

Sensors, cables and accessories

Catalog



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Contents and chapter overview **C**

Sensors for permanent installation **1**

Sensors for mobile data collection **2**

Mounting adapters and tools **3**

Cables, interfaces and accessories for permanent installation **4**

Sensor cables and connection adapters for mobile data collectors **5**

Communication cables **6**

Appendix **A**



C

Contents

1

Order no.	Product description	Page
-----------	---------------------	------

Chapter 1

Sensors for permanent installation

2

VIB 6.102 R :	Industrial accelerometer for standard machinery, adhesive mount	20
---------------	---	----

VIB 6.122 R :	Industrial accelerometer for standard machinery, M8 thread mount	20
---------------	--	----

VIB 6.132 R :	Industrial accelerometer for standard machinery, UNC 5/16 thread mount	20
---------------	--	----

3

VIB 6.125 R :	Industrial accelerometer for standard machinery, M8 thread mount, high-temperature version.....	20
---------------	---	----

VIB 6.135 R :	Industrial accelerometer for standard machinery, UNC 5/16 thread mount, high-temperature version.....	20
---------------	---	----

VIB 6.107 :	Industrial accelerometer for low-speed machinery, adhesive mount.....	22
-------------	---	----

VIB 6.127 :	Industrial accelerometer for low-speed machinery, M8 thread mount.....	22
-------------	--	----

VIB 6.137 :	Industrial accelerometer for low-speed machinery, UNC 5/16 thread mount.....	22
-------------	--	----

4

VIB 6.125 RIP :	Industrial accelerometer for standard machinery ($n > 60 \text{ min}^{-1}$)	24
-----------------	---	----

VIB 6.125 IDEX :	Industrial accelerometer for standard machinery ($n > 60 \text{ min}^{-1}$), intrinsically safe	24
------------------	---	----

VIB 6.129 IP :	Industrial accelerometer for low-speed machinery ($n > 20 \text{ min}^{-1}$)	24
----------------	--	----

VIB 6.129 IDEX :	Industrial accelerometer for low-speed machinery ($n > 20 \text{ min}^{-1}$), intrinsically safe	24
------------------	--	----

5

VIB 6.202-3:	Mini accelerometer with RG 174 cable, 3 meters	26
--------------	--	----

VIB 6.202-6:	Mini accelerometer with RG 174 cable, 6 meters	26
--------------	--	----

VIB 6.203-3:	Mini accelerometer with Spec 44 cable, 3 meters.....	26
--------------	--	----

VIB 6.203-6:	Mini accelerometer with Spec 44 cable, 6 meters.....	26
--------------	--	----

6

VIB 6.215:	Hybrid triaxial accelerometer for VIBGUARD 1 Hz ... 10 kHz (Z)	30
------------	--	----

VIB 6.216:	Hybrid triaxial accelerometer for VIBGUARD 0.1 Hz ... 10 kHz (Z)	30
------------	--	----

VIB 5.731 :	VIBROTECTOR vibration transmitter, 10 Hz - 1 kHz	32
-------------	--	----

VIB 5.736 :	VIBROTECTOR vibration transmitter, 2 Hz - 1 kHz	32
-------------	---	----

VIB 6.172 :	ICP-type accelerometer for very low-speed machinery 0.1 Hz - 10 kHz, Mil connector.....	34
-------------	---	----

VIB 6.195 :	CLD accelerometer for very low-speed machinery 0.1 Hz - 10 kHz, Mil connector	34
-------------	---	----

A

VIB 6.102 DEX :	Industrial accelerometer for standard machinery, adhesive mount, intrinsically safe	36
-----------------	---	----

VIB 6.122 DEX :	Industrial accelerometer for standard machinery, M8 thread mount, intrinsically safe	36
-----------------	--	----

VIB 6.132 DEX :	Industrial accelerometer for standard machinery, UNC 5/16 thread mount, intrinsically safe	36
-----------------	--	----

VIB 6.107 DEX :	Industrial accelerometer for low-speed machinery, adhesive mount, intrinsically safe.....	40
-----------------	---	----

VIB 6.127 DEX :	Industrial accelerometer for low-speed machinery, M8 thread mount, intrinsically safe.....	40
-----------------	--	----

VIB 6.137 DEX :	Industrial accelerometer for low-speed machinery, UNC 5/16 thread mount, intrinsically safe.....	40
-----------------	--	----

VIB 6.202-6XD:	Mini accelerometer with RG 174 cable, 6 meters, intrinsically safe	42
----------------	--	----

VIB 6.202-10XD:	Mini accelerometer with RG 174 cable, 10 meters, intrinsically safe	42
-----------------	---	----

VIB 6.203-3XD:	Mini accelerometer with Spec 44 cable, 3 meters, intrinsically safe.....	42
----------------	--	----

VIB 6.203-6XD:	Mini accelerometer with Spec 44 cable, 6 meters, intrinsically safe.....	42
----------------	--	----

VIB 5.731 EX :	VIBROTECTOR vibration transmitter, 10 Hz - 1 kHz, intrinsically safe	44
----------------	--	----

VIB 5.736 EX :	VIBROTECTOR vibration transmitter, 2 Hz - 1 kHz, intrinsically safe	44
----------------	---	----

VIB 6.172 XICP:	ICP-type accelerometer for very low-speed machinery ($n > 6 \text{ min}^{-1}$), intrinsically safe	46
-----------------	--	----

VIB 5.991-DIS:	Inductive displacement sensor	48
----------------	-------------------------------------	----

VIB 5.992-NX:	Inductive RPM sensor for wind power plants incl. cable	49
---------------	--	----

VIB 5.992-STD:	Default RPM sensor for Online CMS, incl. cable	50
----------------	--	----

VIB 6.610:	Temperature probe PT100 for permanent mounting	51
------------	--	----

VIB 6.620 SET :	Inductive RPM sensor for VIBRONET Signalmaster incl. connector; ($f < 300 \text{ Hz}$)	52
-----------------	--	----

VIB 6.620 :	Inductive RPM sensor for VIBRONET Signalmaster w/o connector; ($f < 300 \text{ Hz}$).....	52
-------------	---	----

VIB 6.621 :	Connector for sensor VIB 6.620.....	52
-------------	-------------------------------------	----

VIB 6.622 SET :	Inductive RPM sensor for VIBRONET Signalmaster incl. connector; ($f < 1500 \text{ Hz}$)	53
-----------------	---	----

VIB 6.622 :	Inductive RPM sensor for VIBRONET Signalmaster w/o connector; ($f < 1500 \text{ Hz}$).....	53
-------------	--	----

VIB 6.621 :	Connector for sensor VIB 6.622.....	53
-------------	-------------------------------------	----

VIB 6.641:	Proximity sensor for Online CMS incl. cable (3-15 mm)	54
------------	---	----

VIB 6.645 SET:	Displacement sensor for Online CMS incl. cable (2-10 mm).....	55
----------------	---	----

VIB 5.993-MIC:	Measuring microphone , CL 1 (DIN EN 60 651).....	56
----------------	--	----

VIB 6.411 SET:	WEARSCANNER set with switching output	58
----------------	---	----

VIB 8.170:	Online VIEW 4.0 for up to 100 data points	60
------------	---	----

VIB 8.171:	Online VIEW 4.0 for up to 250 data points	60
------------	---	----

VIB 8.172:	Online VIEW 4.0 for up to 500 data points	60
------------	---	----

VIB 8.173:	Online VIEW 4.0 for up to 1000 data points	60
------------	--	----

Contents

Order no.	Product description	Page
Chapter 2		
Sensors for mobile data collection		
VIB 8.660 VS :	VIBCODE transducer for VIBSCANNER and VIBXPART	64
VIB 8.660 VD :	VIBCODE transducer for VIBROTIP	64
VIB 8.660 XVS :	VIBCODE transducer with intrinsic safety for VIBSCANNER EX and VIBXPART EX	66
VIB 8.660 XVD :	VIBCODE transducer with intrinsic safety for VIBROTIP EX and VIBTOOL	66
VIB 6.142 R:	Mobile industrial accelerometer for standard machinery ($n > 600 \text{ min}^{-1}$)	68
VIB 6.147:	Mobile industrial accelerometer for low-speed machinery ($n > 120 \text{ min}^{-1}$)	69
VIB 6.142 DEX:	Mobile industrial accelerometer for standard machinery ($n > 600 \text{ min}^{-1}$), intrinsically safe	70
VIB 6.147 DEX:	Mobile industrial accelerometer for low-speed machinery ($n > 120 \text{ min}^{-1}$), intrinsically safe	72
VIB 6.162 VD :	Dual sensor for vibration and temperature measurement with VIBSCANNER EX / VIBXPART EX	74
VIB 6.162 VT :	Dual sensor for vibration and temperature measurement with VIBTOOL	74
VIB 8.606 VS :	TIPTECTOR handheld probe set for VIBSCANNER and VIBXPART	76
VIB 8.606 VD :	TIPTECTOR handheld probe set for VIBROTIP	76
VIB 8.606 XVS :	TIPTECTOR handheld probe set for VIBSCANNER EX, intrinsically safe	78
VIB 8.606 XVD :	TIPTECTOR handheld probe set for VIBROTIP EX, intrinsically safe	78
VIB 8.666 VS :	Mobile accelerometer with quick fitting coupling for VIBSCANNER and VIBXPART	80
VIB 8.666 VD :	Mobile accelerometer with quick fitting coupling for VIBROTIP	80
VIB 6.655 :	Triaxial accelerometer for VIBXPART	81
VIB 8.605 :	Built-in temperature probe for VIBROTIP / VIBSCANNER (spare part)	82
VIB 8.607-1,5 :	Temperature probe with magnetic holder, 1.5 m	82
VIB 8.608 :	Handheld temperature probe	82
VIB 6.631 :	Laser trigger / Laser RPM sensor	84
VIB 6.631 EX:	Laser trigger / Laser RPM sensor, intrinsically safe	86
VIB 6.640:	Inductive proximity sensor for VIBXPART incl. cable (3-15 mm)	88
VIB 6.672:	LED stroboscope	89
VIB 6.673:	Current clamp (400A AC/ 600A DC)	90
Chapter 3		
Mounting adapters and tools		
VIB 3.411 :	Screwed adapter with locking nut, M8 to M8	93
VIB 3.412 :	Screwed adapter with locking nut, M8 to M10	93
VIB 3.413 :	Screwed adapter with locking nut, M8 to M12	93
VIB 3.414 :	Screwed adapter with locking nut, UNC 5/16 to UNC 5/16	93
VIB 3.415 :	Screwed adapter with locking nut, UNC 5/16 to UNC 3/8 - 16	93
VIB 3.416 :	Screwed adapter with locking nut, UNC 5/16 to UNC 1/2 -13	93
VIB 3.417-M5 :	Screwed adapter for mini accelerometer, UNF 1/4 to M5-flat	94
VIB 3.417-M6 :	Screwed adapter for mini accelerometer, UNF 1/4 to M6-flat	94
VIB 3.437 :	Screwed adapter for CLD- /ICP-type accelerometer and VIBROTECTOR, UNF 1/4 to M8-90°	94
VIB 3.438 :	Screwed adapter for CLD- /ICP-type accelerometer and VIBROTECTOR, UNF 1/4 to M8-flat	94
VIB 3.439 :	Screwed adapter for CLD- /ICP-type accelerometer and VIBROTECTOR, UNF 1/4 to M5-flat	94
VIB 3.480 :	M8 thread for CLD- /ICP-type accelerometer and VIBROTECTOR vibration transmitter	94
VIB 3.435 :	Screwed adapter for mobile industrial accelerometer, M5-flat to M5-120°	95
VIB 3.436 :	Screwed adapter for mobile industrial accelerometer, M5-flat to M6-90°	95
VIB 3.440 :	Screwed adapter for mobile industrial accelerometer, M5-flat to M8-90°	95
VIB 3.441 :	Screwed adapter for mobile industrial accelerometer, M5-flat to UNC5/16-90°	95
VIB 3.474 :	Screwed adapter for industrial accelerometer, M8-90° to M16	95
VIB 3.475 :	Screwed adapter for industrial accelerometer, M8-90° to M20	95
VIB 8.772 :	Screwed adapter for industrial accelerometer, M8-90° to M10-120°	95
VIB 3.418 :	Adhesive adapter for mini accelerometer, UNF 1/4 thread	96
VIB 3.430 :	Adhesive adapter for mobile industrial accelerometer, M5-flat	96
VIB 3.431 :	Adhesive adapter for industrial accelerometer, M8-90°	96
VIB 3.432 :	Adhesive adapter for industrial accelerometer, UNC 5/16-90°	96
VIB 3.433 :	Adhesive adapter for CLD-/ICP-type accelerometer and VIBROTECTOR vibration transmitter	96
VIB 3.420 :	Magnetic holder for curved surfaces, M5 internal thread	97
VIB 3.422 :	Magnetic holder for flat surfaces, M5 internal thread	97
VIB 3.423 :	Magnetic holder for flat surfaces, 1/4-28 UNF thread	97
VIB 8.586 :	Extension post for industrial accelerometer, M8 x 55 mm	98
VIB 8.587 :	Extension post for industrial accelerometer, M8 x 95 mm	98
VIB 8.588 :	Extension post for industrial accelerometer, M8 x 170 mm	98
VIB 8.589 :	Extension post for industrial accelerometer, M8 x 35 mm	98

C

Contents

1

Order no.	Product description	Page
-----------	---------------------	------

2

VIB 8.590 :	Extension post for industrial accelerometer, UNC 5/16 x 2 1/8"	98
VIB 8.591 :	Extension post for industrial accelerometer, UNC 3/8 x 3 3/4"	98
VIB 8.592 :	Extension post for industrial accelerometer, UNC 1/2 x 6 5/8"	98
VIB 8.679 SET :	VIBCODE measurement stud, M8, high quality stainless steel (VA1.4571), 1 pc.	99
VIB 8.680 SET :	VIBCODE measurement stud, M8, stainless steel (VA1.4305), 1 pc.	99
VIB 8.680 A25 :	VIBCODE measurement studs, M8, stainless steel (VA1.4305), 25 pcs.	99
VIB 8.689 SET :	VIBCODE measurement stud, UNC 5/16, high quality stainless steel (VA1.4571), 1 pc.	99
VIB 8.689 A25 :	VIBCODE measurement studs, UNC 5/16, high quality stainless steel (VA1.4571), 25 pcs.	99
VIB 8.690 SET :	VIBCODE measurement stud, UNC 5/16, stainless steel (VA1.4305), 1 pc.	99
VIB 8.690 A25 :	VIBCODE measurement studs, UNC 5/16, stainless steel (VA1.4305), 25 pcs.	99

4

VIB 8.576 :	VIBCODE measurement stud with extension post, M8 x 55 mm	100
VIB 8.577 :	VIBCODE measurement stud with extension post, M8 x 95 mm	100
VIB 8.578 :	VIBCODE measurement stud with extension post, M8 x 170 mm	100
VIB 8.580 :	VIBCODE measurement stud with extension post, UNC 5/16 x 2 1/8"	100
VIB 8.581 :	VIBCODE measurement stud with extension post, UNC 3/8 x 3 3/4"	100
VIB 8.582 :	VIBCODE measurement stud with extension post, UNC 3/8 x 6 5/8"	100
VIB 8.571 :	VIBCODE measurement stud with locking nut, M8	101
VIB 8.572 :	VIBCODE measurement stud with locking nut, M10	101

5

VIB 8.573 :	VIBCODE measurement stud with locking nut, M12	101
VIB 8.594 :	VIBCODE measurement stud with locking nut, UNC 5/16	101
VIB 8.595 :	VIBCODE measurement stud with locking nut, UNC 3/8 - 16	101
VIB 8.596 :	VIBCODE measurement stud with locking nut, UNC 1/2 - 13	101
VIB 8.685 SET :	VIBCODE measurement stud for adhesive mounting, 1 pc.	102
VIB 8.685 A25 :	VIBCODE measurement stud for adhesive mounting, 25 pcs.	102

6

VIB 8.563 A25 :	VIBCODE code ring, 25 pcs.	103
VIB 8.566 :	Protective cap for VIBCODE stud	103
VIB 8.568/B :	Color coding for protective cap, black, 25 pcs.	103
VIB 8.568/GN :	Color coding for protective cap, green, 25 pcs.	103
VIB 8.568/GR :	Color coding for protective cap, gray, 25 pcs.	103
VIB 8.568/W :	Color coding for protective cap, white, 25 pcs.	103
VIB 8.568/Y :	Color coding for protective cap, yellow, 25 pcs.	103
VIB 8.692 :	VIBCODE encoding tool	103
VIB 6.632 :	Stand for laser trigger / laser RPM sensor	104
VIB 3.306 :	Reflective tape	104
VIB 32000 :	Measurement stud for accelerometer type VIB 8.666, M8x24, nickel-plated	105
VIB 32010 :	Measurement stud for accelerometer type VIB 8.666, M8x24, stainless steel	105
VIB 32200 :	Measurement stud for accelerometer type VIB 8.666, M8x113, nickel-plated	105
VIB 32210 :	Measurement stud for accelerometer type VIB 8.666, M8x113, stainless steel	105
VIB 32310 :	Measurement stud for accelerometer type VIB 8.666, M8x202, stainless steel	105
VIB 32410 :	Measurement stud for accelerometer type VIB 8.666, M8x291, stainless steel	105
VIB 33000 A25 :	Measurement stud for accelerometer type VIB 8.666, adhesive mount, stainless steel, 25 pcs.	105
VIB 81025 :	Protective cap for measurement stud, black	105
VIB 3.450 :	Probe tip for mobile industrial accelerometer type VIB 6.14x	106
VIB 8.610 :	PRÜFTECHNIK counter sink bit	107
VIB 8.693 :	M8 thread tap	107
VIB 8.694 :	90° counter sink bit	107
VIB 8.696 :	UNC5/16 thread tap	107

Chapter 4

Cables, interfaces and accessories for permanent installation

VIB 90006 :	Coaxial cable for hazardous areas, PVC cable sheath, blue	112
VIB 90007 :	Coaxial cable for high ambient temperatures (< 150°C), oil-resistant	112
VIB 90008 :	Coaxial cable for low ambient temperatures (> - 40°C)	112
VIB 90009 :	Coaxial cable, halogen free and highly flame retardant	112
VIB 90093 :	Coaxial cable for high ambient temperatures (< 125°C), oil-resistant	112
VIB 90080 :	Standard triaxial cable	113
VIB 90180 :	Standard triaxial cable, armored version	113
VIB 81026 :	Crimping tool for coaxial cables	114
VIB 81052 :	Cutting tool for coaxial cables	114
VIB 81053 :	Cable stripper for triaxial cables	114
VIB 81054 :	Replacement blade for cable stripper VIB 81053	114

Contents

Order no.	Product description	Page
VIB 6.730 :	Protective sheath for standard coaxial cables.....	115
VIB 6.725-100 :	Shield connector set for coaxial and twisted-pair cables.....	116
VIB 90061 :	Shielded twisted-pair sensor cable, PUR sheath.....	117
VIB 90065 :	Stranded sensor cable, silicone sheath and cable armor	117
VIB 90070 :	Multi-core twisted-pair sensor cable.....	118
VIB 90030 :	Industrial Ethernet cable for WEARSCANNER (CAT5).....	119
VIB 5.740-X :	Pre-assembled sensor cable, silicone sheath and cable armor, straight connector	120
VIB 5.741-X :	Pre-assembled sensor cable, silicone sheath and cable armor, angled connector.....	120
VIB 5.745-L :	Pre-assembled sensor cable, PUR sheath, angled connector	121
VIB 5.746-L :	Pre-assembled sensor cable, PUR sheath, straight connector (Stainless steel VA 1.4305).....	121
VIB 3.570-L :	Pre-assembled cable for intrinsically safe VIBROTECTOR and ICP-type accelerometers	122
VIB 3.575-10 :	Sensor cable for hybrid triaxial accelerometers (VIB 6.215 / VIB 6.216), 10 meters	123
VIB 3.575-20 :	Sensor cable for hybrid triaxial accelerometers (VIB 6.215 / VIB 6.216), 20 meters.....	123
VIB 5.771 :	Pre-assembled VIBREX cable	124
VIB 309007-6 :	Pre-assembled twisted-pair VIBNODE cable, PUR sheath, 6 meters long	125
VIB 309007-10 :	Pre-assembled twisted-pair VIBNODE cable, PUR sheath, 10 meters long	125
VIB 309007-15 :	Pre-assembled twisted-pair VIBNODE cable, PUR sheath, 15 meters long	125
VIB 309007-20 :	Pre-assembled twisted-pair VIBNODE cable, PUR sheath, 20 meters long	125
VIB 7.115-6 :	Pre-assembled coaxial VIBNODE cable, PVC sheath, 6 meters long	125
VIB 7.115-12 :	Pre-assembled coaxial VIBNODE cable, PVC sheath, 12 meters long	125
VIB 6.420-L :	Pre-assembled WEARSCANNER cable for power supply & data transmission incl. M12 connector VIB 6.421.....	126
VIB 6.426-L :	Pre-assembled WEARSCANNER cable for switching output, incl. M12 connector VIB 6.425	126
VIB 3.550 :	Limiting device for CLD-type accelerometers with intrinsic safety	127
0 2088 0009 :	Safety barrier for ICP-type accelerometers with intrinsic safety	127
0 2088 0010 :	Transmitter supply unit for VIBROTECTOR EX.....	127
VIB 6.770/9 :	Junction box (aluminium) for the extension of a sensor cable, coaxial - coaxial	129
VIB 6.770/13 :	Junction box (aluminium) for the extension of a sensor cable, coaxial - triaxial	129
VIB 6.770/9-S :	Junction box (stainless steel) for the extension of a sensor cable, coaxial - coaxial.....	129
VIB 6.770/13-S :	Junction box (stainless steel) for the extension of a sensor cable, coaxial - triaxial.....	129
VIB 6.776 :	Junction box (plastic) for the extension of a sensor cable, twisted-pair / 2-pin	129
VIB 6.775/9 :	Junction box for the extension of two sensor cables, coaxial - coaxial	131
VIB 6.775/13 :	Junction box for the extension of two sensor cables, coaxial - triaxial	131
VIB 8.306 :	Field multiplexer with threaded fitting M12 for VIBRONET Signalmaster.....	132
VIB 8.306 S :	Field multiplexer with threaded fitting M20 for VIBRONET Signalmaster.....	132
VIB 8.306 V :	Field multiplexer with stainless steel housing for VIBRONET Signalmaster	132
VIB 8.306 EX :	Field multiplexer for VIBRONET Signalmaster, aluminium housing, intrinsically safe, 224x120 mm	133
VIB 8.310 :	Temperature module for VIBRONET field multiplexer	134
VIB 8.312 :	Process parameters module (current/ voltage) for VIBRONET field multiplexer.....	134
VIB 8.313 :	RPM module for VIBRONET field multiplexer	134
VIB 8.310 EX :	Temperature module for VIBRONET field multiplexer, intrinsically safe	134
VIB 8.313 EX :	RPM module for VIBRONET field multiplexer, intrinsically safe	134
VIB 8.314 EX :	Vibration module for VIBRONET field multiplexer, intrinsically safe	134
VIB 7.560 :	VIBROWEB connection box	135
VIB 7.580 :	Open ring spanner, 14x17	136
VIB 7.581 :	Open ring spanner, 19x22	136
VIB 7.582 :	Open ring spanner, 24x27	136
VIB 7.583 :	Open ring spanner, 24x25	136
VIB 7.590 :	Metric cable fitting M 16, 5 pieces.....	137
VIB 7.591 :	Metric cable fitting M 25, 2 pieces	137
VIB 7.592 :	Metric cable fitting M 20, 5 pieces	137
VIB 7.593 :	Metric cable fitting M 12, 5 pieces	137
VIB 7.595 :	Shield clamp SK8, 5 pieces	137
VIB 81060 :	Screw driver 2.5 x 35.....	137
VIB 91001 :	TNC plug to threaded fitting, angled, oilproof	138
VIB 91002 :	TNC plug to TNC socket, angled	138
VIB 91009 :	BNC plug to crimp contact, angled	138
VIB 93022 :	TNC plug to crimp contact, straight.....	138
VIB 93031 :	TNC plug to threaded fitting, straight.....	138
VIB 93033 :	TNC socket to TNC socket, straight.....	138
VIB 93047 :	TNC socket to crimp contact, straight.....	138
VIB 93055 :	TNC plug to BNC plug, straight	138

C

Contents

1

Order no.	Product description	Page
-----------	---------------------	------

2

VIB 93060 :	BNC plug to crimp contact, straight.....	138
VIB 93062 :	TNC socket to BNC plug, straight	138
VIB 93067 :	TNC plug to BNC socket, straight	138
VIB 93077 :	TNC plug to crimp contact, angled	138
VIB 94010 :	Plug-in connector, 2-pin, straight.....	139
VIB 94011 :	Plug-in connector, 2-pin, angled	139
VIB 91000 :	Chassis connector, TNC socket to crimp contact	140
VIB 93035 :	Dust cap for TNC socket.....	140
VIB 93036 F :	Bulkhead connector w/ fastening flange, TNC socket to TNC socket	140
VIB 93036 S :	Bulkhead connector single hole screw version, TNC socket to TNC socket.....	140
VIB 93056 :	Bulkhead connector w/ fastening flange, BNC socket to TNC socket.....	140
VIB 93061 :	Dust cap for BNC socket.....	140
VIB 93090 :	Chassis connector, BNC socket to crimp contact	140
VIB 6.700 :	Dust cap for industrial accelerometer (type VIB 6.1xx), straight, 10 pcs.	141
VIB 6.701 :	Dust cap for industrial accelerometer (type VIB 6.1xx), straight, oil-resistant, 10 pcs.	141
VIB 6.710 :	Dust cap for industrial accelerometer (type VIB 6.1xx), angled, 10 pcs.	141
VIB 6.711 :	Dust cap for industrial accelerometer (type VIB 6.1xx), angled, oil-resistant, 10 pcs.	141
VIB 6.720 :	Clamp for dust cap, cable end, 10 pcs.....	141
VIB 6.721 :	Clamp for dust cap, sensor end, 10 pcs.	141
VIB 6.722 :	Dust cap sleeve, 10 pcs.....	141
VIB 8.745 :	Installation checker.....	143
VIB 6.760 :	IP 68 option for industrial accelerometer (type VIB 6.1xx).....	144
VIB 6.761 :	IP 68 option for industrial accelerometer (type VIB 6.1xx), short version	144

3

4

5

6

A

Chapter 5**Sensor cables and connection adapters for mobile data collectors**

VIB 5.436 :	Spiral connection cable for current linedrive accelerometer (VIBSCANNER / VIBXPART)	147
VIB 5.437-2,9 :	Straight connection cable for current linedrive accelerometer, 2.9 meters (VIBSCANNER / VIBXPART).....	147
VIB 5.437-5 :	Straight connection cable for current linedrive accelerometer, 5 meters (VIBSCANNER / VIBXPART).....	147
VIB 5.444-5 :	Universal cable extension for analog measurement channel, 5 meters.....	148
VIB 5.339:	Cable extension for Current Linedrive accelerometer, 8 meters.....	149
VIB 4.701-2 :	Straight connection cable for CLD-type accelerometer, BNC angled plug, 2 meters (VIBROTIP).....	150
VIB 4.701-5 :	Straight connection cable for CLD-type accelerometer, BNC angled plug, 5 meters (VIBROTIP).....	150
VIB 4.702-2 :	Straight connection cable for CLD-type accelerometer, Microdot angled plug, 2 meters (VIBROTIP).....	150
VIB 4.702-5 :	Straight connection cable for CLD-type accelerometer, Microdot angled plug, 5 meters (VIBROTIP).....	150
VIB 4.704-2 :	Straight connection cable for CLD-type accelerometer, TNC angled plug, 2 meters (VIBROTIP)	150
VIB 4.704-5 :	Straight connection cable for CLD-type accelerometer, TNC angled plug, 5 meters (VIBROTIP)	150
VIB 321926-2 :	Spiral connection cable for CLD-type accelerometer, TNC plug, 2 meters (VIBROTIP)	150
VIB 8.618-1,5 :	TIPTECTOR cable, straight, 1.5 meters (VIBROTIP)	151
VIB 8.618-5 :	TIPTECTOR cable, straight, 5 meters (VIBROTIP)	151
VIB 5.438-0.5 :	Straight connection cable for ICP-type accelerometer, 0.5 m, BNC-connector (VIBSCANNER/ VIBXPART).....	152
VIB 5.422 :	Spiral connection cable for ICP-type accelerometer, MIL-connector (VIBSCANNER / VIBXPART)	152
VIB 5.345-6 :	Cable extension for VIB 5.422, 6 meters, MIL-connector (VIBSCANNER / VIBXPART)	152
VIB 5.433 :	Cable adapter for the measurement of signal-low voltage with VIBXPART II / VIBSCANNER	153
VIB 5.434 :	Cable adapter for the measurement of signal-low current with VIBXPART II / VIBSCANNER	153
VIB 5.433 X :	Cable adapter for the measurement of signal-low voltage with VIBXPART EX / VIBSCANNER EX.....	155
VIB 5.432-2,9 :	Connection cable for RPM sensors (VIBSCANNER / VIBXPART)	157
VIB 4.750-5 :	Cable extension for VIB 5.432-2,9	157
VIB 5.443 :	Connection cable for TTL trigger sensors (VIBSCANNER / VIBXPART).....	157
VIB 5.431 :	Cable for analog signal output (VIBSCANNER / VIBXPART).....	158
VIB 5.332 :	Keyphasor adapter for machine protection systems (VIBSCANNER / VIBXPART).....	159
VIB 5.332 X :	Keyphasor adapter for machine protection systems (VIBSCANNER EX / VIBXPART EX).....	160
VIB 5.333 :	Cable adapter for TTL / strobe output (VIBXPART).....	161
VIB 5.336 :	Cable adapter for triaxial accelerometer (VIBXPART)	162
VIB 5.341 :	VST 24V adapter for VIBXPART II.....	163
VIB 5.342 :	Analog cable for VST 24V adapter	163

Contents

Order no.	Product description	Page
VIB 5.343 :	Digital cable for VST 24V adapter	163
VIB 5.344 :	VIBROTECTOR cable for VST 24V adapter	163
VIB 5.439 :	Connection cable for Pt100 temperature probe (VIBSCANNER)	165
VIB 5.445 :	Manual channel switch for 2-plane balancing with VIBSCANNER	166
VIB 5.446 :	Automatic channel switch for 2-plane balancing with VIBSCANNER	166
VIB 8.749 :	Current Linedrive converter for data collector with voltage input	167
VIB 5.449-CLD :	Cable adapter for CLD-type accelerometer VIB 6.195	168
VIB 5.449-ICP :	Cable adapter for ICP-type accelerometer VIB 6.172	168
VIB 4.705 :	BNC to QLA cable adapter	169
VIB 8.617 :	QLA angled plug	169
VIB 6.780 :	Terminal holder for bulkhead connectors	170
VIB 10473 :	Dust cap for TNC connector	170
VIB 6.785 :	SwitchBox - Channel switching unit for CLD-/ ICP-type accelerometers, 12 ch.	171
VIB 8.746-VD :	SPM cable adapter for VIBROTIP	172
VIB 8.746-VS :	SPM cable adapter for VIBSCANNER / VIBXPART	172
VIB 5.346:	Connection cable, VIBXPART II to VIBRONET field multiplexer	173
VIB 5.346-MUX :	BNC connection adapter for cable VIB 5.436	173

Chapter 6

Communication cables

VIB 5.330 MUSB :	VIBXPART II USB cable for peripheral devices (Master)	177
VIB 5.330 SUSB :	VIBXPART II USB cable for communication (Slave)	177
VIB 5.330 MEM :	VIBXPART II adapter for USB pen drive	177
VIB 5.330-USB :	VIBXPART II USB pen drive	177
VIB 5.330 UNV :	Universal communication adapter for VIBXPART EX	178
VIB 5.338 :	USB cable for VIBXPART EX	178
VIB 5.331:	VIBXPART II Ethernet cable	180
VIB 5.430-2 :	Serial PC cable (VIBSCANNER / VIBXPART)	181
VIB 5.448 :	Adapter cable, serial to USB (VIBSCANNER / VIBXPART)	181
VIB 8.619 :	Serial PC cable (VIBROTIP)	181
VIB 8.619-USB :	Serial to USB cable adapter for VIBROTIP EX	182
VIB 5.955-X :	Patch cable (VIBRONET Signalmaster / VIBROWEB)	183
VIB 5.957-2 :	Crossover ethernet cable (VIBRONET Signalmaster / VIBROWEB), 2 m	183
VIB 5.957-5 :	Crossover ethernet cable (VIBRONET Signalmaster / VIBROWEB), 5 m	183
VIB 5.956-X :	System bus cable for VIBRONET Signalmaster with X connectors	184

Appendix

Ordering information for customized sensor cables	186
VIB 2.200 : Balancing and Vibration model (Rotor kit)	187
Accelerometer performance characteristics (selection)	188
Portable instruments connection overview	189
Information about installing sensors and cables in hazardous areas	192
The patented Tandem-Piezo accelerometer	195
Advantages of current linedrive accelerometers	196
PRÜFTECHNIK worldwide	197
PRÜFTECHNIK Service & Diagnostic Center	198
Index by order number	199

C

Chapter overview

1 For reasons of clarity, the products in this catalog are organized into chapters, which are based on their location and application on-site.

2 Basically this categorization depends on whether the

product can be assigned to the permanently installed on-line systems or to the portable instruments.

The overview below shows the appropriate division of the chapters.

3 Chapter 4
Cables, interfaces and accessories for permanent installation

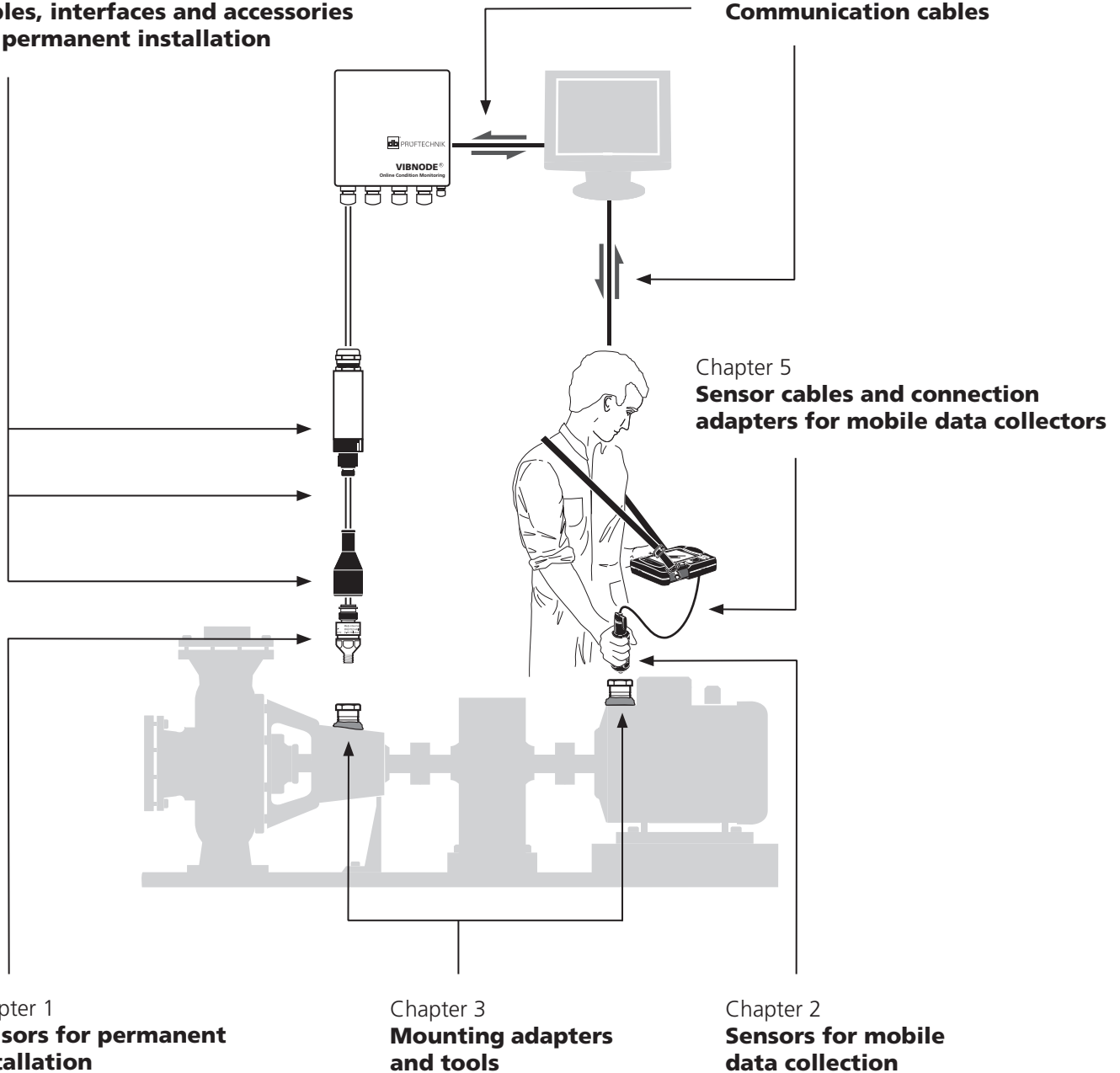
Chapter 6
Communication cables

4

5

6

A

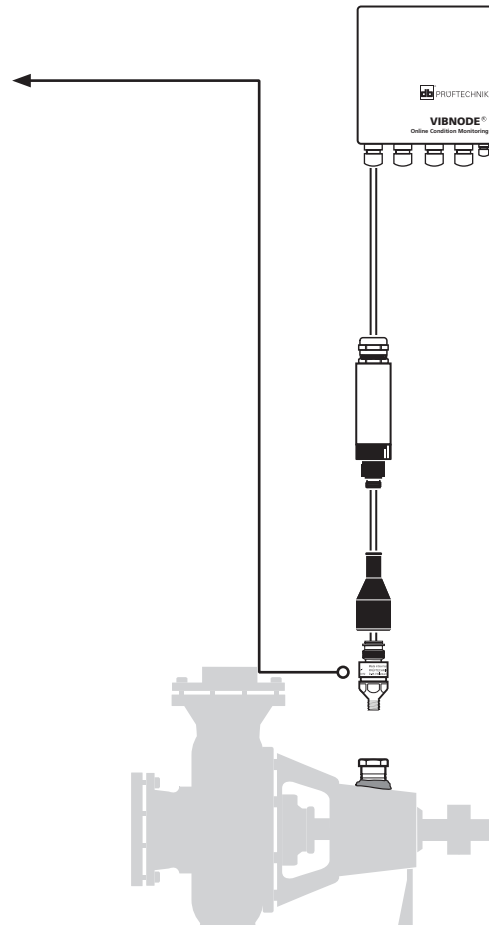


Chapter contents, organized by location and application

Chapter 1

Sensors for permanent installation

Order no.	Description	Page
VIB 5.991-DIS	Inductive displacement sensor	48
VIB 5.992-NX	Inductive RPM sensor incl. cable	49
VIB 5.992-STD	Default RPM sensor for Online CMS	50
VIB 5.993-MIC	Microphone	56
VIB 5.731 VIB 5.736	VIBROTECTOR vibration transmitter, 10 mm/s or 20 mm/s	32
VIB 5.731 EX VIB 5.736 EX	VIBROTECTOR vibration transmitter, 10 mm/s or 20 mm/s, intrinsically safe	44
VIB 6.102 R	Industrial accelerometer for standard machinery, adhesive mount	20
VIB 6.102 DEX	-, intrinsically safe	36
VIB 6.107	Industrial accelerometer for low-speed machinery, adhesive mount	22
VIB 6.107 DEX	-, intrinsically safe	40
VIB 6.122 R	Industrial accelerometer for standard machinery, M8 thread mount	20
VIB 6.122 DEX	-, intrinsically safe	36
VIB 6.125 R	-, high-temperature version	20
VIB 6.125 RIP VIB 6.125 IDEX	-, suitable for IP 68 option --, intrinsically safe	24
VIB 6.127	Industrial accelerometer for low-speed machinery, M8 thread mount	22
VIB 6.127 DEX	-, intrinsically safe	40
VIB 6.129 IP VIB 6.129 IDEX	-, suitable for IP 68 option --, intrinsically safe	24
VIB 6.132 R	Industrial accelerometer for standard machinery, UNC 5/16 thread mount	20
VIB 6.132 DEX	-, intrinsically safe	36
VIB 6.135 R	-, high-temperature version	20
VIB 6.137	Industrial accelerometer for low-speed machinery, UNC 5/16 thread mount	22
VIB 6.137 DEX	-, intrinsically safe	40
VIB 6.152 DEX	Industrial accelerometer, low sensitivity, intrinsically safe	38
VIB 6.172	ICP-type accelerometer for very low- speed machinery 0.1 Hz - 10 kHz	34
VIB 6.172 XICP	-, intrinsically safe	46
VIB 6.195	CLD-type accelerometer for very low- speed machinery 0.1 Hz - 10 kHz	34
VIB 6.202-3 /-6 VIB 6.203-3 /-6	Mini accelerometer, RG 174 or Spec 44, 3 m / 6 m	26
VIB 6.202...XD VIB 6.203...XD	-, intrinsically safe	42
VIB 6.215 VIB 6.216	Triaxial accelerometers for VIBGUARD 1 Hz ... 10 kHz 0.1 Hz ... 10 kHz	30



Order no.	Description	Page
VIB 6.411 SET	WEARSCANNER particle counter	58
VIB 6.610	Temperature probe PT100	51
VIB 6.620 SET VIB 6.621	Inductive RPM sensor for VIBRONET Sig- nalmaster incl. connector (f< 300 Hz) Connector for sensor VIB 6.620	52
VIB 6.622 SET VIB 6.621	Inductive RPM sensor for VIBRONET Sig- nalmaster incl. connector (f<1500 Hz) Connector for sensor VIB 6.622	53
VIB 6.641	Proximity sensor for Online CMS incl. cable (3-15 mm)	54
VIB 6.645 SET VIB 6.646	Displacement sensor for Online CMS incl. cable (2-10 mm) Connection cable for sensor VIB 6.645	55
VIB 7.205-2,9	VIBCONNECT RF sensor	28

C

Chapter contents, organized by location and application

1

2

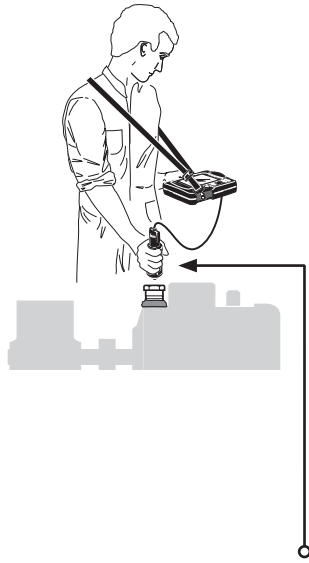
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4

5

6

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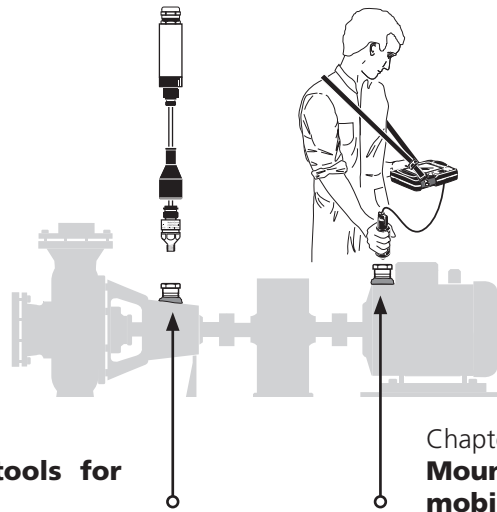
Chapter 2

Sensors for mobile data collection

Order no.	Description	Page
VIB 6.142 R	Mobile industrial accelerometer for standard machinery	68
VIB 6.142 DEX	Mobile industrial accelerometer for standard machinery, intrinsically safe	70
VIB 6.147	Mobile industrial accelerometer for low-speed machinery	69
VIB 6.147 DEX	Mobile industrial accelerometer for low-speed machinery, intrinsically safe	72
VIB 6.162 VD VIB 6.162 VT	Dual sensor for vibration and temperature measurement with VIBSCANNER/ VIBXPART (VD) VIBTOOL (VT)	74
VIB 6.631	Laser trigger / Laser RPM sensor	84
VIB 6.631 EX	Laser trigger / Laser RPM sensor, intrinsically safe	86
VIB 6.640	Inductive proximity sensor for VIBXPART / VIBSCANNER	88
VIB 6.655	Triaxial accelerometer for VIBXPART	81
VIB 6.672	LED stroboscope	89
VIB 6.673	Current clamp	90

Order no.	Description	Page
VIB 8.605	Built-in temperature probe for VIBROTIP / VIBSCANNER (spare part)	82
VIB 8.606 VD VIB 8.606 VS	TIPTECTOR handheld probe, -, set for VIBROTIP -, set for VIBSCANNER / VIBXPART	76
VIB 8.606 XVD VIB 8.606 XVS	TIPTECTOR handheld probe, intr. safe -, set for VIBROTIP EX -, set for VIBSCANNER EX	78
VIB 8.607-1,5 VIB 8.608	Temp. probe with magnetic holder Hand-held temperature probe	82
VIB 8.609 VIB 8.633	TIPTECTOR grip extension, 100 mm TIPTECTOR grip	76
VIB 8.660 VS VIB 8.660 VD VIB 8.660 VIB 8.691	VIBCODE transducer incl. cable -, for VIBSCANNER and VIBXPART -, for VIBROTIP -, as replacement part w/o cable Dust cap for VIBCODE transducer	64
VIB 8.660 XVS VIB 8.660 XVD VIB 8.660 HEX	VIBCODE transducer incl. cable, int. safe -, for VIBSCANNER EX and VIBXPART EX -, for VIBROTIP EX and VIBTOOL -, as replacement part w/o cable	66
VIB 8.666 VD VIB 8.666 VS VIB 8.666 R	Mobile accelerometer with quick fitting coupling incl. cable -, for VIBROTIP -, for VIBSCANNER / VIBXPART -, as replacement part w/o cable	80

Chapter contents, organized by location and application



Chapter 3

Mounting adapters and tools for permanent installation

Order no.	Description	Page
VIB 3.411 VIB 3.412 VIB 3.413 VIB 3.414 VIB 3.415 VIB 3.416	Screwed adapter with locking nut for industrial accelerometers -, M8 to M8 -, M8 to M10 -, M8 to M12 -, UNC 5/16 to UNC 5/16 -, UNC 5/16 to UNC 3/8 - 16 -, UNC 5/16 to UNC 1/2 - 13	93
VIB 3.417-M5 VIB 3.417-M6	Screwed adapter for mini accelerometer, -, UNF1/4 to M5 -, UNF1/4 to M6	94
VIB 3.418 VIB 3.431 VIB 3.432 VIB 3.433	Adhesive adapter for -, mini accelerometer -, industrial accelerometer, M8-90° -, industrial accelerometer, UNC 5/16 -, CLD-/ICP-type accelerometer and VIBROTECTOR vibration transmitter	96
VIB 3.437 VIB 3.438 VIB 3.439	Screwed adapter for CLD- /ICP-type accelerometer and VIBROTECTOR -, UNF 1/4 to M8/90° -, UNF 1/4 to M8 -, UNF 1/4 to M5	94
VIB 3.474 VIB 3.475 VIB 8.772	Screwed adapter for industrial accelerometers, -, M8-90° to M16 -, M8-90° to M20 -, M8-90° to M10-120°	95
VIB 3.480	M8 thread for CLD- /ICP-type accelerometer and VIBROTECTOR vibration transmitter	94
VIB 8.586 VIB 8.587 VIB 8.588 VIB 8.589 VIB 8.590 VIB 8.591 VIB 8.592	Extension post for industrial accelerometer -, M8 x 55 mm -, M8 x 95 mm -, M8 x 170 mm -, M8 x 35 mm -, UNC 5/16 x 2 1/8" -, UNC 5/16 x 3 3/4" -, UNC 5/16 x 6 5/8"	98
VIB 8.693 VIB 8.694 VIB 8.696	M8 thread tap 90° counter sink bit UNC5/16 thread tap	107

Chapter 3

Mounting adapters and tools for mobile data collection

Order no.	Description	Page
VIB 3.306	Reflective tape for laser trigger	104
VIB 3.420 VIB 3.422 VIB 3.423	Magnetic holder for -, curved surfaces, M5 -, flat surfaces, M5 -, flat surfaces, ¼-28 UNF	97
VIB 3.430	Adhesive adapter, M5	96
VIB 3.435 VIB 3.436 VIB 3.440 VIB 3.441	Screwed adapter -, M5-flat to M5-120° -, M5 to M6 -, M5 to M8 -, M5 to UNC 5/16	95
VIB 3.450	Probe tip, M5	106
VIB 6.632	Stand for laser trigger / laser RPM sensor	104
VIB 8.563 A25 VIB 8.566 VIB 8.568	VIBCODE code ring, 25 pcs. Protective cap for VIBCODE stud Color coding for protective cap	103
VIB 8.571 VIB 8.572 VIB 8.573 VIB 8.594 VIB 8.595 VIB 8.596	VIBCODE meas. stud w/ locking nut -, M8 -, M10 -, M12 -, UNC 5/16-18 -, UNC 3/8-16 -, UNC 1/2-13	101
VIB 8.576 VIB 8.577 VIB 8.578 VIB 8.580 VIB 8.581 VIB 8.582	VIBCODE meas. stud w/ extension post -, M8 x 55 -, M8 x 95 -, M8 x 170 -, UNC 5/16 x 2 1/8" -, UNC 5/16 x 3 3/4" -, UNC 5/16 x 6 5/8"	100
VIB 8.610	PRÜFTECHNIK counter sink bit	107
VIB 8.679 SET VIB 8.680 SET	VIBCODE meas. stud -, M8, VA 1.4571 -, M8, VA 1.4305	99
VIB 8.685 SET	VIBCODE measurement stud for adhesive mounting	102
VIB 8.689 SET VIB 8.690 SET	VIBCODE meas. stud -, UNC 5/16, VA 1.4571 -, UNC 5/16, VA 1.4305	99
VIB 8.692	VIBCODE encoding tool	103
VIB 32000 VIB 32010 VIB 32200 VIB 32210 VIB 32310 VIB 32410 VIB 33000A25	Meas. stud for accelerometer VIB 8.666 -, M8x24, nickel-plated -, M8x24, stainless steel -, M8x113, nickel-plated -, M8x113, stainless steel -, M8x202, stainless steel -, M8x291, stainless steel -, adhesive mount	105
VIB 81025	Protective cap for measurement stud	105

C

Chapter contents, organized by location and application

Chapter 4

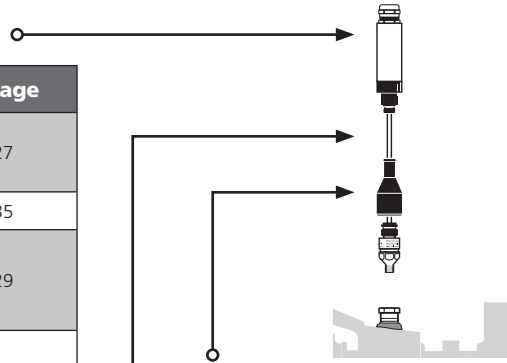
Cabel interfaces

Order no.	Description	Page
0 2088 0009 0 2088 0010 VIB 3.550	Safety barrier for ICP-type accelerometers Transmitter supply unit VIBROTECTOR EX Limiting device, CLD-type accelerometers	127
VIB 7.560	VIBROWEB connection box	135
VIB 6.770/9 VIB 6.770/13 VIB 6.776	Junction box (extension of a sensor cable) -, coaxial - coaxial -, coaxial - triaxial -, twisted-pair/ 2-pin	129
VIB 6.775/9 VIB 6.775/13	Junction box (extension of 2 sensor cables) -, coaxial - coaxial -, coaxial - triaxial	131
VIB 8.306 VIB 8.306 S VIB 8.306 V	VIBRONET field multiplexer, 9-channel, -, w/ threaded fitting M12 -, w/ threaded fitting M20 -, stainless steel housing, M20	132
VIB 8.306 EX	VIBRONET field multiplexer, 9-channel, -, intrinsically safe, aluminium housing	133
VIB 8.310 VIB 8.310 EX VIB 8.312 VIB 8.313 VIB 8.313 EX VIB 8.314 EX	Connection modules for VIBRONET MUX Temperature module -, intrinsically safe Process parameters module (U / I) RPM module -, intrinsically safe Vibration module, intrinsically safe	134

Chapter 4

Cables for permanent installation

Order no.	Description	Page
VIB 3.570-L	Pre-assembled cable for intrins. safe VIBROTECTOR and ICP-type accelerometers	122
VIB 3.575-10 VIB 3.575-20	Sensor cable for triaxial accelerometers (VIB 6.215 / VIB 6.216), 10 / 20 meters	123
VIB 5.740-X VIB 5.741-X	Sensor cable for VIBROTECTOR & CLD-/ICP-type accelerometers -, silicone sheath, straight connector -, silicone sheath, angled connector	120
VIB 5.745-L VIB 5.746-L	Sensor cable for VIBROTECTOR & CLD-/ICP-type accelerometers -, PUR sheath, angled connector -, PUR sheath, straight connector	119
VIB 5.771	Pre-assembled VIBREX cable	124
VIB 6.420-L VIB 6.426-L	Pre-assembled WEARSCANNER cables... for power supply & data transmission for switching output	126
VIB 7.115-6 VIB 7.115-12	Pre-assembled VIBNODE cables -, Twisted-pair (TP), 6 m -, Twisted-pair (TP), 12 m	125
VIB 90006 VIB 90007 VIB 90008 VIB 90009 VIB 90093	Coaxial cable RG58 -, for hazardous areas (blue) -, oil-resistant, max. 150°C -, for low ambient temperatures > - 40°C -, halogen free & highly flame retardant -, oil-resistant, max. 125°C	112
VIB 90030	Industrial Ethernet cable, CAT5	119
VIB 90061 VIB 90065	Twisted-pair sensor cable, PUR sheath Sensor cable, silicone and cable armor	117
VIB 90070	Multi-core twisted-pair sensor cable	118
VIB 90080 VIB 90180	Standard triaxial cable Standard triaxial cable, armored version	113
VIB 309007- 6 VIB 309007-10 VIB 309007-15 VIB 309007-20	Pre-assembled VIBNODE cables -, coaxial, 6 m -, coaxial, 10 m -, coaxial, 15 m -, coaxial, 20 m	125

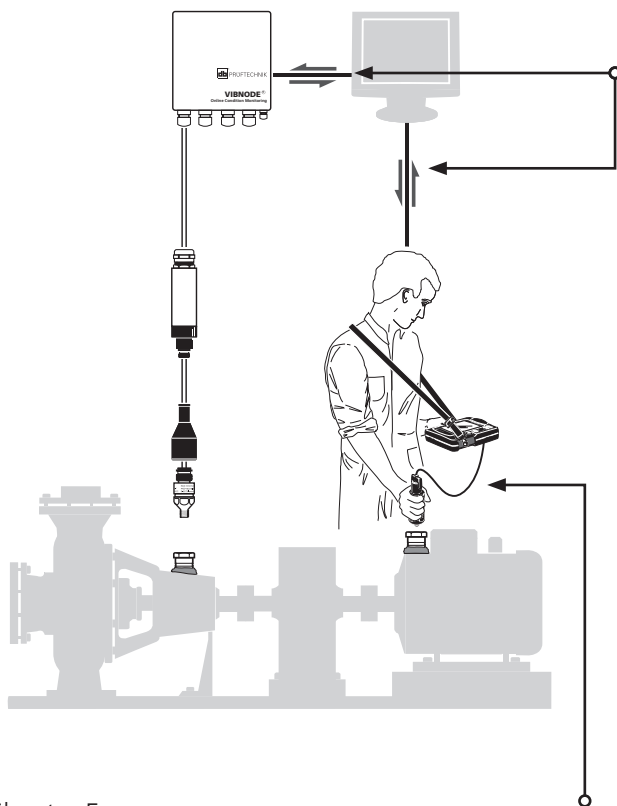


Chapter 4

Accessories for cable connection

Order no.	Description	Page
VIB 6.700 VIB 6.701 VIB 6.710 VIB 6.711 VIB 6.720 VIB 6.721 VIB 6.722	Dust caps for accelerometers VIB 6.1xx -, straight -, straight and oil-resistant -, angled -, angled and oil-resistant Clamp for dust cap, cable end -, sensor end Dust cap sleeve	141
VIB 6.725-100	Shield connector set for coaxial and twisted-pair cables	116
VIB 6.730	Protective sheath for coaxial cables	115
VIB 6.760 VIB 6.761	IP 68 option for accelerometer VIB 6.1xx -, short version	144
VIB 7.580..3	Open ring spanners size 14x17 / 19x22 / 24x27 / 24x25	136
VIB 7.590..3 VIB 7.595	Metric cable fittings M16 / M20 / M25 / M12 Shield clamp SK8	137
VIB 8.718	Cable clamp for prot. sheath VIB 6.730	115
VIB 8.745	Installation checker	143
VIB 81015	Protective sleeve for cable type RG 174	26
VIB 81026 VIB 81052 VIB 81053 VIB 81054	Crimping tool for coaxial cables Cutting tool for coaxial cables Cable stripper for triaxial cables Replacement blade for cable stripper	114
VIB 81060	Screw driver 2.5 x 35	137
VIB 91000	Chassis connector, TNC socket to crimp	140
VIB 91001 VIB 91002 VIB 91009 VIB 93022	TNC plug to threaded fitting, angled TNC plug to TNC socket, angled BNC plug to crimp contact, angled TNC plug to crimp contact, straight	138
VIB 93025	TNC plug to crimp contact, RG174 cable	26
VIB 93031 VIB 93033	TNC plug to threaded fitting, straight TNC socket to TNC socket, straight	138
VIB 93035 VIB 93036 F VIB 93036 S	Dust cap for TNC socket Bulkhead connector w/ fastening flange -, single hole screw version	140
VIB 93047 VIB 93055	TNC socket to crimp contact, straight TNC plug to BNC plug, straight	138
VIB 93056	Bulkhead connector, flange, BNC- TNC	140
VIB 93060	BNC plug to crimp contact, straight	138
VIB 93061	Dust cap for BNC socket	140
VIB 93062 VIB 93067 VIB 93077	TNC socket to BNC plug, straight TNC plug to BNC socket, straight TNC plug to crimp contact, angled	138
VIB 93090	Chassis connector, BNC socket to crimp	140
VIB 94010 VIB 94011	Plug-in connector, 2-pin, straight Plug-in connector, 2-pin, angled	139

Chapter contents, organized by location and application



Chapter 5

Sensor cables and connection adapters for data collectors

Order no.	Description	Page
VIB 321926-2	Spiral cable, TNC-QLA	150
VIB 4.701-2	Straight cable, BNC - QLA, 2 m	150
VIB 4.701-5	- , BNC - QLA, 5 m	
VIB 4.702-2	- , Microdot - QLA, 2 m	
VIB 4.702-5	- , Microdot-QLA, 5 m	
VIB 4.704-2	- , TNC - QLA, 2 m	
VIB 4.704-5	- , TNC - QLA, 5 m	
VIB 4.750-5	Cable extension for RPM sensor, 5m	157
VIB 5.332	Keyphasor adapter for machine protection systems, VIBSCANNER / VIBXPERT	159
VIB 5.332 X	Keyphasor adapter for machine protection systems, VIBSCANNER EX / VIBXPERT EX	160
VIB 5.333	Cable adapter for TTL / strobe output, VIBXPERT	161
VIB 5.336	Cable adapter for triaxial accelerometer VIB 6.655, VIBXPERT	162
VIB 5.339	Cable extension for Current Linedrive accelerometer, 8 meters	149
VIB 5.341	VST 24V adapter for VIBXPERT	163
VIB 5.342	Analog cable for VST 24V adapter	
VIB 5.343	Digital cable for VST 24V adapter	
VIB 5.344	VIBROTECTOR cable for VST 24V	
VIB 5.345-6	Cable extension for VIB 5.422	152
VIB 5.422	Spiral connection cable for ICP-type accelerometer, MIL-connector	
VIB 5.346	VIBXPERT II connection cable for VIBRONET field multiplexer VIB 8.306	173
VIB 5.346-MUX	BNC adapter for cable VIB 5.346	
VIB 5.431	Cable for analog signal output	158
VIB 5.432-2,9	Connection cable for RPM sensors	157

Chapter 6

Communication cables

Order no.	Description	Page
VIB 5.330 MUSB	VIBXPERT USB cable for periph. devices	177
VIB 5.330 SUSB	VIBXPERT USB cable for PC	
VIB 5.330 MEM	VIBXPERT II adapter for USB pen drive	
VIB 5.330-USB	VIBXPERT II USB pen drive	
VIB 5.330-UNV	Universal communication adapter for VIBXPERT EX	178
VIB 5.331	Ethernet cable, VIBXPERT	180
VIB 5.338	USB cable, VIBXPERT EX	178
VIB 5.430-2	Serial PC cable, VIBSCANNER / VIBXPERT	181
VIB 5.448	Adapter cable, serial to USB, VIBSCANNER / VIBXPERT	
VIB 5.955-X	Patch cable, VIBRONET / VIBROWEB	183
VIB 5.957-2 /-5	Crossover ethernet cable, VIBRONET / VIBROWEB	
VIB 5.956-X	System bus cable, VIBRONET	184
VIB 8.619	Serial PC cable, VIBROTIP	181
VIB 8.619-USB	Serial to USB cable adapter, VIBROTIP EX	182

C

1

2

3

4

5

6

A

Chapter 1

Sensors for permanent installation



C

1

2

3

4

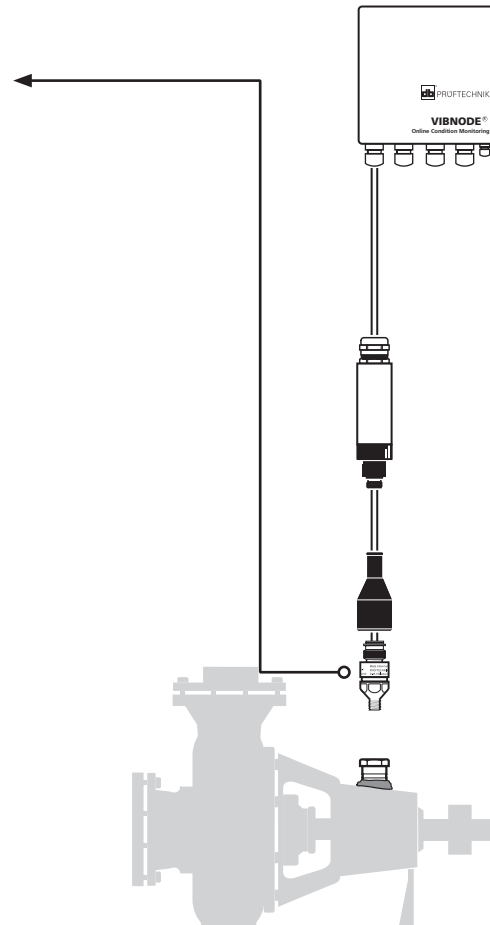
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6

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Contents : Sensors for permanent installation

Order no.	Description	Page
VIB 5.991-DIS	Inductive displacement sensor	48
VIB 5.992-NX	Inductive RPM sensor incl. cable	49
VIB 5.992-STD	Default RPM sensor for Online CMS	50
VIB 5.993-MIC	Microphone	56
VIB 5.731 VIB 5.736	VIBROTECTOR vibration transmitter, 10 mm/s or 20 mm/s	32
VIB 5.731 EX VIB 5.736 EX	VIBROTECTOR vibration transmitter, 10 mm/s or 20 mm/s, intrinsically safe	44
VIB 6.102 R	Industrial accelerometer for standard machinery, adhesive mount	20
VIB 6.102 DEX	-, intrinsically safe	36
VIB 6.107	Industrial accelerometer for low-speed machinery, adhesive mount	22
VIB 6.107 DEX	-, intrinsically safe	40
VIB 6.122 R	Industrial accelerometer for standard machinery, M8 thread mount	20
VIB 6.122 DEX	-, intrinsically safe	36
VIB 6.125 R	-, high-temperature version	20
VIB 6.125 RIP VIB 6.125 IDEX	-, suitable for IP 68 option --, intrinsically safe	24
VIB 6.127	Industrial accelerometer for low-speed machinery, M8 thread mount	22
VIB 6.127 DEX	-, intrinsically safe	40
VIB 6.129 IP VIB 6.129 IDEX	-, suitable for IP 68 option --, intrinsically safe	24
VIB 6.132 R	Industrial accelerometer for standard machinery, UNC 5/16 thread mount	20
VIB 6.132 DEX	-, intrinsically safe	36
VIB 6.135 R	-, high-temperature version	20
VIB 6.137	Industrial accelerometer for low-speed machinery, UNC 5/16 thread mount	22
VIB 6.137 DEX	-, intrinsically safe	40
VIB 6.152 DEX	Industrial accelerometer, low sensitivity, intrinsically safe	38
VIB 6.172	ICP-type accelerometer for very low- speed machinery 0.1 Hz - 10 kHz	34
VIB 6.172 XICP	-, intrinsically safe	46
VIB 6.195	CLD-type accelerometer for very low- speed machinery 0.1 Hz - 10 kHz	34
VIB 6.202-3 /-6 VIB 6.203-3 /-6	Mini accelerometer, RG 174 or Spec 44, 3 m / 6 m	26
VIB 6.202...XD VIB 6.203...XD	-, intrinsically safe	42



Order no.	Description	Page
VIB 6.215 VIB 6.216	Triaxial accelerometers for VIBGUARD 1 Hz ... 10 kHz 0.1 Hz ... 10 kHz	30
VIB 6.411 SET	WEARSCANNER particle counter	58
VIB 6.610	Temperature probe PT100	51
VIB 6.620 SET VIB 6.621	Inductive RPM sensor for VIBRONET Sig- nalmaster incl. connector (f< 300 Hz) Connector for sensor VIB 6.620	52
VIB 6.622 SET VIB 6.621	Inductive RPM sensor for VIBRONET Sig- nalmaster incl. connector (f<1500 Hz) Connector for sensor VIB 6.622	53
VIB 6.641	Proximity sensor for Online CMS incl. cable (3-15 mm)	54
VIB 6.645 SET VIB 6.646	Displacement sensor for Online CMS incl. cable (2-10 mm) Connection cable for sensor VIB 6.645	55
VIB 7.205-2,9	VIBCONNECT RF sensor	28

C

Industrial accelerometers for standard machinery ($n > 60 \text{ min}^{-1}$)

1

VIB 6.102 R : Industrial accelerometer for standard machinery, adhesive mount

VIB 6.122 R : Industrial accelerometer for standard machinery, M8 thread mount

VIB 6.132 R : Industrial accelerometer for standard machinery, UNC 5/16 thread mount

2

VIB 6.125 R : Industrial accelerometer for standard machinery, M8 thread mount, high-temperature version

VIB 6.135 R : Industrial accelerometer for standard machinery, UNC 5/16 thread mount, high-temperature version

3

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6

A



Adhesive mount



Thread mount



Vibration acceleration



Bearing condition



Pump cavitation

Application

These accelerometers are suitable for vibration measurements up to 20 kHz on machinery with rotational speeds above 60 min^{-1} , for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

The accelerometers are mainly used for continuous machine condition monitoring in an industrial environment. The signal acquisition and processing is carried out with a condition monitoring system from PRÜFTECHNIK (e.g. VIBNODE, VIBROWEB,...).

Installation accessories

Mounting tools for screw threads:

VIB 8.693 M8 screw tap

VIB 8.696 UNC 5/16 screw tap

VIB 8.694 90° countersink bit

Mounting adapters for M8 screw threads:

VIB 3.474 Screwed adapter to M16

VIB 3.475 Screwed adapter to M20

VIB 8.772 Screwed adapter to M10

VIB 3.411 -, w/ locking nut to M8

VIB 3.412 -, w/ locking nut to M10

VIB 3.413 -, w/ locking nut to M12

VIB 3.431 -, w/ adhesive mount

Mounting adapters for UNC 5/16 screw threads:

VIB 3.414 Screwed ad. w/ locking nut to UNC 5/16

VIB 3.415 -, w/ locking nut to UNC 3/8 - 16

VIB 3.416 -, w/ locking nut to UNC 1/2 - 13

VIB 3.432 -, w/ adhesive mount

Extension post for M8 screw threads:

VIB 8.586 length: 55 mm

VIB 8.587 length: 95 mm

VIB 8.588* length: 170 mm

VIB 8.589 length: 35 mm

Extension post for UNC 5/16 screw threads:

VIB 8.590 length: 2 1/8"

VIB 8.591 length: 3 3/4"

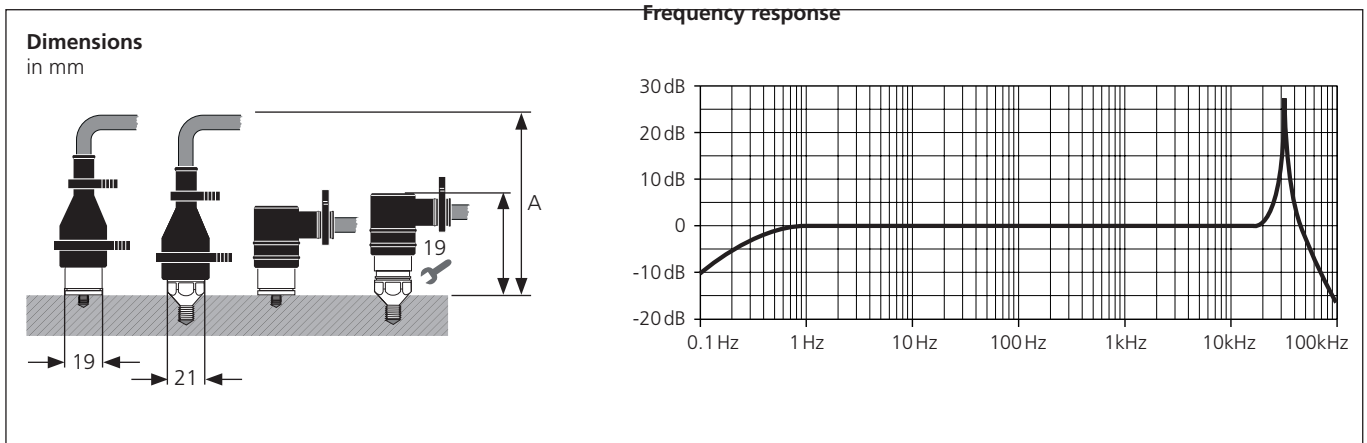
VIB 8.592* length: 6 5/8"

* only for shock pulse measurements!

Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Technical data

PARAMETER		VIB 6.102 R	VIB 6.122 R	VIB 6.132 R	VIB 6.125 R	VIB 6.135 R
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal				
	Transmission factor ± 3%	1.0 $\mu\text{A}/\text{ms}^{-2}$ (Reference: 159 Hz; 25 °C)				
	Frequency range ± 5%	2 Hz ... 8 kHz				
	± 10%	1 Hz ... 12 kHz				
	± 3dB	1 Hz ... 20 kHz				
	Resonance frequency	36 kHz				
	Linearity range ± 10%	± 961 ms^{-2}				
	Temperature range, w/ Rayolin cable	-30 °C ... +80 °C	-30 °C ... +100 °C		-30 °C ... +125 °C	
w/ Teflon cable	not available			-30 °C ... +135 °C (short-term up to +150 °C)		
Electrical	Power requirement	> 10 mA / 7-18 VDC				
	Transverse sensitivity	< 5% at 10 kHz				
	Temperature sensitivity	< 0.05 ms^{-2}/K				
	Magnetic sensitivity	< 5 ms^{-2}/T (at 50 Hz)				
	Base strain sensitivity	< 0.1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$				
	Electrical noise, rms	< 0.01 ms^{-2} from 2 Hz				
	Output impedance	> 1 MOhm				
	Insulation	> 10 ⁹ MOhm				
Mechanical	Case material	Stainless steel VA 1.4305				
	Environmental protection	IP 65 (w/ cable)				
	Cable connection	TNC socket				
	Shock limit	< 250 kms^{-2}				
	Weight	40 g				
	Installation height A (see below)					
	w/ coaxial cable & straight TNC plug	> 119 mm	> 115 mm			
	... and angled TNC plug	59 mm	55 mm			
	Mounting	Adhesive	M8 thread	UNC 5/16 thread	M8 thread	UNC 5/16 thread



C

Industrial accelerometers for low-speed machinery ($n > 20 \text{ min}^{-1}$)

1

VIB 6.107 : Industrial accelerometer for low-speed machinery, adhesive mount

VIB 6.127 : Industrial accelerometer for low-speed machinery, M8 thread mount

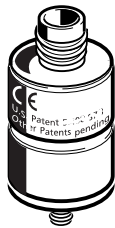
VIB 6.137 : Industrial accelerometer for low-speed machinery, UNC 5/16 thread mount

2

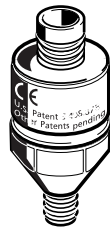
3

4

5



Adhesive mount



Thread mount



Vibration acceleration

6

Application

These accelerometers are suitable for vibration measurements up to 10 kHz on low-speed machinery with rotational speeds above 20 min^{-1} . High frequency shock pulse measurements for bearing condition evaluation and pump cavitation are not possible with this series.

The accelerometers are mainly used for continuous machine condition monitoring in an industrial environment. The signal acquisition and processing is carried out with a condition monitoring system from PRÜFTECHNIK (e.g. VIBNODE, VIBROWEB,...).

A

Installation accessories

Mounting tools for screw threads:

VIB 8.693 M8 screw tap
 VIB 8.696 UNC 5/16 screw tap
 VIB 8.694 90° countersink bit

Mounting adapters for M8 screw threads:

VIB 3.474 Screwed adapter to M16
 VIB 3.475 Screwed adapter to M20
 VIB 8.772 Screwed adapter to M10
 VIB 3.411 -, w/ locking nut to M8
 VIB 3.412 -, w/ locking nut to M10
 VIB 3.413 -, w/ locking nut to M12
 VIB 3.431 -, w/ adhesive mount

Mounting adapters for UNC 5/16 screw threads:

VIB 3.414 Screwed ad. w/ locking nut to UNC 5/16
 VIB 3.415 -, w/ locking nut to UNC 3/8 - 16
 VIB 3.416 -, w/ locking nut to UNC 1/2 - 13
 VIB 3.432 -, w/ adhesive mount

Extension post for M8 screw threads:

VIB 8.586 length: 55 mm
 VIB 8.587 length: 95 mm
 VIB 8.588* length: 170 mm
 VIB 8.589 length: 35 mm

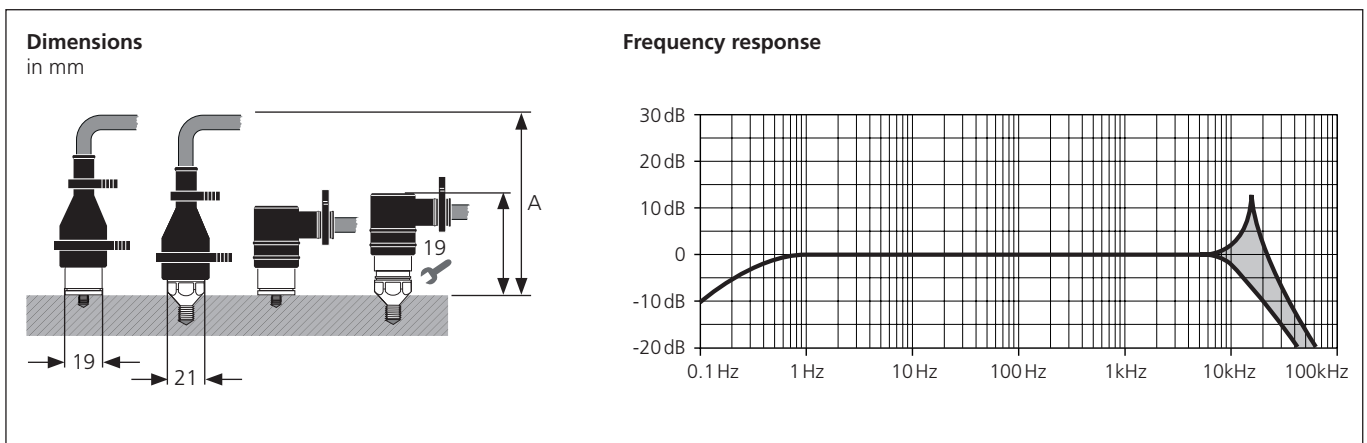
Extension post for UNC 5/16 screw threads:

VIB 8.590 length: 2 1/8"
 VIB 8.591 length: 3 3/4"
 VIB 8.592* length: 6 5/8"
 * only for shock pulse measurements!

Installation material for adhesive mount:
 2-component adhesive (e.g. WEICON HB 300).

Technical data

PARAMETER		VIB 6.107	VIB 6.127	VIB 6.137
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal		
	Transmission factor ± 4%	5.35 $\mu\text{A}/\text{ms}^{-2}$ (Reference: 159 Hz; 25 °C)		
	Frequency range ± 5%	2 Hz ... 4 kHz		
	± 10%	1 Hz ... 6 kHz		
	± 3dB	0.3 Hz ... 10 kHz		
	Resonance frequency	17 kHz; > 20 dB damped		
	Linearity range ± 10%	± 450 ms^{-2}		
Electrical	Temperature range, w/ Rayolin cable	-30 °C ... +80 °C	-30 °C ... +100 °C	
	Power requirement	> 10 mA / 7-18 VDC		
	Transverse sensitivity	< 5% at 10 kHz		
	Temperature sensitivity	< 0.01 ms^{-2}/K		
	Magnetic sensitivity	< 1 ms^{-2}/T (at 50 Hz)		
	Base strain sensitivity	< 0.1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$		
	Electrical noise, rms	< 0.002 ms^{-2} from 2 Hz		
	Output impedance	> 300 kOhm		
	Insulation	> 10 ⁹ MOhm		
	Mechanical	Case material	Stainless steel VA 1.4305	
Environmental protection		IP 65 (w/ cable)		
Cable connection		TNC socket		
Shock limit		< 50 kms^{-2}		
Weight		41 g	43 g	
Installation height A (see below)				
w/ coaxial cable & straight TNC plug		> 124 mm	> 120 mm	
... and angled TNC plug		64 mm	60 mm	
Mounting		Adhesive	M8 thread	UNC 5/16 thread



C

Industrial accelerometers for use in liquid media (IP 68)

1

VIB 6.125 RIP : Industrial accelerometer for standard machinery ($n > 60 \text{ min}^{-1}$)

VIB 6.125 IDEX : Industrial accelerometer for standard machinery ($n > 60 \text{ min}^{-1}$), intrinsically safe

VIB 6.129 IP : Industrial accelerometer for low-speed machinery ($n > 20 \text{ min}^{-1}$)

VIB 6.129 IDEX : Industrial accelerometer for low-speed machinery ($n > 20 \text{ min}^{-1}$), intrinsically safe

2

3

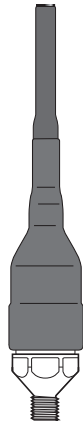
4

5

6



Thread mount

Accelerometer w/
IP 68 option

Vibration acceleration



Bearing condition



Pump cavitation



CE 0044

IP 68 (Option)

A

Application

These accelerometers are suitable for vibration measurements on rotating machinery. The accelerometer series VIB 6.125 can additionally be used for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

In combination with the IP 68 option the accelerometers can be used under water and in hot and chemical aggressive fluids. The signal acquisition and processing is carried out with a condition monitoring system from PRÜFTECHNIK (e.g. VIBNODE, VIBROWEB,...).

The accelerometer of the series VIB 6.125 IDEX and VIB 6.129 IDEX are gas and dust explosion-proof. They are suitable for use with dusts having a minimum ignition temperature for 5 mm layers of not less than 210 °C. The maximum ambient temperature is 80°C.

Notes on intrinsic safety

The accelerometers of the series VIB 6.125 IDEX and VIB 6.129 IDEX may only be connected to designated devices with the following interface parameters:

$$U_{\max} = 24\text{V}$$

$$P_{\max} = 300\text{mW}$$

$$C_i = 15\text{nF}$$

$$L_i = \text{negligible small}$$

The following documents must be considered:

- EC type examination certificate TÜV 02 ATEX 1865
- 1st supplement dated from 01.03.2007
- 2nd supplement dated from 22.06.2011

Additionally the installation notes for hazardous areas annexed in this catalog must be observed.

Installation accessories

Mounting tools for screw threads:

VIB 8.693 M8 screw tap

VIB 8.694 90° countersink bit

Mounting adapters for M8 screw threads:

VIB 3.474 Screwed adapter to M16

VIB 3.475 Screwed adapter to M20

VIB 8.772 Screwed adapter to M10

VIB 3.411 -, w/ locking nut to M8

VIB 3.412 -, w/ locking nut to M10

VIB 3.413 -, w/ locking nut to M12

Extension post for M8 screw threads:

VIB 8.586 length: 55 mm

VIB 8.587 length: 95 mm

VIB 8.588* length: 170 mm

VIB 8.589 length: 35 mm

* only for shock pulse measurements!

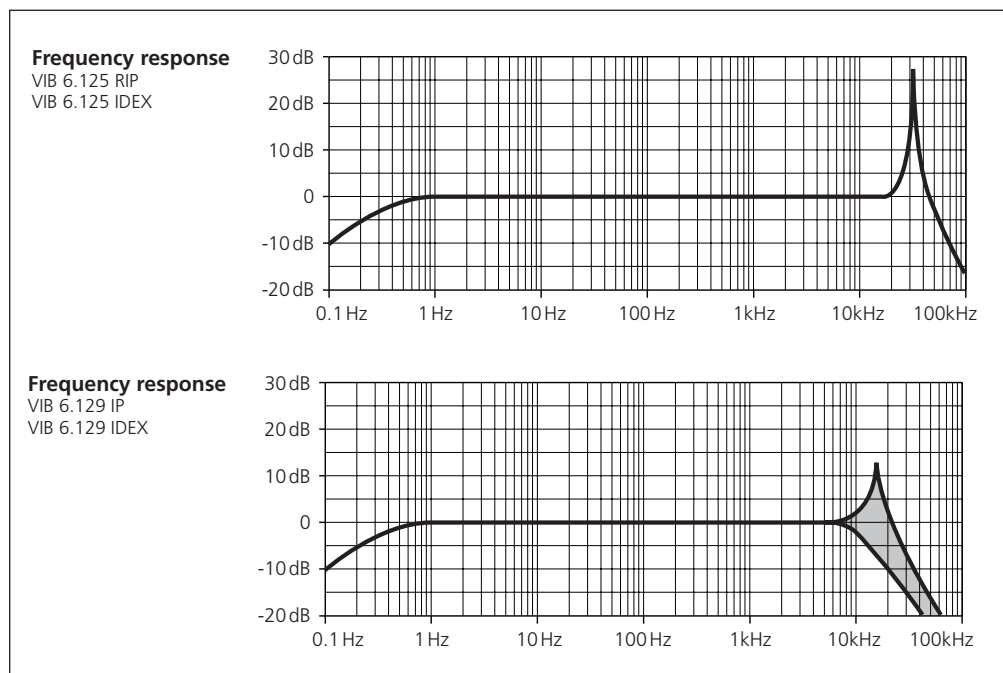
IP 68 option for use in liquid media:

VIB 6.760 IP 68 option, oil-resistant, long version

VIB 6.761 IP 68 option, oil-resistant, short version

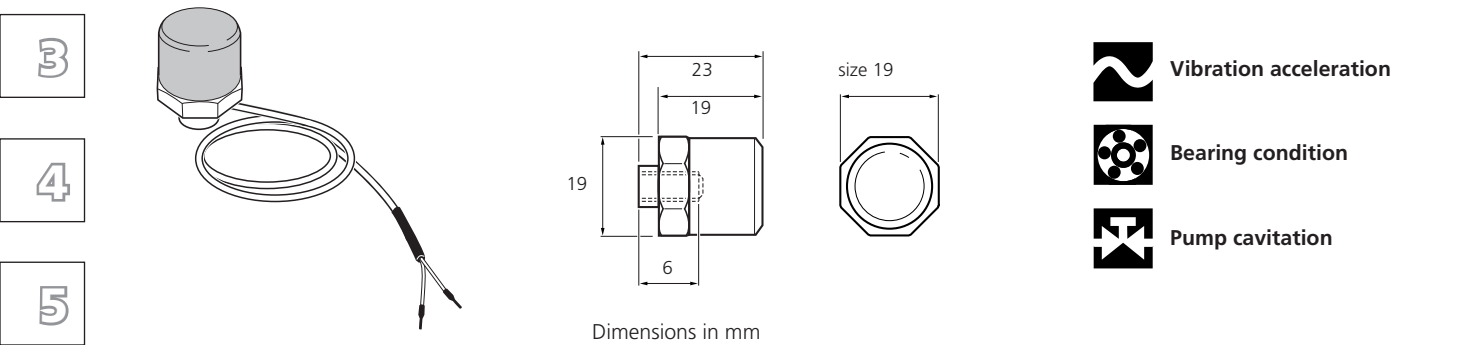
Technical data

PARAMETER		VIB 6.125 RIP	VIB 6.125 IDEX	VIB 6.129 IP	VIB 6.129 IDEX
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal			
	Transmission factor	1,0 $\mu\text{A}/\text{ms}^2$ (Reference: 159 Hz; 25 °C) \pm 3%		5.35 $\mu\text{A}/\text{ms}^2$ (Reference: 159 Hz; 25 °C) \pm 4%	
	Frequency range \pm 5%	2 Hz ... 8 kHz		2 Hz ... 4 kHz	
	\pm 10%	1 Hz ... 12 kHz		1 Hz ... 6 kHz	
	\pm 3dB	1 Hz ... 20 kHz		0.3 Hz ... 10 kHz	
	Resonance frequency	36 kHz		17 kHz; > 20 dB damped	
	Linearity range \pm 10%	\pm 961 ms^{-2}		\pm 450 ms^{-2}	
	Temperature range, w/ Rayolin cable	-30 °C ... +125 °C	--	-30 °C ... +125 °C	--
	w/ PVC cable	--	-30 °C ... +80 °C	--	-30 °C ... +80 °C
w/ Teflon cable	-30 °C ... +135 °C	--	-30 °C ... +135 °C	--	
Electrical	Power requirement	> 10 mA / 7-18 VDC			
	Transverse sensitivity	< 5% at 10 kHz			
	Temperature sensitivity	< 0.05 ms^{-2}/K		< 0.01 ms^{-2}/K	
	Magnetic sensitivity	< 5 ms^{-2}/T (at 50 Hz)		< 1 ms^{-2}/T (at 50 Hz)	
	Base strain sensitivity	< 0.1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$			
	Electrical noise, rms	< 0.01 ms^{-2} from 2 Hz		< 0.002 ms^{-2} from 2 Hz	
	Output impedance	> 1 MOhm		> 300 kOhm	
	Insulation	> 10 ⁹ MOhm			
Mechanical	Case material	Stainless steel VA 1.4571, chemical resistant			
	Environmental protection	IP 65 w/ cable, IP 68 w/ option VIB 6.760 / VIB 6.761			
	Cable connection	TNC socket			
	Shock limit	< 250 kms^{-2}		< 50 kms^{-2}	
	Weight	40 g		43 g	
	Installation height, w/ IP 68 option VIB 6.760	> 140 mm			
	Installation height, w/ IP 68 option VIB 6.761	> 120 mm			
Mounting	M8 thread				
EX	Marking, gas explosion protection	--	Ex II 2 G Ex ib IIC T4	--	Ex II 2 G Ex ib IIC T4
	Marking, dust explosion protection	--	Ex II 2 D Ex ib IIIB T ₅ 187°C	--	Ex II 2 D Ex ib IIIB T ₅ 187°C



C Mini accelerometers

- 1 VIB 6.202-3: Mini accelerometer with RG 174 cable, 3 meters
- VIB 6.202-6: Mini accelerometer with RG 174 cable, 6 meters
- VIB 6.203-3: Mini accelerometer with Spec 44 cable, 3 meters
- VIB 6.203-6: Mini accelerometer with Spec 44 cable, 6 meters



6 Application

These accelerometers are suitable for vibration measurements up to 10 kHz on machinery with rotational speeds above 120 min⁻¹, for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

The compact design and the position of the cable, which is passed through the base, reduces the installation space required for this type of accelerometers considerably.

The accelerometers are mainly used for continuous machine condition monitoring in an industrial environment. The signal acquisition and processing is carried out with a condition monitoring system from PRÜFTECHNIK (e.g. VIBNODE, VIBROWEB,...).

Installation accessories

- VIB 3.417-M5 M5 screwed adapter for mini accelerom.
- VIB 3.417-M6 M6 screwed adapter for mini accelerom.
- VIB 3.418 Adhesive adapter for mini accelerom.
- VIB 3.423 Magnetic holder for flat surfaces

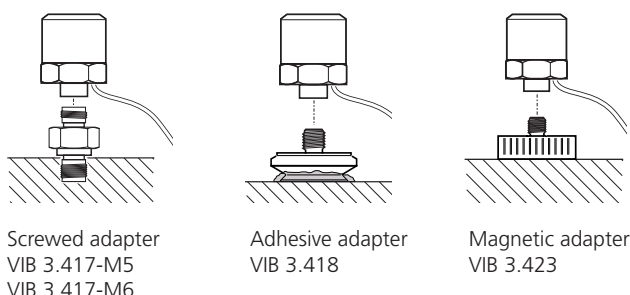
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

- Installation material for sensor cable
- VIB 93025 TNC plug for RG 174 cable
 - VIB 81015 Protective sleeve for RG 174 cable

Extending the sensor cable

To extend the sensor cable installed, use shielded cables (coaxial or triaxial) that are electrically connected in a junction box (e.g. VIB 6.776).

Mounting types



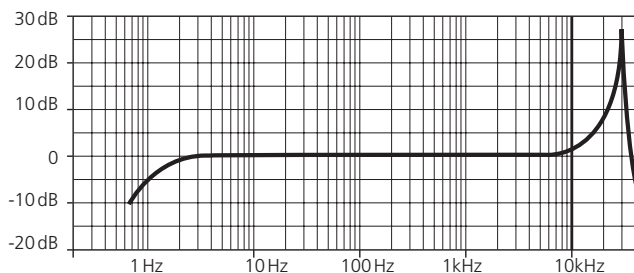
Accessories for RG 174 cable



Technical data

PARAMETER		VIB 6.202	VIB 6.203
Measurement	Signaling system	Current Line Drive; 3.5 ± 1.5 mA closed current with superposed AC signal	
	Transmission factor $\pm 10\%$	$1.0 \mu\text{A}/\text{ms}^{-2}$ (Reference: 159 Hz; 25 °C)	
	Frequency range $\pm 10\%$	4 Hz ... 8 kHz	
	$\pm 3\text{dB}$	2 Hz ... 10 kHz	
	Resonance frequency	30 kHz	
	Linearity range $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$ ($\pm 98\text{g}$)	
	Temperature range	$-30 \text{ °C} \dots +80 \text{ °C}$	$-30 \text{ °C} \dots +120 \text{ °C}$
Electrical	Power requirement	$> 10 \text{ mA} / 7\text{-}18 \text{ VDC}$	
	Temperature sensitivity	$< 0.08 \text{ ms}^{-2}/\text{K}$	
	Electrical noise, rms	$< 0.1 \text{ ms}^{-2}$ ab 2 Hz	
	Output impedance	$> 250 \text{ k}\Omega$	
Mechanical	Case material	Stainless steel VA 1.4305 / Grivory HTV (resistant amongst others to diesel, crude oil, hydraulic and engine oil, lubricants, tar, turpentine)	
	Environmental protection	IP 65 (w/ cable)	
	Shock limit	$< 250 \text{ kms}^{-2}$	
	Weight	22 g	
	Dimensions	see figure	
	Mounting	Adapter w/ UNF 1/4 thread	
	Connection cable		
	Specification	Coaxial, RG 174/U	Coaxial, Raychem Spec. 44
	Diameter	2.8 mm	2.4 mm
	Material	PVC - Polyvinylchloride	PVDF - Polyvinylidenfluoride: highly resistant to many acids, alkalis, hydrocarbon solvents, fuels, lubricants, water, and many missile fuels and oxidizers
Protective sleeve, material	EVA, non halogen line Temp.range: $-40\text{ °C} \dots +70\text{ °C}$	---	

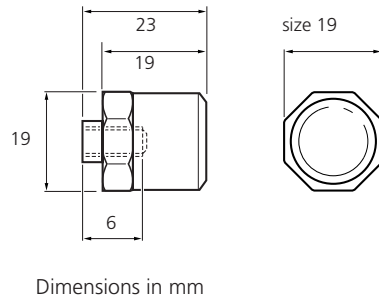
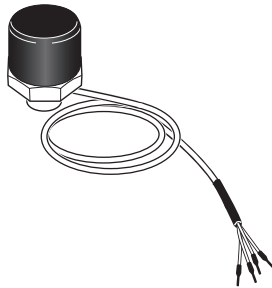
Frequency response - VIB 6.202 / VIB 6.203



C

VIB 7.205-2,9: VIBCONNECT RF sensor

1



Vibration acceleration

Temperature

2

3

4

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Application

This accelerometer is suitable for vibration measurements up to 10 kHz on machinery with rotational speeds above 300 min⁻¹ and for temperature measurements.

6

The compact design and the position of the cable reduces the installation space required for this type of accelerometers considerably.

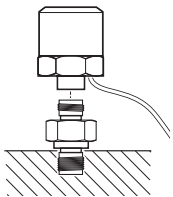
A

The accelerometer is used together with the wireless CMS VIBCONNECT RF for continuous machine condition monitoring in an industrial environment.

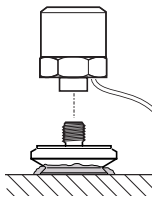
Installation accessories

- VIB 3.417-M5 M5 screwed adapter for mini accelerom.
- VIB 3.417-M6 M6 screwed adapter for mini accelerom.
- VIB 3.418 Adhesive adapter for mini accelerom.
- VIB 3.423 Magnetic holder for flat surfaces

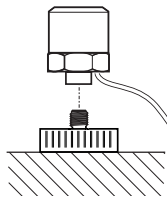
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Mounting types

Screwed adapter
VIB 3.417-M5
VIB 3.417-M6



Adhesive adapter
VIB 3.418

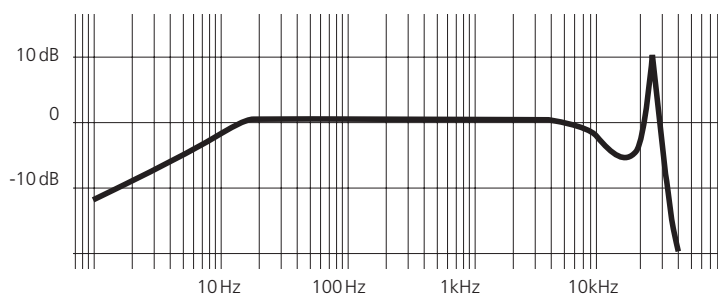


Magnetic adapter
VIB 3.423

Technical data

PARAMETER		VIB 7.205-2,9
Measurement, Vibration	Sensortype	Combined accelerometer / temperature sensor with low power consumption
	Output $\pm 10\%$	3.5 mV / ms ²
	Max. measuring range $\pm 10\%$	500 m/s ² rms
	Offset	2.5 VDC
	Frequency range $\pm 10\%$	10 Hz ... 8 kHz
	$\pm 3\text{dB}$	5 Hz ... 10 kHz
	Resonance frequency	23 kHz (Resonance rise: 9 dB)
Temperature	Temperature measuring range	-40 °C ... +85 °C
	Output $\pm 3\%$	-5.5 mV/K
	Benchmark	898 mV at 25°C
Electrical	Power requirement	5 VDC / < 0.5 mA
	Temperature sensitivity	< 0.08 ms ² /K
	Electrical noise, rms	< 0.0015 ms ² / Hz ^{1/2} from 30 Hz to 10 kHz < 0.005 m/s ² at 5 Hz
General	Case material	Stainless steel VA 1.4305 / Grivory HTV (resistant amongst others to diesel, crude oil, hydraulic and engine oil, lubricants, tar, turpentine)
	Environmental protection	IP 65
	Shock limit	< 250 kms ²
	Relative humidity	< 95%, non-condensed
	Weight	22 g
	Dimensions	see figure
	Mounting	Adapter w/ UNF 1/4 thread
	Connection cable	
	Specification	3 wire, shielded
	Outer diameter	2.9 mm
	Length	2.9 m
	Material	ETFE
	Chemical resistance	Highly resistant to acid, alkali, oil, fuel

Frequency response - VIB 7.205-2,9



Connection cable, color code:

VIB 7.205-2,9	
Wire color	Function
Red	Power, 5 VDC
Black	Temperature signal
White	Vibration signal
Shield	GND

C

Hybrid triaxial accelerometers for VIBGUARD

1

VIB 6.215: Hybrid triaxial accelerometer for VIBGUARD 1 Hz ... 10 kHz (Z)

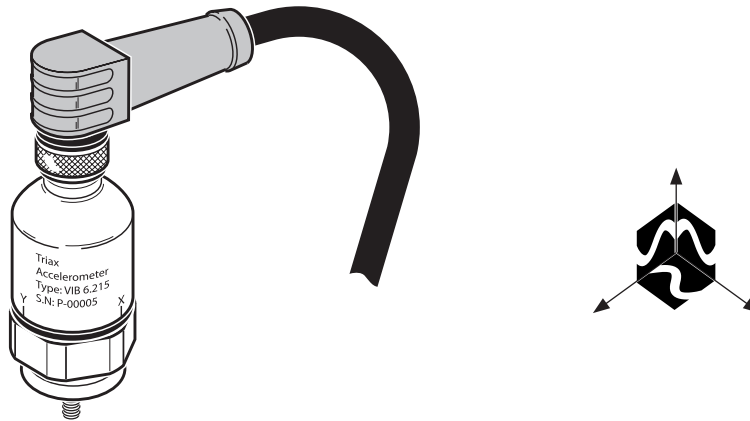
VIB 6.216: Hybrid triaxial accelerometer for VIBGUARD 0.1 Hz ... 10 kHz (Z)

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6

Application

Detection of low frequency mechanical vibration in three axes, such as on wind turbines.

A

Function

Vibrations in the X and Y directions are detected by a MEMS sensor*. A PRUFTECHNIK accelerometer measures vibrations in the Z direction.

*MEMS: MicroElectroMechanical System

Mounting

The sensor is glued onto the machine. The orientation of the measurement axis has to be observed during installation. The positions of the X and Y axes are labeled on the sensor housing. The Z-axis points onto the object.

Connection

The connection to the VIBGUARD condition monitoring system is carried out with a cable available as an accessory.

Accessories

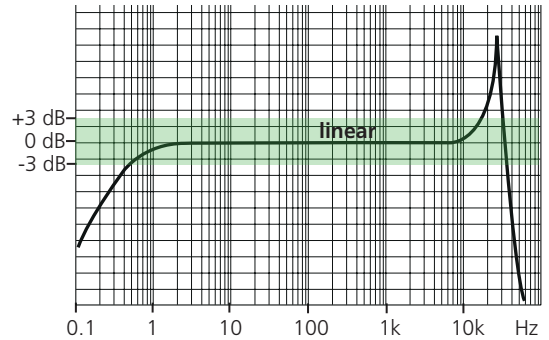
VIB 3.575-10	Connection cable for triax accelerometer VIB 6.215, 10 m
VIB 3.575-20	Connection cable for triax accelerometer VIB 6.215, 20 m

Technical data

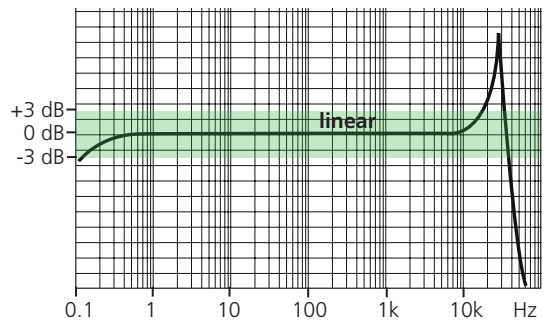
PARAMETER		VIB 6.215	VIB 6.216	
Measurement	Signaling system	X / Y Z	Voltage ICP	
	Measuring range (0-p)	X / Y Z	19.6 m/s ² 400 m/s ²	
	Transmission factor	X / Y Z	67 mV/ms ² , ± 6% @ 159 Hz 20 mV/ms ² , ± 3% @ 159 Hz	
	Frequency range	X / Y Z	0 Hz ... 1 kHz (± 3dB) 1 Hz ... 10 kHz (± 3dB)	0 Hz ... 1 kHz (± 3dB) 0.1 Hz ... 10 kHz (± 3dB)
	Resonance frequency	X / Y Z	2.5 kHz 28 kHz	
	Grav. acceleration voltage	X / Y	± 660 mV, ± 6%	
	Max. deviation from linear average after 360° rotation	X / Y	± 2% of meas. value	
	Inaccuracy of axis labeling		< ± 5°	
	Temperature sensitivity	X Y Z	AC / DC: -0.03% of meas. value/K AC: -0.03% of m.v./K; DC: +0.03% of m.v./K 0.1% of m.v./K	
	Temperature leap sensitivity	X / Y Z	0.015 ms ⁻² /K 3.1 ms ⁻² /K	
	Transverse sensitivity		< 5%	
	Sound sensitivity	X / Y Z	< 1.5 ms ⁻² /mPa < 0.15 ms ⁻² /mPa	
Electrical	Power supply	X / Y Z	MEMS electronics via Z channel 24 VDC / 3-10 mA, ± 10%	
	Noise	X / Y	0.0005 ms ⁻² /(Hz) ^{1/2} for 1 Hz ... 1 kHz	0.0005 ms ⁻² /(Hz) ^{1/2} for 0.1 Hz ... 1 kHz
	Noise	Z	0.005 ms ⁻² at 1 Hz 0.0005 ms ⁻² /(Hz) ^{1/2} for 10 Hz ... 10 kHz	
	Output impedance		100 Ohm	
	Output bias	X / Y Z	1.65 VDC 10.5-13.5 VDC	
Environment	Temperature range		-40°C ... +85 °C	
	Relative humidity		95%, non-condensing	
	Chemical resistance, cable		Oil, alcohol	
	Environmental protection, w/ cable		IP 65	
	Shock limit		< 100 kms ⁻² (10000 g)	
Mechanical	Case material		Stainless steel 1.4305	
	Mounting		Adhesive mount	
	Connection		M12 plug, 4 wire, A coded	
	Weight		62 g	

Response curves

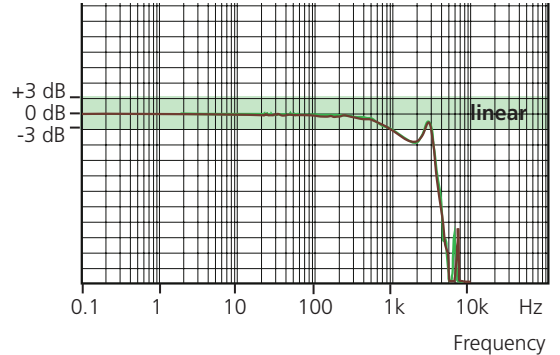
VIB 6.215: Frequency response Z axis



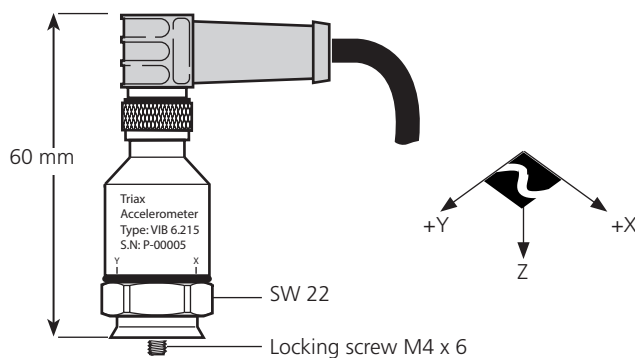
VIB 6.216: Frequency response Z axis



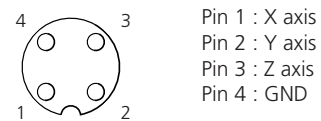
VIB 6.215 / VIB 6.216: Frequency response X axis (green); Y axis (brown)



Dimensions



Pin allocation, sensor connection socket:



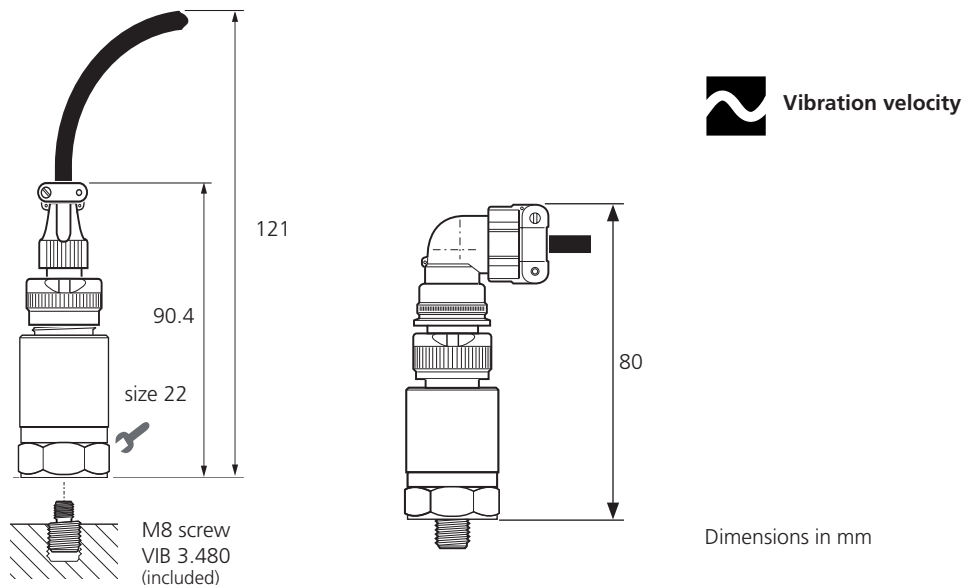
Color code, connection cable:

- Wire 1 : brown, bn
- Wire 2 : blue, bu
- Wire 3 : black, bk
- Wire 4 : Shield

VIBROTECTOR vibration transmitters

VIB 5.731 : VIBROTECTOR vibration transmitter, 10 Hz - 1 kHz

VIB 5.736 : VIBROTECTOR vibration transmitter, 2 Hz - 1 kHz



Application

The VIBROTECTOR vibration transmitter measures vibration velocity and is used for the continuous monitoring of absolute machine vibrations. The output signal (4-20mA) is output for analysis and alarm directly on the control system.

Installation accessories

Mounting tools for screw threads:

- VIB 8.693 M8 screw tap
- VIB 8.694 90° countersink bit

Mounting adapters for VIBROTECTOR:

- VIB 3.437 Screwed adapter to M8-90°
- VIB 3.438 Screwed adapter to M8 flat
- VIB 3.439 Screwed adapter to M5 flat
- VIB 3.480 M8 screw
- VIB 3.433 Adhesive adapter

Installation material for adhesive mount:

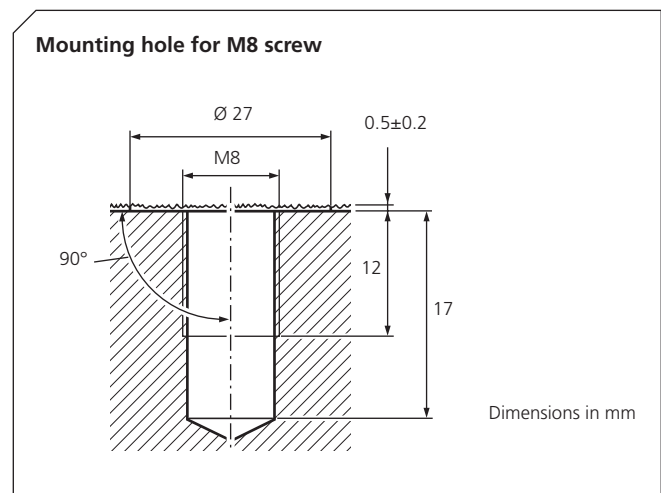
2-component adhesive (e.g. WEICON HB 300).

Connection cables

- VIB 5.740-X Connection cable (silicone) w/ straight plug, X meters long.
- VIB 5.741-X Connection cable (silicone) w/ angled plug, X meters long.
- VIB 5.745-L Connection cable (PUR) w/ angled plug, X meters long.
- VIB 5.746-L Connection cable (PUR) w/ straight plug, L meters long.

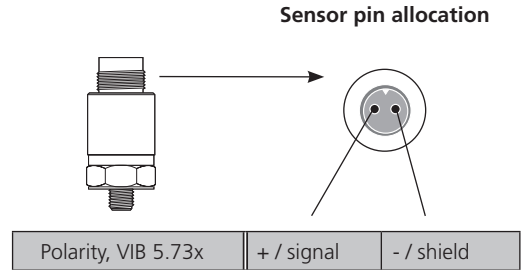
Mounting VIBROTECTOR

- Drill the mounting hole as shown in the graphics.
- Clean and smooth the area around the mounting hole (Abrasive paper, type 220).
- Clean both contact surfaces with solvent.
- Cover one of the dried surfaces with a thin film of LOCTITE 243 for better signal transmission.
- Screw in the VIBROTECTOR (3-7Nm!).

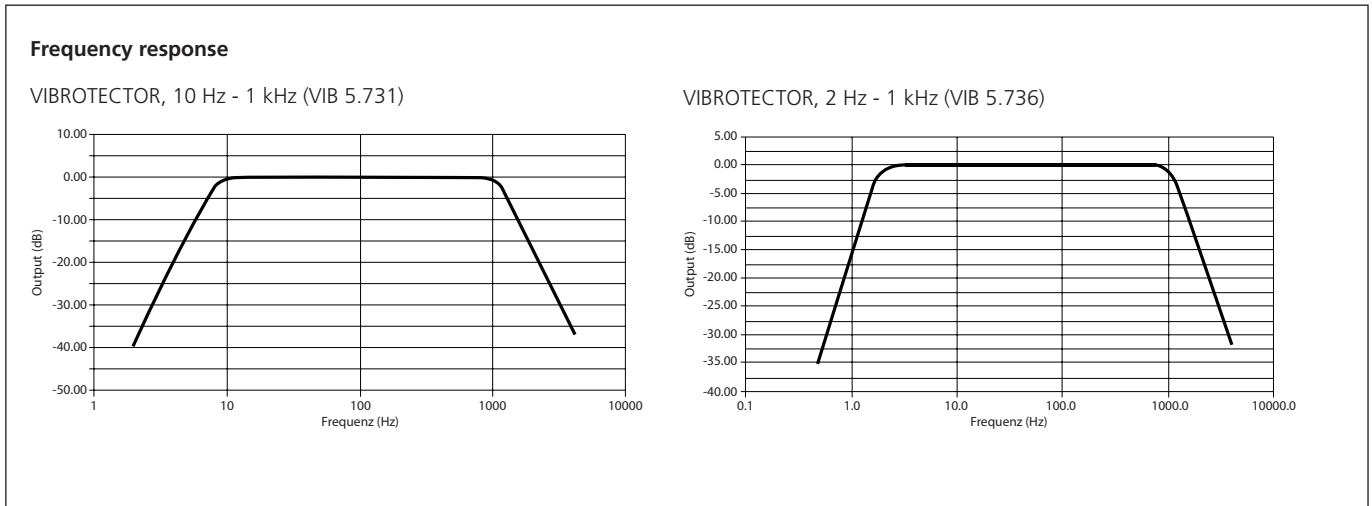


Technical data

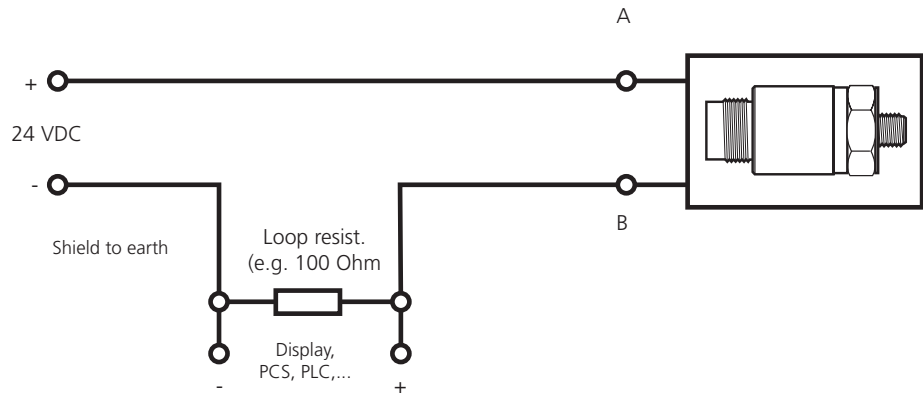
PARAMETER		VIB 5.731	VIB 5.736
Measurement	Output signal	Current level (4-20mA)	
	Measurement range (RMS) ±2%	≤ 20 mm/S (Ref.: 159 Hz)	
	Frequency range ± 10%	10 Hz ... 1 kHz	2 Hz ... 1 kHz
	Temperature range	-30 °C ... +80 °C	
	Temperature sensitivity	- 0.4 µA/K	
Electrical	Supply voltage (loop power)	24 VDC (±5%)	
	Loop resistance	90 ... 360 Ohm	
	Insulation	complete	
Mechanical	Case material	Stainless steel VA 1.4305	
	Environmental protection	IP 67 (IP 68 w/ special cable)	
	Shock limit	50 km/s ²	
	Connector type	Cable connector, 2 pin (Cannon, Mil-C5015)	
	Weight	80 g	
	Mounting	M8 thread	



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Connecting VIBROTECTOR to PCS, PLC



C

Industrial accelerometers for very low-speed machinery ($n > 6 \text{ min}^{-1}$)

1

VIB 6.172 : ICP-type accelerometer for very low-speed machinery 0.1 Hz - 10 kHz, Mil connector

VIB 6.195 : CLD accelerometer for very low-speed machinery 0.1 Hz - 10 kHz, Mil connector

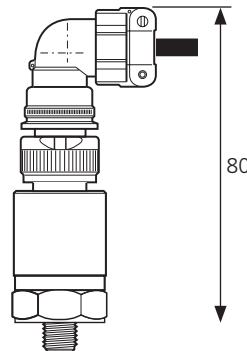
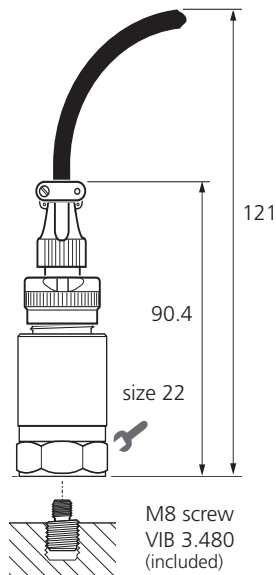
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Vibration acceleration

CLD: Current Line Drive

ICP: Integrated Circuit Piezoelectric

Dimensions in mm

A

Application

These accelerometers are used for the measurement of very slowly rotating machinery components such as the main bearings of a wind turbine.

Installation and connection

Permanent mounting using a threaded or adhesive adapter. The accelerometer is connected to the measuring device with a screened twisted pair cable.

Installation accessories

Mounting tools for screw threads:

- VIB 8.693 M8 screw tap
- VIB 8.694 90° countersink bit

Mounting adapters for VIB 6.195 / VIB 6.172:

- VIB 3.437 Screwed adapter to M8-90°
- VIB 3.438 Screwed adapter to M8 flat
- VIB 3.439 Screwed adapter to M5 flat
- VIB 3.480 M8 screw
- VIB 3.433 Adhesive adapter
- VIB 3.423 Magnetic holder for flat surfaces

Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Connection cables

- VIB 5.740-X Connection cable (silicone) w/ straight plug, X meters long.
- VIB 5.741-X Connection cable (silicone) w/ angled plug, X meters long.
- VIB 5.745-L Connection cable (PUR) w/ angled plug, X meters long.

VIB 5.746-L Connection cable (PUR) w/ straight plug, L meters long.

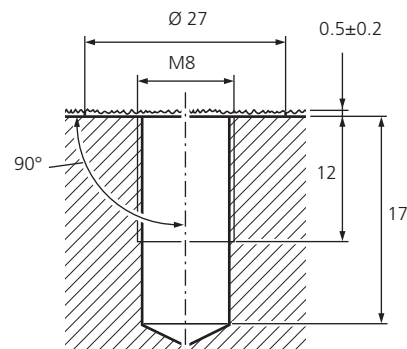
Connecting VIBXPRT II via sensor cable VIB 5.436 plus:
VIB 5.449-ICP Cable adapter for ICP-type accelerometer VIB 6.172

VIB 5.449-CLD Cable adapter for CLD-type accelerometer VIB 6.195

Mounting

- Drill the mounting hole as shown in the graphics.
- Clean and smooth the area around the mounting hole (Abrasive paper, type 220).
- Clean both contact surfaces with solvent.
- Cover one of the dried surfaces with a thin film of LOCTITE 243 for better signal transmission.
- Screw in the accelerometer (3-7Nm!).

Mounting hole for M8 screw

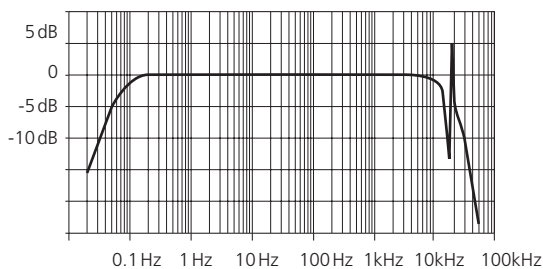


Dimensions in mm

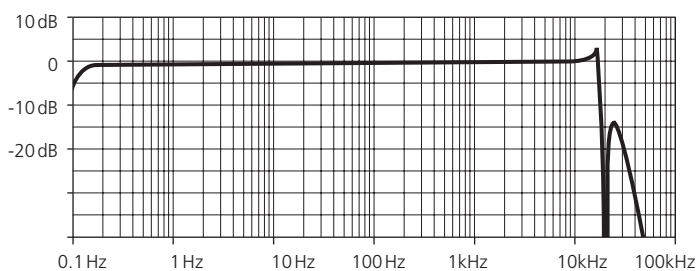
Technical data

PARAMETER		VIB 6.172	VIB 6.195
Measurement	Signaling system	ICP	Current Line Drive; 3.5 mA closed current w/ superposed AC signal
	Transmission factor $\pm 4\%$	100 mV/g (Ref.: 159 Hz; 25 °C)	5.35 $\mu\text{A}/\text{ms}^2$ (Ref.: 159 Hz; 25 °C)
	Frequency range $\pm 3\text{dB}$	0.1 Hz ... 10 kHz	
	Resonance frequency	17 kHz; > 10 dB damped	17 kHz; > 20 dB damped
	Linearity range	< 70 g (r.m.s.) $\pm 1\%$	$\pm 450 \text{ ms}^2 \pm 10\%$
	Temperature range	-40 °C ... +120 °C	-30 °C ... +80 °C
Electrical	Power requirement	2 - 10 mA / 24 VDC ($\pm 10\%$)	> 10 mA / 7-18 VDC
	Bias, DC output	12 V DC ($\pm 0.5\text{V}$)	--
	Grounding	insulated from machine ground, internal shielding	--
	Transverse sensitivity	< 5% at 5 kHz	< 5% at 10 kHz
	Temperature sensitivity	< 0.15 g/K	< 0.01 ms^2/K
	Magnetic sensitivity	< 0.1 g/T (at 50 Hz)	< 1 ms^2/T (at 50 Hz)
	Base strain sensitivity	< 0.001 g/ $\mu\text{m}/\text{m}$	< 0.1 $\text{ms}^2/\mu\text{m}/\text{m}$
	Acoustic sensitivity (130 dB)	0.0004 g	---
	Electrical noise, (0.1 Hz - 20 kHz)	< 0.0005 g from 0.1 Hz	< 0.002 ms^2 from 2 Hz
	Output impedance	< 10 Ohm	> 300 kOhm
Mechanical	Case material	Stainless steel VA 1.4305	
	Environmental protection	IP 67 (w/ cable)	
	max. Shock limit	5000 g	--
	Connector type	Cable connector, 2 pole (Mil-C5015)	
	Weight	85 g	
	Dimensions	see previous page	
	Mounting	M8 thread	

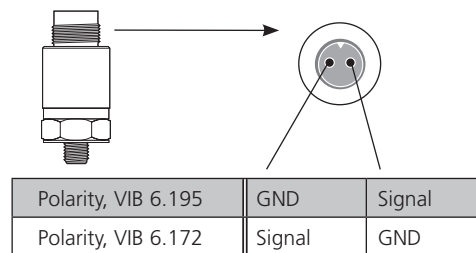
Frequency response - VIB 6.172



Frequency response - VIB 6.195



Sensor pin allocation



C

Industrial accelerometers for standard machinery ($n > 60 \text{ min}^{-1}$), intrinsically safe

1

VIB 6.102 DEX : Industrial accelerometer for standard machinery, adhesive mount, intrinsically safe

VIB 6.122 DEX : Industrial accelerometer for standard machinery, M8 thread mount, intrinsically safe

VIB 6.132 DEX : Industrial accelerometer for standard machinery, UNC 5/16 thread mount, intrinsically safe

2

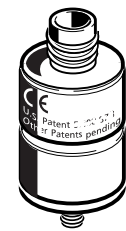
3

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A



Adhesive mount



Thread mount



Vibration acceleration



Bearing condition



Pump cavitation



CE 0044

Application

These accelerometers are suitable for vibration measurements up to 20 kHz on machinery with rotational speeds above 60 min^{-1} , for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

The accelerometers are mainly used for continuous machine condition monitoring in a hazardous industrial environment. The signal acquisition and processing is carried out with a condition monitoring system from PRÜFTECHNIK (e.g. VIBNODE, VIBROWEB,...).

The accelerometers are gas and dust explosion-proof. They are suitable for use with dusts having a minimum ignition temperature for 5 mm layers of not less than 210 °C .

Notes on intrinsic safety

The accelerometers of the series VIB 6.1xx DEX may only be connected to designated devices with the following interface parameters:

$$\begin{aligned} U_{\max} &= 24\text{V} \\ P_{\max} &= 300\text{mW} \\ C_i &= 15\text{nF} \\ L_i &= \text{negligible small} \end{aligned}$$

The following documents must be considered:

- EC type examination certificate TÜV 02 ATEX 1865
- 1st supplement dated from 01.03.2007
- 2nd supplement dated from 22.06.2011

Additionally the installation notes for hazardous areas annexed in this catalog must be observed.

Installation accessories

Mounting tools for screw threads:

VIB 8.693	M8 screw tap
VIB 8.696	UNC 5/16 screw tap
VIB 8.694	90° countersink bit

Mounting adapters for M8 screw threads:

VIB 3.474	Screwed adapter to M16
VIB 3.475	Screwed adapter to M20
VIB 8.772	Screwed adapter to M10
VIB 3.411	-, w/ locking nut to M8
VIB 3.412	-, w/ locking nut to M10
VIB 3.413	-, w/ locking nut to M12
VIB 3.431	-, w/ adhesive mount

Mounting adapters for UNC 5/16 screw threads:

VIB 3.414	Screwed ad. w/ locking nut to UNC 5/16
VIB 3.415	-, w/ locking nut to UNC 3/8 - 16
VIB 3.416	-, w/ locking nut to UNC 1/2 - 13
VIB 3.432	-, w/ adhesive mount

Extension post for M8 screw threads:

VIB 8.586	length: 55 mm
VIB 8.587	length: 95 mm
VIB 8.588*	length: 170 mm
VIB 8.589	length: 35 mm

Extension post for UNC 5/16 screw threads:

VIB 8.590	length: 2 1/8"
VIB 8.591	length: 3 3/4"
VIB 8.592*	length: 6 5/8"

* only for shock pulse measurements!

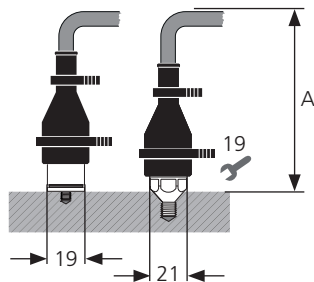
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Technical data

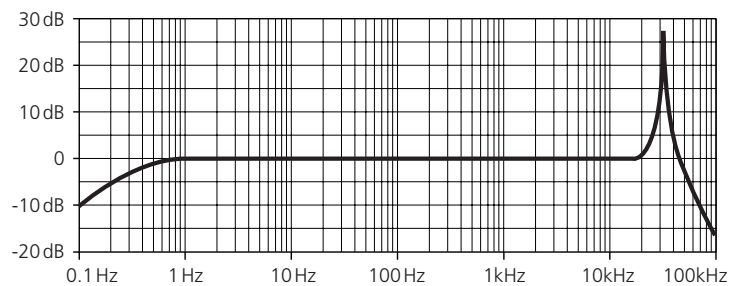
PARAMETER		VIB 6.102 DEX	VIB 6.122 DEX	VIB 6.132 DEX
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal		
	Transmission factor $\pm 3\%$	1.0 $\mu\text{A}/\text{ms}^{-2}$ (Reference: 159 Hz; 25 °C)		
	Frequency range $\pm 5\%$	2 Hz ... 8 kHz		
	$\pm 10\%$	1 Hz ... 12 kHz		
	$\pm 3\text{dB}$	1 Hz ... 20 kHz		
	Resonance frequency	36 kHz		
	Linearity range $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$		
Temperature range, w/ Rayolin cable		-30 °C ... +80 °C		
Electrical	Power requirement	> 10 mA / 7-18 VDC		
	Transverse sensitivity	< 5% at 10 kHz		
	Temperature sensitivity	< 0.05 ms^{-2}/K		
	Magnetic sensitivity	< 5 ms^{-2}/T (at 50 Hz)		
	Base strain sensitivity	< 0.1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$		
	Electrical noise, rms	< 0.01 ms^{-2} from 2 Hz		
	Output impedance	> 1 MOhm		
	Insulation	> 10 ⁹ MOhm		
Mechanical	Case material	Stainless steel VA 1.4305		
	Environmental protection	IP 65 (w/ cable)		
	Cable connection	TNC socket		
	Shock limit	< 250 kms^{-2}		
	Weight	40 g		
	Installation height A (see below)			
	w/ coaxial cable & straight TNC plug	> 119 mm	> 115 mm	
	Mounting	Adhesive	M8 thread	UNC 5/16 thread
	EX	Marking, gas explosion protection	II 2 G Ex ib IIC T4	
Marking, dust explosion protection		II 2 D Ex ib IIIB T ₅ 187°C		

Dimensions

in mm



Frequency response



C

VIB 6.152 DEX: Industrial accelerometer, low sensitivity, intrinsically safe

1

0,1 $\mu\text{A}/\text{ms}^{-2}$ 

M8 thread



Vibration acceleration



Bearing condition



Pump cavitation



CE 0044

2

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Application

This accelerometer is suitable for vibration measurements up to 20 kHz on machinery with rotational speeds above 5000 min^{-1} , for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

6

The accelerometer is mainly used for continuous machine condition monitoring in a hazardous industrial environment. The signal acquisition and processing is carried out with a condition monitoring system from PRÜFTECHNIK (e.g. VIBNODE, VIBROWEB,...).

A

The accelerometer is gas and dust explosion-proof. It is suitable for use with dusts having a minimum ignition temperature for 5 mm layers of not less than 210 °C.

Notes on intrinsic safety

The accelerometers of the series VIB 6.1xx DEX may only be connected to designated devices with the following interface parameters:

$$\begin{aligned} U_{\max} &= 24\text{V} \\ P_{\max} &= 300\text{mW} \\ C_i &= 15\text{nF} \\ L_i &= \text{negligible small} \end{aligned}$$

The following documents must be considered:

- EC type examination certificate TÜV 02 ATEX 1865
- 1st supplement dated from 01.03.2007
- 2nd supplement dated from 22.06.2011

Additionally the installation notes for hazardous areas annexed in this catalog must be observed.

Installation accessories

Mounting tools for screw threads:

- | | |
|-----------|---------------------|
| VIB 8.693 | M8 screw tap |
| VIB 8.694 | 90° countersink bit |

Mounting adapters for M8 screw threads:



- | | |
|-----------|--------------------------|
| VIB 3.474 | Screwed adapter to M16 |
| VIB 3.475 | Screwed adapter to M20 |
| VIB 8.772 | Screwed adapter to M10 |
| VIB 3.411 | -, w/ locking nut to M8 |
| VIB 3.412 | -, w/ locking nut to M10 |
| VIB 3.413 | -, w/ locking nut to M12 |
| VIB 3.431 | -, w/ adhesive mount |

Extension post for M8 screw threads:

- | | |
|------------|----------------|
| VIB 8.586 | length: 55 mm |
| VIB 8.587 | length: 95 mm |
| VIB 8.588* | length: 170 mm |
| VIB 8.589 | length: 35 mm |
- * only for shock pulse measurements!

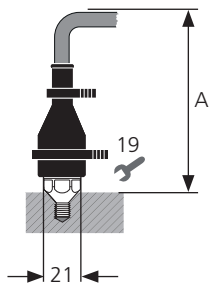
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Technical data

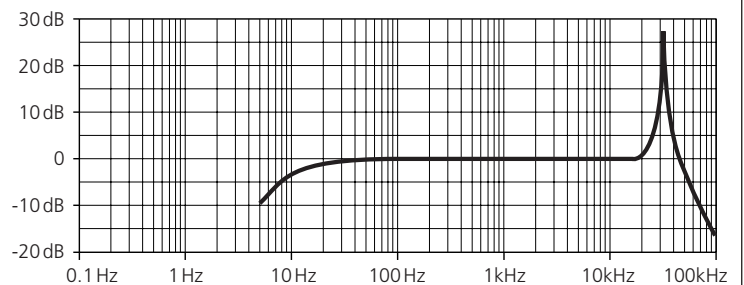
PARAMETER		VIB 6.152 DEX
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal
	Transmission factor $\pm 3\%$	0.1 $\mu\text{A}/\text{ms}^2$ (Reference: 159 Hz; 25 °C)
	Frequency range $\pm 5\%$	2 Hz ... 8 kHz
	$\pm 10\%$	1 Hz ... 12 kHz
	$\pm 3\text{dB}$	1 Hz ... 20 kHz
	Resonance frequency	36 kHz
	Linearity range $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$
Electrical	Temperature range, w/ Rayolin cable	-30 °C ... +80 °C
	Power requirement	> 10 mA / 7-18 VDC
	Transverse sensitivity	< 5% at 10 kHz
	Temperature sensitivity	< 0.5 ms^{-2}/K
	Magnetic sensitivity	< 50 ms^{-2}/T (at 50 Hz)
	Base strain sensitivity	< 1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$
	Electrical noise, rms	< 0.0005 $\text{ms}^{-2} / \text{Hz}^{1/2}$ from 15 Hz to 20 kHz < 0.005 ms^{-2} at 1 Hz
	Output impedance	> 1 MOhm
	Insulation	> 10 ⁹ MOhm
Mechanical	Case material	Stainless steel VA 1.4305
	Environmental protection	IP 65 (w/ cable)
	Cable connection	TNC socket
	Shock limit	< 250 kms^{-2}
	Weight	40 g
	Installation height A (see below)	
	w/ coaxial cable & straight TNC plug	> 115 mm
	Mounting	M8 thread
EX	Marking, gas explosion protection	 II 2 G Ex ib IIC T4
	Marking, dust explosion protection	 II 2 D Ex ib IIIB T ₅ 187°C

Dimensions

in mm



Frequency response



C

Industrial accelerometers for low-speed machinery ($n > 20 \text{ min}^{-1}$), intrinsically safe

1

VIB 6.107 DEX : Industrial accelerometer for low-speed machinery, adhesive mount, intrinsically safe

VIB 6.127 DEX : Industrial accelerometer for low-speed machinery, M8 thread mount, intrinsically safe

VIB 6.137 DEX : Industrial accelerometer for low-speed machinery, UNC 5/16 thread mount, intrinsically safe

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Adhesive mount



Thread mount



6

Application

These accelerometers are suitable for vibration measurements up to 10 kHz on low-speed machinery with rotational speeds above 20 min^{-1} . High frequency shock pulse measurements for bearing condition evaluation and pump cavitation are not possible with this series.

The accelerometers are mainly used for continuous machine condition monitoring in a hazardous industrial environment. The signal acquisition and processing is carried out with a condition monitoring system from PRÜFTECHNIK (e.g. VIBNODE, VIBROWEB,...).

The accelerometers are gas and dust explosion-proof. They are suitable for use with dusts having a minimum ignition temperature for 5 mm layers of not less than $210 \text{ }^\circ\text{C}$.

Notes on intrinsic safety

The accelerometers of the series VIB 6.1xx DEX may only be connected to designated devices with the following interface parameters:

$$\begin{aligned} U_{\max} &= 24\text{V} \\ P_{\max} &= 300\text{mW} \\ C_i &= 15\text{nF} \\ L_i &= \text{negligible small} \end{aligned}$$

The following documents must be considered:

- EC type examination certificate TÜV 02 ATEX 1865
- 1st supplement dated from 01.03.2007
- 2nd supplement dated from 22.06.2011

Additionally the installation notes for hazardous areas annexed in this catalog must be observed.

Installation accessories

Mounting tools for screw threads:

VIB 8.693	M8 screw tap
VIB 8.696	UNC 5/16 screw tap
VIB 8.694	90° countersink bit

Mounting adapters for M8 screw threads:

VIB 3.474	Screwed adapter to M16
VIB 3.475	Screwed adapter to M20
VIB 8.772	Screwed adapter to M10
VIB 3.411	-, w/ locking nut to M8
VIB 3.412	-, w/ locking nut to M10
VIB 3.413	-, w/ locking nut to M12
VIB 3.431	-, w/ adhesive mount

Mounting adapters for UNC 5/16 screw threads:

VIB 3.414	Screwed ad. w/ locking nut to UNC 5/16
VIB 3.415	-, w/ locking nut to UNC 3/8 - 16
VIB 3.416	-, w/ locking nut to UNC 1/2 - 13
VIB 3.432	-, w/ adhesive mount

Extension post for M8 screw threads:

VIB 8.586	length: 55 mm
VIB 8.587	length: 95 mm
VIB 8.588*	length: 170 mm
VIB 8.589	length: 35 mm

Extension post for UNC 5/16 screw threads:

VIB 8.590	length: 2 1/8"
VIB 8.591	length: 3 3/4"
VIB 8.592*	length: 6 5/8"

* only for shock pulse measurements!

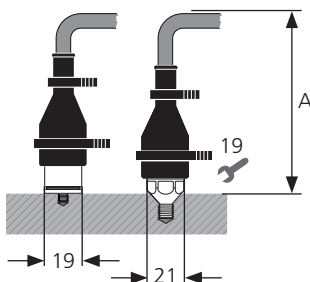
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Technical data

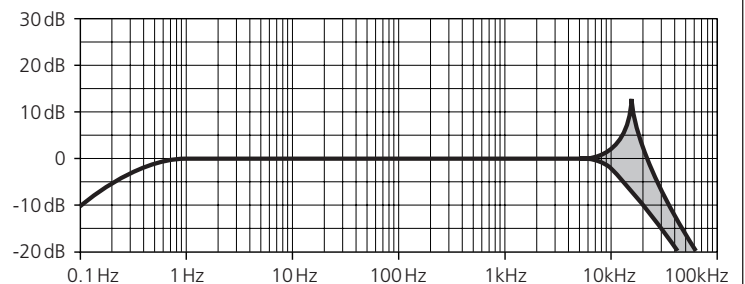
PARAMETER		VIB 6.107 DEX	VIB 6.127 DEX	VIB 6.137 DEX
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal		
	Transmission factor $\pm 4\%$	5.35 $\mu\text{A}/\text{ms}^{-2}$ (Reference: 159 Hz; 25 °C)		
	Frequency range $\pm 5\%$	2 Hz ... 4 kHz		
	$\pm 10\%$	1 Hz ... 6 kHz		
	$\pm 3\text{dB}$	0.3 Hz ... 10 kHz		
	Resonance frequency	17 kHz; > 20 dB damped		
	Linearity range $\pm 10\%$	$\pm 450 \text{ ms}^{-2}$		
Electrical	Temperature range, w/ PVC cable	-30 °C ... +80 °C		
	Power requirement	> 10 mA / 7-18 VDC		
	Transverse sensitivity	< 5% at 10 kHz		
	Temperature sensitivity	< 0.01 ms^{-2}/K		
	Magnetic sensitivity	< 1 ms^{-2}/T (bei 50 Hz)		
	Base strain sensitivity	< 0.1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$		
	Electrical noise, rms	< 0.002 ms^{-2} from 2 Hz		
	Output impedance	> 300 kOhm		
Mechanical	Insulation	> 10 ⁹ MOhm		
	Case material	Stainless steel VA 1.4305		
	Environmental protection	IP 65 (w/ cable)		
	Cable connection	TNC socket		
	Shock limit	< 50 kms^{-2}		
	Weight	41 g	43 g	
	Installation height A (see below)			
	w/ coaxial cable & straight TNC plug	> 124 mm	> 120 mm	
EX	Mounting	Adhesive	M8 thread	UNC 5/16 thread
	Marking, gas explosion protection	II 2 G Ex ib IIC T4		
Marking, dust explosion protection	II 2 D Ex ib IIIB T ₃ 187°C			

Dimensions

in mm



Frequency response



C Mini accelerometers, intrinsically safe

1

VIB 6.202-6XD: Mini accelerometer with RG 174 cable, 6 meters, intrinsically safe

VIB 6.202-10XD: Mini accelerometer with RG 174 cable, 10 meters, intrinsically safe

VIB 6.203-3XD: Mini accelerometer with Spec 44 cable, 3 meters, intrinsically safe

VIB 6.203-6XD: Mini accelerometer with Spec 44 cable, 6 meters, intrinsically safe

2

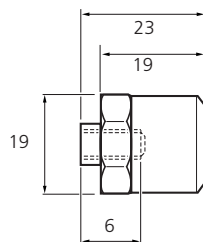
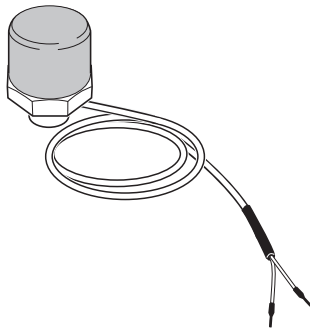
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A



Dimensions in mm

size 19



Vibration acceleration



Bearing condition



Pump cavitation



CE 0044

Application

These accelerometers are suitable for vibration measurements up to 10 kHz on machinery with rotational speeds above 120 min⁻¹, for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

The compact design and the position of the cable, which is passed through the base, reduces the installation space required for this type of accelerometers considerably.

The accelerometers are mainly used for continuous machine condition monitoring in a hazardous industrial environment. The signal acquisition and processing is carried out with a condition monitoring system from PRÜFTECHNIK (e.g. VIBNODE, VIBROWEB,...).

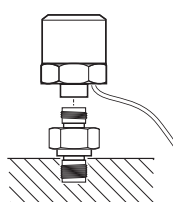
Installation accessories

- VIB 3.417-M5 M5 screwed adapter for mini accelerom.
- VIB 3.417-M6 M6 screwed adapter for mini accelerom.
- VIB 3.418 Adhesive adapter for mini accelerom.
- VIB 3.423 Magnetic holder for flat surfaces

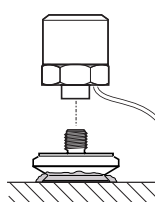
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

- Installation material for sensor cable
- VIB 93025 TNC plug for RG 174 cable
- VIB 81015 Protective sleeve for RG 174 cable

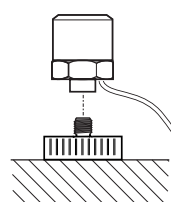
Mounting types



Screwed adapter
VIB 3.417-M5
VIB 3.417-M6



Adhesive adapter
VIB 3.418



Magnetic adapter
VIB 3.423

Notes on intrinsic safety

Mini accelerometers of the series VIB 6.20..XD may only be connected to designated devices with the following interface parameters:

$$U_i = 24 \text{ V} \quad C_i = 15 \text{ nF}$$

$$P_i = 300 \text{ mW} \quad L_i = 0 \text{ H}$$

The sensor is delivered with a permanently attached cable. When selecting the cable length, take into consideration the capacitance and inductance of the cable type:

RG174	Spec 44
$C_{\text{cable}} = 111 \text{ pF}$	$C_{\text{cable}} = 430 \text{ pF}$
$L_{\text{cable}} = 277 \text{ nH}$	$L_{\text{cable}} = 154 \text{ nH}$

If the open cable ends are connected within the hazardous area, the explosion protection type must not be impaired, taking into account the intended use.

The sensor should be protected against mechanical destruction or damage.

The sensor should be protected from direct sunlight.

The intrinsically safe power circuit should be connected to the equipotential bonding system.

The details in the EC type examination certificate ZELM 07 ATEX 0327 X should be observed.

The admissible inductance and capacitance of the intrinsic power supply must be followed!

The European installation instructions (EN 60079-14 / EN 61241-14) must be followed.

The metal body isolated from the intrinsically safe supply must be electrostatically grounded.

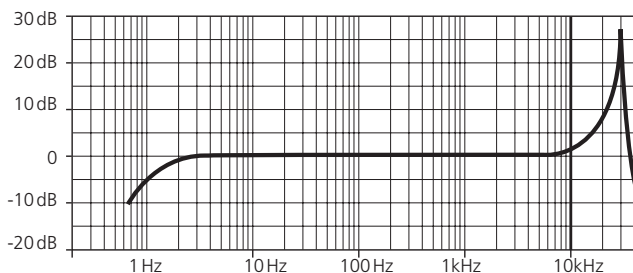
Service and maintenance cannot be performed on the sensor.

Technical data

PARAMETER		VIB 6.202.. XD	VIB 6.203.. XD
Measurement	Signaling system	Current Line Drive; 3.5 ± 1.5 mA closed current with superposed AC signal	
	Transmission factor $\pm 10\%$	$1.0 \mu\text{A}/\text{ms}^{-2}$ (Reference: 159 Hz; 25 °C)	
	Frequency range $\pm 10\%$	4 Hz ... 8 kHz	
	$\pm 3\text{dB}$	2 Hz ... 10 kHz	
	Resonance frequency	30 kHz	
	Linearity range $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$ ($\pm 98\text{g}$)	
	Temperature range	-30 °C ... +80 °C	
Electrical	Power requirement	> 10 mA / 7-18 VDC	
	Temperature sensitivity	< $0.08 \text{ ms}^{-2}/\text{K}$	
	Electrical noise, rms	< 0.1 ms^{-2} ab 2 Hz	
	Output impedance	> 250 kOhm	
Mechanical	Case material	Stainless steel VA 1.4305 / Grivory HTV (resistant amongst others to diesel, crude oil, hydraulic and engine oil, lubricants, tar, turpentine)	
	Environmental protection	IP 67 (w/ cable)	
	Shock limit	< 250 kms^{-2}	
	Weight	22 g	
	Dimensions	see figure below	
	Mounting	Adapter w/ UNF 1/4 thread	
	Connection cable	Coaxial, RG 174/U	Coaxial, Raychem Spec. 44
	Diameter	2.8 mm	2.4 mm
	Material	PVC - Polyvinylchloride	PVDF - Polyvinylidenfluoride: highly resistant to many acids, alkalis, hydrocarbon solvents, fuels, lubricants, water, and many missile fuels and oxidizers
Protective sleeve, material	EVA, non halogen line Temp.range: - 40°C .. +70°C	---	
EX	Marking, gas explosion protection	⊕ II 2 G Ex ib IIC T4	
	Marking, dust explosion protection	⊕ II 2 D Ex ibD 21 T95°C	

Note
The maximum surface temperature for the installation in dust hazardous explosive areas (II 2 D) relates to procedure A of EN 61241-14 : 2005.

Frequency response - VIB 6.202 / VIB 6.203



Accessories for RG 174 cable



TNC plug
VIB 93025



TNC plug + protective sleeve
VIB 93025 + VIB 81015

C

VIBROTECTOR vibration transmitters, intrinsically safe

1

VIB 5.731 EX : VIBROTECTOR vibration transmitter, 10 Hz - 1 kHz, intrinsically safe

VIB 5.736 EX : VIBROTECTOR vibration transmitter, 2 Hz - 1 kHz, intrinsically safe

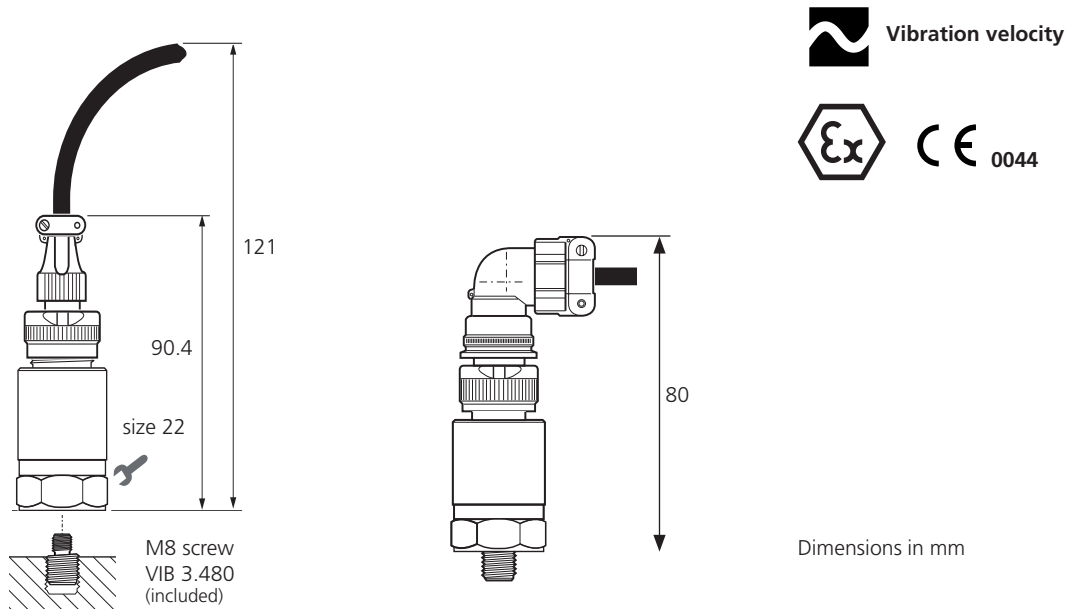
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A

Application

The VIBROTECTOR vibration transmitter measures vibration velocity and is used for the continuous monitoring of absolute machine vibrations. The output signal (4-20mA) is output for analysis and alarm directly on the control system.

Installation accessories

Mounting tools for screw threads:

VIB 8.693 M8 screw tap

VIB 8.694 90° countersink bit

Mounting adapters for VIBROTECTOR:

VIB 3.437 Screwed adapter to M8-90°

VIB 3.438 Screwed adapter to M8 flat

VIB 3.439 Screwed adapter to M5 flat

VIB 3.480 M8 screw

VIB 3.433 Adhesive adapter

Installation material for adhesive mount:

2-component adhesive (e.g. WEICON HB 300).

Connection cables

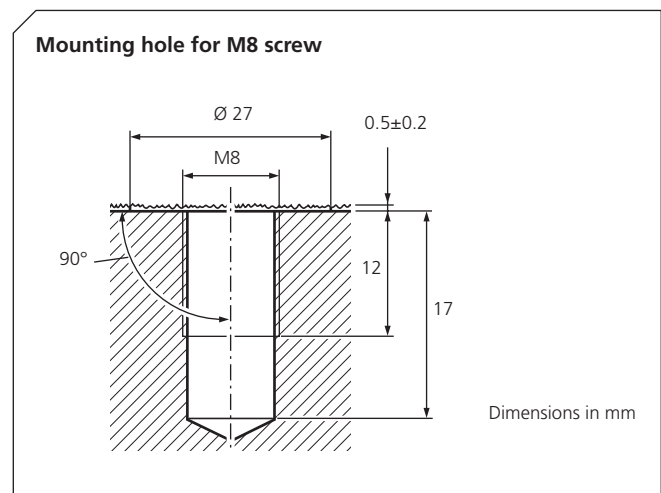
VIB 3.570-6 Connection cable (PUR) w/ straight plug,
VIB 3.570-12 6 or 12 meters long, permissible for a dust-
and gas-explosive environment.

VIB 5.740-X Connection cable (silicone) w/ straight or
VIB 5.741-X angled plug, X meters long, permissible
for a dust-and gas-explosive environment.

0 2088 0010 Transmitter supply unit for VIBROTECTOR
EX

Mounting VIBROTECTOR

- Drill the mounting hole as shown in the graphics.
- Clean and smooth the area around the mounting hole (Abrasive paper, type 220).
- Clean both contact surfaces with solvent.
- Cover one of the dried surfaces with a thin film of LOCTITE 243 for better signal transmission.
- Screw in the VIBROTECTOR (3-7Nm!).



Notes on intrinsic safety

VIBROTECTOR vibration transmitter of the series 5.731 EX and VIB 5.731 EX may only be connected to designated devices with the following interface parameters:

$$U_i = 30 \text{ V} \quad C_i = 15 \text{ nF}$$

$$P_i = 600 \text{ mW} \quad L_i = 0 \text{ H}$$

The details in the EC type examination certificate TÜV 05 ATEX 2788 should be observed.

The admissible inductance and capacitance of the intrinsic power supply must be followed!

The European installation instructions (EN 60079-14 / EN 61241-14) must be followed. Additionally the installation notes for hazardous areas annexed in this catalog must be observed.

The metal body isolated from the intrinsically safe supply must be electrostatically grounded.

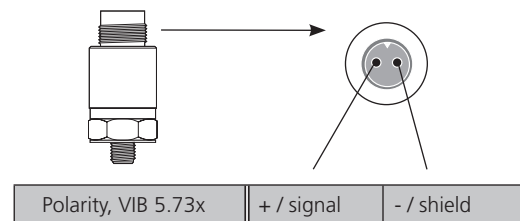
Service and maintenance cannot be performed on the sensor.

Technical data

PARAMETER		VIB 5.731 EX	VIB 5.736 EX
Measurement	Output signal	Current level (4-20mA)	
	Measurement range (RMS) ± 2%	≤ 20 mm/s (Ref.: 159 Hz)	
	Frequency range ± 10%	10 Hz ... 1 kHz	2 Hz ... 1 kHz
	Temperature range T _A	-25 °C ... +80 °C	
	Temperature sensitivity	- 0.4 µA/K	
Electrical	Supply voltage (loop power)	24 VDC (±5%)	
	Loop resistance	90 ... 360 Ohm	
	Insulation	complete	
Mechanical	Case material	Stainless steel VA 1.4305	
	Environmental protection	IP 67 (IP 68 for dust explosion protection only w/ special cable, immersion depth: 10 m)	
	Shock limit	50 km/s ²	
	Connector type	Cable connector, 2 pin (Cannon, Mil-C5015)	
	Weight	80 g	
	Mounting	M8 thread	
EX	Marking, gas explosion protection	Ex II 2 G EEx ib IIC T4	
	Marking, dust explosion protection	Ex II 2 D Ex ibD21 IP68 T90°C	

IP 67 (IP 68 bei Staub-Explosionsschutz nur mit Spezialkabel)
Tauchtiefe (IP 68): 10 m

Sensor pin allocation

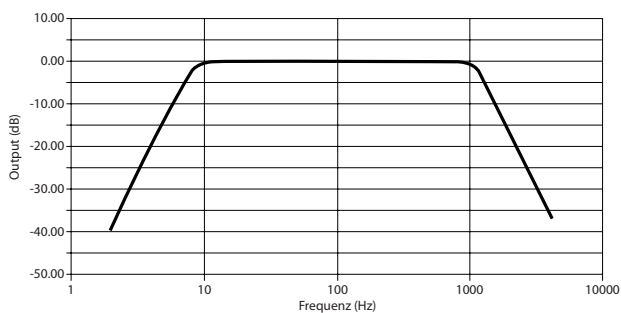


Note

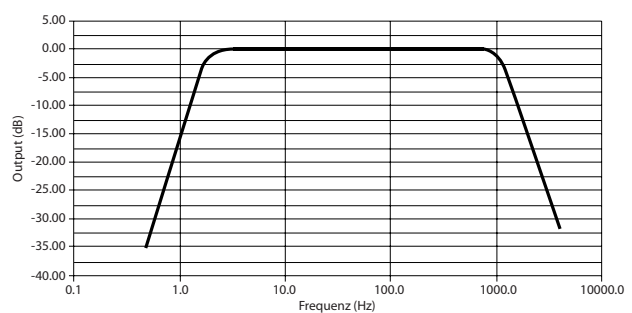
The maximum surface temperature for the installation in dust hazardous explosive areas (II 2 D) relates to procedure A of EN 61241-14 : 2005.

Frequency response

VIBROTECTOR, 10 Hz - 1 kHz (VIB 5.731)



VIBROTECTOR, 2 Hz - 1 kHz (VIB 5.736)



C

VIB 6.172 XICP: ICP-type accelerometer for very low-speed machinery ($n > 6 \text{ min}^{-1}$), intrinsically safe

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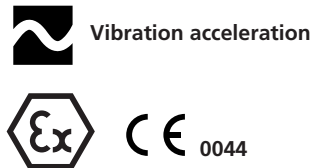
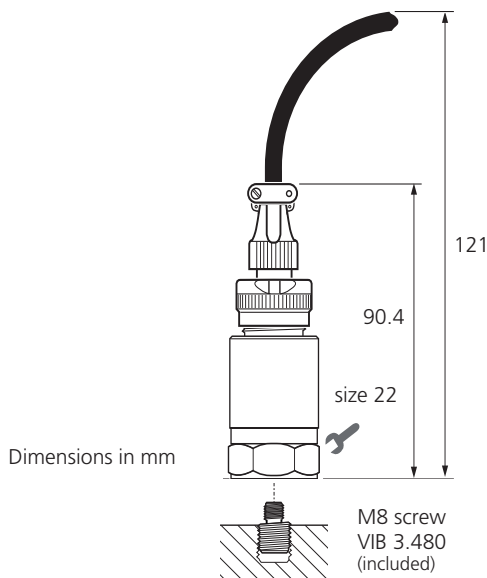
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A

Application

This accelerometer is used for the measurement of absolute machine vibrations. Due to the very low lower limit frequency, it is particularly suitable for very slowly rotating machinery components such as the main bearings of a wind turbine.

Installation and connection

Permanent mounting using a threaded or adhesive adapter or a magnetic holder (see accessories list below).

Installation accessories

Mounting tools for screw threads:

- VIB 8.693 M8 screw tap
- VIB 8.694 90° countersink bit

Mounting adapters for VIB 6.172:

- VIB 3.437 Screwed adapter to M8-90°
- VIB 3.438 Screwed adapter to M8 flat
- VIB 3.439 Screwed adapter to M5 flat
- VIB 3.480 M8 screw
- VIB 3.433 Adhesive adapter
- VIB 3.423 Magnetic holder for flat surfaces

Installation material for adhesive mount:

2-component adhesive (e.g. WEICON HB 300).

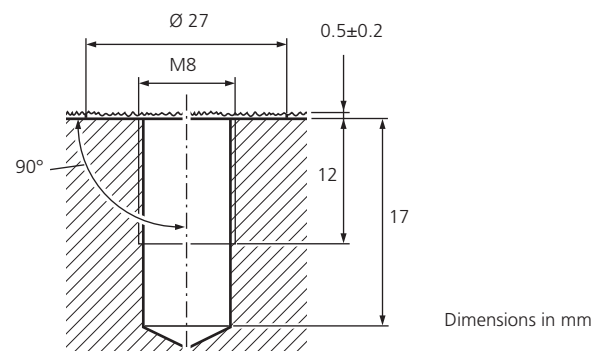
Connection cables

- VIB 3.570-6 Connection cable (PUR) w/ straight plug, 6 meters long, permissible for a dust- and gas-explosive environment.
- VIB 3.570-12 Connection cable (PUR) w/ straight plug, 12 meters long, permissible for a dust- and gas-explosive environment.
- VIB 5.422 VIBXPERT connection cable for ICP-type accelerometers (only in gas-explosive environment)
- 0 2088 0009 Single-channel safety barrier for ICP-type accelerometers

Mounting

- Drill the mounting hole as shown in the graphics.
- Clean and smooth the area around the mounting hole (Abrasive paper, type 220).
- Clean both contact surfaces with solvent.
- Cover one of the dried surfaces with a thin film of LOCTITE 243 for better signal transmission.
- Screw in the accelerometer (3-7Nm!).

Mounting hole for M8 screw



Notes on intrinsic safety

The ICP-type accelerometer of the series VIB 6.172 XICP may only be connected to designated devices with the following interface parameters:

$$U_i = 38 \text{ V} \quad C_i = 10 \text{ nF}$$

$$P_i = 1 \text{ W} \quad L_i = 0 \text{ H}$$

The VIB 6.172 XICP accelerometer may be operated with VIBXPRT EX in gas-explosive environment. The accelerometer is connected to the instrument with the VIBXPRT cable for ICP-type accelerometers (VIB 5.422).

The operation with VIBXPRT EX in dust hazardous areas is prohibited.

The details in the EC type examination certificate TÜV 05 ATEX 2795 should be observed.

The admissible inductance and capacitance of the intrinsic power supply must be followed!

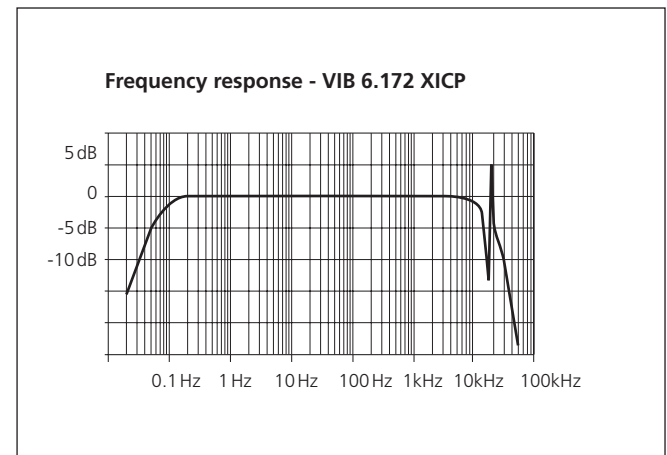
The european installation instructions (EN 60079-14 / EN 61241-14) must be followed. Additionally the installation notes for hazardous areas annexed in this catalog must be observed.

The metal body isolated from the intrinsically safe supply must be electrostatically grounded.

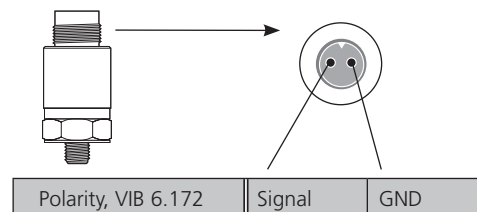
Service and maintenance cannot be performed on the sensor.

Technical data

PARAMETER		VIB 6.172 XICP
Measurement	Signaling system	ICP
	Transmission factor ± 4%	100 mV/g (Ref.: 159 Hz; 25 °C)
	Frequency range ± 3dB	0.1 Hz ... 10 kHz
	Resonance frequency	17 kHz; > 10 dB damped
	Linearity range ± 1%	< 70 g (r.m.s.)
	Temperature range	-40 °C ... +80 °C
Electrical	Power requirement	2 - 10 mA / 24 VDC (±10%)
	Bias, DC output	12 V DC (±0.5V)
	Grounding	insulated from machine ground, internal shielding
	Transverse sensitivity	< 5% at 5 kHz
	Temperature sensitivity	< 0.15 g/K
	Magnetic sensitivity	< 0.1 g/T (at 50 Hz)
	Base strain sensitivity	< 0.001 g/μm/m
	Acoustic sensitivity (130 dB)	0.0004 g
	Electrical noise, (0.1 Hz - 20 kHz)	< 0.0005 g
	Output impedance	< 10 Ohm
Mechanical	Case material	Stainless steel VA 1.4305
	Environmental protection	IP 67 (IP 68 for dust explosion protection only w/ special cable, immersion depth: 10 m)
	max. Shock limit	5000 g
	Connector type	Cable connector, 2 pole (Mil-C5015)
	Weight	85 g
	Dimensions	see previous page
EX	Marking, gas explosion protection	⊕ II 2 G Ex ib IIC T4
	Marking, dust explosion protection	⊕ II 2 D Ex ibD21 IP68 T95°C



Sensor pin allocation



Note

The maximum surface temperature for the installation in dust hazardous explosive areas (II 2 D) relates to procedure A of EN 61241-14 : 2005.

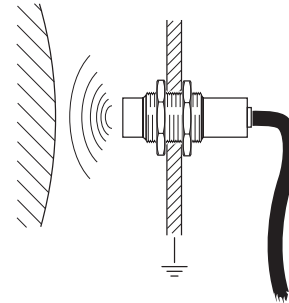
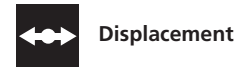
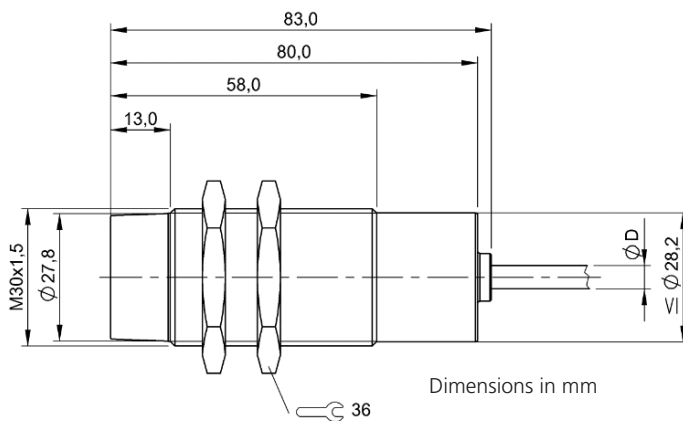
VIB 5.991-DIS: Inductive displacement sensor

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Application

The displacement sensor is used for contact-free measuring the relative displacement and relative expansion.

6

Note

The sensor is supplied with a connection cable (6 m).

Function

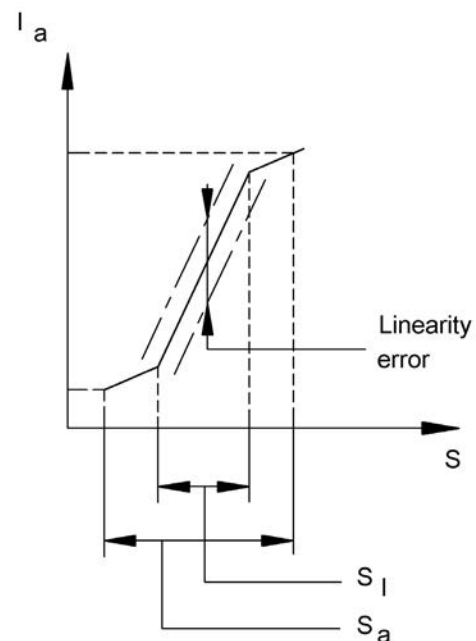
The evaluation electronics are integrated in the sensor and provide an interference insensitive output signal that can also be transmitted over long distances.

A

Technical data

PARAMETER	VIB 5.991-DIS	
Measurement	Measuring principle	inductive
	Measurement variable	relative displacement / expansion
	Working range S_a	3 ... 15 mm
	Output current at $S_a = 0\text{mm}$ / max.	1.5 / 10 mA
	Linearity range S_i	4.5 ... 12 mm
	Output current at $S_i = \text{min}$ / max.	2.2 / 9.1 mA
	Switching function	Current falling on approach
	Switching output	PNP / Analog
	Repeat accuracy	± 0.02 mm
	Temperature range	$-10\text{ }^\circ\text{C}$... $+60\text{ }^\circ\text{C}$
Electrical	Operating voltage	10 - 30 V DC
	Rated operating voltage U_e	24 V DC
	Power / Adjustment indicator	no / no
	Short circuit / Polarity reversal prot.	yes / yes
	No-load current max. I_o at U_e	10 mA
Mechanical	Housing material	Messing, vernickelt
	Sensing surface material	PA 12
	Environmental protection	IP 67
	Cable diameter D max.	4.6 mm
	Einbaubedingung	non-flush
	Tightening torque	70 Nm
Size	M30	

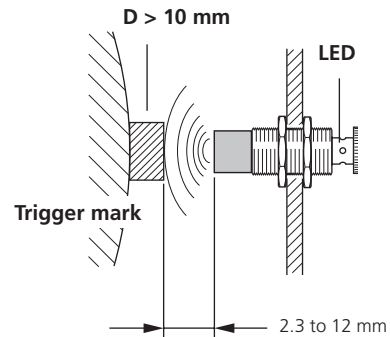
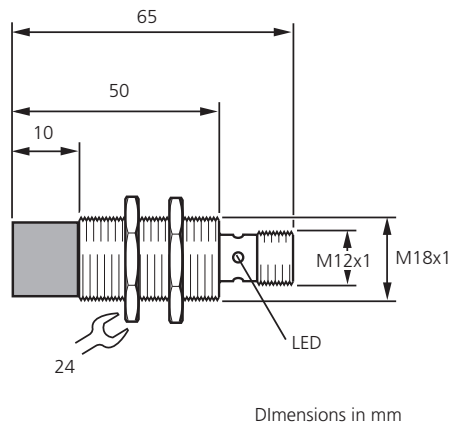
Characteristic



Connection diagram



VIB 5.992-NX: Inductive RPM sensor for wind power plants incl. cable



Application

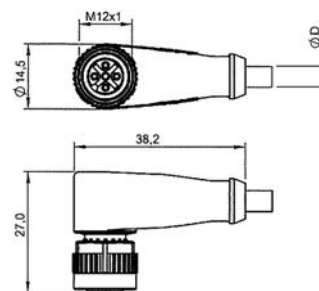
The inductive RPM sensor is used in online condition monitoring systems for wind power plants (e.g. VIBROWEB

XP) as a trigger sensor and for the measurement of machine RPM.

Technical data

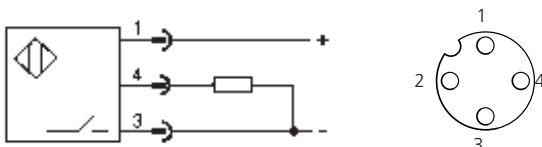
PARAMETER		VIB 5.992-NX
Measurement	Measuring principle	Inductive
	Rated operating distance S_n	12 mm
	Assured operating distance S_a	0 ... 9.7 mm
	Repeat accuracy	5%
	Switching frequency	2500 Hz
	Switching function	Closer (NO)
	Operation display	yes
	Short-circuit protection	yes
	Reverse-connect protection	yes
	Magnetic field immune	immune to magnetic DC and AC fields
	Temperature range	-25 °C ... +70 °C
	Electrical	Operating voltage
Rated operating voltage U_e		24 V DC
Effective operating current I_e		200 mA
Voltage drop		< 2.5 V
Off-state current		< 0.08 mA
Mechanical	Housing material	CuZn, PTFE plated
	Sensing surface material	LCP + PTFE
	Environmental protection	IP 67
	Dimensions	M18 x 1 x 65 mm (DxH)
	Tightening torque	12 Nm
Mounting	non flush	

PARAMETER		Connection cable
Cable design	Number of pins	3
	Cable length	15 m
	Cable diameter D	4.3 mm ± 0.20 mm
	Head 1 - Head 2 size	M12x1
	Coupling nut material	Zinc die cast (GD-Zn)
	Cable jacket material	PUR
General	Temperature range	-25 °C ... +80 °C
	Environmental protection	IP 68
	Additional features	Drag chain compatible



Wiring and Pinout (cable)

Connection diagram and plug pin allocation (sensor)



C

VIB 5.992-STD: Default RPM sensor for Online CMS, incl. cable

1

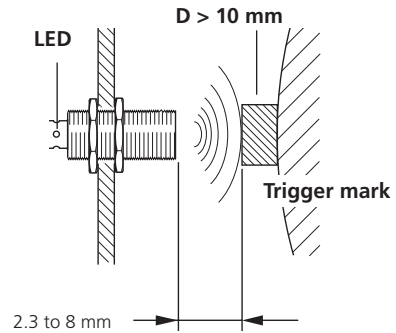
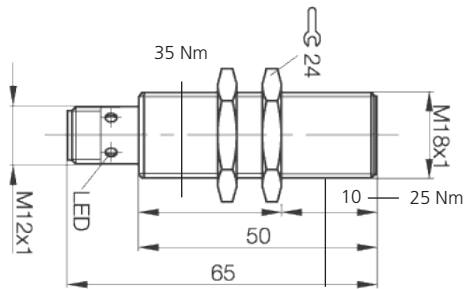
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Dimensions in mm

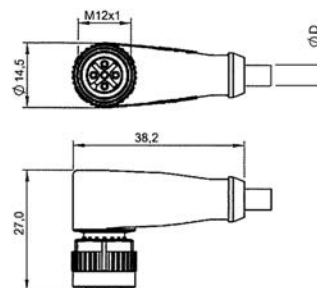
Application

The inductive RPM sensor is used in VIBGUARD, VIBNODE and VIBROWEB online condition monitoring systems as a trigger sensor and for the measurement of machine RPM.

Technical data

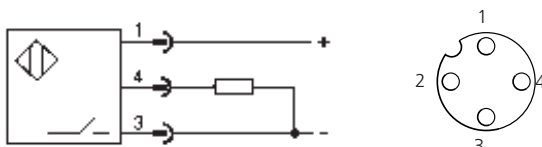
	PARAMETER	VIB 5.992-STD
Measurement	Measuring principle	Inductive
	Eff. switching distance S_f	8 mm
	Assured operating distance S_a	0 ... 6.4 mm
	Repeat accuracy (% of S_f)	5%
	Switching frequency	1000 Hz
	Switching function	Closer (NO)
	Operation display	yes
	Short-circuit protection	yes
	Reverse-connect protection	yes
	Temperature range	-25 °C ... +70 °C
Electrical	Operating voltage	10 ... 30 V DC
	Rated operating voltage U_e	24 V DC
	Effective operating current I_e	200 mA
	Voltage drop	< 2.5 V
	Off-state current	< 0.01 mA
Mechanical	Housing material	CuZn, Nickel-free coating
	Sensing surface material	PBT
	Environmental protection	IP 67
	Dimensions	M18 x 1 x 65 mm (DxH)
	Tightening torque	25 / 35 Nm
	Mounting	flush

	PARAMETER	Connection cable
Cable design	Number of pins	3
	Cable length	15 m
	Cable diameter D	4.3 mm ± 0.20 mm
	Head 1 - Head 2 size	M12x1
	Coupling nut material	Zinc die cast (GD-Zn)
	Cable jacket material	PUR
General	Temperature range	-25 °C ... +80 °C
	Environmental protection	IP 68
	Additional features	Drag chain compatible

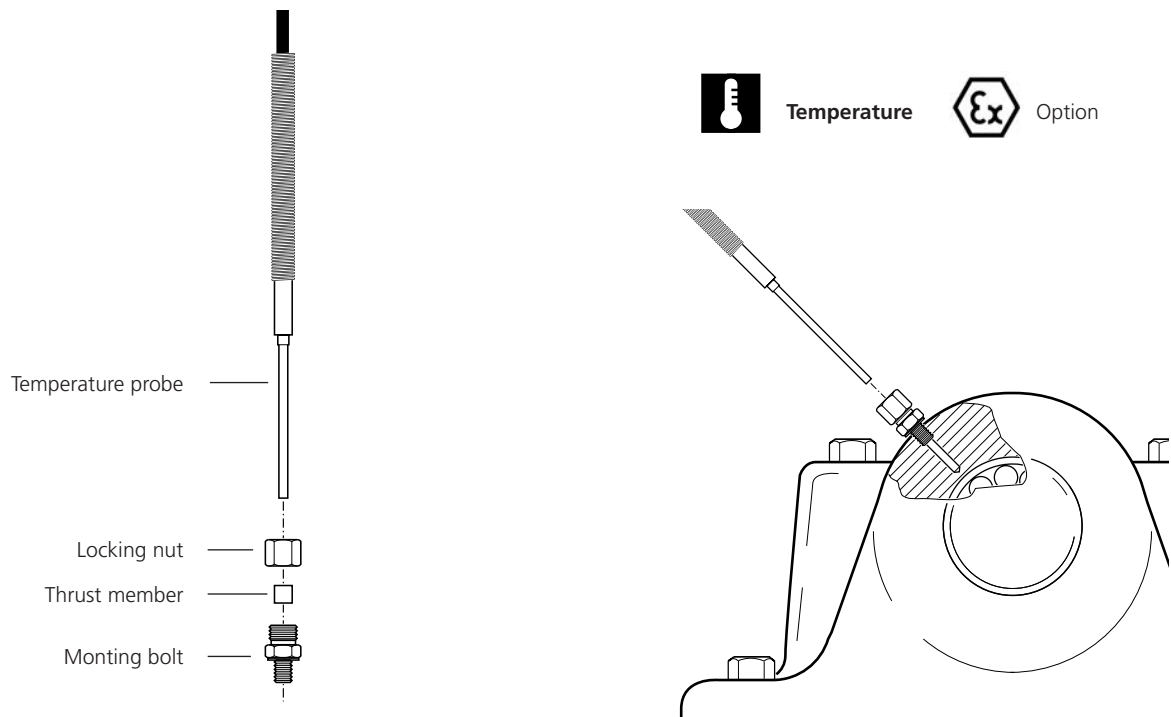


Wiring and Pinout (cable)

Connection diagram and plug pin allocation (sensor)



VIB 6.610: Temperature probe PT100 for permanent mounting



Application

The temperature sensor PT 100 is used for temperature monitoring with an online condition monitoring system.

The sensor is mounted through the machine housing with a pressure-proof threaded fitting.

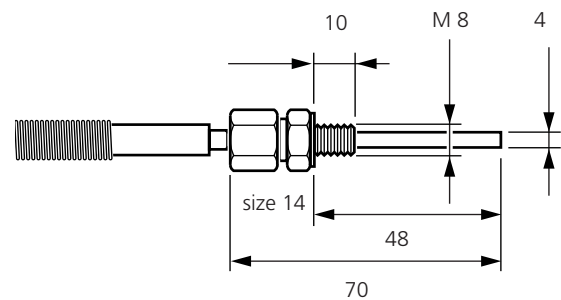
Notes on the intrinsically safe version

The PT100 temperature sensor type RL-70-40 EX of the Rössel Messtechnik GmbH company is cast in plastic and tested with 500V against earth in compliance with the manufacturer declaration. Its self heating of 32 mW at 18 mA is negligible.

Technical data

PARAMETER		VIB 6.610
Meas.	Sensor type	Pt 100 resistance thermometer
	Measurement range	0 ... +200 °C
	Limit deviation	DIN IEC 751 Kl. B
Mechanical	Material of the protective sheath	Rust- and acid-resistant steel
	Environmental protection, connector	IP 54
	Connection	Coaxial cable, 5 m long
	Dimensions	see figure

Dimensions in mm



C

Inductive RPM sensor for VIBRONET Signalmaster ($f < 300$ Hz)

1

VIB 6.620 SET : Inductive RPM sensor for VIBRONET Signalmaster incl. connector; ($f < 300$ Hz)

VIB 6.620 : Inductive RPM sensor for VIBRONET Signalmaster w/o connector; ($f < 300$ Hz)

VIB 6.621 : Connector for sensor VIB 6.620

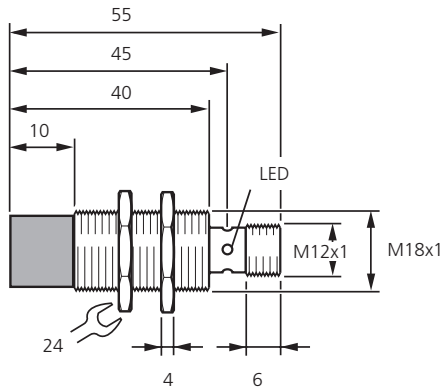
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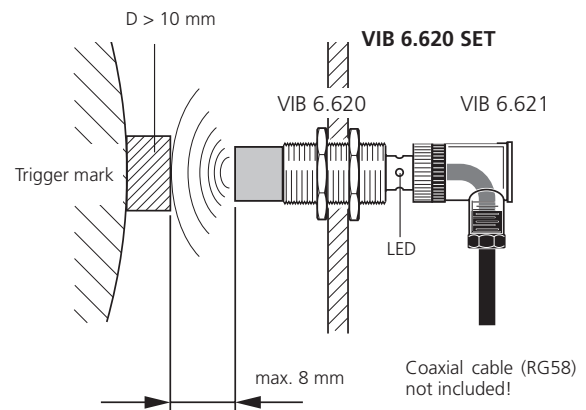
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Option



Application

The sensor is used for inductive RPM measurements with the VIBRONET Signalmaster online condition monitoring system.

A

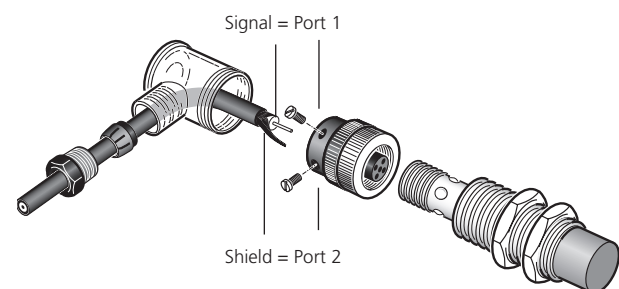
Connection

The sensor is connected to the VIBRONET field multiplexer with the RPM connector module VIB 8.313.

Technical data

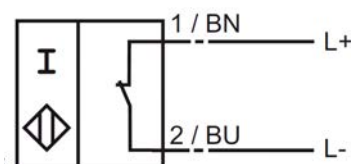
PARAMETER		VIB 6.620
Measurement	Measuring principle	Inductive
	Rated operating distance S_n	8 mm
	Assured operating distance S_a	0 ... 6.48 mm
	Sensor type	NAMUR / opener
	Reduction factor $r(V2A) / r(Al) / r(Cu)$	0.72 / 0.42 / 0.4
	Switching frequency	0 ... 300 Hz
	Hysteresis H	1 ... 15 typ. 15%
	Operation display	LED, yellow
	Temperature range	-25 °C ... +100 °C
Electrical	Supply voltage	8 V DC (from RPM module)
	Current drain, meas. plate detected	≤ 1 mA
	-, meas. plate not detected	≥ 3 mA
	Short-circuit protection	yes
Mechanical	Reverse-connect protection	yes
	Installation	Non-flush
	Connection	V1 instrument connector
	Case material	Stainless steel
	Face material	PBT
	Environmental protection	IP 67
	Dimensions	see figure
EX	Operation in hazardous area	see operating instructions
	Marking	Ⓜ II 2 G EEx ia IIC T6

Cable connection, sensor side



Connection diagram

N / NO

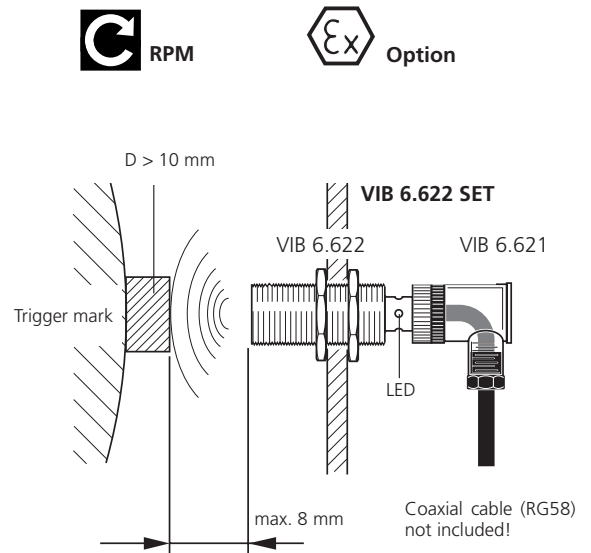
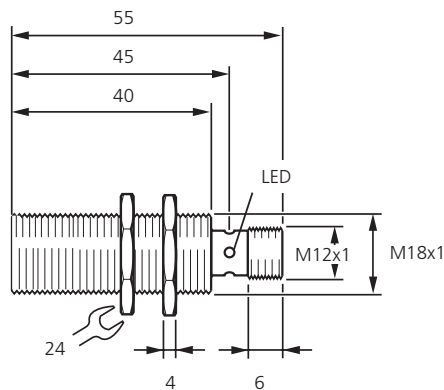


Inductive RPM sensor for VIBRONET Signalmaster ($f < 1500$ Hz)

VIB 6.622 SET : Inductive RPM sensor for VIBRONET Signalmaster incl. connector; ($f < 1500$ Hz)

VIB 6.622 : Inductive RPM sensor for VIBRONET Signalmaster w/o connector; ($f < 1500$ Hz)

VIB 6.621 : Connector for sensor VIB 6.622



Application

The sensor is used for inductive RPM measurements with the VIBRONET Signalmaster online condition monitoring system.

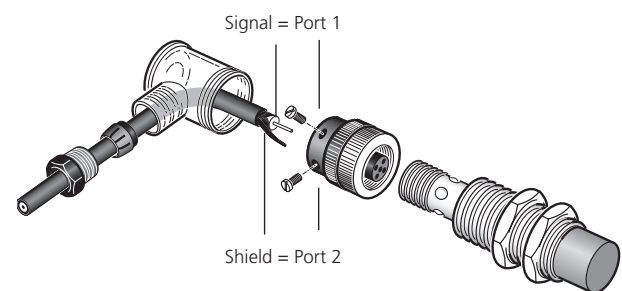
Technical data

PARAMETER		VIB 6.622
Measurement	Measuring principle	Inductive
	Rated operating distance S_n	8 mm
	Assured operating distance S_a	0 ... 6.48 mm
	Sensor type	NAMUR / opener
	Reduction factor $r(V2A) / r(Al) / r(Cu)$	0.71 / 0.39 / 0.36
	Switching frequency	0 ... 1500 Hz
	Hysteresis H	1 ... 15 typ. 15%
	Operation display	LED, yellow
	Temperature range	-25 °C ... +100 °C
Electrical	Supply voltage	8.2 V DC (from RPM module)
	Current drain, meas. plate detected	≤ 1 mA
	-, meas. plate not detected	≥ 2.2 mA
	Short-circuit protection	yes
Mechanical	Reverse-connect protection	yes
	Installation	flush
	Connection	M12 connector, 4 wire
	Case material	Stainless steel
	Face material	PBT
	Environmental protection	IP 67
	Dimensions	see figure
EX	Operation in hazardous area	see operating instructions
	Marking	Ⓜ II 1 G Ex ia IIC T6 Ga

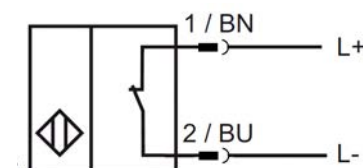
Connection

The sensor is connected to the VIBRONET field multiplexer with the RPM connector module VIB 8.313.

Cable connection, sensor side



Connection diagram

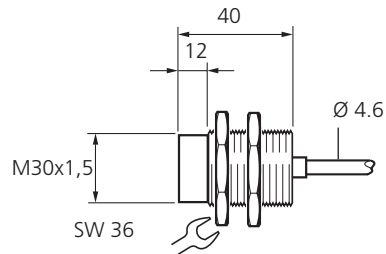




VIB 6.641: Proximity sensor for Online CMS incl. cable (3-15 mm)



Displacement



Dimensions in mm



Application

The proximity sensor is used for contact-free measuring the gap of metallic objects within the specified range (3 - 15 mm).



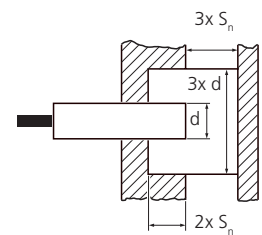
Function

The sensor is suitable for measurements without the highest precision requirements. The linearization of the char-

acteristic curve is automatically done in the online condition monitoring system.

Mounting

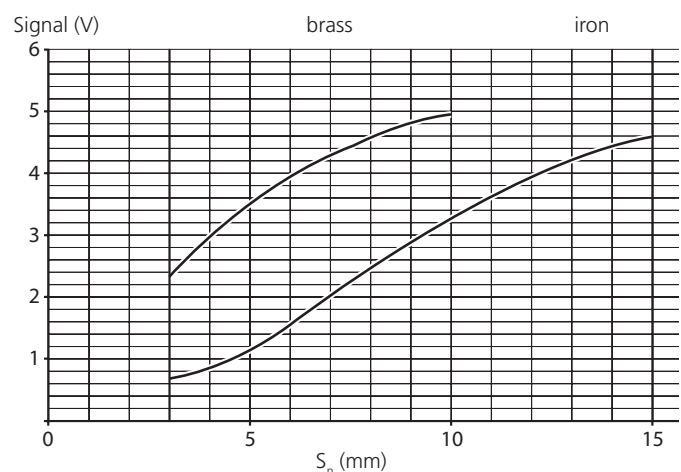
The through tapped hole enables the simple mounting and positioning of the sensor. The following notes according to EN 60947-5-2 for non-flush mounting in metal must be observed:



Technical data

PARAMETER		VIB 6.641
Measurement	Measuring principle	Inductive
	Measurement variable	relative displacement / expansion
	Working range S_n	3 ... 15 mm
	Linearity	$\leq 5\%$
	Repeatability	$\leq 1\%$
	Average rise	0.333 V/mm $\pm 5\%$
	Max. frequency	300 Hz
	Influence U_b on U_a dU_a/dU_b	approx. 6.7% / 0.1V
	Temperature range	-25 °C ... +70 °C
Temperature drift	$\pm 5\%$	
Electrical	Operating voltage U_b	5 VDC, stabilized
	Operating current	$\leq 15\text{mA}$
	Output signal U_a	0.5 .. 4.5 VDC (see characteristic)
	Load resistance	$\geq 20\text{ k}\Omega$
Mechanical	Case material	Nickel-plated brass
	Material of active surface	PCP
	Environmental protection	IP 67
	Installation	Non-flush
	Connection	PVC cable, 6 meters long, open end, LIYY 3x0.34mm ²

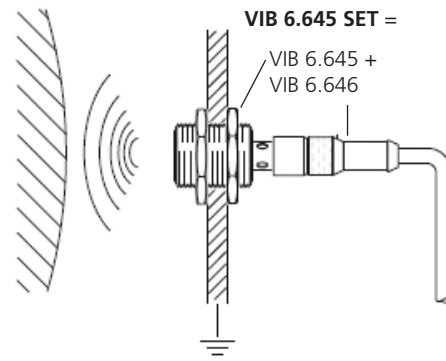
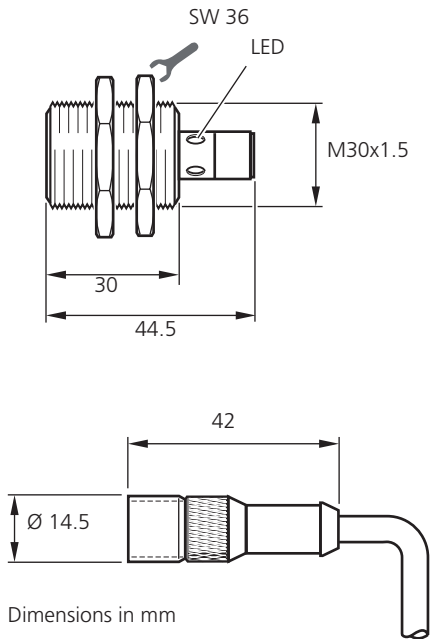
Characteristic



Connection diagram



VIB 6.645 SET: Displacement sensor for Online CMS incl. cable (2-10 mm)



Application

This displacement sensor can determine the position of metallic objects within the specified range (2 - 10 mm).

Function

The displacement sensor is an inductive sensor that delivers a linear voltage output signal over the entire working range that is proportional to the distance from the measured object.

Mounting

The through tapped hole enables the simple mounting and positioning of the sensor. The minimum distance to the non-measured metal surface is $3 \times s_e$.

Accessories

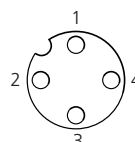
VIB 6.646 Connection cable w/ plug

Technical data

PARAMETER		VIB 6.645 SET
Measurement	Measuring principle	Inductive
	Measurement variable	relative displacement / expansion
	Linearity range S_l	2 ... 10 mm
	Rated operating distance S_e	6 mm
	Max. non-linearity at S_e	$\pm 3\%$ from U_a max.
	Repeat accuracy	$\pm 10 \mu\text{m}$
	Max. frequency	500 Hz
	Adjusting indication	yes, LED
	Temperature range	-10 °C ... +70 °C
	Temperature drift	< 5% from U_a max.

PARAMETER		VIB 6.645 SET
Electrical	Operating voltage U_b	24 VDC
	No-load supply current	< 10 mA
	Output signal U_a	0 ... 10 VDC
	Output resistance	> 2 kOhm
Mechanical	Case material	Nickel-plated brass
	Material of active surface	PBT
	Environmental protection	IP 67
	Mounting in steel	flush
	Connection	PUR cable (10 m) + plug
Dimensions	see figure above	

Connection diagram and plug pin allocation (sensor)



C

VIB 5.993-MIC: Measuring microphone , CL 1 (DIN EN 60 651)

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BNC



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Application

This microphone is used for noise emission measurement and analysis of disturbing noise. The microphone is designed with PRUFTECHNIK measurement devices for operational measurements.

6

Design

The microphone consists of a constant current powered measuring microphone preamplifier and an electret condenser microphone capsule.

A

Calibration

The measuring microphone can be calibrated with a sound pressure calibrator. Recommendations for appropriate calibrators are available on request.

Accessories

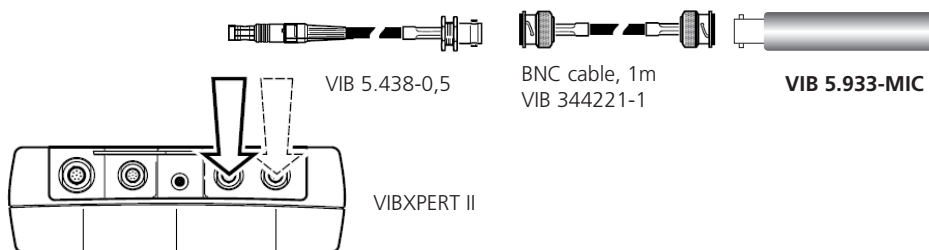
- VIB 6.632 Stand for laser trigger
- VIB 5.438-0,5 Connection cable for ICP-type accelerometer, 0.5 m
- VIB 344221-1 BNC cable, 1 m

Connection

The measuring microphone is connected to standard current powered measuring channels (IEPE standard / ICP).

For PRUFTECHNIK systems the following connection configurations are provided:

- VIBXPERT II: The measuring microphone is connected to the analog input channel using the ICP cable (VIB 5.438-0,5) and an appropriate BNC cable (i.e. VIB 344221-1), see below.
- VIBNODE, VIBROWEB XP, VIBGUARD: The measuring microphone is connected to an ICP-type terminal using an appropriate BNC cable.
- VIBRONET Signalmaster: The measuring microphone is connected to the connection module for ICP-type sensors (VIB 5.812-ICP).

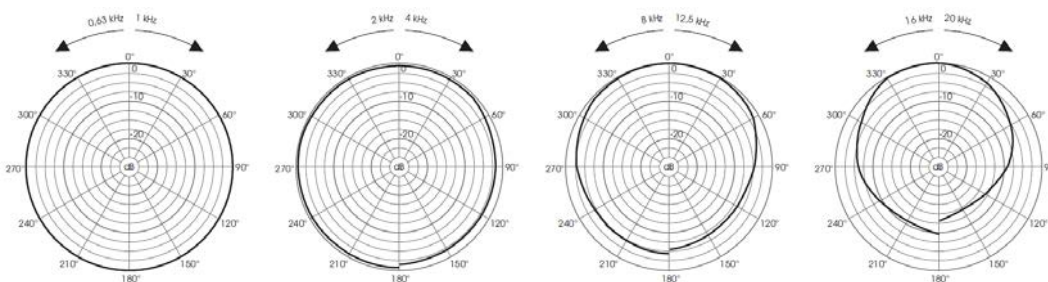
Connection example

Technical data

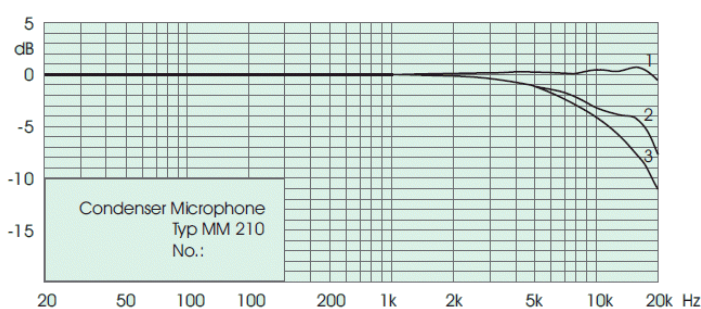
PARAMETER		VIB 5.993-MIC
Messung	Transducer type	Capacitive pressure transducer
	Sensitivity *	50 mV/Pa
	Correction free-field for 1 kHz	0 dB
	Random incidence at 1 kHz	0 dB
	Principal axis	Microphone axis
	Frequency range free-field response *	3,5 Hz ... 20 kHz, CL 1 DIN EN 60 651
	Polarization voltage	0 V
	Capacitance at 1 kHz *	19 pF
	Max. SPL for THD \leq 3% at 1 kHz	135 dB
	Output voltage, K=3%	$\geq 6.5 V_{\text{eff}}$
	Output impedance	$< 100 \text{ Ohm}$
	Nom. load impedance	100 kOhm
	Current consumption	2 ... 10 mA
	Transducer excitation	$U_L 24 \dots 30 \text{ VDC}$
	Time for power up	1 minute
	Equivalent loudness level	15 dB A
	Influence of magnetic field 80A/m, 50 Hz	$< 22 \text{ dB}$
	Influence of vibration, 1m/s ² , 20 Hz .. 1 kHz	60 dB
	Allgemein	Operating temperature range, $\pm 0.5 \text{ dB}$
Main ambient temperature coefficient		$\leq 0.01 \text{ dB/K}$
Main ambient pressure coefficient		$-1 \times 10^{-5} \text{ dB/Pa}$
Influence of relative humidity, 30% to 90%		$< 0.1 \text{ dB}$
Temperature limits		$-50^\circ\text{C} \dots +100^\circ\text{C}$
Humidity limits		r.H $< 100\%$; absence of condensation
Diameter		12.7 mm
Length		97 mm
Weight		45 g
Plug		BNC

* individually calibrated, see calibration certificate

Polar patterns



Frequency response (calibration certificate)



Calibration Chart

Sensitivity S: $-27.2 \text{ dB re } 1 \text{ V/Pa}$
equivalent to: 43.6 mV/Pa
Cartridge Capacitance: 15.0 pF

Calibration Conditions

Polarization Voltage: 0 V
Ambient Static Pressure: 96.1 kPa
Ambient Temperature: 23°C
Relative Humidity: 67%

- 1 Zero Degree Incidence
- 2 Random Incidence
- 3 Actuator Pressure Response

Date: Signature:

C

VIB 6.411 SET: WEARSCANNER set with switching output

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VIB 6.411



VIB 9.840



VIB 6.421



VIB 6.425

6

Application

WEARSCANNER is used to detect, count and evaluate electrically conductive particles in lubricating oil circuits.

Scope of delivery

- VIB 6.411 WEARSCANNER particle counter w/ switching output
- VIB 6.421 M12 connector (for power supply and data line, 8 pins)
- VIB 6.425 M12 connector (for switching output, 5 pins)
- VIB 9.840.G Installation and operating instructions

Accessories

- VIB 6.420-L Connection cable for power supply and data transmission, assembled with M12 connector (VIB 6.421), L meters long (max. 20 m).
- VIB 6.426-L Connection cable for switching output, assembled with M12 connector (VIB 6.425), L meters long (max. 20 m).
- VIB 6.430 WEARSCANNER utility. Free software tool for commissioning and maintenance of the WEARSCANNER sensor can be downloaded from the PRÜFTECHNIK homepage.

Description

The WEARSCANNER is a sensor that detects electrically conductive particles in the medium that passes through it. The WEARSCANNER has the following features:

- Size-based counting and classification of particles
- Size classes are adjustable as specified in ISO 16232
- Continuous operation with integrated signal processing
- Suitable for lubricating oils
- Records oil temperature
- Temperature range: -20°C to +80 °C (+60°C, no flow)
- Large permissible flow rate range
- Many measurement functions customizable to machine and application, such as:
 - Threshold
 - Measurement time window
 - Electronic filter
 - Averaging
 - Gain etc.
- Internal ring memory for measurement data recording
- Persistent log file for the documentation of setting changes
- Modbus TCP communication
- Additional switching output as an option
- Network capability through its own IP address
- Switching output for signaling particle quantity exceeding
- Alive switching output for signaling system faults
- Self-monitoring
- Overload protection
- Maintenance-free

Technical data

PARAMETER		VIB 6.411
Measurement	Measuring method	Eddy current, differential coil principle
	Particles	Ferritic or non-ferritic
	Particle size	Three size classes are set by default; up to 8 size classes can be set
	Signal processing	Particle distribution counter with integral average determination and classification
	Mean flow velocity	0.01 m/s ... 5 m/s
	Mean flow rate	0.08 l/min. ... 39 l/min.
	Oil types	Mineral, synthetic, biodegradable
	Oil pressure	Max. 16 bar operating pressure / 30 bar burst pressure
	Temperature range	Ambient: -20°C ... +80°C; -20°C ... +60°C (no flow) Oil: -20°C ... +80°C
Electrical	Power supply, Voltage	24 VDC (21 V ... 30 V)
	- , Current consumption	approx. 400 mA at 24 V
	- , Power consumption	approx. 9.6 W
	Switching capacity, switching output	24 VDC (max. 30 V) / 0.2 A (max., perm. load)
	- , alive output	24 VDC (max. 30 V) / 0.2 A (max., perm. load)
	Overload protection	Integrated
	Connector, Power supply / LAN	Male socket M12, 8 pins
	- , switching output / alive output	Male socket M12, 5 pins
	Permitted common-mode voltage	max. 50 V (housing / ground)
Data	Interface	Ethernet, 100 Mbit/s
	Protocols	TCP/IP, Modbus-TCP
	Internal memory	64 MB, sufficient for data-storage period from about 150 days to 10 years, depending on the data logger time interval
	Display	System signal LED 1: green = ready, rot = fault Operat. signal LED 2: Orange = particles passing through, Red = overload (particles too big/many, offset voltage too high)
	Self-monitoring	Integrated
Mechanical	Housing material	Stainless steel 1.4308 (salt water resistant)
	Fitting dimensions	2 x G 1/2" (Whitworth pipe thread DIN ISO 228)
	Sensor tube diameter	approx. 13 mm
	IP rating	IP 65
	Weight	approx. 3.5 kg
	Maintenance	No moving parts, maintenance-free
	Dimensions, WEARSCANNER	approx. 170 x 86 x 102 mm ³ (L x W x H)
Dimensions, mounting base (mounted upon delivery)	approx. 137 x 110 x 3 mm ³ (L x W x H)	

Particle size classes

(ISO 16232)

└── Size classes covered by the WEARSCANNER ───┘

Klasse	B	C	D	E*	F*	G*	H	I	J	K
Größe	5 – 15 µm	15 – 25 µm	25 – 50 µm	50 – 100 µm	100 – 150 µm	150 – 200 µm	200 – 400 µm	400 – 600 µm	600 – 1000 µm	>1000 µm

* Classes E, F, G only with appropriate configuration

C

Online VIEW 4.0 - Visualization software for Online CMS

1

VIB 8.170: Online VIEW 4.0 for up to 100 data points

VIB 8.171: Online VIEW 4.0 for up to 250 data points

VIB 8.172: Online VIEW 4.0 for up to 500 data points

VIB 8.173: Online VIEW 4.0 for up to 1000 data points

2

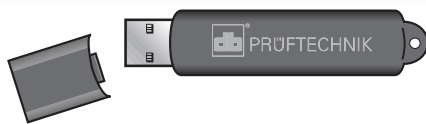
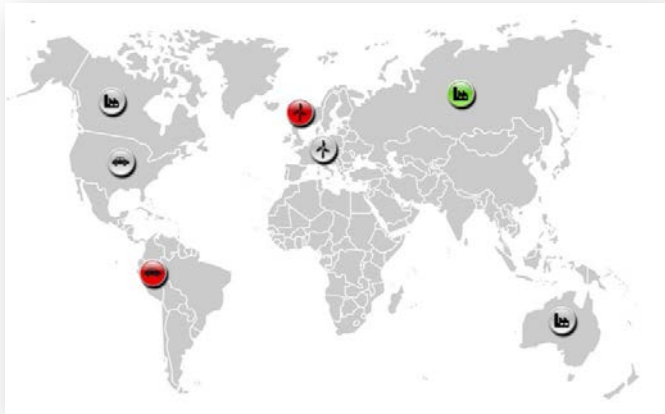
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A



VIB 8.140-USB



Application

This web-based software is used for online visualization of machine condition data that is collected with PRUFTECHNIK online CMS* and provided via Modbus TCP. The data is displayed in real time on a PC or mobile devices.

Online VIEW 4.0 runs in a current browser, where the monitored assets, machines and the relevant status information are presented clearly and attractively.

Scope of supply:

VIB 8.140-USB Online VIEW 4.0 USB pendrive

Note

The individual software packages are available based on the required data points. A data point corresponds to a Modbus address, i.e. a characteristic overall value, or an alarm, or a warning is one data point.

* CMS: Condition Monitoring System

Overview

- Client-Server application
- No additional client software required, web browser with Silverlight plug-in is sufficient.
- Visualization on mobile devices as an option
- Configuration and commissioning done by PRUFTECHNIK
- User interface in more than 150 languages
- Visualization of three levels (asset, machine train, machine) plus status overview
- Status overview with traffic light function
- Several display options for data visualization (bar chart, digital meters, analog instrument)
- Historical data and live data, each as a trend
- Compatible online CMS:
 - WEARSCANNER
 - VIBGUARD
 - VIBNODE
 - VIBROWEB
 - VIBROWEB XP
 - VIBCONNECT RF

Chapter 2

Sensors for mobile data collection



C

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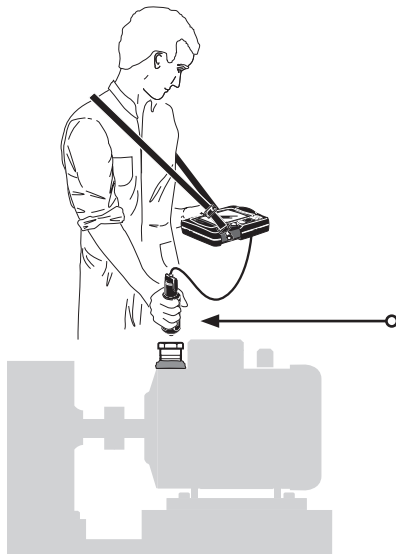
4

5

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A

Contents : Sensors for mobile data collection



Order no.	Description	Page
VIB 6.142 R	Mobile industrial accelerometer for standard machinery	68
VIB 6.142 DEX	Mobile industrial accelerometer for standard machinery, intrinsically safe	70
VIB 6.147	Mobile industrial accelerometer for low-speed machinery	69
VIB 6.147 DEX	Mobile industrial accelerometer for low-speed machinery, intrinsically safe	72
VIB 6.162 VD VIB 6.162 VT	Dual sensor for vibration and temperature measurement with VIBSCANNER/ VIBXPART (VD) VIBTOOL (VT)	74
VIB 6.631	Laser trigger / Laser RPM sensor	84
VIB 6.631 EX	Laser trigger / Laser RPM sensor, intrinsically safe	86
VIB 6.640	Inductive proximity sensor for VIBXPART / VIBSCANNER	88
VIB 6.655	Triaxial accelerometer for VIBXPART	81
VIB 6.672	LED stroboscope	89
VIB 6.673	Current clamp	90
VIB 8.605	Built-in temperature probe for VIBROTIP / VIBSCANNER (spare part)	82
VIB 8.606 VD VIB 8.606 VS	TIPTECTOR handheld probe, -, set for VIBROTIP -, set for VIBSCANNER / VIBXPART	76
VIB 8.606 XVD VIB 8.606 XVS	TIPTECTOR handheld probe, intr. safe -, set for VIBROTIP EX -, set for VIBSCANNER EX	78
VIB 8.607-1,5 VIB 8.608	Temp. probe with magnetic holder Handheld temperature probe	82
VIB 8.609 VIB 8.633	TIPTECTOR grip extension, 100 mm TIPTECTOR grip	76
VIB 8.660 VS VIB 8.660 VD VIB 8.660 VIB 8.691	VIBCODE transducer incl. cable -, for VIBSCANNER and VIBXPART -, for VIBROTIP -, as replacement part w/o cable Dust cap for VIBCODE transducer	64
VIB 8.660 XVS VIB 8.660 XVD VIB 8.660 HEX	VIBCODE transducer incl. cable, int. safe -, for VIBSCANNER EX and VIBXPART EX -, for VIBROTIP EX and VIBTOOL -, as replacement part w/o cable	66
VIB 8.666 VD VIB 8.666 VS VIB 8.666 R	Mobile accelerometer with quick fitting coupling incl. cable -, for VIBROTIP -, for VIBSCANNER / VIBXPART -, as replacement part w/o cable	80

C

VIBCODE transducer with automatic location identification

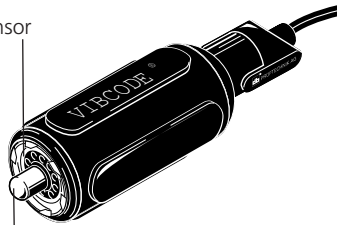
1

VIB 8.660 VS : VIBCODE transducer for VIBSCANNER and VIBXPERT

VIB 8.660 VD : VIBCODE transducer for VIBROTIP

2

Code ring sensor



Vibration sensor



Vibration acceleration



Bearing condition



Pump cavitation

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Description

VIBCODE is the world's first vibration measurement system that uses coded measurement studs for certain identification of measurement locations on the machine. The system consists of the VIBCODE transducer and the VIBCODE measurement stud.

The VIBCODE transducer contains a code ring sensor and a vibration sensor. The transducer locks onto the VIBCODE stud via bayonet mount in optimum position and with consistent pressure. Trend readings are taken with perfect repeatability regardless of operator qualification and training. The code ring sensor reads the tooth pattern of the plastic ring in the measurement stud to determine its location so that the correct types of measurement can be taken. Mix-ups, erroneous trend deviations and time-consuming repeat measurements are all eliminated once and for all.

A

Application

The signal acquisition and processing is carried out with a PRÜFTECHNIK data collector (e.g. VIBSCANNER, VIBXPERT II, VIBROTIP).

Spare parts

VIB 8.660 VIBCODE transducer w/o cable

VIB 8.691 Dust cap for VIBCODE transducer

Accessories

VIB 8.679 SET Meas. stud, M8, stainless steel

VIB 8.680 SET Meas. stud, M8, high qual. stainless steel

VIB 8.689 SET Meas. stud, UNC 5/16, hq. stainless steel

VIB 8.690 SET Meas. stud, UNC 5/16, stainless steel

VIB 8.571..73 Meas. studs w/ counter nut, M8

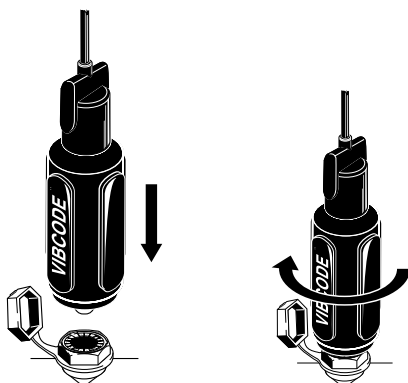
VIB 8.594..96 Meas. studs w/ counter nut, UNC 5/16

VIB 8.576..78 Meas. studs w/ extension post, M8

VIB 8.580..82 Meas. studs w/ extension post, UNC 5/16

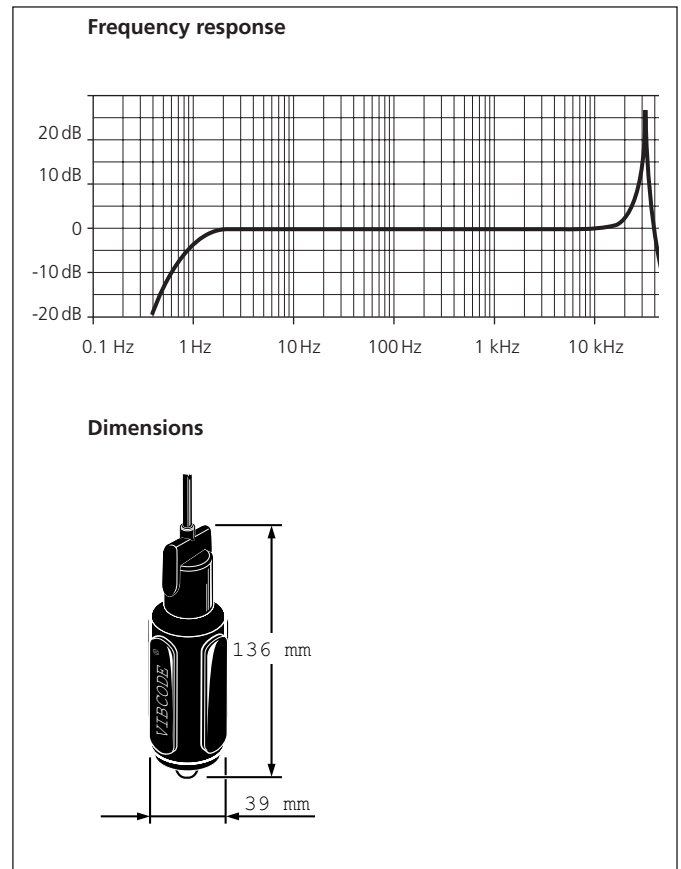
VIB 8.685 Meas. stud for adhesive mounting

Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).



Technical data

PARAMETER		VIB 8.660 VS	VIB 8.660 VD
Measurement	Signaling system	Current Line Drive; 3.5 mA closed current w/ superposed AC signal	
	Transmission factor $\pm 2\%$	$1.0 \mu\text{A}/\text{ms}^{-2}$ (Ref.: 159 Hz; 25 °C)	
	Frequency range $\pm 10\%$	2 Hz ... 10 kHz	
	$\pm 3\text{dB}$	1.5 Hz ... 20 kHz	
	Resonance frequency	36 kHz	
	Linearity range $\pm 10\%$	$\pm 50 \text{ ms}^{-2}$ ($\pm 5\text{g}$)	
	Temperature range	-10 °C ... +70 °C	
Electrical	Power requirements	> 10 mA / 7-18 VDC	
	Temperature sensitivity	< $0.3 \text{ ms}^{-2}/\text{K}$	
	Transverse sensitivity	< 10% of axial value	
	Magnetic sensitivity	< $14 \text{ ms}^{-2}/\text{T}$ (at 50 Hz)	
	Electrical noise, rms	< $1 \text{ mms}^{-2} / \text{Hz}^{1/2}$ at 10 Hz	
	Output impedance	> 500 kOhm	
Mechanical	Environmental protection	IP 65	
	Weight	390 g	
	Dimensions	136 mm x 39 mm (H x D)	
	Mounting	Adapters for VIBCODE transducer	
	Connection cable	VIB 5.436, VIB 5.437-2,9 / -5	VIB 4.704-2 / -5



C

VIBCODE transducer with automatic location identification, intrinsically safe

1

VIB 8.660 XVS : VIBCODE transducer with intrinsic safety for VIBSCANNER EX and VIBXPERT EX

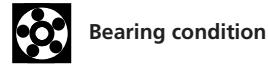
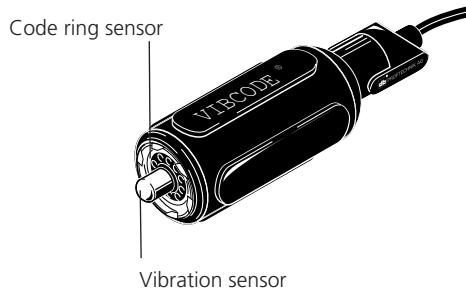
VIB 8.660 XVD : VIBCODE transducer with intrinsic safety for VIBROTIP EX and VIBTOOL

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Description

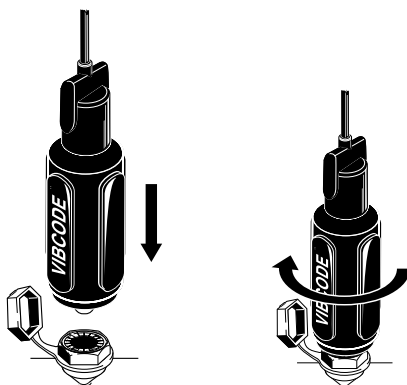
VIBCODE is the world's first vibration measurement system that uses coded measurement studs for certain identification of measurement locations on the machine. The system consists of the VIBCODE transducer and the VIBCODE measurement stud.

A

The VIBCODE transducer contains a code ring sensor and a vibration sensor. The transducer locks onto the VIBCODE stud via bayonet mount in optimum position and with consistent pressure. Trend readings are taken with perfect repeatability regardless of operator qualification and training. The code ring sensor reads the tooth pattern of the plastic ring in the measurement stud to determine its location so that the correct types of measurement can be taken. Mix-ups, erroneous trend deviations and time-consuming repeat measurements are all eliminated once and for all.

Application

The intrinsically safe VIBCODE transducer is mainly used for data collection in a hazardous industrial environment. The signal acquisition and processing is carried out with an intrinsically safe PRÜFTECHNIK data collector (e.g. VIBSCANNER EX, VIBXPERT EX, VIBROTIP EX, VIBTOOL).



Notes on intrinsic safety

The VIBCODE transducer of the series VIB 8.660 HEX may only be connected to designated devices with the following interface parameters:

$$\begin{aligned}
 U_{\max} &= 30 \text{ V} \\
 I_{\max} &= 63 \text{ mA} \\
 P_{\max} &= 300 \text{ mW} \\
 C_i &= 347 \text{ nF} \\
 L_i &= \text{negligible small}
 \end{aligned}$$

The details in the EC type examination certificate TÜV 02 ATEX 1890 and the 1st supplement dated from 31.10.2008 must be considered.

Additionally the installation notes for hazardous areas annexed in this catalog must be observed.

Spare parts

VIB 8.660 HEX VIBCODE EX for VIBXPERT EX and VIBSCANNER EX w/o cable

VIB 8.691 Dust cap VIBCODE transducer

Accessories

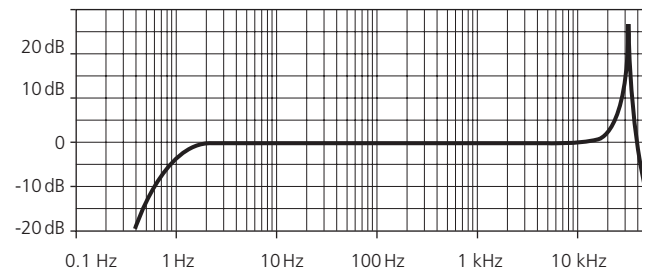
VIB 8.679 SET Meas. stud, M8, stainless steel
 VIB 8.680 SET Meas. stud, M8, high qual. stainless steel
 VIB 8.689 SET Meas. stud, UNC 5/16, hq. stainless steel
 VIB 8.690 SET Meas. stud, UNC 5/16, stainless steel
 VIB 8.571..73 Meas. studs w/ counter nut, M8
 VIB 8.594..96 Meas. studs w/ counter nut, UNC 5/16
 VIB 8.576..78 Meas. studs w/ extension post, M8
 VIB 8.580..82 Meas. studs w/ extension post, UNC 5/16
 VIB 8.685 Meas. stud for adhesive mounting

Installation material for adhesive mount:
 2-component adhesive (e.g. WEICON HB 300).

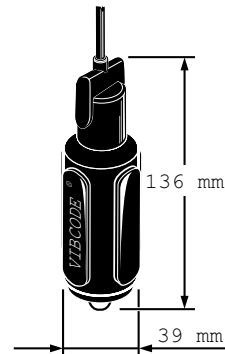
Technical data

PARAMETER		VIB 8.660 XVS	VIB 8.660 XVD
Measurement	Signaling system	Current Line Drive; 3.5 mA closed current w/ superposed AC signal	
	Transmission factor $\pm 2\%$	1.0 $\mu\text{A}/\text{ms}^{-2}$ (Ref.: 159 Hz; 25 °C)	
	Frequency range $\pm 10\%$	2 Hz ... 10 kHz	
	$\pm 3\text{dB}$	1.5 Hz ... 20 kHz	
	Resonance frequency	36 kHz	
	Linearity range $\pm 10\%$	$\pm 50 \text{ ms}^{-2}$ ($\pm 5\text{g}$)	
	Temperature range	-10 °C ... +70 °C	
Electrical	Power requirements	> 10 mA / 7-18 VDC	
	Temperature sensitivity	< 0.3 ms^{-2}/K	
	Transverse sensitivity	< 10% of axial value	
	Magnetic sensitivity	< 14 ms^{-2}/T (at 50 Hz)	
	Electrical noise, rms	< 1 $\text{mms}^{-2} / \text{Hz}^{1/2}$ at 10 Hz	
	Output impedance	> 500 kOhm	
Mechanical	Environmental protection	IP 65	
	Weight	390 g	
	Dimensions	136 mm x 39 mm (H x D)	
	Mounting	Adapters for VIBCODE transducer	
	Connection cable	VIB 5.436, VIB 5.437-2,9 / -5	VIB 4.704-2 / -5
EX	Marking, explosion protect.	II 2 G Ex ib IIC T4	

Frequency response



Dimensions



C

VIB 6.142 R: Mobile industrial accelerometer for standard machinery ($n > 600 \text{ min}^{-1}$)

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6

A



M5 thread



Vibration acceleration



Bearing condition



Pump cavitation

Application

This accelerometer is suitable for vibration measurements up to 20 kHz on machinery with rotational speeds above 600 min^{-1} , for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

The accelerometer is mainly used for data collection in an industrial environment. The signal acquisition and processing is carried out with a PRÜFTECHNIK data collector (e.g. VIBSCANNER, VIBXPERT II, VIBROTIP).

Installation accessories

- VIB 3.420 Magnetic holder for curved surfaces
- VIB 3.422 Magnetic holder for flat surfaces
- VIB 3.430 Adapter for adhesive mounting
- VIB 3.435 Screwed adapter, M5-flat to M5-120°
- VIB 3.436 Screwed adapter, M5-flat to M6-90°
- VIB 3.440 Screwed adapter, M5-flat to M8-90°
- VIB 3.441 Screwed adapter, M5-flat to UNC5/16-90°
- VIB 3.450 Probe tip for accelerometer type VIB 6.14x

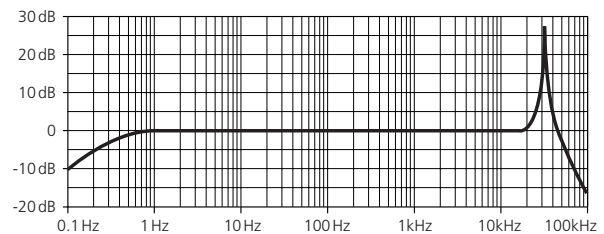
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Technical data

PARAMETER		VIB 6.142 R
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal
	Transmission factor $\pm 3\%$	$1.0 \mu\text{A}/\text{ms}^{-2}$ (Ref.: 159 Hz; 25 °C)
	Frequency range $\pm 5\%$	2 Hz ... 8 kHz
	$\pm 10\%$	1 Hz ... 20 kHz
	$\pm 3\text{dB}$	0.3 Hz..20 kHz
	Resonance frequency	36 kHz
	Linearity range $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$
	Temperature range	-30 °C ... +100 °C
Electrical	Power requirement	> 10 mA / 7-18 VDC
	Transverse sensitivity	< 5% at 10 kHz
	Temperature sensitivity	< $0.05 \text{ ms}^{-2}/\text{K}$
	Magnetic sensitivity	< $5 \text{ ms}^{-2}/\text{T}$ (at 50 Hz)
	Base strain sensitivity	< $0.1 \text{ ms}^{-2}/\mu\text{m}/\text{m}$
	Electrical noise, rms	< 0.01 ms^{-2} from 2 Hz
	Output impedance	> 300 kOhm
	Insulation	> 10^9 MOhm
Mechanical	Case material	Stainless steel VA 1.4305
	Environmental protection	IP 65 (w/ cable)
	Cable connection	TNC socket
	Shock limit	< 250 kms^{-2}
	Weight	39 g
	Mounting	Adapter, probe tip

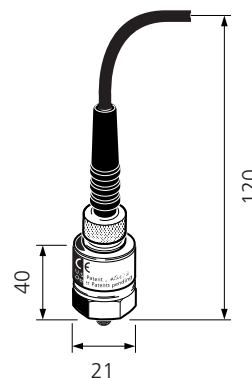
Frequency response

Threaded or adhesive mounting



Linear frequency range is limited with

- Magnetic holder: $\leq 5 \dots 20 \text{ kHz}$
- Probe tip: $\leq 1 \text{ kHz}$

Dimensions

Dimensions in mm

VIB 6.147: Mobile industrial accelerometer for low-speed machinery ($n > 120 \text{ min}^{-1}$)



M5 thread



Vibration acceleration

Application

This accelerometer is suitable for vibration measurements up to 10 kHz on low-speed machinery with rotational speeds above 120 min^{-1} . High frequency shock pulse measurements for bearing condition evaluation and pump cavitation are not possible with this series.

The accelerometer is mainly used for data collection in an industrial environment. The signal acquisition and processing is carried out with a PRÜFTECHNIK data collector (e.g. VIBSCANNER, VIBXPERT II, VIBROTIP).

Installation accessories

- VIB 3.420 Magnetic holder for curved surfaces
- VIB 3.422 Magnetic holder for flat surfaces
- VIB 3.430 Adapter for adhesive mounting
- VIB 3.435 Screwed adapter, M5-flat to M5-120°
- VIB 3.436 Screwed adapter, M5-flat to M6-90°
- VIB 3.440 Screwed adapter, M5-flat to M8-90°
- VIB 3.441 Screwed adapter, M5-flat to UNC5/16-90°
- VIB 3.450 Probe tip for accelerometer type VIB 6.14x

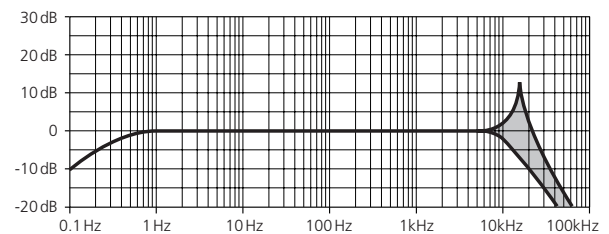
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Technical data

PARAMETER		VIB 6.147
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal
	Transmission factor $\pm 4\%$	$5.35 \mu\text{A/ms}^2$ (Ref.: 159 Hz; 25 °C)
	Frequency range $\pm 5\%$	2 Hz ... 4 kHz
	$\pm 10\%$	1 Hz ... 8 kHz
	$\pm 3\text{dB}$	0.3 Hz..12 kHz
	Resonance frequency	17 kHz; > 20 dB damped
	Linearity range $\pm 10\%$	$\pm 450 \text{ ms}^{-2}$
Temperature range	-30 °C ... +100 °C	
Electrical	Power requirement	> 10 mA / 7-18 VDC
	Transverse sensitivity	< 5% at 5 kHz
	Temperature sensitivity	< 0.01 ms^{-2}/K
	Magnetic sensitivity	< 1 ms^{-2}/T (at 50 Hz)
	Base strain sensitivity	< 0.01 $\text{ms}^{-2}/\mu\text{m/m}$
	Electrical noise, rms	< 0.002 ms^{-2} from 2 Hz
	Output impedance	> 300 kOhm
Insulation	> 10^9 MOhm	
Mechanical	Case material	Stainless steel VA 1.4305
	Environmental protection	IP 65 (w/ cable)
	Cable connection	TNC socket
	Shock limit	< 50 kms^{-2}
	Weight	38 g
Mounting	Adapter, probe tip	

Frequency response

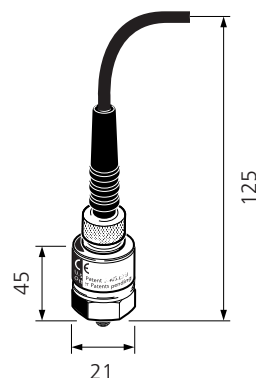
Threaded or adhesive mounting



Linear frequency range is limited with

- Magnetic holder: $\leq 5 \text{ kHz}$
- Probe tip: $\leq 1 \text{ kHz}$

Dimensions



Dimensions in mm

C

VIB 6.142 DEX: Mobile industrial accelerometer for standard machinery ($n > 600 \text{ min}^{-1}$), intrinsically safe

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4



M5 thread



Vibration acceleration



Bearing condition



Pump cavitation



CE 0044

5

6

A

Application

This accelerometer is suitable for vibration measurements up to 20 kHz on machinery with rotational speeds above 600 min^{-1} , for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

The accelerometer is mainly used for data collection in a hazardous industrial environment. The signal acquisition and processing is carried out with an intrinsically safe PRÜFTECHNIK data collector (e.g. VIBSCANNER EX, VIBXPERT EX, VIBROTIP EX, VIBTOOL).

The accelerometer is gas and dust explosion-proof. It is suitable for use with dusts having a minimum ignition temperature for 5 mm layers of not less than 210 °C .

Notes on intrinsic safety

The accelerometers of the series VIB 6.1xx DEX may only be connected to designated devices with the following interface parameters:

$$\begin{aligned} U_{\max} &= 24\text{V} \\ P_{\max} &= 300\text{mW} \\ C_i &= 15\text{nF} \\ L_i &= \text{negligible small} \end{aligned}$$

The following documents must be considered:

- EC type examination certificate TÜV 02 ATEX 1865
- 1st supplement dated from 01.03.2007
- 2nd supplement dated from 22.06.2011

Additionally the installation notes for hazardous areas annexed in this catalog must be observed.

Installation accessories

VIB 3.420	Magnetic holder for curved surfaces
VIB 3.422	Magnetic holder for flat surfaces
VIB 3.430	Adapter for adhesive mounting
VIB 3.435	Screwed adapter, M5-flat to M5-120°
VIB 3.436	Screwed adapter, M5-flat to M6-90°
VIB 3.440	Screwed adapter, M5-flat to M8-90°
VIB 3.441	Screwed adapter, M5-flat to UNC5/16-90°
VIB 3.450	Probe tip for accelerometer type VIB 6.14x

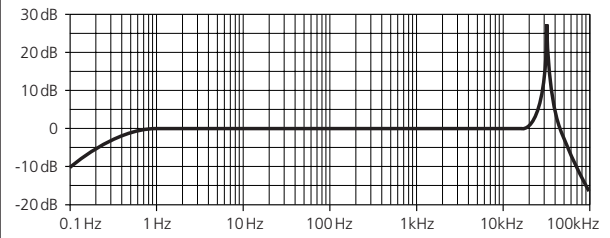
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Technical data

PARAMETER		VIB 6.142 DEX
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal
	Transmission factor ± 3%	1.0 $\mu\text{A}/\text{ms}^2$ (Ref.: 159 Hz; 25 °C)
	Frequency range ± 5%	2 Hz ... 8 kHz
	± 10%	1 Hz ... 20 kHz
	± 3dB	0.3 Hz..20 kHz
	Resonance frequency	36 kHz
	Linearity range ± 10%	± 961 ms^{-2}
	Temperature range	-30 °C ... +80 °C
Electrical	Power requirement	> 10 mA / 7-18 VDC
	Transverse sensitivity	< 5% at 10 kHz
	Temperature sensitivity	< 0.05 ms^{-2}/K
	Magnetic sensitivity	< 5 ms^{-2}/T (at 50 Hz)
	Base strain sensitivity	< 0.1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$
	Electrical noise, rms	< 0.01 ms^{-2} from 2 Hz
	Output impedance	> 300 kOhm
	Insulation	> 10 ⁹ MOhm
Mechanical	Case material	Stainless steel VA 1.4305
	Environmental protection	IP 65 (w/ cable)
	Cable connection	TNC socket
	Shock limit	< 250 kms^{-2}
	Weight	39 g
	Mounting	Adapter, probe tip
EX	Marking, gas explosion protection	Ex II 2 G Ex ib IIC T4
	Marking, dust expl. protection	Ex II 2 D Ex ib IIIB T ₅ 187°C

Frequency response

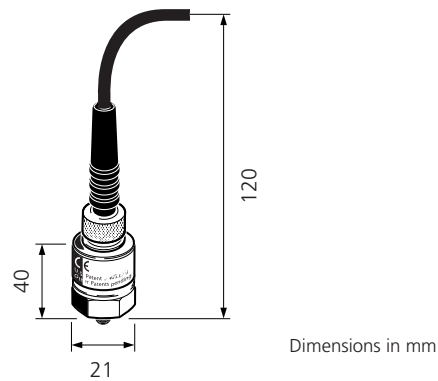
Threaded or adhesive mounting



Linear frequency range is limited with

- Magnetic holder: ≤ 5...20 kHz
- Probe tip: ≤ 1 kHz

Dimensions



C

VIB 6.147 DEX: Mobile industrial accelerometer for low-speed machinery ($n > 120 \text{ min}^{-1}$), intrinsically safe

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M5-Schraubgewinde



Vibration acceleration



CE 0044

4

Application

This accelerometer is suitable for vibration measurements up to 10 kHz on low-speed machinery with rotational speeds above 120 min^{-1} . High frequency shock pulse measurements for bearing condition evaluation and pump cavitation are not possible with this series.

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The accelerometer is mainly used for data collection in a hazardous industrial environment. The signal acquisition and processing is carried out with an intrinsically safe PRÜFTECHNIK data collector (e.g. VIBSCANNER EX, VIBXPERT EX, VIBROTIP EX, VIBTOOL).

A

The accelerometer is gas and dust explosion-proof. It is suitable for use with dusts having a minimum ignition temperature for 5 mm layers of not less than 210 °C .

Installation accessories

VIB 3.420	Magnetic holder for curved surfaces
VIB 3.422	Magnetic holder for flat surfaces
VIB 3.430	Adapter for adhesive mounting
VIB 3.435	Screwed adapter, M5-flat to M5-120°
VIB 3.436	Screwed adapter, M5-flat to M6-90°
VIB 3.440	Screwed adapter, M5-flat to M8-90°
VIB 3.441	Screwed adapter, M5-flat to UNC5/16-90°
VIB 3.450	Probe tip for accelerometer type VIB 6.14x

Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Notes on intrinsic safety

The accelerometers of the series VIB 6.1xx DEX may only be connected to designated devices with the following interface parameters:



U_{max}	= 24V
P_{max}	= 300mW
$C_{\text{i}}^{\text{max}}$	= 15nF
L_{i}	= negligible small

The following documents must be considered:

- EC type examination certificate TÜV 02 ATEX 1865
- 1st supplement dated from 01.03.2007
- 2nd supplement dated from 22.06.2011

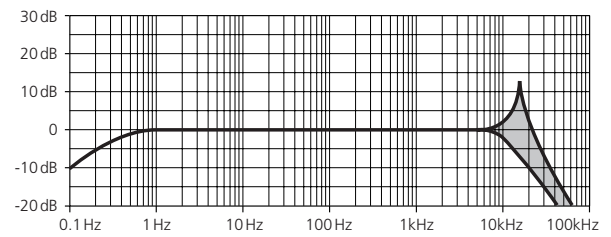
Additionally the installation notes for hazardous areas annexed in this catalog must be observed.

Technical data

PARAMETER		VIB 6.147 DEX
Measurement	Signaling system	Current LineDrive, 3.5 mA closed current with superposed AC signal
	Transmission factor $\pm 4\%$	5.35 $\mu\text{A}/\text{ms}^{-2}$ (Ref.: 159 Hz; 25 °C)
	Frequency range $\pm 5\%$	2 Hz ... 4 kHz
	$\pm 10\%$	1 Hz ... 8 kHz
	$\pm 3\text{dB}$	0.3 Hz.. 12 kHz
	Resonance frequency	17 kHz; > 20 dB damped
	Linearity range $\pm 10\%$	$\pm 450 \text{ ms}^{-2}$
Electrical	Temperature range	-30 °C ... +80 °C
	Power requirement	> 10 mA / 7-18 VDC
	Transverse sensitivity	< 5% at 10 kHz
	Temperature sensitivity	< 0.01 ms^{-2}/K
	Magnetic sensitivity	< 1 ms^{-2}/T (at 50 Hz)
	Base strain sensitivity	< 0.01 $\text{ms}^{-2}/\mu\text{m}/\text{m}$
	Electrical noise, rms	< 0.002 ms^{-2} from 2 Hz
	Output impedance	> 300 kOhm
Mechanical	Insulation	> 10 ⁹ MOhm
	Case material	Stainless steel VA 1.4305
	Environmental protection	IP 65 (w/ cable)
	Cable connection	TNC socket
	Shock limit	< 50 kms^{-2}
	Weight	388 g
EX	Mounting	Adapter, probe tip
	Marking, gas explosion protection	 II 2 G Ex ib IIC T4
	Marking, dust expl. protection	 II 2 D Ex ib IIIB T ₅ 187°C

Frequency response

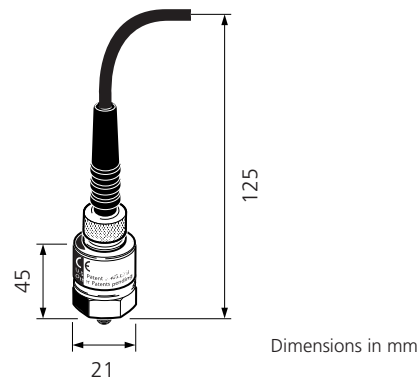
Threaded or adhesive mounting



Linear frequency range is limited with

- Magnetic holder: $\leq 5 \text{ kHz}$
- Probe tip: $\leq 1 \text{ kHz}$

Dimensions



C

Dual sensor for vibration and temperature measurement, intrinsically safe

1

VIB 6.162 VD : Dual sensor for vibration and temperature measurement with VIBSCANNER EX / VIBXPRT EX

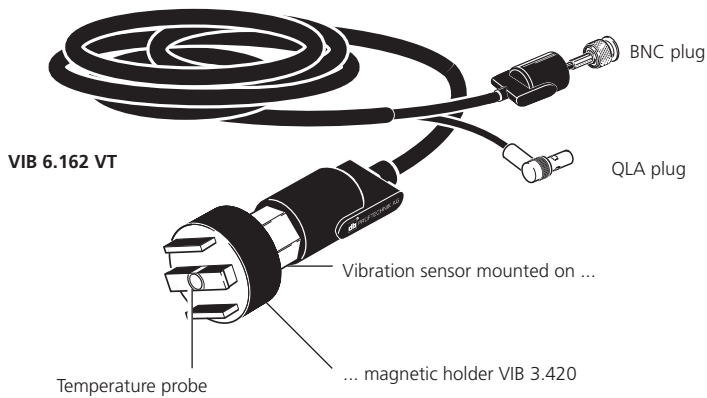
VIB 6.162 VT : Dual sensor for vibration and temperature measurement with VIBTOOL

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Vibration acceleration



Temperature



CE 0044

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Application

The dual sensor is suitable for vibration measurements up to 2 kHz and temperature measurements in the specified range. High frequency shock pulse measurements for bearing condition evaluation and pump cavitation are not possible with this sensor.

The dual sensor is mainly used for data collection in a hazardous industrial environment. The signal acquisition and processing is carried out with an intrinsically safe PRÜFTECHNIK data collector (e.g. VIBSCANNER EX, VIBXPRT EX, VIBROTIP EX, VIBTOOL).

Installation

The dual sensor has a magnetic holder to affix it securely to ferromagnetic measurement locations - including on curved surfaces.

Notes

During transport / storage a steel washer as a short-circuit rail is mounted on the pole pieces.

The safety data sheet is available upon request (info@pruftechnik.com) or in the Internet (www.pruftechnik.com).

Notes on intrinsic safety

The dual sensor VIB 6.162.. consists of:
 Mobile industrial accelerometer (intrinsically safe) VIB 6.142 DEX incl. coaxial cable and connector,
 NiCrNi thermo couple incl. cable, connector and magnetic holder in which the thermal element is embedded.
 The cables are bundled and the accelerometer is equipped with a protective cap. The assembled measuring device does not require a separate type examination certificate as the parts mounted on the vibration sensor are simple electrical devices in compliance with EN60079-11:2007: 5.7

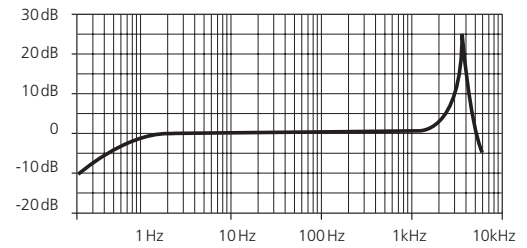
Spare part

VIB 3.420 Magnetic holder for curved surfaces

Technical data

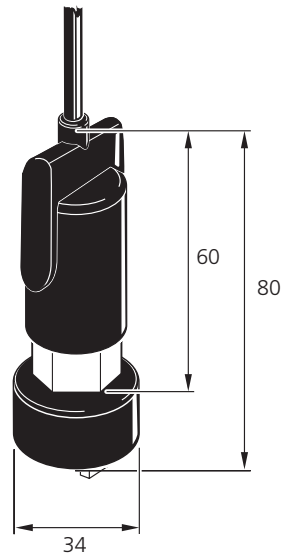
PARAMETER		VIB 6.162 VD	VIB 6.162 VT
Measurement, vibration	Signaling system	Current Line Drive; 3.5 mA closed current with superposed AC signal	
	Transmission factor	± 5%	1.0 $\mu\text{A}/\text{ms}^2$ (Ref.: 159 Hz; 25 °C)
	Frequency range	± 10%	2 Hz ... 2 kHz
	Resonance frequency		3.7 kHz
	Linearity range	± 10%	± 961 ms^2 (± 98 g)
	Temperature range, in hazard. area		-30 °C ... +80 °C
	-, outside hazardous area		-30 °C ... +100 °C
Electrical, vibration	Power requirement	> 3.5 mA / 7-18 VDC	
	Temperature sensitivity	< 0.05 ms^2/K	
	Magnetic sensitivity	< 5 ms^2/T (at 50 Hz)	
	Electrical noise, rms	< 0.01 ms^2 from 2 Hz	
	Output impedance	> 300 kOhm	
	Insulation	> 10 ⁹ MOhm	
Temp. sensor	Measuring system	NiCrNi	
	Transmission factor	41 $\mu\text{V}/\text{K}$	
	Accuracy	± 6% from meas. value	
	Measurement range	-30°C ... +100°C	
Mechanical	Case material	Accelerometer	Stainless steel VA 1.4305
		Magnetic holder	PA6
	Environmental protection	IP 65 (w/ cable)	
	Connection	1x QLA, 1x MiniSnap	1x QLA 1x BNC
	Shock limit	< 250 kms^2	
	Weight	155 g	
	Mounting	Magnetic holder	
EX	Marking, gas explosion protection	⊕ II 2 G Ex ib IIC T4, T _a 80°C	
	Marking, dust explosion protection	⊕ II 2 D Ex ib IIIB T ₅ 187°C, T _a 80°C	

Frequency response magnetic coupling



Dimensions

in mm



C

TIPTECTOR handheld probe set for mobile vibration measurements

1

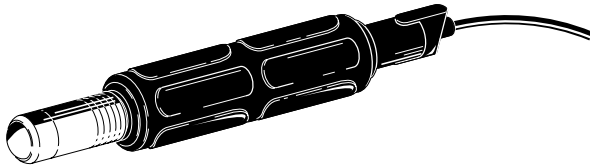
VIB 8.606 VS : TIPTECTOR handheld probe set for VIBSCANNER and VIBXPERT

VIB 8.606 VD : TIPTECTOR handheld probe set for VIBROTIP

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Vibration acceleration



Bearing condition



Pump cavitation

5

Application

The TIPTECTOR handheld probe is suitable for vibration measurements up to 10 kHz on machinery with rotational speeds above 600 min⁻¹, for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

6

TIPTECTOR is mainly used for data collection in an industrial environment. The signal acquisition and processing is carried out with a PRÜFTECHNIK data collector (e.g. VIBSCANNER, VIBXPERT II, VIBROTIP).

A

The handheld probe can be extended by various grips to reach measurement locations that are inaccessible with the built-in VIBROTIP or VIBSCANNER sensor, or those which obstruct your view of the display.

Scope of supply

The TIPTECTOR set VIB 8.606 VS contains:

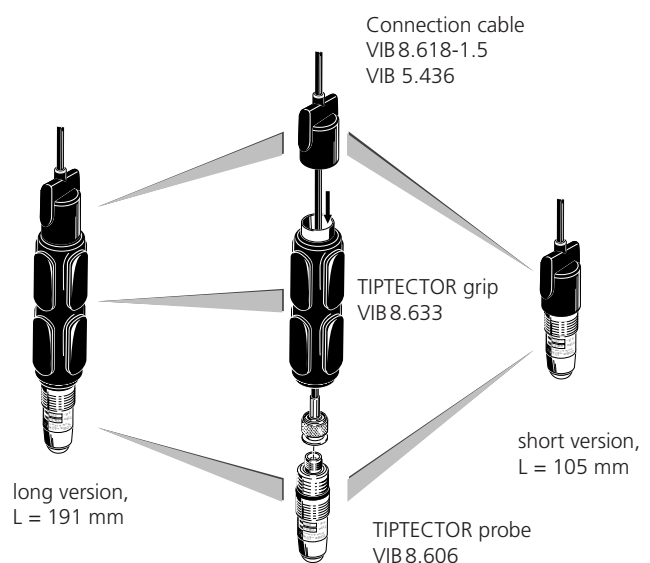
VIB 8.606	TIPTECTOR probe
VIB 8.633	TIPTECTOR grip
VIB 5.436	VIBSCANNER cable

The TIPTECTOR set VIB 8.606 VD contains:

VIB 8.606	TIPTECTOR probe
VIB 8.633	TIPTECTOR grip
VIB 8.618-1.5	VIBROTIP cable, 1.5 m

Accessories / Spare parts

VIB 8.609	TIPTECTOR grip extension, 100 mm
VIB 8.618-5	VIBROTIP cable, 5 m
VIB 8.610	PRÜFTECHNIK counter sink bit (to prepare the measurement location)

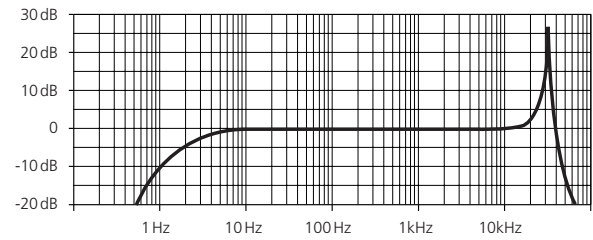


Technical data

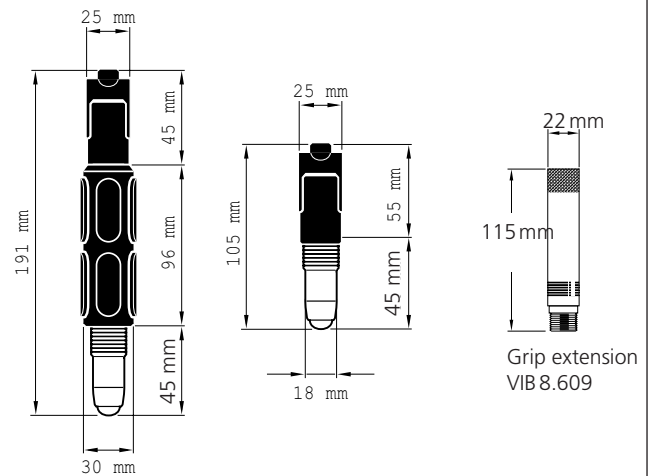
PARAMETER		VIB 8.606
Measurement	Signaling system	Current Line Drive; 3.5 mA closed current with superposed AC signal
	Transmission factor $\pm 2\%$	1.0 $\mu\text{A}/\text{ms}^2$ (Ref.: 159 Hz; 25 °C)
	Frequency range $\pm 10\%$	10 Hz ... 10 kHz
	Resonance frequency	36 kHz
	Linearity range	$\pm 50 \text{ ms}^{-2}$
	Temperature range	-10 °C ... +80 °C
Electrical	Power requirement	> 10 mA / 7-18 VDC
	Transverse sensitivity	< 10%
	Temperature sensitivity	< 0.3 ms^{-2}/K
	Magnetic sensitivity	< 14 ms^{-2}/T (at 50 Hz)
	Base strain sensitivity	< 0.1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$
	Electrical noise, rms	< 0.001 ms^{-2} from 2 Hz
	Output impedance	> 300 kOhm
Mechanical	Case material	Stainless steel VA 1.4305
	Cable connection	TNC socket
	Shock limit	< 50 kms^{-2}
	Weight	75 g (short), 205 g (long)

All details apply to a measuring in the sinking. For optimal signal transmission, the measurement location should be prepared with the PRÜFTECHNIK countersink bit VIB 8.610.

Frequency response



Dimensions



C

1

2

3

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6

A

C

TIPTECTOR handheld probe set for mobile vibration measurements, intrinsically safe

1

VIB 8.606 XVS : TIPTECTOR handheld probe set for VIBSCANNER EX, intrinsically safe

VIB 8.606 XVD : TIPTECTOR handheld probe set for VIBROTIP EX, intrinsically safe

2

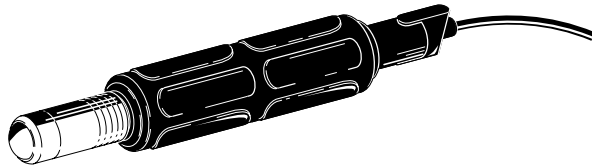
3

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A



Vibration acceleration



Bearing condition



Pump cavitation



CE 0044

Application

The TIPTECTOR handheld probe is suitable for vibration measurements up to 10 kHz on machinery with rotational speeds above 600 min⁻¹, for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

TIPTECTOR EX is mainly used for data collection in a hazardous industrial environment. The signal acquisition and processing is carried out with an intrinsically safe PRÜFTECHNIK data collector (e.g. VIBSCANNER EX, VIBROTIP EX). TIPTECTOR EX may not be used with VIBXPERT EX!

For measurements outside a hazardous area TIPTECTOR EX can also be used with data collectors without EX protection.

The handheld probe can be extended by various grips to reach measurement locations that are inaccessible with the built-in VIBROTIP or VIBSCANNER sensor, or those which obstruct your view of the display.

Notes on intrinsic safety

The intrinsically safe TIPTECTOR probe VIB 8.606 EX may only be connected to designated devices with the following interface parameters:

$$\begin{aligned} U_{\max} &= 17 \text{ V} \\ I_{\max} &= 50 \text{ mA} \\ P_{\max} &= 300 \text{ mW} \\ C_i, L_i &= \text{negligible small} \end{aligned}$$

The details in the EC type examination certificate TÜV 04 ATEX 2741 must be considered.

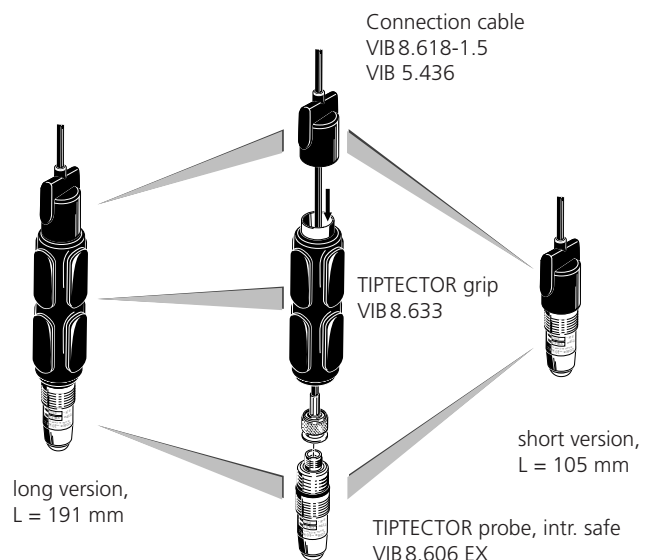
Scope of supply

The TIPTECTOR set VIB 8.606 XVS contains:
 VIB 8.606 EX TIPTECTOR probe, intrinsically safe
 VIB 8.633 TIPTECTOR grip
 VIB 5.436 VIBSCANNER cable


The TIPTECTOR set VIB 8.606 XVD contains:
 VIB 8.606 EX TIPTECTOR probe, intrinsically safe
 VIB 8.633 TIPTECTOR grip
 VIB 8.618-1.5 VIBROTIP cable, 1.5 m

Accessories / Spare parts

VIB 8.609 TIPTECTOR grip extension, 100 mm
 VIB 8.618-5 VIBROTIP cable, 5 m
 VIB 8.610 PRÜFTECHNIK counter sink bit (to prepare the measurement location)

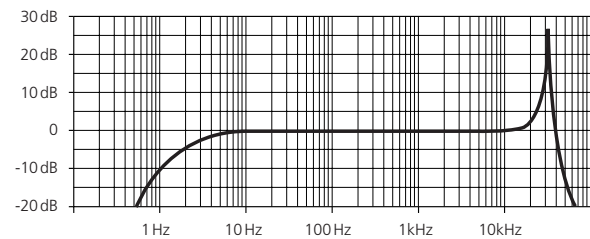


Technical data

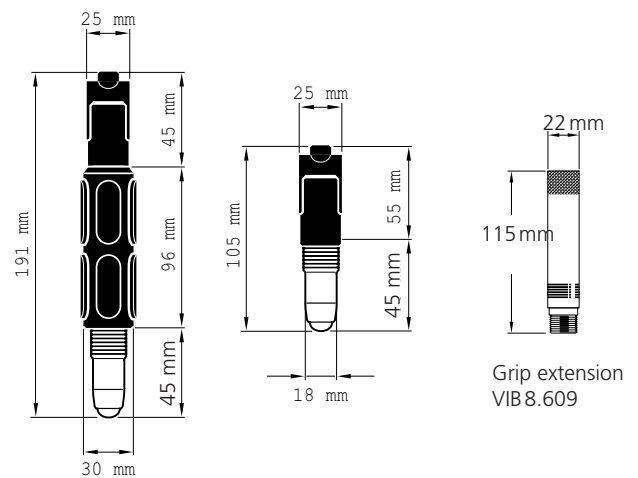
PARAMETER		VIB 8.606 EX
Measurement	Signaling system	Current Line Drive; 3.5 mA closed current with superposed AC signal
	Transmission factor $\pm 2\%$	1.0 $\mu\text{A}/\text{ms}^2$ (Ref.: 159 Hz; 25 °C)
	Frequency range $\pm 10\%$	10 Hz ... 10 kHz
	Resonance frequency	36 kHz
	Linearity range	$\pm 50 \text{ ms}^{-2}$
	Temperature range	-10°C ... +80 °C
Electrical	Power requirement	> 10 mA / 7-18 VDC
	Transverse sensitivity	< 10%
	Temperature sensitivity	< 0.3 ms^{-2}/K
	Magnetic sensitivity	< 14 ms^{-2}/T (at 50 Hz)
	Base strain sensitivity	< 0.1 $\text{ms}^{-2}/\mu\text{m}/\text{m}$
	Electrical noise, rms	< 0.001 ms^{-2} from 2 Hz
	Output impedance	> 300 kOhm
Mechanical	Case material	Stainless steel VA 1.4305
	Cable connection	TNC socket
	Shock limit	< 50 kms^{-2}
	Weight	75 g (short), 205 g (long)
EX	Marking, gas expl. protection	 II 2 G EEx ib IIC T4

All details apply to a measuring in the sinking. For optimal signal transmission, the measurement location should be prepared with the PRÜFTECHNIK countersink bit VIB 8.610.

Frequency response



Dimensions



C

Mobile accelerometers with quick fitting coupling

1

VIB 8.666 VS : Mobile accelerometer with quick fitting coupling for VIBSCANNER and VIBXPRT

VIB 8.666 VD : Mobile accelerometer with quick fitting coupling for VIBROTIP

2

3

4

5



Vibration acceleration



Bearing condition



Pump cavitation

6

A

Application

These accelerometers are suitable for vibration measurements up to 10 kHz on machinery with rotational speeds above 600 min⁻¹, for shock pulse measurements on roller bearings and for cavitation measurements in pumps.

The signal acquisition and processing is carried out with a PRÜFTECHNIK data collector (e.g. VIBSCANNER, VIBXPRT II, VIBROTIP).

The accelerometer locks onto the appropriate stud via its quick fitting coupling in optimum position and with consistent pressure. The rigid coupling to the stud provides optimum transmission of vibration and bearing signals (shock pulse).

Technical data

PARAMETER		VIB 8.666 R
Measurement	Signaling system	Current Line Drive; 3.5 mA closed current with superposed AC signal
	Transmission factor ± 2%	1.0 µA/ms ² (Ref.: 159 Hz; 25 °C)
	Frequency range ± 5%	1 Hz ... 10 kHz (short stud)
	Resonance frequency	36 kHz (short stud)
	Linearity range ± 10%	± 50 ms ⁻²
	Temperature range	-30°C ... +100 °C
Electrical	Power requirement	> 10 mA / 7-18 VDC
	Transverse sensitivity	< 5% at 10 Hz
	Temperature sensitivity	< 0.05 ms ⁻² /K
	Magnetic sensitivity	< 5 ms ⁻² /T (at 50 Hz)
	Electrical noise, rms	< 0.01 ms ⁻² from 2 Hz
	Output impedance	> 300 kOhm
Mechanical	Case material	Stainless steel VA 1.4305
	Environmental protection	IP 65 (w/ cable)
	Shock limit	< 250 kms ⁻²
	Weight	28 g

Scope of supply

The accelerometer set VIB 8.666 VS contains:
 VIB 8.666 R Quick fit accelerometer w/o cable
 VIB 5.436 VIBSCANNER/ VIBXPRT cable

The accelerometer set VIB 8.666 VD contains:
 VIB 8.666 R Quick fit accelerometer w/o cable
 VIB 321926-2 Spiral cable with QLA plug

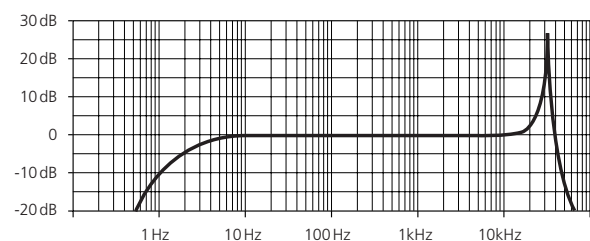
Spare part

VIB 8.666 R Quick fit accelerometer w/o cable

Accessories

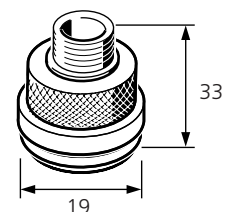
VIB 32000 Meas. stud M8x24, nickel-plated
 VIB 32010 Meas. stud M8x24, Stainless steel
 VIB 32200 Meas. stud M8x113, nickel-plated
 VIB 32210 Meas. stud M8x113, Stainless steel
 VIB 32310 Meas. stud M8x202, Stainless steel
 VIB 32410 Meas. stud M8x291, Stainless steel

Frequency response

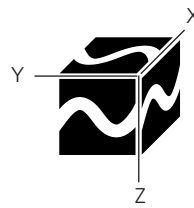
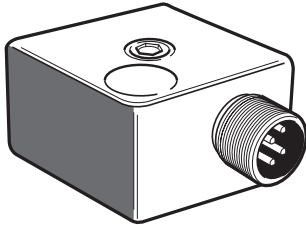


Dimensions

in mm



VIB 6.655 : Triaxial accelerometer for VIBXPRT



Application

This triaxial accelerometer is used for the measurement of machine and component vibrations up to 10 kHz in the horizontal, vertical and axial directions at a single measurement location. The triaxial accelerometer achieves shorter measuring times with a data collector and is easier to install since only one sensor needs to be mounted.

Connection

Cable adapter VIB 5.336 is needed to connect the sensor to the 2-channel VIBXPRT FFT data collector. It is not permissible to connect the sensor to VIBXPRT EX.

Mounting

The triaxial accelerometer is attached to the machine using the magnetic holder VIB 3.420.

Accessories

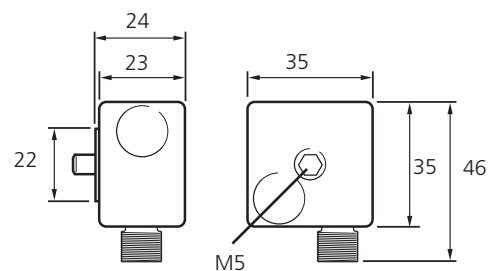
- VIB 5.336 Cable adapter for triaxial accelerometer
- VIB 3.420 Magnetic holder for curved surfaces
- VIB 3.422 Magnetic holder for flat surfaces

Technical data

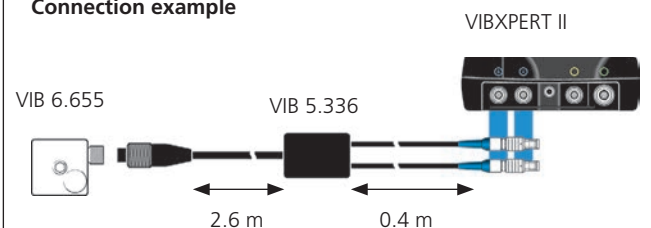
PARAMETER		VIB 6.655
Measurement	Signaling system	ICP
	Measurement range (peak.)	± 50 g
	Transmission factor	± 5% 100 mV/g
	Frequency range	± 3dB 0.6 Hz ...10kHz
		w/ magnetic holder ± 3dB 0.6 Hz ...2 kHz
		± 10% 1 Hz ...6.5 kHz
	Temperature range	-54°C ... +121 °C
Electrical	Settling time	< 2.5 s
	Power requirement	2-10 mA / 18-30 VDC
	Spectral noise, @ 10 / 100 / 1000 Hz	27 / 6.5 / 2.5 µg / (Hz) ^{1/2}
	Output impedance	< 100 Ohm
	Case insulation	> 10 ⁸ Ohm
	Bias output voltage	11-13 VDC
Mechanical	Case material	Stainless steel 316L
	Mounting	M5x1 captive bolt
	Mounting torque	1.4 bis 2.7 Nm
	Connector type	Cable connector, 4-pole (Mini-MIL)
	Weight	200 g

Dimensions

in mm



Connection example



C

Temperature probes for PRÜFTECHNIK data collectors

1

VIB 8.605 : Built-in temperature probe for VIBROTIP / VIBSCANNER (spare part)

VIB 8.607-1,5 : Temperature probe with magnetic holder, 1.5 m

VIB 8.608 : Handheld temperature probe

2

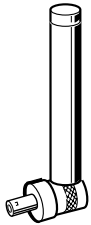
3

4

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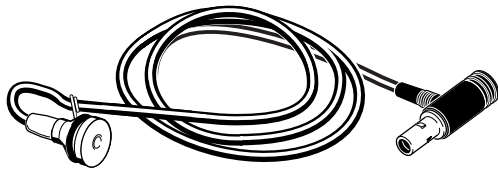
A



VIB 8.605



Temperature



VIB 8.607-1,5



VIB 8.608

Description

Temperature probes for PRÜFTECHNIK data collectors include a thermocouple type K, which can be used for temperature measurements up to 500 °C.

Application

The temperature probe VIB 8.605 is a spare part for VIBROTIP's or VIBSCANNER's built-in temperature probe. It can be easily replaced by pressing a button. Its flexible, rubberized neck allows optimum contact with the measurement location and temperature measurements in liquids.

The temperature probe with magnetic holder VIB 8.607-1,5 is used to reach poorly-accessible measurement lo-

cations, which are not accessible with VIBROTIP's or VIBSCANNER's built-in temperature probe. The powerful magnet makes for extremely quick and simple mounting.

The handheld temperature probe VIB 8.608 measures up to 500°C. The long, narrow probe tip allows measurements even at hard to reach locations.

Notes

Applies to VIB 8.607-1,5:

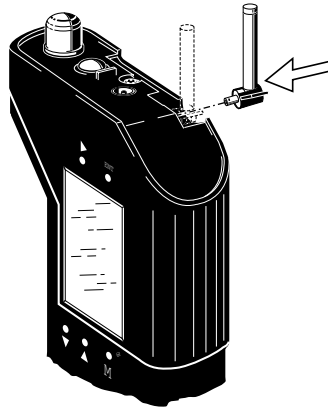
During transport / storage a steel washer as a short-circuit rail is mounted on the pole pieces.

The safety data sheet is available upon request (info@pruftechnik.com) or in the Internet (www.pruftechnik.com).

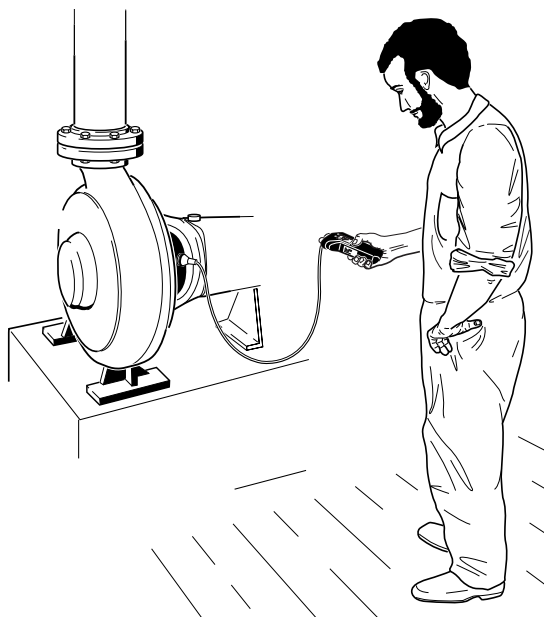
Technical data

PARAMETER		VIB 8.605	VIB 8.607-1,5	VIB 8.608
Measurement	Type	Thermocouple type K		
	Meas. range	-30°C.. +270°C	-50°C ... +240°C	-50°C ... +500°C
	Sensitivity	--	0.040 mV/°C	
	Accuracy	< 3%		
Mechanical	Dimensions (L x Ø)	25 mm x 11 mm	14 mm (Ø)	250 mm x 3 mm
	Cable length	--	1,5 m	--
	Weight	6 g	28 g	83 g
	Connector	QLA plug		

Application examples



Replacing the internal VIBROTIP temperature probe VIB 8.605



Temperature probe VIB 8.607-1,5 used with VIBROTIP

C VIB 6.631 : Laser trigger / Laser RPM sensor

1

Laser / Sensor



2



RPM / Trigger

3

4

Application

This sensor is used as a trigger for vibration measurements and for RPM measurements.

5

Description

The sensor detects the signals optically, i.e. without having contact with rotating machine parts during the measurement. Red laser light is emitted from the sensor head and impinges on a mark on the rotating shaft. The mark can be light reinforcing (e.g. reflective tape VIB 3.306) or light damping (e.g. black, high-contrast line on a bright surface). Every time the optical system measures a brightness contrast, the sensor emits an electrical pulse. The data collector (VIBXPERT, VIBSCANNER) calculates the shaft speed based on the rate of repetition of this voltage pulse.

6

A

Installation and adjustment

The sensor is mounted on the machine using the trigger stand (VIB 6.632). To adjust the sensor, the laser beam is pointed toward the measurement mark while the machine is at a standstill. As far as possible, the laser beam should be slightly inclined to the shaft surface and shaft axis.

Safety notes

- Do not stare into the laser beam!
- Do not open the housing!

Cleaning instructions

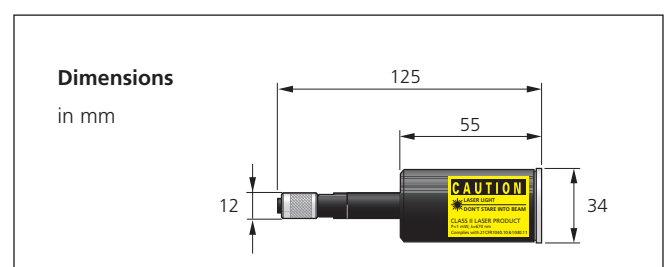
- Clean the lens with a moist cloth.
- Use water only. Do not use alcohol of any kind!
- Protect the lens from contamination with skin grease. Avoid direct contact. Do not touch with areas of the cloth that were previously touched.

Accessories

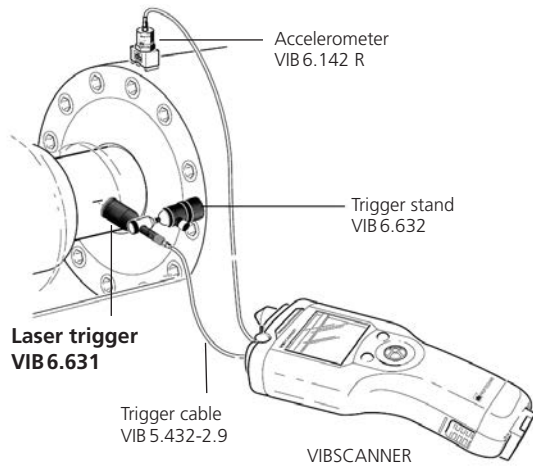
- VIB 6.632 Trigger stand
- VIB 5.432-2,9 Trigger cable
- VIB 3.306 Reflective tape (measurement mark)

Technical data

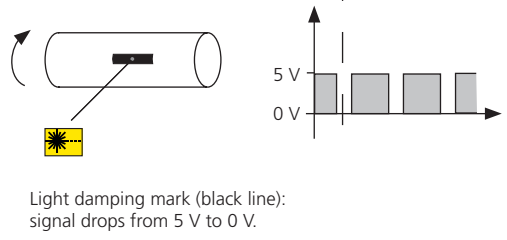
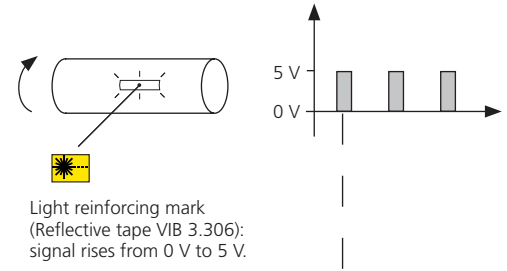
PARAMETER		VIB 6.631
Measurement	Measurement principle	optical
	Measurement range	0.1 ... 600'000 1/min.
	Measurement distance w/ reflective mark	0.05 ... 2 m
		w/ contrast mark
	Temperature range	-20 °C ... +50 °C
Electrical	Power requirement	< 5.8 V (from device)
	Output	5 V (TTL)
	Laser wave length	670 nm (red)
	Laser class	2 (DIN EN 60825-1, May 2008)
Mechanical	Connection	Trigger cable VIB 5.432-2,9
	Environmental protection	IP 65
	Weight	72 g
	Dimensions	see drawing



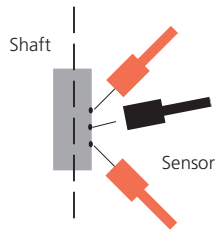
Typical setup



Signal response



Adjusting



Acceptable angular deviation:
± 45° (Reflective mark)
± 15° (Contrast mark)

- C
- 1
- 2
- 3
- 4
- 5
- 6
- A

C

VIB 6.631 EX: Laser trigger / Laser RPM sensor, intrinsically safe

1

2

3

Laser / Sensor



4

Application

This sensor is used as a trigger for vibration measurements and for RPM measurements in a hazardous industrial environment. The signal acquisition and processing is carried out with an intrinsically safe PRÜFTECHNIK data collector (e.g. VIBSCANNER EX, VIBXPERT EX).

5

For measurements outside a hazardous area the sensor can also be used with data collectors without EX protection.

6

Description

The sensor detects the signals optically, i.e. without having contact with rotating machine parts during the measurement. Red laser light is emitted from the sensor head and impinges on a mark on the rotating shaft. The mark can be light reinforcing (e.g. reflective tape VIB 3.306) or light damping (e.g. black, high-contrast line on a bright surface). Every time the optical system measures a brightness contrast, the sensor emits an electrical pulse. The data collector (VIBXPERT, VIBSCANNER) calculates the shaft speed based on the rate of repetition of this voltage pulse.

A

Installation and adjustment

The sensor is mounted on the machine using the trigger stand (VIB 6.632). To adjust the sensor, the laser beam is pointed toward the measurement mark while the machine is at a standstill. As far as possible, the laser beam should be slightly inclined to the shaft surface and shaft axis.

Accessories

VIB 6.632	Trigger stand
VIB 5.432-2,9	Trigger cable
VIB 3.306	Reflective tape (measurement mark)

Safety notes

- Do not stare into the laser beam!
- Do not open the housing!

Cleaning instructions

- Clean the lens with a moist cloth.
- Use water only. Do not use alcohol of any kind!
- Protect the lens from contamination with skin grease. Avoid direct contact. Do not touch with areas of the cloth that were previously touched.

Notes on intrinsic safety

The intrinsically safe laser trigger sensor of the series VIB 6.631 EX is only for „connection to a compatible measuring device/operating equipment with a separate EG type examination certificate“ or „for connection to certified intrinsically safe circuits that do not exceed the following maximum values:

U_{max}	12V DC
P_{max}	600 mW
$I_{i,max}$	160 mA
C_i	328 nF
L_i	negligible small

The details in the EC type examination certificate Zelm 10 ATEX 0429 must be considered.

Additionally the installation notes for hazardous areas annexed in this catalog and the european installation instructions must be followed (EN 60079-14:2003).


Permissible cable

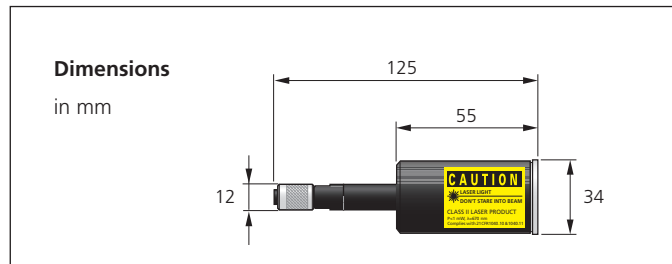
Cable for laser trigger sensor - VIB 5.432-2,9

Service and maintenance

Service and maintenance cannot be performed on the sensor. If the sensor is damaged, it must be immediately removed from the hazardous area.

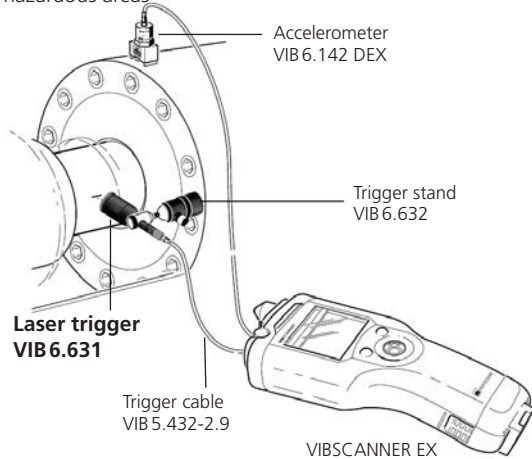
Technical data

PARAMETER		VIB 6.631 EX
Measurement	Measurement principle	optical
	Measurement range	0.1 ... 600'000 1/min.
	Measurement distance w/ reflective mark	0.05 ... 2 m
		w/ contrast mark
	Temperature range	-20 °C ... +50 °C
Electrical	Power requirement	< 5.8 V (from device)
	Output	5 V (TTL)
	Laser wave length	670 nm (red)
	Laser class	2 (DIN EN 60825-1, May 2008)
Mechanical	Connection	Trigger cable VIB 5.432-2,9
	Environmental protection	IP 65
	Weight	72 g
	Dimensions	see drawing
EX	Marking	 II 2 G Ex ib op is IIC T4

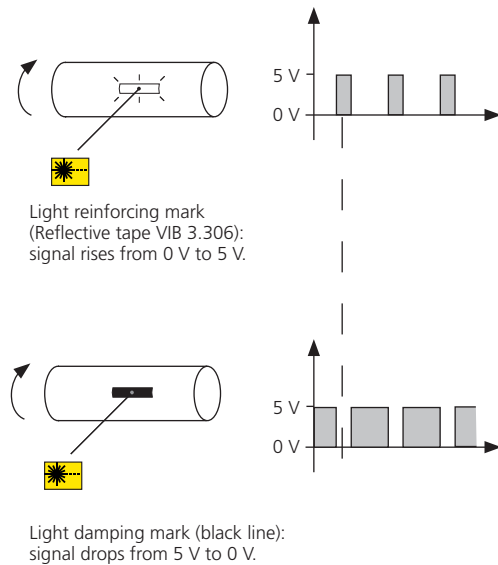


Typical setup

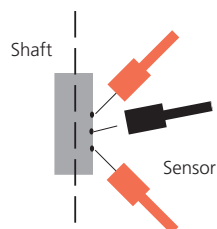
in hazardous areas



Signal response



Adjusting



Acceptable angular deviation:
± 45° (Reflective mark)
± 15° (Contrast mark)

C

VIB 6.640: Inductive proximity sensor for VIBXPRT incl. cable (3-15 mm)

1

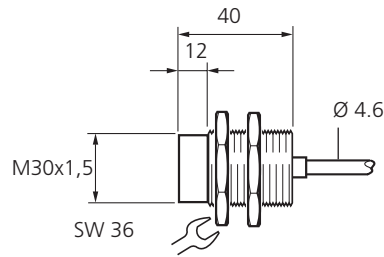
2

3

4



Displacement / Expansion



Dimensions in mm

5

Application

The proximity sensor is used for contact-free measuring the gap of metallic objects within the specified range (3 - 15 mm).

6

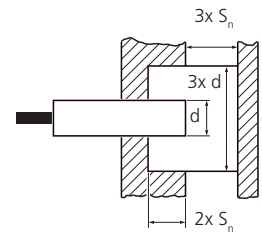
Function

The sensor is suitable for measurements without the highest precision requirements. The linearization of the characteristic curve is automatically done in the VIBXPRT data collector.

A

Mounting

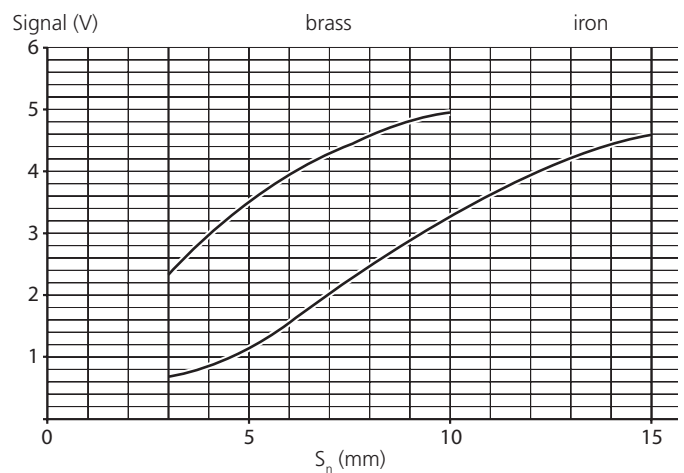
The through tapped hole enables the simple mounting and positioning of the sensor. The following notes according to EN 60947-5-2 for non-flush mounting in metal must be observed:



Technical data

PARAMETER		VIB 6.640
Measurement	Measuring principle	Inductive
	Measurement variable	relative displacement / expansion
	Working range S_n	3 ... 15 mm
	Linearity	$\leq 5\%$
	Repeatability	$\leq 1\%$
	Average rise	0.333 V/mm $\pm 5\%$
	Max. frequency	300 Hz
	Influence U_b on U_a dU_a/dU_b	approx. 6.7% / 0.1V
	Temperature range	-25 °C ... +70 °C
Temperature drift	$\pm 5\%$	
Electrical	Operating voltage U_b	5 VDC, stabilized
	Operating current	$\leq 15\text{mA}$
	Output signal U_a	0.5 .. 4.5 VDC (see characteristic)
	Load resistance	$\geq 20\text{k}\Omega$
Mechanical	Case material	Brass, nickel-plated
	Material of active surface	PCP
	Environmental protection	IP 67
	Installation	Non-flush
	Connection	Cable with MiniSnap connector, 2.9 m long

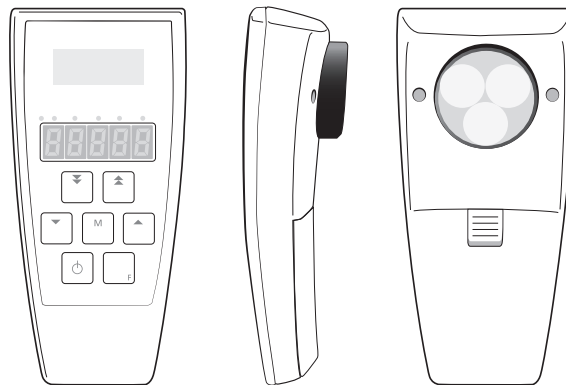
Characteristic



Connection diagram



VIB 6.672: LED stroboscope



Application

This handy stroboscope is used together with the VIBXPERT FFT analyzer to analyze rotary motion and to measure phase shift, rotational speed and velocity.

Function

The stroboscope uses bright LEDs. The flash frequency can be controlled internally or set via an external trigger signal

Scope of delivery

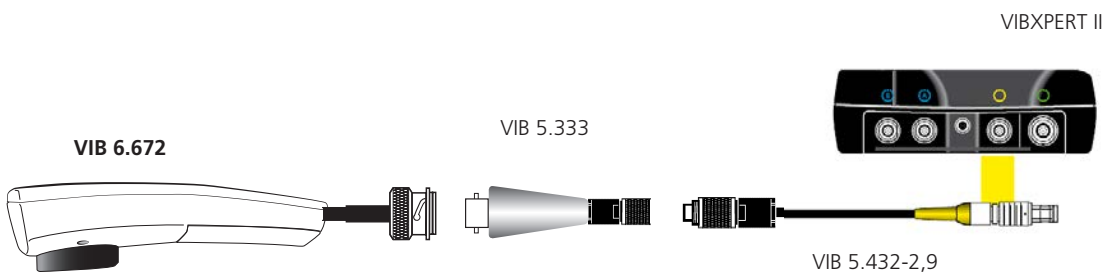
- LED stroboscope
- Trigger cable 1.5 m incl. BNC connector
- Hard shell box
- Set of batteries (2x AA / LR6)
- Manual

Technical data

PARAMETER		VIB 6.672
Measurement	Light source	3 CREE diodes
	Light intensity	3800 Lux max. (@ 50 Hz / 20 cm)
	Frequency range	1 - 2000 Hz / 60 - 99999 min ⁻¹
	Control of the flash rate	Internal: key pad External: external trigger signal
	Phase shifting	0 - 360°
	Operating temperature	0 ... +40 °C
	Operating time	< 15h
General	Dimensions	140 x 63 x 38 mm
	Weight	175 g
	Storage temperature	-20 °C ... +70 °C
	Rel. humidity	< 80% at 30 °C
	Protection class	IP 40

Application example

VIBXPERT II with stroboscope VIB 6.672



C VIB 6.673: Current clamp (400A AC/ 600A DC)

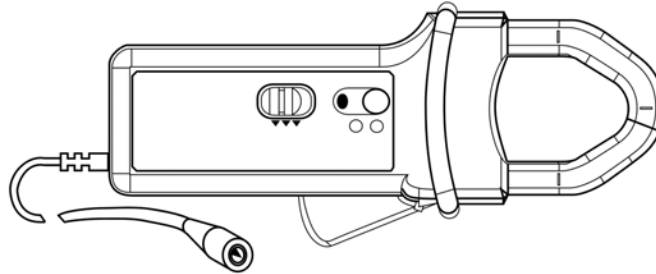
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Application

This current clamp connects to the VIBXPERT II FFT analyzer and is used for AC/DC current measurement, power measurement and True RMS measurement with DC component.

A

Function

The current clamp uses the Hall-effect principle. A push button operates the automatic DC zeroing.

Connection

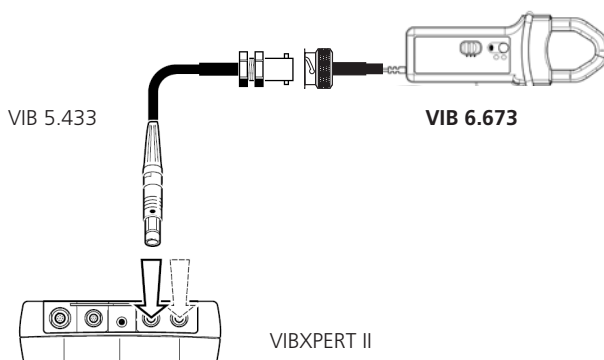
The cable adapter for signal low voltage (VIB 5.433) is required to connect the current clamp to VIBXPERT II.

Scope of supply

Current clamp, 9V battery, manual

Application example

VIBXPERT II and current clamp VIB 6.673



Technical data

PARAMETER		VIB 6.673	
Electrical	Calibre	60 A	600 A
	Current range	0.2 ... 40A AC 0.4 ... 60A DC	0.5 ... 400A AC 0.5 ... 600A DC
	Output signal	10mV/A	1mV/A
	Accuracy*	0.5..40A: 1.5% ±5mV 40 ... 60A DC: 1.5%	0.5..100A: 1.5% ±1mV 100 .. 400A DC: 2% 400 .. 600A DC: 2.5%
	Phase shift (45 - 65 Hz)*	10 ... 20A : < 3° 20 ... 40A : < 2°	10 ... 100A : < 2° 100...400A : < 1.5°
	Noise	DC ... 1 kHz : < 8mV DC ... 5 kHz : < 12mV 0.1 Hz ..5 kHz : < 2mV	DC ... 1 kHz : < 1mV DC ... 5 kHz : < 1,5mV 0.1Hz...5 kHz : < 0.5mV
	Rise/ Fall time	≤ 100µs from 10 to 90% of the voltage value	≤ 70µs from 10 to 90% of the voltage value
	Overload	2000 A DC / 1000 A AC up to 1kHz	
	Bandwidth	DC ... 10 kHz at -3dB	
	Load impedance	≥ 1MΩ and ≤ 100pF	
	Operating voltage	600 V RMS	
	Battery	9V alkaline (NEDA 1604 A, IEC 6LR61)	
	Low battery signal	Green LED when battery voltage > 6.5 V	
	Battery life	approx. 50 hours	
Overload indicator	Red LED		
Autom. switch-off	10 minutes non-use		
Mechanical	Operat. temperature	-10°C .. +55°C	
	DC zero adjustment	Automatically operated by button (±10A)	
	Max. jaw insertion	1 cable Ø 30mm or 2 cables Ø 24 mm	
	Protection rating	IP 30	
	Dimensions	224x97x44 mm	
Weight	440g		
Connection	Coaxial cable, 2 m, BNC plug		

* Conditions of reference:
18° at 28°C, 20 to 75% RH, 48 to 65 Hz, external magnetic field < 40 A/m, no DC component, no current-carrying conductor nearby, centred test sample, charge ≥ 1 MΩ and ≤ 100 pF, reset to zero before measurement (only DC) DC to 65 Hz, batteries 9 V ±0.1 V

C

Contents: Mounting adapters and tools

1

2

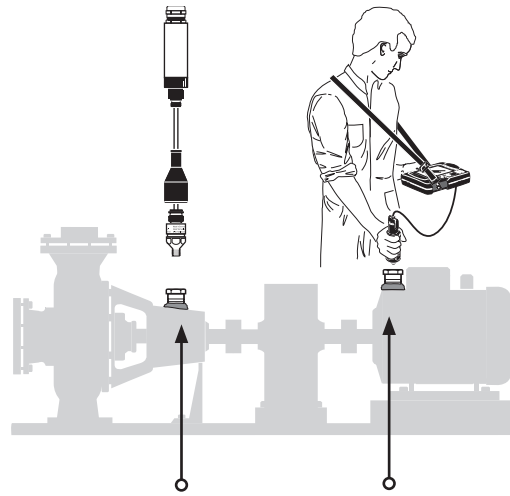
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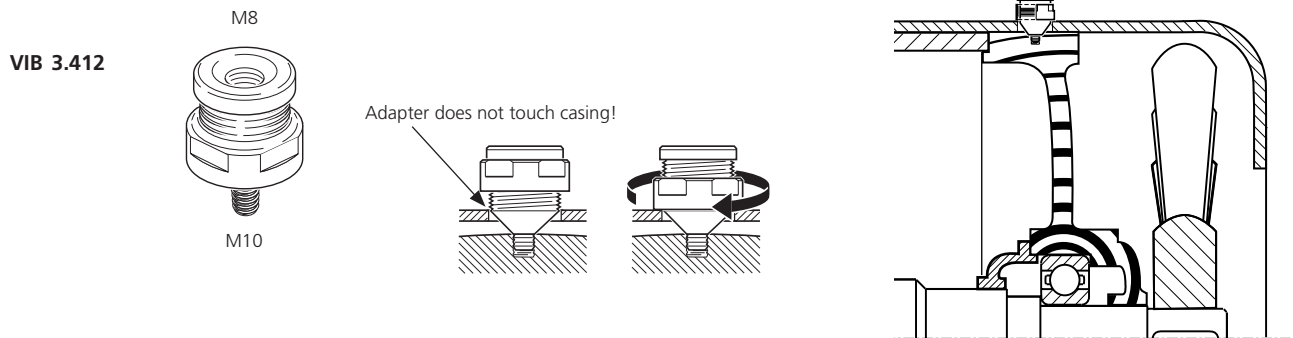


Order no.	Description	Page
VIB 3.411 VIB 3.412 VIB 3.413 VIB 3.414 VIB 3.415 VIB 3.416	Screwed adapter with locking nut for industrial accelerometers -, M8 to M8 -, M8 to M10 -, M8 to M12 -, UNC 5/16 to UNC 5/16 -, UNC 5/16 to UNC 3/8 - 16 -, UNC 5/16 to UNC 1/2 - 13	93
VIB 3.417-M5 VIB 3.417-M6	Screwed adapter for mini accelerometer, -, UNF1/4 to M5 -, UNF1/4 to M6	94
VIB 3.418 VIB 3.431 VIB 3.432 VIB 3.433	Adhesive adapter for -, mini accelerometer -, industrial accelerometer, M8-90° -, industrial accelerometer, UNC 5/16 -, CLD-/ICP-type accelerometer and VIBROTECTOR vibration transmitter	96
VIB 3.437 VIB 3.438 VIB 3.439	Screwed adapter for CLD-/ICP-type accelerometer and VIBROTECTOR -, UNF 1/4 to M8/90° -, UNF 1/4 to M8 -, UNF 1/4 to M5	94
VIB 3.474 VIB 3.475 VIB 8.772	Screwed adapter for industrial accelerometers, -, M8-90° to M16 -, M8-90° to M20 -, M8-90° to M10-120°	95
VIB 3.480	M8 thread for CLD-/ICP-type accelerometer and VIBROTECTOR vibration transmitter	94
VIB 8.586 VIB 8.587 VIB 8.588 VIB 8.589 VIB 8.590 VIB 8.591 VIB 8.592	Extension post for industrial accelerometer -, M8 x 55 mm -, M8 x 95 mm -, M8 x 170 mm -, M8 x 35 mm -, UNC 5/16 x 2 1/8" -, UNC 5/16 x 3 3/4" -, UNC 5/16 x 6 5/8"	98
VIB 8.693 VIB 8.694 VIB 8.696	M8 thread tap 90° counter sink bit UNC5/16 thread tap	107

Order no.	Description	Page
VIB 3.306	Reflective tape for laser trigger	104
VIB 3.420 VIB 3.422 VIB 3.423	Magnetic holder for -, curved surfaces, M5 -, flat surfaces, M5 -, flat surfaces, ¼-28 UNF	97
VIB 3.430	Adhesive adapter, M5	96
VIB 3.435 VIB 3.436 VIB 3.440 VIB 3.441	Screwed adapter -, M5-flat to M5-120° -, M5 to M6 -, M5 to M8 -, M5 to UNC 5/16	95
VIB 3.450	Probe tip, M5	106
VIB 6.632	Stand for laser trigger / laser RPM sensor	104
VIB 8.563 A25 VIB 8.566 VIB 8.568	VIBCODE code ring, 25 pcs. Protective cap for VIBCODE stud Color coding for protective cap	103
VIB 8.571 VIB 8.572 VIB 8.573 VIB 8.594 VIB 8.595 VIB 8.596	VIBCODE meas. stud w/ locking nut -, M8 -, M10 -, M12 -, UNC 5/16-18 -, UNC 3/8-16 -, UNC 1/2-13	101
VIB 8.576 VIB 8.577 VIB 8.578 VIB 8.580 VIB 8.581 VIB 8.582	VIBCODE meas. stud w/ extension post -, M8 x 55 -, M8 x 95 -, M8 x 170 -, UNC 5/16 x 2 1/8" -, UNC 5/16 x 3 3/4" -, UNC 5/16 x 6 5/8"	100
VIB 8.610	PRÜFTECHNIK counter sink bit	107
VIB 8.679 SET VIB 8.680 SET	VIBCODE meas. stud -, M8, VA 1.4571 -, M8, VA 1.4305	99
VIB 8.685 SET	VIBCODE measurement stud for adhesive mounting	102
VIB 8.689 SET VIB 8.690 SET	VIBCODE meas. stud -, UNC 5/16, VA 1.4571 -, UNC 5/16, VA 1.4305	99
VIB 8.692	VIBCODE encoding tool	103
VIB 32000 VIB 32010 VIB 32200 VIB 32210 VIB 32310 VIB 32410 VIB 33000A25	Meas. stud for accelerometer VIB 8.666 -, M8x24, nickel-plated -, M8x24, stainless steel -, M8x113, nickel-plated -, M8x113, stainless steel -, M8x202, stainless steel -, M8x291, stainless steel -, adhesive mount	105
VIB 81025	Protective cap for measurement stud	105

Screwed adapters with locking nut

VIB 3.411 :	Screwed adapter with locking nut, M8 to M8
VIB 3.412 :	Screwed adapter with locking nut, M8 to M10
VIB 3.413 :	Screwed adapter with locking nut, M8 to M12
VIB 3.414 :	Screwed adapter with locking nut, UNC 5/16 to UNC 5/16
VIB 3.415 :	Screwed adapter with locking nut, UNC 5/16 to UNC 3/8 - 16
VIB 3.416 :	Screwed adapter with locking nut, UNC 5/16 to UNC 1/2 -13



Application

The adapter with locking nut is ideal for situations such as motor housings where there is little clearance between the actual mounting location (e.g. the bearing housing) and the machine housing. This arrangement can even be used to replace existing housing screws. Once the adapter is torqued into the threaded hole prepared for measurement, the counter nut can be tightened against the machine housing.

To ensure optimum signal transmission, the cone of the bolt may only touch the measuring point (e.g. the bearing housing), but not the metal casing.

Material

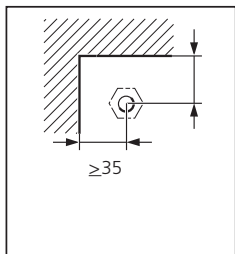
Stainless steel, VA1.4305

Installation accessories

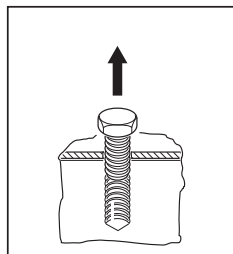
VIB 8.693	M8 screw tap
VIB 8.696	UNC 5/16 screw tap
VIB 8.694	90° countersink bit

Mounting instructions

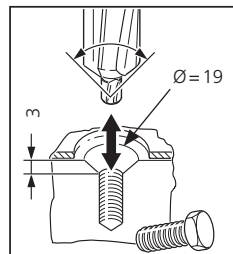
dimensions in mm



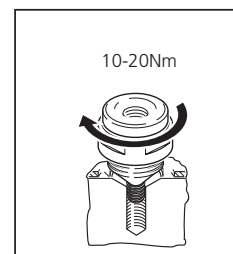
Ensure sufficient clearance



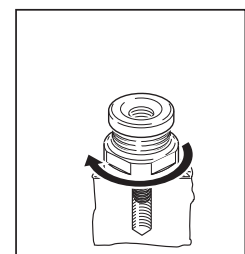
Remove bolt and housing cowling



Countersink hole, bore cowling

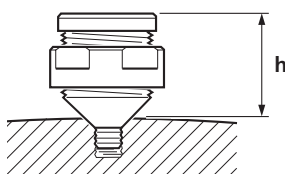


Mount adapter



Fasten locking nut

Height



Adapter Order no.	Height h in mm
VIB 3.413 / VIB 3.416	16
VIB 3.412 / VIB 3.415	17
VIB 3.411 / VIB 3.414	18

C Screwed adapters for accelerometers

1

VIB 3.417-M5 : Screwed adapter for mini accelerometer, UNF 1/4 to M5-flat

VIB 3.417-M6 : Screwed adapter for mini accelerometer, UNF 1/4 to M6-flat

2

VIB 3.437 : Screwed adapter for CLD- /ICP-type accelerometer and VIBROTECTOR, UNF 1/4 to M8-90°

VIB 3.438 : Screwed adapter for CLD- /ICP-type accelerometer and VIBROTECTOR, UNF 1/4 to M8-flat

VIB 3.439 : Screwed adapter for CLD- /ICP-type accelerometer and VIBROTECTOR, UNF 1/4 to M5-flat

3

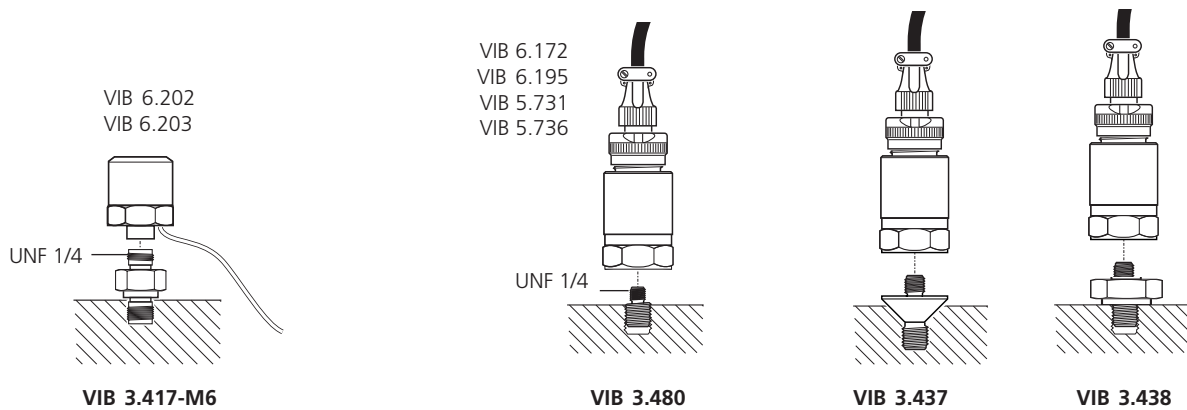
VIB 3.480 : M8 thread for CLD- /ICP-type accelerometer and VIBROTECTOR vibration transmitter

4

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6

A



Application

The adapters VIB 3.417-M5 / M6 and VIB 3.437 to VIB 3.439 are used for the installation of accelerometers in existing threads of the appropriate size.

The M8 threaded adapter VIB 3.480 is standard in the CLD / ICP-type accelerometers and in the VIBROTECTOR vibration transmitter.

Material

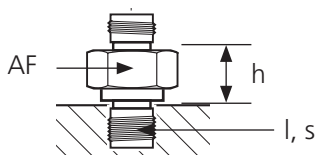
Stainless steel, VA1.4305

Installation accessories

VIB 8.693 M8 screw tap
VIB 8.694 90° countersink bit

Dimensions in mm

Adapter order no.	Installation height h	Thread size s	Thread length l	Width across flats, AF
VIB 3.480	0	M8	11	--
VIB 3.417-M5	11	M5	5	13
VIB 3.417-M6	11	M6	6	13
VIB 3.437	4	M8-90°	5	--
VIB 3.438	8	M8	4	22
VIB 3.439	1	M5	4	--



Screwed adapters for industrial accelerometers

VIB 3.435 : Screwed adapter for mobile industrial accelerometer, M5-flat to M5-120°

VIB 3.436 : Screwed adapter for mobile industrial accelerometer, M5-flat to M6-90°

VIB 3.440 : Screwed adapter for mobile industrial accelerometer, M5-flat to M8-90°

VIB 3.441 : Screwed adapter for mobile industrial accelerometer, M5-flat to UNC5/16-90°

VIB 3.474 : Screwed adapter for industrial accelerometer, M8-90° to M16

VIB 3.475 : Screwed adapter for industrial accelerometer, M8-90° to M20

VIB 8.772 : Screwed adapter for industrial accelerometer, M8-90° to M10-120°

VIB 6.122R



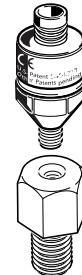
VIB 8.772

VIB 6.142R

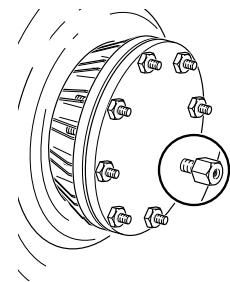


VIB 3.435

VIB 6.122R



VIB 3.474



Application

The adapters VIB 3.435 to VIB 3.441 are used for the installation of industrial accelerometers of the series VIB 6.1xx in existing threads of the appropriate size.

The adapters VIB 3.474 and VIB 3.475 are used for the permanent installation of accelerometers for monitoring the bearings in turbochargers. The adapter replaces a screw on the turbocharger. When selecting the accelerometer and cabling, bear in mind the high temperature range (approx. 130°C) of the turbocharger.

Journal bearings cannot be monitored using these adapters.

The adapter VIB 8.772 is used to install an industrial accelerometer (M8 thread) into an existing M10 hole, e.g. jack ring thread on a motor.

Material

Stainless steel, VA1.4305

Installation accessories

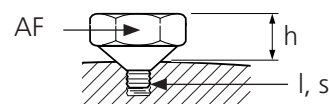
VIB 8.693 M8 screw tap

VIB 8.696 UNC 5/16 screw tap

VIB 8.694 90° countersink bit

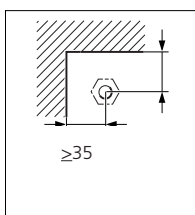
Dimensions in mm

Adapter order no.	Installation height h	Thread size s	Thread length l	Width across flats, AF
VIB 3.435	8	M5-120°	3.5	19
VIB 3.436	8	M6-90°	6	19
VIB 3.440	9	M8-90°	5	19
VIB 3.441	9	UNC 5/16-90°	5	19
VIB 3.474	27	M16	65	30
VIB 3.475	27	M20	45	30
VIB 8.772	12	M10-120°	7	19

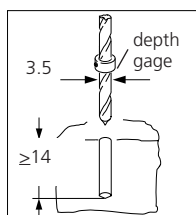


Mounting instructions for VIB 3.440 / VIB 3.441

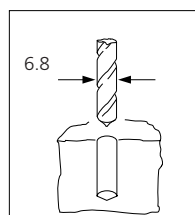
dimensions in mm



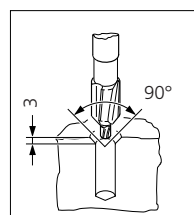
Select position



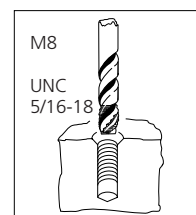
Bore pilot hole



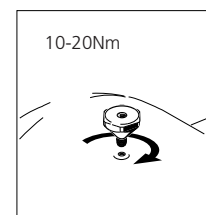
Bore out hole



Countersink



Tap thread



Mount adapter

C

Adhesive adapters for accelerometers

1

VIB 3.418 : Adhesive adapter for mini accelerometer, UNF 1/4 thread

VIB 3.430 : Adhesive adapter for mobile industrial accelerometer, M5-flat

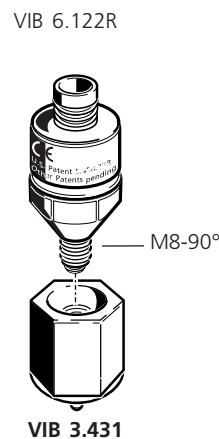
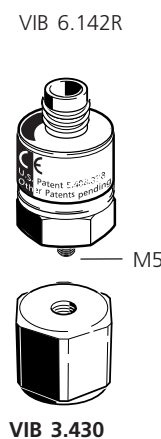
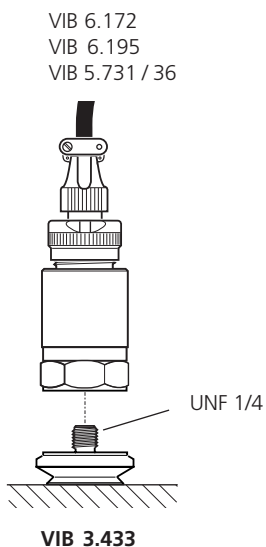
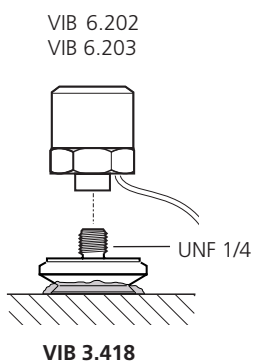
VIB 3.431 : Adhesive adapter for industrial accelerometer, M8-90°

2

VIB 3.432 : Adhesive adapter for industrial accelerometer, UNC 5/16-90°

VIB 3.433 : Adhesive adapter for CLD-/ICP-type accelerometer and VIBROTECTOR vibration transmitter

3



Adhesive connection patented
U.S. patents 6,706,367 / 6,805,943 B2

A

Application

These adapters are ideal when only adhesive mounting is possible.

Material

Stainless steel, VA1.4305

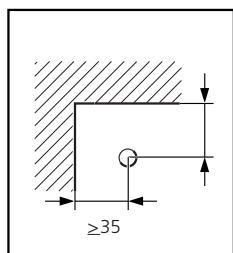
Mounting notes

A removable self-threading centering pin may be used if desired to hold the adapter in place while the adhesive cures to final hardness.

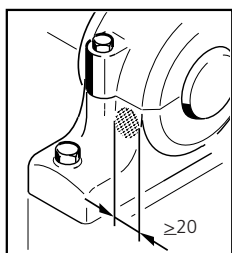
Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Mounting instructions for VIB 3.430 ... VIB 3.432

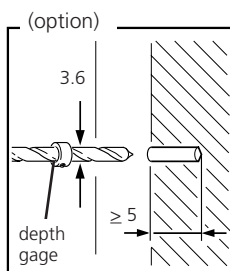
dimensions in mm



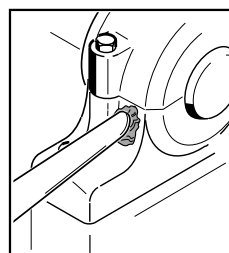
Allow clearance for transducer



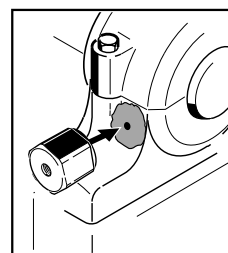
Mounting surface: flat & roughened



(Option: bore hole for centering pin)

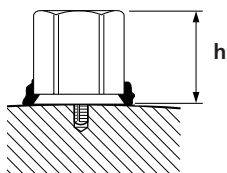


Apply compound to both surfaces



Press & turn adapter into surface

Height



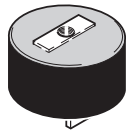
Adapter Order no.	Height h in mm
VIB 3.418	6
VIB 3.433	8
VIB 3.430	16
VIB 3.431 / VIB 3.432	21

Magnetic holders for accelerometers

VIB 3.420 : Magnetic holder for curved surfaces, M5 internal thread

VIB 3.422 : Magnetic holder for flat surfaces, M5 internal thread

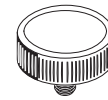
VIB 3.423 : Magnetic holder for flat surfaces, ¼-28 UNF thread



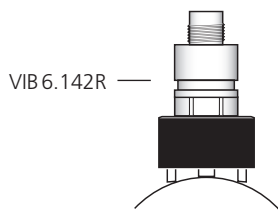
VIB 3.420



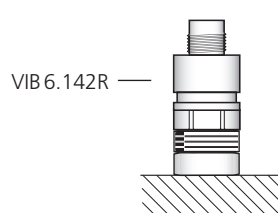
VIB 3.422



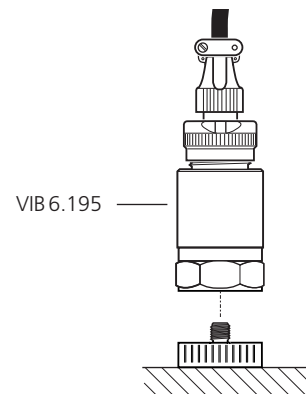
VIB 3.423



VIB 6.142R



VIB 6.142R



VIB 6.195

Application

During mobile measurements magnetic holders can be used to attach accelerometers easily and securely at measurement locations with a ferromagnetic base.

The magnetic adapter VIB 3.420 offers secure hold on both curved and flat surfaces.

Notes

Shock pulse measurements (of anti-friction bearings and pump cavitation) may not be performed using magnetic holders.

During transport / storage a steel washer as a short-circuit rail is mounted on the pole pieces.

The safety data sheet is available upon request (info@pruftechnik.com) or in the Internet (www.pruftechnik.com).

Technical data

PARAMETER		VIB 3.420	VIB 3.422	VIB 3.423
General	Housing material	Plastic PA6, Poles made of steel	Steel	Steel
	Magnet	NdFeB (Neodymium-Iron-Boron)		
	Temperature range (for PA6)	-40°C ... +120°C	--	
	Connection to accelerometer	M5		¼-28 UNF
	Weight, total	70 g	27 g	41 g
	Weight, magnet	28 g	5 g	7 g
	Diameter	34 mm	20 mm	25 mm
	Height	23 mm	11 mm	10 mm

C

Extension posts for industrial accelerometers

1

VIB 8.586 : Extension post for industrial accelerometer, M8 x 55 mm

VIB 8.587 : Extension post for industrial accelerometer, M8 x 95 mm

VIB 8.588 : Extension post for industrial accelerometer, M8 x 170 mm

2

VIB 8.589 : Extension post for industrial accelerometer, M8 x 35 mm

VIB 8.590 : Extension post for industrial accelerometer, UNC 5/16 x 2 1/8"

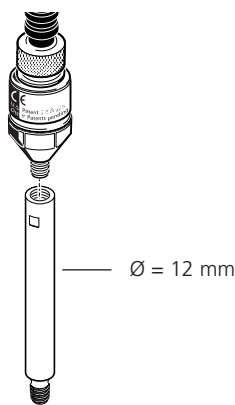
VIB 8.591 : Extension post for industrial accelerometer, UNC 3/8 x 3 3/4"

3

VIB 8.592 : Extension post for industrial accelerometer, UNC 1/2 x 6 5/8"

4

VIB 6.122R

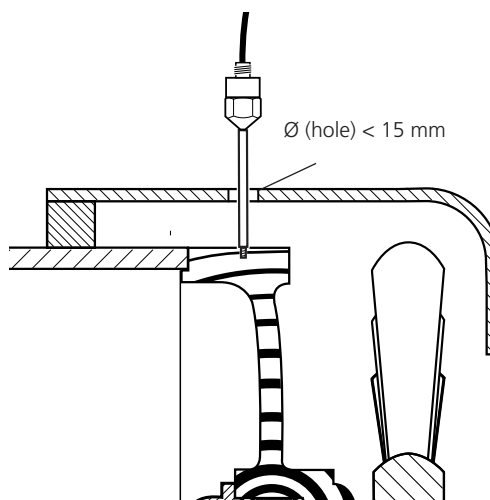


VIB 8.589

5

6

A



Application

As its name implies, the extension post provides an extra-long shaft to allow measurement in locations where the stem of the industrial accelerometer does not fit directly at the measurement surface. This stud is available in various lengths with an M8 or UNC thread at its bottom.

Material

Stainless steel, VA1.4305

Note

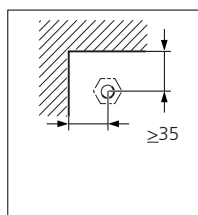
The longest extension posts (170 mm and 6 5/8") should be used only for bearing condition readings and not for general vibration measurements.

Installation accessories

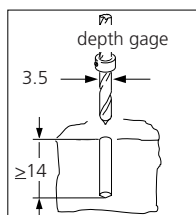
- VIB 8.693 M8 screw tap
- VIB 8.696 UNC 5/16 screw tap
- VIB 8.694 90° countersink bit

Mounting instructions

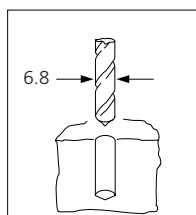
dimensions in mm



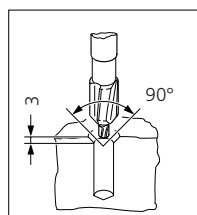
Select position



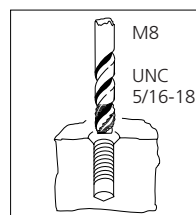
Bore pilot hole



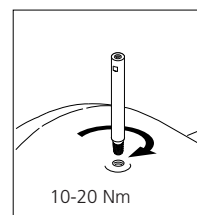
Bore out hole



90° countersink



Tap thread



Mount post

VIBCODE measurement studs

VIB 8.679 SET : VIBCODE measurement stud, M8, high quality stainless steel (VA1.4571), 1 pc.

VIB 8.680 SET : VIBCODE measurement stud, M8, stainless steel (VA1.4305), 1 pc.

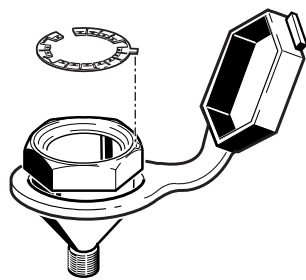
VIB 8.680 A25 : VIBCODE measurement studs, M8, stainless steel (VA1.4305), 25 pcs.

VIB 8.689 SET : VIBCODE measurement stud, UNC 5/16, high quality stainless steel (VA1.4571), 1 pc.

VIB 8.689 A25 : VIBCODE measurement studs, UNC 5/16, high quality stainless steel (VA1.4571), 25 pcs.

VIB 8.690 SET : VIBCODE measurement stud, UNC 5/16, stainless steel (VA1.4305), 1 pc.

VIB 8.690 A25 : VIBCODE measurement studs, UNC 5/16, stainless steel (VA1.4305), 25 pcs.



Distinctive feature



VIB 8.679 SET



VIB 8.690 SET



VIB 8.680 SET



VIB 8.689 SET

Description

These VIBCODE measurement studs are the standard measurement locations used with the VIBCODE transducer. Each stud is coded by breaking off specific tabs from the plastic ring using a ring encoding tool according to the unique pattern generated by OMNITREND for each measurement location.

The resulting pattern is read by the VIBCODE probe to identify the measurement location (and from it, its required measurement tasks) reliably and automatically.

Studs made out of high quality stainless steel (composite VA 1.4571) are particularly suited for applications in exceptionally harsh chemical environments.

Installation accessories

- VIB 8.693 M8 screw tap
- VIB 8.696 UNC 5/16 screw tap
- VIB 8.694 90° countersink bit

Accessories

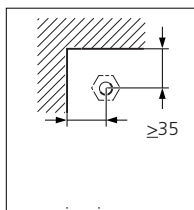
- VIB 8.563 A25 VIBCODE code rings, 25 pcs.
- VIB 8.692 VIBCODE encoding tool
- VIB 8.566 Protective cap
- VIB 8.568/.. Color coding for protective cap, 25 pcs.

Scope of delivery for one VIBCODE meas. stud

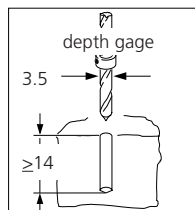
1x stainless steel bolt, 1x code ring, 1x protective cap.

Mounting instructions

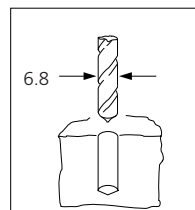
dimensions in mm



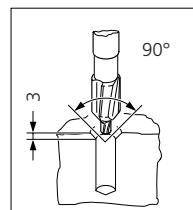
Select position



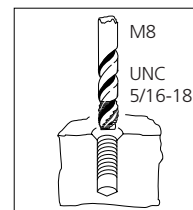
Bore pilot hole



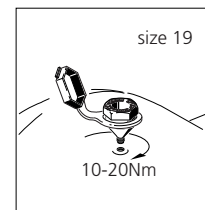
Bore out hole



90° countersink

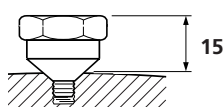


Tap thread



Mount stud

Height



C

VIBCODE measurement studs with extension post

1

VIB 8.576 : VIBCODE measurement stud with extension post, M8 x 55 mm

VIB 8.577 : VIBCODE measurement stud with extension post, M8 x 95 mm

VIB 8.578 : VIBCODE measurement stud with extension post, M8 x 170 mm

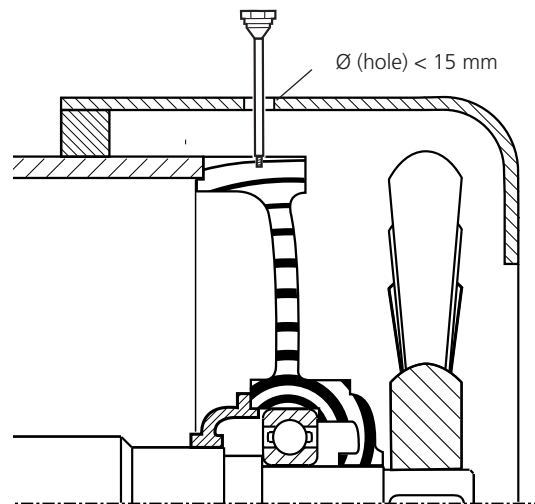
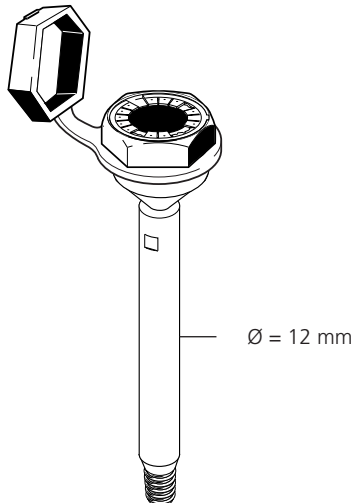
2

VIB 8.580 : VIBCODE measurement stud with extension post, UNC 5/16 x 2 1/8"

VIB 8.581 : VIBCODE measurement stud with extension post, UNC 3/8 x 3 3/4"

VIB 8.582 : VIBCODE measurement stud with extension post, UNC 3/8 x 6 5/8"

3



4

5

6

A

Application

As its name implies, these studs feature an extra-long shaft to allow measurement in locations where the VIBCODE transducer does not fit directly at the measurement surface. The studs are available in various lengths with an M8 or UNC 5/16 thread at its bottom.

Note

The longest extension (170 mm and 6 5/8") may be used only for taking shock pulse readings and not for vibration measurement!

Material

Stainless steel, VA1.4305

Installation accessories

- VIB 8.693 M8 screw tap
- VIB 8.696 UNC 5/16 screw tap
- VIB 8.694 90° countersink bit

Accessories

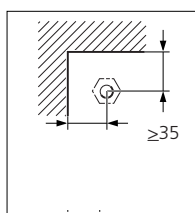
- VIB 8.563 A25 VIBCODE code rings, 25 pcs.
- VIB 8.692 VIBCODE encoding tool
- VIB 8.566 Protective cap
- VIB 8.568/.. Color coding for protective cap, 25 pcs.

Scope of delivery for one VIBCODE meas. stud

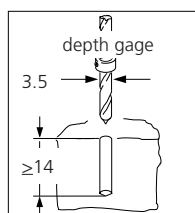
1x stainless steel bolt, 1x code ring, 1x protective cap, 1x extension post.

Mounting instructions

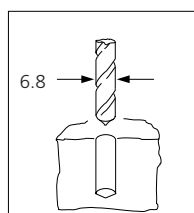
dimensions in mm



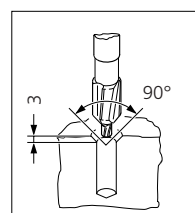
Select position



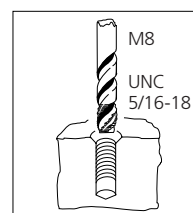
Bore pilot hole



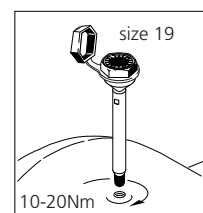
Bore out hole



90° countersink



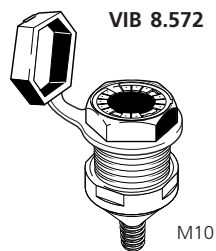
Tap thread



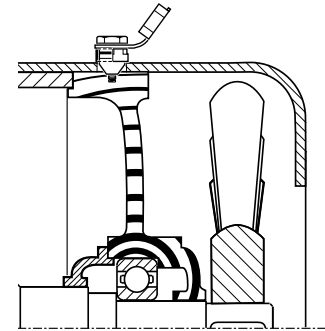
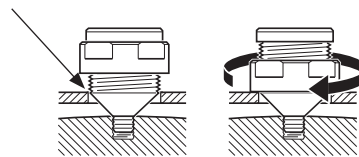
Mount post

VIBCODE measurement studs with locking nut

VIB 8.571 :	VIBCODE measurement stud with locking nut, M8
VIB 8.572 :	VIBCODE measurement stud with locking nut, M10
VIB 8.573 :	VIBCODE measurement stud with locking nut, M12
VIB 8.594 :	VIBCODE measurement stud with locking nut, UNC 5/16
VIB 8.595 :	VIBCODE measurement stud with locking nut, UNC 3/8 - 16
VIB 8.596 :	VIBCODE measurement stud with locking nut, UNC 1/2 -13



Bolt does not touch casing!



Application

The VIBCODE measurement studs with locking nut are ideal for situations such as motor housings where there is little clearance between the actual mounting location (e.g. the bearing housing) and the machine housing. This arrangement can even be used to replace existing housing screws. Once the stud is torqued into the threaded hole prepared for measurement, the counter nut can be tightened against the machine housing.

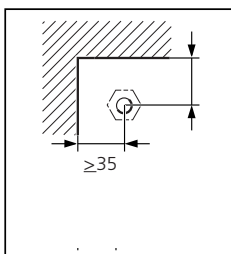
To ensure optimum signal transmission, the cone of the bolt may only touch the measuring point (e.g. the bearing housing), but not the metal casing.

Material

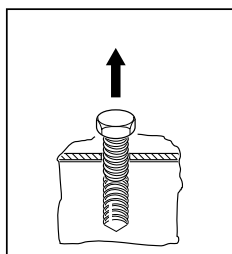
Stainless steel, VA1.4305

Mounting instructions

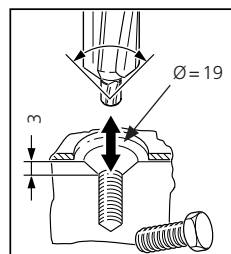
dimensions in mm



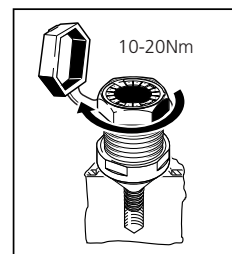
Ensure sufficient clearance



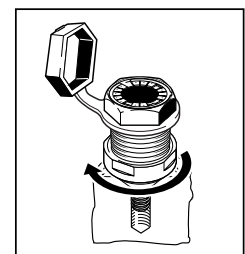
Remove bolt and housing cawling



Countersink hole, bore cawling

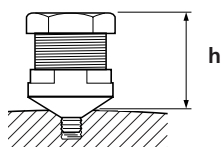


Mount adapter



Fasten locking nut

Height



Height h in mm	Adapter Order no.
28	VIB 8.571 / VIB 8.594
27	VIB 8.572 / VIB 8.595
26	VIB 8.573 / VIB 8.596

Installation accessories

VIB 8.693	M8 screw tap
VIB 8.696	UNC 5/16 screw tap
VIB 8.694	90° countersink bit

Accessories

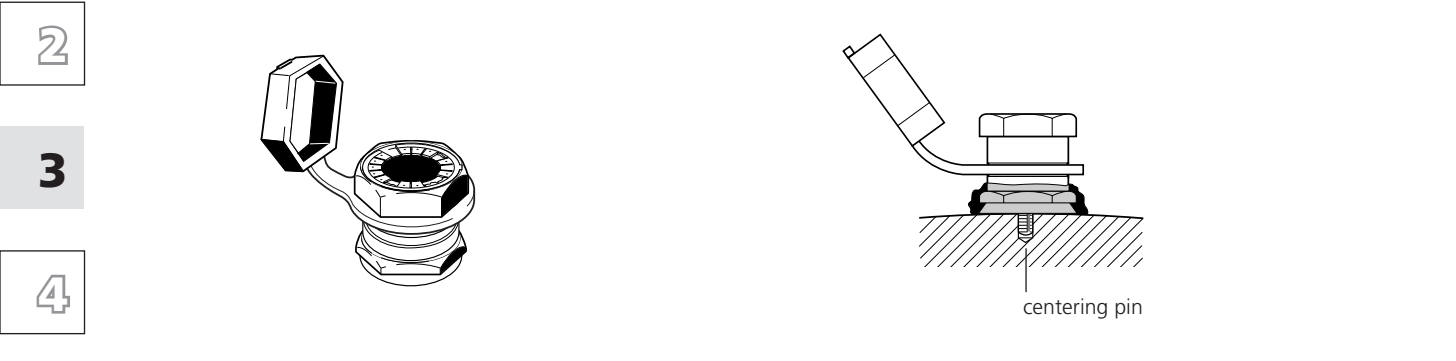
VIB 8.563 A25	VIBCODE code rings, 25 pcs.
VIB 8.692	VIBCODE encoding tool
VIB 8.566	Protective cap
VIB 8.568/..	Color coding for protective cap, 25 pcs.

Scope of delivery for one VIBCODE meas. stud

1x stainless steel bolt, 1x code ring, 1x protective cap, 1x locking nut.

C VIBCODE measurement studs for adhesive mounting

- 1 VIB 8.685 SET : VIBCODE measurement stud for adhesive mounting, 1 pc.
- VIB 8.685 A25 : VIBCODE measurement stud for adhesive mounting, 25 pcs.



5 **Application**
 These VIBCODE measurement studs are ideal when only adhesive mounting is possible.

6 **Mounting notes**
 A removable self-threading centering pin may be used if desired to hold the stud in place while the adhesive cures to final hardness.

A **Material**
 Stainless steel, VA1.4305

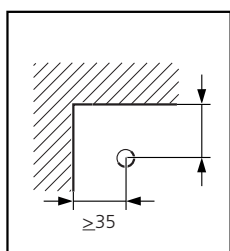
Installation material for adhesive mount:
 2-component adhesive (e.g. WEICON HB 300).

- Accessories**
- VIB 8.563 A25 VIBCODE code rings, 25 pcs.
 - VIB 8.692 VIBCODE encoding tool
 - VIB 8.566 Protective cap
 - VIB 8.568/.. Color coding for protective cap, 25 pcs.

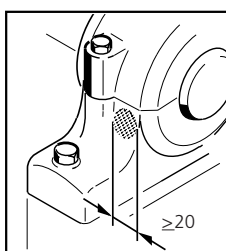
Scope of delivery for one VIBCODE meas. stud
 1x stainless steel bolt, 1x code ring, 1x protective cap.

Mounting instructions

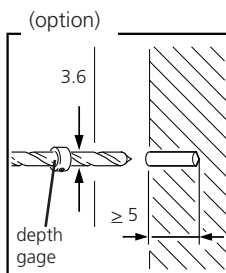
dimensions in mm



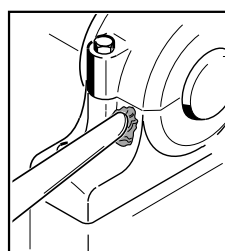
Allow clearance for transducer



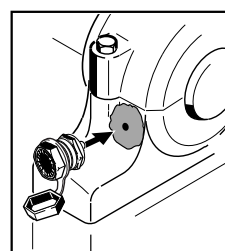
Mounting surface: flat & roughened



(Option: bore hole for centering pin)

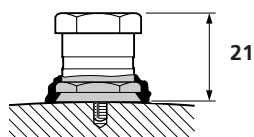


Apply compound to both surfaces



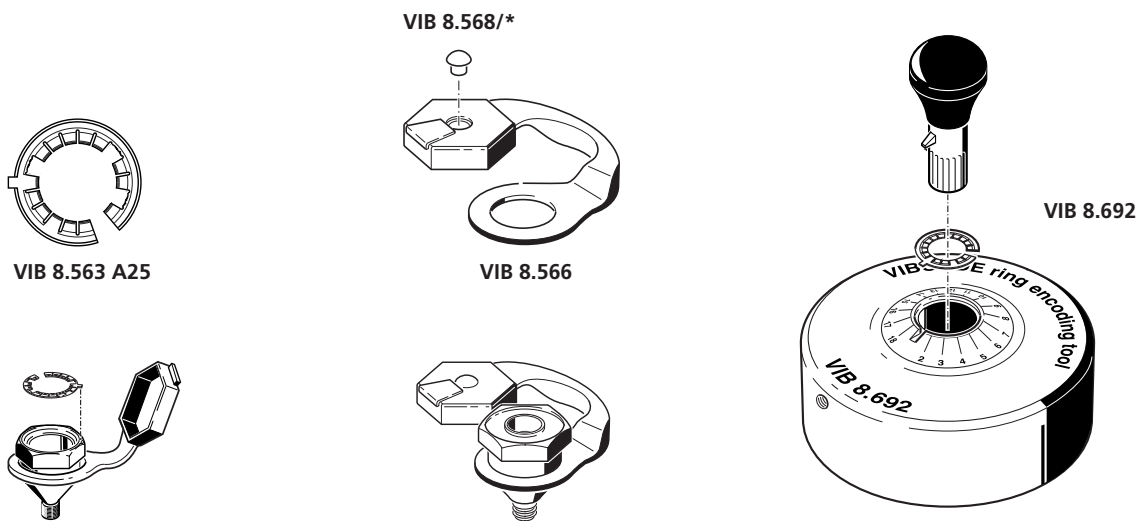
Press & turn adapter into surface

Height



Accessories for VIBCODE measurement studs

VIB 8.563 A25 :	VIBCODE code ring, 25 pcs.
VIB 8.566 :	Protective cap for VIBCODE stud
VIB 8.568/B :	Color coding for protective cap, black, 25 pcs.
VIB 8.568/GN :	Color coding for protective cap, green, 25 pcs.
VIB 8.568/GR :	Color coding for protective cap, gray, 25 pcs.
VIB 8.568/W :	Color coding for protective cap, white, 25 pcs.
VIB 8.568/Y :	Color coding for protective cap, yellow, 25 pcs.
VIB 8.692 :	VIBCODE encoding tool



Description

The protective cap VIB 8.566 protects the measurement surfaces and code ring from damage by aggressive industrial materials. Each VIBCODE measurement location can be individually color-coded for easy recognition during route-based data collection.

Example:

VIBCODE locations to be measured daily can be marked with black color coding, while green color coding can be used to mark VIBCODE locations that require only weekly measurement.

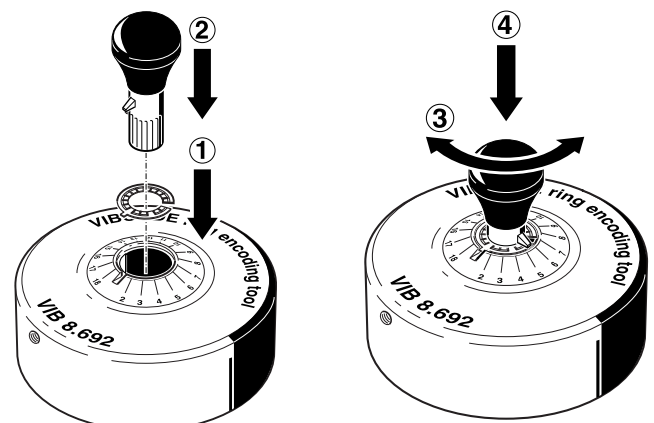
The plastic tabs of the code ring VIB 8.563 may easily be removed using the VIBCODE encoding tool VIB 8.692 as illustrated above. The ring then fits into the VIBCODE stud; a tab on the outside of the ring provides positive orientation.

Encoding the code ring:

1. Insert code ring
2. Insert plunger
3. Set code number (issued by OMNITREND software)
4. Slowly press down plunger

Technical data

PARAMETER		VIB 8.566	VIB 8.563 A25
General	Material	Desmopan®	Hostaform®
	Temperature range	-30°C ... +100°C	-40°C ... +130°C
	Resistance	oil, coolant	



C

Stand and accessories for laser trigger / laser RPM sensor

1

VIB 6.632 : Stand for laser trigger / laser RPM sensor

VIB 3.306 : Reflective tape

2

3

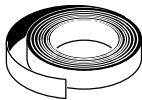
4

5

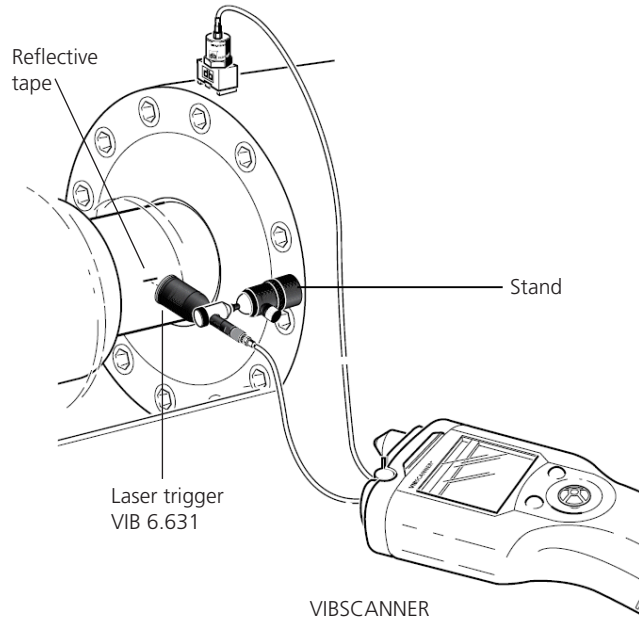
6



VIB 6.632



VIB 3.306



A

Description

This compact and stable stand can be used to quickly and securely mount the laser trigger sensor on any machine.

The laser trigger sensor is fixed in a bracket on the stand and the stand is fastened to the machine with a magnetic holder VIB 3.420. To adjust the sensor, the ball joint can be fixed in virtually any position.

The reflective tape VIB 3.306 is used as a measurement mark on the shaft.

Notes

During transport / storage a steel washer as a short-circuit rail is mounted on the pole pieces.

The safety data sheet is available upon request (info@pruftechnik.com) or in the Internet (www.pruftechnik.com).

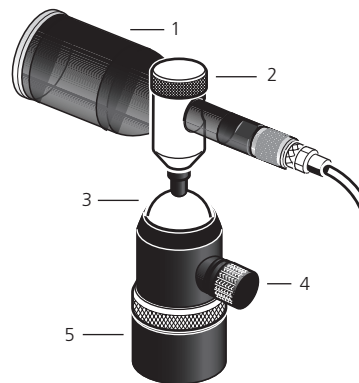
Accessories

VIB 3.420 Magnetic holder, spare part

Technical data

PARAMETER		VIB 6.632
General	Weight	approx. 230 g
	Height	max. 116 mm
	Mounting	magnetic

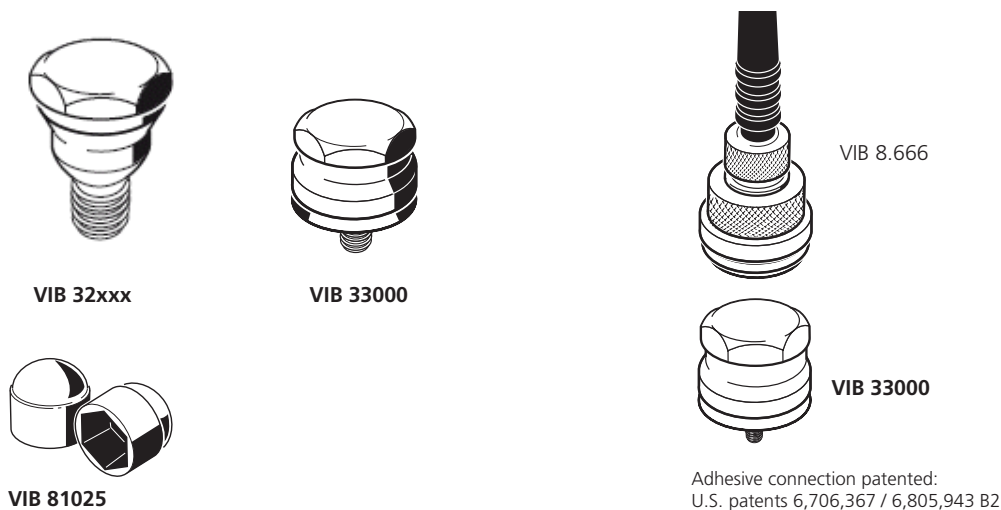
PARAMETER		VIB 3.306
General	Material	SL7610
	Width	10 mm
	Length	approx. 4.5 m on roll



1. Laser trigger sensor
2. Sensor carrier with locking screw
3. Ball joint
4. Locking screw for ball joint
5. Magnetic holder, VIB 3.420

Measurement studs for accelerometer type VIB 8.666

VIB 32000 :	Measurement stud for accelerometer type VIB 8.666, M8x24, nickel-plated
VIB 32010 :	Measurement stud for accelerometer type VIB 8.666, M8x24, stainless steel
VIB 32200 :	Measurement stud for accelerometer type VIB 8.666, M8x113, nickel-plated
VIB 32210 :	Measurement stud for accelerometer type VIB 8.666, M8x113, stainless steel
VIB 32310 :	Measurement stud for accelerometer type VIB 8.666, M8x202, stainless steel
VIB 32410 :	Measurement stud for accelerometer type VIB 8.666, M8x291, stainless steel
VIB 33000 A25 :	Measurement stud for accelerometer type VIB 8.666, adhesive mount, stainless steel, 25 pcs.
VIB 81025 :	Protective cap for measurement stud, black



Application

These measurement studs are used to mount the accelerometer type VIB 8.666 on the machine. They represent a defined measurement location and are very robust and resilient.

The stud VIB 33000 is used when only adhesive mounting is possible. A removable self-threading centering pin may be used if desired to hold the stud in place while the adhesive cures to final hardness.

The measurement studs VIB 32xxx are the standard studs for the accelerometer type VIB 8.666.

Studs made out of high quality stainless steel (composite VA 1.4305) are particularly suited for applications in exceptionally harsh chemical environments.

Installation material for adhesive mount:
2-component adhesive (e.g. WEICON HB 300).

Accessories

VIB 81025 Protective cap for measurement stud

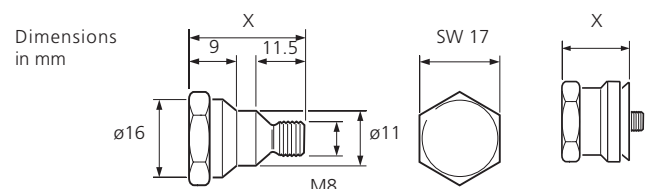
Installation accessories

VIB 8.693 M8 screw tap
VIB 8.694 90° countersink bit

Technical data

PARAMETER		VIB 32000	VIB 32200	VIB 32010	VIB 32210	VIB 32310	VIB 32410	VIB 33000
General	Material	9 SMn28K (W.Nr. 1.0715.07), nickel-plated			Stainless steel (VA 1.4305)			
	Height X	24 mm	113 mm	24 mm	113 mm	202 mm	294 mm	14 mm
	Dimensions	see figure below						

PARAMETER		VIB 81025
General	Material	LDPE
	Operating temp.	< 70°C
	Height	19 mm
	Wrench size	17



C

VIB 3.450: Probe tip for mobile industrial accelerometer type VIB 6.14x

1

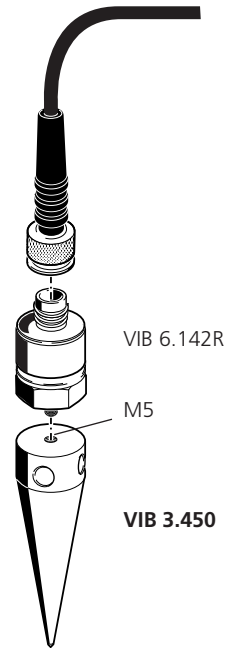
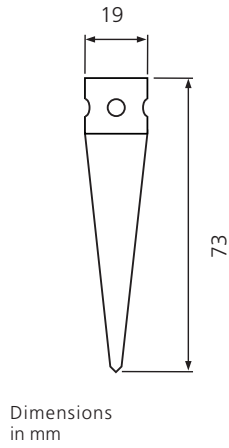
2

3

4

5

6



A

Application

The accelerometer type VIB 6.14x can be used as a mobile hand-held probe through use of a contact tip.

Technical data

PARAMETER		VIB 3.450
General	Material	Aluminium
	Weight	30 g
	Dimensions	s. figure

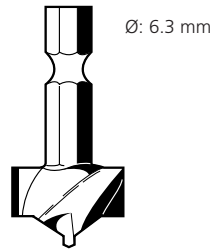
Tools for the installation of accelerometers and for the preparation of meas. locations

VIB 8.610 : PRÜFTECHNIK countersink bit

VIB 8.693 : M8 thread tap

VIB 8.694 : 90° counter sink bit

VIB 8.696 : UNC5/16 thread tap



VIB 8.610



VIB 8.693
VIB 8.696



VIB 8.694

Application

The PRÜFTECHNIK countersink bit VIB 8.610 should always be used to prepare the location for VIBROTIP's, VIBSCANNER's or TIPECTOR's vibration and shock pulse sensor. The countersink produces a hole smaller than the built-in sensor. A ring-shaped contact area is thereby created between the sensor and the measurement surface, providing optimal signal transmission. And as an important side benefit for reliable comparison between successive readings: this clearly marks the measurement location so that readings are always taken in the exact same spot.

The bit has a hexagonal shaft compatible with a standard battery-operated screwdriver. This is recommended in preference to an electric drill as only a relatively shallow countersunk hole is needed.

Notes

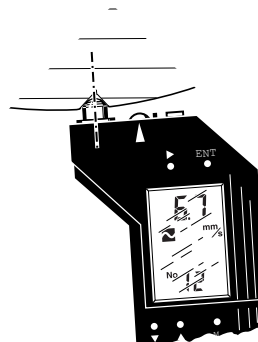
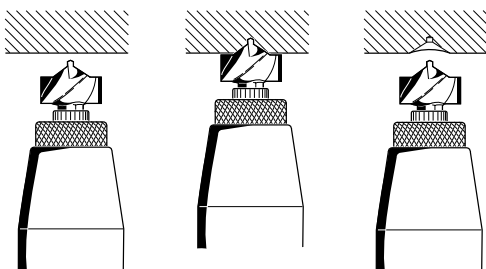
on how to prepare the measurement location:

1. Clean and then mark the exact desired measurement location.
2. Drill with a battery operated screwdriver until the rim of the countersink is level with the measurement surface (see below).
3. Blow any shavings out of the hole with compressed air (using a thin hose or tube).

Make sure that the hole is completely free of metal particles, which otherwise could contact the sensor and interfere with proper signal transmission. Place the accelerometer as perpendicular to the surface as possible. Otherwise, the measuring direction does not correspond to the ISO standards!

The thread taps VIB 8.693 and VIB 8.696 and the 90° counter sink bit VIB 8.694 are used to prepare measurement locations for industrial accelerometer mounting.

In addition, drill bits of sizes 3.5 mm (1/8") (with depth gage) and 6.8 mm (1/4") are required.



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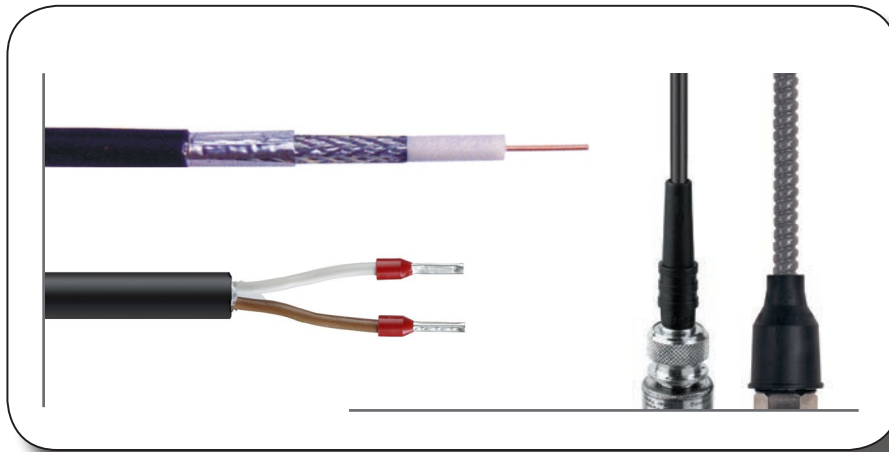
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6

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Chapter 4

Cables, interfaces and accessories for permanent installation



C

Contents: Cables, interfaces and accessories for permanent installation

1

2

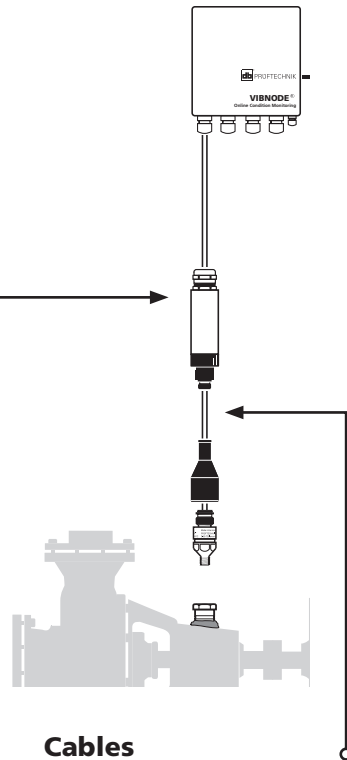
3

4

5

6

A



Interfaces

Order no.	Description	Page
0 2088 0009 0 2088 0010 VIB 3.550	Safety barrier for ICP-type accelerometers Transmitter supply unit VIBROTECTOR EX Limiting device, CLD-type accelerometers	127
VIB 7.560	VIBROWEB connection box	135
VIB 6.770/9 VIB 6.770/13 VIB 6.776	Junction box (aluminium) for the extension of a sensor cable -, coaxial - coaxial -, coaxial - triaxial -, twisted-pair/ 2-pin	129
VIB 6.775/9 VIB 6.775/13	Junction box for the extension of two sensor cables -, coaxial - coaxial -, coaxial - triaxial	131
VIB 8.306 VIB 8.306 S VIB 8.306 V	VIBRONET field multiplexer, 9-channel, -, w/ threaded fitting M12 -, w/ threaded fitting M20 -, stainless steel housing, M20	132
VIB 8.306 EX	VIBRONET field multiplexer, 9-channel, -, intrinsically safe, aluminium housing	133
VIB 8.310 VIB 8.310 EX VIB 8.312 VIB 8.313 VIB 8.313 EX VIB 8.314 EX	Connection modules for VIBRONET field multiplexer Temperature module -, intrinsically safe Process parameters module (U / I) RPM module -, intrinsically safe Vibration module, intrinsically safe	134

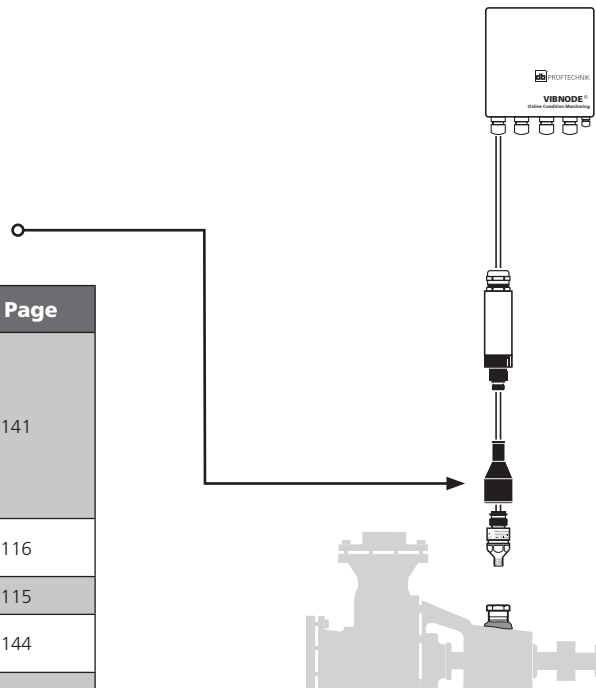
Cables

Order no.	Description	Page
VIB 3.570-L	Pre-assembled cable for intrinsically safe VIBROTECTOR and ICP-type accelerometers	122
VIB 3.575-10 VIB 3.575-20	Sensor cable for triaxial accelerometers (VIB 6.215 / VIB 6.216), 10 / 20 meters	123
VIB 5.740-X VIB 5.741-X	Sensor cable for VIBROTECTOR & CLD-/ICP-type accelerometers -, silicone sheath, straight connector -, silicone sheath, angled connector	120
VIB 5.745-L VIB 5.746-L	Sensor cable for VIBROTECTOR & CLD-/ICP-type accelerometers -, PUR sheath, angled connector -, PUR sheath, straight connector	121
VIB 5.771	Pre-assembled VIBREX cable	124
VIB 6.420-L VIB 6.426-L	Pre-assembled WEARSCANNER cables... for power supply & data transmission for switching output	126
VIB 7.115-6 VIB 7.115-12	Pre-assembled VIBNODE cables -, Twisted-pair (TP), 6 m -, Twisted-pair (TP), 12 m	125
VIB 90006 VIB 90007 VIB 90008 VIB 90009 VIB 90093	Coaxial cable RG58 -, for hazardous areas (blue) -, oil-resistant, max. 150°C -, for low ambient temperatures > - 40°C -, halogen free & highly flame retardant -, oil-resistant, max. 125°C	112
VIB 90030	Industrial Ethernet cable, CAT5	119
VIB 90061 VIB 90065	Twisted-pair sensor cable, PUR sheath Sensor cable, silicone and cable armor	117
VIB 90070	Multi-core twisted-pair sensor cable	118
VIB 90080 VIB 90180	Standard triaxial cable Standard triaxial cable, armored version	113
VIB 309007-6 VIB 309007-10 VIB 309007-15 VIB 309007-20	Pre-assembled VIBNODE cables -, coaxial, 6 m -, coaxial, 10 m -, coaxial, 15 m -, coaxial, 20 m	125

Contents: Cables, interfaces and accessories for permanent installation

Accessories for cable installation

Order no.	Description	Page
VIB 6.700 VIB 6.701 VIB 6.710 VIB 6.711 VIB 6.720 VIB 6.721 VIB 6.722	Dust caps for accelerometers VIB 6.1xx -, straight -, straight and oil-resistant -, angled -, angled and oil-resistant Clamp for dust cap, cable end -, sensor end Dust cap sleeve	141
VIB 6.725-100	Shield connector set for coaxial and twisted-pair cables	116
VIB 6.730	Protective sheath for coaxial cables	115
VIB 6.760 VIB 6.761	IP 68 option for accelerometer VIB 6.1xx -, short version	144
VIB 7.580..3	Open ring spanners size 14x17 / 19x22 / 24x27 / 24x25	136
VIB 7.590..3 VIB 7.595	Metric cable fittings M16 / M20 / M25 / M12 Shield clamp SK8	137
VIB 8.718	Cable clamp for prot. sheath VIB 6.730	115
VIB 8.745	Installation checker	143
VIB 81015	Protective sleeve for cable type RG 174	26
VIB 81026 VIB 81052 VIB 81053 VIB 81054	Crimping tool for coaxial cables Cutting tool for coaxial cables Cable stripper for triaxial cables Replacement blade for cable stripper	114
VIB 81060	Screw driver 2.5 x 35	137
VIB 91000	Chassis connector, TNC socket to crimp	140
VIB 91001 VIB 91002 VIB 91009 VIB 93022	TNC plug to threaded fitting, angled TNC plug to TNC socket, angled BNC plug to crimp contact, angled TNC plug to crimp contact, straight	138
VIB 93025	TNC plug to crimp contact, RG174 cable	26
VIB 93031 VIB 93033	TNC plug to threaded fitting, straight TNC socket to TNC socket, straight	138
VIB 93035 VIB 93036 F VIB 93036 S	Dust cap for TNC socket Bulkhead connector w/ fastening flange -, single hole screw version	140
VIB 93047 VIB 93055	TNC socket to crimp contact, straight TNC plug to BNC plug, straight	138
VIB 93056	Bulkhead connector, flange, BNC- TNC	140
VIB 93060	BNC plug to crimp contact, straight	138
VIB 93061	Dust cap for BNC socket	140
VIB 93062 VIB 93067 VIB 93077	TNC socket to BNCplug, straight TNC plug to BNC socket, straight TNC plug to crimp contact, angled	138
VIB 93090	Chassis connector, BNC socket to crimp	140
VIB 94010 VIB 94011	Plug-in connector, 2-pin, straight Plug-in connector, 2-pin, angled	139



C

1

2

3

4

5

6

A

C

Coaxial cables for permanent installation

1

VIB 90006 : Coaxial cable for hazardous areas, PVC cable sheath, blue

VIB 90007 : Coaxial cable for high ambient temperatures (< 150°C), oil-resistant

VIB 90008 : Coaxial cable for low ambient temperatures (> - 40°C)

2

VIB 90009 : Coaxial cable, halogen free and highly flame retardant

VIB 90093 : Coaxial cable for high ambient temperatures (< 125°C), oil-resistant

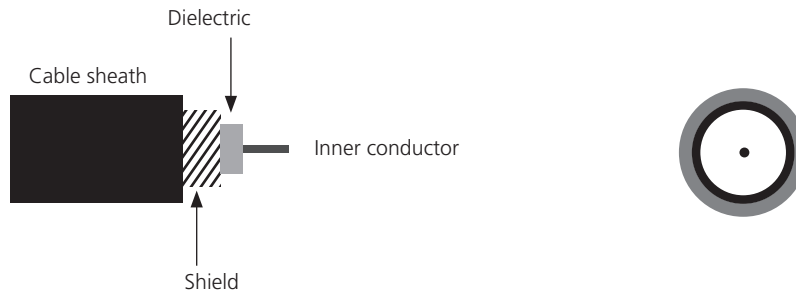
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Application

Coaxial cables (RG 58) are used for the transmission of high frequency measurement signals. For special applications the coaxial cables are available in different versions.

Accessories

VIB 6.730 Protective sheath for coaxial cables

VIB 8.718 Cable clamp for protective sheath

VIB 81052 Cutting tool for coaxial cables

Order information

Add the required cable length to the order number.

Example: Coaxial cable, 250 meters

Order no.: VIB 90008-250

Bundle: Ring up to 100 meters,

Roll up to 500 meters

Technical data

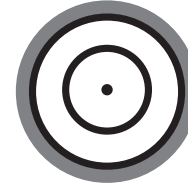
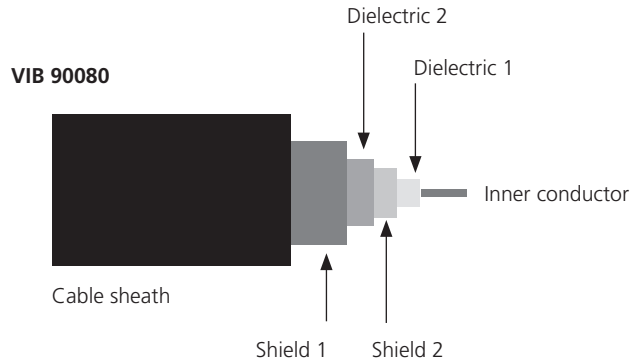
PARAMETER		VIB 90007	VIB 90006	VIB 90008	VIB 90009	VIB 90093
Measurement	Type	RG 142 B/U	RG 58			
	Char. impedance	50 Ohm				
	Capacitance	95 nF/km	101 nF/km	101 nF/km	101 nF/km	105 nF/km
	Attenuation ¹	28 dB/100m	38 dB/100m	32 dB/100m	38 dB/100m	46 dB/100m
Cable design	Inner conductor	Steel, Cu + Ag	Cu strand, tinned			
	Dielectric	PTFE	PE white	MDPE white	PEX (PE cross-linked)	Rayolin™
	Shield	2xCu braid, Ag	Cu braid, tinned			
	Sheath	FEP, brown	PVC, blue	MDPE, black	RADOX GKW S, black	Thermorad® S, black
Mechanical	Temperature range	-65°C ... + 165°C	-25°C ... + 85°C	-40°C ... + 80°C	-25°C ... + 105°C	-50°C ... + 125°C
	Bending radius	50 mm				
	External diameter	5 mm				
	Weight	6.4 kg / 100 m	3.7 kg / 100 m	4 kg / 100 m	4 kg / 100 m	3.5 kg / 100 m
	Special features	oil resistant, double screened	hazardous area (blue sheath)	halogen free IEC 60708	halogen free, highly flame retardant	oil resistant

¹ at 400 MHz / 25°C / sea level

Triaxial cables for permanent installation

VIB 90080 : Standard triaxial cable

VIB 90180 : Standard triaxial cable, armored version



Application

Triaxial cables are used for the transmission of high frequency measurement signals. The cable has two screening conductors and a inner conductor. Thus, triaxial cables are particularly suitable for use in industrial environments that are subject to electromagnetic fields.

The armored version has an additional jacket of steel for increased mechanical protection (against vermin, mouse bites, ...).

Note

The cable sheath of the armored version VIB 90180 does not contain any silicone or talcum and, as a result, can also be used in the automotive industry (e.g. paint shops).

Accessories

VIB 81053 Cable stripper for triaxial cables

VIB 81054 Replacement blade for cable stripper

Order information

Add the required cable length to the order number.

Example: Standard triaxial cable, 250 meters
Order no.: VIB 90080-250

Bundle: Ring up to 100 meters,
Roll up to 500 meters (VIB 90080) or
250 meters (VIB 90180)

Technical data

PARAMETER		VIB 90080	VIB 90180
Electrical	Type	RG 58	
	Char. impedance	50 Ohm	
	Capacitance	approx. 105 nF/km (1kHz)	-
	Attenuation	34 dB/100m (300 MHz, 20°C)	-
Cable design	Inner conductor	Cu braid, tinned	
	Dielectric	PE	
	Shield	Cu strand, tinned	
	Sheath	PUR	PUR; armouring: steel braid, tinned
Mechanical	Temperature range	-40°C ... + 80°C	-10°C ... + 80°C
	Bending radius	50 mm	60 mm
	External diameter	10 mm	14 mm*
	Weight	12.6 kg / 100 m	-
	Special features	silicone free, UV-stabilized, flame retardant (IEC 60332-1-2), RoHS compliant (2002/95/EG)	silicone free, talkum free, UV-stabilized

* not suitable for standard threaded fittings (M20) of the VIBRONET 9-channel field multiplexers (VIB 8.306).

C

Installation tools for coaxial, triaxial and twisted-pair cables

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VIB 81026 : Crimping tool for coaxial cables

VIB 81052 : Cutting tool for coaxial cables

VIB 81053 : Cable stripper for triaxial cables

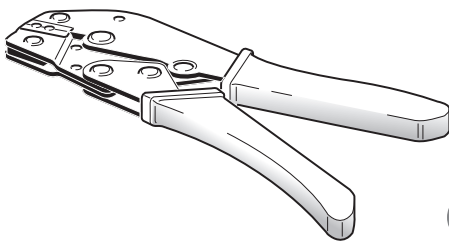
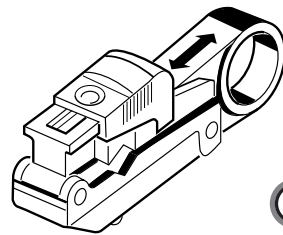
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VIB 81054 : Replacement blade for cable stripper VIB 81053

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Crimping tool for coaxial cables
VIB 81026Cutting tool for coaxial cables
VIB 81052Cable stripper for triaxial cables
VIB 81053

6

Application

The crimping tool is a special pliers and is used to crimp coaxial cables (RG 58 / RG 59).

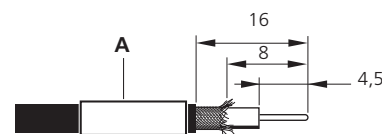
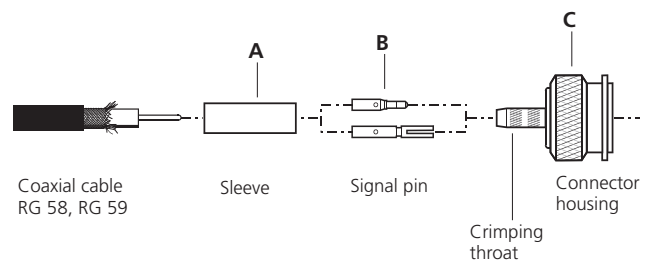
The VIB 81052 cutting tool cleanly strips the ends of coaxial cables for proper connection.

The cable stripper VIB 81053 is ideal for stripping wires with a diameter of 6 mm to 28 mm.

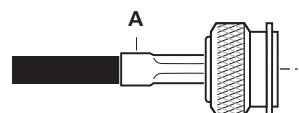
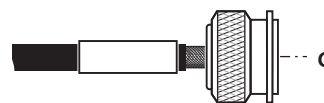
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Instructions for crimping (BNC/ TNC)

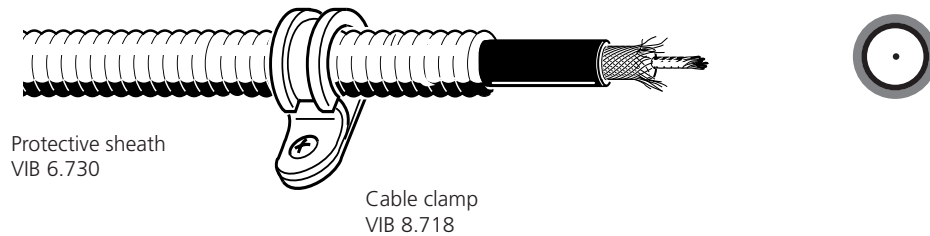
- Slide sleeve A onto the cable.
- Strip the insulation of the cable as shown in diagram.
CAUTION!
Do not damage the shielding, dielectric or inner conductor!
- Push signal pin B over the cable inner conductor up to the dielectric and crimp it.
- Spread the shielding slightly apart and insert the cable into the connector housing C. The shielding must lie over the crimping throat.
- Push sleeve A over the shielding and crimp as close as possible to housing C.



Dimensions in mm



VIB 6.730 : Protective sheath for standard coaxial cables



Application

A protective sheath made of plastic protects the standard coaxial cables against mechanical damage. Cable clamps should be used for strain relief.

Accessories

VIB 8.718 Cable clamp for protective sheath

Order information

Add the required cable length to the order number.

Example: Protective sheath, 250 meters
Order no.: VIB 6.730-250

Technical data

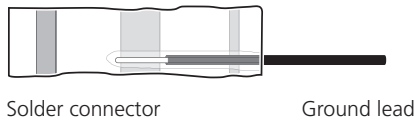
PARAMETER		VIB 6.730
Cable design	Material	Polyamide 6, color: black
	Nominal diameter	6.5 mm
	External diameter	10 mm
	Bending radius	13 mm
Environment	Temperature range	-40°C ... + 115°C
	Chemical resistance	Oil, petrol
	Environmental influences	UV and weather resistant
	Special features	flame-retardant, self-extinguishing in acc. with UL94 V0, silicone, cadmium, halogen free

C

VIB 6.725-100 : Shield connector set for coaxial and twisted-pair cables

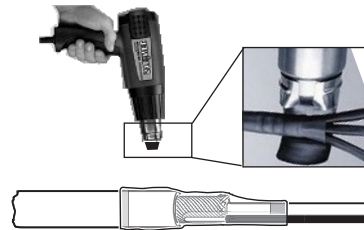
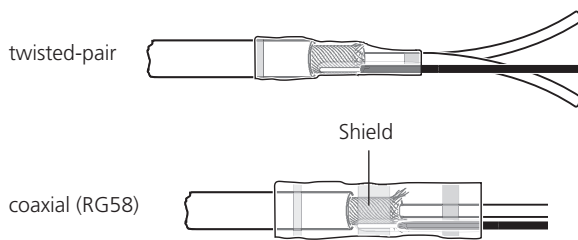
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Application

The soldering bush simplifies the task of connecting the shield of the coaxial and twisted pair cables. These cable types are used as sensor lines in the PRÜFTECHNIK online condition monitoring systems. The method eliminates the time-consuming preparation of a shielding braid.

Installation

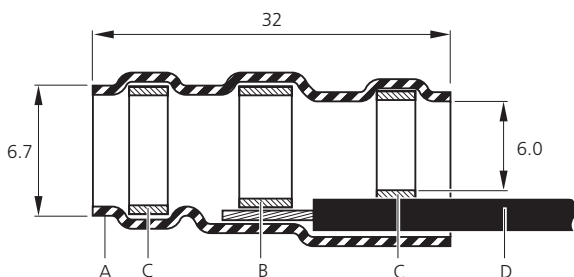
The soldering bush is pulled onto the stripped end of the wire and shrunk onto it using a hot air gun. In the process, the inner tinned ring solders the shielding braid to

the wire in the bush. At the same time, both ends of the soldering bush are sealed cleanly and tightly. The quality of the soldered connection can be checked through the transparent bush.

Note

To avoid damaging the cable with the hot air gun and to focus the air jet onto the soldering point, a suitable reduction nozzle is needed.

Product specification and dimensions



Material

A Sleeve:

Polyolefin, transparent, heat-shrinkable

B Solder preform with flux:

Cd18 per ANSI/J-STD-006 / ROM1 per ANSI/J-STD-004

C Meltabel sealing ring:

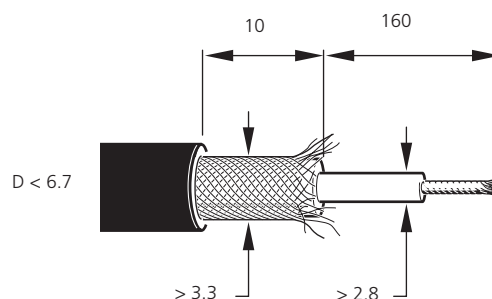
Thermally stabilized thermoplastic

D Ground lead:

Stranded tin plated copper, size: AWG22 (0,38 mm²),
Raychem polyethylene wire, length: approx. 160mm, color: green

Strip the cable according to illustration

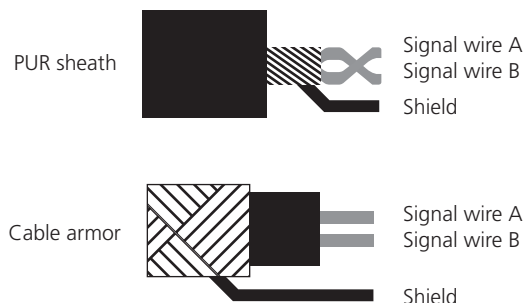
Dimensions in mm



Two-wire, shielded sensor cables for permanent installation

VIB 90061 : Shielded twisted-pair sensor cable, PUR sheath

VIB 90065 : Stranded sensor cable, silicone sheath and cable armor



Application for twisted-pair cable VIB 90061

The cable is used with the VIBROTECTOR vibration transmitter and in the VIBNODE Online Condition Monitoring System with the following transducers:

- VIB 6.195 - CLD-type accelerometer
- VIB 6.172 - ICP-type accelerometer

Special features

This cable

- is resistant against mineral oil and hydraulic fluid
- is halogen free and flame-retardant (IEC 60332-1-2).
- is notch resistant
- is insensitive against electrical interference
- contains no paint-wetting substances

Application for stranded cable VIB 90065

Connects the VIBROTECTOR vibration transmitter to a PCS. Resists high temperatures and is used if high mechanical strength is required. Only suitable for use in dry conditions.

Special features

The stranded cable

- has a wide temperature range: -50°C...+180°C
- has an outer sheath which is covered with a tight braid of galvanized steel wires as mechanical protection for the cable and for electrical screening.
- is halogen free and flame-retardant (IEC 60332-1-2).

Order information

Add the required cable length to the order number.

Example: Twisted-pair cable, 250 meters

Order no.: VIB 90061-250

Technical data

PARAMETER		VIB 90061	VIB 90065
Electrical	Char. impedance	72 Ohm	87 Ohm
	Capacitance (w/w)	approx. 86 nF/km ±10%	approx. 73 nF/km
	Inductance	approx. 0.75 mH/km	approx. 0.55 mH/km
	Nominal voltage U_0/U	300 / 500 V	
Cable design	Conductor	2 x 0.50 mm ²	2 x 0.75 mm ² , fine wire
	Insulation	Co-polymer	silicone-based
	Stranding	twisted-pair	stranded together
	Shielding	Cu braid, tin-coated	Steel wire braiding
	Sheath	PUR Polyurethane, black	silicone-based, glass fibre wrapping, galvanized steel wires
Mechanical	Temperature range	-40°C ... + 85°C, static	-50°C ... + 180°C
	Bending radius, flexing	> 84 mm	> 160 mm
	-, static	> 34 mm	> 30 mm
	Outer diameter	approx. 5.6 mm	approx. 8 mm
	Weight	--	90.5 kg/km
	Special features	halogen free and flame retardant (IEC 60332-1-2)	
Signal wire color code	BN (brown), WH (white)	BN (brown), BU (blue)	

C

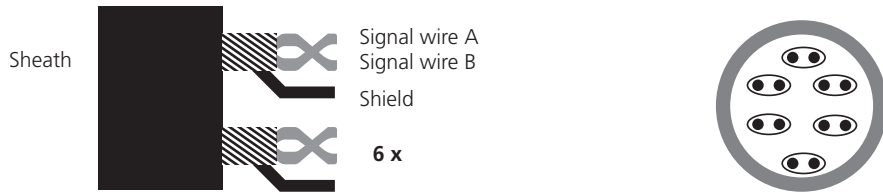
VIB 90070 : Multi-core twisted-pair sensor cable

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Application

The multi-core cable combines up to 6 sensor cables (VIB 90061) in the VIBROWEB online condition monitoring system.

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Note

The twisted-pair cable design minimizes crosstalk. The overall shielding reduces interference of adjacent lines.

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Order information

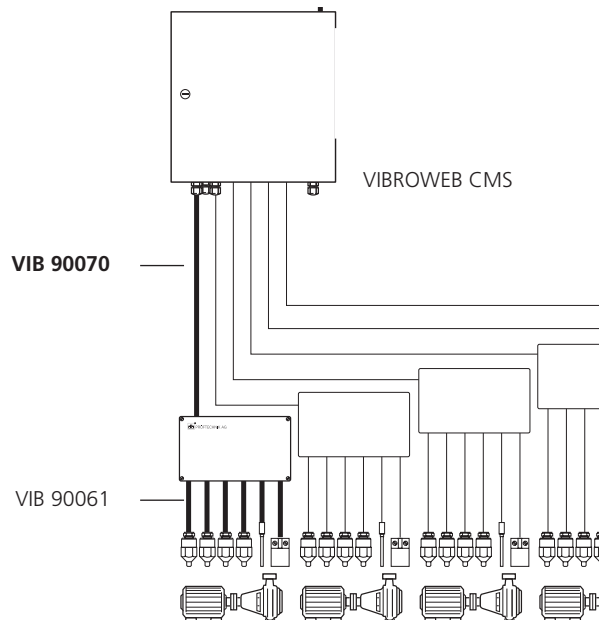
Add the required cable length to the order number.

Example: Multi-core sensor cable, 250 meters
Order no.: VIB 90070-250

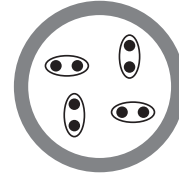
Bundle: 500 meters on cable drum

Technical data

PARAMETER		VIB 90070
Electrical	Characteristic impedance	approx. 65 Ohm
	Mutual capacitance (A/A)	approx. 140 nF/km
	Inductance	approx. 0.65 mH/km
Cable design	Conductor	6 x 2 x 0.25 mm ² , Cu, fine-wire strands
	Shielding	Pair screening: wrapping of Cu wires Outer shield: Cu braid, tinned
	Outer sheath	PUR, black, halogen free, UV stabilized
Mechanical	Temperature range	-40°C ... + 80°C, static
	Outer diameter	approx. 17.5 mm ± 0.5 mm
	Bending radius, static	> 108 mm
	Signal wire color code	in each pair: one wire white (WH), 2nd wire acc. to DIN 47100



VIB 90030 : Industrial Ethernet cable for WEARSCANNER (CAT5)



Application

This multi-core cable is used as a data and power cable for the WEARSCANNER particle counter.

Note

The twisted-pair cable design minimizes crosstalk. The overall shielding reduces interference of adjacent lines.

Order information

Add the required cable length to the order number.

Example: Ethernet cable for WEARSCANNER, 25 meters
Order no.: VIB 90030-25

Accessories

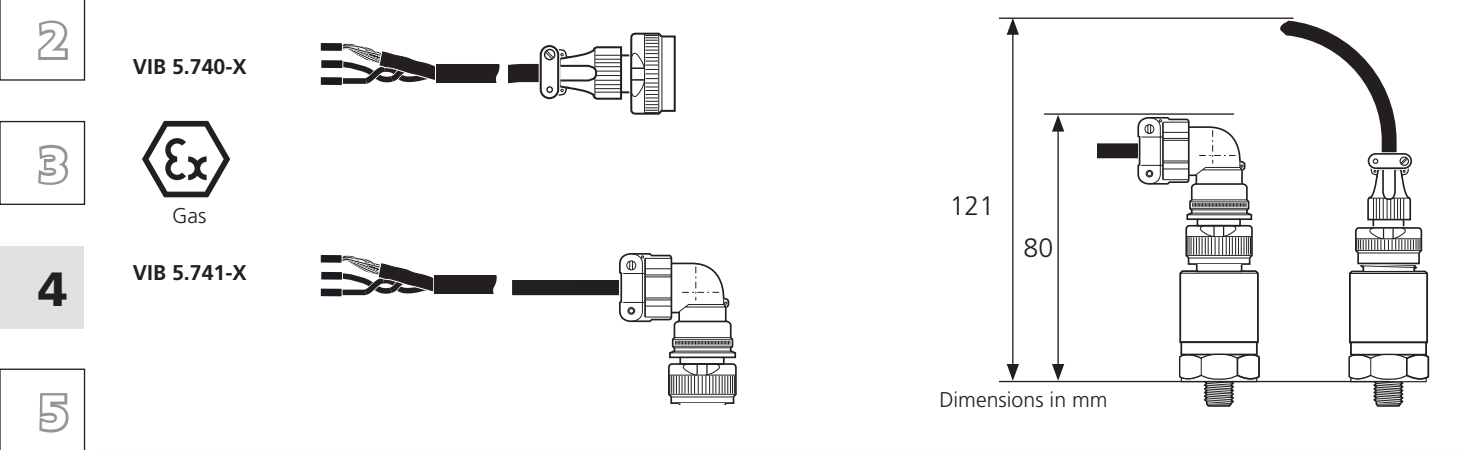
- VIB 6.421 M12 cable connector for power supply and data transmission (8-pin).
- VIB 6.425 M12 cable connector for switching output (5-pin)

Technical data

PARAMETER		VIB 90030
Electrical	Characteristic impedance	approx. 100 Ohm ± 15 Ohm (1 ... 100 MHz)
	Mutual capacitance (nom.)	approx. 48 nF/km
	Attenuation	33 dB/100m (100 MHz)
	Test voltage	0.7 kV
Cable design	Conductor	4 x 2 x 0.15 mm ² , Cu braid
	Insulation	PP
	Stranding	twisted-pair
	Shielding	Polyester foil over stranded bundle Polyester foil aluminium-lined Total: Cu braid, tin-coated
	Sheath	PUR, green, drag chain suitable
	Standards fulfilled	flame retardant (IEC 60332-1), halogen free (IEC 60754-2), Category 5e (CAT 5), corrosivity (EN50267-2-3), UL style 20963 (80°C/30V)
Mechanical	Temperature range	-40°C ... + 80°C
	Outer diameter	approx. 6.8 mm ± 0.3 mm
	Bending radius	> 102 mm
	Weight	approx. 56 kg/km

C Pre-assembled cables for VIBROTECTOR and CLD-/ICP-type accelerometers

- 1 VIB 5.740-X : Pre-assembled sensor cable, silicone sheath and cable armor, straight connector
- VIB 5.741-X : Pre-assembled sensor cable, silicone sheath and cable armor, angled connector



Application
 These sensor cables are already fitted with a suitable connector on the sensor side. The open end of the cable is for the connection to an online CMS or to a PCS (VIBROTECTOR only).

The cables can be used to install the following sensors OUTSIDE the hazardous area:

- VIB 5.73x VIBROTECTOR vibration transmitter
- VIB 6.172 ICP-type accelerometer
- VIB 6.195 CLD-type accelerometer

INSIDE the gas-explosion hazardous area the cables can be used with the following sensors:

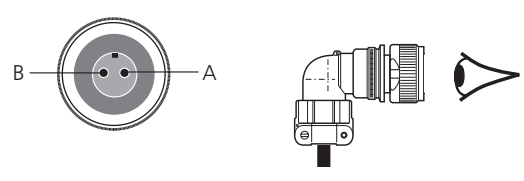
- VIB 5.73x EX VIBROTECTOR, intrinsically safe
- VIB 6.172XICP ICP-type accelerometer, intrinsically safe

The operation in dust-explosion hazardous areas is not allowed.

Accessories
 VIB 6.776 Junction box for the extension of a twisted-pair sensor cable.

Technical data

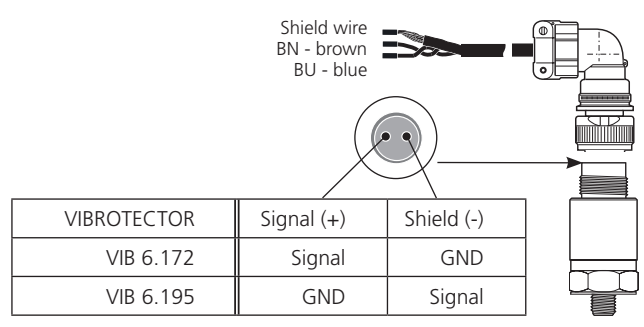
VIB 5.740-X / VIB 5.741-X		
Cable type	Stranded sensor cable, silicone sheath and cable armor, VIB 90065	
Connector	Type: 2-pin, MIL-C5015 Material: Aluminum alloy Surface: Zinc Nickel (A 240) Order no.: VIB 94010 (straight), VIB 94011 (angled)	
Standard length X	5 meters, 10 meters	
Pin assignment	A	B
Color code	BN - brown	BU - blue



Example:

Color code of the sensor signal pin?

SENSOR		KABEL
Type	Pin polarity	Color code
VIBROTECTOR	Signal (+)	BN - brown
VIB 6.172	Signal	BN - brown
VIB 6.195	Signal	BU - blue



Pre-assembled cables for VIBROTECTOR and CLD-/ICP-type accelerometers

VIB 5.745-L : Pre-assembled sensor cable, PUR sheath, angled connector

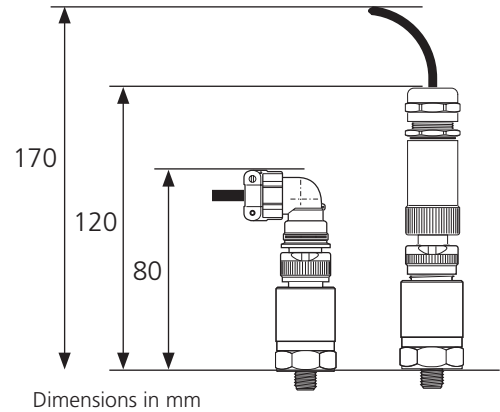
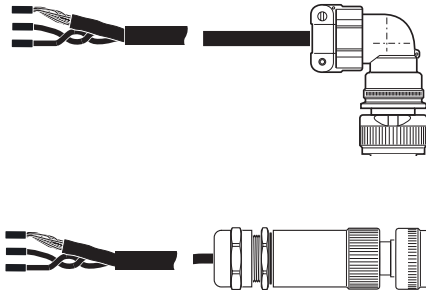
VIB 5.746-L : Pre-assembled sensor cable, PUR sheath, straight connector (Stainless steel VA 1.4305)

VIB 5.745-L



Gas

VIB 5.746-L



Application

These sensor cables are already fitted with a suitable connector on the sensor side. The open end of the cable is for the connection to an online CMS or to a PCS (VIBROTECTOR only).

The cables can be used to install the following sensors OUTSIDE the hazardous area:

VIB 5.73x	VIBROTECTOR vibration transmitter
VIB 6.172	ICP-type accelerometer
VIB 6.195	CLD-type accelerometer

INSIDE the gas-explosion hazardous area the cables can be used with the following sensors:

VIB 5.73x EX	VIBROTECTOR, intrinsically safe
VIB 6.172XICP	ICP-type accelerometer, intrinsically safe

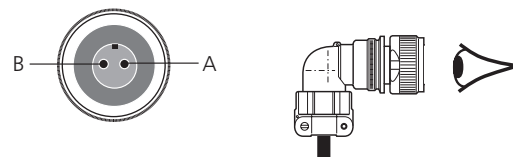
The operation in dust-explosion hazardous areas is not allowed.

Accessories

VIB 6.776	Junction box for the extension of a twisted-pair sensor cable.
-----------	--

Technical data

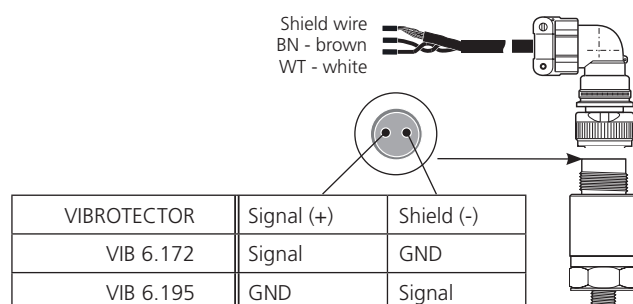
CABLE	VIB 5.745-L		VIB 5.746-L	
	Cable type	Shielded twisted-pair sensor cable, PUR sheath, VIB 90061		
Connector	Type: 2-pin, MIL-C5015 Material: Aluminum alloy Surface: Zinc Nickel (A 240) Order no.: VIB 94011		Type: 2-pin, MIL-C5015 Material / Surface: Stainless steel VA 1.4305	
Standard length L	5 meters, 10 meters		10m, 15m, 20m	
Pin assignment	A	B	A	B
Color code	WT - white	BN - brown	WT - white	BN - brown



Example:

Color code of the sensor signal pin?

SENSOR		KABEL
Type	Pin polarity	Color code
VIBROTECTOR	Signal (+)	WT - white
VIB 6.172	Signal	WT - white
VIB 6.195	Signal	BN - brown



C

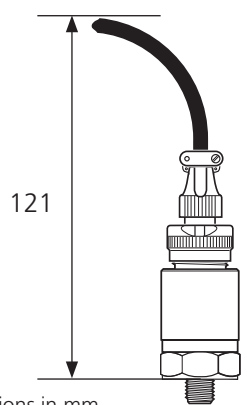
VIB 3.570-L : Pre-assembled cable for intrinsically safe VIBROTECTOR and ICP-type accelerometers

1

2

3

4



Dimensions in mm



gas & dust

5

Application
This sensor cable is already fitted with a suitable connector on the sensor side. The open cable end is for the connection to an online CMS or to a PCS (VIBROTECTOR only).

6

Inside the hazardous area the cable can be used with the following sensors:

- VIB 5.73x EX VIBROTECTOR EX vibration transmitter
- VIB 6.172 XICP ICP- type accelerometer, intrinsically safe

A

The operation in gas- and dust-explosion hazardous areas is permitted.

Accessories

VIB 6.776 Junction box for the extension of a twisted-pair sensor cable.

Special feature

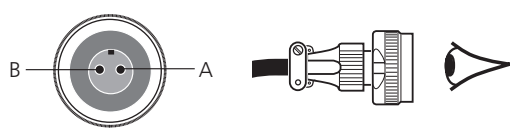
The interface between the cable and plug is hermetically sealed (IP 68). This means it is suitable for use under water or in an oil bath (up to 0.8 bar). The shield is not connected with the plug.

Abbreviations

- PCS: Process control system
- CMS: Condition Monitoring System
- ICP: Integrated Circuit Piezoelectric (sensor w/ voltage output)

Technical data

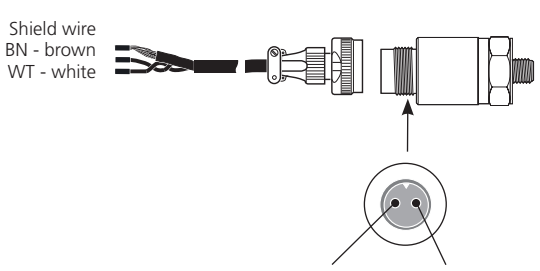
CABLE	VIB 3.570-L	
Cable type	Shielded twisted-pair sensor cable, PUR sheath, VIB 90061	
Connector	Type: 2-pin, MIL-C5015 Material: Aluminum alloy Surface: Zinc Nickel (A 240) Order no.: VIB 94010	
Standard length L	6 meters, 12 meters	
Pin assignment	A	B
Color code	WT - white	BN - brown



Example:

Color code of the sensor signal pin?

SENSOR		CABLE
Type	Pin Polarity	Color Code
VIB 6.172XICP, ICP-type accel.	Signal	WT - white
	GND	BN - brown
VIBROTECTOR EX	Signal (+)	WT - white
	Shield (-)	BN - brown



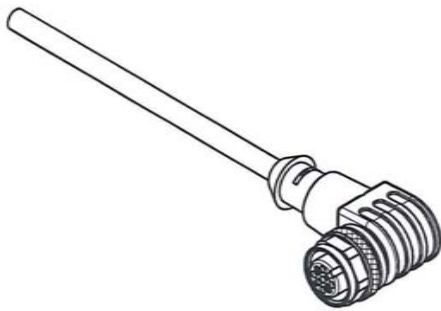
Shield wire
BN - brown
WT - white

VIB 6.172XICP	Signal	GND
VIBROTECTOR EX	Signal (+)	Shield (-)

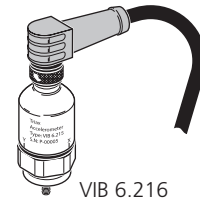
Sensor cable for hybrid triaxial accelerometers

VIB 3.575-10 : Sensor cable for hybrid triaxial accelerometers (VIB 6.215 / VIB 6.216), 10 meters

VIB 3.575-20 : Sensor cable for hybrid triaxial accelerometers (VIB 6.215 / VIB 6.216), 20 meters



VIB 3.575-10



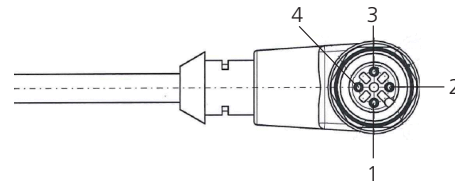
VIB 6.216

Application

This sensor cable is used to connect the hybrid triaxial accelerometers (type: VIB 6.215 or VIB 6.216) to the VIB-GUARD online CMS*.

*CMS: Condition Monitoring System

Plug pin allocation



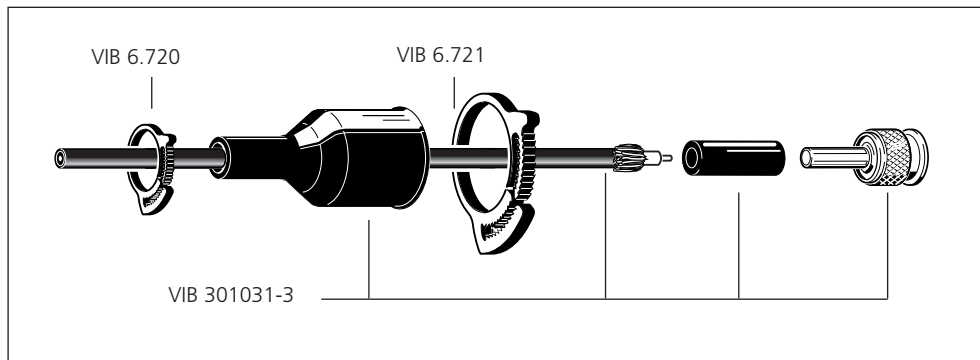
VIB 3.575-10 / VIB 3.575-20	
Cable sheath	PUR UL, black
Pin: color code	1: BN - brown 2: BU - blue 3: BK - black 4: drain wire (shield)

C

VIB 5.771 : Pre-assembled VIBREX cable

1

VIB 5.771 =



2

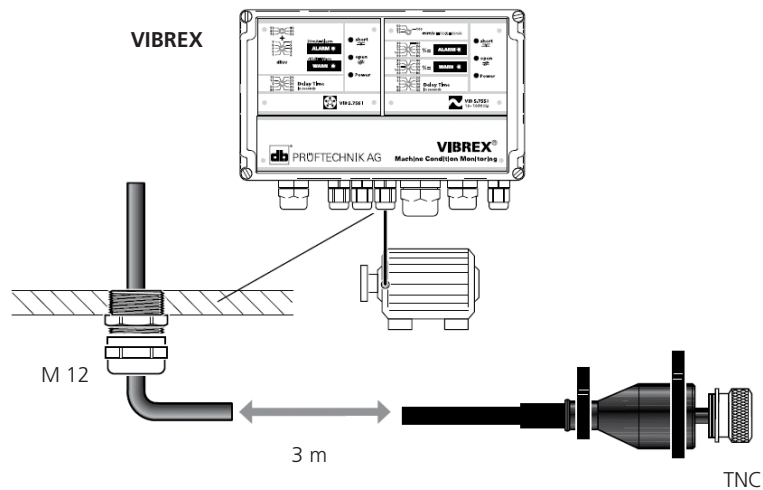
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Application

This coaxial cable is used by default for the connection of industrial accelerometers (type: VIB 6.1xx) to the VIBREX basic unit. The cable is 3 meters long.

Cable type

In this cable the coaxial cable VIB 90008 is used.

Accessories

VIB 6.770/9 Junction box for the extension of a single coaxial sensor cable.

VIB 6.775/9 Junction box for the extension of two coaxial sensor cables.

Pre-assembled VIBNODE cables

VIB 309007-6 : Pre-assembled twisted-pair VIBNODE cable, PUR sheath, 6 meters long

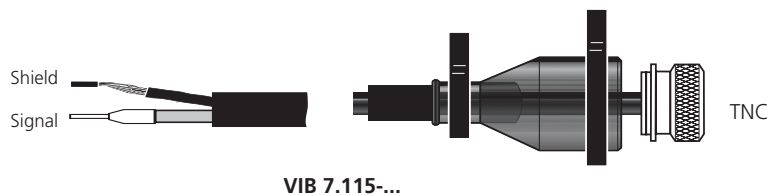
VIB 309007-10 : Pre-assembled twisted-pair VIBNODE cable, PUR sheath, 10 meters long

VIB 309007-15 : Pre-assembled twisted-pair VIBNODE cable, PUR sheath, 15 meters long

VIB 309007-20 : Pre-assembled twisted-pair VIBNODE cable, PUR sheath, 20 meters long

VIB 7.115-6 : Pre-assembled coaxial VIBNODE cable, PVC sheath, 6 meters long

VIB 7.115-12 : Pre-assembled coaxial VIBNODE cable, PVC sheath, 12 meters long



Application

These cables are used by default for the connection of the following industrial accelerometers to the VIBNODE basic unit.

Coaxial cable, VIB 7.115-...:

VIB 6.1xx Industrial accelerometer w/ TNC socket

Twisted-pair cable, VIB 309007-...:

VIB 6.172 ICP- type accelerometer w/ MIL socket

VIB 6.195 CLD- type accelerometer w/ MIL socket

Cable type

In these cables the shielded twisted-pair sensor cable with PUR sheath (VIB 90061) and the coaxial cable VIB 90008 is used.

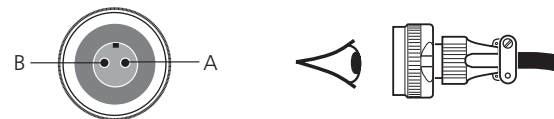
Accessories

VIB 6.770/9 Junction box for the extension of a single coaxial sensor cable.

VIB 6.775/9 Junction box for the extension of two coaxial sensor cables.

VIB 6.776 Junction box for the extension of a twisted-pair sensor cable.

Plug pin allocation



CABLE	VIB 309007-...	
Pin	A	B
Color code	WT - white	BN - brown

C

Pre-assembled WEARSCANNER cables

1

VIB 6.420-L : Pre-assembled WEARSCANNER cable for power supply & data transmission incl. M12 connector VIB 6.421

VIB 6.426-L : Pre-assembled WEARSCANNER cable for switching output, incl. M12 connector VIB 6.425

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Application

These cables are available as an accessory for the WEARSCANNER particle counter. They are used for the connection of the power and data line and for the connection of the switching signal output to a process control system respectively. The maximum cable length is 20 meters.

6

Cable type

In these cables the Industrial Ethernet cable (VIB 90030) is used.

Accessories

VIB 6.421 M12 cable connector for power supply and data transmission (8-pin).

VIB 6.425 M12 cable connector for switching output (5-pin)

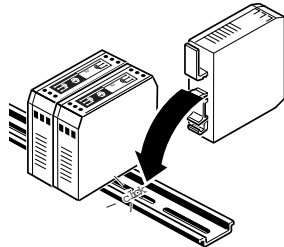
A

Devices for separating an intrinsically safe circuit from a non-intrinsically safe circuit

VIB 3.550 : Limiting device for CLD-type accelerometers with intrinsic safety

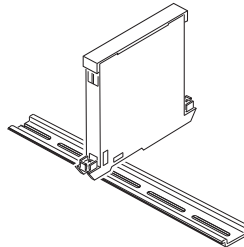
0 2088 0009 : Safety barrier for ICP-type accelerometers with intrinsic safety

0 2088 0010 : Transmitter supply unit for VIBROTECTOR EX



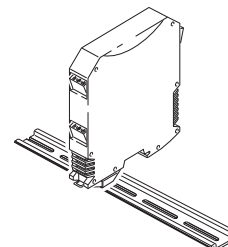
VIB 3.550

CE 0044



0 2088 0009

CE 0102



0 2088 0010

CE 0158

Application

These devices are used to separate an intrinsically safe circuit from a non-intrinsically safe circuit and to limit current and voltage in the intrinsically safe circuit. They are necessary for the operation of sensors in hazardous areas.

For the individual sensor types the following separating devices are provided:

- VIB 3.550 for types VIB 6.1xx DEX
for types VIB 6.202 XD, VIB 6.203 XD
- 0 2088 0009 for type VIB 6.172 XICP
- 0 2088 0010 for VIBROTECTOR EX, VIB 5.73x EX

The transmitter supply unit 0 2088 0010 also powers the VIBROTECTOR transmitter with auxiliary power.

Notes regarding limiting device VIB 3.550

The details in the EC type examination certificate TÜV 02 ATEX 1849 must be considered.

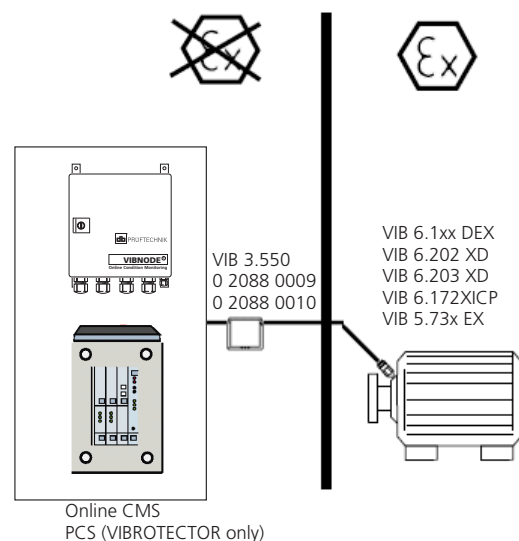
Additionally the european installation instructions (EN 60079-14 / EN 61241-14) and the installation notes for hazardous areas annexed in this catalog must be observed.

Note regarding items 0 2088 0009 / 0 2088 0010

Technical data are available on request.

Technical data

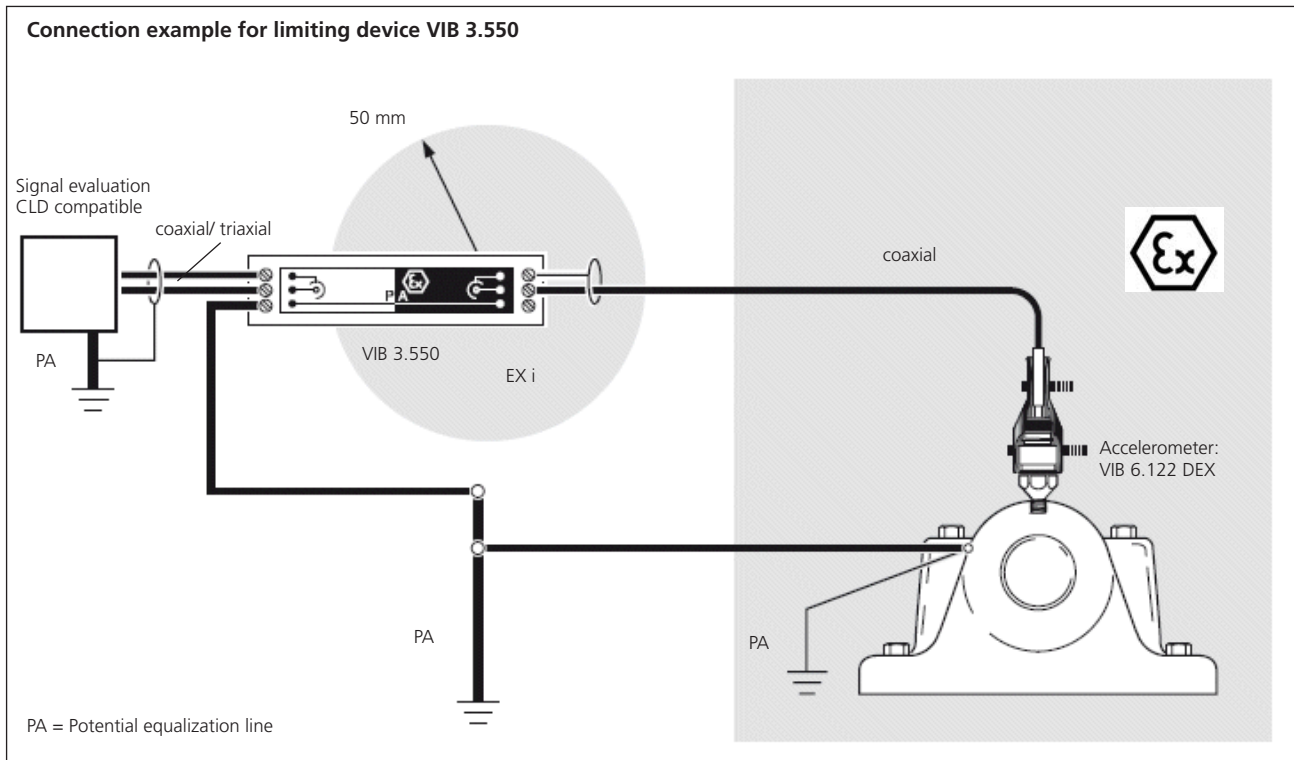
PARAMETER		VIB 3.550
Electrical	Nominal supply voltage U_n	12V DC ($\pm 10\%$)
	Current drain	3.5mA DC + AC signal
	Signal	CLD (e.g. $1\mu A/ms^2$)
	Accuracy, signal	sensor accuracy
	Non-intrinsically safe circuit (terminals IN+ IN- PA1)	$U_m = 250$ V AC
	Intrinsically safe circuit (terminals OUT+ OUT- PA2)	in type of protection Intrinsic Safety EEx ib IIC Maximum values: $U_0 = 13$ V $I_0 = 18$ mA $P_0 = 240$ mW $C_0 = 300$ nF $L_0 = 1$ mH
General	Temperature range, T_A	$-10^\circ\text{C} \dots +50^\circ\text{C}$
	Case material	PA6.6, green
	Environmental protection	IP 20
	Dimensions (HxWxD)	85 x 79 x 22.5 mm
EX	Marking	Ex II (2) G [EEx ib] IIC



Abbreviations

PCS: Process control system
CMS: Condition Monitoring System
ICP: Integrated Circuit Piezoelectric (sensor w/ voltage output)
CLD: Current Line Drive (sensor w/ current output)

- C
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- A



For more connection examples, see Appendix

Junction boxes for the extension of a sensor cable

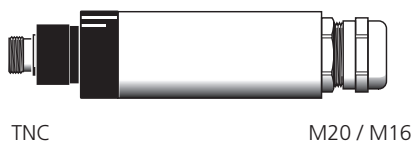
VIB 6.770/9 : Junction box (aluminium) for the extension of a sensor cable, coaxial - coaxial

VIB 6.770/13 : Junction box (aluminium) for the extension of a sensor cable, coaxial - triaxial

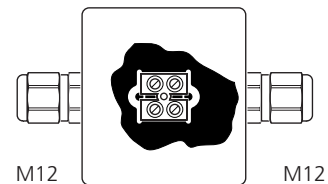
VIB 6.770/9-S : Junction box (stainless steel) for the extension of a sensor cable, coaxial - coaxial

VIB 6.770/13-S : Junction box (stainless steel) for the extension of a sensor cable, coaxial - triaxial

VIB 6.776 : Junction box (plastic) for the extension of a sensor cable, twisted-pair / 2-pin



VIB 6.770...



VIB 6.776

Application

These junction boxes are used to extend a sensor cable or as a cable interface for mobile data acquisition with a data collector. They are easy to mount and protect the cable terminals from dust and water.

Coaxial sensor cables can be extended with either a coaxial or triaxial cable.

The latter option is suitable for an environment subject to electromagnetic fields so that the signal is particularly well shielded from interference. The coaxial sensor cable is kept as short as possible and connected by a TNC plug to the junction box VIB 6.770/13. The TNC connector can be hermetically sealed with a dust cap and clamp rings. Most of the cable length consists of triaxial cable that is connected to the junction box via the threaded fitting.

* (only VIB 6.770...)

Note

The junction box VIB 6.770/13 is also suitable for coaxial cables with protective sheath (VIB 6.730).

Accessories

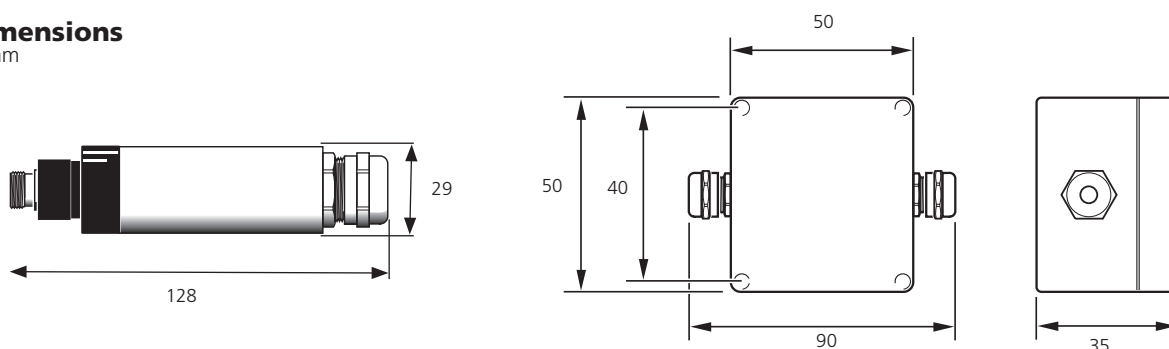
- VIB 6.700 Dust caps for TNC plug, 10 pcs.
- VIB 6.701 Dust caps for TNC plug, 10 pcs., oil proof
- VIB 6.720 Small clamp rings for dust cap, 10 pcs.
- VIB 6.721 Large clamp rings for dust cap, 10 pcs.
- VIB 7.590 Metric fitting M16, 5 pcs.
- VIB 7.592 Metric fitting M20, 2 pcs.
- VIB 7.593 Metric fitting M12, 5 pcs.

Technical data

PARAMETER		VIB 6.770/9	VIB 6.770/13	VIB 6.770/9-S	VIB 6.770/13-S	VIB 6.776
General	Case material	Aluminium		Stainless steel		ABS plastic
	In / Out connector	TNC / M16	TNC / M20	TNC / M16	TNC / M20	M12
	Env. protection	IP 65 (TNC plug connected)				

Dimensions

in mm



C

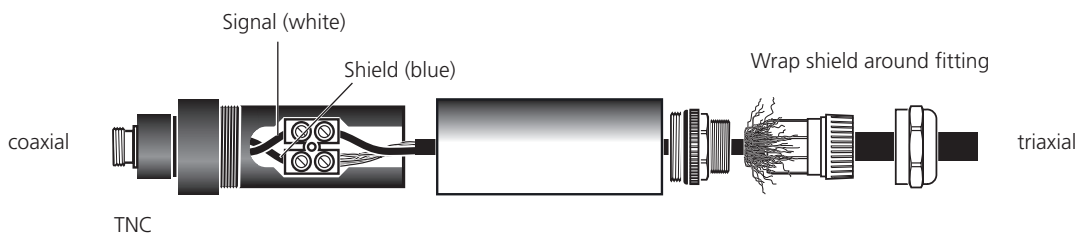
Connection diagram for VIB 6.770/13:

Extending a coaxial cable with a triaxial cable

1

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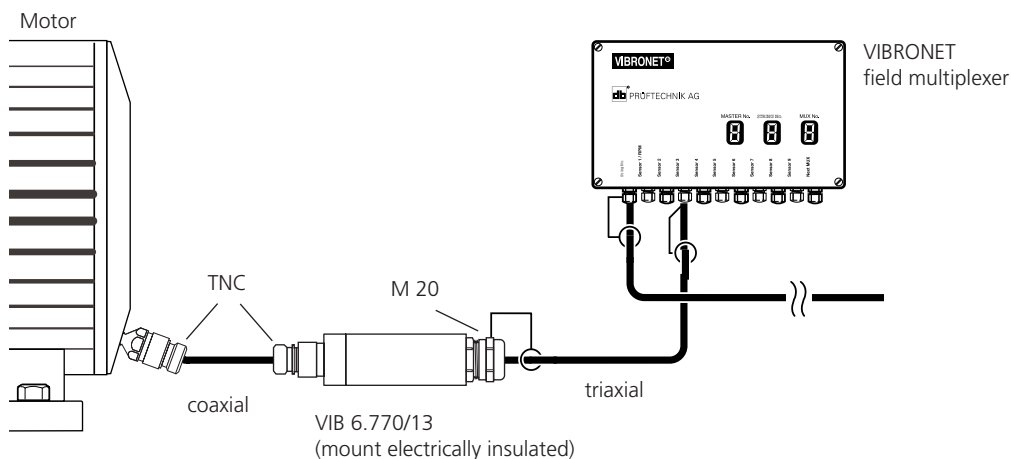
Application example for VIB 6.770/13:

Online condition monitoring with VIBRONET Signalmaster

5

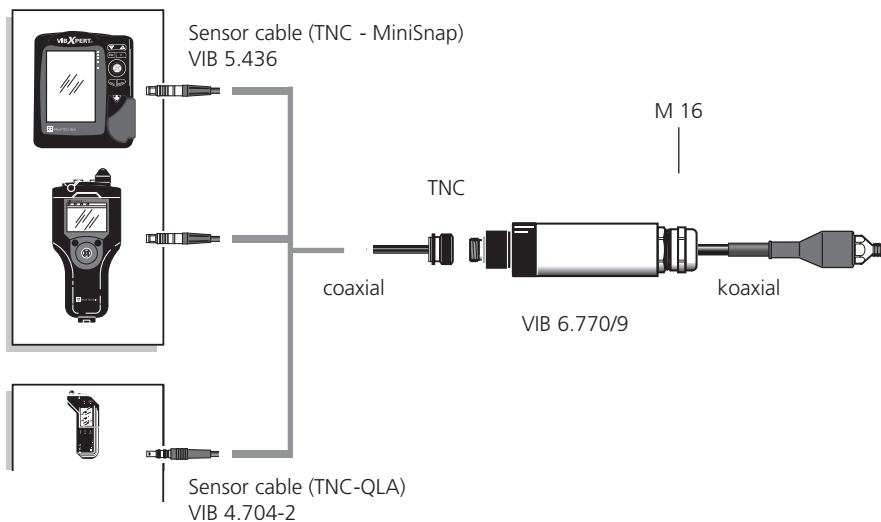
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Application example for VIB 6.770/9:

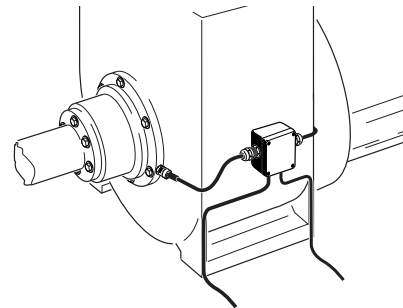
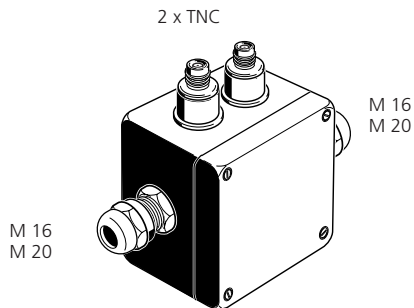
Interface for mobile data collection with VIBXPERT, VIBSCANNER, VIBROTIP.



Junction boxes for the extension of two sensor cables

VIB 6.775/9 : Junction box for the extension of two sensor cables, coaxial - coaxial

VIB 6.775/13 : Junction box for the extension of two sensor cables, coaxial - triaxial



Application

This junction box is used to extend up to two sensor cables or as a cable interface for mobile data acquisition with a data collector. It is easy to mount and protects the cable terminals from dust and water.

Coaxial sensor cables can be extended with either a coaxial or triaxial cable.

The latter option is suitable for an environment subject to electromagnetic fields so that the signal is particularly well shielded from interference. The coaxial sensor cable is kept as short as possible and connected by a TNC plug to the junction box VIB 6.775/13. The TNC connector can be hermetically sealed with a dust cap and clamp rings.

Most of the cable length consists of triaxial cable that is connected to the junction box via the threaded fitting.

Note

The junction box VIB 6.775/13 is also suitable for coaxial cables with protective sheath (VIB 6.730).

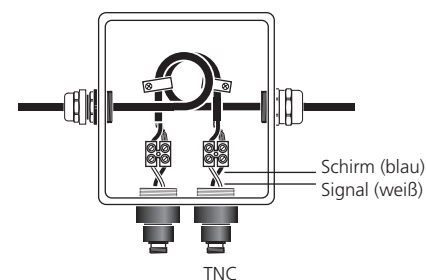
Accessories

- VIB 6.700 Dust caps for TNC plug, 10 pcs.
- VIB 6.701 Dust caps for TNC plug, 10 pcs., oil proof
- VIB 6.720 Small clamp rings for dust cap, 10 pcs.
- VIB 6.721 Large clamp rings for dust cap, 10 pcs.
- VIB 7.590 Metric fitting M16, 5 pcs.
- VIB 7.592 Metric fitting M20, 2 pcs.

Technical data

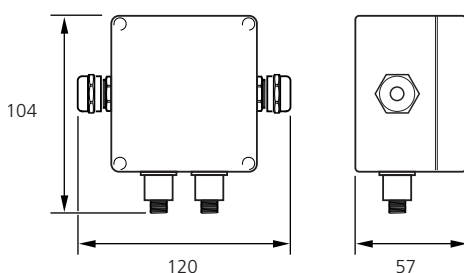
PARAMETER		VIB 6.775/9	VIB 6.775/13
General	Case material	Aluminium (die cast)	
	Input connectors	2x TNC	
	Output fittings	M16	M20
	Env. protection	IP 65 (TNC plug connected)	

Connection diagram

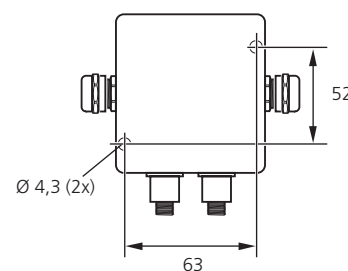


Dimensions

in mm



Mounting holes



C

Field multiplexers for VIBRONET Signalmaster Online CMS

1

VIB 8.306 : Field multiplexer with threaded fitting M12 for VIBRONET Signalmaster

VIB 8.306 S : Field multiplexer with threaded fitting M20 for VIBRONET Signalmaster

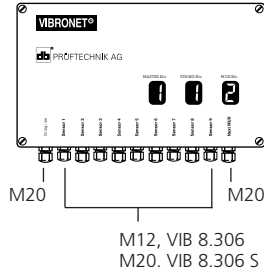
VIB 8.306 V : Field multiplexer with stainless steel housing for VIBRONET Signalmaster

2

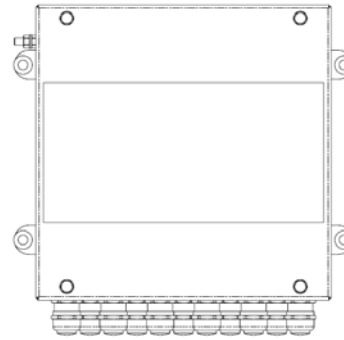
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VIB 8.306-V



M20

6

A

Application

These field multiplexers are used as channel switch selectors in the VIBRONET Signalmaster online CMS. The industrial-proofed field multiplexer for up to nine measuring channels reduces the number of signal lines to one single connection and, thus, saves installation costs. The channel is switched automatically by the online CMS. The stainless steel housing enables the multiplexer to be installed in chemically aggressive environments.

Modularity and Connections

Up to six multiplexers can be connected in series to form a single string line. Up to three string lines can be connected to the VIBRONET Signalmaster where a total of 108 measurement channels are allowed.

Sensor cables for vibration measurements are directly connected to the multiplexer board. For the connection of RPM, temperature, current and voltage sensors special multiplexer modules are required.

Accessories

VIB 7.590 Metric fitting M16, 5x

VIB 7.592 Metric fitting M20, 2x

VIB 8.310 Temperature modul

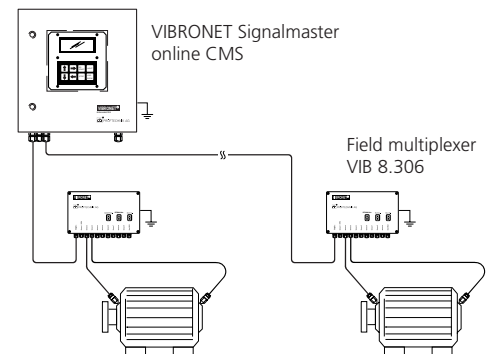
VIB 8.312 Process parameters module
(current / voltage)

VIB 8.313 RPM module

VIB 8.361 LED labels 0-9

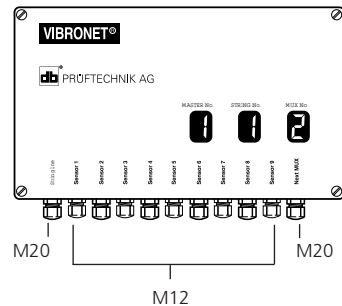
Technical data

PARAMETER		VIB 8.306	VIB 8.306 S	VIB 8.306 V
General	Housing material	Cast aluminum housing, powder coated		Stainless steel (VA)
	Inputs / Outputs	9 sensor inputs, 1 string input, 1 string output		
	Env. protection	IP 65		IP 66
	Temperature range	-40°C ... +80°C		
	Clamping range M12	3.0 ... 6.5 mm		--
	- , M20	7.0 ... 12.0 mm		
	Dimensions LxWxD	224 x 120 x 98 mm		253 x 253 x 120 mm
	Weight	approx. 3 kg		approx. 5 kg
Electrical	Power supply	Approx. 10 V from VIBRONET Signalmaster 'string' output		
	Current consumption	In µA range		
	Interference protect.	Inputs and outputs protected by suppressor diodes		



Field multiplexers with intrinsic safety for VIBRONET Signalmaster Online CMS

VIB 8.306 EX : Field multiplexer for VIBRONET Signalmaster, aluminium housing, intrinsically safe, 224x120 mm



Application

These field multiplexers can be installed in hazardous areas and are used as channel switch selectors in the VIBRONET Signalmaster online CMS. The industrial-proofed field multiplexer for up to nine measuring channels reduces the number of signal lines to one single connection and, thus, saves installation costs. The channel is switched automatically by the online CMS.

Modularity and connections

The number of multiplexers in a string line is limited by the interface conditions for installation in hazardous areas and by the OMNITREND software. From the software side a maximum of 6 multiplexers can be connected to a single string line. All sensor cables are connected via appropriate connection modules in the multiplexer.

Notes on intrinsic safety

The details in the examination certificate of the VIBRONET field multiplexer (type: VIB ..- 8.3 EX) TÜV 02 ATEX 1962 must be considered.

Additionally the following documents must be observed:

- European installation instructions (EN 60079-14:1997, EN 61241-14:2004)
- Installation notes for hazardous areas in this catalog.
- VIBRONET installation instructions VIB 9.520.G

Accessories

- VIB 7.590 Metric fitting M16, 5x
- VIB 7.592 Metric fitting M20, 2x
- VIB 8.310 EX Temperature module, intr. safe
- VIB 8.313 EX RPM module, intr. safe
- VIB 8.314 EX Vibration module, intr. safe
- VIB 3.550 Limiting device for Current LineDrive accelerometers with intrinsic safety
- VIB 8.361 LED labels 0-9

Technical data

PARAMETER		VIB 8.306 EX
General	Housing material	Cast aluminum housing, powder coated
	Inputs / Outputs	9 sensor inputs, 1 string input, 1 string output
	Env. protection	IP 65
	Temperature range	-20°C ... +70°C
	Clamping range M12	3.0 ... 6.5 mm
	- , M20	7.0 ... 12.0 mm
	Dimensions LxWxD	224 x 120 x 98 mm
	Weight	approx. 3 kg
Electrical	Power supply	Approx. 10V from VIBRONET Signalmaster 'string' output
	Current consumption	In µA range
	Interference protect.	Inputs and outputs protected by suppressor diodes
EX	Marking	II 2 G EEx ib IIC T4

C

Connection modules for VIBRONET field multiplexers

1

VIB 8.310 : Temperature module for VIBRONET field multiplexer

VIB 8.312 : Process parameters module (current/ voltage) for VIBRONET field multiplexer

VIB 8.313 : RPM module for VIBRONET field multiplexer

2

VIB 8.310 EX : Temperature module for VIBRONET field multiplexer, intrinsically safe

VIB 8.313 EX : RPM module for VIBRONET field multiplexer, intrinsically safe

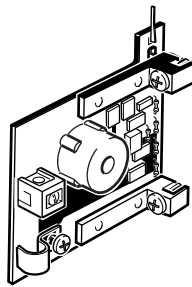
VIB 8.314 EX : Vibration module for VIBRONET field multiplexer, intrinsically safe

3

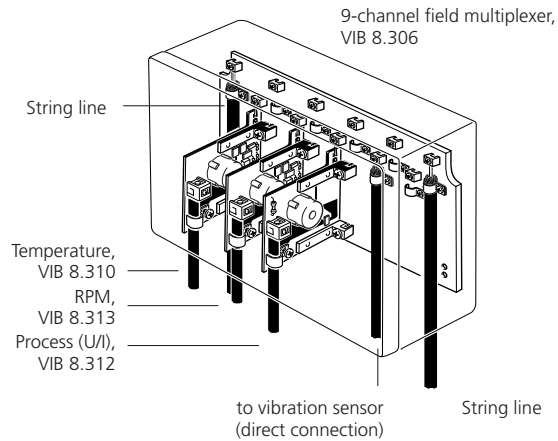
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VIB 8.310



A

Application

These modules are required for the connection of the appropriate sensor cable in the VIBRONET field multiplexer.

Description

The VIB 8.310 module converts the resistance value of the Pt100 temperature probe (VIB 6.610) into a digital current signal.

The VIB 8.312 module allows connection to measurement instruments with a standard current or standard voltage output (4-20 mA, 0-10V). This allows monitoring of process parameters, e.g. pressure, flow rate, etc..

The VIB 8.313 module is used to connect a RPM sensor to the multiplexer.

CLD-type accelerometers are connected directly to the multiplexer board. In hazardous areas the connection module VIB 8.314 EX is required for this type of sensor.

Notes on intrinsic safety

The details in the examination certificate of the VIBRONET field multiplexer (type: VIB ..- 8.3 EX) TÜV 02 ATEX 1962 must be considered.

Additionally the following documents must be observed:

- European installation instructions (EN 60079-14:1997, EN 61241-14:2004)
- Installation notes for hazardous areas annexed in the sensor catalog LIT 01.700.EN.
- VIBRONET installation instructions VIB 9.520.G

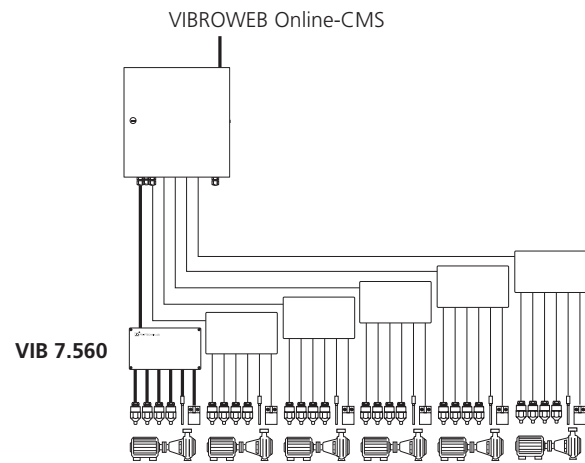
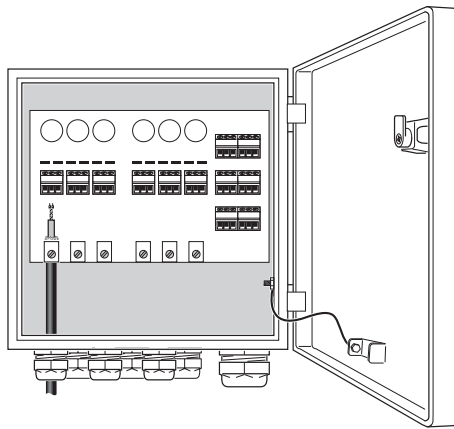
Abbreviation

CLD: Current Line Drive

Technical data

PARAMETER		VIB 8.310	VIB 8.312	VIB 8.313	VIB 8.314 EX
Electrical	Input	Pt100 temperature probe	Current / Voltage	Inductive proximity sensor	CLD-type accelerometer
	Output	Digitalized current signal			
	Sensitivity	0,385 Ohm/°C	--	2 mA	--
	Current output to sensor	< 2 mA	--	< 4 mA	--
	Voltage output to sensor	< 1 V	< 2.2 V (at connector, current module) 10 kOhm (Input resistance, voltage module)	< 8 V	--
	Balancing resistor	--			100 Ohm
General	Temperature range, operation	-20°C ...+80°C			-20°C ...+70°C
	Dimensions	46 x 50 x 2 mm			

VIB 7.560 : VIBROWEB connection box



Application

Up to 6 sensor lines are connected in the VIBROWEB connection box and fed to the VIBROWEB switching cabinet via a multicore shielded cable. If the connection box is mounted near the measurement locations, installation costs can be reduced by avoiding long cables.

If electromagnetic interference is present within the vicinity of the sensor lines, its influence on the measured signals can be suppressed by chokes. All components and connection terminals are provided on a board in an in-

dustrial housing. The glands for the sensor cables and the multicore electrical cable are already installed.

Up to:

- six sensors with 2-line or 3-line connection, or
- three sensors with 4-line connection

can be connected in the VIBROWEB connection box.

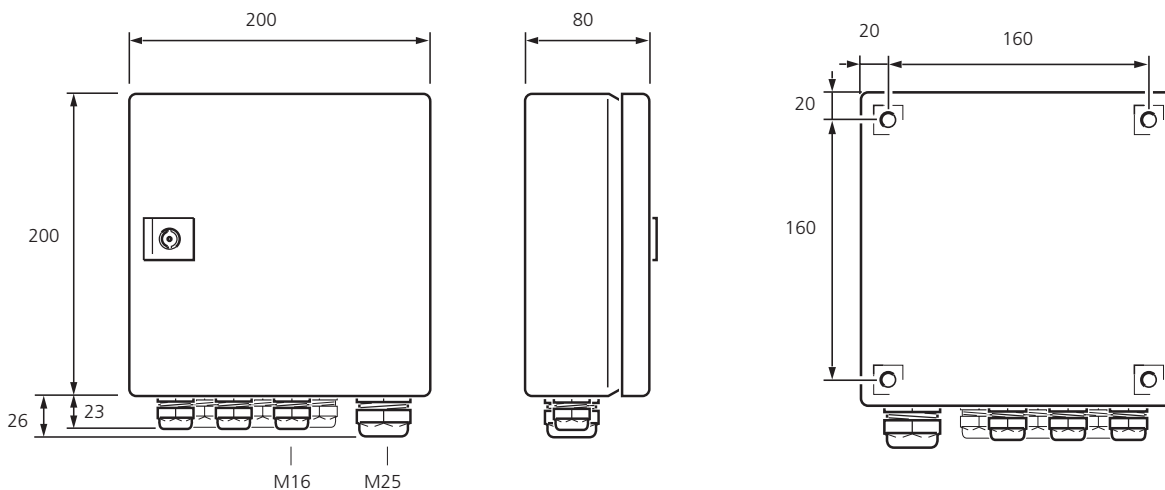
Accessories

VIB 7.590 Metric fitting M16, 5 pcs.

VIB 7.591 Metric fitting M25, 2 pcs.

Dimensions and drilling template

Dimensions in mm



C

Installation tools for metric cable fittings

1

VIB 7.580 : Open ring spanner, 14x17

VIB 7.581 : Open ring spanner, 19x22

VIB 7.582 : Open ring spanner, 24x27

2

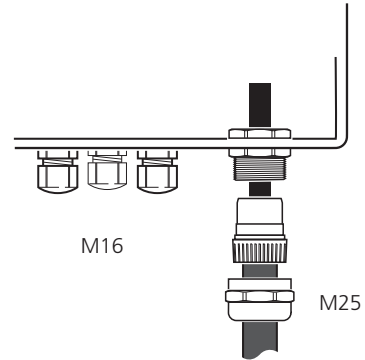
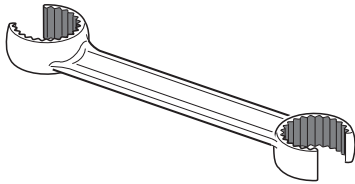
VIB 7.583 : Open ring spanner, 24x25

3

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A

Application

Open ring spanners are used for the installation of metric cable fittings.

Note

Recommended key sizes for metric cable fittings:

Fitting	Key size
M12	17
M16	22
M20	25
M25	27

Metric cable fittings and shield clamps

VIB 7.590 : Metric cable fitting M 16, 5 pieces

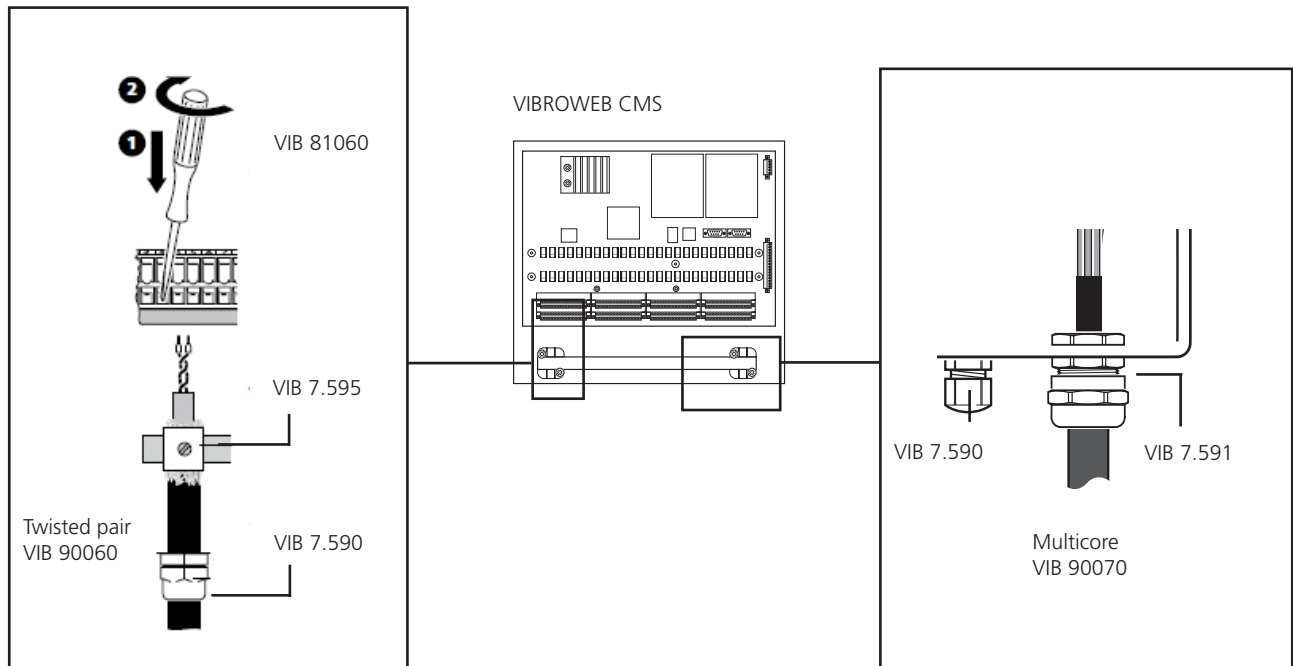
VIB 7.591 : Metric cable fitting M 25, 2 pieces

VIB 7.592 : Metric cable fitting M 20, 5 pieces

VIB 7.593 : Metric cable fitting M 12, 5 pieces

VIB 7.595 : Shield clamp SK8, 5 pieces

VIB 81060 : Screw driver 2.5 x 35



Application

For the installation of the sensor cable in the CMS switching cabinet, metric threaded fittings in different sizes are available:

M16 is suitable for standard coaxial cable (VIB 90008), standard twisted-pair cable (VIB 90061) and cables with similar dimensions.

The multicore twisted-pair cable (VIB 90070) fits in the M25 threaded fitting.

The M12 threaded fitting is suitable for ethernet cables and control lines.

Abbreviation

CMS: Condition Monitoring system

The shield clamping clips SK8 are mounted on the shield rails in the CMS switching cabinet and are intended for the shield of the twisted-pair cable, the inner shields of the multicore cable and other potential-free shields.

Accessories

VIB 7.580 Open ring spanner, 14x17
 VIB 7.581 Open ring spanner, 19x22
 VIB 7.582 Open ring spanner, 24x27
 VIB 7.583 Open ring spanner, 24x25

C Plugs and sockets for coaxial cable RG 58

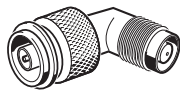
1	VIB 91001 : TNC plug to threaded fitting, angled, oilproof
	VIB 91002 : TNC plug to TNC socket, angled
	VIB 91009 : BNC plug to crimp contact, angled
2	VIB 93022 : TNC plug to crimp contact, straight
	VIB 93031 : TNC plug to threaded fitting, straight
	VIB 93033 : TNC socket to TNC socket, straight
3	VIB 93047 : TNC socket to crimp contact, straight
	VIB 93055 : TNC plug to BNC plug, straight
	VIB 93060 : BNC plug to crimp contact, straight
4	VIB 93062 : TNC socket to BNC plug, straight
	VIB 93067 : TNC plug to BNC socket, straight
	VIB 93077 : TNC plug to crimp contact, angled

5

6



VIB 91001



VIB 91002



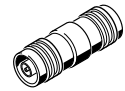
VIB 91009



VIB 93022

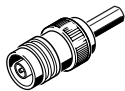


VIB 93031



VIB 93033

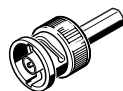
A



VIB 93047



VIB 93055



VIB 93060



VIB 93062



VIB 93067



VIB 93077

Application

These plugs and sockets in various designs and shapes are used for connecting sensor cables and for the assembly of coaxial cables (RG 58).

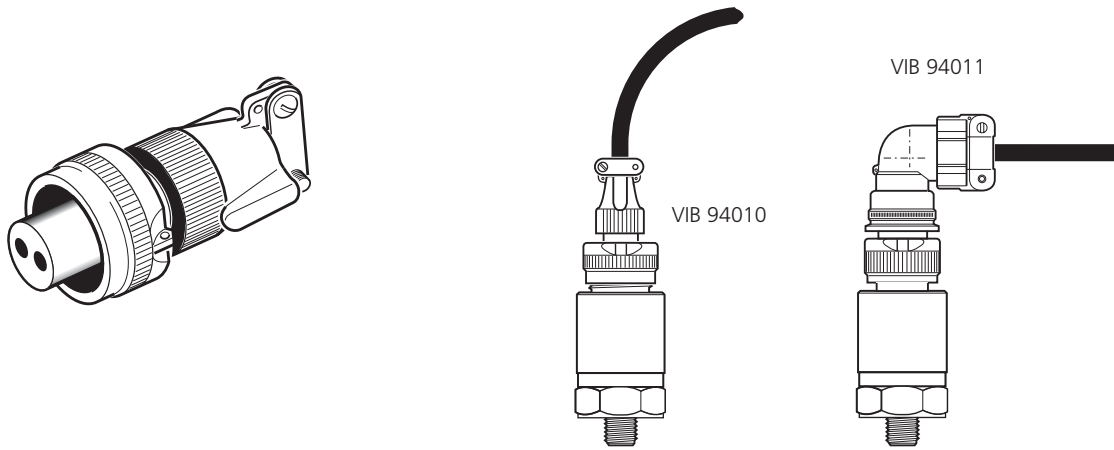
Accessories

- VIB 81026 Crimping tool for coaxial cable
- VIB 81052 Cutting tool for coaxial cable

Plug-in connectors for two-wire, shielded sensor cables

VIB 94010 : Plug-in connector, 2-pin, straight

VIB 94011 : Plug-in connector, 2-pin, angled



Application

These connectors are used for the assembly of two-wire sensor cables which are suitable for the following sensors:

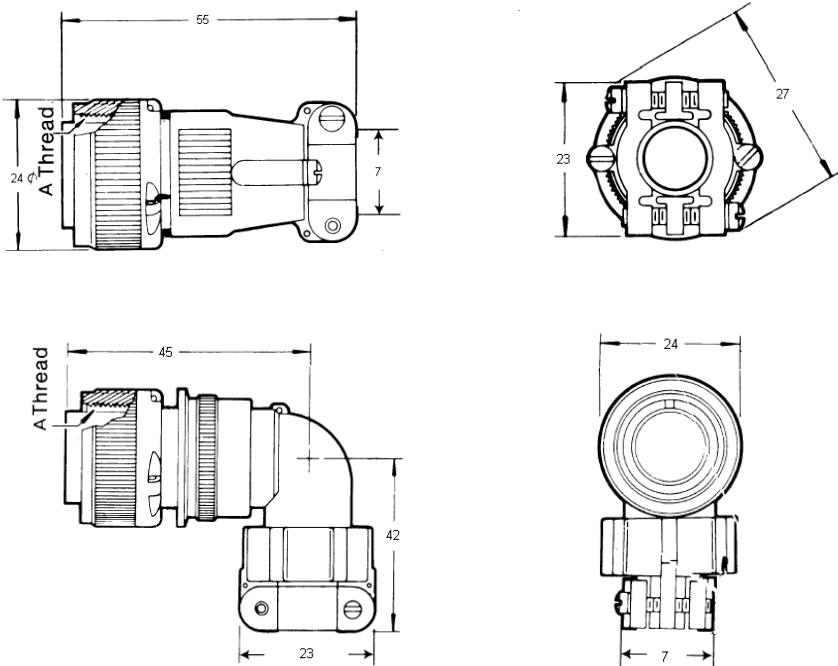
- VIB 6.195 CLD-type accelerometer
- VIB 6.172 ICP-type accelerometer
- VIB 6.172XICP ICP-type accelerometer, intrinsically safe (only with straight connector, VIB 94010)
- VIB 5.73.. VIBROTECTOR vibration transmitter
- VIB 5.73..EX VIBROTECTOR vibration transmitter, intrinsically safe

Technical data

PARAMETER		VIB 94010	VIB 94011
General	Material	Aluminum alloy	
	Surface	Zinc Nickel (A 240); RoHS compliant Protection against salt spray (500h) and shielding acc. to VG95234	
	Clamping range	< 7 mm	
	Specification	MIL-C-5015	
	Special feature	Cable clamp and sleeve	

Dimensions

in mm



C Bulkhead connectors for coaxial cable RG 58

VIB 91000 : Chassis connector, TNC socket to crimp contact

VIB 93035 : Dust cap for TNC socket

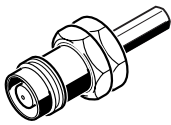
VIB 93036 F : Bulkhead connector w/ fastening flange, TNC socket to TNC socket

VIB 93036 S : Bulkhead connector single hole screw version, TNC socket to TNC socket

VIB 93056 : Bulkhead connector w/ fastening flange, BNC socket to TNC socket

VIB 93061 : Dust cap for BNC socket

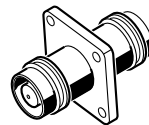
VIB 93090 : Chassis connector, BNC socket to crimp contact



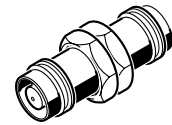
VIB 91000



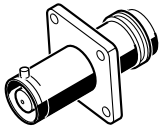
VIB 93035



VIB 93036 F



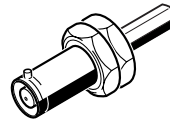
VIB 93036 S



VIB 93056



VIB 93061



VIB 93090

Application

Bulkhead connectors are used if sensor cables have to be fed through protective covers, housing covers or similar.

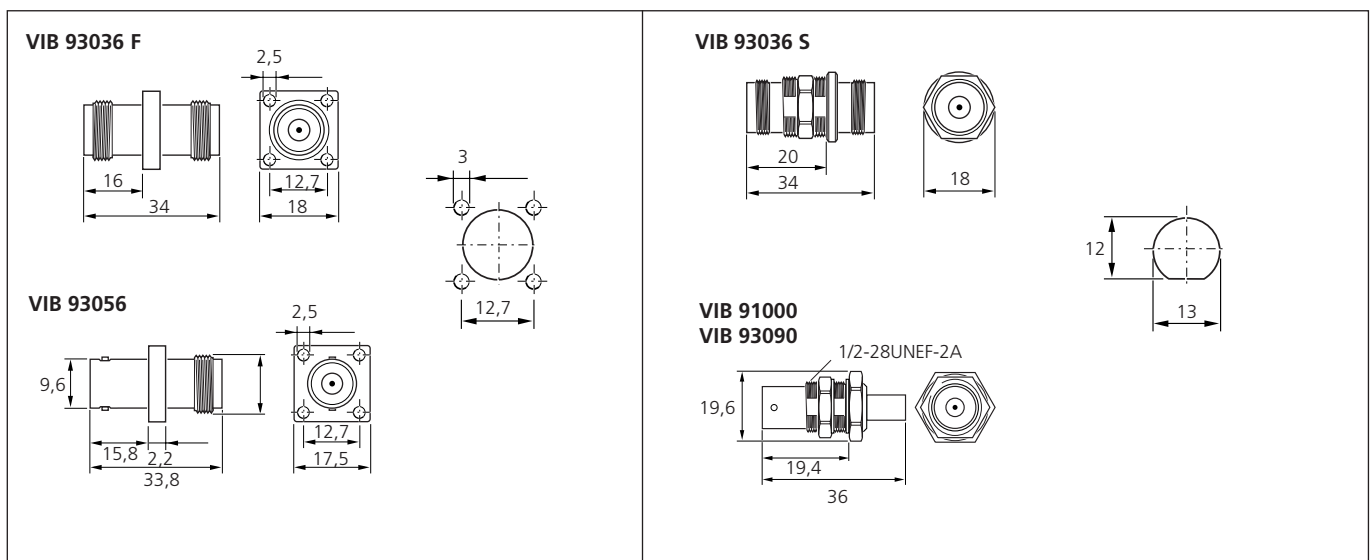
Notes

Suitable insulating washers are required to electrically insulate the connectors.

The dust caps are attached to a metal cord. To electrically insulate the connector, the dust caps must only come into contact with insulated components.

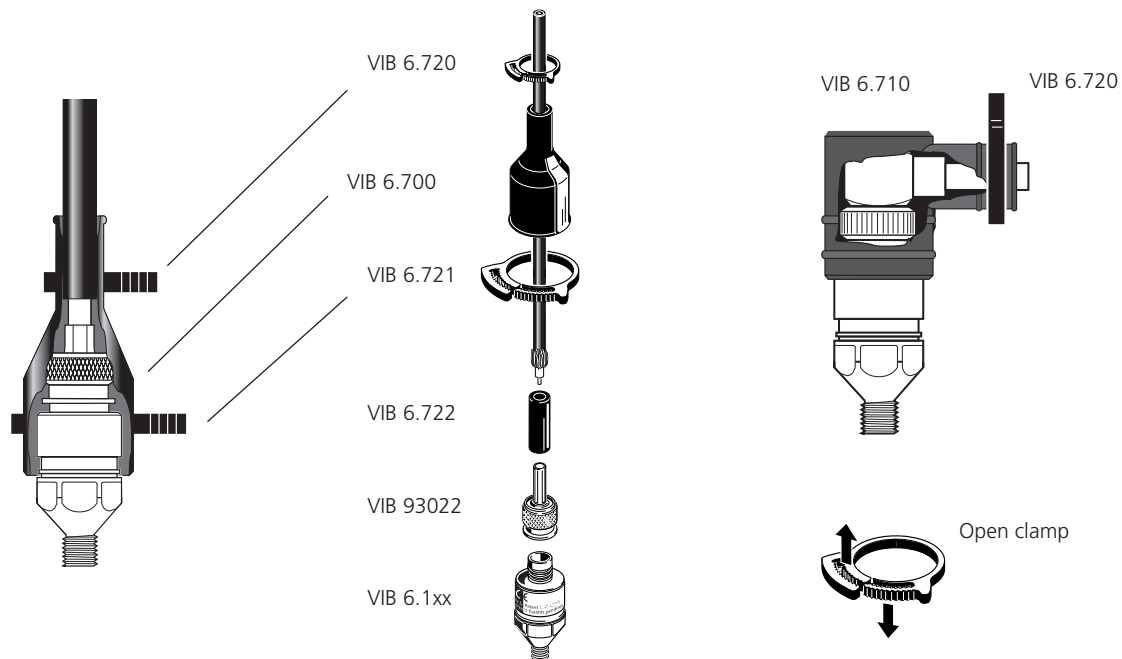
Dimensions and drilling template

in mm



Dust caps for industrial accelerometers (type VIB 6.1xx)

VIB 6.700 :	Dust cap for industrial accelerometer (type VIB 6.1xx), straight, 10 pcs.
VIB 6.701 :	Dust cap for industrial accelerometer (type VIB 6.1xx), straight, oil-resistant, 10 pcs.
VIB 6.710 :	Dust cap for industrial accelerometer (type VIB 6.1xx), angled, 10 pcs.
VIB 6.711 :	Dust cap for industrial accelerometer (type VIB 6.1xx), angled, oil-resistant, 10 pcs.
VIB 6.720 :	Clamp for dust cap, cable end, 10 pcs.
VIB 6.721 :	Clamp for dust cap, sensor end, 10 pcs.
VIB 6.722 :	Dust cap sleeve, 10 pcs.



Function

The dust cap with the appropriate clamp seal and relieve stress on the connection between the accelerometer and cable. The clamp can be mounted and undone without the need for any tools.

Notes

In hazardous areas only the straight caps* (VIB 6.700 / VIB 6.701) may be used, because they can be sealed according to the requirements (IP 67).

The angled caps (6.710 VIB / VIB 6.711) must not be used in hazardous areas, as they can be sealed only with the cable-ended clamp (IP 65).

Only silicone-free dust caps may be used in paint shops.

Technical data

PARAMETER		VIB 6.700	VIB 6.710	VIB 6.701	VIB 6.711	VIB 6.720	VIB 6.721	VIB 6.722
General	Material	Silicone (Silopren HV)		Vitone (FKM polymer, P-60 120 black)		Nylon 66, thermally stabilized		Acrylonitrile-Butadiene-rubber (NBR)
	Resistance	Ozone, weathering, ageing, UV emission, hot water, steam (up to 130°C / 266°F), aliphatic hydrocarbons (mineral oils)		Ozone, weathering, ageing aliphatic, aromatic and chlorinated hydrocarbons (e.g. mineral oils, greases, fuels and mixtures), anorganic acids, chemicals, silicone oil or greases		Industrial solvents, fuels, oils, greases, weathering		silikone free, oil-resistant
	Temperature range	-55°C ... + 180°C		-30°C ... + 200°C		-40°C ... +120°C		---
	Env. protection	IP 67**	IP 65	IP 67**	IP 65	---		---
	Size range, clamp	---		---		12.2...14.8 mm	20.5...23 mm	---

* w/ dust cap sleeve, protective sheath or triaxial cable (if applicable, see next page)

** w/ clamps VIB 6.720 & VIB 6.721 and dust cap sleeve VIB 6.722

C

Installation examples

1

2

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4

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A

Standard coaxial cable RG 58
VIB 90008-x

Standard coaxial cable RG 58
VIB 90008-x

Standard triaxial cable
VIB 90080-x

Dust cap sleeve
VIB 6.722

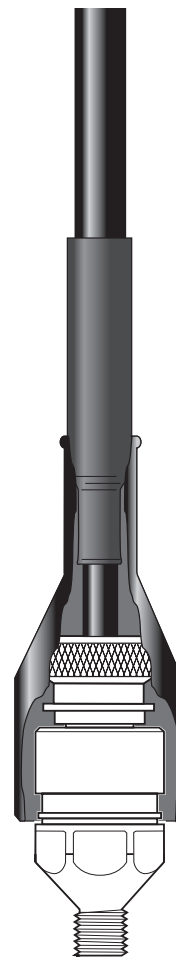
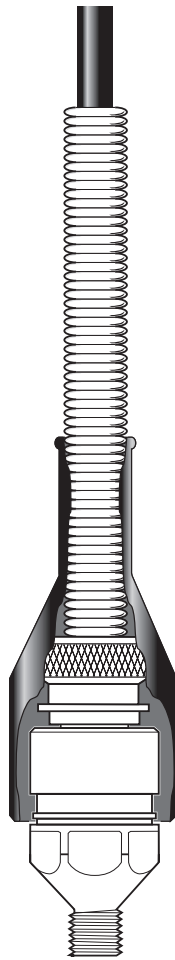
Protective sheath
VIB 6.730

Heat-shrinkable sleeve

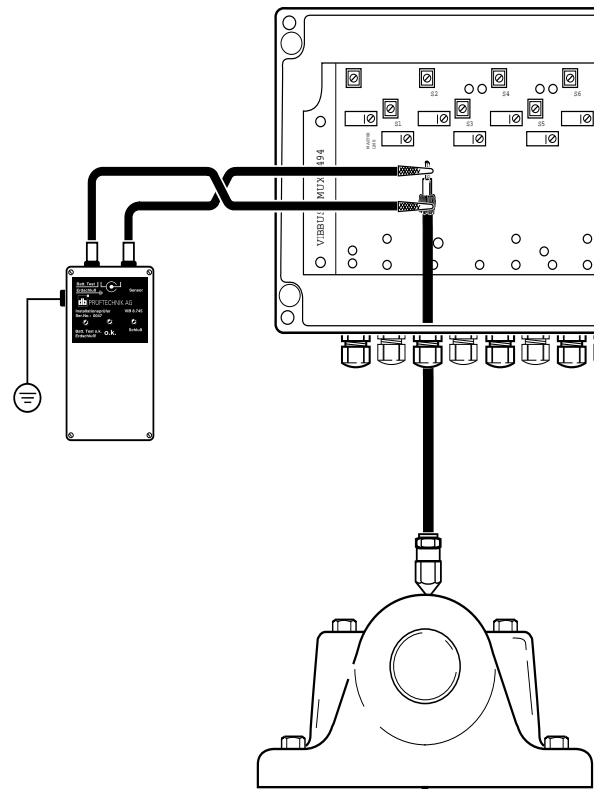
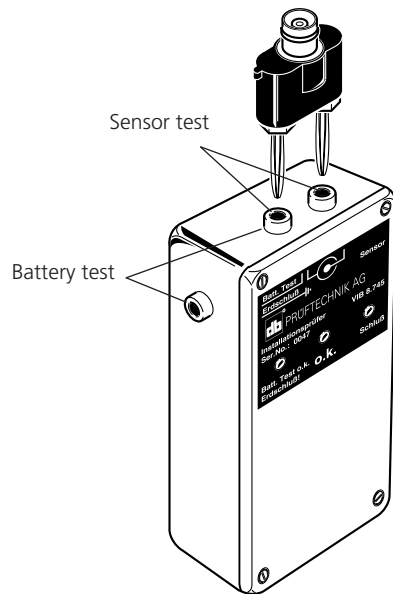
Dust cap
VIB 6.700

Dust cap
VIB 6.700

Dust cap
VIB 6.700



VIB 8.745 : Installation checker



Application

The VIB 8.745 installation checker lets you ensure that remotely mounted accelerometers are properly connected. The unit features three LED's which light up according to the status of the connection:

- Green LED = Installation is correct
- Red LED = Short circuit
- Yellow LED = Ground loop

Additionally, battery test terminals allow battery voltage checking: if voltage is less than 5V, the yellow LED lights up.

If the battery voltage is sufficient, yet none of the LED's lights up, then the connection to the sensor has been broken.

How to check the installation:

Attach the leads from the accelerometer to be checked via the QLA jacks on the top of the installation checker, if necessary using the VIB 4.705 QLA-BNC plug adapter.

Alternatively, the sensor leads may be connected to the jacks on the top of the unit via BNC or TNC adapter (not included), as shown above, or using ordinary banana plugs.

C

Sealing of the cable connection for use in liquids / in hazardous areas (IP68)

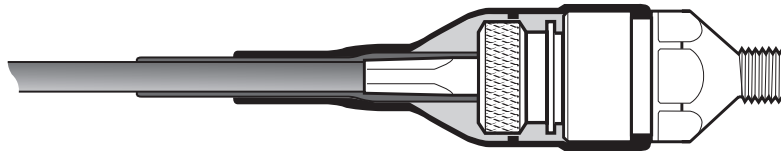
1

VIB 6.760 : IP 68 option for industrial accelerometer (type VIB 6.1xx)

VIB 6.761 : IP 68 option for industrial accelerometer (type VIB 6.1xx), short version

2

3



Option

4

Coaxial cable, oil-resistant
VIB 90093-L*Shrink-fit part,
incl. TNC plug
VIB 6.760
VIB 6.761Industrial accelerometer
VIB 6.125-RIP
VIB 6.129-IP

5

*L= cable length in meters

6

Function

The IP 68 option is used to hermetically seal the connection between sensor and cable and relieve strain.

Application

Vibration measurements in gearboxes and submerged pumps with the industrial accelerometers for high ambient temperatures (type VIB 6.125 RIP and VIB 6.129 IP). The IP 68 option is also suitable for applications in hazardous areas (only with accelerometers type VIB 6.125 IDEX or VIB 6.129 IDEX respectively).

Order information

The shrink-fit part, the cable and the accelerometer are factory-built. Please indicate accelerometer type, option IP68 and cable with length when ordering.

Example: VIB 6.125 RIP / VIB 6.760 / VIB 90093-10
= industrial accelerometer with M8 thread, shrink-fit part IP68 and 10-meter coaxial cable.

Test certificate

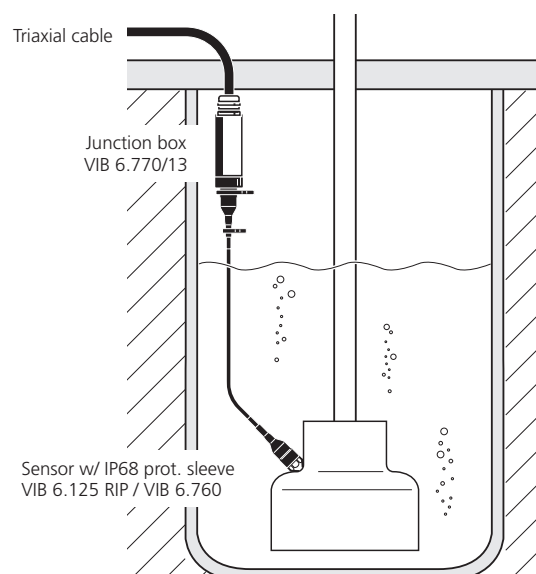
The test certificate for the accelerometer VIB 6.125-RIP can be ordered separately (VIB 2.550).

Technical data

PARAMETER		VIB 6.760	VIB 6.761
General	Env. protection	IP 68 (dust and waterproofed)	
	Admissible sensor	VIB 6.125-RIP, VIB 6.129-IP VIB 6.125-IDEX, VIB 6.129-IDEX	
	Temperature range	defined by sensor	
	Max. depth / pressure	8 m in water / zero pressure in oil	
	Resistance	Aircraft fuel F40, lubricating oil O-156, hydraulic fluid H515, diesel fuel F54, motor fuel F46, water, seawater	
	Mounting height	> 140 mm	> 120 mm

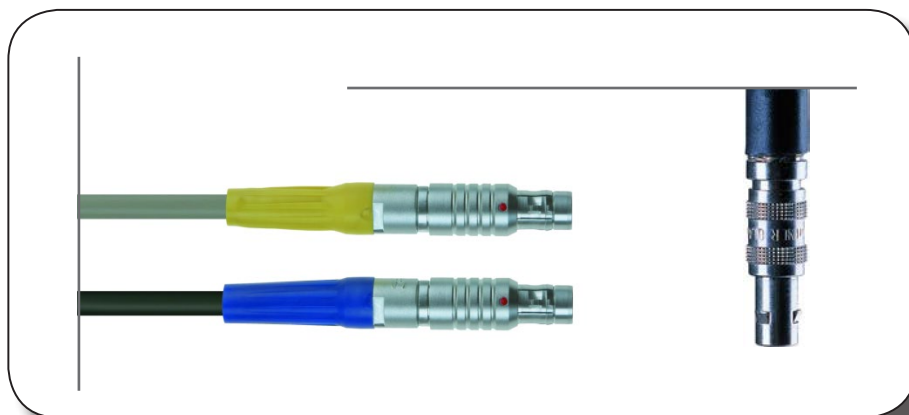
Application example:

Vibration monitoring on a submerged pump



Chapter 5

Sensor cables and connection adapters for mobile data collectors



C

Contents: Sensor cables and connection adapters for mobile data collectors

1

2

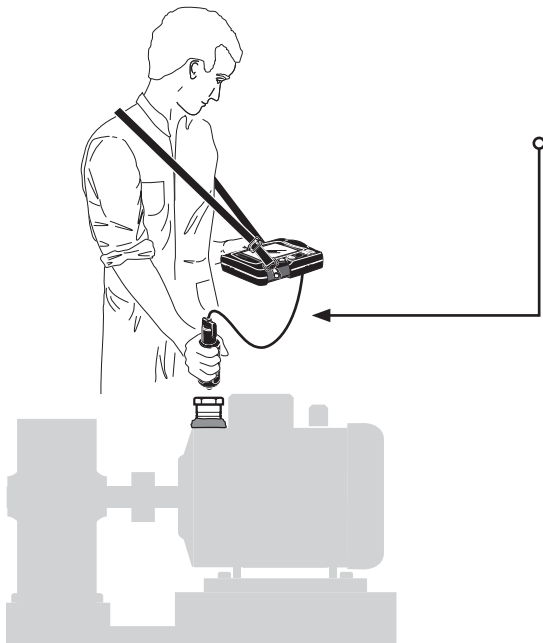
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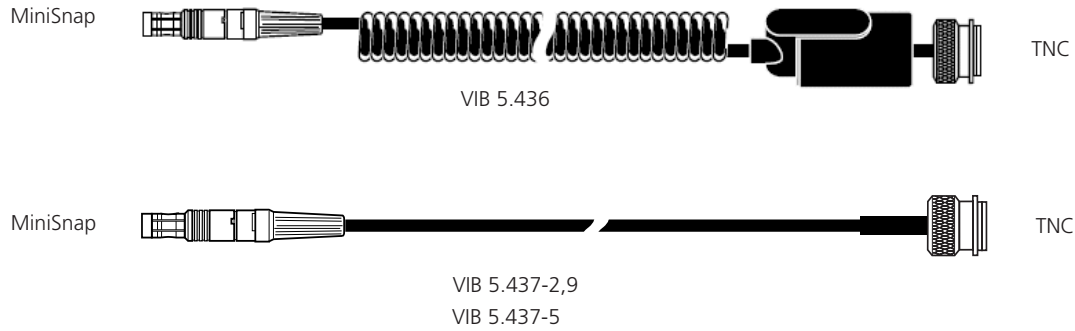
Order no.	Description	Page
VIB 321926-2	Spiral cable, TNC-QLA	150
VIB 4.701-2 VIB 4.701-5 VIB 4.702-2 VIB 4.702-5 VIB 4.704-2 VIB 4.704-5	Straight cable, BNC - QLA, 2 m -, BNC - QLA, 5 m -, Microdot - QLA, 2 m -, Microdot-QLA, 5 m -, TNC - QLA, 2 m -, TNC - QLA, 5 m	150
VIB 4.750-5	Cable extension for RPM sensor, 5m	157
VIB 5.332	Keyphasor adapter for machine protection systems, VIBXPERT / VIBSCANNER	159
VIB 5.332 X	Keyphasor adapter for machine protection systems, VIBSCANNER EX / VIBXPERT EX	160
VIB 5.333	Cable adapter for TTL / strobe output, VIBXPERT	161
VIB 5.336	Cable adapter for triaxial accelerometer VIB 6.655, VIBXPERT	162
VIB 5.339	Cable extension for Current Linedrive accelerometer, 8 meters	149
VIB 5.341 VIB 5.342 VIB 5.343 VIB 5.344	VST 24V adapter for VIBXPERT Analog cable for VST 24V adapter Digital cable for VST 24V adapter VIBROTECTOR cable for VST 24V	163
VIB 5.345-6 VIB 5.422	Cable extension for VIB 5.422 Spiral connection cable for ICP-type accelerometer, MIL-connector	152
VIB 5.346 VIB 5.346-MUX	VIBXPERT II connection cable for VIBRONET field multiplexer VIB 8.306 BNC adapter for cable VIB 5.346	173
VIB 5.431	Cable for analog signal output	158
VIB 5.432-2,9	Connection cable for RPM sensors	157
VIB 5.433 VIB 5.434	Cable adapter for signal-low voltage Cable adapter signal-low current	153
VIB 5.433 X	Cable adapter for signal-low voltage, VIBXPERT EX	155
VIB 5.436 VIB 5.437-2,9 VIB 5.437-5	Spiral cable for CLD-type accelerometer -, straight 2.9 m -, straight 5 m	147
VIB 5.438-0.5	Cable for ICP-type accelerometer, BNC	152
VIB 5.439	Cable for Pt100 temperature probe, VIBSCANNER	165
VIB 5.443	Connection cable for TTL trigger sensors	157
VIB 5.444-5	Universal cable extension for analog measurement channel, 5 meters	148
VIB 5.445 VIB 5.446	Manual channel switch, VIBSCANNER Automatic channel switch, VIBSCANNER	166
VIB 5.449	Cable adapter for VIB 6.195 / VIB 6.172	168
VIB 4.705	BNC to QLA cable adapter, VIBROTIP	169
VIB 6.780	Terminal holder for bulkhead connectors	170
VIB 6.785	SwitchBox - Channel switching unit	171
VIB 8.617	QLA angled plug, VIBROTIP	169
VIB 8.618-1,5 VIB 8.618-5	TIPTECTOR cable, 1,5 m TIPTECTOR cable, 5 m	151
VIB 8.746	SPM cable adapter	172
VIB 8.749	Current Linedrive converter	167
VIB 10473	Dust cap for TNC connector	170

Connection cables for current linedrive accelerometers (VIBSCANNER / VIBXPERT)

VIB 5.436 : Spiral connection cable for current linedrive accelerometer (VIBSCANNER / VIBXPERT)

VIB 5.437-2,9 : Straight connection cable for current linedrive accelerometer, 2.9 meters (VIBSCANNER / VIBXPERT)

VIB 5.437-5 : Straight connection cable for current linedrive accelerometer, 5 meters (VIBSCANNER / VIBXPERT)



Application

These cables are used to connect mobile industrial accelerometers with current linedrive output to the following PRÜFTECHNIK data collectors:

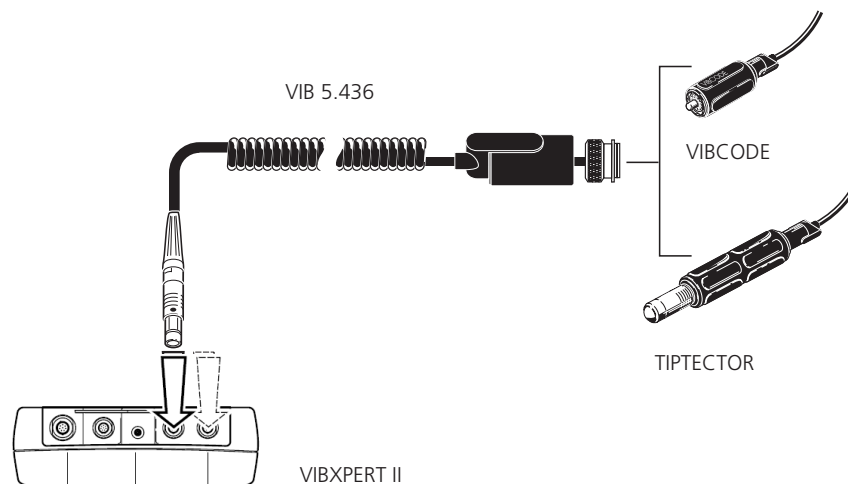
- VIBXPERT II
- VIBXPERT I
- VIBXPERT EX
- VIBSCANNER
- VIBSCANNER EX

Cable lengths

VIB 5.436	0.7 ... 1.8 m
VIB 5.437-2,9	2.9 m
VIB 5.437-5	5 m

Connection example

VIBCODE / TIPECTOR connected to VIBXPERT II



C

VIB 5.444-5 : Universal cable extension for analog measurement channel, 5 meters

1

2

MiniSnap



MiniSnap

3

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Application

With this cable, the analog signal path can be extended by up to five meters.

5

Extendable sensor cables:

- VIB 5.436 LineDrive spiral cable
- VIB 5.437-2,9 LineDrive cable, straight, 2.9m
- VIB 5.437-5 LineDrive cable, straight, 5m
- VIB 5.438-0,5 ICP cable, BNC connector

- VIB 5.422 ICP cable, MIL connector
- VIB 5.433 Cable for extra-low voltage
- VIB 5.433 Cable for extra-low voltage, VIBXPERT EX
- VIB 5.434 Cable for extra-low current
- VIB 5.342 Cable for VST 24V adapter

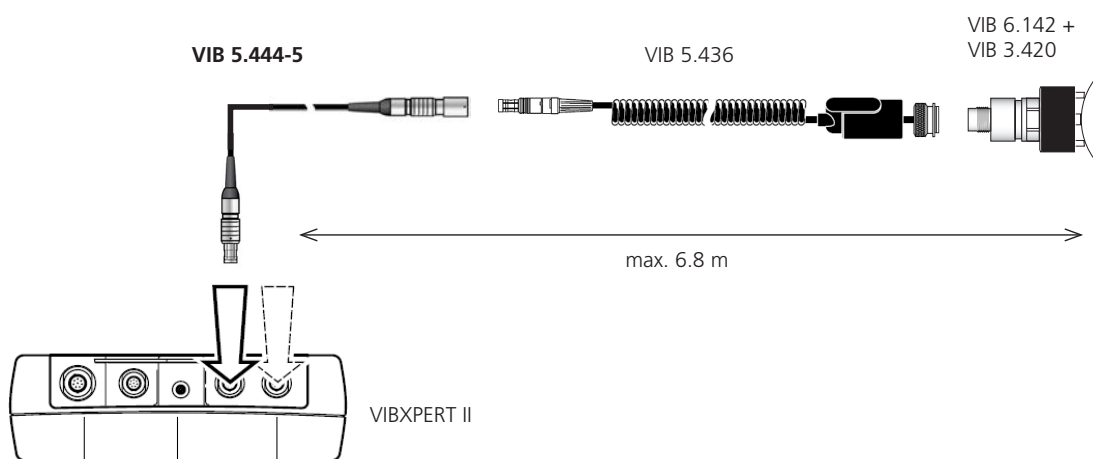
Note

For cable lengths greater than 2.9 meters, the EMC immunity of the signal path can be adversely affected.

6

A

Connection example



VIB 5.339: Cable extension for Current Linedrive accelerometer, 8 meters



Application

With this cable, the Current LineDrive sensor cables can be extended by up to eight meters.

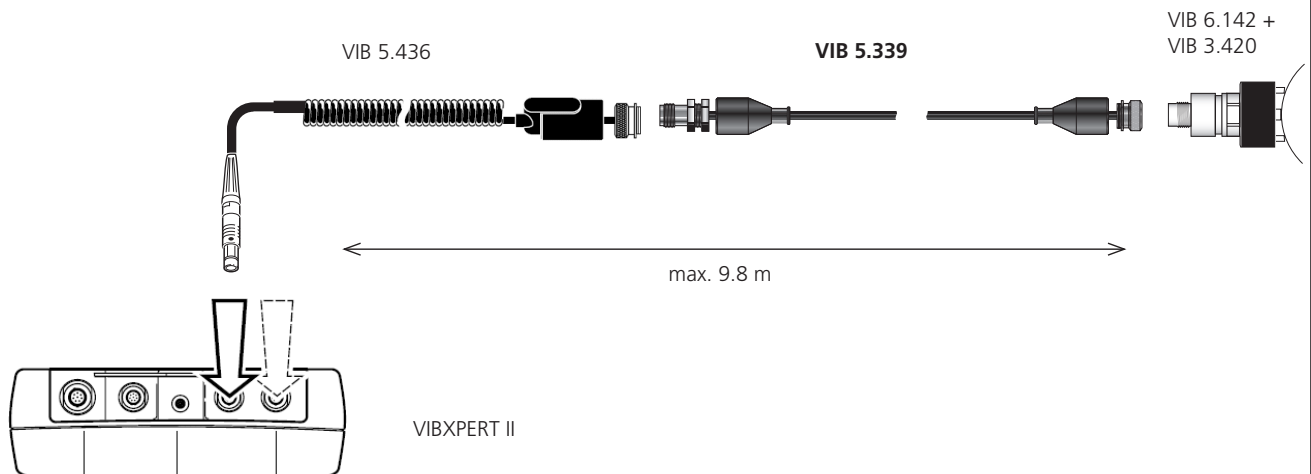
Note

For cable lengths greater than 2.9 meters, the EMC immunity of the signal path can be adversely affected.

Extendable sensor cables:

- VIB 5.436 LineDrive spiral cable
- VIB 5.437-2,9 LineDrive cable, straight, 2.9m
- VIB 5.437-5 LineDrive cable, straight, 5m

Connection example



C

Connection cables for current linedrive (CLD) accelerometers (VIBROTIP)

1

VIB 4.701-2 : Straight connection cable for CLD-type accelerometer, BNC angled plug, 2 meters (VIBROTIP)

VIB 4.701-5 : Straight connection cable for CLD-type accelerometer, BNC angled plug, 5 meters (VIBROTIP)

2

VIB 4.702-2 : Straight connection cable for CLD-type accelerometer, Microdot angled plug, 2 meters (VIBROTIP)

VIB 4.702-5 : Straight connection cable for CLD-type accelerometer, Microdot angled plug, 5 meters (VIBROTIP)

3

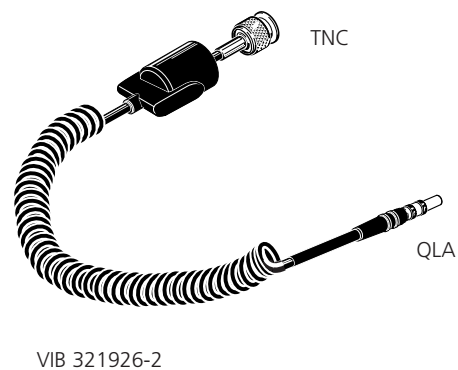
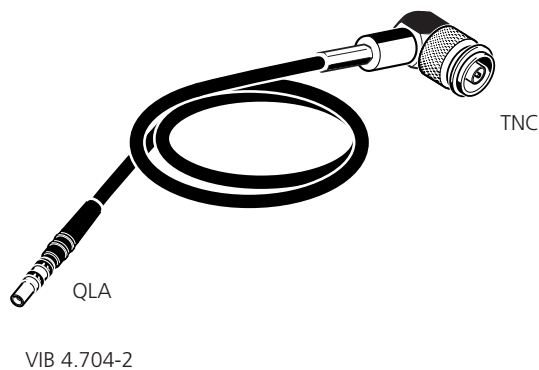
VIB 4.704-2 : Straight connection cable for CLD-type accelerometer, TNC angled plug, 2 meters (VIBROTIP)

VIB 4.704-5 : Straight connection cable for CLD-type accelerometer, TNC angled plug, 5 meters (VIBROTIP)

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Application

Standard sensor cable for connecting mobile CLD-type accelerometers to the VIBROTIP data collector.

Cable length

VIB 4.70x-2 /-5 2 m / 5 m

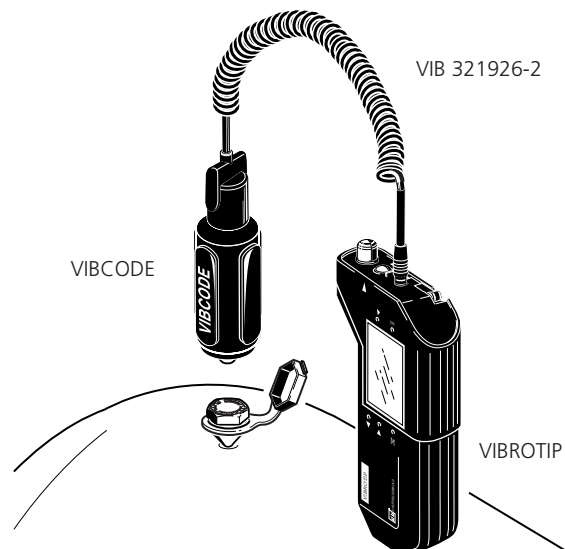
VIB 321926-2 0.4 ... 2.0 m

Accessories

VIB 8.617 QLA angled plug for VIBROTIP

Connection example

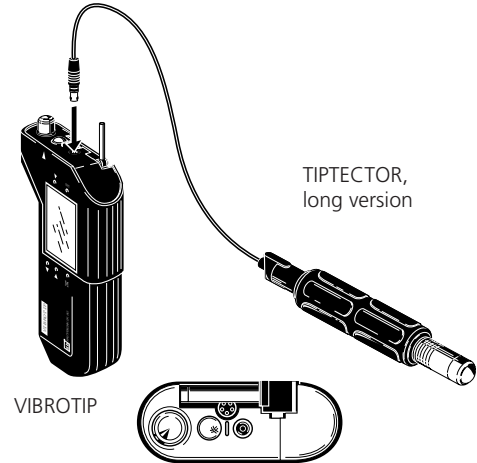
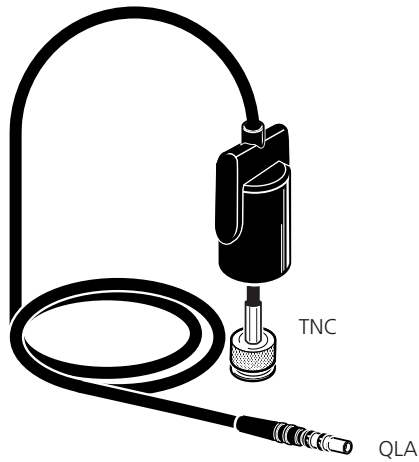
VIBCODE to VIBROTIP



TIPTECTOR cables (VIBROTIP)

VIB 8.618-1,5 : TIPTECTOR cable, straight, 1.5 meters (VIBROTIP)

VIB 8.618-5 : TIPTECTOR cable, straight, 5 meters (VIBROTIP)



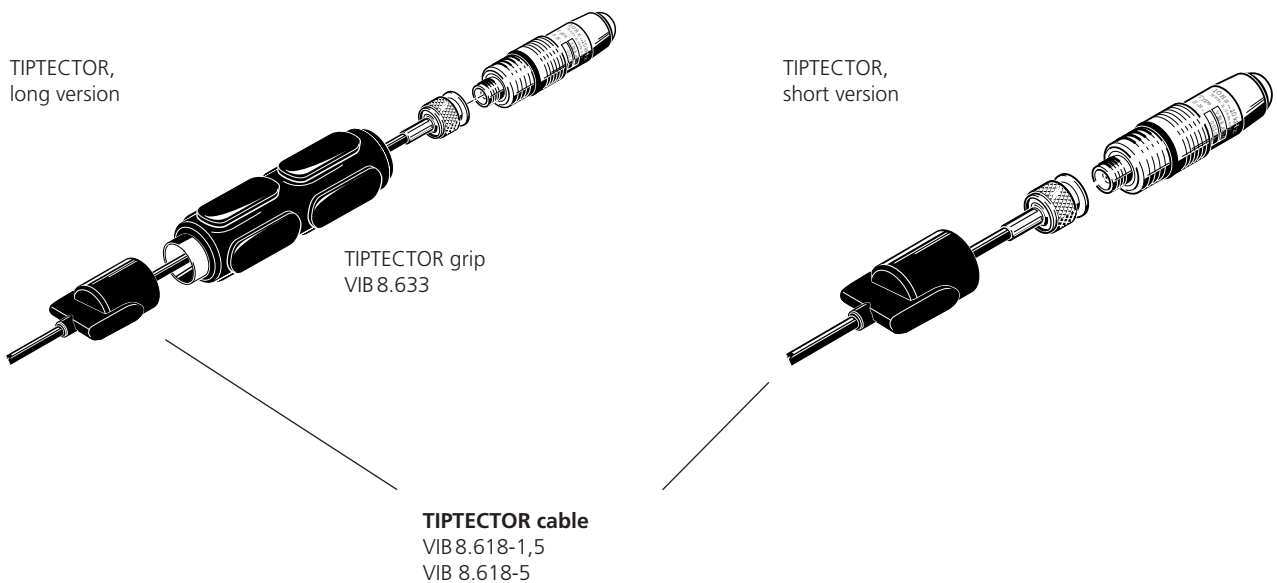
Application

Spare connection cable for the TIPTECTOR probe.

Note

To disconnect the cable, first pull off the cap, and, with the long version, unscrew the handle. Then unscrew the TNC connector.

Connection example



C

Connection cables for ICP-type accelerometers (VIBSCANNER / VIBXPART)

1

VIB 5.438-0.5 : Straight connection cable for ICP-type accelerometer, 0.5 m, BNC-connector (VIBSCANNER/ VIBXPART)

VIB 5.422 : Spiral connection cable for ICP-type accelerometer, MIL-connector (VIBSCANNER / VIBXPART)

VIB 5.345-6 : Cable extension for VIB 5.422, 6 meters, MIL-connector (VIBSCANNER / VIBXPART)

2

MiniSnap



VIB 5.438-0.5

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MiniSnap



VIB 5.422

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6

MIL-C-5015



VIB 5.345-6

MIL-C-5015

A

Application

Standard sensor cable for connecting an ICP-type accelerometer or a microphone to the following data collectors:

- VIBXPART II
- VIBXPART I
- VIBXPART EX*
- VIBSCANNER

Notes

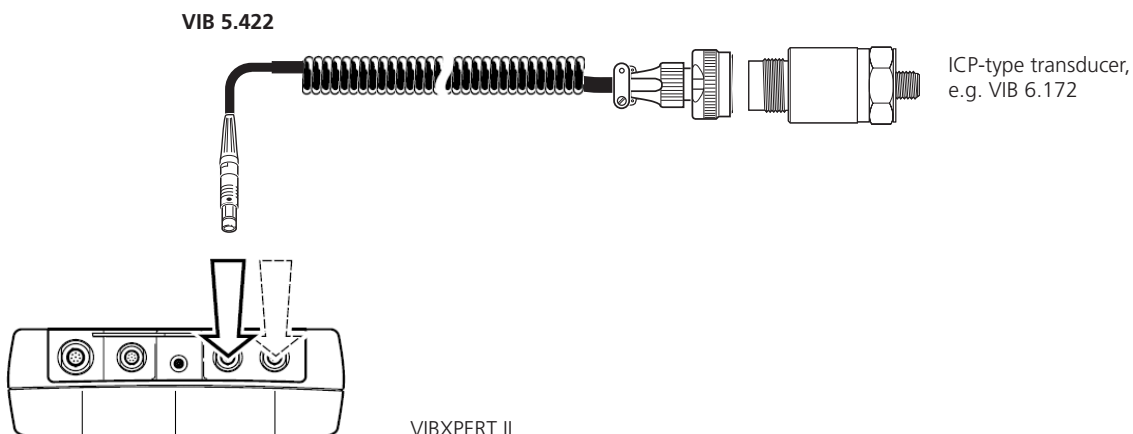
The intrinsically safe PRÜFTECHNIK ICP-type accelerometer VIB 6.172 XICP can be connected to VIBXPART EX using the cable VIB 5.422, and be operated in gas hazardous area.

Cable lengths

VIB 5.438-0.5	0.5 m
VIB 5.422	0.7 ... 1.8 m
VIB 5.345-6	6 m

Connection example

ICP to VIBXPART II



Cable adapters for the measurement of signal-low voltage / current with VIBXPART II

VIB 5.433 : Cable adapter for the measurement of signal-low voltage with VIBXPART II / VIBSCANNER

VIB 5.434 : Cable adapter for the measurement of signal-low current with VIBXPART II / VIBSCANNER



Application

These cable adapters are used to measure signal-low voltage (AC: 0-30V) or signal levels (DC: 0-30V; 0-30 mA) provided by other measuring instruments.

An additional cable with at least one BNC plug is required to connect the adapter cable to the signal-measuring instrument.

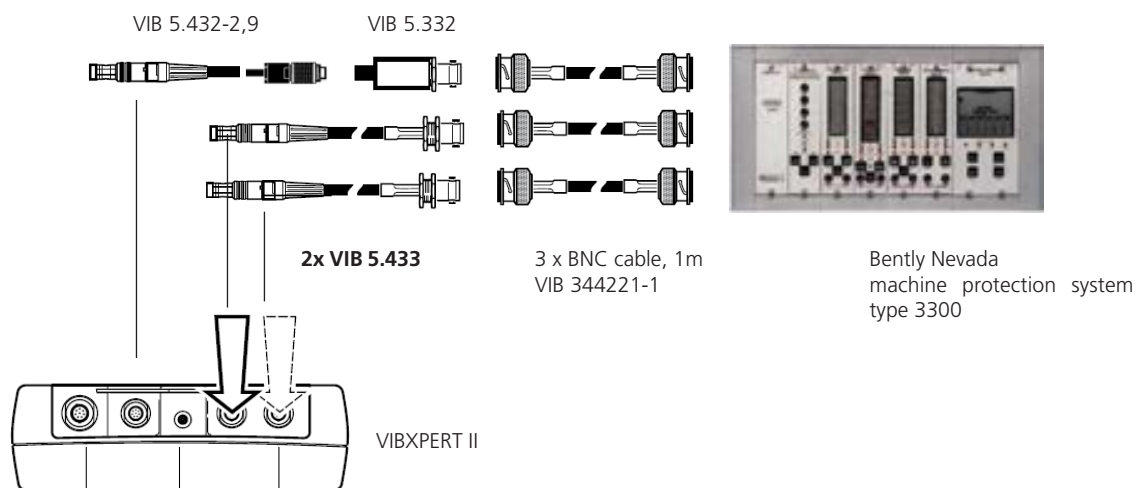
Safety notes

The cable adapters may not be used in hazardous areas!
All electric circuits in VIBXPART II are galvanically connected. If more than one electric circuit is connected, a difference in potential may result in malfunctions.

The length of the spiral cable is 0.7 to 1.8 meters.

Application example

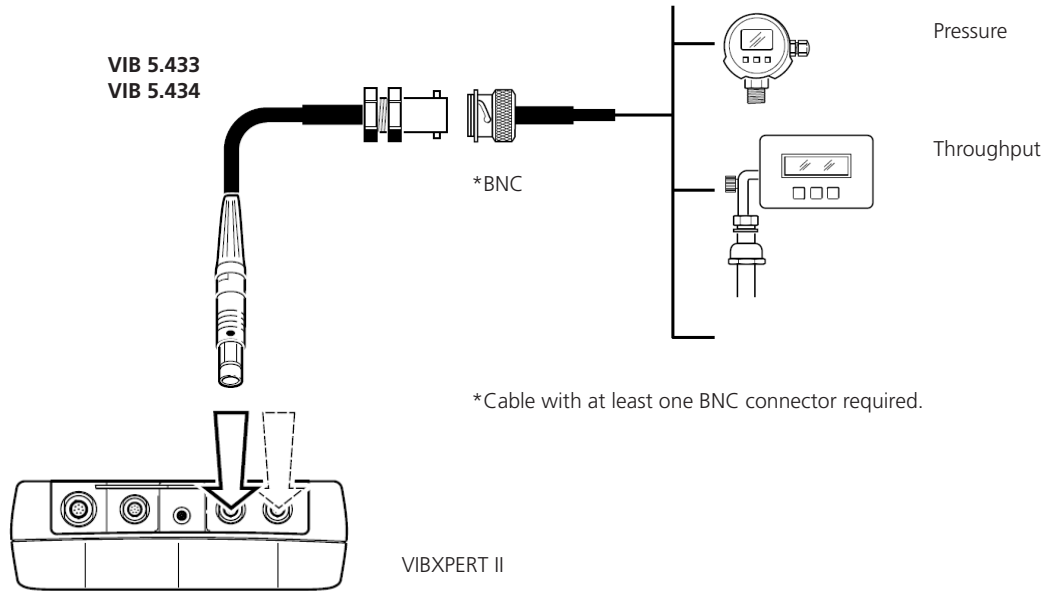
Measuring shaft vibration via machine protection system (e.g. Bently Nevada 3300) as voltage signal



- C
- 1
- 2
- 3
- 4
- 5
- 6
- A

Application examples

- Connection to pressure transmitter: Pressure as a current level (4-20mA)
- Connection to continuous flow measuring instrument: Throughput as a current or voltage level (4-20mA / 0-10V)



VIB 5.433 X : Cable adapter for the measurement of signal-low voltage with VIBXPRT EX / VIBSCANNER EX



Application

This cable adapter is used to measure signal-low voltage (AC/DC: 0-30V) provided by other measuring instruments.

An additional cable with at least one BNC plug is required to connect the adapter cable to the signal-measuring instrument (see example on next page).

Safety notes

The cable adapter may not be used in hazardous areas!

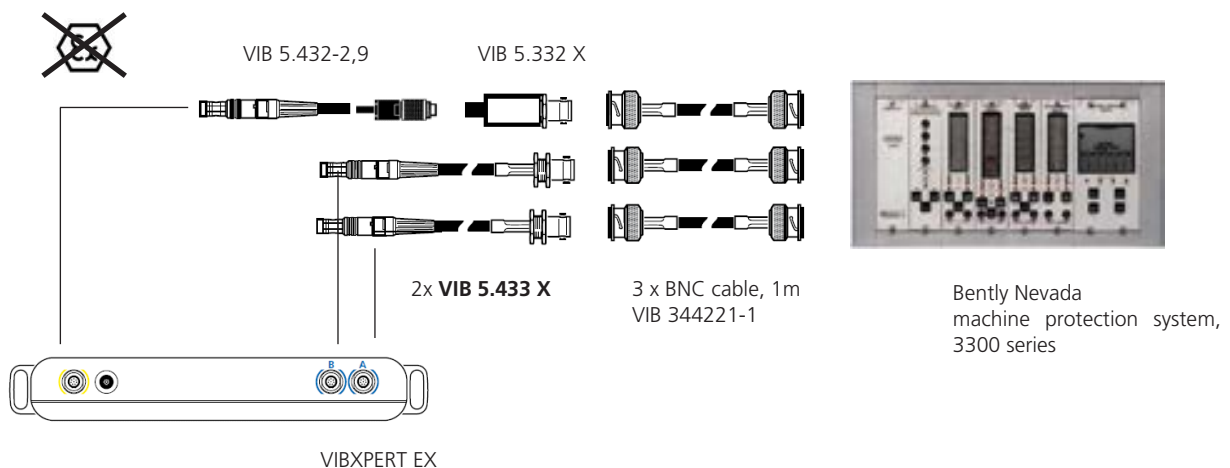
The cable adapter protects the analog port of the data collector (VIBXPRT EX / VIBSCANNER EX) against surges. The adapter must be connected with the data collector only outside the hazardous area to an electrical circuit, whose maximum voltage does not exceed $265 V_{rms}$ when a malfunction occurs.

Technical data

PARAMETER		VIB 5.433 X
General	Cable length	0.7 ... 1.8 m
	Temperature range	0°C ... + 40°C
	Maximum measurement error	-2,0% / +2,7%
	Upper frequency for AC measurements	5 kHz

Application example

Measuring shaft vibration via machine protection system (e.g. Bently Nevada 3300) as voltage signal



- C
- 1
- 2
- 3
- 4
- 5**
- 6
- A

Application example

Pressure / Throughput as a voltage level (0-10V)



VIB 5.433 X

*BNC

Pressure

Throughput

Etc.

*Cable with at least one BNC connector required.



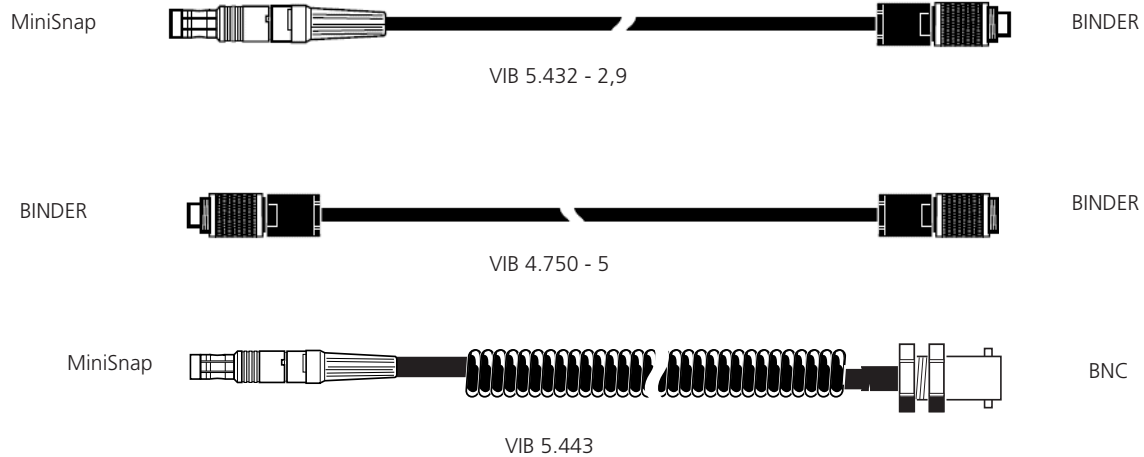
VIBXPERT EX

Connection cables for RPM sensors and trigger sensors (VIBSCANNER / VIBXPERT)

VIB 5.432-2,9 : Connection cable for RPM sensors (VIBSCANNER / VIBXPERT)

VIB 4.750-5 : Cable extension for VIB 5.432-2,9

VIB 5.443 : Connection cable for TTL trigger sensors (VIBSCANNER / VIBXPERT)



Application

The VIB 5.432-2,9 cable is used to connect the PRÜFTECHNIK RPM sensors VIB 6.631 or VIB 6.631 EX to the following data collectors:

- VIBXPERT II
- VIBXPERT I
- VIBXPERT EX
- VIBSCANNER
- VIBSCANNER EX

The VIB 5.443 cable is used to connect a trigger sensor from other manufacturers.

Cable lengths

VIB 5.432-2,9	2.5 m
VIB 4.750-5	5.0 m
VIB 5.443	0.45 - 1.6 m

Application example



C

VIB 5.431 : Cable for analog signal output (VIBSCANNER / VIBXPERT)

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Application

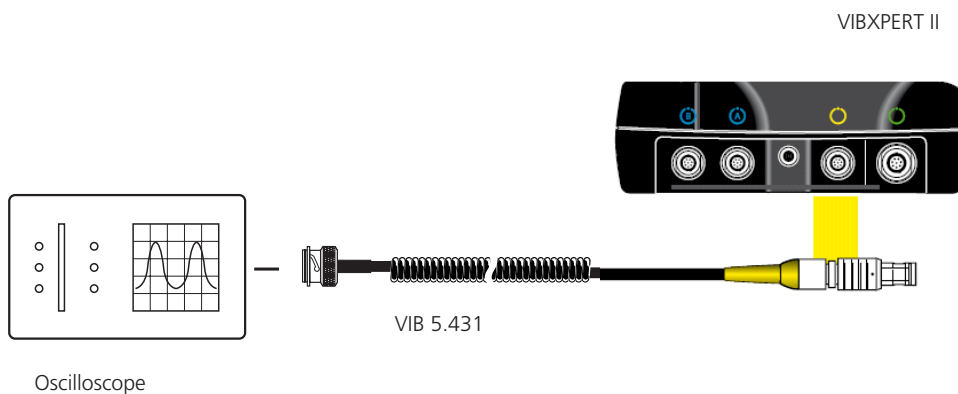
In order to analyze the measured analog signal, a head-set (> 450 Ohm) or an analytical instrument (e.g. oscilloscope) can be connected with this cable to the following data collectors:

6

- VIBXPERT II
- VIBXPERT I
- VIBXPERT EX
- VIBSCANNER
- VIBSCANNER EX

A

Cable length: 0.7 to 1.8 meters

Application example

VIB 5.332 : Keyphasor adapter for machine protection systems (VIBSCANNER / VIBXPERT)



Application

This adapter converts a pulse signal (including the DC level) to a 5V rectangular signal. Keyphasor signals can thereby be measured at a machine protection system output with PRÜFTECHNIK instruments:

- VIBXPERT II
- VIBXPERT I
- VIBSCANNER

Technical data

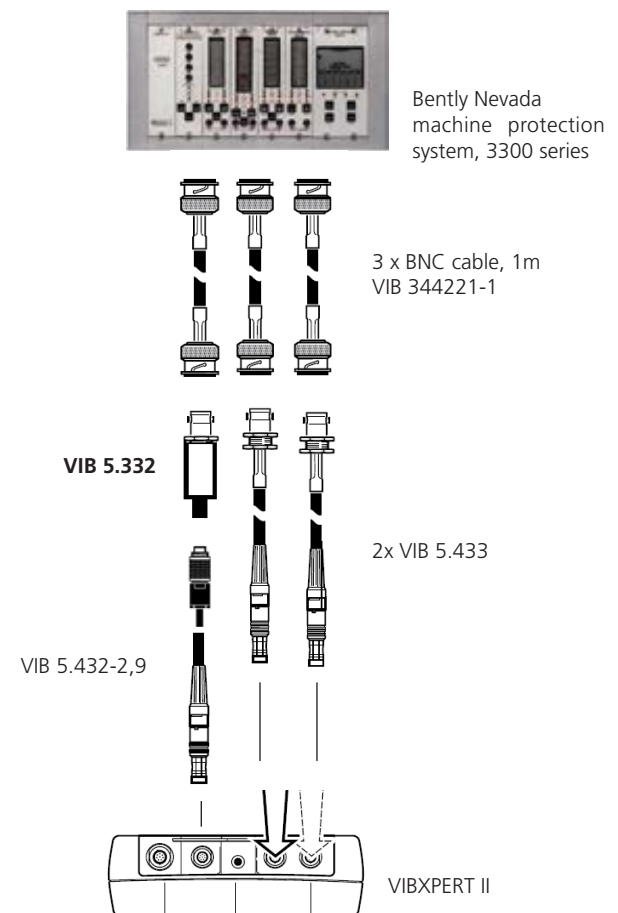
PARAMETER		VIB 5.332
Electrical	Operating voltage	5.4 V ± 10%
	Power consumption	0.5 mA
	Input signal, Pulse width	> 100 µs
	- , Pulse level	> 500 mV _{pp}
	- , DC fraction	+8 V to -30 V
	Output signal	5 V, rectangular signal
	Input resistance	200 kOhm
Mechanical	Output resistance	1 kOhm
	Housing material	Stainless steel, VA 1.4301
	Length, incl. connectors	130 mm
	Diameter	15 mm
	Weight	30 g
	Env. protection class	IP 65
Interfaces	Temperature range	0°C ... +60°C
	Input signal	Binder connector, 8 pin, 712 series
	- , Pin allocation	2 / 5V, 4 / rectangular signal, 7 / GND
	Output signal	BNC connector
- , Pin allocation	internal contact / signal, external contact / GND	

Connection

On the instrument side, the adapter is equipped with an 8-pin binder socket that is connected to trigger cable VIB 5.432-2,9. The signal input side provides a BNC socket.

Application example

VIBXPERT II connected to Bently Nevada 3300 series



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VIB 5.332 X : Keyphasor adapter for machine protection systems (VIBSCANNER EX / VIBXPRT EX)

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Application

This adapter converts a pulse signal (including the DC level) to a 5V rectangular signal. Keyphasor signals can thereby be measured at a machine protection system output with PRÜFTECHNIK instruments:

5

- VIBXPRT EX
- VIBSCANNER EX

6

Connection

On the instrument side, the adapter is equipped with an 8-pin binder socket that is connected to trigger cable VIB 5.432-2,9. The signal input side provides a BNC socket.

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Technical data

PARAMETER		VIB 5.332 X
Electrical	Operating voltage	5.4 V ± 10%
	Power consumption	0.5 mA
	Input signal, Pulse width	> 100 µs
	- , Pulse level	> 500 mV _{pp}
	- , DC fraction	+8 V to -30 V
	Output signal	5 V, rectangular signal
	Input resistance	200 kOhm
	Output resistance	1 kOhm
Mechanical	Housing material	Stainless steel, VA 1.4301
	Length, incl. connectors	130 mm
	Diameter	15 mm
	Weight	30 g
	Env. protection class	IP 65
	Temperature range	0°C ... +40°C
Interfaces	Input signal	Binder connector, 8 pin, 712 series
	- , Pin allocation	2 / 5V, 4 / rectangular signal, 7 / GND
	Output signal	BNC connector
	- , Pin allocation	internal contact / signal, external contact / GND

Safety notes

The adapter may not be used in hazardous areas!

The adapter protects the digital port of the VIBXPRT EX against surges. The adapter must be connected with VIBXPRT EX only outside the hazardous area to an electrical circuit, whose maximum voltage does not exceed 265 V_{rms} when a malfunction occurs.

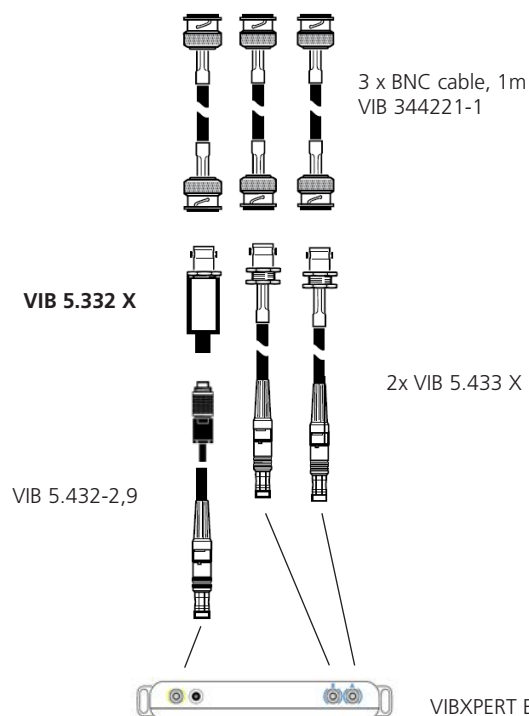
Ambient temperature: 0°C to + 40°C.

Application example

VIBXPRT EX connected to Bently Nevada 3300 series



Bently Nevada machine protection system, 3300 series



VIB 5.333 : Cable adapter for TTL / strobe output (VIBXPRT)



Application

The VIB 5.333 cable adapter is used to connect a stroboscope to VIBXPRT. The flash rate is controlled by the cursor on the spectrum.

Connection

BNC: Stroboscope trigger input with BNC cable.

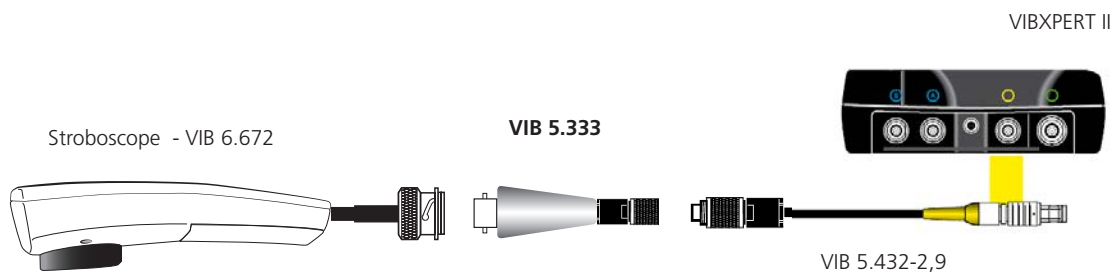
Binder: VIBXPRT digital input with cable VIB 5.432-2,9.

Technical data

PARAMETER		VIB 5.333
Mechanical	Housing material	Aluminium
	Length, incl. connectors	62 mm
	Diameter	15 mm
	Weight	20 g

Application example

VIBXPRT II connected to stroboscope



C

VIB 5.336 : Cable adapter for triaxial accelerometer (VIBXPERT)

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Application

The cable adapter VIB 5.336 is used to connect the triaxial accelerometer VIB 6.655 to the VIBXPERT II instrument. It is not permissible to connect the triaxial accelerometer to VIBXPERT EX.

5

Connectors

MiniSnap: Analog inputs A & B
MiniMIL: Triaxial sensor VIB 6.655

6

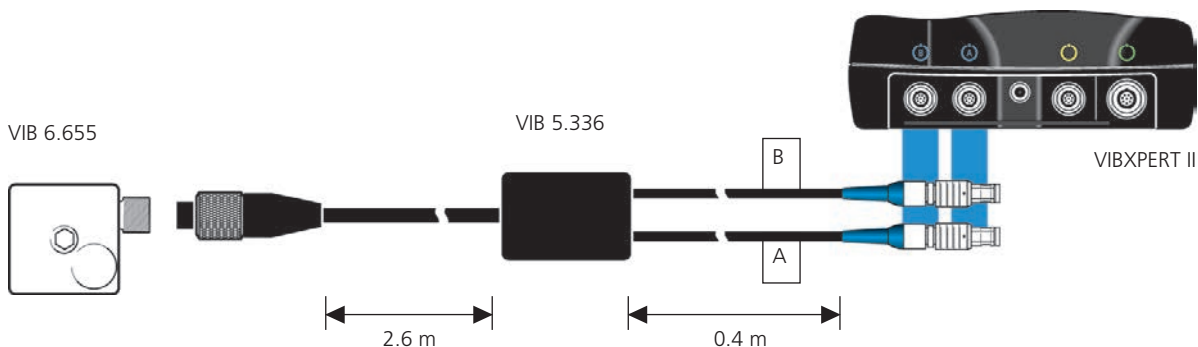
A

Technical data

PARAMETER		VIB 5.336
Design	Conductor	4-pin AWG25, spiralized CTC cable from adapter to sensor
	Cable sheath	PU
	Diameter	5.3 mm
	Cable length, instrument side	approx. 0.4 m
	-, sensor side	approx. 2.6 m
Environment	Operation temperature range	-10 °C ... +60 °C
	Storage temperature range	-20 °C ... +80 °C
	Rel. humidity	< 95 %
	Env. protection	IP 65
	Weight	approx. 310 g

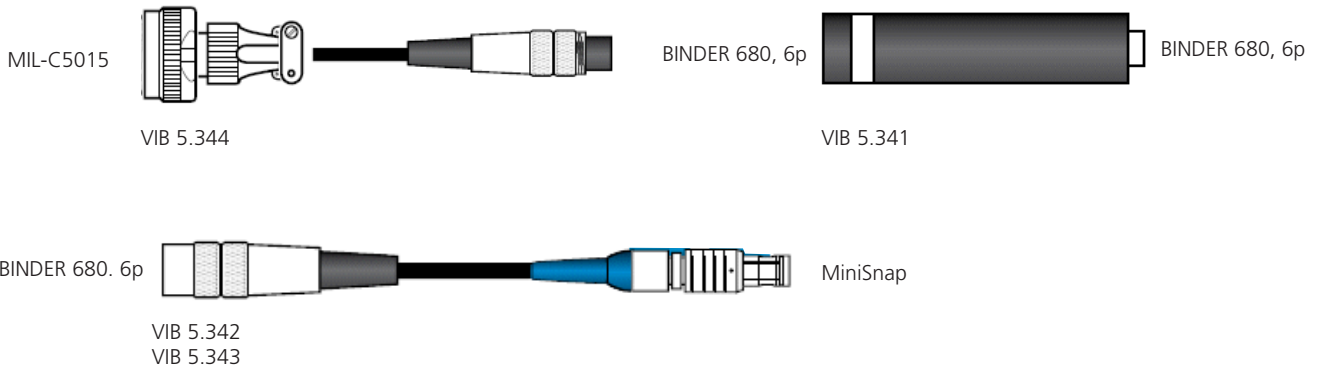
Application example

VIBXPERT II connected to triaxial accelerometer VIB 6.655



Adapters and cables for voltage-supplied sensors and VIBROTECTOR (VIBXPRT)

VIB 5.341 :	VST 24V adapter for VIBXPRT II
VIB 5.342 :	Analog cable for VST 24V adapter
VIB 5.343 :	Digital cable for VST 24V adapter
VIB 5.344 :	VIBROTECTOR cable for VST 24V adapter



Application

The VST 24V adapter is used for connecting any sensors with a power supply (-24 VDC) to the VIBXPRT II instrument.

Examples of sensors:

- AS-022: accelerometer
- IN 085: non-contacting displacement sensor from Brüel & Kjaer Vibro / Schenck Vibro.
- VIBROTECTOR: vibration transmitter from PRÜFTECHNIK Condition Monitoring

To measure RPM, sensors with a power supply (-24 VDC) or rpm reference sensors with an external supply can be connected. The minimum required trigger level is 2 volts.

Safety note

Do not operate VIBXPRT II with the charger unit when the adapter is connected.

Cleaning notes

- Clean with a moist cloth.
- Use a mild detergent or alcohol.

Technical data

PARAMETER		VIB 5.341
Electrical	Output voltage U_{out}	-24V, unregulated (dep. on VIBXPRT)
	Frequency range, Signal IN - Analog Out Signal IN - Trigger Out	0.1 Hz ... 100 kHz
	Case material	stainless steel + heat shrink tubing
Mechanical	Plug	DIN 41524, BINDER 680, 6 pole, m / f
	Dimensions L x D	120 x 27 mm
	Weight	105 g
	Protection class	IP 40
	Temperature range	-10°C ... +60°C

Connection

The VST 24V adapter is connected to the sensor and instrument using the cables provided:

Analog cable - VIB 5.342:

Connection cable between adapter and VIBXPRT II for measurement of vibration acceleration, velocity and displacement.

Digital cable - VIB 5.343:

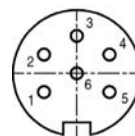
Connection cable between adapter and VIBXPRT II for RPM measurement.

VIBROTECTOR cable - VIB 5.344:

Connection cable between adapter and VIBROTECTOR vibration transmitter. The adapter is connected to VIBXPRT II with the analog cable (VIB 5.342).

Cable length: 2.9 meters

Plug pin allocation, sensor side



- 1: -24 VDC
- 2: Analog signal (Sensor)
- 3: Trigger signal (5V TTL)
- 4: GND
- 5: Shield
- 6: 5 VDC (Voltage from VIBXPRT)



C

Connection examples

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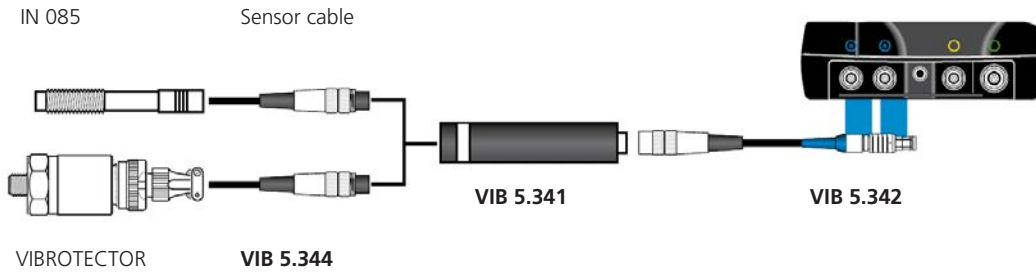
- Displacement measurement with IN 085 sensor
- Vibration measurement with VIBROTECTOR

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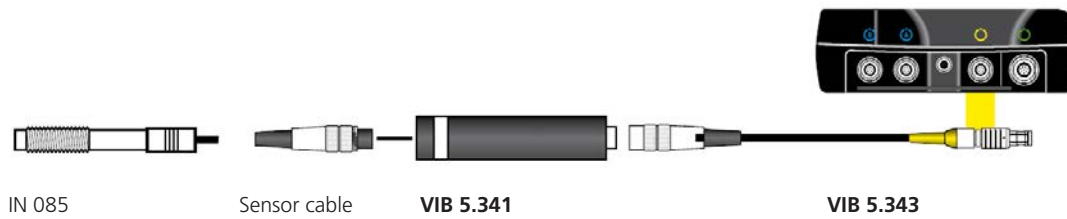
5



6

- RPM measurement with IN 085 sensor

A



VIB 5.439 : Connection cable for Pt100 temperature probe (VIBSCANNER)



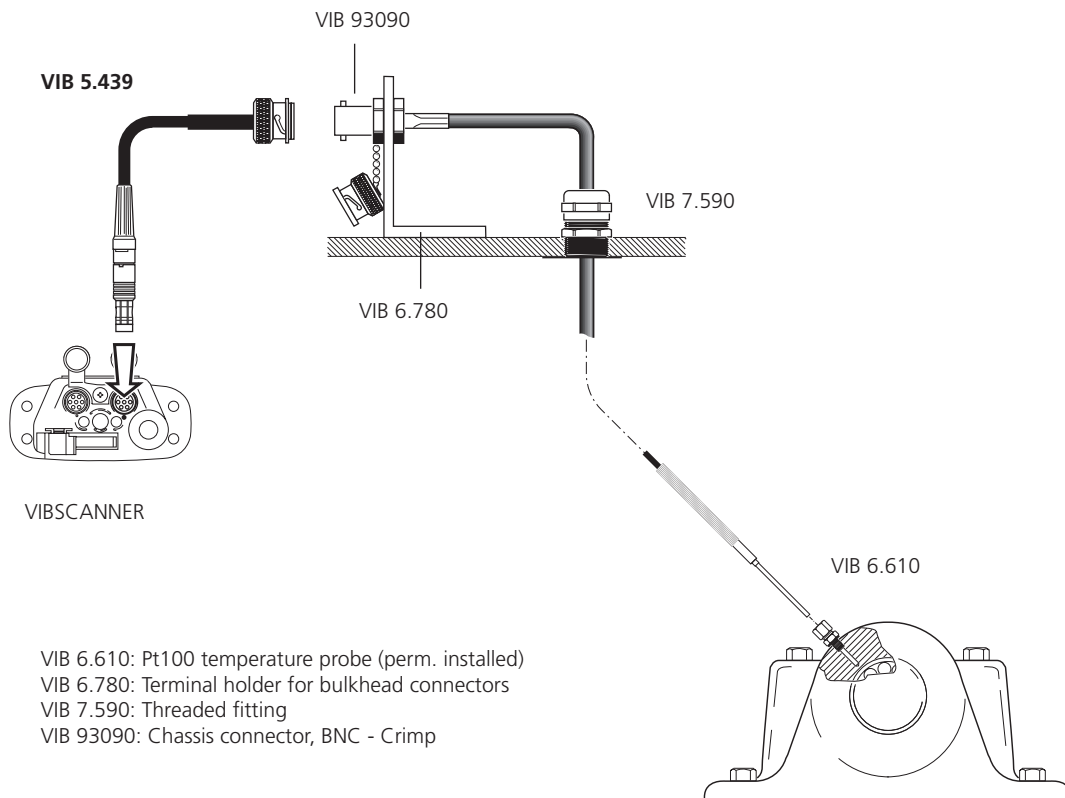
Application

This cable is used to connect a Pt100 temperature probe to VIBSCANNER for temperature measurements.

Cable length: 0.7 ... 1.8 meters

Connection example

Pt100 probe connected to VIBSCANNER



C

VIBSCANNER channel switches

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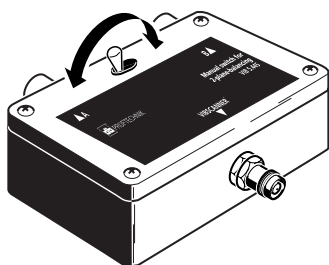
- VIB 5.445 : Manual channel switch for 2-plane balancing with VIBSCANNER
- VIB 5.446 : Automatic channel switch for 2-plane balancing with VIBSCANNER

2

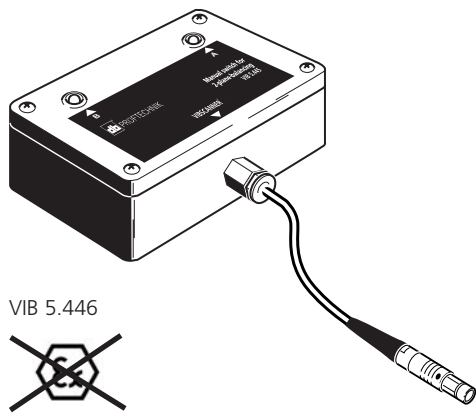
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VIB 5.445



VIB 5.446



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Application and function

The channel switch provides two inputs for accelerometers, which are merged into one output channel. The channel switching is done either via a toggle switch (VIB 5.445) or automatically controlled by the VIBSCANNER application program (VIB 5.446).

This simplifies e.g. the (sequential) balancing in two planes, because the accelerometers do not have to be unplugged when changing the balancing plane.

Connection

With the manual channel switch VIB 5.445, the accelerometers are connected each with a coaxial cable with TNC connector (VIB 311221-L). The channel switch itself

is plugged in VIBSCANNER with the connection cable for linedrive accelerometers VIB 5.436.

The automatic channel switch VIB 5.446 is connected directly to VIBSCANNER. For each sensor, a connection cable for linedrive accelerometers (VIB 5.436) is required.

Note

The automatic switch cannot be operated with VIBSCANNER EX!

Accessories

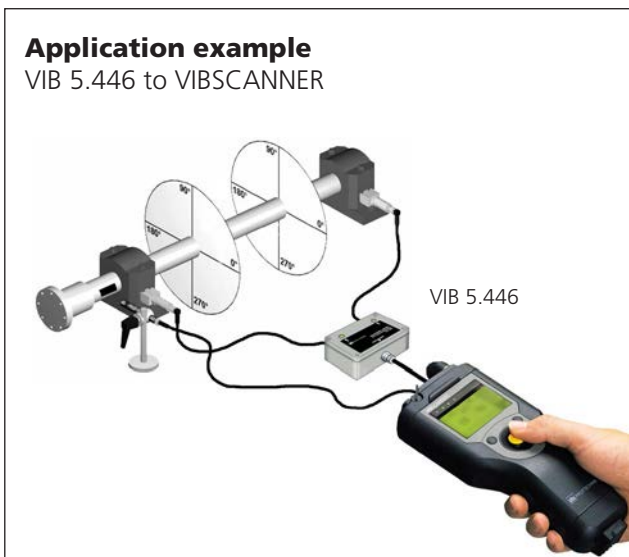
- VIB 5.436 Conn. cable for linedrive accelerometers
- VIB 311221-L Coaxial cable, TNC (2x), L= cable length

Technical data

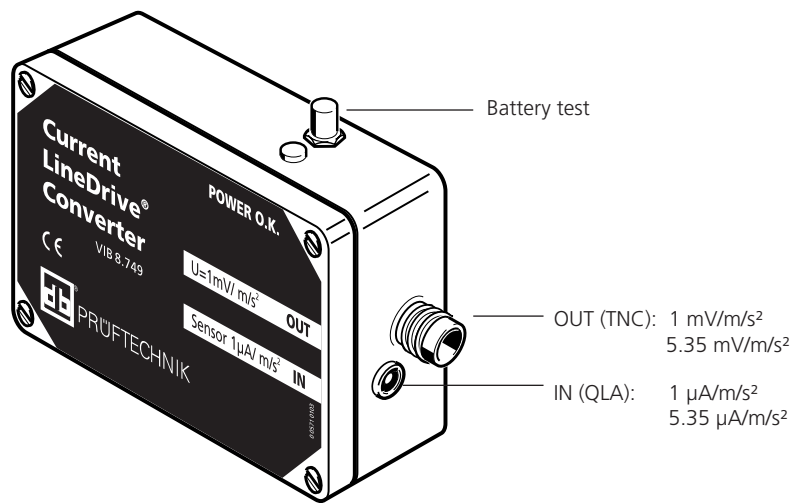
PARAMETER		VIB 5.445	VIB 5.446
Mechanical	Case material	Aluminium	
	Connections	1x TNC socket, 2x TNC socket	1x Cable with MiniSnap plug 2x MiniSnap sockets
	Dimensions L x B x H	97 x 63 x 35 mm	
	Weight	approx. 230 g	

Application example

VIB 5.446 to VIBSCANNER



VIB 8.749 : Current LineDrive converter for data collector with voltage input



Description

This adapter converts the current signal of a current line drive accelerometer into a voltage signal. Thus PRÜFTECHNIK accelerometers can be connected to data collectors with voltage input. The adapter is powered by two 9V batteries.

Note

Battery condition can be checked at the press of a button: if the green LED lights up, the batteries are loaded.

Connection

The accelerometer is connected to the adapter with a VI-BROTIP sensor cable (e.g. VIB 4.704-2). The data collector is plugged into the signal output socket using a suitable TNC cable.

Technical data

PARAMETER		VIB 8.749
Electrical	Power requirement	2x 9 volt batteries (6LR61)
	Sensitivity	1 mV / 1 µA
	Accuracy	±1% of measured value
	Current consumption	6 mA (w/ sensor)
	Operating duration	approx. 75 hours
General	Dimensions, H x W x D	3.5 x 11 x 6 cm
	Env. protection	IP 50
	Temperature range	+10°C ...+40°C
	Weight, incl. batteries	approx. 320 g

C

Cable adapters for accelerometers with Mil-type connector

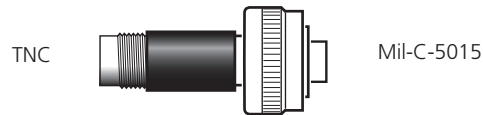
1

VIB 5.449-CLD : Cable adapter for CLD-type accelerometer VIB 6.195

VIB 5.449-ICP : Cable adapter for ICP-type accelerometer VIB 6.172

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Application

Connection of accelerometers with Mil-type connectors, e.g. VIB 6.195 (CLD type) or VIB 6.172 (ICP type) to the following PRÜFTECHNIK instruments:

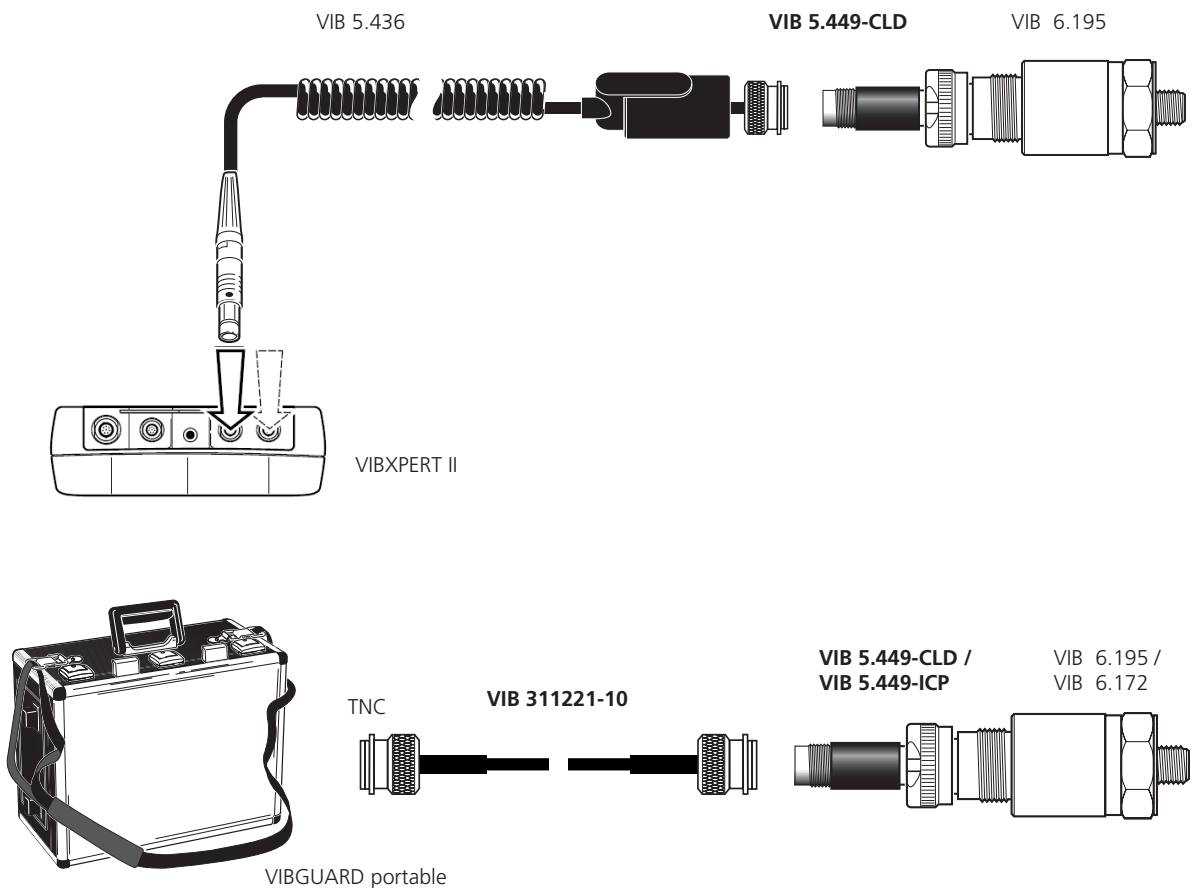
5

- VIBXPERT II
- VIBGUARD portable
- VIBSCANNER

6

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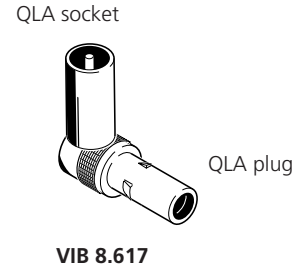
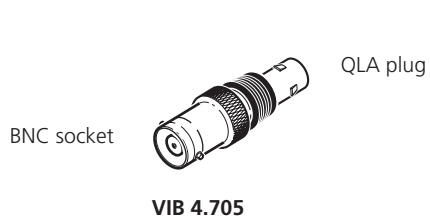
Application example



Cable adapters for VIBROTIP

VIB 4.705 : BNC to QLA cable adapter

VIB 8.617 : QLA angled plug



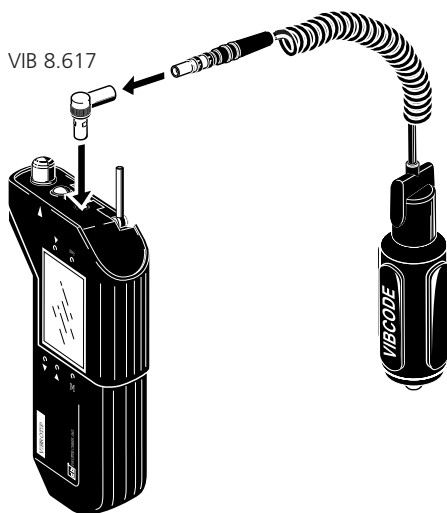
Application

These adapters extend the connection options at the QLA input of the VIBROTIP data collector.

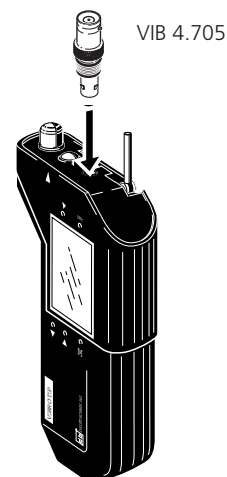
The VIB 4.705 adapter connects transducers with BNC connector to the data collector. The VIB 8.617 adapter is

used to connect external vibration sensors to VIBROTIP so that they do not interfere with measurements using the built-in temperature probe or RPM sensor.

Connection example
VIB 8.617 to VIBROTIP and VIBCODE



Connection example
VIB 4.705 to VIBROTIP



C

Terminal holder for bulkhead connectors

1

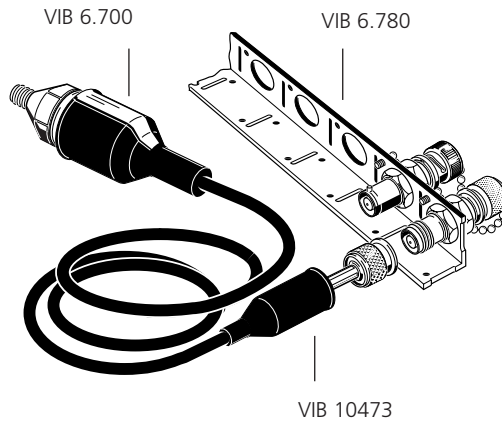
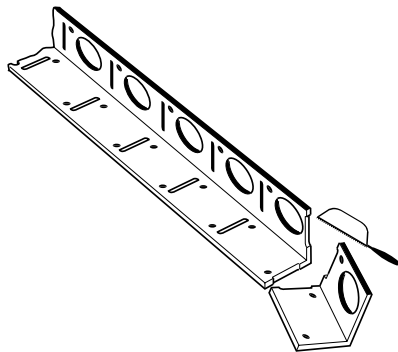
- VIB 6.780 : Terminal holder for bulkhead connectors
- VIB 10473 : Dust cap for TNC connector

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Application

Up to 12 cables are joined at the terminal holder to record the measured values conveniently with a data collector.

The cables are mounted on the terminal holder with the aid of bulkhead connectors. The terminal holder can be sawn to the required length.

A

The TNC dust cap VIB 10473 hermetically seals the connection between the sensor cable and the bulkhead connector.

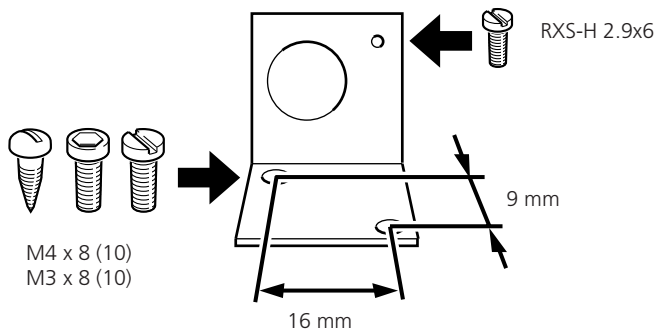
Note

To seal the connection between the accelerometer and the sensor cable a dust caps with a larger diameter is required (e.g. VIB 6.700).

Technical data

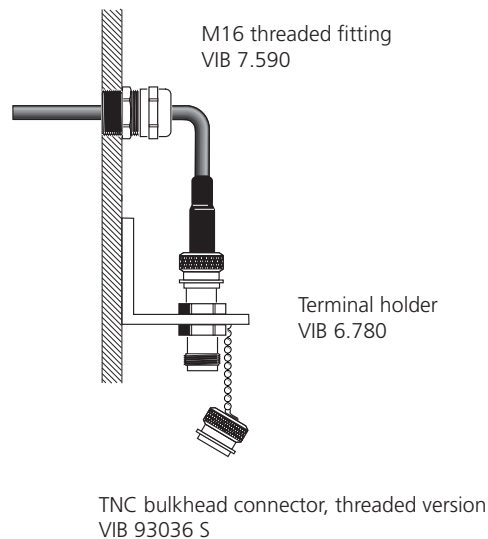
PARAMETER		VIB 6.780	VIB 10473
General	Material	Plastic PA	Silicone (HTV R 701)
	Env. protection	---	IP 65
	Temperature range	0°C ...+85°C	< +200°C
	Chemical resistance	--	aliphatic hydrocarbons (mineral oils)

Mounting hole



The screws are not included in the scope of delivery

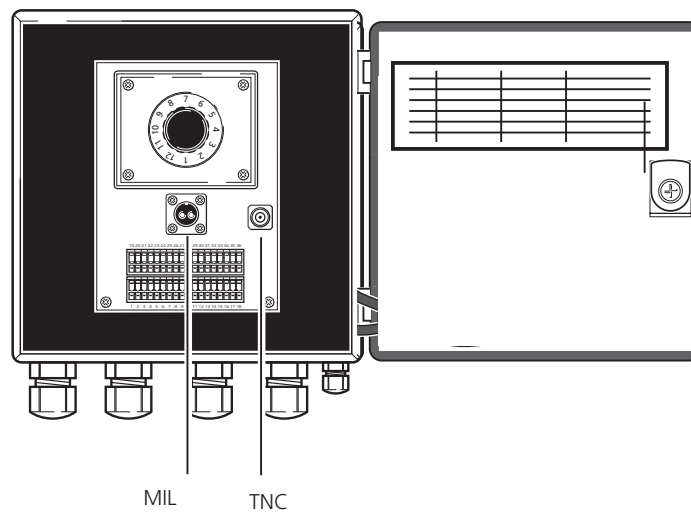
Mounting example



Attention!

The bulkhead connector dust cap is attached to a metal cord. To electrically insulate the connector, the dust cap must only come into contact with insulated components.

VIB 6.785 : SwitchBox - Channel switching unit for CLD-/ ICP-type accelerometers, 12 ch.



Application

The SwitchBox channel switching unit VIB 6.785 has been designed to enable inaccessible measurement locations to be monitored and hard wired back to a safe position.

The channels are individually selected by a rotary switch. The data collector (e.g. VIBSCANNER or VIBXPERT) is connected to one of the two sockets (TNC/MIL) using an appropriate cable.

Installation

The SwitchBox requires no external power supply. Up to 12 accelerometers can be connected to the SwitchBox. All accelerometer cables are glanded into the SwitchBox, terminations are made off into spring terminals. The VIB 81060 screwdriver is included in the scope of delivery for the installation of the accelerometer cables.

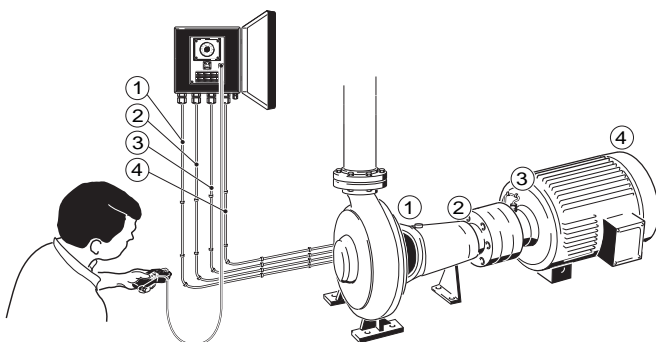
As of version 1.1 the SwitchBox can also be installed in hazardous areas.

Accessories

- VIB 5.436 Spiral cable for Linedrive accelerometer, TNC
- VIB 5.422 Cable for ICP-type accelerometer, MIL

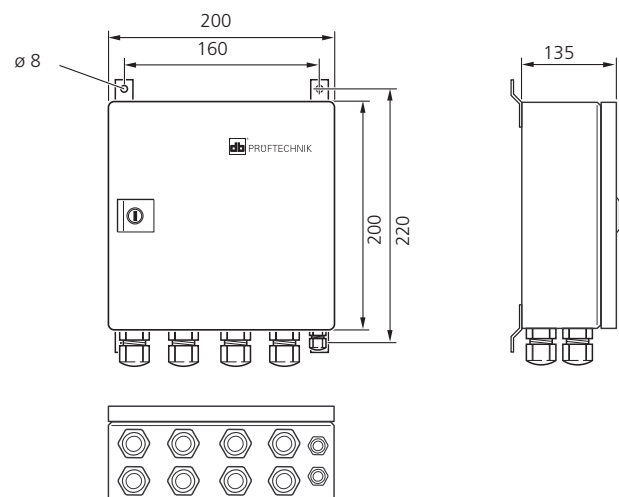
Technical data

PARAMETER		VIB 6.785
General	Input	Up to 12 accelerometers (ICP or LineDrive)
	Output	one via TNC or MIL socket
	Temperature range	- 20°C ... + 60°C
	Env. protection	IP 65



Dimensions

in mm



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SPM cable adapter for data collectors

1

VIB 8.746-VD : SPM cable adapter for VIBROTIP

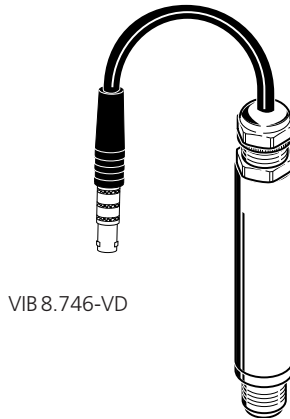
VIB 8.746-VS : SPM cable adapter for VIBSCANNER / VIBXPERT

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VIB 8.746-VD



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Application

The SPM cable adapter is used to connect PRÜFTECHNIK data collectors to existing SPM 40000 or TRA 30 measurement sensors by converting the voltage signal to a current signal.

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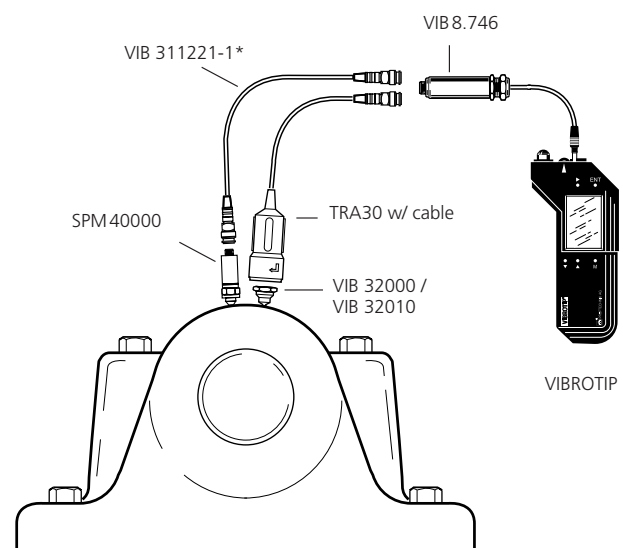
Note

The SPM cable adapter may not be used in hazardous areas!

Technical data

PARAMETER		VIB 8.746-VD	VIB 8.746-VS
General	Input	QLA	MiniSnap
	Output	TNC	
	Length	approx. 240 mm	
	Diameter	16 mm	

Application example



* This cable is not included in the scope of delivery

VIBXPERT II connection cable and adapter for VIBRONET field multiplexer

VIB 5.346: Connection cable, VIBXPERT II to VIBRONET field multiplexer

VIB 5.346-MUX : BNC connection adapter for cable VIB 5.436

MiniSnap



BNC

VIB 5.346



VIB 5.346-MUX

Application

These cables are used to connect the VIBXPERT II data collector to a VIBRONET field multiplexer (VIB 8.306) for automatic data acquisition at many measurement locations of the same type or hard-to-access measurement locations.

The measurement locations are combined on one string line and are measured consecutively.

Notes

Only vibration measurements with Current Linedrive accelerometers are possible.

Up to 6 multiplexers with a maximum of 54 measurement locations are possible on one string line.

It is not permissible to connect these cables to VIBXPERT EX!

Cable lengths

VIB 5.346 1.5 meters

VIB 5.346-MUX 0.16 meters

Application example



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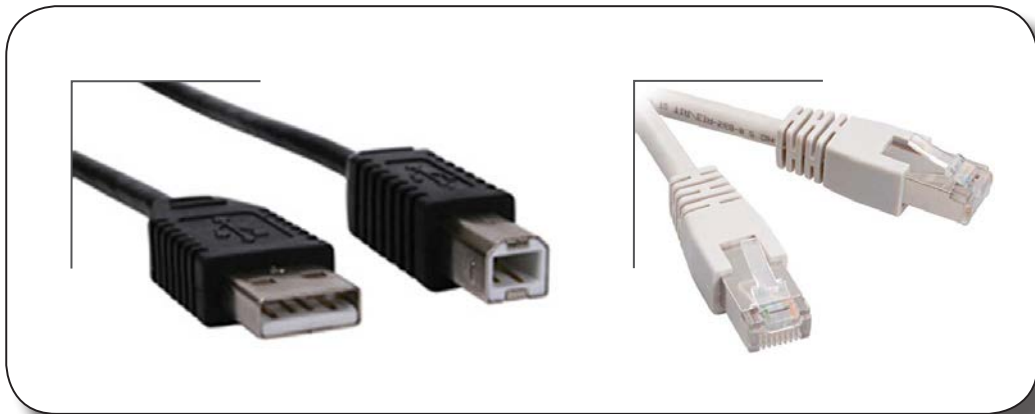
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Chapter 6

Communication cables



C

Contents: Communication cables

1

2

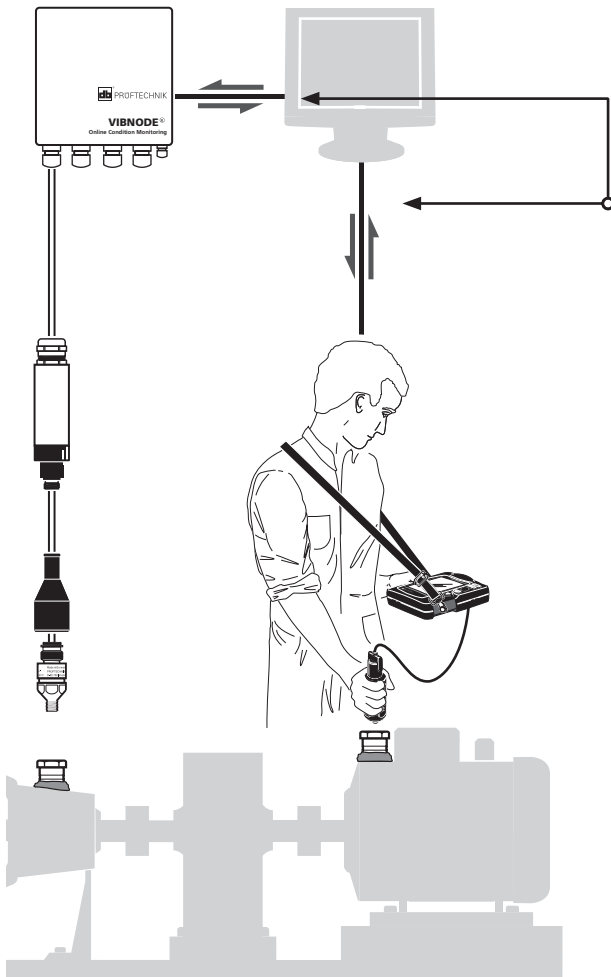
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Order no.	Description	Page
VIB 5.330 MUSB	VIBXPRT USB cable for periph. devices	177
VIB 5.330 SUSB	VIBXPRT USB cable for PC	
VIB 5.330 MEM	VIBXPRT II adapter for USB pen drive	
VIB 5.330-USB	VIBXPRT II USB pen drive	
VIB 5.330-UNV	Universal communication adapter for VIBXPRT EX	178
VIB 5.331	Ethernet cable, VIBXPRT	180
VIB 5.338	USB cable, VIBXPRT EX	178
VIB 5.430-2	Serial PC cable, VIBSCANNER / VIBXPRT	181
VIB 5.448	Adapter cable, serial to USB, VIBSCANNER / VIBXPRT	
VIB 5.955-X	Patch cable, VIBRONET / VIBROWEB	183
VIB 5.957-2 /-5	Crossover ethernet cable, VIBRONET / VIBROWEB	
VIB 5.956-X	System bus cable, VIBRONET	184
VIB 8.619	Serial PC cable, VIBROTIP	181
VIB 8.619-USB	Serial to USB cable adapter, VIBROTIP EX	182

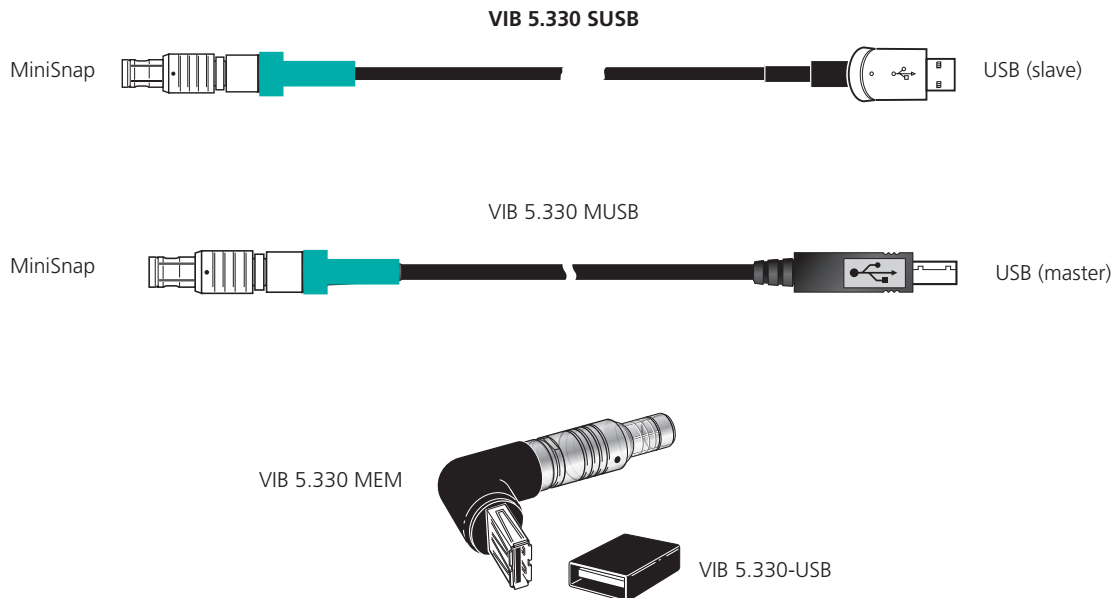
VIBXPERT II USB cables and adapters

VIB 5.330 MUSB : VIBXPERT II USB cable for peripheral devices (Master)

VIB 5.330 SUSB : VIBXPERT II USB cable for communication (Slave)

VIB 5.330 MEM : VIBXPERT II adapter for USB pen drive

VIB 5.330-USB : VIBXPERT II USB pen drive



Application

VIBXPERT II has a USB interface which can be used for communication and data transfer with a computer as well as for printing reports on a printer.

The cable for peripheral devices VIB 5.330 MUSB is used for connecting the printer. The connection to the PC is made with the cable VIB 5.330 SUSB. The adapter VIB 5.330-MEM is used to store reports in PDF format on the VIBXPERT II USB pen drive VIB 5.330-USB.

Cable lengths: 2 meters

Note

These cables and the adapter may not be used with VIBXPERT EX!

Application examples

Data transfer via USB



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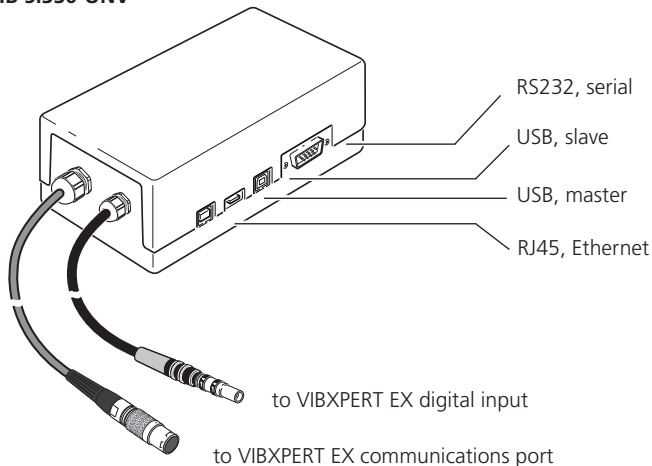
Communication adapter and USB cable for VIBXPRT EX

1

- VIB 5.330 UNV : Universal communication adapter for VIBXPRT EX
- VIB 5.338 : USB cable for VIBXPRT EX

2

VIB 5.330-UNV



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VIB 5.338



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Application

The VIB 5.330-UNV adapter is a communication and printer interface for VIBXPRT EX. The adapter protects the instrument against damage due to over voltages that may arise from connecting non-certified peripheral equipment.

Connection

The adapter is connected to VIBXPRT EX using the integrated cables. The connectors are color-coded to match the instrument sockets. The adapter is connected to the PC via the serial or USB (slave) interface. An RJ45 socket is provided for the net-

work connection. To print out reports from VIBXPRT EX, the adapter must be connected to a suitable printer via USB (master) and to a running PC via USB (slave) in order to operate the printer.

Cable length, VIB 5.338: 2 meters

Note

The adapter may not be used in hazardous environments! The adapter can also be operated with standard VIBXPRT (non-EX version).

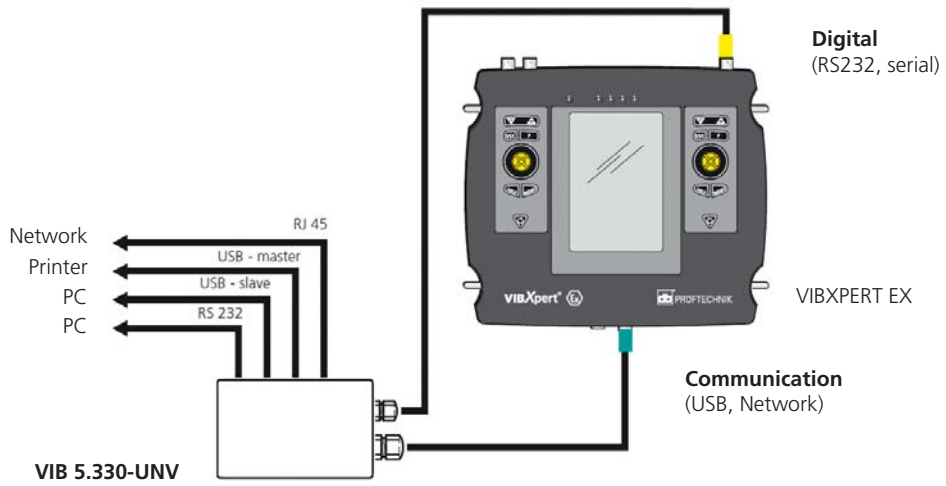
Technical data

PARAMETER		VIB 5.330-UNV
Interfaces	VIBXPRT side	Two integrated connecting cables for digital and communications port
	PC	RS 232 and USB (slave)
	Printer	USB (master)
	Network	RJ 45
General	Case material	Plastic - Polystyrol
	Dimensions, L x B x H	170 x 80 x 55 mm
	Weight	approx. 350 g



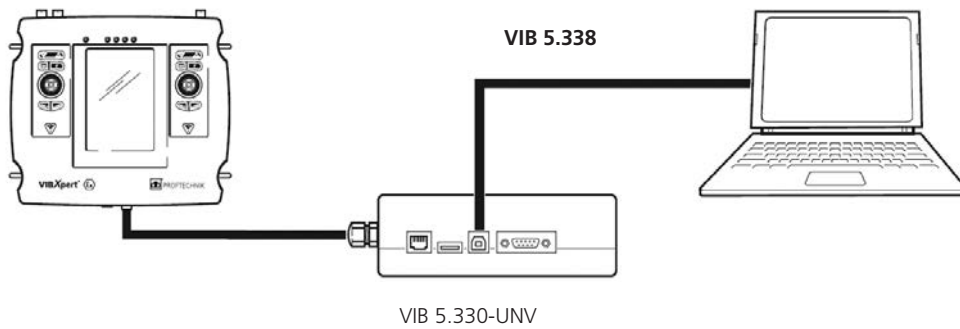
Application example

VIB 5.330-UNV connected to VIBXPERT EX



Application example

PC connected to VIBXPERT EX



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VIB 5.331: VIBXPERT II Ethernet cable

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Application

The VIBXPERT II is connected with the cable VIB 5.331 to an ethernet network to a hub or to a PC for data transmission.

Cable length: 2 meters

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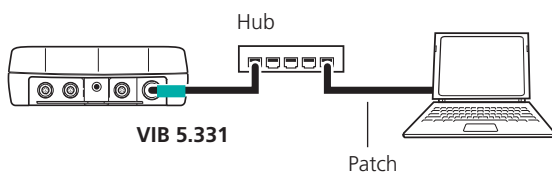
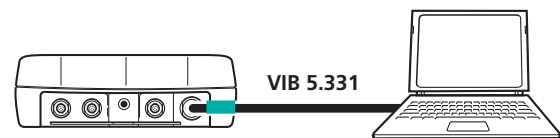
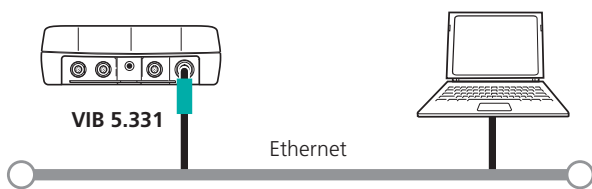
Note

This cable may not be used with VIBXPERT EX!

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Application examples

Data transfer via Ethernet

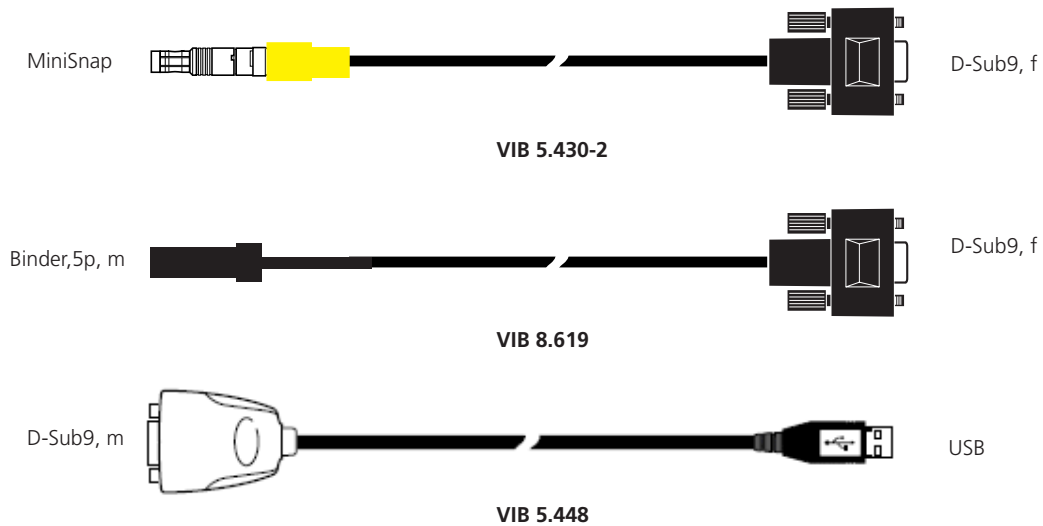


Serial PC cables for VIBROTIP, VIBSCANNER and VIBXPRT

VIB 5.430-2 : Serial PC cable (VIBSCANNER / VIBXPRT)

VIB 5.448 : Adapter cable, serial to USB (VIBSCANNER / VIBXPRT)

VIB 8.619 : Serial PC cable (VIBROTIP)



Application

These cables are used for data transmission via the serial interface.

The adapter cable VIB 5.448 is additionally required if the PC or the laptop only has a USB port.

Cable lengths

VIB 5.430-2 approx. 2 m

VIB 5.448 approx. 0.2 m

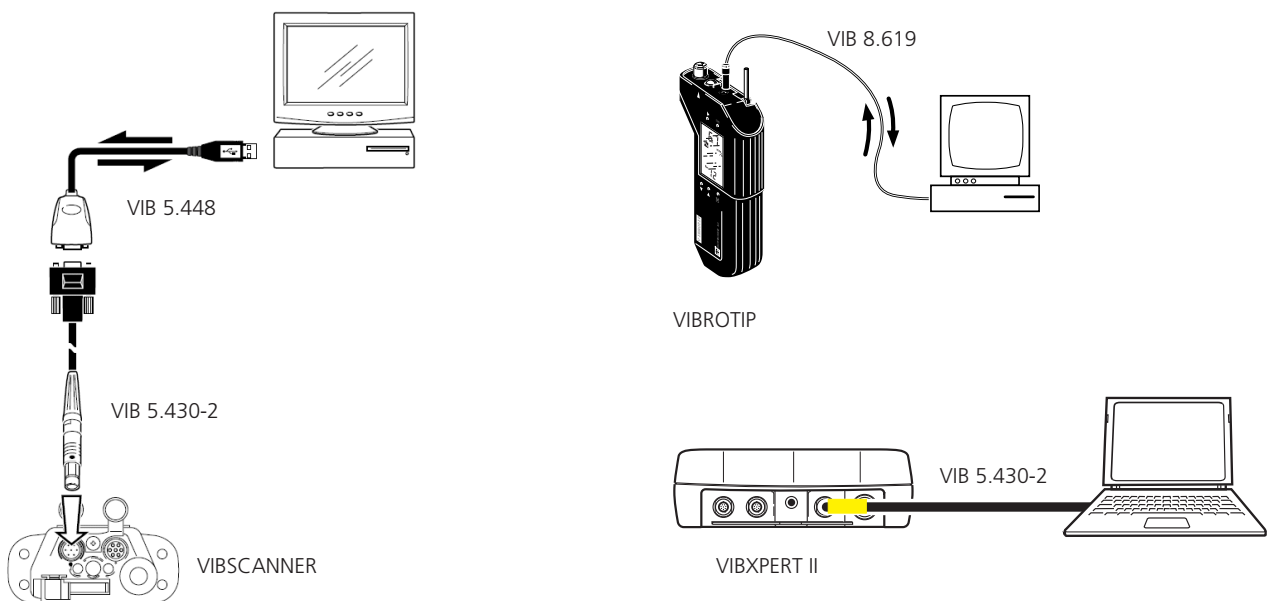
VIB 8.619 approx. 2 m

Note

These cables may not be used with VIBXPRT EX or VIBROTIP EX respectively!

Application examples

Data collector connected to PC (RS 232)



C

VIB 8.619-USB : Serial to USB cable adapter for VIBROTIP EX

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Binder 5p, m  USB**VIB 8.619-USB**

4

Application

This cable adapter is used with the VIBROTIP EX data collector for data transfer to a PC via an USB port. It protects the data collector from damage caused by surges and may only be connected temporarily - i.e. not permanent - to the USB port of a standard computer. The maximum voltage U_m on the USB port must not be greater than 60 volts, even under fault conditions.

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Cable length approx. 1.5 m

Note

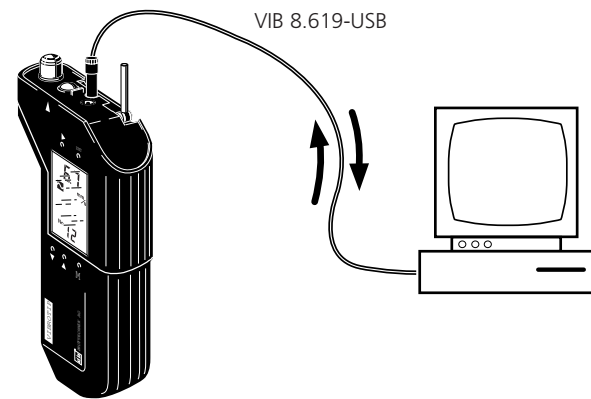
This cable adapter may only be connected outside the hazardous area.

This cable adapter can also be used with VIBROTIP without intrinsic safety!

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Technical data

PARAMETER		VIB 8.619-USB
Electrical	Connectors	USB plug / Binder plug 5p
	Supply	5 VDC, from PC USB port
General	Length	approx. 1.5 m
	Operating temperature	-20°C ... + 50°C
	Storage temperature	-30°C ... + 80°C
	Relative humidity	< 95%
	Protection class	IP 50



VIBROTIP EX

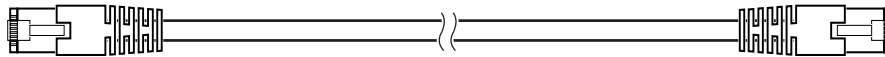
Network cables for Online-CMS (VIBRONET Signalmaster / VIBROWEB)

VIB 5.955-X : Patch cable (VIBRONET Signalmaster / VIBROWEB)

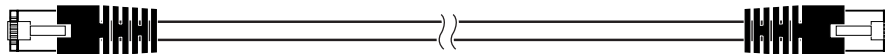
VIB 5.957-2 : Crossover ethernet cable (VIBRONET Signalmaster / VIBROWEB), 2 m

VIB 5.957-5 : Crossover ethernet cable (VIBRONET Signalmaster / VIBROWEB), 5 m

X = 2,5,10,30 m



VIB 5.955-2



VIB 5.957-2

Application

The Patch cable VIB 5.955-X is used to connect the CMS basic unit (VIBRONET Signalmaster / VIBROWEB) to a data network - either directly or via a switch.

The crossover ethernet cable VIB 5.957-X is used to connect the CMS basic unit directly to a PC.

Abbreviation

CMS: Condition-Monitoring-System

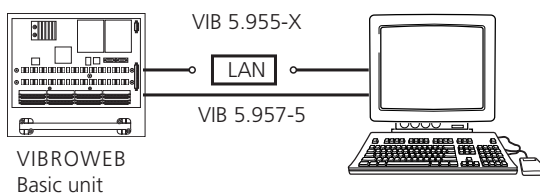
Technical data

PARAMETER		VIB 5.955-X	VIB 5.957-2 / -5	
Electrical	Charact. impedance	100 Ohm ±15%		
	Loop resistance	188 Ohm		
	Conductor resistance	< 94 Ohm/km		
Layout and Environment	Wire	0.52 mm Cu blk AWG24		
	Wire insulation	PE, color coding acc. to IEC 708		
	Formation	4 pairs, twisted		
	Shielding	Aluminium compound foil		
	Earth lead	0.5 mm Cu vzn		
	Sheath	FR-PVC, gray (flame resistant)	FR-LSOH, yellow (flame resistant, low-smoke, halogen-free)	
	External diameter	6.3 mm		
	Model	TP patch cable, shielded Category 5 - 100 Mbit/s, Allocation acc. to EIA/TIA 568, 4 x 2 x AWG 24/7 RJ 45 connector w/ sprayed on cable sleeve	S/FTP Crossover cable, double shielded Category 5 - 100 Mbit/s, Crossover allocation (100BASE-T4)*, 4 x 2 x AWG 26/7 RJ 45-'HIROSE' connector, yellow	
	Temperature range	-5°C ... +50°C (laying)		-30°C ... +70°C (operation)
Cable length	2, 5, 10 or 30 meters		2 meters or 5 meters	

*Crossover pin allocation (100BASE-T4):
1 - 3
2 - 6
3 - 1
4 - 7
5 - 8
6 - 2
7 - 4
8 - 5

Application example

VIBROWEB connected to network / PC



C

VIB 5.956-X : System bus cable for VIBRONET Signalmaster with X connectors

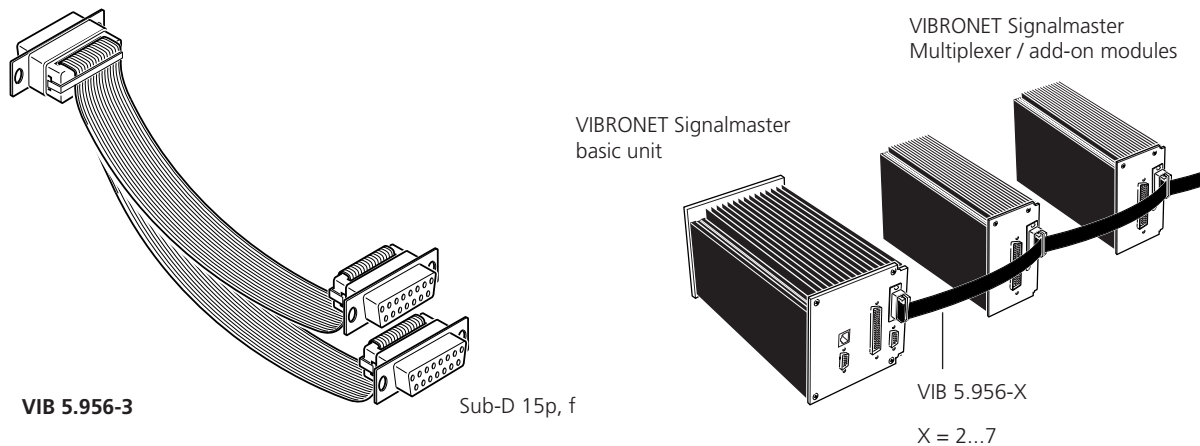
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Application

Connection of the 16-channel multiplexers and add-on modules to the VIBRONET Signalmaster for the transmission of analog and digital measurement and control signals.

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Description

The system bus cable is a 15-wire ribbon cable. At a distance of about 0.5 meter 15-pole Sub-D connectors are attached for connecting system components.

Note

The expansion of an existing system bus requires a system bus cable with the relevant number of connectors.

Pin allocation: System bus cable

PIN	Function
1	Hi3
2	Lo3
3	AG
4	MUX-CLK
5	12 V
6	PG
7	SDM1
8	SDM2
9	SDM3
10	AG
11	AG
12	Hi1
13	Lo1
14	Hi2
15	Lo2

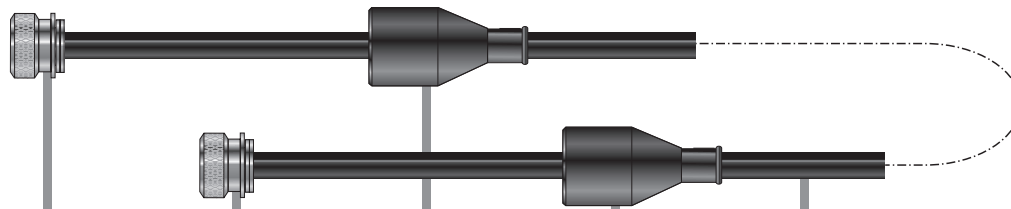
12VDC/15mA 12V DC current supply
 PG Reference zero for the 12V supply
 AG Analog reference zero
 MUX-CLK Impulse for channel switching
 SDM A-wire for triggering
 HiLo Analog signal line

Appendix



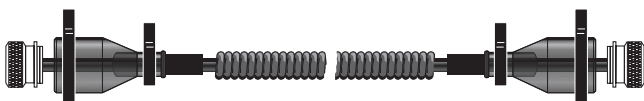
- C
- 1
- 2
- 3
- 4
- 5
- 6
- A

Ordering information for customized sensor cables



VIB 3..	[Plug 1]	[Plug 2]	[Gland 1]	[Gland 2]	[Cable type]	L (S)	
Order number	0	no plug	0	no plug	0	coax, VIB 90009 flame retardant	This suffix indicates the cable length in meters. Add the letter 'S' for cable with protective sheath. (See below examples)
	1	TNC, straight VIB 93022	1	TNC, straight VIB 93022	1	Gland for TNC VIB 10473	
	2	QLA	2	QLA	2	Anti-kink sleeve, silicon free VIB 81018	
	3	TNC, angled VIB 93077	3	TNC, angled VIB 93077	3	Silicone dust cap VIB 6.700	
	4	BNC, straight VIB 93060	4	BNC, straight VIB 93060	4	Vitone dust cap VIB 6.701	
	5	BNC, angled VIB 91009	5	BNC, angled VIB 91009	5	Silicone dust cap angled VIB 6.710	
	6	Chassis, BNC VIB 93090	6	Chassis, BNC VIB 93090	6	Vitone dust cap angled VIB 6.711	
	7	Chassis, TNC VIB 91000	7	Chassis, TNC VIB 91000	7	Shrink tubing	
	8	TNC socket, VIB 93047	8	TNC socket, VIB 93047	8	-	
	9	MIL plug, 2p VIB 94010	9	MIL plug, 2p VIB 94010	9	-	

Ordering examples



VIB 311342-10S :
Coaxial cable with Rayolin cable sheath (oil- and heat-resistant up to 125°C) and with protective sheath 10 meters long;
2x TNC plug, straight, with vitone and silicone glands



VIB 303061-20S:
Coaxial cable (RG 58) with protective sheath, length 20m;
1x TNC plug, angled, with vitone gland; one cable end open

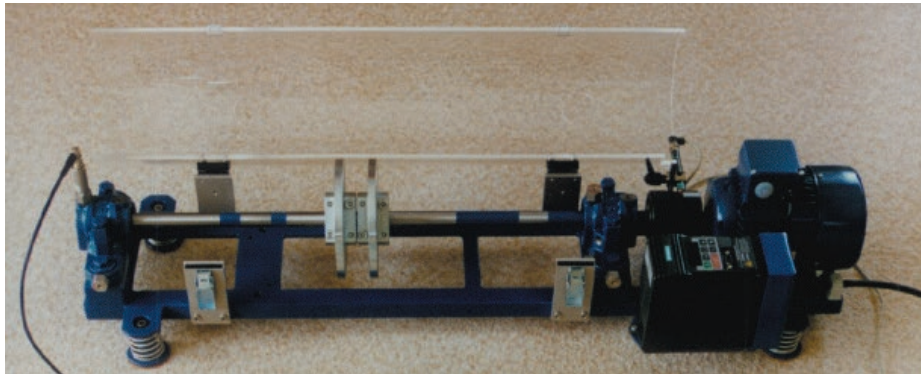
Acceptable combinations of cable types, plugs and glands

Designation, see above

CABLE TYPE	Plug	Gland
0, 1	all	all
2, 3*, 4	0, 1, 3, 6, 7	all
5*	0, 1, 3	3, 4, 5, 6, 7
6*, 7*	9	0
8*	0	0

* Protective sheath VIB 6.730 is not allowed

VIB 2.200 : Balancing and Vibration model (Rotor kit)



Application

Simulation of actual machines for measurements in tests, demonstrations and training courses. The balancing and vibration model is suitable for the following applications:

- Balancing
- Diagnosis of machine faults
- Measurement of rolling bearing damage
- Investigations on Laval rotors

With a variable RPM and different degrees of stiffness of rotor and foundation, almost all the situations that occur on actual machines can be simulated. Individual components (bearings, rotor disk, rotor length) can be easily and rapidly replaced as a result of the simple construction of the model.

Scope of supply

- Balancing machine with safety shutter, completely assembled
- Bonded adapter to M5 thread, flat, 6 pcs.
- Bonded adapter to M8, 2 pcs.
- VIBCODE long-stem stud, 2x
- Manual for frequency converter on CD
- Instructions for use
- Safety notes
- 1 set with 4 defective bearings (outer raceway, inner raceway, roll body)
- Tool set (fork wrench 3x, hook wrench, allen wrench for hex screws 2x, hammer, thickness gage, allen key)

Balancing

- 1-plane and 2-plane balancing
- Replacing the rotor disk in less than 1 minute
- Overhung rotor
- Rotor in intermediate bearing
- Combination of overhung and intermediate mounted rotor
- Width and narrow impellers
- Rigid and soft foundation, adjustable
- Rigid and soft rotor, adjustable

Machine faults and rolling bearing damage:

- Rotor resonance
- Rolling bearing race damage adjustable
- Rolling bearings can be exchanged
- Bearing clearance adjustable
- Static or dynamic unbalance
- Misalignment
- Loose foundation
- Foundation defect
- Foundation resonance, instability
- All errors at variable RPM
- Start up and coast down analysis

Technical data

PARAMETER		VIB 2.200
Electrical	Power supply	SIEMENS frequency inverter 50/60 Hz, 230 VAC (115 VAC with adapter)
	RPM range	0 ... 3000 min. ⁻¹ (60 Hz: 3600 min. ⁻¹)
	Drive	3~ DMA type 0.55 kW at 2775 min. ⁻¹ /50 Hz 2.4 A at 230 VAC / 0.55 kW
Model	Machine	Rolling bearings in plummer block
	Motor, bearing mounting	M10/ wrench size 17
	Clearance to bearing center	460mm (short), 660 mm (long)
	Weight	25 kg (incl. motor, converter, cable)
	Rotor mass	5 - 8 kg adjustable
	Intrinsic frequencies	Foundation: rigid / soft (adjustable < 6 Hz) Rotor: 75 Hz, rigid, short shaft 48 Hz, soft, long shaft
	Bearing condition measurement	Bearing load as on actual machines with shock pulse measurements up to a RPM of 120min. ⁻¹
	Replacement time for rolling bearings	5 minutes

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Accelerometer performance characteristics (selection)

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Accelerometer Order no.	Type	Sensitivity	Frequency range (±3dB)	Temperature range	Shock pulse bearing condition	IP class w/ cable	Intrinsic safety -> alternative
VIB 6.102 R	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+80°C	yes	IP 65	no -> VIB 6.102 DEX
VIB 6.102 DEX	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+80°C	yes	IP 65	yes
VIB 6.107	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...10 kHz	-30°C...+100°C	no	IP 65	no -> VIB 6.107 DEX
VIB 6.107 DEX	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...10 kHz	-30°C...+80°C	no	IP 65	yes
VIB 6.122 R	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+100°C	yes	IP 65	no -> VIB 6.122 DEX
VIB 6.122 DEX	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+80°C	yes	IP 65	yes
VIB 6.125 R	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+135°C	yes	IP 65	no -> VIB 6.125 IDEX
VIB 6.125 RIP	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+135°C	yes	IP 68 ³	no -> VIB 6.125 IDEX
VIB 6.125 IDEX	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+80°C	yes	IP 68 ³	yes
VIB 6.127	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...10 kHz	-30°C...+100°C	no	IP 65	no -> VIB 6.127 DEX
VIB 6.127 DEX	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...10 kHz	-30°C...+80°C	no	IP 65	yes
VIB 6.129 IP	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...10 kHz	-30°C...+135°C	no	IP 68 ³	no -> VIB 6.129 IDEX
VIB 6.129 IDEX	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...10 kHz	-30°C...+80°C	no	IP 68 ³	yes
VIB 6.132 R	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+100°C	yes	IP 65	no -> VIB 6.132 DEX
VIB 6.132 DEX	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+80°C	yes	IP 65	yes
VIB 6.135 R	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ... 20 kHz	-30°C...+135°C	yes	IP 65	no -> VIB 6.125 IDEX
VIB 6.137	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...10 kHz	-30°C...+100°C	no	IP 65	no -> VIB 6.137 DEX
VIB 6.137 DEX	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...10 kHz	-30°C...+80°C	no	IP 65	yes
VIB 6.142 R	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...20 kHz	-30°C...+100°C	yes	IP 65	no -> VIB 6.142 DEX
VIB 6.142 DEX	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...20 kHz	-30°C...+80°C	yes	IP 65	yes
VIB 6.147	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...12 kHz	-30°C...+100°C	no	IP 65	no -> VIB 6.147 DEX
VIB 6.147 DEX	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.3 Hz ...12 kHz	-30°C...+80°C	no	IP 65	yes
VIB 6.152 DEX	CLD	0.1 $\mu\text{A}/\text{ms}^{-2}$	1 Hz ...20 kHz	-30°C...+80°C	yes	IP 65	yes
VIB 6.162 VD	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	2 Hz...2 kHz (±10%)	-30°C...+80°C ²	no	IP 65	yes
VIB 6.172	ICP	100 mV/g	0.1 Hz ...10 kHz	-40°C...+120°C	no	IP 67	no -> VIB 6.172 XICP
VIB 6.172 XICP	ICP	100 mV/g	0.1 Hz ...10 kHz	-40°C...+80°C	no	IP 67	yes
VIB 6.195	CLD	5.35 $\mu\text{A}/\text{ms}^{-2}$	0.1 Hz ...10 kHz	-30°C...+80°C	no	IP 67	no -> VIB 6.172 XICP
VIB 6.202-3 /-6	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	2 Hz ...10 kHz	-30°C...+80°C	yes	IP 65	no -> VIB 6.202..XD
VIB 6.203-3 /-6	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	2 Hz ...10 kHz	-30°C...+120°C	yes	IP 65	no -> VIB 6.203..XD
VIB 6.202..XD	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	2 Hz ...10 kHz	-30°C...+80°C	yes	IP 65	yes
VIB 6.203..XD	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	2 Hz ...10 kHz	-30°C...+80°C	yes	IP 65	yes
VIB 6.215	V / ICP	20 mV/ms ⁻² (Z)	1 Hz ... 10 kHz (Z)	-40°C...+85°C	no	IP 65	no -> none
VIB 6.216	V / ICP	20 mV/ms ⁻² (Z)	0.1 Hz ... 10 kHz (Z)	-40°C...+85°C	no	IP 65	no -> none
VIB 6.655	ICP	100 mV/g	0.6 Hz ...2 kHz ¹	-54°C...+121°C	no	--	no -> none
VIB 8.606 VS	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	10 Hz...10 kHz (±10%)	-10°C...+80°C	yes	IP 65	no -> VIB 8.606 XVS
VIB 8.606 XVS	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	10 Hz...10 kHz (±10%)	-10°C...+80°C	yes	IP 65	yes
VIB 8.660 VS	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1.5 Hz ...20 kHz	-10°C...+70°C	yes	IP 65	no -> VIB 8.660 XVS
VIB 8.660 XVS	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1.5 Hz ...20 kHz	-10°C...+70°C	yes	IP 65	yes
VIB 8.666 VS	CLD	1.0 $\mu\text{A}/\text{ms}^{-2}$	1 Hz...10 kHz (±5%)	-30°C...+100°C	yes	IP 65	no -> none

Abbreviations

ICP: Integrated Circuit Piezoelectric (Sensor w/ voltage output)

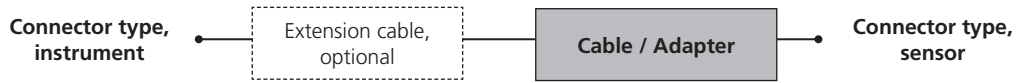
CLD: Current Line Drive (Sensor w/ current output)

¹ w/ magnetic holder VIB 3.420² outside hazardous area: -30°C...+100°C³ w/ VIB 6.760 or VIB 6.761

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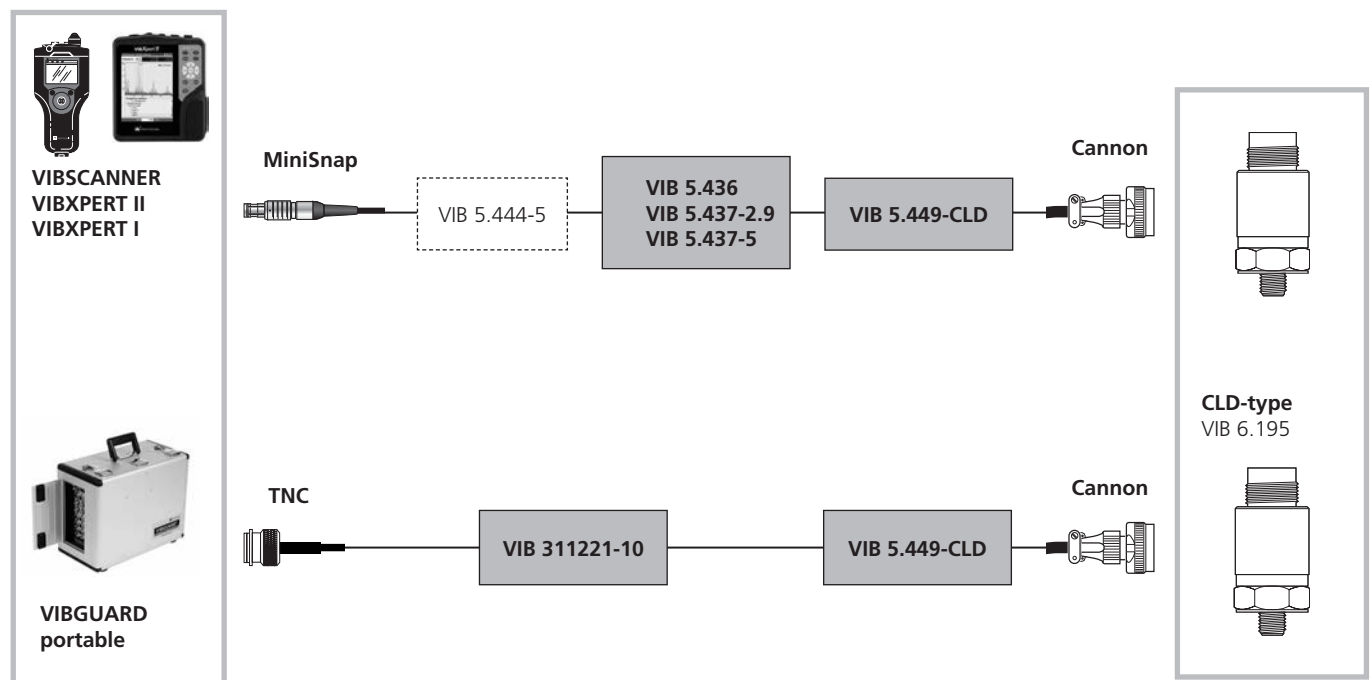
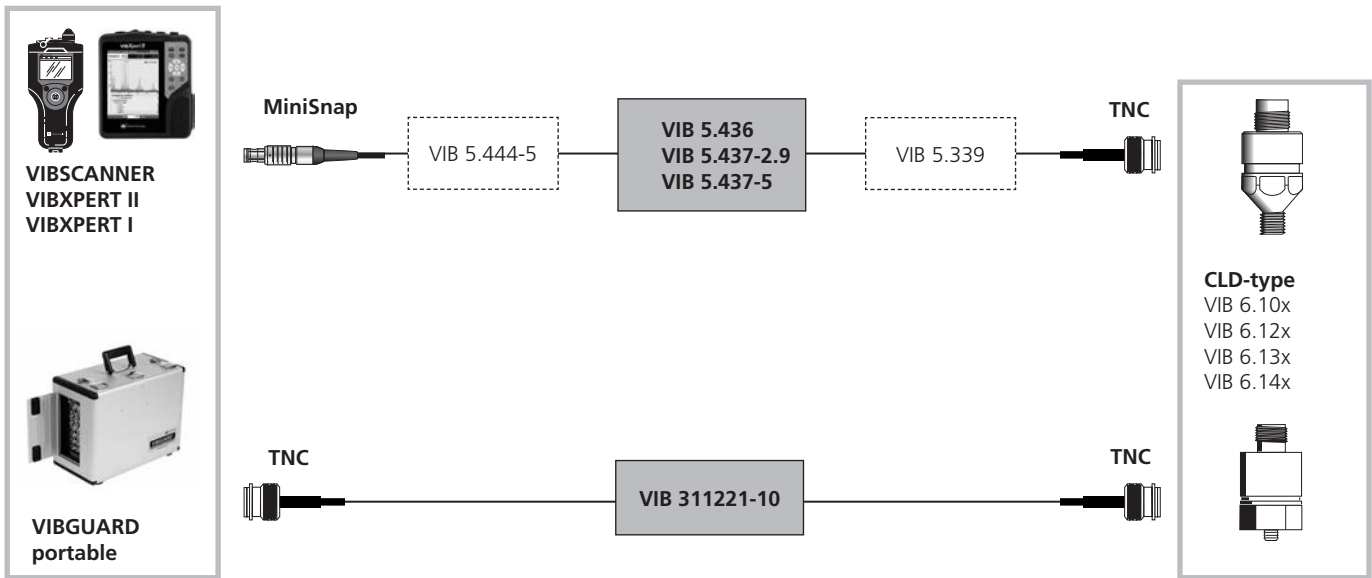
Portable instruments connection overview

Legend



Note
For cable lengths greater than 2.9 meters, the EMC immunity of the signal path can be adversely affected.

Current LineDrive Accelerometers (CLD)



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ICP-type Accelerometers

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VIBSCANNER
VIBXPART II
VIBXPART I

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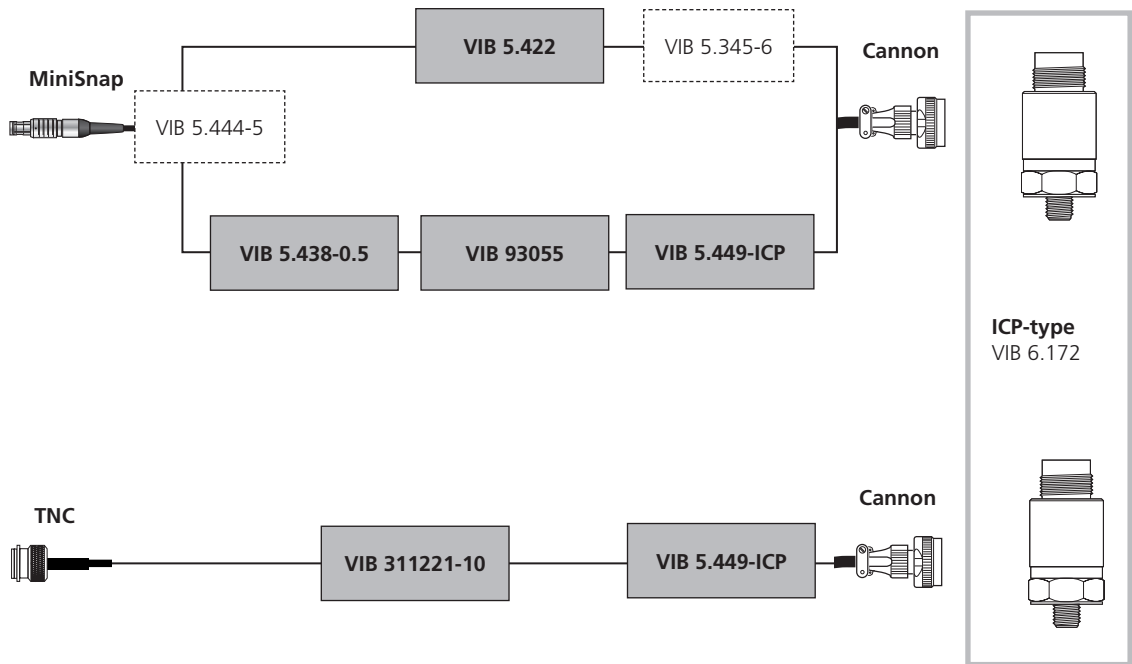
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VIBGUARD
portable

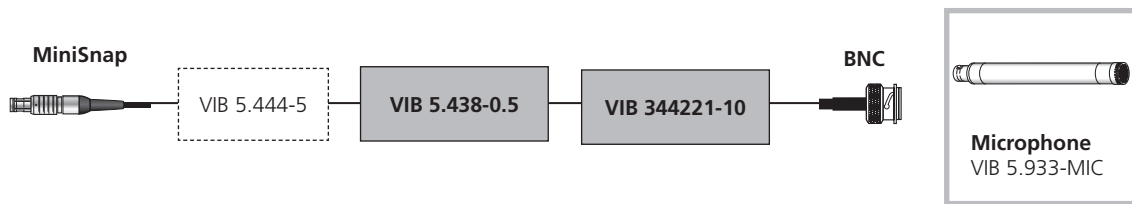


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Microphone, ICP-type



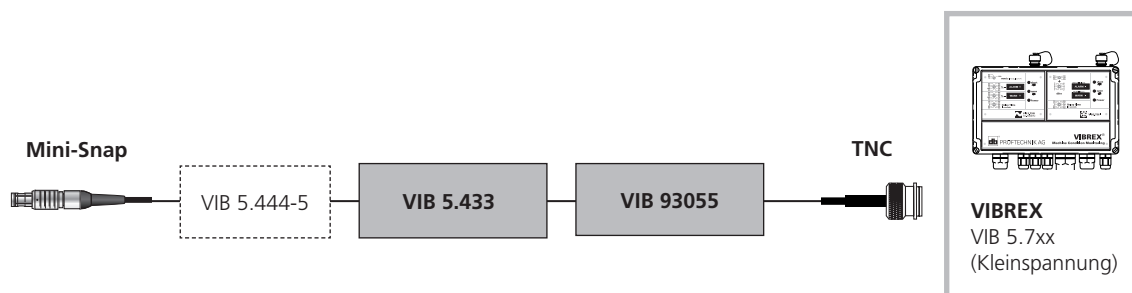
VIBXPART II
VIBXPART I



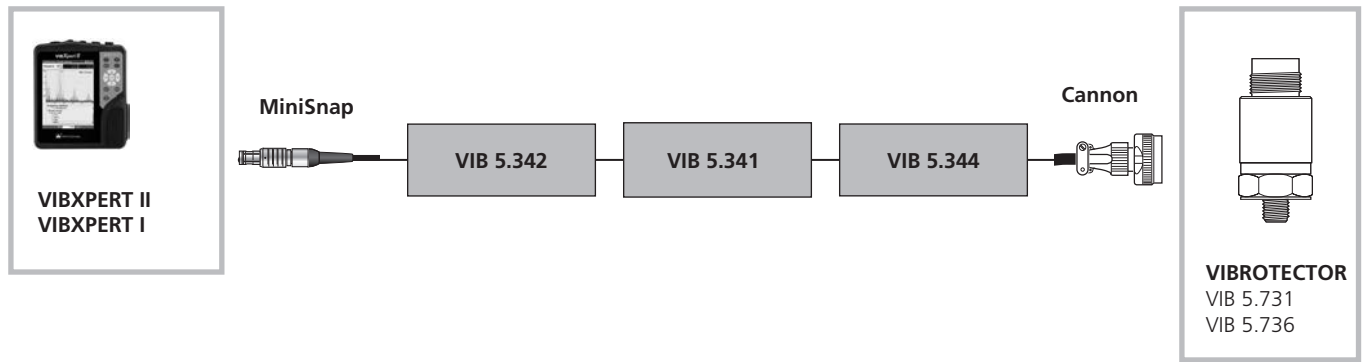
VIBREX (mV)



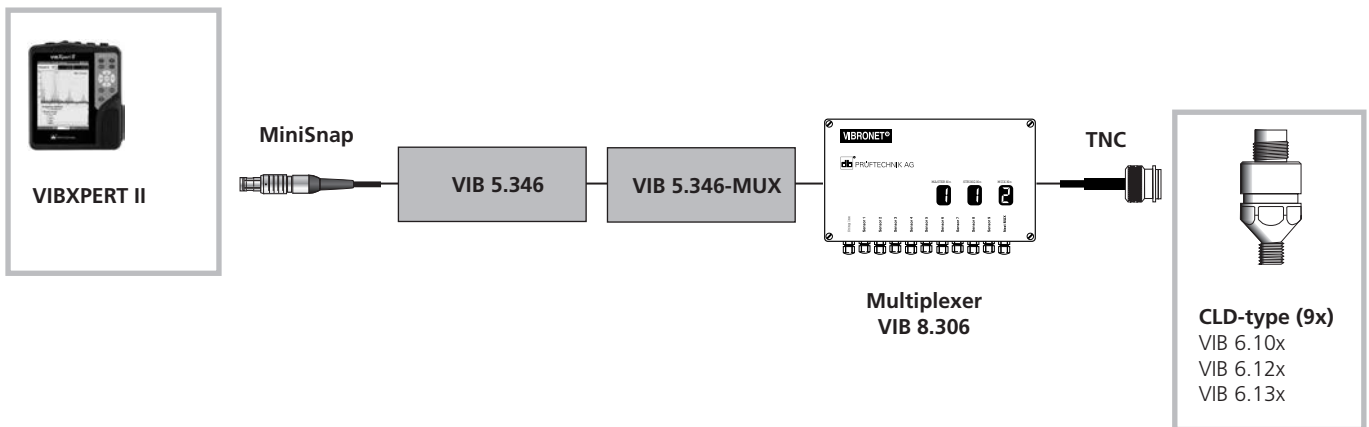
VIBXPART II
VIBXPART I



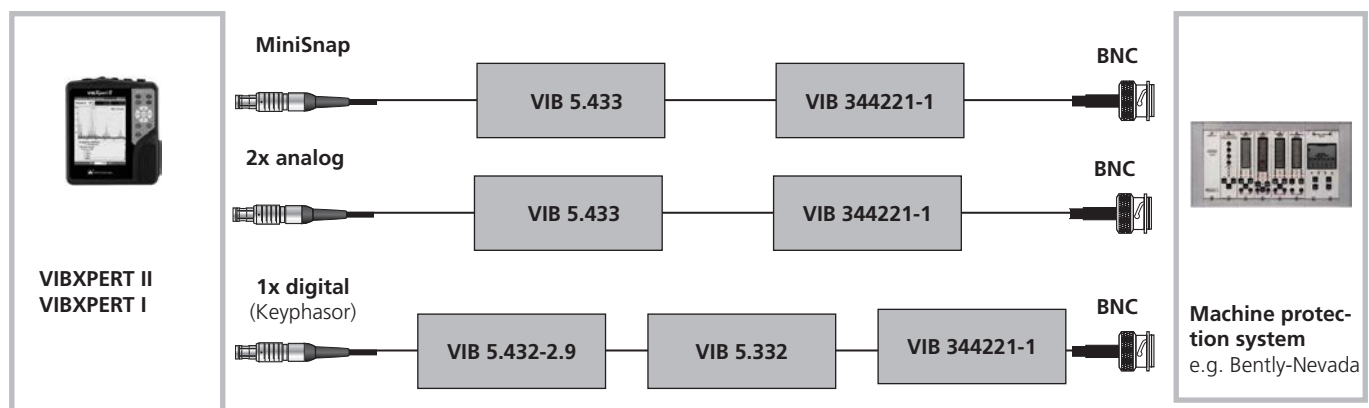
VIBROTECTOR



Data collection via multiplexer



Machine protection system



- C
- 1
- 2
- 3
- 4
- 5
- 6
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Information about installing sensors and cables in hazardous areas

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Conditions for safe operation of the signal evaluation units and the transducers

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0. Responsibility for the installation of intrinsic safe systems:

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- Each intrinsic safe company has an authorized EX protection representative who is solely aware which conditions, norms, etc. must be observed in his company. Only the specialist personnel he authorizes are allowed to work on the system.

4

- The following installation recommendations must be authorized by the EX protection representative.

5

1. Limiting device for transducers with Current LineDrive output: VIB 3.550

6

- The limiting device must be installed in a connection box or housing (min. IP 20).
- The limiting device must be at least 50 mm away from non-intrinsically safe circuits.

A

- The potential equalization connector must be applied first and should not be connected through.
- The signal evaluation unit must be earthed with the hazardous areas equipotential bonding system (PA) at the position of the limiting device.

- The only grounded point of the intrinsically safe circuits within the hazardous area is the limiting device.
- The limiting device should have potential equalization with the machines to be monitored.

2. Transducers

- Electrically non-insulated transducers may only be used in the area of the machine with electrically non-insulated and PA-contacted fittings.
- The insulated sensors with Current Line- Drive output and the intermediate connectors must be reliably protected against physical contact. To do this, they must be fitted with the IP68 option or with caps beyond the insulated position and fixed with plastic clamps.



3. Wiring to the hazardous areas equipotential bonding system (PA)

- For reasons of noise suppression, a line resistance of <math><120\text{ mOhm}</math> is recommended (e.g. Cu cable, AWG 16 (1.5 mm²) / 10 meters long).
- The following safety regulations must be implemented: personnel, goods, with respect to lightning, explosion, electricity and, if necessary, any other regulations of the respective customers, trade union, insurers, country, confederation, etc. must be taken into account.
- The respective installation regulations regarding the safety of the type of connection must also be followed here. Consequently, this must be performed by an authorized specialist there who is insured to do so.

4. Cables

Coaxial and triaxial cables are used for LineDrive sensors with TNC connectors (VIB 6.1..EX) or with sealed cable connection (VIB 6.2...XD, coaxial only) respectively. Twisted-pair cables are used for sensors with 2-pin ML connectors*.

The outer shield of the triax cable must ...

- ... be connected to the hazardous areas equipotential bonding system at the limiting device (PA).
- ... not be connected to the sensor, but reliably insulated instead (under shrinkage tube or insulating cap, 5mm gap to the plug.)
- ... not be connected to the metal housing at the sensor intermediate connector (VIB 6.770/13), but reliably insulated instead or the metal housing should be insulated by shrinkage tube.
- ... be insulated by shrinkage tube or insulating cap when using cable interconnections.

5. The national safety regulations must be followed.

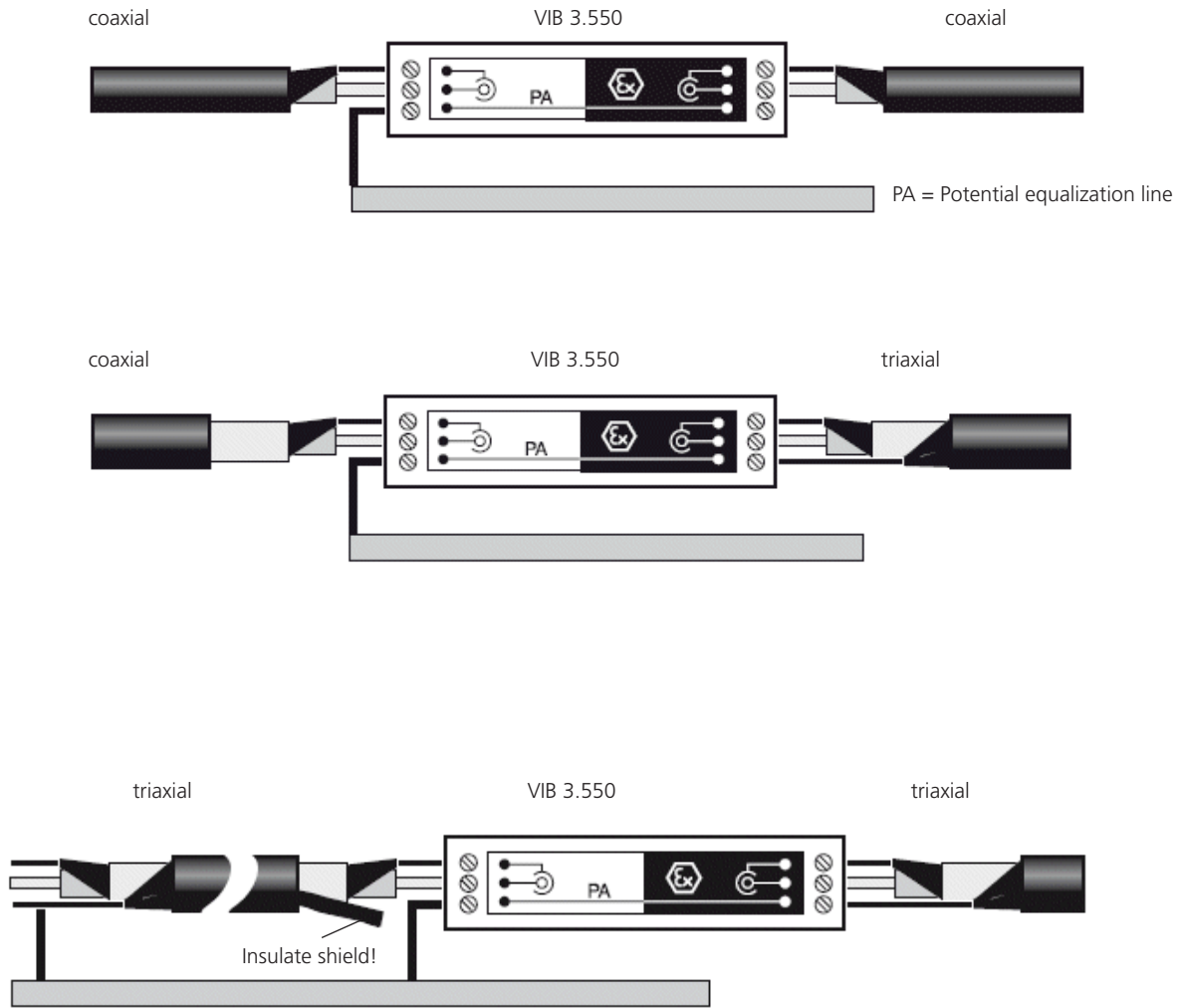
6. The conformity certifications must be observed.

7. The EX protection instructions in the various catalog pages must be adhered to.

* VIBROTECTOR EX, VIB 5.73x EX
ICP-type accelerometer EX, VIB 6.172XICP

Connection examples:

Limiting device (VIB 3.550) for Linedrive accelerometers



Evaluation unit side:
Connect outer shield to PA!

- C
- 1
- 2
- 3
- 4
- 5
- 6
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The patented Tandem-Piezo accelerometer

PRÜFTECHNIK accelerometers provide measurable success

PRÜFTECHNIKs patented Tandem-Piezo accelerometers set new standards in terms of reliability, versatility, mounting ease and economy.

The unique design practically eliminates temperature shock and base strain effects; it also handles condition evaluation of turbo machinery and gearboxes, anti-friction bearings and pump cavitation - all with the same transducer, thanks to a wide linear range and a defined shock pulse resonance characteristic at 36 kHz. The built-in current line drive amplifier ensures immunity to ground looping and extremely low signal loss, even over long transmission distances, as well as compatibility with the entire PRÜFTECHNIK line of mobile data collectors, FFT analyzers and online or remote condition monitoring equipment.

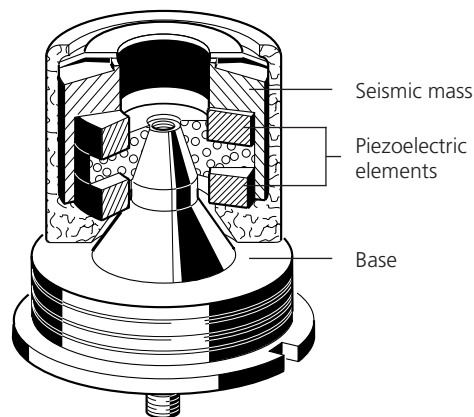
And the Tandem-Piezo transducer family not only costs far less than shear designs, but cuts installation expense as well: economical standard TNC fittings mount quickly and are available with flexible caps (silicone-free, if desired) for extra protection. Laser-welded and laser-marked, the

hermetically sealed housings withstand even the harshest industrial surroundings. Angled plugs require only 45 mm mounting clearance height; besides standard stud mounting, a revolutionary bonded arrangement is ideal for mounting on thin-profile bearing housings. A self-threading pin holds the accelerometer in place using only a small pilot hole while the bonding compound sets to a final hardness comparable to that of steel.

Tandem-Piezo® accelerometer at a glance

- Low base strain sensitivity
- Low sensitivity to temperature transients
- Built-in 'Linedrive' amplifier offers unsurpassed immunity against cable noise and ground loops
- Low transverse sensitivity
- High shock resistance
- Integrated resonance suppression filters avoids amplifier overloading
- Factory burn-in for high long-term stability
- Intrinsically safe version also available

Tandem-Piezo® accelerometer design



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Advantages of current linedrive accelerometers

1 The long cables used in permanent monitoring systems must stand up to considerable electrical and mechanical interference. With traditional sensors the signals barely get through the network, being drowned out by the noise and interference.

2 The solution: use either expensive high-quality cable carefully laid away from interference sources or a 'line drive' system, which consists of a tiny electronic amplifier built into each sensor which boosts the vibration signal. The latter offers several advantages:

- 3
- 4 • Low sensitivity to mechanical and electrical interference (cable noise, electromagnetic sources, ground looping)
 - 5 • Very long low-cost cables possible with very little signal loss
 - 6 • Cable positioning during installation is not as critical
 - Power supply current carried along the very same coaxial cable carrying the vibration signal (power comes from a source built into the receiver instrument).

A There are two types of line drive systems on the market, providing either voltage output or current output. PRÜFTECHNIK systems use the latter, since it is a superior system with more sophisticated electronics and the following significant advantages:

- Much lower high frequency loss in very long cables even over 1000 meters.
- Much lower susceptibility to induced noise and ground-loop noise, also obviating in most cases the need for insulated sensors.

High frequency loss in long cables

The PRÜFTECHNIK current line driver system has much lower high frequency loss in long cables than voltage output systems.

This is because the instrument has a significantly lower input impedance, and since the maximum frequency is inversely proportional to input impedance, the maximum frequency is greatly extended.

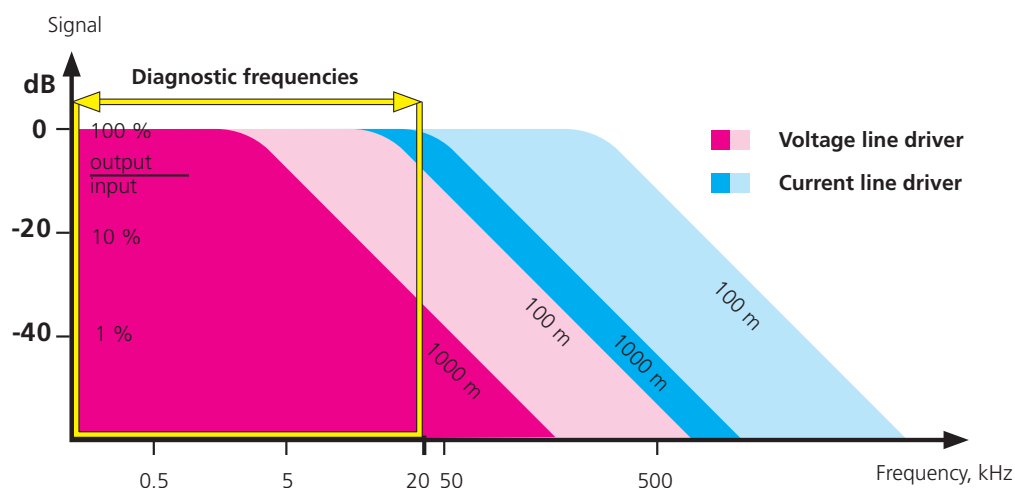
Ground looping and noise

The PRÜFTECHNIK current line driver system has much lower susceptibility to induced noise and ground-loop noise than voltage output systems.

This is because the very low instrument input impedance minimizes influence from electromagnetic fields. The instrument virtually 'shorts' the cable conductors.

This has the added advantage that, with the exception of frequency rectifier-governed motors and high-voltage motors, costly insulated sensors can be avoided, eliminating the problem of insulator capacitance.

Frequency range and signal loss depend on cable length



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C PRÜFTECHNIK Service & Diagnostic Center

1 PRÜFTECHNIK develops and produces not only top-class condition monitoring systems, but also offers its customers professional services and practically oriented seminars in the field of condition based maintenance.

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The PRÜFTECHNIK Service & Diagnostic Center handles the coordination and execution of tasks.



Mobile measurement and diagnostic service

- Measurements for acceptance tests
- Balancing and alignment services on special machines
- Mobile vibration diagnosis measurements
- Special mobile measurement such as noise and strain analyses
- Inspection services including videoscapy and thermographic examinations

In-house engineering and training

- Implementation of Condition Monitoring programs, including reference measurements
- Consultation and assistance in introducing a Condition Monitoring program
- Customized in-house training courses for machine operators and service providers

Temporary installations & tediagnosis service

- Temporary online monitoring of machines and systems
- Remote monitoring of machines and systems
- Load collective determination and automatic overload monitoring
- Regular vibration diagnosis service with results in the form of reports or on the Internet (OMNITREND Web)

Consulting and engineering

- Development of Condition Monitoring strategies for machine operators and manufacturers
- Machine failure and damage analyses
- Machine condition assessment by independent surveyors
- Working load determination and simulation to optimize existing drive systems
- FMEA of mechanical drives (root cause analysis)

Index by order number

Order no.	Page	Order no.	Page	Order no.	Page	Order no.	Page
0 2088 0009	127	VIB 5.731 EX	44	VIB 6.730	115	VIB 8.660 VD	64
0 2088 0010	127	VIB 5.736	32	VIB 6.760	144	VIB 8.660 VS	64
VIB 2.200	187	VIB 5.736 EX	44	VIB 6.761	144	VIB 8.660 XVD	66
VIB 3.306	104	VIB 5.740-X	120	VIB 6.770/9	129	VIB 8.660 XVS	66
VIB 3.411	93	VIB 5.741-X	120	VIB 6.770/9-S	129	VIB 8.666 VD	80
VIB 3.412	93	VIB 5.745-L	121	VIB 6.770/13	129	VIB 8.666 VS	80
VIB 3.413	93	VIB 5.746-L	121	VIB 6.770/13-S	129	VIB 8.679 SET	99
VIB 3.414	93	VIB 5.771	124	VIB 6.775/9	131	VIB 8.680 A25	99
VIB 3.415	93	VIB 5.955-X	183	VIB 6.775/13	131	VIB 8.680 SET	99
VIB 3.416	93	VIB 5.956-X	184	VIB 6.776	129	VIB 8.685 A25	102
VIB 3.417-M5	94	VIB 5.957-2	183	VIB 6.780	170	VIB 8.685 SET	102
VIB 3.417-M6	94	VIB 5.957-5	183	VIB 6.785	171	VIB 8.689 A25	99
VIB 3.418	96	VIB 5.991-DIS	48	VIB 7.115-6	125	VIB 8.689 SET	99
VIB 3.420	97	VIB 5.992-NX	49	VIB 7.115-12	125	VIB 8.690 A25	99
VIB 3.422	97	VIB 5.992-STD	50	VIB 7.205-2,9	28	VIB 8.690 SET	99
VIB 3.423	97	VIB 5.993-MIC	56	VIB 7.560	135	VIB 8.691	64
VIB 3.430	96	VIB 6.102 DEX	36	VIB 7.580	136	VIB 8.692	103
VIB 3.431	96	VIB 6.102 R	20	VIB 7.581	136	VIB 8.693	107
VIB 3.432	96	VIB 6.107	22	VIB 7.582	136	VIB 8.694	107
VIB 3.433	96	VIB 6.107 DEX	40	VIB 7.583	136	VIB 8.696	107
VIB 3.435	95	VIB 6.122 DEX	36	VIB 7.590	137	VIB 8.718	115
VIB 3.436	95	VIB 6.122 R	20	VIB 7.591	137	VIB 8.745	143
VIB 3.437	94	VIB 6.125 IDEX	24	VIB 7.592	137	VIB 8.746-VD	172
VIB 3.438	94	VIB 6.125 R	20	VIB 7.593	137	VIB 8.746-VS	172
VIB 3.439	94	VIB 6.125 RIP	24	VIB 7.595	137	VIB 8.749	167
VIB 3.440	95	VIB 6.127	22	VIB 8.140-USB	60	VIB 8.772	95
VIB 3.441	95	VIB 6.127 DEX	40	VIB 8.170	60	VIB 10473	170
VIB 3.450	106	VIB 6.129 IDEX	24	VIB 8.171	60	VIB 32000	105
VIB 3.474	95	VIB 6.129 IP	24	VIB 8.172	60	VIB 32010	105
VIB 3.475	95	VIB 6.132 DEX	36	VIB 8.173	60	VIB 32200	105
VIB 3.480	94	VIB 6.132 R	20	VIB 8.306	132	VIB 32210	105
VIB 3.550	127	VIB 6.135 R	20	VIB 8.306 EX	133	VIB 32310	105
VIB 3.570-L	122	VIB 6.137	22	VIB 8.306 S	132	VIB 32410	105
VIB 3.575-10	123	VIB 6.137 DEX	40	VIB 8.306 V	132	VIB 33000 A25	105
VIB 3.575-20	123	VIB 6.142 DEX	70	VIB 8.310	134	VIB 81025	105
VIB 4.701-2	150	VIB 6.142 R	68	VIB 8.310 EX	134	VIB 81026	114
VIB 4.701-5	150	VIB 6.147	69	VIB 8.312	134	VIB 81052	114
VIB 4.702-2	150	VIB 6.147 DEX	72	VIB 8.313	134	VIB 81053	114
VIB 4.702-5	150	VIB 6.152 DEX	38	VIB 8.313 EX	134	VIB 81054	114
VIB 4.704-2	150	VIB 6.162 VD	74	VIB 8.314 EX	134	VIB 81060	137
VIB 4.704-5	150	VIB 6.162 VT	74	VIB 8.563 A25	103	VIB 90006	112
VIB 4.705	169	VIB 6.172	34	VIB 8.566	103	VIB 90007	112
VIB 4.750-5	157	VIB 6.172 XICP	46	VIB 8.568/B	103	VIB 90008	112
VIB 5.330 MEM	177	VIB 6.195	34	VIB 8.568/GN	103	VIB 90009	112
VIB 5.330 MUSB	173,177	VIB 6.202-3	26	VIB 8.568/GR	103	VIB 90030	119
VIB 5.330 SUSB	173,177	VIB 6.202-6	26	VIB 8.568/W	103	VIB 90061	117
VIB 5.330 UNV	178	VIB 6.202-6XD	42	VIB 8.568/Y	103	VIB 90065	117
VIB 5.330-USB	177	VIB 6.202-10XD	42	VIB 8.571	101	VIB 90070	118
VIB 5.331	180	VIB 6.203-3	26	VIB 8.572	101	VIB 90080	113
VIB 5.332	159	VIB 6.203-3XD	42	VIB 8.573	101	VIB 90093	112
VIB 5.332-X	160	VIB 6.203-6	26	VIB 8.576	100	VIB 90180	113
VIB 5.333	161	VIB 6.203-6XD	42	VIB 8.577	100	VIB 91000	140
VIB 5.336	162	VIB 6.215	30	VIB 8.578	100	VIB 91001	138
VIB 5.338	178	VIB 6.216	30	VIB 8.580	100	VIB 91002	138
VIB 5.339	149	VIB 6.411 SET	58	VIB 8.581	100	VIB 91009	138
VIB 5.341	163	VIB 6.420-L	126	VIB 8.582	100	VIB 93022	138
VIB 5.342	163	VIB 6.421	126	VIB 8.586	98	VIB 93031	138
VIB 5.343	163	VIB 6.425	126	VIB 8.587	98	VIB 93033	138
VIB 5.344	163	VIB 6.426-L	126	VIB 8.588	98	VIB 93035	140
VIB 5.345-6	152	VIB 6.610	51	VIB 8.589	98	VIB 93036 F	140
VIB 5.346	173	VIB 6.620	52	VIB 8.590	98	VIB 93036 S	140
VIB 5.346-MUX	173	VIB 6.620 SET	52	VIB 8.591	98	VIB 93047	138
VIB 5.422	152	VIB 6.621	52,53	VIB 8.592	98	VIB 93055	138
VIB 5.430-2	181	VIB 6.622	53	VIB 8.594	101	VIB 93056	140
VIB 5.431	158	VIB 6.622 SET	53	VIB 8.595	101	VIB 93060	138
VIB 5.432-2,9	157	VIB 6.631	84	VIB 8.596	101	VIB 93061	140
VIB 5.433	153	VIB 6.631 EX	86	VIB 8.605	82	VIB 93062	138
VIB 5.433-X	155	VIB 6.632	104	VIB 8.606 VD	76	VIB 93067	138
VIB 5.434	153	VIB 6.640	88	VIB 8.606 VS	76	VIB 93077	138
VIB 5.436	147	VIB 6.641	54	VIB 8.606 XVD	78	VIB 93090	140
VIB 5.437-2,9	147	VIB 6.645 SET	55	VIB 8.606 XVS	78	VIB 94010	139
VIB 5.437-5	147	VIB 6.655	81	VIB 8.607-1,5	82	VIB 94011	139
VIB 5.438-0,5	152	VIB 6.672	89	VIB 8.608	82	VIB 309007-6	125
VIB 5.439	165	VIB 6.673	90	VIB 8.609	76,78	VIB 309007-10	125
VIB 5.443	157	VIB 6.700	141	VIB 8.610	107	VIB 309007-15	125
VIB 5.444-5	15,146,148	VIB 6.701	141	VIB 8.617	169	VIB 309007-20	125
VIB 5.445	166	VIB 6.710	141	VIB 8.618-1,5	151	VIB 321926-2	150
VIB 5.446	166	VIB 6.711	141	VIB 8.618-5	151		
VIB 5.448	181	VIB 6.720	141	VIB 8.619	181		
VIB 5.449-CLD	168	VIB 6.721	141	VIB 8.619-USB	182		
VIB 5.449-ICP	168	VIB 6.722	141	VIB 8.660	64		
VIB 5.731	32	VIB 6.725-100	116	VIB 8.660 HEX	66		

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Productive maintenance technology

VIBXPert® II VIBXPert® EX

Vibration analysis
Machine diagnostics
Data collection
Field balancing

Catalog



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Contents

Chapter 1: VIBXPRT II

VIBXPRT II - Dual channel FFT data collector and signal analyzer	6
VIBXPRT II firmware structure	8

Order no.	Product description	Page
VIB 5.310-1E:	VIBXPRT II Data Collector package for 1-channel instrument.....	10
VIB 5.314-1E:	VIBXPRT II Data Collector package for 1-ch. instrument incl. OMNITREND.....	11
VIB 5.310-1:	VIBXPRT II Advanced package for 1-channel instrument.....	12
VIB 5.314-1:	VIBXPRT II Advanced package for 1-channel instrument incl. OMNITREND	13
VIB 5.310-2:	VIBXPRT II Advanced package for 2-channel instrument.....	14
VIB 5.314-2:	VIBXPRT II Advanced package for 2-channel instrument incl. OMNITREND	15
VIB 5.311-1UG :	Upgrade package ‚Data collector‘ to ‚Advanced / 1-channel‘	16
VIB 5.311-2UG :	Upgrade package ‚Data collector‘ to ‚Advanced / 2-channels‘	16
VIB 5.311-UOM:	Upgrade package ‚OMNITREND‘	16
VIB 6.142 RSET:	Transducer set for vibration measurements	17
VIB 5.387-HW:	VIBXPRT II transducer set for balancing with 1-channel instrument	18
VIB 5.386-HW:	VIBXPRT II transducer set for balancing with 2-channel instrument	19
VIB 5.388-HW:	VIBXPRT II transducer set for balancing with 2-channel instrument on low-speed machinery.....	20
VIB 5.320-INT:	VIBXPRT II charger	21
VIB 5.325:	VIBXPRT II rechargeable battery	22
VIB 5.324-SET:	VIBXPRT II charging station set.....	23
VIB 5.328:	VIBXPRT II case	24
VIB 5.356 :	VIBXPRT II carrying bag	25
VIB 5.354-CL :	VIBXPRT II sensor clip.....	25
VIB 5.354-GT :	VIBXPRT II carrying strap	25
VIB 5.354-HS :	VIBXPRT II hand strap	25
VIB 6.670 :	Headphones.....	26
VIB 5.436 :	Spiral connection cable for current line-drive accelerometer.....	27
VIB 5.437-2,9 :	Straight connection cable for current line-drive accelerometer, 2.9 meters	27
VIB 5.437-5 :	Straight connection cable for current line-drive accelerometer, 5 meters	27
VIB 5.444-5 :	Universal cable extension for analog measurement channel, 5 meters	28
VIB 5.339:	Cable extension for Current Linedrive accelerometer, 8 meters	29
VIB 5.438-0,5 :	Straight connection cable for ICP-type accelerometer, 0.5 meters, BNC-connector	30
VIB 5.422 :	Spiral connection cable for ICP-type accelerometer, MIL-connector	30
VIB 5.345-6 :	Cable extension for VIB 5.422, 6 meters, MIL-connector.....	30
VIB 5.432-2,9 :	Connection cable for RPM sensors.....	31
VIB 4.750-5 :	Cable extension for VIB 5.432-2,9	31
VIB 5.443 :	Connection cable for TTL trigger sensors	31
VIB 5.431 :	Cable for analog signal output	32
VIB 5.433 :	Cable adapter for the measurement of signal-low voltage with VIBXPRT II	33
VIB 5.434 :	Cable adapter for the measurement of signal-low current with VIBXPRT II	33
VIB 5.332 :	Keyphaser adapter for machine protection systems	34
VIB 5.449 :	Cable adapter for the VIB 6.195 accelerometer	35
VIB 5.341 :	VST 24V adapter for VIBXPRT II.....	36
VIB 5.342 :	Analog cable for VST 24V adapter.....	36
VIB 5.343 :	Digital cable for VST 24V adapter	36
VIB 5.344 :	VIBROTECTOR cable for VST 24V adapter.....	36
VIB 8.746-VS:	SPM adapter for VIBXPRT II.....	38
VIB 5.333 :	Cable adapter for TTL / strobe output.....	39
VIB 5.336 :	Cable adapter for triaxial accelerometer	40
VIB 6.655 :	Triaxial accelerometer for VIBXPRT II.....	41
VIB 5.346:	Connection cable, VIBXPRT II to VIBRONET field multiplexer	42
VIB 5.346-MUX :	BNC connection adapter for cable VIB 5.436	42
VIB 5.330 MUSB:	VIBXPRT II USB cable for peripheral devices (Master)	43
VIB 5.330 SUSB :	VIBXPRT II USB cable for communication (Slave).....	43
VIB 5.330 MEM :	VIBXPRT II adapter for USB pen drive	43
VIB 5.330-USB :	VIBXPRT II USB pen drive	43
VIB 5.331:	VIBXPRT II Ethernet cable.....	44
VIB 5.430-2:	Serial PC cable.....	45
VIB 8.981 :	OMNITREND for VIBXPRT, Software package	46
VIB 8.981-DR :	VIBXPRT device driver for OMNITREND	46
VIB 5.312-P :	PC licence for VIBXPRT II.....	46
VIB 8.982 :	OMNITREND ‚View‘ for VIBXPRT, Software package.....	46

Chapter 2: VIBXPERT EX

VIBXPERT EX – Intrinsically safe solution for mobile Condition Monitoring..... 50
 VIBXPERT EX firmware structure..... 52

Order no.	Product description	Page
VIB 5.360-1EEX:	VIBXPERT EX Basic package for 1-channel instrument.....	54
VIB 5.364-1EEX:	VIBXPERT EX Basic Trending package for 1-channel instrument.....	55
VIB 5.360-1EX:	VIBXPERT EX Diagnosis package for 1-channel instrument.....	56
VIB 5.360-2EX:	VIBXPERT EX Diagnosis package for 2-channel instrument.....	57
VIB 5.364-1EX:	VIBXPERT EX Trending package for 1-channel instrument.....	58
VIB 5.364-2EX:	VIBXPERT EX Trending package for 2-channel instrument.....	59
VIB 5.387-XHW:	VIBXPERT EX transducer set for balancing with 1-channel instrument.....	60
VIB 5.386-XHW:	VIBXPERT EX transducer set for balancing with 2-channel instrument.....	61
VIB 5.388-XHW:	VIBXPERT EX transducer set for balancing with 2-channel instrument on low-speed machinery.....	62
VIB 5.322:	VIBXPERT EX charger.....	63
VIB 5.329-X:	VIBXPERT EX case.....	64
VIB 5.355 :	VIBXPERT EX leather bag.....	65
VIB 5.354-LD :	VIBXPERT EX leather carrying strap.....	65
VIB 5.330-UNV :	Universal communication adapter for VIBXPERT EX.....	66
VIB 5.338 :	USB cable for VIBXPERT EX.....	66
VIB 5.332-X :	Keyphaser adapter for machine protection systems (VIBXPERT EX).....	68
VIB 5.433-X :	Cable adapter for the measurement of signal-low voltage with VIBXPERT EX.....	69
	Common cables for VIBXPERT EX and VIBXPERT II.....	71
VIB 8.981 :	OMNITREND for VIBXPERT, Software package.....	72
VIB 8.981-DR :	VIBXPERT device driver for OMNITREND.....	72
VIB 5.312-P :	PC licence for VIBXPERT II.....	72
VIB 8.982 :	OMNITREND ‚View‘ for VIBXPERT, Software package.....	72

Chapter 3: VIBXPERT II Balancer

VIBXPERT II Balancer - Field balancing in one plane or two planes 74
 VIBXPERT II Balancer firmware..... 75

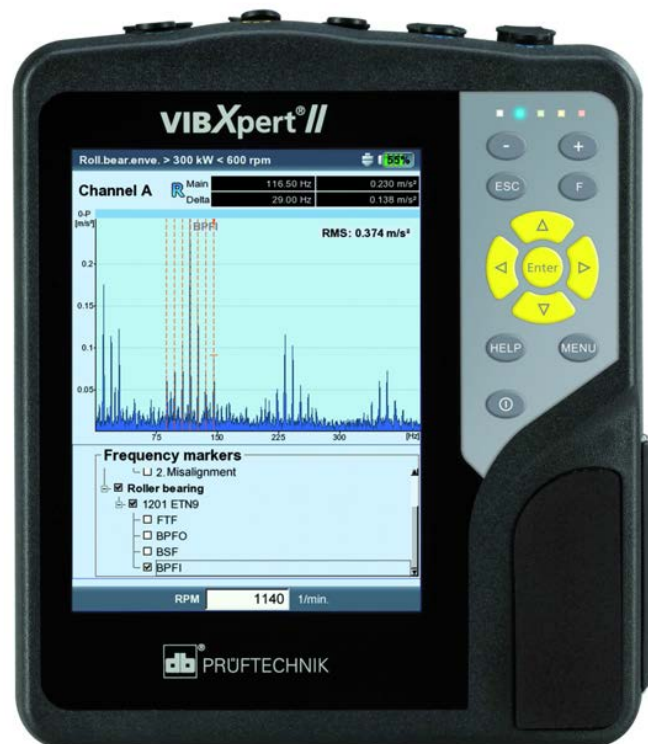
Order no.	Product description	Page
VIB 5.310 B:	VIBXPERT II Balancer package.....	76

Index

Index by order number..... 77

Chapter 1

VIBXPERT II

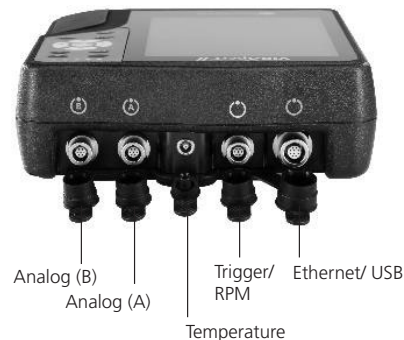


VIBXPert II - Dual channel FFT data collector and signal analyzer

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VIBXPert II (VIB 5.310) is a high performance, full-featured FFT data collector and signal analyzer which allows easy condition monitoring of equipment found in many industries such as power generation, petrochemical, pulp and paper. VIBXPert II collects field data including vibration information, bearing condition, inspection and process data. Extensive analysis functions facilitate data analysis and condition diagnostics on site. For in-depth analysis, archiving and documentation VIBXPert II passes the collected information to the OMNI-TREND maintenance software.

Key features

- **Intuitive** to operate on its graphical user interface and effective use of color.
- **Fast** thanks to optimized measuring workflow and advanced processor technology.
- **Ergonomic** with a handy design and brilliant color display.
- **Powerful** due to many practical analysis functions and measuring templates.
- **Long-lived** with a long battery life and a large data memory.

Application

- Route-based data collection
- Vibration diagnosis
- One- or two-plane field balancing
- Acceptance measurement with machine templates
- Troubleshooting
- Multimeter
- Data logging
- Visual inspection

Analysis functions

- Overall values and process parameters
- Time waveform
- Amplitude/envelope spectrum
- Cepstrum
- Phase, cross-channel phase
- Orbit
- Static shaft position
- Runout analysis (shaft vibration)
- Bump test
- Coast-down/run-up test

- Order analysis
- Modal analysis
- Operating Deflection Shape Analysis (ODS)
- Transient capture
- Long-term recording
- Characteristic frequency markers
- Signal post-processing
- ISO standards for evaluation

Valuable additional features

- Printing of measurement reports
- Rugged hard case
- Extensive accessories
- Optional measuring functions that can be enabled by entering a password

Hardware

- Two true synchronous channel capabilities for diagnosis of complex machinery faults
- Replaceable compact flash cards
- Dust and splash proof (IP65) - ideal for use in demanding environments
- Analog connectors are compatible to VIBSCANNER
- Connector for type K thermocouples
- Signal output: headphones and strobe light

Ergonomics

- Large backlit VGA color display for easy reading, comprehensive data presentation and interpretation
- LED traffic light display: results evaluation according to ISO standards or user-defined alarm thresholds
- Daylight sensor controls keyboard illumination
- Easy-to-use navigation key pad
- Icon based user interface
- Color-coded cable connectors
- Online context sensitive HELP.

Power supply

- Powered by the latest Lithium-Ion battery technology for at least 8 hours operation
- Smart internal battery charging
- Power management (display illumination)

Communication

- Fully networkable
- PC connection via USB, Ethernet, RS232.

Technical data

PARAMETER		VIB 5.310
Input Channels	Analog, 2x	Voltage (AC/DC, ± 30 V max.) Current (AC/DC, ± 30 mA max.) ICP-type accelerometer (2 mA, 24 V max.) Current Linedrive (CLD) accelerometer (10 V, 10 mA max.)
	Frequency range	DC ... 51.2 kHz (Acceleration from 0.5 Hz)
	Dynamic range	96 dB (measurement) / 136 dB (total)
	Sampling frequency	up to 131 kHz per channel
	Impedance	90 kOhm, w/ cable VIB 5.433
	Analog, 1x	Thermocouple (type K)
	Digital (1+1 Pulse/ Tacho), 1x	RPM, Trigger, Keyphaser with pulse and AC signals: 0 V ... +26 V or -26 V ... 0 V
	Max. input voltage	± 26 V
	Switching threshold for 0 V ... +26 V signal	max. 2.5 V rising, min. 0.6 V falling
	Switching threshold for -26 V ... 0 V signal	min. -8 V rising, max. -10 V falling
Pulse width	< 0.1 ms	
Output Channels	Stroboscope control	TTL output
	Frequency range	0 ... 500 Hz
	Resolution	0.05 Hz
	Signal-Out	Connection for headphones to listen to the analog input signal; signal processing (oscilloscope)
	Frequency range	0.5 Hz ... 40 kHz
	Output impedance	100 Ohm
Meas. range / Accuracy	Vibration acceleration	depends on the transducer connected
	Shock pulse	-10 ... 80 dBsv / ± 3 dBsv
	RPM	10 ... 200 000 min^{-1} / $\pm 0.1\%$ or $\pm 1 \text{ min}^{-1}$ (the lower accuracy is applicable)
	Temperature type K	-50 ... +1000°C / 1% or $\pm 1^\circ\text{C}$ (the lower accuracy is applicable)
	Standards fulfilled	Frequency response according to ISO 2954
Display	Type	TFT-LCD, backlit
	Pixel area	116 x 87 mm
	Resolution	VGA (640 x 480 pixel) with 140 ppi
	Color depth	18 bit (262144 colors)
Power supply	Battery type	Li Ion rechargeable battery pack (7.2V / 4.8Ah - 34 Wh)
	Charging time	< 5 hours in the device or external with optional charging station
	Charger, input	110-240 V / 50-60 Hz
	Charging temperature	0°C ... +50°C
Computer	Processor	Marvell PXA320 806 MHz
	Keyboard	1 navigation pad and 7 keys (Zoom, Escape, Function, Help, Menu, On/Off); Keyboard illumination controlled by ambient light.
	Memory	Internal: 128 MB DDR RAM; Compact Flash: 2 GB ... 8 GB
	Serial interface	RS 232, <115 kBaud
	USB interface	USB host for printing; USB slave for data exchange with OMNITREND
	Ethernet interface	100 Mbit (100Base T), 10 Mbit (10Base T)
	Printing	Direct printing of measurement reports via the USB port Compatible printer types: HP, Epson and other printers with USB connection
Environment / General	Connectors	Analog / Digital channels: MiniSnap socket Thermocouple (type K): QLA socket; all compatible to VIBSCANNER
	Housing	ABS plastics
	Dimensions	186 x 162 x 52 mm (LxWxH)
	Weight	approx. 1.1 kg
	IP rating	IP65, dust and splash-proofed
	Temperature range	-10°C ... +60°C (Operation) -20°C ... +60°C (Storage)

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VIBXPRT II firmware structure

1 The functionality of the modular VIBXPRT II firmware can be expanded as required by a password. The standard firmware can be upgraded with the following firmware modules:

- 2**
- Recording (VIB 5.315-REC)
 - Balancing (VIB 5.316-BAL)
 - ODS / Modal analysis (VIB 5.319-ODS)

3 The VIBXPRT II Advanced packages contain the standard firmware for the 1-channel or the 2-channel instrument respectively.

1-channel data collector

In addition to the 'Advanced' version, VIBXPRT II is available as a pure 1-channel data collector in one of the two 'Data collector' packages (VIB 5.310-1E or VIB 5.314-1E respectively). The appropriate firmware, 'E-Registration' (VIB 5.318-E) has a limited functionality and provides

- Route-base data collection
- Vibration analysis using spectra
- Vibration analysis using time waveforms

An upgrade to the 'Advanced' version is possible with the appropriate upgrade package (see next page).

Features of the standard firmware

PARAMETER		VIB 5.311 / VIB 5.311-CH2
Operating modes	Multimode, Characteristic Overall Values	<ul style="list-style-type: none"> • Vibration (Acceleration, Velocity, Displacement) • Current, Voltage (AC / DC) • Shock pulse (bearing condition) • Temperature • Rotational speed
	Multimode, Signals	<ul style="list-style-type: none"> • Amplitude spectrum for accel., velocity, displacement, current, voltage • Envelope spectrum for acceleration, velocity, shock pulse, current, voltage • Time waveform for acceleration, velocity, displacement, current, voltage • Phase measurement (polar diagram) • Impact test w/o recording of the exciting force • Run-up/ Coast-down analysis for acceptance checks and for the evaluation of resonances; phase over RPM (Bode or Nyquist diagram); overall value over RPM (RMS and either 0-p, p-p or crest factor) with 2-channel firmware only (VIB 5.311-CH2): <ul style="list-style-type: none"> • 2-channel measurements with trigger • Orbit (filtered / unfiltered) • Cepstrum • Cross channel phase measurement • Impact test for natural frequency analysis on a shutdown or running machine* • ODS - Operation deflecting shape analysis* * requires optional firmware module VIB 5.319-ODS
	Machine templates	Machine-specific templates for repetitive measurement tasks used for acceptance tests or service measurements.
	Route	<ul style="list-style-type: none"> • Set of measurement tasks for machine condition monitoring and diagnosis • Route guidance via tree / list view or machine graphics • Optimizer levels, TrendingSpectrum, 'Near location' mode for rapid data collection
Analysis functions	Cursor	single, delta, harmonics, sub harmonics, sideband cursor
	Frequency markers	Fixed and RPM-variable characteristic frequencies for machines, roller bearings and gearboxes can be displayed in 'Template' and 'Route' mode
	Alarm bands	Narrow band monitoring of damage frequencies (route mode only)
	Max 10 values	List of the 10 highest amplitudes in the spectrum
	Results display	<ul style="list-style-type: none"> • Linear scaling, Logarithmic scaling (Y axis) • Trend, Cascade diagram (waterfall), Polar plot • Order scaling for amplitude / envelope spectrum • Sound spectrum (octave / third octave bars)
Measurement functions	Multi Meas. tasks	Combination of several measurements in one task.
	Averaging	<ul style="list-style-type: none"> • none (not for temperature), • linear (not for time waveform), • peak hold (not for time waveform and temperature), • exponential (not for time waveform & temperature), • time-synchronous (time waveform, spectrum, balancing)
	Trigger modes	Free running, external (time-synchronous), internal Amplitude, Edge, Pre and post triggered.
	FFT	F_{min} : between 0.5 Hz and 10 Hz programmable F_{max} : between 200 Hz and 51.2 kHz programmable Lines: 400, 800, 1600, 3200, 6400, 12800, 25600, 51200, 102400 Window: Rectangular, Hanning, Hamming, Blackman, Bartlett, Flattop, Kaiser

Features of the optional firmware modules

RECORDING		VIB 5.315-REC
Features	Short-term recording	<ul style="list-style-type: none"> • Characteristic overall values, phase, spectrum and time waveform • Pre- and post history
	Start / stop triggering	time, rpm, threshold, manual
	Recording duration	approx. 10 minutes for time waveform with 512 Hz sampling rate
	Time waveform recorder	Continuous long-term signal recording
	Recording duration	approx. 132 hours with 512 Hz sampling rate and 2 GB CF card

Use of the time waveform recorder requires registration of either the

- VIB 5.318-E, E-Registration module or the
- VIB 5.311, 1-channel measurements module.

Also, the 'Advanced file export' software module VIB 8.984 is required to export data.

BALANCING		VIB 5.316-BAL
Features	Meas. quantities	Vibration velocity, acceleration, displacement
	Balancing modes	One-plane balancing with vibration minimization in the second plane Balancing in two planes under operating conditions
	Correction type	Fixed location, Fixed mass, Tape measure, Free correction
	Operation	Graphical user interface with machine icons and on-screen instructions
	Additional measurement tasks	Diagnosis measurements for detecting an imbalance (characteristic overall value, spectrum, time waveform, phase)
	Add. averaging type	Unlimited averaging if the imbalance pointer is unstable

Additional measurement equipment required for balancing is available in a separate package:

- VIB 5.387-HW: 1-channel instrument
- VIB 5.386-HW: 2-channels instrument

ODS /MODALANALYSIS		VIB 5.319-ODS
Features	Bump test with modal hammer	Analysis of operation-critical mode shapes, Visualization of the dynamic behavior of a structure
	Results display	Transmission function, Coherence function
	Add. averaging type	Negative averaging for measurements on a running machine
	ODS	Structure analysis on running machine

Use of this module requires registration of the modules:

- VIB 5.311, 1-channel measurements, and
- VIB 5.311-CH2, 2-channel measurements.

Also, the 'Advanced file export' software module VIB 8.984 is required to export data.

VIBXPERT II Upgrade Matrix

		<u>ex</u> OMNITREND		<u>with</u> OMNITREND		
		Advanced packg. 1-channel instr. VIB 5.310-1	Advanced packg. 2-channel instr. VIB 5.310-2	Data collector packg. 1-channel instr. VIB 5.314-1E	Advanced package 1-channel instr. VIB 5.314-1	Advanced package 2-channel instr. VIB 5.314-2
<u>ex</u> OMNITREND	Data collector packg. 1-channel instrument VIB 5.310-1E	VIB 5.311-1UG	VIB 5.311-2UG	VIB 5.311-UOM	VIB 5.311-1UG VIB 5.311-UOM VIB 8.115	VIB 5.311-2UG VIB 5.311-UOM VIB 8.115
	Advanced package 1-channel instrument VIB 5.310-1	N/A	VIB 5.311-CH2 VIB 6.142RSET	N/A	VIB 5.311-UOM VIB 8.115	VIB 5.311-CH2 VIB 6.142RSET VIB 5.311-UOM VIB 8.115
	Advanced package 2-channel instrument VIB 5.310-2	N/A	N/A	N/A	N/A	VIB 5.311-UOM VIB 8.115
<u>with</u> /	Data collector packg. 1-channel instrument VIB 5.314-1E	N/A	N/A	N/A	VIB 5.311-1UG VIB 8.115	VIB 5.311-2UG VIB 8.115
	Advanced package 1-channel instrument VIB 5.314-1	N/A	N/A	N/A	N/A	VIB 5.311-CH2 VIB 6.142RSET

VIB 8.115 = OMNITREND Web Certificate, single user

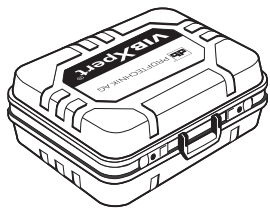


VIB 5.310-1E: VIBXPert II Data Collector package for 1-channel instrument

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VIB 5.328



VIB 8.970

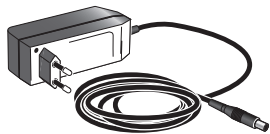


LIT 01.800



VIB 5.310

VIB 5.356



VIB 5.320-INT



VIB 6.142 R



VIB 3.420



LIT 53.201
LIT 53.202
LIT 53.102



VIB 5.330 SUSB



VIB 5.436



VIB 5.318-E

Description

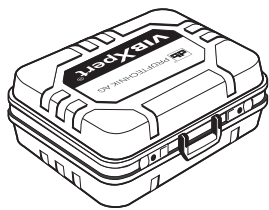
The Data Collector packages include the basic equipment for data collection and machine diagnostics with VIBXPert II. The instrument features the firmware 'E-Registration' and provides one measurement channel.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPert II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

- VIB 5.310 VIBXPert II instrument, incl. rechargeable battery VIB 5.325
- VIB 5.318-E E-registration firmware certificate
- VIB 5.320-INT VIBXPert II charger
- VIB 5.328 VIBXPert II case
- VIB 5.330SUSB USB cable, PC communication
- VIB 5.356 VIBXPert II carrying bag
- VIB 5.436 Spiral cable for Current line-drive transducers
- VIB 6.142 R Accelerometer for standard machines
- VIB 3.420 Magnetic holder for curved mounting surfaces
- LIT 53.201.EN VIBXPert II manual
- LIT 53.102.EN VIBXPert II short instructions
- LIT 53.202.EN VIBXPert II balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.970 CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

VIB 5.314-1E: VIBXPert II Data Collector package for 1-ch. instrument incl. OMNITREND



VIB 5.328



VIB 8.981

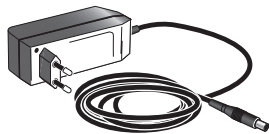


LIT 01.800



VIB 5.310

VIB 5.356



VIB 5.320-INT



VIB 6.142 R



VIB 3.420



VIB 9.631
LIT 53.201
LIT 53.202
LIT 53.102



VIB 5.330 SUBS



VIB 5.436



VIB 5.318-E
VIB 5.312-P

Description

The Data Collector packages include the basic equipment for data collection and machine diagnostics with VIBXPert II. The instrument features the firmware 'E-Registration' and provides one measurement channel.

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPert II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

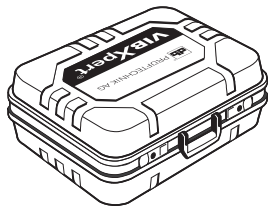
- VIB 5.310 VIBXPert II instrument, incl. rechargeable battery VIB 5.325
- VIB 5.312-P PC licence for VIBXPert II
- VIB 5.318-E E-registration firmware certificate
- VIB 5.320-INT VIBXPert II charger
- VIB 5.328 VIBXPert II case
- VIB 5.330SUBS USB cable, PC communication
- VIB 5.356 VIBXPert II carrying bag
- VIB 5.436 Spiral cable for Current line-drive transducers
- VIB 6.142 R Accelerometer for standard machines
- VIB 3.420 Magnetic holder for curved mounting surfaces
- LIT 53.201.EN VIBXPert II manual
- LIT 53.102.EN VIBXPert II short instructions
- LIT 53.202.EN VIBXPert II balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.981 OMNITREND for VIBXPert, PC software
- VIB 9.631.G OMNITREND getting started manual

VIB 5.310-1: VIBXPERT II Advanced package for 1-channel instrument

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VIB 5.328



VIB 8.970

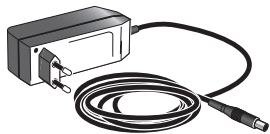


LIT 01.800



VIB 5.310

VIB 5.356



VIB 5.320-INT



VIB 6.142 R



VIB 3.420



LIT 53.201
LIT 53.202
LIT 53.102



VIB 5.330 SUSB



VIB 5.436



VIB 5.311

Description

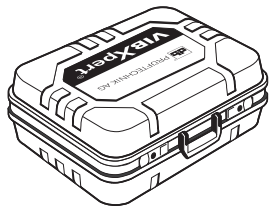
The Advanced packages include the basic equipment for data collection and machine diagnostics with VIBXPERT II. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

- VIB 5.310 VIBXPERT II instrument, incl. rechargeable battery VIB 5.325
- VIB 5.311 1-channel standard firmware certificate
- VIB 5.320-INT VIBXPERT II charger
- VIB 5.328 VIBXPERT II case
- VIB 5.330SUSB USB cable, PC communication
- VIB 5.356 VIBXPERT II carrying bag
- VIB 5.436 Spiral cable for Current line-drive transducers
- VIB 6.142 R Accelerometer for standard machines
- VIB 3.420 Magnetic holder for curved mounting surfaces
- LIT 53.201.EN VIBXPERT II manual
- LIT 53.102.EN VIBXPERT II short instructions
- LIT 53.202.EN VIBXPERT II balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.970 CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

VIB 5.314-1: VIBXPERT II Advanced package for 1-channel instrument incl. OMNITREND



VIB 5.328



VIB 8.981

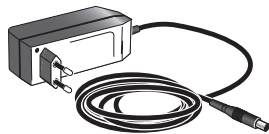


LIT 01.800



VIB 5.310

VIB 5.356



VIB 5.320-INT



VIB 6.142 R



VIB 3.420



VIB 9.631
LIT 53.201
LIT 53.202
LIT 53.102



VIB 5.330 SUSB



VIB 5.436



VIB 5.311
VIB 5.312-P
VIB 8.115

Description

The Advanced packages include the basic equipment for data collection and machine diagnostics with VIBXPERT II. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

- VIB 5.310 VIBXPERT II instrument, incl. rechargeable battery VIB 5.325
- VIB 5.311 1-channel standard firmware certificate
- VIB 5.312-P PC licence for VIBXPERT II
- VIB 5.320-INT VIBXPERT II charger
- VIB 5.328 VIBXPERT II case
- VIB 5.330SUSB USB cable, PC communication
- VIB 5.356 VIBXPERT II carrying bag
- VIB 5.436 Spiral cable for Current line-drive transducers
- VIB 6.142 R Accelerometer for standard machines
- VIB 3.420 Magnetic holder for curved mounting surfaces
- LIT 53.201.EN VIBXPERT II manual
- LIT 53.102.EN VIBXPERT II short instructions
- LIT 53.202.EN VIBXPERT II balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.981 OMNITREND for VIBXPERT, PC software
- VIB 9.631.G OMNITREND getting started manual
- VIB 8.115 OMNITREND web, single user certificate

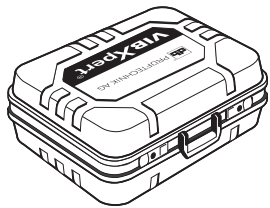


VIB 5.310-2: VIBXPert II Advanced package for 2-channel instrument

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VIB 5.328



VIB 8.970

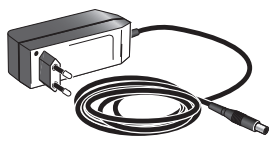


LIT 01.800



VIB 5.310

VIB 5.356



VIB 5.320-INT



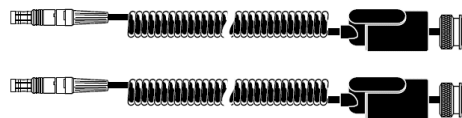
VIB 6.142 R



VIB 3.420



LIT 53.201
LIT 53.202
LIT 53.102



VIB 5.436



VIB 5.330 SUSB



VIB 5.311
VIB 5.311-CH2

Description

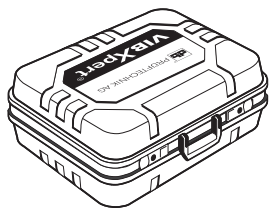
The Advanced packages include the basic equipment for data collection and machine diagnostics with VIBXPert II. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPert II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

- VIB 5.310 VIBXPert II instrument, incl. rechargeable battery VIB 5.325
- VIB 5.311 1-channel standard firmware certificate
- VIB 5.311-CH2 2-channel standard firmware certificate
- VIB 5.320-INT VIBXPert II charger
- VIB 5.328 VIBXPert II case
- VIB 5.330SUSB USB cable, PC communication
- VIB 5.356 VIBXPert II carrying bag
- VIB 5.436 Spiral cable for Current line-drive transducers, 2x
- VIB 6.142 R Accelerometer for standard machines, 2x
- VIB 3.420 Magnetic holder for curved mounting surfaces, 2x
- LIT 53.201.EN VIBXPert II manual
- LIT 53.102.EN VIBXPert II short instructions
- LIT 53.202.EN VIBXPert II balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.970 CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

VIB 5.314-2: VIBXPERT II Advanced package for 2-channel instrument incl. OMNITREND



VIB 5.328



VIB 8.981

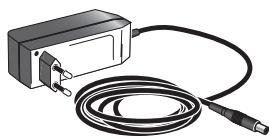


LIT 01.800



VIB 5.310

VIB 5.356



VIB 5.320-INT



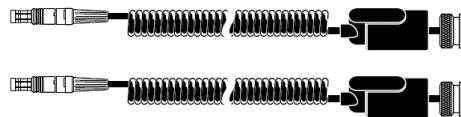
VIB 6.142 R



VIB 3.420



VIB 9.631
LIT 53.201
LIT 53.202
LIT 53.102



VIB 5.436



VIB 5.311
VIB 5.311-CH2
VIB 5.312-P
VIB 8.115



VIB 5.330 SUSB

Description

The Advanced packages include the basic equipment for data collection and machine diagnostics with VIBXPERT II. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

- VIB 5.310 VIBXPERT II instrument, incl. rechargeable battery VIB 5.325
- VIB 5.311 1-channel standard firmware certificate
- VIB 5.311-CH2 2-channel standard firmware certificate
- VIB 5.312-P PC licence for VIBXPERT II
- VIB 5.320-INT VIBXPERT II charger
- VIB 5.328 VIBXPERT II case
- VIB 5.330SUSB USB cable, PC communication
- VIB 5.356 VIBXPERT II carrying bag
- VIB 5.436 Spiral cable for Current line-drive transducers, 2x
- VIB 6.142 R Accelerometer for standard machines, 2x
- VIB 3.420 Magnetic holder for curved mounting surfaces, 2x
- LIT 53.201.EN VIBXPERT II manual
- LIT 53.102.EN VIBXPERT II short instructions
- LIT 53.202.EN VIBXPERT II balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.981 OMNITREND for VIBXPERT, PC software
- VIB 9.631.G OMNITREND getting started manual
- VIB 8.115 OMNITREND web, single user certificate

VIBXPERT II upgrades

1

VIB 5.311-1UG : Upgrade package ‚Data collector‘ to ‚Advanced / 1-channel‘

VIB 5.311-2UG : Upgrade package ‚Data collector‘ to ‚Advanced / 2-channels‘

VIB 5.311-UOM: Upgrade package ‚OMNITREND‘

2

3



VIB 6.142 R



VIB 5.436



VIB 3.420



VIB 8.981



VIB 9.631



VIB 5.311
VIB 5.311-CH2
VIB 5.312-P

The upgrade packages extend the functionality and options of the instrument. The matrix below shows the possible upgrade options.

Content VIB 5.311-1UG:

VIB 5.311 1-channel standard firmware certificate

Content VIB 5.311-2UG:

VIB 5.311 1-channel standard firmware certificate

VIB 5.311-CH2 2-channel standard firmware certificate

VIB 5.436 Spiral cable for Current line-drive transducers

VIB 6.142 R Accelerometer for standard machines

VIB 3.420 Magnetic holder for curved mounting surfaces

Content VIB 5.311-UOM:

VIB 8.981 OMNITREND for VIBXPERT, PC software

VIB 9.631.G OMNITREND getting started manual

VIB 5.312-P PC licence for VIBXPERT II

VIBXPERT II Upgrade Matrix

		<u>ex</u> OMNITREND		<u>with</u> OMNITREND		
		Advanced packg. 1-channel instr. VIB 5.310-1	Advanced packg. 2-channel instr. VIB 5.310-2	Data collector packg. 1-channel instr. VIB 5.314-1E	Advanced package 1-channel instr. VIB 5.314-1	Advanced package 2-channel instr. VIB 5.314-2
<u>ex</u> OMNITREND	Data collector packg. 1-channel instrument VIB 5.310-1E	VIB 5.311-1UG	VIB 5.311-2UG	VIB 5.311-UOM	VIB 5.311-1UG VIB 5.311-UOM VIB 8.115	VIB 5.311-2UG VIB 5.311-UOM VIB 8.115
	Advanced package 1-channel instrument VIB 5.310-1	N/A	VIB 5.311-CH2 VIB 6.142RSET	N/A	VIB 5.311-UOM VIB 8.115	VIB 5.311-CH2 VIB 6.142RSET VIB 5.311-UOM VIB 8.115
	Advanced package 2-channel instrument VIB 5.310-2	N/A	N/A	N/A	N/A	VIB 5.311-UOM VIB 8.115
<u>with</u> /	Data collector packg. 1-channel instrument VIB 5.314-1E	N/A	N/A	N/A	VIB 5.311-1UG VIB 8.115	VIB 5.311-2UG VIB 8.115
	Advanced package 1-channel instrument VIB 5.314-1	N/A	N/A	N/A	N/A	VIB 5.311-CH2 VIB 6.142RSET

VIB 6.142 RSET: Transducer set for vibration measurements



VIB 6.142 R



VIB 3.420



VIB 5.436

Description

This package contains the hardware components for vibration measurements with VIBXPERT II.

Scope of supply

VIB 5.436	Spiral cable for Current line-drive transducers
VIB 6.142 R	Accelerometer for standard machines
VIB 3.420	Magnetic holder for curved mounting surfaces

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VIB 5.387-HW: VIBXPERT II transducer set for balancing with 1-channel instrument

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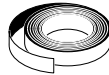
3



VIB 6.147



VIB 3.420



VIB 3.306



VIB 6.631



VIB 6.632



MiniSnap

VIB 5.437-2,9

TNC



MiniSnap

VIB 5.432-2,9

BINDER

Description

This package extends the functionality of any VIBXPERT II instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

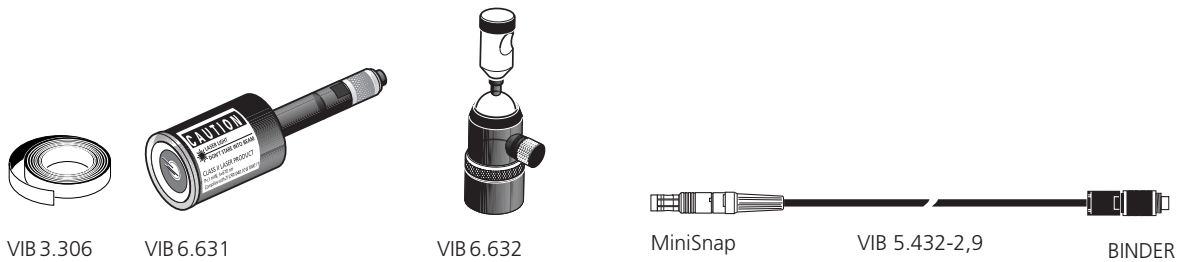
Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 5.437-2,9	Cable for Current line-drive transducer, 2.9 m
VIB 6.147	Accelerometer for low-speed machines
VIB 6.631	Laser Trigger Sensor
VIB 6.632	Trigger stand

Note

The VIBXPERT II balancing firmware module (VIB 5.316-BAL) is not included in the transducer set.

VIB 5.386-HW: VIBXPERT II transducer set for balancing with 2-channel instrument



Description

This package extends the functionality of any VIBXPERT II instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 6.631	Laser Trigger Sensor
VIB 6.632	Trigger stand

Note

The VIBXPERT II balancing firmware module (VIB 5.316-BAL) is not included in the transducer set.

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VIB 5.388-HW: VIBXPERT II transducer set for balancing with 2-channel instrument on low-speed machinery

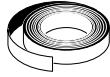
1

2

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VIB 6.147



VIB 3.306



VIB 6.631



VIB 6.632



MiniSnap

VIB 5.432-2,9

BINDER

Description

This package extends the functionality of any VIBXPERT II instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

Note

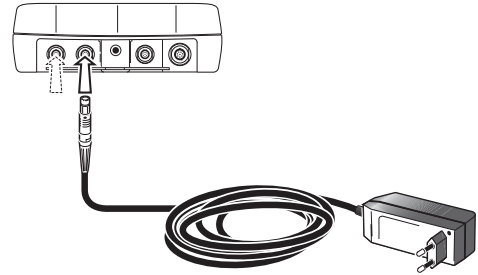
The VIBXPERT II balancing firmware module (VIB 5.316-BAL) is not included in the transducer set.

Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 6.147	Accelerometer for low-speed machines, 2x
VIB 6.631	Laser Trigger Sensor
VIB 6.632	Trigger stand

VIB 5.320-INT: VIBXPERT II charger

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- 2
- 3



Description

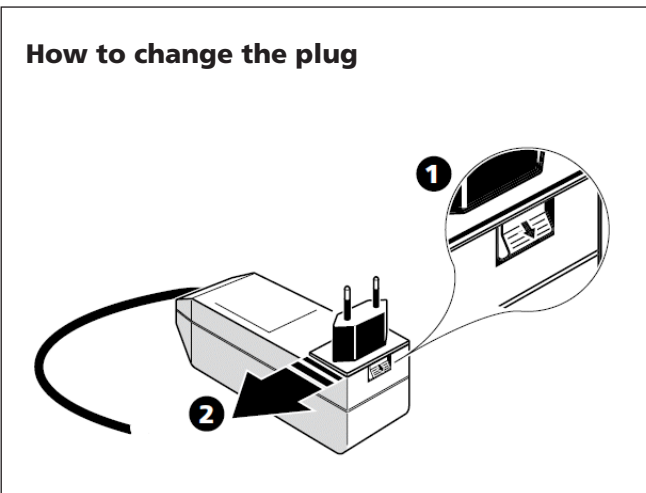
The VIBXPERT II Charger VIB 5.320-INT has several interchangeable AC plugs for the most international plug types.

To charge the rechargeable battery, connect the charger to one of the two measurement channels (A, B). After charging, the charger switches automatically to trickle-mode in order to protect the rechargeable battery.

Technical data

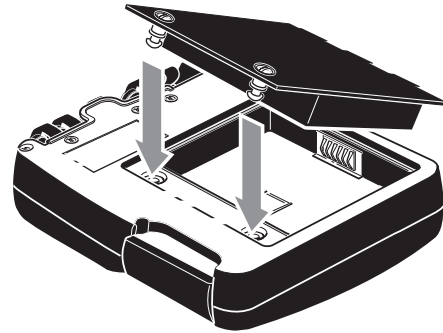
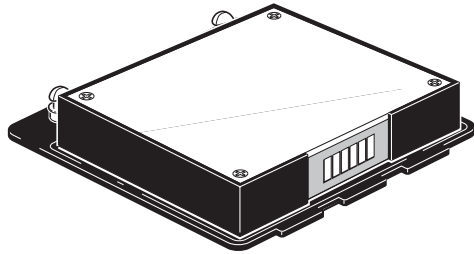
PARAMETER		VIB 5.320-INT
Electrical	Primary voltage	110 - 240VAC; 50 - 60 Hz
	Secondary voltage	12 VDC / 2A
	Charging duration	< 5 hours, depends on battery charge condition
General	Environmental protection	IP 20
	Temperature range, operation	-5°C ... +40°C
	Temperature range, storage	-20°C ... +70°C
	Dimensions (WxHxL)	40 x 45 x 110 mm
	Cable length	approx. 1.5 m

How to change the plug



VIB 5.325: VIBXPERT II rechargeable battery

- 1
- 2
- 3

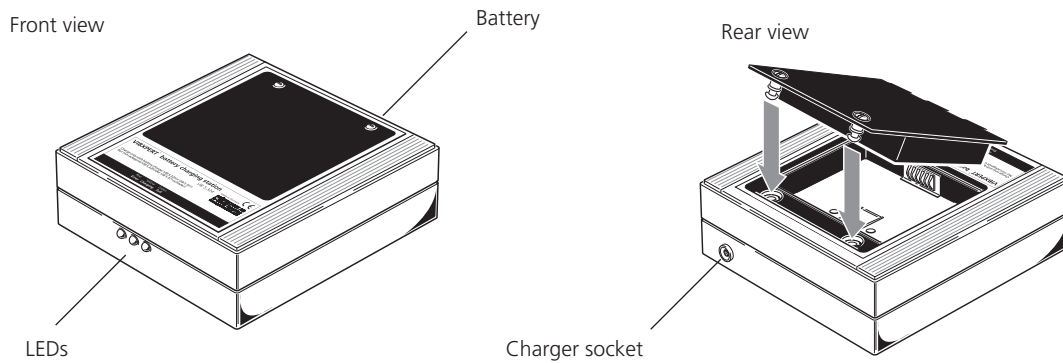


Description

VIBXPERT II is supplied from a Li Ion rechargeable battery (VIB 5.325). The battery can be recharged in the device or in the external charging station (VIB 5.324) with the charger (VIB 5.320-INT).

Technical data

PARAMETER		VIB 5.425
Electrical	Battery type	Lithium ion
	Nominal voltage	7.2 V
	Nominal capacitance	4.8 Ah
	Nominal power	34.5 Wh
	Charging temperature	0°C ... +50°C

VIB 5.324-SET: VIBXPERT II charging station set**Description**

The VIBXPERT II battery can be removed from the instrument to be charged externally using the charging station. Thus, work can continue without major interruption using a second charged battery while the empty battery is being charged in the office.

The charging station set consists of the VIBXPERT charging station (VIB 5.324) and an additional VIBXPERT rechargeable battery (VIB 5.325).

Three LEDs indicate the charging status:

GREEN: Battery is fully charged
YELLOW: Battery is charging
RED: Fault during charging

Charging temperature: 0°C ... +50°C

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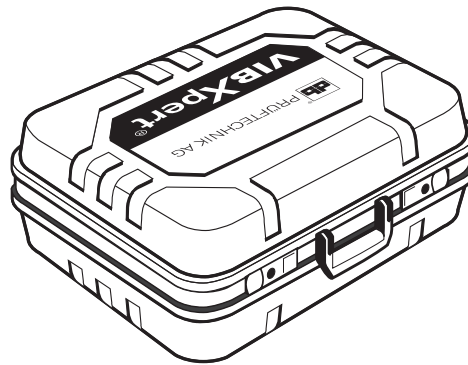
3

VIB 5.328: VIBXPERT II case

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Description

This black case of rugged ABS plastic with contoured foam insert protects all components of the VIBXPERT system during transport (contents not included).

It also offers plenty of space for accessories. The case is key lockable and drop-tested from 2m (6' 6").

Technical data

PARAMETER		VIB 5.328
General	Material	ABS plastic
	Dimensions (W x D x H)	470 x 400 x 195 mm
	Empty weight	3 kg

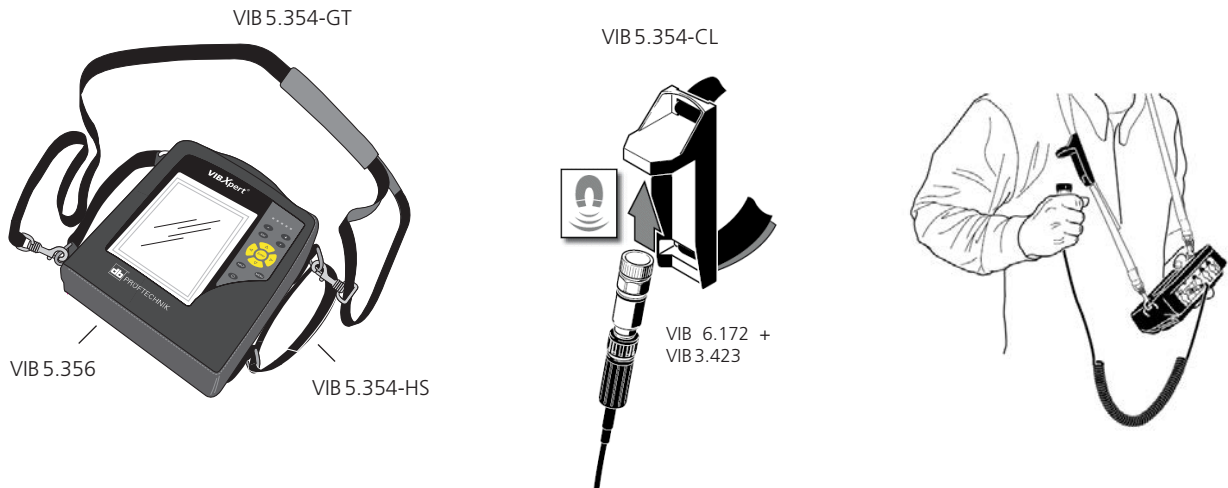
VIBXPERT II carrying bag and accessories

VIB 5.356 : VIBXPERT II carrying bag

VIB 5.354-CL : VIBXPERT II sensor clip

VIB 5.354-GT : VIBXPERT II carrying strap

VIB 5.354-HS : VIBXPERT II hand strap



Description

The carrying bag, made of nylon-synthetic blend, provides a convenient aid in carrying the VIBXPERT II instrument around. Its side pocket allows safe storage of connection cables, sensors and tools.

The continuously adjustable carrying strap can be adjusted to fit nearly any body size. The VIBXPERT II instrument can be held securely in one hand using the handstrap. The size of the hand strap can be adjusted with the Velcro fastener.

If necessary, the carrying belt and hand strap can be ordered separately later.

The sensor clip is a convenient holder for sensors with magnetic adapter*. The clip can be attached directly to the carrying strap and continuously adjusted.

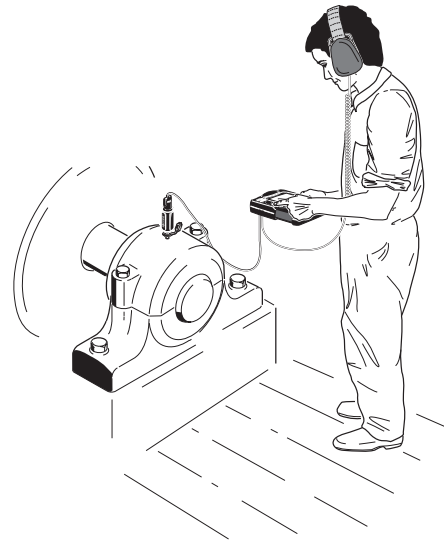
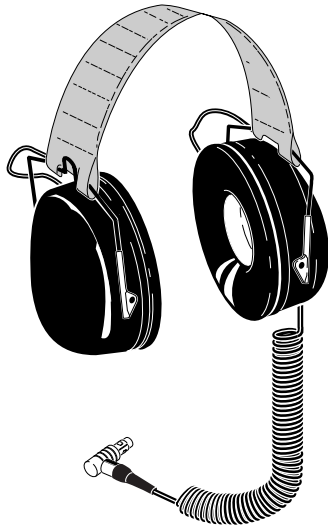
*e.g. VIB 6.172 + VIB 3.423 or comb. vibration and temperature sensor VIB 6.162.

VIB 6.670 : Headphones

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Description

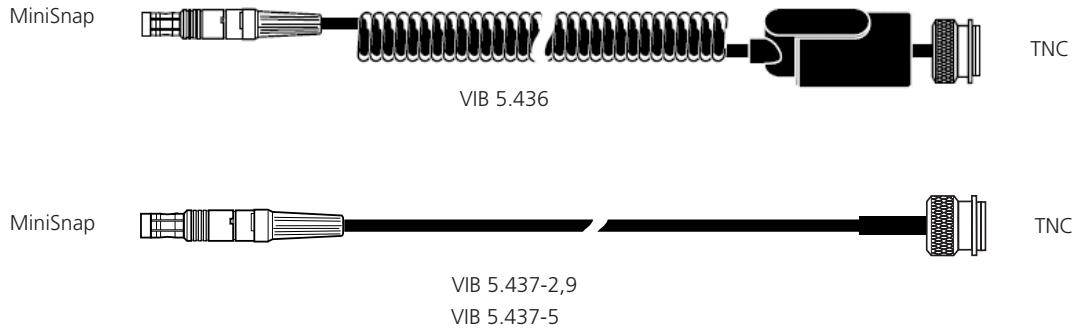
The headphones can be used to listen to the machines and, in particular, roller bearings for the characteristic noises that indicate damage. The buffered transducer signal is picked up with the headphones at the analog output (yellow socket).

Technical data

PARAMETER		VIB 6.670
Electrical	Impedance	450 Ohm
	Frequency range	125 - 8000 Hz
	Volume limit (0.5 V / 1 kHz)	81 dB (A)
General	Connection	1 spiral cable for VIBSCANNER (MiniSnap)
	Weight	approx. 360 g

Connection cables for current line-drive accelerometers

VIB 5.436 :	Spiral connection cable for current line-drive accelerometer
VIB 5.437-2,9 :	Straight connection cable for current line-drive accelerometer, 2.9 meters
VIB 5.437-5 :	Straight connection cable for current line-drive accelerometer, 5 meters



Application

These cables are used to connect mobile industrial accelerometers with current line-drive output to the following PRÜFTECHNIK data collectors:

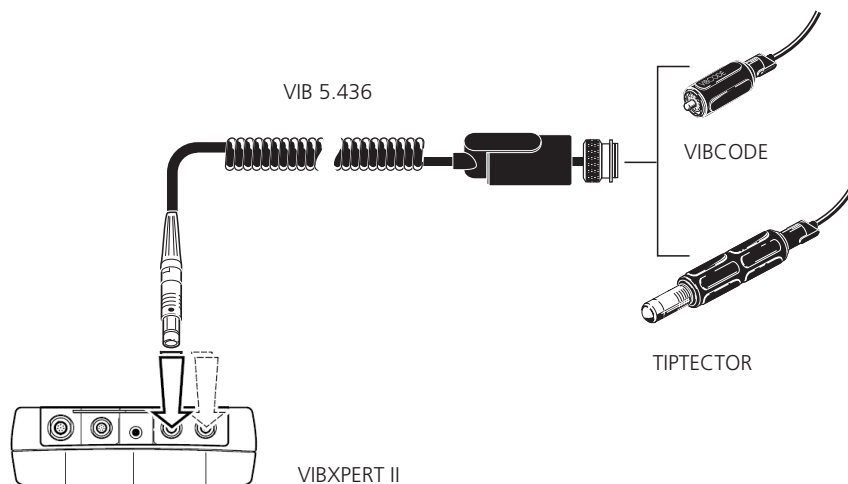
- VIBXPERT II
- VIBXPERT I
- VIBXPERT EX
- VIBSCANNER
- VIBSCANNER EX

Cable lengths

VIB 5.436	0.7 ... 1.8 m
VIB 5.437-2,9	2.9 m
VIB 5.437-5	5 m

Connection example

VIBCODE / TIPECTOR connected to VIBXPERT II



VIB 5.444-5 : Universal cable extension for analog measurement channel, 5 meters

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MiniSnap



MiniSnap

Application

With this cable, the analog signal path can be extended by up to five meters.

Extendable sensor cables:

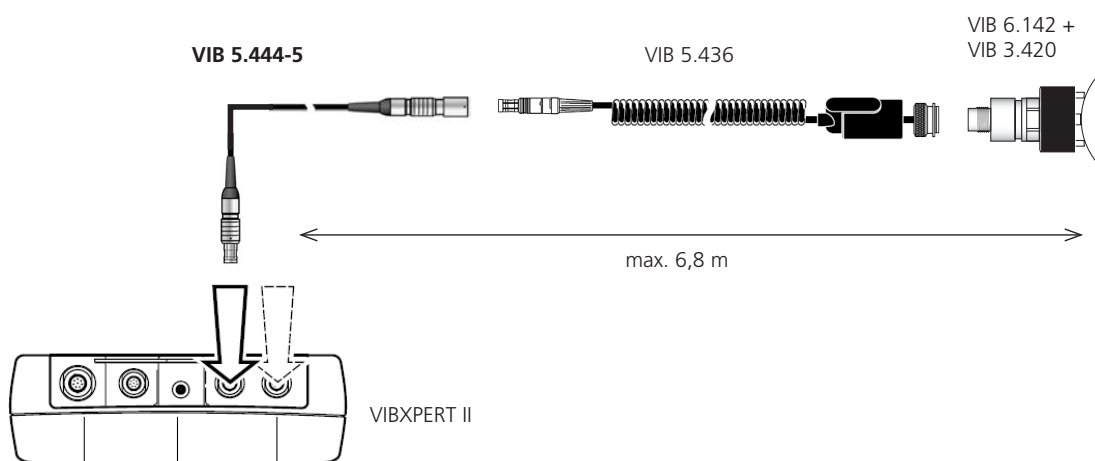
- VIB 5.436 LineDrive spiral cable
- VIB 5.437-2,9 LineDrive cable, straight, 2.9 m
- VIB 5.437-5 LineDrive cable, straight, 5 m
- VIB 5.438-0,5 ICP cable, BNC connector
- VIB 5.422 ICP cable, MIL connector

- VIB 5.440 VIBREX cable (mV)
- VIB 5.433 Cable for extra-low voltage
- VIB 5.433 X Cable for extra-low voltage, VIBXPRT EX
- VIB 5.434 Cable for extra-low current
- VIB 5.342 Cable for VST 24V adapter

Note for all cables, except LineDrive

For cable lengths greater than 2.9 meters, the EMC immunity of the signal path can be adversely affected.

Connection example



VIB 5.339: Cable extension for Current Linedrive accelerometer, 8 meters



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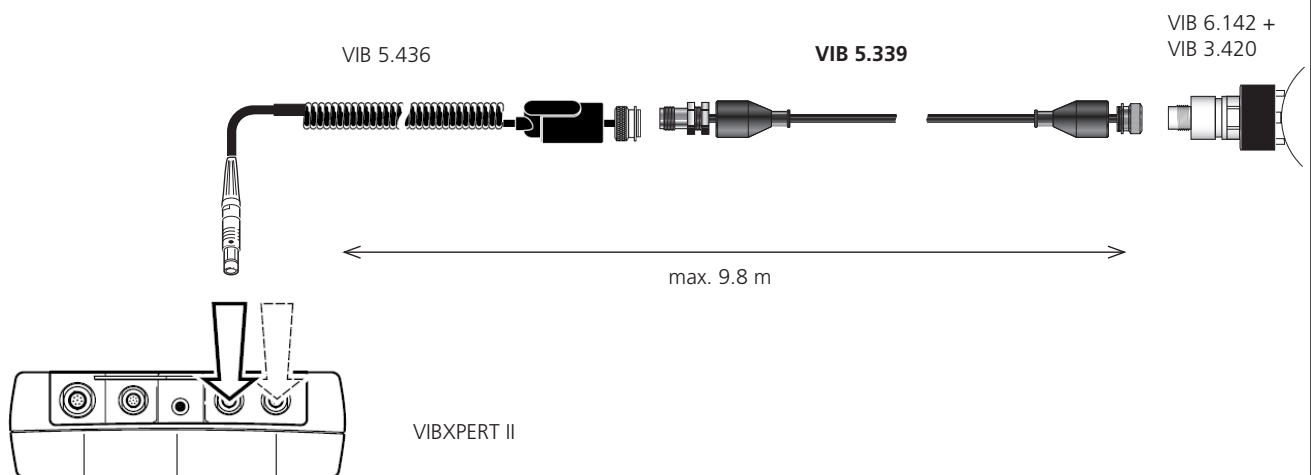
Application

With this cable, the Current LineDrive sensor cables can be extended by up to eight meters.

Extendable sensor cables:

- VIB 5.436 LineDrive spiral cable
- VIB 5.437-2,9 LineDrive cable, straight, 2.9m
- VIB 5.437-5 LineDrive cable, straight, 5m

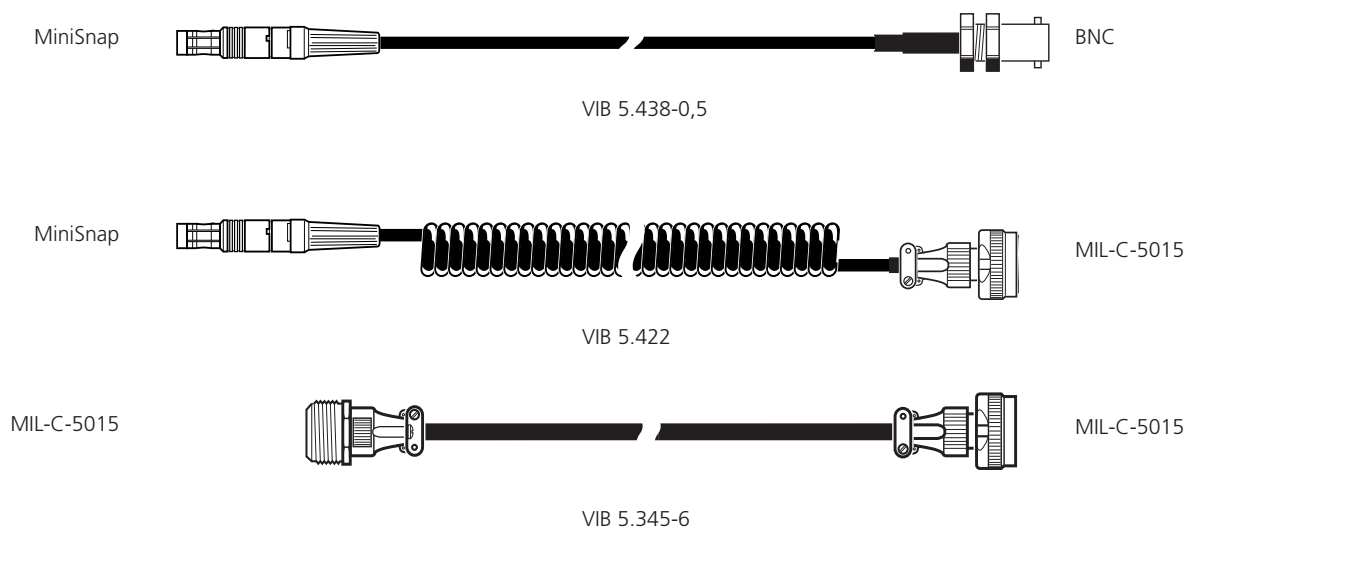
Connection example



Connection cables for ICP-type accelerometers

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VIB 5.438-0,5 :	Straight connection cable for ICP-type accelerometer, 0.5 meters, BNC-connector
VIB 5.422 :	Spiral connection cable for ICP-type accelerometer, MIL-connector
VIB 5.345-6 :	Cable extension for VIB 5.422, 6 meters, MIL-connector



Application

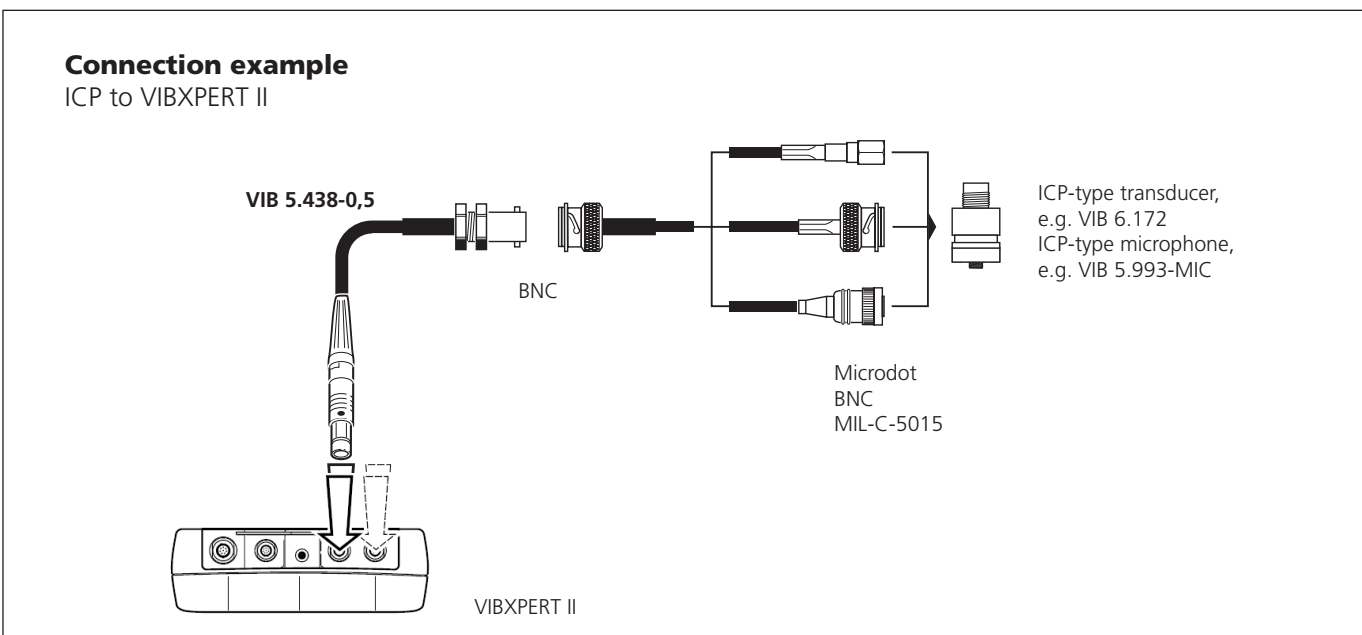
Standard sensor cables for connecting an ICP-type accelerometer or a microphone to VIBXPRT II.

Cable lengths

VIB 5.438-0,5	0.5 m
VIB 5.422	0.7 ... 1.8 m
VIB 5.345-6	6 m

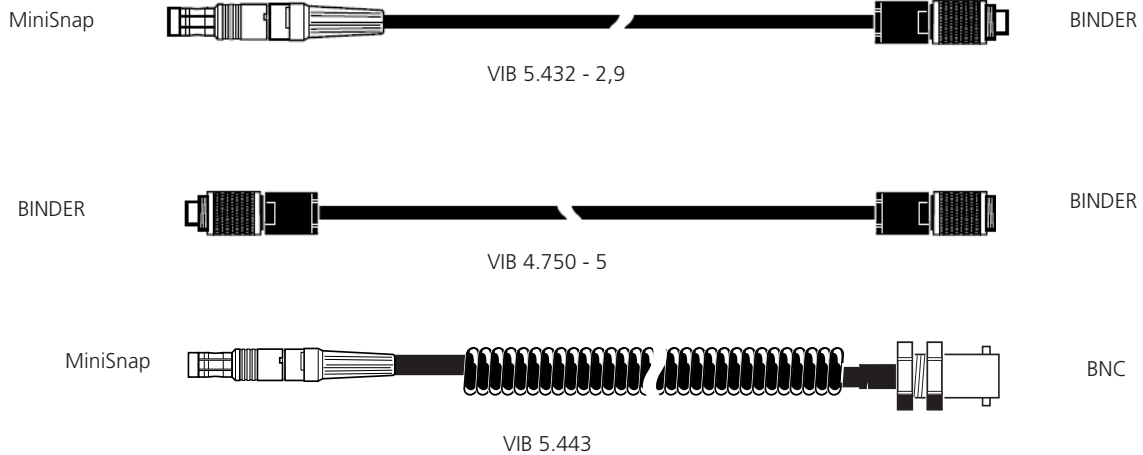
Notes

Applies to cable VIB 5.438-0,5: Depending on which type of connector the accelerometer has (e.g. Microdot, BNC, MIL-C-5015,...), a suitable cable must have at least one BNC connector.



Connection cables for RPM sensors and trigger sensors

VIB 5.432-2,9 :	Connection cable for RPM sensors
VIB 4.750-5 :	Cable extension for VIB 5.432-2,9
VIB 5.443 :	Connection cable for TTL trigger sensors



Application

The VIB 5.432-2,9 cable is used to connect the PRÜFTECHNIK RPM sensors VIB 6.631 or VIB 6.631 EX to the following data collectors:

- VIBXPert II
- VIBXPert I
- VIBXPert EX
- VIBSCANNER
- VIBSCANNER EX

The VIB 5.443 cable is used to connect a trigger sensor from other manufacturers.

Cable lengths

VIB 5.432-2,9	2.5 m
VIB 4.750-5	5.0 m
VIB 5.443	0.45 - 1.6 m

Application example



VIB 5.431 : Cable for analog signal output

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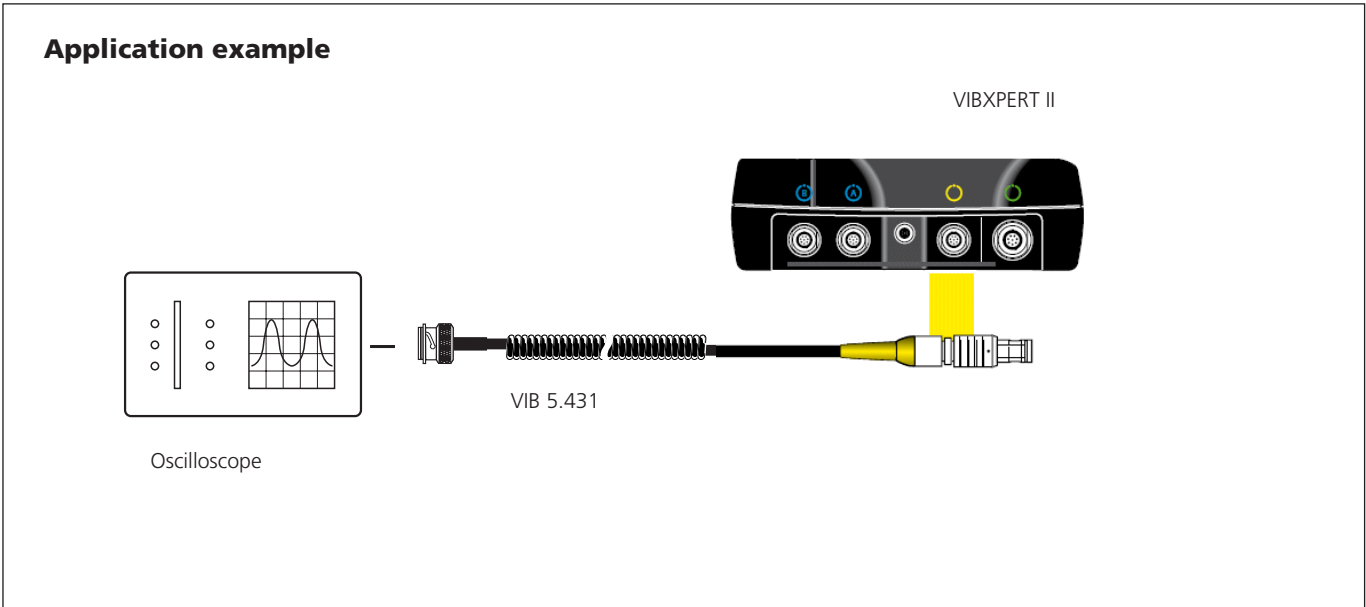


Application

In order to analyze the measured analog signal, a head-set (> 450 Ohm) or an analytical instrument (e.g. oscilloscope) can be connected with this cable to the following data collectors:

- VIBXPRT II
- VIBXPRT I
- VIBXPRT EX
- VIBSCANNER
- VIBSCANNER EX

Cable length: 0.7 to 1.8 meters



Cable adapters for the measurement of signal-low voltage / current with VIBXPART II

- VIB 5.433 : Cable adapter for the measurement of signal-low voltage with VIBXPART II
- VIB 5.434 : Cable adapter for the measurement of signal-low current with VIBXPART II



Application

These cable adapters are used to measure signal-low voltage (AC: 0-30V) or signal levels (DC: 0-30V; 0-30 mA) provided by other measuring instruments.

An additional cable with at least one BNC plug is required to connect the adapter cable to the signal-measuring instrument.

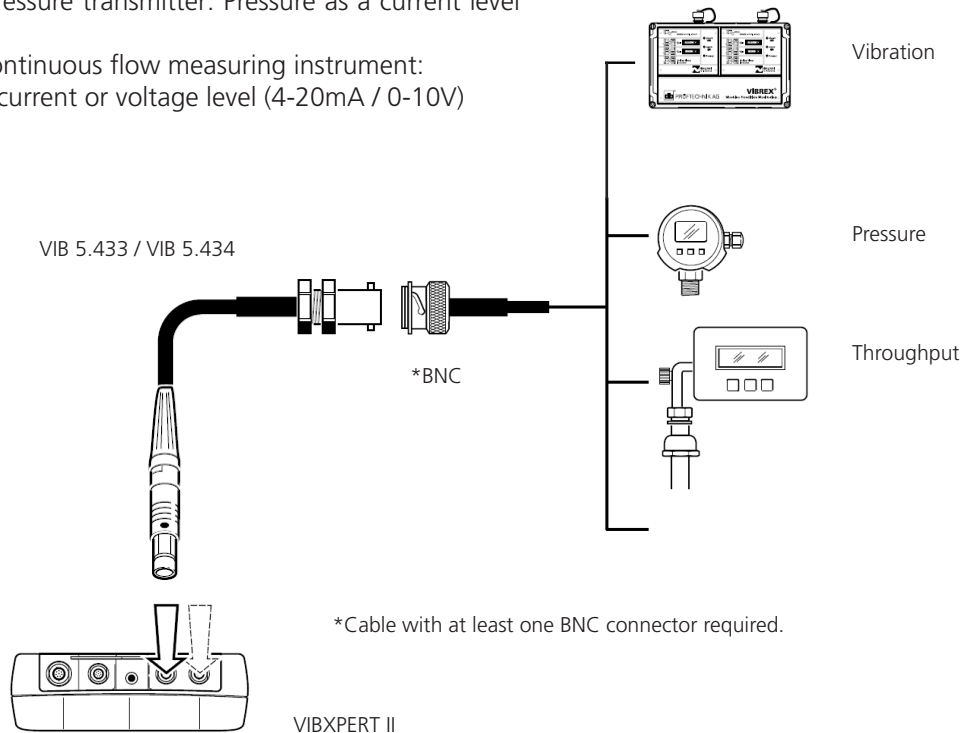
Safety note

All electric circuits in VIBXPART II are galvanically connected. If more than one electric circuit is connected, a difference in potential may result in malfunctions.

The length of the spiral cable is 0.7 to 1.8 meters.

Application examples

- Connection to VIBREX: Vibration as a current level (4-20mA)
- Connection to pressure transmitter: Pressure as a current level (4-20mA)
- Connection to continuous flow measuring instrument: Throughput as a current or voltage level (4-20mA / 0-10V)



VIB 5.332 : Keyphaser adapter for machine protection systems

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Application

This adapter converts a pulse signal (including the DC level) to a 5V rectangular signal. This makes it possible to connect keyphaser, such as from the Bently Nevada, with measuring devices from PRÜFTECHNIK:

- VIBXPERT II
- VIBXPERT I

Connection

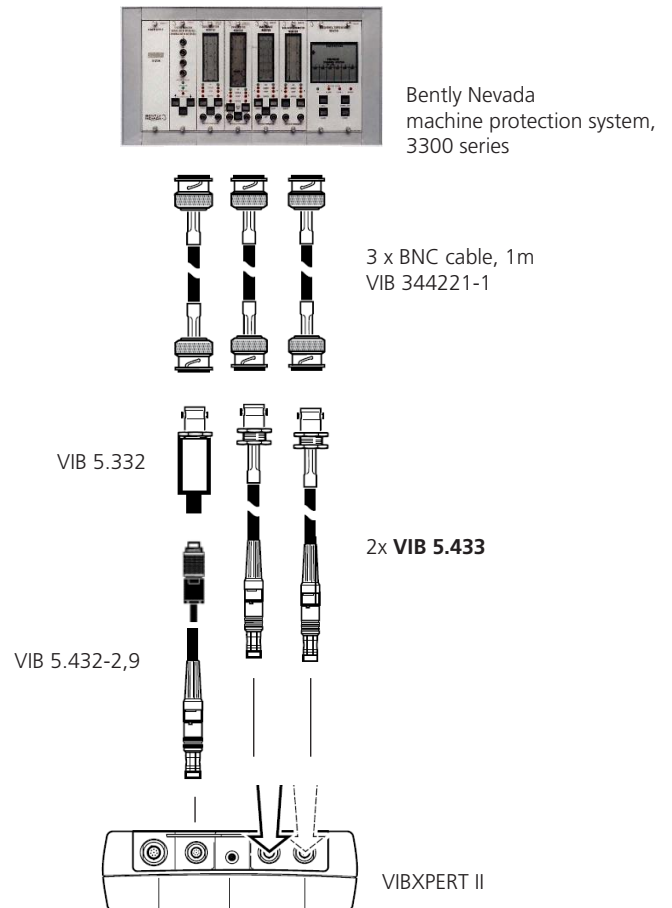
On the device side, the adapter is equipped with an 8-pin binder socket that is connected to trigger cable VIB 5.432-2,9. The signal input side provides a BNC socket.

Technical data

PARAMETER		VIB 5.332
Electrical	Operating voltage	5.4 V ± 10%
	Power consumption	0.5 mA
	Input signal, Pulse width	> 100 µs
	- , Pulse level	> 500 mV _{pp}
	- , DC fraction	+8 V to -30 V
	Output signal	5 V, rectangular signal
	Input resistance	200 kOhm
	Output resistance	1 kOhm
Mechanical	Housing material	Stainless steel, VA 1.4301
	Length, incl. connectors	130 mm
	Diameter	15 mm
	Weight	30 g
	Env. protection class	IP 65
	Temperature range	0°C ... +60°C
Interfaces	Input signal	Binder connector, 8 pin, 712 series
	- , Pin allocation	2 / 5V, 4 / rectangular signal, 7 / GND
	Output signal	BNC connector
	- , Pin allocation	internal contact / signal, external contact / GND

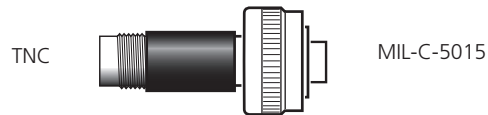
Application example

VIBXPERT II connected to Bently Nevada 3300 series



VIB 5.449 : Cable adapter for the VIB 6.195 accelerometer

- 1
- 2
- 3



Application

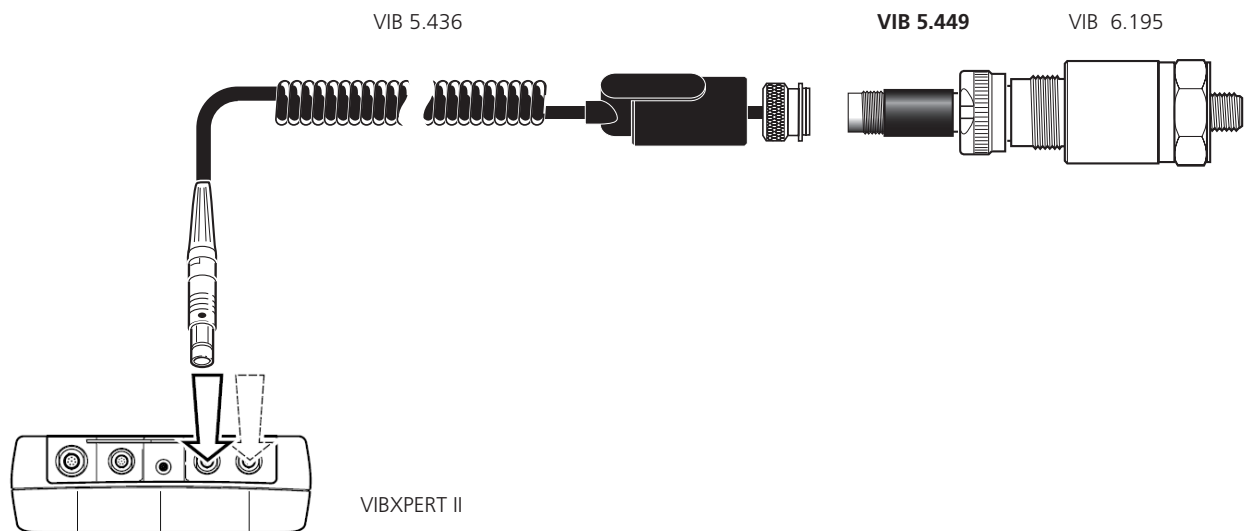
This adapter is used to connect the VIB 6.195 accelerometer to the VIBXPRT II instrument.

Connector: TNC / MIL-C-5015

Length: 6 cm

Application example

VIB 6.195 connected to VIBXPRT II



Adapters and cables for voltage-supplied sensors and VIBROTECTOR

1

VIB 5.341 : VST 24V adapter for VIBXPERT II

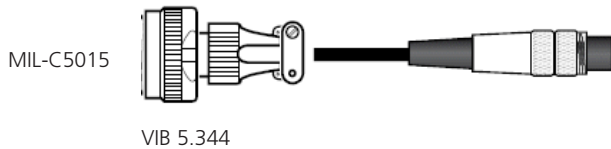
VIB 5.342 : Analog cable for VST 24V adapter

VIB 5.343 : Digital cable for VST 24V adapter

VIB 5.344 : VIBROTECTOR cable for VST 24V adapter

2

3



Application

The VST 24V adapter is used for connecting any sensors with a power supply (-24 VDC) to the VIBXPERT II instrument.

Examples of sensors:

- AS-022: accelerometer
- IN 085: non-contacting displacement sensor from Brüel & Kjaer Vibro / Schenck Vibro.
- VIBROTECTOR: vibration transmitter from PRÜFTECHNIK Condition Monitoring

To measure RPM, sensors with a power supply (-24 VDC) or rpm reference sensors with an external supply can be connected. The minimum required trigger level is 2 volts.

Safety note

Do not operate VIBXPERT II with the charger unit when the adapter is connected.

Cleaning notes

- Clean with a moist cloth.
- Use a mild detergent or alcohol.

Technical data

PARAMETER		VIB 5.341
Electrical	Output voltage U_{out}	-24V, unregulated (dep. on VIBXPERT)
	Frequency range, Signal IN - Analog Out Signal IN - Trigger Out	0.1 Hz ... 100 kHz
	Case material	stainless steel + heat shrink tubing
Mechanical	Plug	DIN 41524, BINDER 680, 6 pole, m / f
	Dimensions L x D	120 x 27 mm
	Weight	105 g
	Protection class	IP 40
	Temperature range	-10°C ... +60°C

Connection

The VST 24V adapter is connected to the sensor and instrument using the cables provided:

Analog cable - VIB 5.342:

Connection cable between adapter and VIBXPERT II for measurement of vibration acceleration, velocity and displacement.

Digital cable - VIB 5.343:

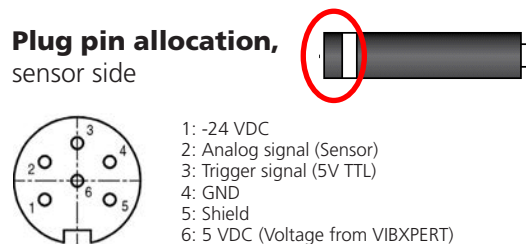
Connection cable between adapter and VIBXPERT II for RPM measurement.

VIBROTECTOR cable - VIB 5.344:

Connection cable between adapter and VIBROTECTOR vibration transmitter. The adapter is connected to VIBXPERT II with the analog cable (VIB 5.342).

Cable length: 2.9 meters

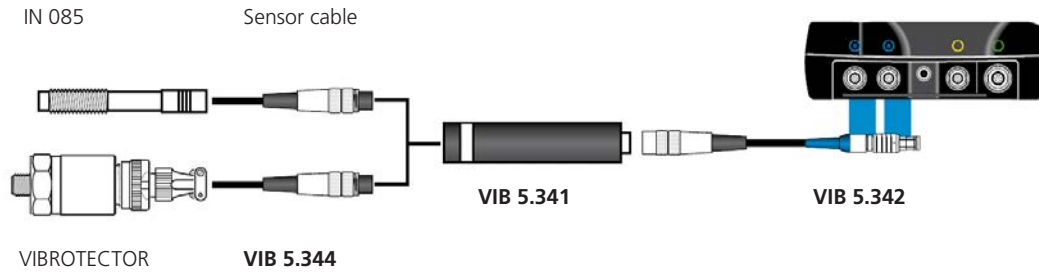
Plug pin allocation, sensor side



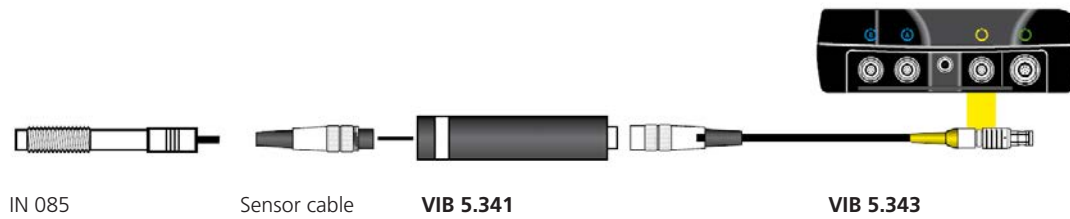
- 1: -24 VDC
- 2: Analog signal (Sensor)
- 3: Trigger signal (5V TTL)
- 4: GND
- 5: Shield
- 6: 5 VDC (Voltage from VIBXPERT)

Connection examples

- Displacement measurement with IN 085 sensor
- Vibration measurement with VIBROTECTOR



- RPM measurement with IN 085 sensor



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2

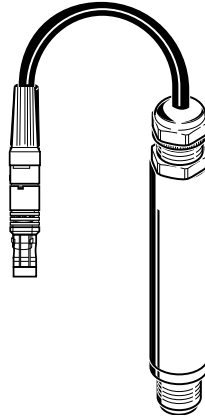
3

VIB 8.746-VS: SPM adapter for VIBXPERT II

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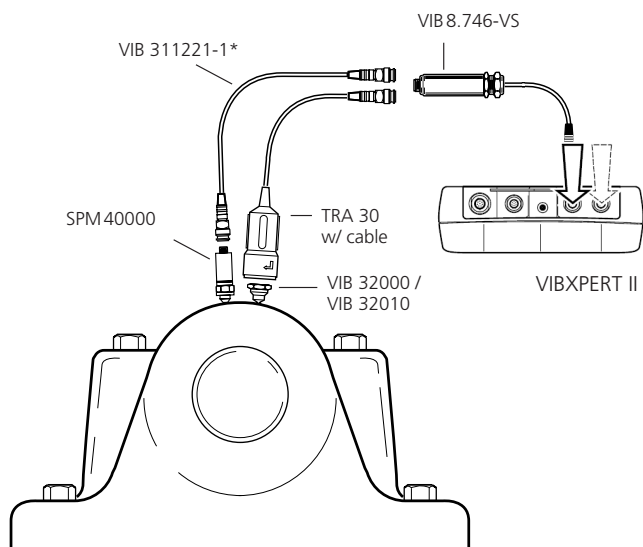
Application

The SPM adapter is used to connect the VIBXPERT II data collector to existing SPM 40000 or TRA 30 measurement sensors by converting the voltage signal to a current signal.

Technical data

PARAMETER		VIB 8.746-VS
General	Input	MiniSnap
	Output	TNC
	Length	approx. 240 mm
	Diameter	16 mm

Application example



* This cable is not included in the scope of delivery

VIB 5.333 : Cable adapter for TTL / strobe output

- 1
- 2
- 3



Application

The VIB 5.333 cable adapter is used to connect a stroboscope to VIBXPRT. The flash rate is controlled by the cursor on the spectrum.

Connection

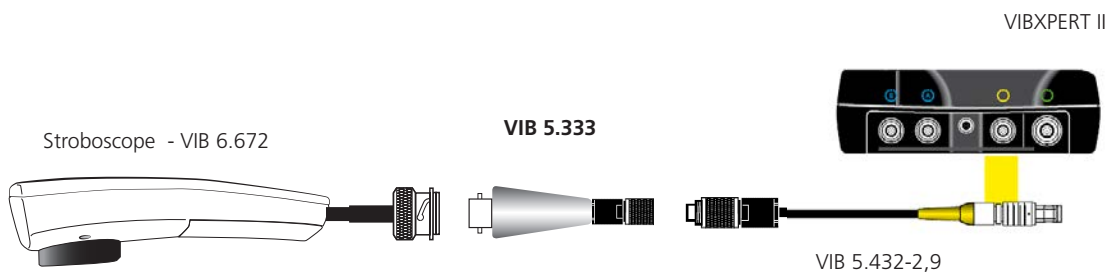
BNC: Stroboscope trigger input with BNC cable.
 Binder: VIBXPRT digital input with cable VIB 5.432-2,9.

Technical data

PARAMETER		VIB 5.333
Mechanical	Housing material	Aluminium
	Length, incl. connectors	62 mm
	Diameter	15 mm
	Weight	20 g

Application example

VIBXPRT II connected to stroboscope



VIB 5.336 : Cable adapter for triaxial accelerometer

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Application

The cable adapter VIB 5.336 is used to connect the triaxial accelerometer VIB 6.655 to the VIBXPERT II instrument. It is not permissible to connect the triaxial accelerometer to VIBXPERT EX.

Connectors

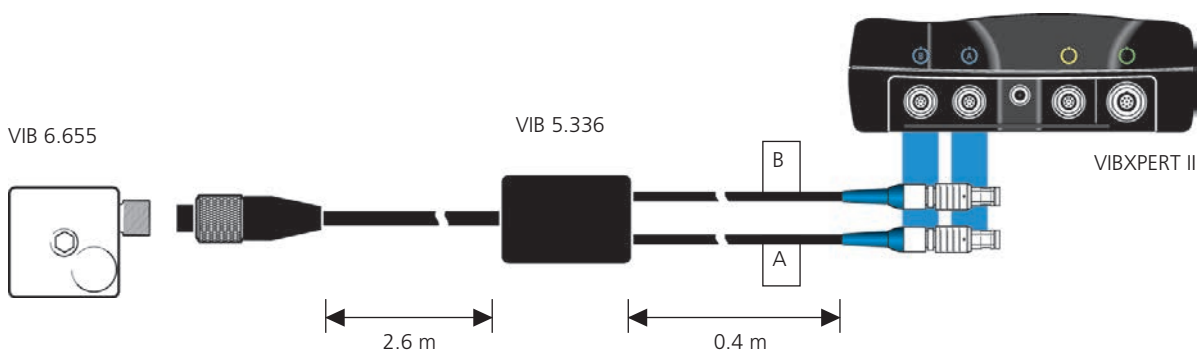
MiniSnap: Analog inputs A & B
 MiniMIL: Triaxial sensor VIB 6.655

Technical data

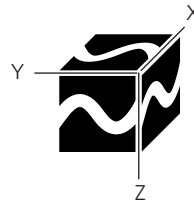
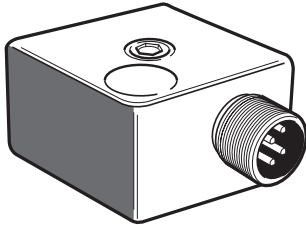
PARAMETER		VIB 5.336
Mechanical	Cable length, instrument side	approx. 0.4 m
	- , sensor side	approx. 2.6 m
Weight		approx. 310 g

Application example

VIBXPERT II connected to triaxial accelerometer VIB 6.655



VIB 6.655 : Triaxial accelerometer for VIBXPERT II



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Application

The triaxial accelerometer VIB 6.655 is used to measure machine and component vibrations up to 10 kHz in the horizontal, vertical and axial directions at a single measurement location. The triaxial accelerometer achieves shorter measuring times with a data collector and is easier to install since only one sensor needs to be mounted.

Connection

The cable adapter VIB 5.336 is used to connect the triaxial accelerometer VIB 6.655 to the VIBXPERT II instrument. It is not permissible to connect the sensor to VIBXPERT EX.

Mounting

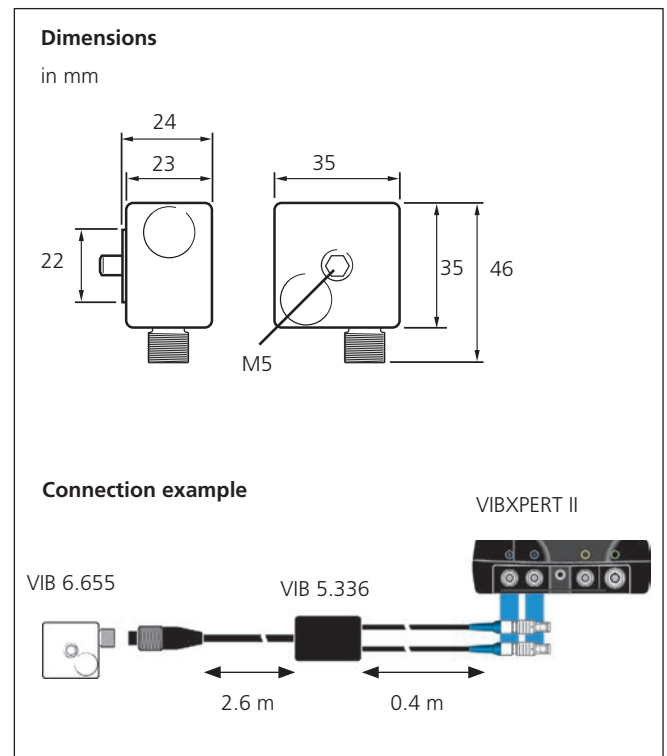
The triaxial accelerometer is attached to the machine using the magnetic holder (VIB 3.420).

Accessories

- VIB 5.336 Cable adapter for triaxial accelerometer
- VIB 3.420 Magnetic holder for curved mounting surfaces
- VIB 3.422 Magnetic holder for flat mounting surfaces

Technical data

PARAMETER		VIB 6.655
Dynamic	Signaling system	ICP
	Measurement range (peak.)	± 50 g
	Transmission factor ± 5%	100 mV/g
	Frequency range ± 3dB	0.6 Hz ...10kHz
	w/ magnetic holder ± 3dB	0.6 Hz ...2 kHz
	± 10%	1 Hz ...6.5 kHz
Temperature range		-54°C ... +121 °C
Electrical	Settling time	< 2.5 s
	Power requirements	2-10 mA / 18-30 VDC
	Spectral noise, @ 10 / 100 / 1000 Hz	27 / 6.5 / 2.5 µg / (Hz) ^{1/2}
	Output impedance	< 100 Ohm
	Case isolation	> 10 ⁸ Ohm
	Bias output voltage	11-13 VDC
Mechanical	Case material	E316L (stainless steel)
	Mounting	M5x1 captive bolt
	Mounting torque	1.4 ... 2.7 Nm
	Connector type	Cable connector, 4-pole (Mini-MIL)
	Weight	200 g



Connection cable and adapter for VIBRONET field multiplexer

1

VIB 5.346: Connection cable, VIBXPERT II to VIBRONET field multiplexer

VIB 5.346-MUX : BNC connection adapter for cable VIB 5.436

2

MiniSnap



BNC

VIB 5.346

3



VIB 5.346-MUX

Application

These cables are used to connect the VIBXPERT II data collector to a VIBRONET field multiplexer (VIB 8.306) for automatic data acquisition at many measurement locations of the same type or hard-to-access measurement locations.

The measurement locations are combined on one string line and are measured consecutively.

Notes

Only vibration measurements with Current Linedrive accelerometers are possible.

Up to 6 multiplexers with a maximum of 54 measurement locations are possible on one string line.

It is not permissible to connect these cables to VIBXPERT EX!

Cable lengths

VIB 5.346 1.5 meters

VIB 5.346-MUX 0.16 meters

Application example



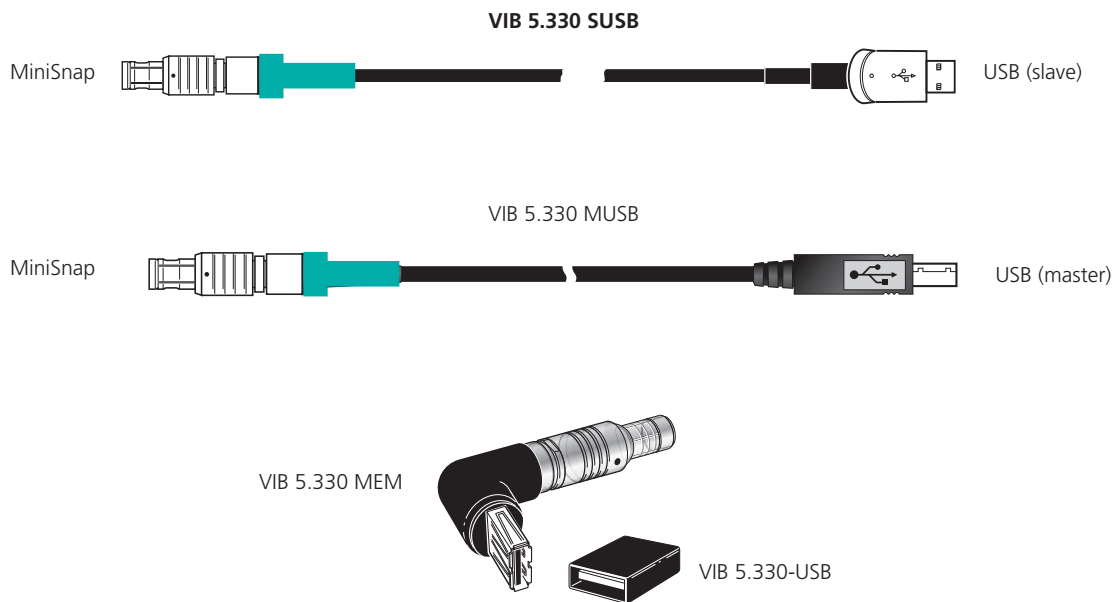
VIBXPERT II USB cables and adapters

VIB 5.330 MUSB: VIBXPERT II USB cable for peripheral devices (Master)

VIB 5.330 SUSB : VIBXPERT II USB cable for communication (Slave)

VIB 5.330 MEM : VIBXPERT II adapter for USB pen drive

VIB 5.330-USB : VIBXPERT II USB pen drive



Application

VIBXPERT II has a USB interface which can be used for communication and data transfer with a computer as well as for printing reports on a printer.

The cable for peripheral devices VIB 5.330 MUSB is used for connecting the printer. The connection to the PC is made with the cable VIB 5.330 SUSB. The adapter VIB 5.330-MEM is used to store reports in PDF format on the VIBXPERT II USB pen drive VIB 5.330-USB.

Cable lengths: 2 meters

Note

These cables and the adapter may not be used with VIBXPERT EX!

Application examples

Data transfer via USB



VIB 5.331: VIBXPERT II Ethernet cable

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Application

The VIBXPERT II is connected with the cable VIB 5.331 to an ethernet network to a hub or to a PC for data transmission.

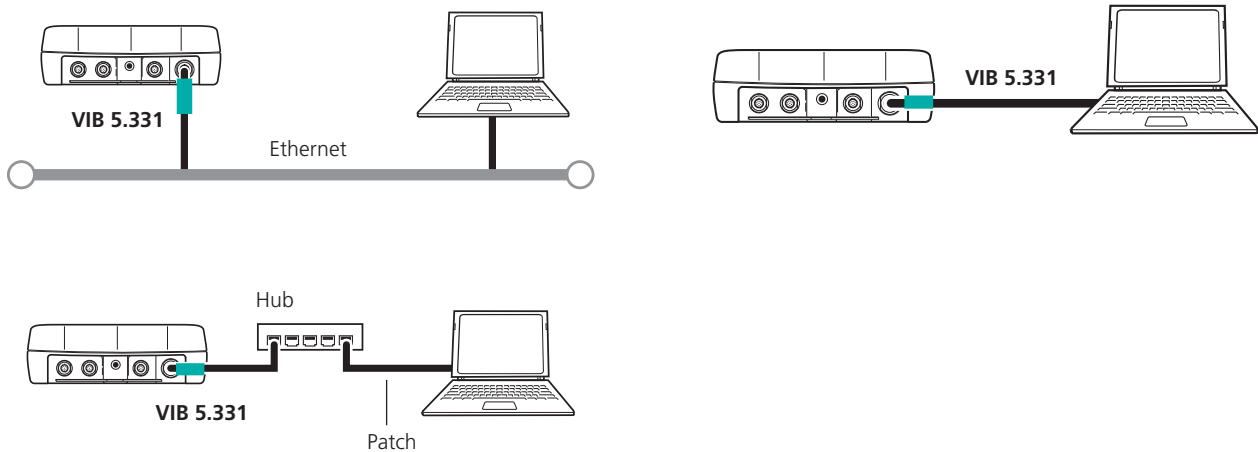
Cable length: 2 meters

Note

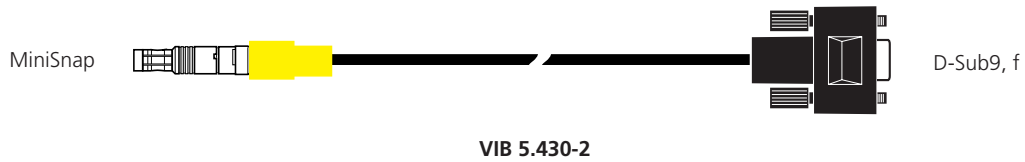
This cable may not be used with VIBXPERT EX!

Application examples

Data transfer via Ethernet



VIB 5.430-2: Serial PC cable



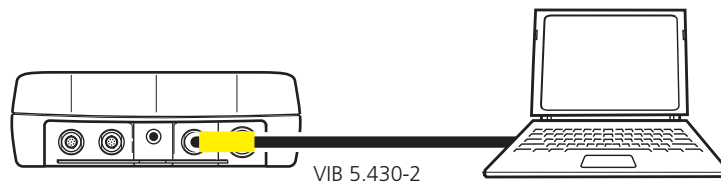
Application

This cable is used for data transmission via the serial interface.

Cable length: approx. 2 m

Application example

VIBXPRT II connected to computer (RS 232)



OMNITREND for VIBXPert

1

VIB 8.981 : OMNITREND for VIBXPert, Software package

VIB 8.981-DR : VIBXPert device driver for OMNITREND

VIB 5.312-P : PC licence for VIBXPert II

2

VIB 8.982 : OMNITREND ,View' for VIBXPert, Software package

3



Description

The OMNITREND software package **VIB 8.981** contains the CD ROM and the following items:

- VIB 5.312-P PC licence
(Communication password for one VIBXPert II instrument)
- VIB 8.981-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

With the OMNITREND View software package **VIB 8.982** only multimode measurement can be imported in the database (no route data). The VIB 8.982 package contains the CD ROM and the following items:

- VIB 5.312-P PC licence
(Communication password for one VIBXPert II instrument)
- VIB 8.982-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 8.981-DR** is required to operate the OMNITREND software already available with the VIBXPert II . VIB 8.981-DR contains:

- VIB 5.312-P PC licence
(Communication password for one VIBXPert II instrument)
- VIB 8.981-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

Each further VIBXPert II is registered with a separate **VIB 5.312-P** PC license.

Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

VIB 8.986: VIBXPERT utility - Excel report module



Description

The optional Excel report module for VIBXPERT utility is used for exporting the following measurement data in Excel format:

- Overall vibration value,
- FFT spectrum,
- Balancing result,
- Time waveform,
- Coast-down measurement (amplitude phase and overall value),
- Dual-channel measurements

Compatible instrument types:

- VIBXPERT II FFT data collector and signal analyzer,
- VIBXPERT II Balancer

Compatible Excel version: Excel 2003, Excel 2007

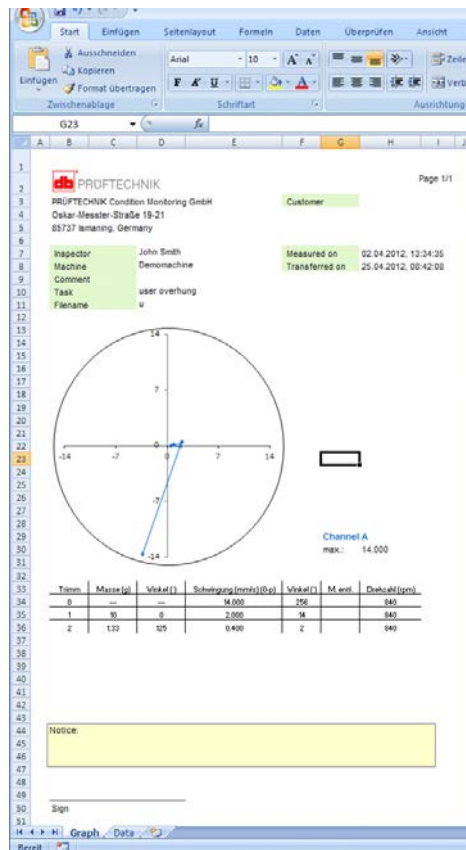
Note

The generated Excel files are based on templates, which can be adapted as necessary by a user with the corresponding skills.

* VIBXPERT utility is a free service tool for VIBXPERT instruments. The program can be downloaded from the PRÜFTECHNIK homepage and be upgraded with optional modules as needed.

Example

Balancing report in Excel 2007



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Chapter 2

VIBXPERT EX

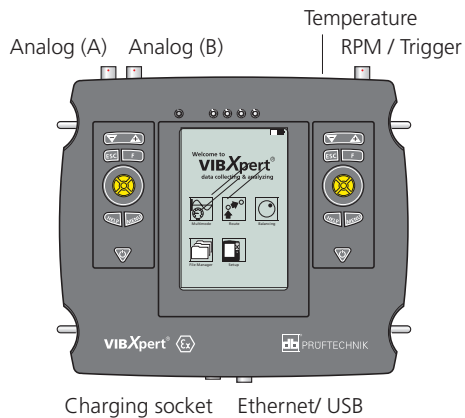


VIBXPert EX – Intrinsically safe solution for mobile Condition Monitoring

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CE 0044

VIBXPert EX (VIB 5.300 EX) is a high performance, full-featured FFT data collector and signal analyzer which allows easy condition monitoring of equipment in hazardous areas such as in refineries, in the oil and gas industry or in the chemical industry. VIBXPert EX collects field data including vibration information, bearing condition, inspection and process data. Extensive analysis functions facilitate data analysis and condition diagnostics on site. For in-depth analysis, archiving and documentation VIBXPert EX passes the collected information to the OMNITREND maintenance software.

Key features - intrinsically safe version

- **Intrinsic safety** allows use in hazardous areas.
- **Intuitive** to operate on its graphical user interface.
- **Powerful** due to many practical analysis functions and measuring templates.
- **Long-lived** with a long battery life and a large data memory.

Application

- Route-based data collection
- Vibration diagnosis
- One- or two-plane field balancing
- Acceptance measurement with machine templates
- Troubleshooting
- Multimeter
- Data logging
- Visual inspection

Analysis functions

- Overall values and process parameters
- Time waveform
- Amplitude/envelope spectrum
- Cepstrum
- Phase, cross-channel phase
- Orbit
- Static shaft position
- Runout analysis (shaft vibration)
- Bump test
- Coast-down/run-up test
- Order analysis

- Modal analysis
- Operating Deflection Shape Analysis (ODS)
- Transient capture
- Long-term recording
- Characteristic frequency markers
- Signal post-processing
- ISO standards for evaluation

Valuable additional features

- Printing of measurement reports
- Rugged hard case
- Extensive accessories
- Optional measuring functions that can be enabled by entering a password

Hardware

- Two true synchronous channel capabilities for diagnosis of complex machinery faults
- Robust, industrial-proofed metal housing
- Dust and splash proof (IP65) - ideal for use in demanding environments
- Analog input connectors are compatible to VIBSCAN-NER
- Connector for type K thermocouples
- Signal output: headphones and strobe light

Ergonomics

- Large backlit display
- Easy-to-use joystick operation (left or right-hand)
- LED traffic light display for results evaluation according to ISO standards or user-defined alarm thresholds
- Daylight sensor controls keyboard illumination
- Icon based user interface
- Online context sensitive HELP.

Power supply

- Lithium-Ion battery for at least 8 hours operation
- Smart internal battery charging
- Power management (display illumination)

Communication

- Fully networkable
- PC connection via USB, Ethernet, RS232.

Technical data

PARAMETER		VIB 5.300 EX
Input Channels	Analog, 2x	Voltage (AC/DC, ± 30 V max.) Current (AC/DC, ± 30 mA max.) ICP-type accelerometer (2 mA, 24 V max.) Current Linedrive (CLD) accelerometer (10 V, 10 mA max.)
	Frequency range	DC ... 51.2 kHz (Acceleration from 0.5 Hz)
	Dynamic range	96 dB (measurement) / 136 dB (total)
	Sampling frequency	up to 131 kHz per channel
	Analog, 1x	Thermocouple (type K)
	Digital (1+1 Pulse/ Tacho), 1x	RPM, Trigger, Keyphaser with pulse and AC signals: 0 V ... +26 V or -26 V ... 0 V
	Max. input voltage	± 26 V
	Switching threshold for 0 V ... +26 V signal	max. 2.5 V rising, min. 0.6 V falling
	Switching threshold for -26 V ... 0 V signal	min. -8 V rising, max. -10 V falling
Pulse width	< 0.1 ms	
Output Channels	Stroboscope control	TTL output
	Frequency range	0 ... 500 Hz
	Resolution	0.05 Hz
	Signal-Out	Connection for headphones to listen to the analog input signal; signal processing (oscilloscope)
	Frequency range	0.5 Hz ... 40 kHz
Output impedance	100 Ohm	
Meas. range / Accuracy	Vibration acceleration	depends on the transducer connected
	Shock pulse	-10 ... 80 dBsv / ± 3 dBsv
	RPM	10 ... 200 000 min ⁻¹ / $\pm 0.1\%$ or ± 1 min ⁻¹ (the lower accuracy is applicable)
	Temperature type K	-50 ... +1000°C / 1% or ± 1 °C (the lower accuracy is applicable)
	Standards fulfilled	Frequency response according to ISO 2954
Display	Type	LCD, backlit
	Pixel area	115 x 78 mm
	Resolution	1/2 VGA (480 x 320 pixel)
	Color depth	16 grey scales
Power supply	Battery type	Li Ion rechargeable battery pack (7.2V / 4.8Ah - 34 Wh)
	Charging time	< 5 hours in the device or external with optional charging station
	Charger, input	110-240 V / 50-60 Hz
	Charging temperature	0°C ... +50°C
Computer	Processor	Intel Strong ARM 206 MHz
	Keyboard	2 joysticks and 12 keys for right-hand or left-hand operation. Keyboard illumination controlled by ambient light.
	Memory	Internal: 64 MB RAM; Compact Flash: 1 GB or 4 GB
	Serial interface	RS 232, <115 kBaud
	USB interface	USB host for printing; USB slave for data exchange with OMNITREND
	Ethernet interface	10 Mbit (10Base T)
	Printing	Direct printing of measurement reports via the USB port Compatible printer types: HP, Epson and other printers with USB connection
Environment / General	Connectors	Analog / Digital channels: MiniSnap socket Thermocouple (type K): QLA socket; all compatible to VIBSCANNER
	Housing	Aluminium
	Dimensions	250 x 220 x 37 mm (LxWxH)
	Weight	approx. 2.3 kg
	IP rating	IP65, dust and splash-proofed
	Temperature range	-10°C ... +50°C (Operation) -20°C ... +60°C (Storage)
	Intrinsic safety	Ⓔ II 2 G Ex ib IIC T4

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VIBXPRT EX firmware structure

1 The functionality of the modular VIBXPRT EX firmware can be expanded as required by a password. The standard firmware can be upgraded with the following firmware modules:

- 2**
- Recording (VIB 5.385-FM)
 - Balancing (VIB 5.386-FM)
 - ODS / Modal analysis (VIB 5.389-FM)

3 The VIBXPRT EX Diagnosis and Trending packages contain the standard firmware for the 1-channel or the 2-channel instrument respectively.

1-channel data collector

In addition to the standard version, VIBXPRT EX is available as a pure 1-channel data collector in the 'Basic' packages. The appropriate basic firmware (VIB 5.360-B) and additionally included firmware modules provide

- Route-base data collection
- Vibration analysis using spectra
- Vibration analysis using time waveforms

Features of the standard firmware

PARAMETER		VIB 5.380 / VIB 5.382
Operating modes	Multimode, Characteristic Overall Values	<ul style="list-style-type: none"> • Vibration (Acceleration, Velocity, Displacement) • Current, Voltage (AC / DC) • Shock pulse (bearing condition) • Temperature • Rotational speed
	Multimode, Signals	<ul style="list-style-type: none"> • Amplitude spectrum for accel., velocity, displacement, current, voltage • Envelope spectrum for acceleration, velocity, shock pulse, current, voltage • Time waveform for acceleration, velocity, displacement, current, voltage • Phase measurement (polar diagram) • Impact test w/o recording of the exciting force • Runup/ Coast down analysis as phase / overall value/ spectrum over RPM (display as Bode or Nyquist diagram (phase - RPM)) with 2-channel firmware only (VIB 5.382): <ul style="list-style-type: none"> • 2-channel measurements with trigger • Orbit (filtered / unfiltered) • Cepstrum • Cross channel phase measurement • Impact test for natural frequency analysis on a shutdown or running machine* • ODS - Operation deflecting shape analysis* * requires optional firmware module VIB 5.389-FM
	Machine templates	Machine-specific templates for repetitive measurement tasks used for acceptance tests or service measurements.
	Route	<ul style="list-style-type: none"> • Set of measurement tasks for machine condition monitoring and diagnosis • Route guidance via tree / list view or machine graphics • Optimizer levels, TrendingSpectrum, 'Near location' mode for rapid data collection
Analysis functions	Cursor	single, delta, harmonics, sub harmonics, sideband cursor
	Frequency markers	Fixed and RPM-variable characteristic frequencies for machines, roller bearings and gearboxes can be displayed in 'Multimode' and 'Route' mode
	Alarm bands	Narrow band monitoring of damage frequencies (route mode only)
	Max 10 values	List of the 10 highest amplitudes in the spectrum
	Results display	<ul style="list-style-type: none"> • Linear scaling, Logarithmic scaling (Y axis) • Trend, Cascade diagram (waterfall), Polar plot • Order scaling for amplitude / envelope spectrum
Measurement functions	Multi Meas. tasks	Combination of several measurements in one task.
	Averaging	<ul style="list-style-type: none"> • none (not for temperature), • linear (not for time waveform), • peak hold (not for time waveform and temperature), • exponential (not for time waveform & temperature), • time-synchronous (time waveform, spectrum, balancing)
	Trigger modes	Free running, external (time-synchronous), internal Amplitude, Edge, Pre and post triggered.
	FFT	F_{min} : between 0.5 Hz and 10 Hz programmable F_{max} : between 200 Hz and 51.2 kHz programmable Lines: 400, 800, 1600, 3200, 6400, 12800, 25600, 51200, 102400 Window: Rectangular, Hanning, Hamming, Blackman, Bartlett, Flattop, Kaiser

Features of the optional firmware modules

RECORDING		VIB 5.315-FM
Features	Short-term recording	<ul style="list-style-type: none"> • Characteristic overall values, phase, spectrum and time waveform • Pre- and post history
	Start / stop triggering	time, rpm, threshold, manual
	Recording duration	approx. 10 minutes for time waveform with 512 Hz sampling rate
	Time waveform recorder	Continuous long-term signal recording
	Recording duration	approx. 132 hours with 512 Hz sampling rate and 2 GB CF card

Use of the time waveform recorder requires registration of the 'Time waveform' module (VIB 5.387-FM*). Also, the 'Advanced file export' software module VIB 8.984 is required to export data.

BALANCING		VIB 5.386-FM
Features	Meas. quantities	Vibration velocity, acceleration, displacement
	Balancing modes	One-plane balancing with vibration minimization in the second plane Balancing in two planes under operating conditions
	Correction type	Fixed location, Fixed mass, Tape measure, Free correction
	Operation	Graphical user interface with machine icons and on-screen instructions
	Additional measurement tasks	Diagnosis measurements for detecting an imbalance (characteristic overall value, spectrum, time waveform, phase)
	Add. averaging type	Unlimited averaging if the imbalance pointer is unstable

Additional measurement equipment required for balancing is available in a separate package:

- VIB 5.387-HW: 1-channel instrument
- VIB 5.386-HW: 2-channel instrument

ODS /MODALANALYSIS		VIB 5.389-FM
Features	Bump test with modal hammer	Analysis of operation-critical mode shapes, Visualization of the dynamic behavior of a structure
	Results display	Transmission function, Coherence function
	Add. averaging type	Negative averaging for measurements on a running machine
	ODS	Structure analysis on running machine

Use of this module requires registration of the following firmware modules:

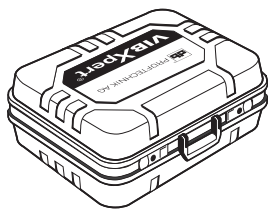
- VIB 5.381: 2-channel measurements, and
- VIB 5.391-FM*: Special analyses

Also, the 'Advanced file export' software module VIB 8.984 is required to export data.

* is included in the standard firmware VIB 5.380

VIB 5.360-1EEX: VIBXPert EX Basic package for 1-channel instrument

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VIB 5.329 X



VIB 8.970

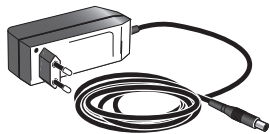


LIT 01.800

VIB 5.354-LD



VIB 5.300 EX



VIB 5.322



VIB 6.142 DEX



VIB 3.420



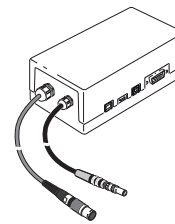
VIB 9.805
VIB 9.806
LIT 53.101



VIB 5.338



VIB 5.436



VIB 5.330-UNV



VIB 5.382-FFT
VIB 5.383-RTE
VIB 5.387-TW

Description

The Basic packages include the basic equipment for data collection and machine diagnostics with VIBXPert EX. The instrument is available only as 1-channel version featuring the Basic firmware plus the following modules:

- FFT analysis (VIB 5.382-FFT)
- Route-based data collection (VIB 5.383-RTE)
- Time waveform analysis (VIB 5.387-TW)

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPert EX. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

- VIB 5.300 EX VIBXPert EX instrument
- VIB 5.322 VIBXPert EX charger
- VIB 5.329-X VIBXPert EX case
- VIB 5.330-UNV Universal communication adapter
- VIB 5.338 USB cable for VIBXPert EX, 2x
- VIB 5.354-LD VIBXPert EX leather carrying strap
- VIB 5.382-FFT FFT analysis, firmware certificate
- VIB 5.383-RTE Route data collector, firmware certificate

- VIB 5.387-TW Time waveform, Firmware certificate
- VIB 5.436 Spiral cable for Current line-drive transducers
- VIB 6.142 DEX Accelerometer for standard machines, intrinsically safe
- VIB 3.420 Magnetic holder for curved mounting surfaces
- VIB 9.805.G VIBXPert manual
- LIT 53.101.EN VIBXPert EX short instructions
- VIB 9.806.G VIBXPert balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.970 CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

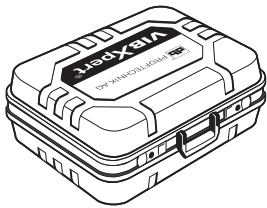
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- 0 0594 0219 EC-type Examination Certificate - ATEX - VIBXPert EX
- 0 0594 0221 Technical data sheet, UNV communication adapter

Applies to the U.S. market:

Package contains VIBXPert EX charger VIB 5.322.

VIB 5.364-1EEX: VIBXPERT EX Basic Trending package for 1-channel instrument



VIB 5.329 X



VIB 8.981

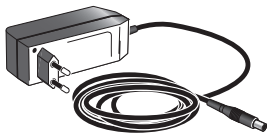


LIT 01.800

VIB 5.354-LD



VIB 5.300 EX



VIB 5.322



VIB 6.142 DEX



VIB 3.420



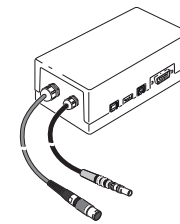
VIB 9.631
VIB 9.805
VIB 9.806
LIT 53.101



VIB 5.338



VIB 5.436



VIB 5.330-UNV



VIB 5.382-FFT
VIB 5.383-RTE
VIB 5.387-TW
VIB 8.981-P

Description

The Basic packages include the basic equipment for data collection and machine diagnostics with VIBXPERT EX. The instrument is available only as 1-channel version featuring the Basic firmware plus the following modules:

- FFT analysis (VIB 5.382-FFT)
- Route-based data collection (VIB 5.383-RTE)
- Time waveform analysis (VIB 5.387-TW)

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

VIB 5.300 EX VIBXPERT EX instrument
 VIB 5.322 VIBXPERT EX charger
 VIB 5.329-X VIBXPERT EX case
 VIB 5.330-UNV Universal communication adapter
 VIB 5.338 USB cable for VIBXPERT EX, 2x
 VIB 5.354-LD VIBXPERT EX leather carrying strap
 VIB 5.382-FFT FFT analysis, firmware certificate
 VIB 5.383-RTE Route data collector, firmware certificate
 VIB 5.387-TW Time waveform, Firmware certificate

VIB 5.436 Spiral cable for Current line-drive transducers
 VIB 6.142 DEX Accelerometer for standard machines, intrinsically safe
 VIB 3.420 Magnetic holder for curved mounting surfaces
 VIB 9.805.G VIBXPERT manual
 LIT 53.101.EN VIBXPERT EX short instructions
 VIB 9.806.G VIBXPERT balancing manual
 LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
 VIB 8.981 CD ROM, OMNITREND for VIBXPERT, PC software
 VIB 9.631.G OMNITREND getting started
 VIB 8.981-P PC licence for VIBXPERT EX

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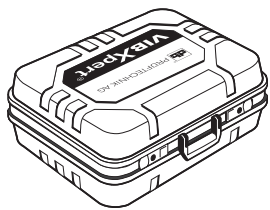
0 0594 0219 EC-type Examination Certificate - ATEX - VIBXPERT EX
 0 0594 0221 Technical data sheet, UNV communication adapter

Applies to the U.S. market:

Package contains VIBXPERT EX charger VIB 5.322.

VIB 5.360-1EX: VIBXPert EX Diagnosis package for 1-channel instrument

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VIB 5.329 X



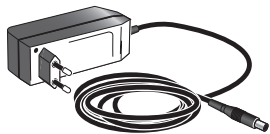
VIB 8.970



LIT 01.800



VIB 5.354-LD



VIB 5.322



VIB 6.142 DEX



VIB 3.420

VIB 5.300 EX



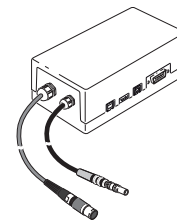
VIB 9.805
VIB 9.806
LIT 53.101



VIB 5.338



VIB 5.436



VIB 5.330-UNV



VIB 5.380-L

Description

The Diagnosis packages include the basic equipment for data collection and machine diagnostics with VIBXPert EX. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPert EX. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

- VIB 5.300 EX VIBXPert EX instrument
- VIB 5.322 VIBXPert EX charger
- VIB 5.329-X VIBXPert EX case
- VIB 5.330-UNV Universal communication adapter
- VIB 5.338 USB cable for VIBXPert EX, 2x
- VIB 5.354-LD VIBXPert EX leather carrying strap
- VIB 5.380-L 1-channel standard firmware certificate
- VIB 5.436 Spiral cable for Current line-drive transducers
- VIB 6.142 DEX Accelerometer for standard machines, intrinsically safe

- VIB 3.420 Magnetic holder for curved mounting surfaces
- VIB 9.805.G VIBXPert manual
- LIT 53.101.EN VIBXPert EX short instructions
- VIB 9.806.G VIBXPert balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.970 CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

- Not shown:
- 0 0594 0219 EC-type Examination Certificate - ATEX - VIBXPert EX
 - 0 0594 0221 Technical data sheet, UNV communication adapter

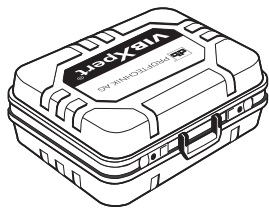
Upgrade

- VIB 5.381 Firmware upgrade to 2-channel version

Applies to the U.S. market:

Package contains VIBXPert EX charger VIB 5.323.

VIB 5.360-2EX: VIBXPert EX Diagnosis package for 2-channel instrument



VIB 5.329 X



VIB 8.970

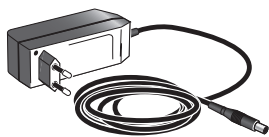


LIT 01.800

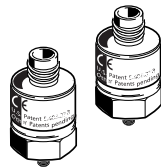
VIB 5.354-LD



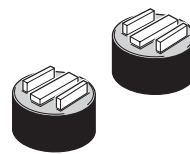
VIB 5.300 EX



VIB 5.322



VIB 6.142 DEX



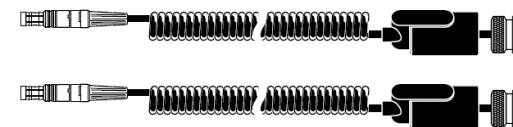
VIB 3.420



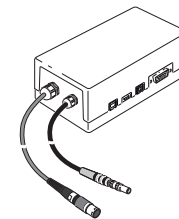
VIB 9.805
VIB 9.806
LIT 53.101



VIB 5.338



VIB 5.436



VIB 5.330-UNV



VIB 5.380-L
VIB 5.382-L

Description

The Diagnosis packages include the basic equipment for data collection and machine diagnostics with VIBXPert EX. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPert EX. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

- VIB 5.300 EX VIBXPert EX instrument
- VIB 5.322 VIBXPert EX charger
- VIB 5.329-X VIBXPert EX case
- VIB 5.330-UNV Universal communication adapter
- VIB 5.338 USB cable for VIBXPert EX, 2x
- VIB 5.354-LD VIBXPert EX leather carrying strap
- VIB 5.380-L 1-channel standard firmware certificate
- VIB 5.382-L 2-channel standard firmware certificate

- VIB 5.436 Spiral cable for Current line-drive transducers, 2x
- VIB 6.142 DEX Accelerometer for standard machines, intrinsically safe, 2x
- VIB 3.420 Magnetic holder for curved mounting surfaces, 2x
- VIB 9.805.G VIBXPert manual
- LIT 53.101.EN VIBXPert EX short instructions
- VIB 9.806.G VIBXPert balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.970 CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

Not shown:

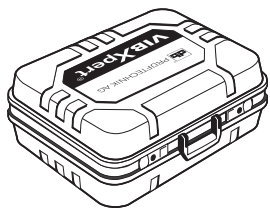
- 0 0594 0219 EC-type Examination Certificate - ATEX - VIBXPert EX
- 0 0594 0221 Technical data sheet, UNV communication adapter

Applies to the U.S. market:

Package contains VIBXPert EX charger VIB 5.323.

VIB 5.364-1EX: VIBXPert EX Trending package for 1-channel instrument

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- 2
- 3



VIB 5.329 X



VIB 8.981

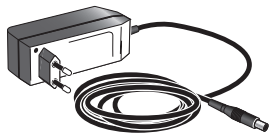


LIT 01.800

VIB 5.354-LD



VIB 5.300 EX



VIB 5.322



VIB 6.142 DEX



VIB 3.420



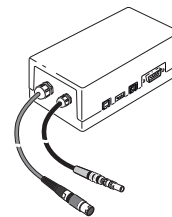
VIB 9.631
VIB 9.805
VIB 9.806
LIT 53.101



VIB 5.338



VIB 5.436



VIB 5.330-UNV



VIB 5.380-L
VIB 8.115
VIB 8.981-P

Description

The Trending packages include the basic equipment for data collection and machine diagnostics with VIBXPert EX. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPert II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

- VIB 5.300 EX VIBXPert EX instrument
- VIB 5.322 VIBXPert EX charger
- VIB 5.329-X VIBXPert EX case
- VIB 5.330-UNV Universal communication adapter
- VIB 5.338 USB cable for VIBXPert EX, 2x
- VIB 5.354-LD VIBXPert EX leather carrying strap
- VIB 5.380-L 1-channel standard firmware certificate
- VIB 5.436 Spiral cable for Current line-drive transducers
- VIB 6.142 DEX Accelerometer for standard machines, intrinsically safe

- VIB 3.420 Magnetic holder for curved mounting surfaces
- VIB 9.805.G VIBXPert manual
- LIT 53.101.EN VIBXPert EX short instructions
- VIB 9.806.G VIBXPert balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.981 CD ROM, OMNITREND for VIBXPert, PC software
- VIB 9.631.G OMNITREND getting started
- VIB 8.115 OMNITREND web, single user certificate
- VIB 8.981-P PC licence for VIBXPert EX

- Not shown:
- 0 0594 0219 EC-type Examination Certificate - ATEX - VIBXPert EX
 - 0 0594 0221 Technical data sheet, UNV communication adapter

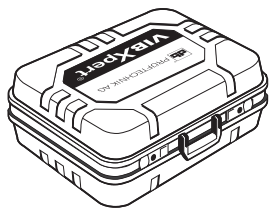
Upgrade

- VIB 5.381 Firmware upgrade to 2-channel version

Applies to the U.S. market:

Package contains VIBXPert EX charger VIB 5.323.

VIB 5.364-2EX: VIBXPert EX Trending package for 2-channel instrument



VIB 5.329 X



VIB 8.981

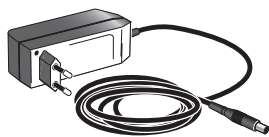


LIT 01.800

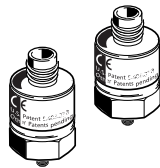


VIB 5.354-LD

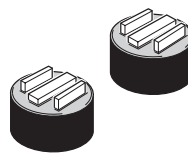
VIB 5.300 EX



VIB 5.322



VIB 6.142 DEX



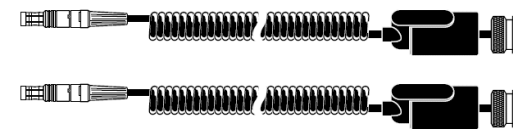
VIB 3.420



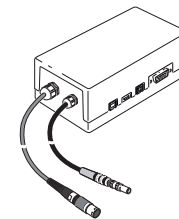
VIB 9.631
VIB 9.805
VIB 9.806
LIT 53.101



VIB 5.338



VIB 5.436



VIB 5.330-UNV



VIB 5.380-L
VIB 5.382-L
VIB 8.115
VIB 8.981-P

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The Trending packages include the basic equipment for data collection and machine diagnostics with VIBXPert EX. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

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Scope of supply

- VIB 5.300 EX VIBXPert EX instrument
- VIB 5.322 VIBXPert EX charger
- VIB 5.329-X VIBXPert EX case
- VIB 5.330-UNV Universal communication adapter
- VIB 5.338 USB cable for VIBXPert EX, 2x
- VIB 5.354-LD VIBXPert EX leather carrying strap
- VIB 5.380-L 1-channel standard firmware certificate
- VIB 5.382-L 2-channel standard firmware certificate
- VIB 5.436 Spiral cable for line-drive transducers, 2x
- VIB 6.142 DEX Accelerometer for standard machines, intrinsically safe, 2x

- VIB 3.420 Magnetic holder for curved mounting surfaces, 2x
- VIB 9.805.G VIBXPert manual
- LIT 53.101.EN VIBXPert EX short instructions
- VIB 9.806.G VIBXPert balancing manual
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.981 CD ROM, OMNITREND for VIBXPert, PC software
- VIB 9.631.G OMNITREND getting started
- VIB 8.115 OMNITREND web, single user certificate
- VIB 8.981-P PC licence for VIBXPert EX

- Not shown:
- 0 0594 0219 EC-type Examination Certificate - ATEX - VIBXPert EX
 - 0 0594 0221 Technical data sheet, UNV communication adapter

Applies to the U.S. market:

Package contains VIBXPert EX charger VIB 5.323.

VIB 5.387-XHW: VIBXPERT EX transducer set for balancing with 1-channel instrument

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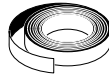
3



VIB 6.147 DEX



VIB 3.420



VIB 3.306



VIB 6.631 EX



VIB 6.632



MiniSnap

VIB 5.437-2,9

TNC



MiniSnap

VIB 5.432-2,9

BINDER

Description

This package extends the functionality of any VIBXPERT EX instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

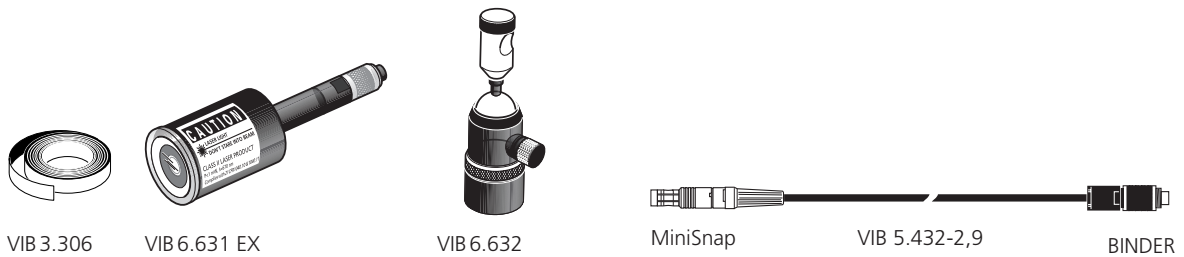
Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 5.437-2,9	Cable for Current line-drive transducer, 2.9 m
VIB 6.147 DEX	Accelerometer for low-speed machines, intrinsically safe
VIB 6.631 EX	Laser Trigger Sensor, intrinsically safe
VIB 6.632	Trigger stand

Note

The VIBXPERT balancing firmware module (VIB 5.386-FM) is not included in the transducer set.

VIB 5.386-XHW: VIBXPERT EX transducer set for balancing with 2-channel instrument



Description

This package extends the functionality of any VIBXPERT EX instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 6.631 EX	Laser Trigger Sensor, intrinsically safe
VIB 6.632	Trigger stand

Note

The VIBXPERT balancing firmware module (VIB 5.386-FM) is not included in the transducer set.

VIB 5.388-XHW: VIBXPERT EX transducer set for balancing with 2-channel instrument on low-speed machinery

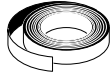
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VIB 6.147 DEX



VIB 3.306



VIB 6.631 EX



VIB 6.632



MiniSnap

VIB 5.432-2,9

BINDER

Description

This package extends the functionality of any VIBXPERT EX instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

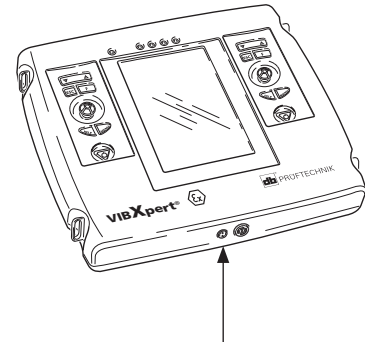
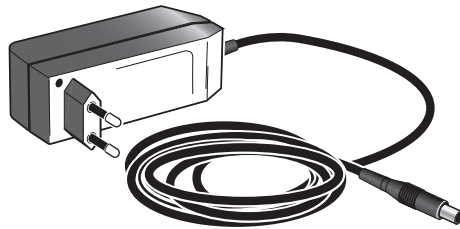
Note

The VIBXPERT balancing firmware module (VIB 5.386-FM) is not included in the transducer set.

Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 6.147 DEX	Accelerometer for low-speed machines, intrinsically safe, 2x
VIB 6.631 EX	Laser Trigger Sensor, intrinsically safe
VIB 6.632	Trigger stand

VIB 5.322: VIBXPert EX charger



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Description

The rechargeable battery in VIBXPert EX is permanently installed in the housing. To charge the battery, connect the charger to the charging socket. After charging, the charger switches automatically to trickle-mode in order to protect the battery.

VIBXPert EX can be operated during charging. However, measurements should not be performed.

Safety note

Do not charge the battery in hazardous areas!

Applies to the U.S. market:

The VIB 5.323 charger has a U.S. plug.

Technical data

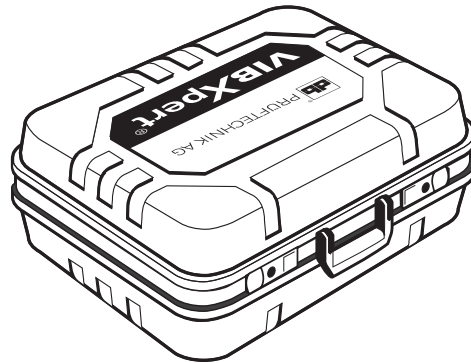
PARAMETER		VIB 5.322
Electrical	Primary voltage	110 - 240VAC; 50 - 60 Hz
	Secondary voltage	12 VDC / 2A
	Charging duration	< 5 hours, depends on battery charge condition
General	Environmental protection	IP 20
	Temperature range, operation	-5°C ... +40°C
	Temperature range, storage	-20°C ... +70°C
	Dimensions (WxHxL)	40 x 45 x 110 mm
	Cable length	approx. 1.5 m

VIB 5.329-X: VIBXPERT EX case

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Description

This black case of rugged ABS plastic with contoured foam insert protects all components of the VIBXPERT EX system during transport (contents not included).

It also offers plenty of space for accessories. The case is key lockable and drop-tested from 2 meters (6' 6").

ATTENTION!

The case is not allowed in hazardous areas!

Technical data

PARAMETER		VIB 5.329-X
General	Material	ABS plastic
	Dimensions (W x D x H)	470 x 400 x 195 mm
	Empty weight	3 kg

VIBXPERT EX Leather bag and accessories

VIB 5.355 : VIBXPERT EX leather bag

VIB 5.354-LD : VIBXPERT EX leather carrying strap

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Description

The leather bag (VIB 5.355) provides a convenient aid in carrying the VIBXPERT EX instrument around.

The continuously adjustable carrying strap (VIB 5.354-LD) can be adjusted to fit nearly any body size.

Communication adapter and USB cable for VIBXPERT EX

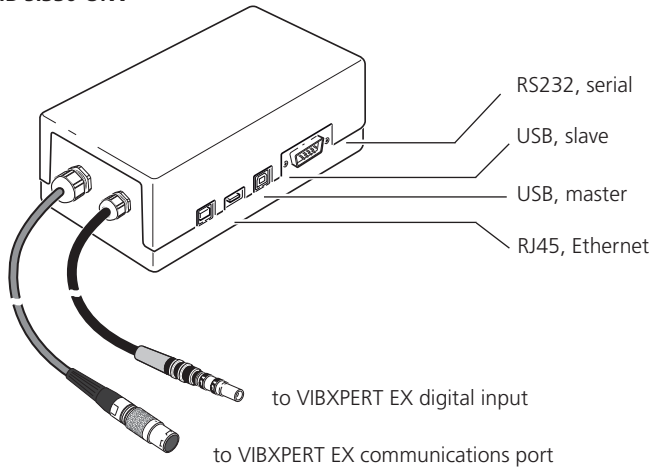
1

VIB 5.330-UNV : Universal communication adapter for VIBXPERT EX

VIB 5.338 : USB cable for VIBXPERT EX

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VIB 5.330-UNV



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VIB 5.338



Application

The VIB 5.330-UNV adapter is a communication and printer interface for VIBXPERT EX. The adapter protects the instrument against damage due to over voltages that may arise from connecting non-certified peripheral equipment.

Connection

The adapter is connected to VIBXPERT EX using the integrated cables. The connectors are color-coded to match the instrument sockets.

The adapter is connected to the PC via the serial or USB (slave) interface. An RJ45 socket is provided for the net-

work connection. To print out reports from VIBXPERT EX, the adapter must be connected to a suitable printer via USB (master) and to a running PC via USB (slave) in order to operate the printer.

Note

The adapter may not be used in hazardous environments! The adapter can also be operated with standard VIBXPERT (non-EX version).

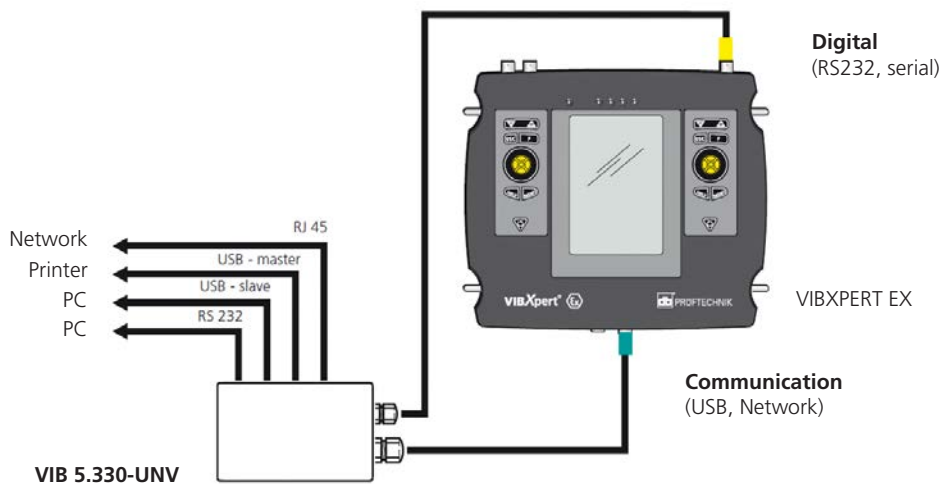
Technical data

PARAMETER		VIB 5.330-UNV
Interfaces	VIBXPERT side	Two integrated connecting cables for digital and communications port
	PC	RS 232 and USB (slave)
	Printer	USB (master)
	Network	RJ 45
General	Case material	Plastic - Polystyrol
	Dimensions, L x B x H	170 x 80 x 55 mm
	Weight	approx. 350 g

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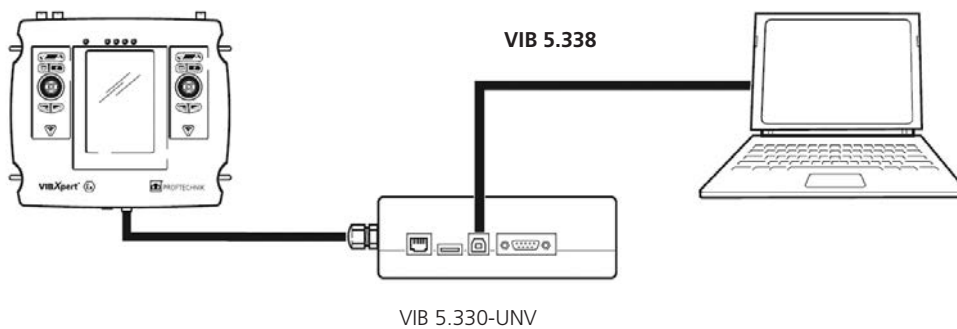
Application example

VIB 5.330-UNV connected to VIBXPert EX



Application example

PC connected to VIBXPert EX



VIB 5.332-X : Keyphaser adapter for machine protection systems (VIBXPERT EX)

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Application

This adapter converts a pulse signal (including the DC level) to a 5V rectangular signal. This makes it possible to connect keyphaser, such as from the Bently Nevada, with measuring devices from PRÜFTECHNIK:

- VIBXPERT EX
- VIBSCANNER EX

Connection

On the device side, the adapter is equipped with an 8-pin binder socket that is connected to trigger cable VIB 5.432-2,9. The signal input side provides a BNC socket.

Technical data

PARAMETER		VIB 5.332-X
Electrical	Operating voltage	5.4 V ± 10%
	Power consumption	0.5 mA
	Input signal, Pulse width	> 100 µs
	- , Pulse level	> 500 mV _{pp}
	- , DC fraction	+8 V to -30 V
	Output signal	5 V, rectangular signal
	Input resistance	200 kOhm
	Output resistance	1 kOhm
Mechanical	Housing material	Stainless steel, VA 1.4301
	Length, incl. connectors	130 mm
	Diameter	15 mm
	Weight	30 g
	Env. protection class	IP 65
	Temperature range	0°C ... +40°C
Interfaces	Input signal	Binder connector, 8 pin, 712 series
	- , Pin allocation	2 / 5V, 4 / rectangular signal, 7 / GND
	Output signal	BNC connector
	- , Pin allocation	internal contact / signal, external contact / GND

Safety notes

The cable adapter may not be used in hazardous areas!

The cable adapter protects the digital port of the VIBXPERT EX against surges. The adapter must be connected with VIBXPERT EX only outside the hazardous area to an electrical circuit, whose maximum voltage does not exceed 265 V_{rms} when a malfunction occurs.

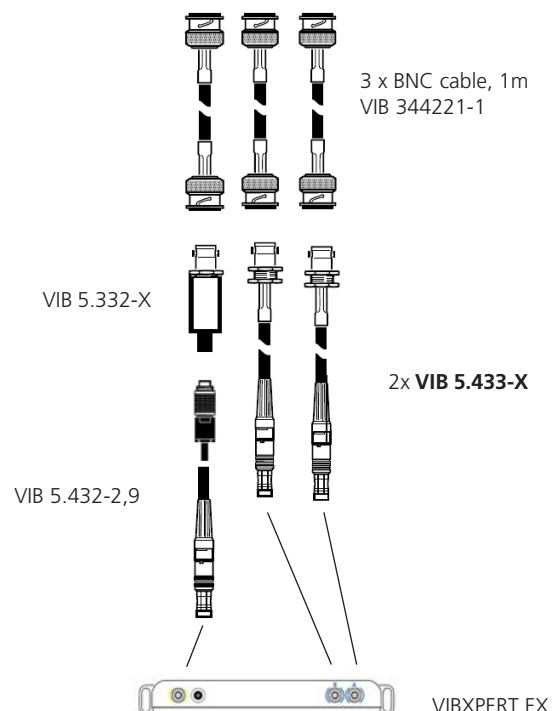
Ambient temperature: 0°C to + 40°C.

Application example

VIBXPERT EX connected to Bently Nevada 3300 series



Bently Nevada machine protection system, 3300 series



VIB 5.433-X : Cable adapter for the measurement of signal-low voltage with VIBXPERT EX



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Application

This cable adapter is used to measure signal-low voltage (AC/DC: 0-30V) provided by other measuring instruments.

An additional cable with at least one BNC plug is required to connect the adapter cable to the signal-measuring instrument.

Safety notes

The cable adapter may not be used in hazardous areas!

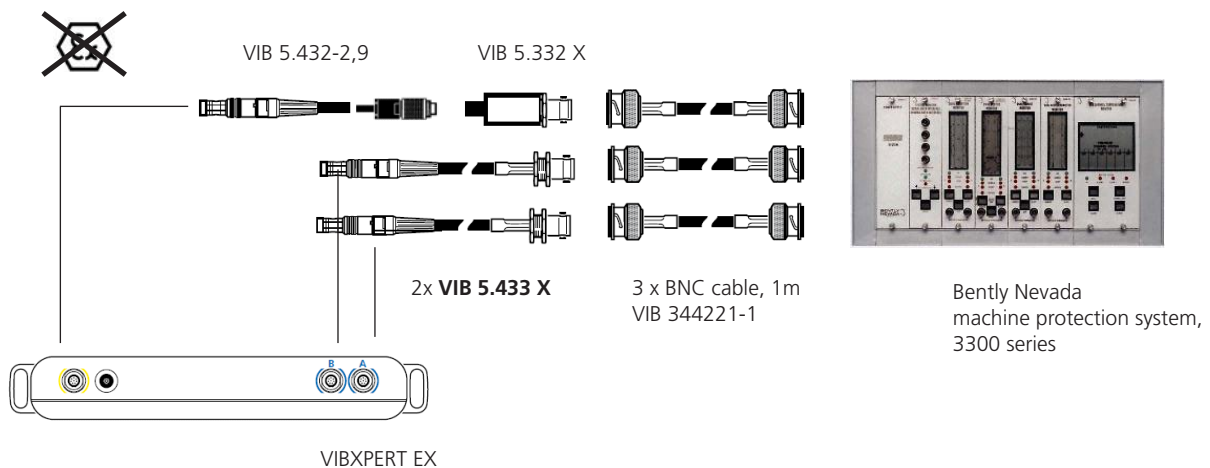
The cable adapter protects the analog port of the data collector (VIBXPERT EX) against surges. The adapter must be connected with the data collector only outside the hazardous area to an electrical circuit, whose maximum voltage does not exceed $265 V_{rms}$, when a malfunction occurs.

Technical data

PARAMETER		VIB 5.433-X
General	Cable length	0.7 ... 1.8 m
	Temperature range	0°C ... + 40°C
	Maximum measurement error	-2,0% / +2,7%
	Upper frequency for AC measurements	5 kHz

Application example

Measuring shaft vibration via machine protection system (e.g. Bently Nevada 3300) as voltage signal



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Application example

Pressure / Throughput as a voltage level (0-10V)

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VIB 5.433 X

*BNC

Pressure

Throughput

Etc.

*Cable with at least one BNC connector required.



VIBXPERT EX

Common cables for VIBXPRT EX and VIBXPRT II

VIB 5.339:	Cable extension for Current Linedrive accelerometer, 8 meters	see page 29
VIB 5.422:	Cable for ICP-type accelerometer (VIBXPRT EX only w/ VIB 6.172 XICP)	see page 30
VIB 5.431 :	Cable for analog signal output	see page 32
VIB 5.432-2,9 :	Connection cable for RPM sensors	see page 31
VIB 4.750-5 :	Cable extension for VIB 5.432-2,9	see page 31
VIB 5.443 :	Connection cable for TTL trigger sensors	see page 31
VIB 5.436 :	Spiral connection cable for current line-drive transducer	see page 27
VIB 5.437-2,9 :	Straight connection cable for current line-drive transducer, 2.9 meters	see page 27
VIB 5.437-5 :	Straight connection cable for current line-drive transducer, 5 meters	see page 27
VIB 5.444-5 :	Universal cable extension for analog measurement channel, 5 meters	see page 28

Note

The above cables can be operated with VIBXPRT EX and VIBXPRT II. Further information on the individual cables can be found on the pages indicated in Chapter 1.

OMNITREND for VIBXPERT

1

VIB 8.981 : OMNITREND for VIBXPERT, Software package

VIB 8.981-DR : VIBXPERT device driver for OMNITREND

VIB 5.312-P : PC licence for VIBXPERT II

2

VIB 8.982 : OMNITREND ‚View‘ for VIBXPERT, Software package

3



Description

The OMNITREND software package **VIB 8.981** contains the CD ROM and the following items:

- VIB 5.312-P PC licence
(Communication password for one VIBXPERT EX instrument)
- VIB 8.981-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

With the OMNITREND View software package **VIB 8.982** only multimode measurement can be imported in the database (no route data). The VIB 8.982 package contains the CD ROM and the following items:

- VIB 5.312-P PC licence
(Communication password for one VIBXPERT EX instrument)
- VIB 8.982-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 8.981-DR** is required to operate the OMNITREND software already available with the VIBXPERT II . VIB 8.981-DR contains:

- VIB 5.312-P PC licence
(Communication password for one VIBXPERT EX instrument)
- VIB 8.981-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

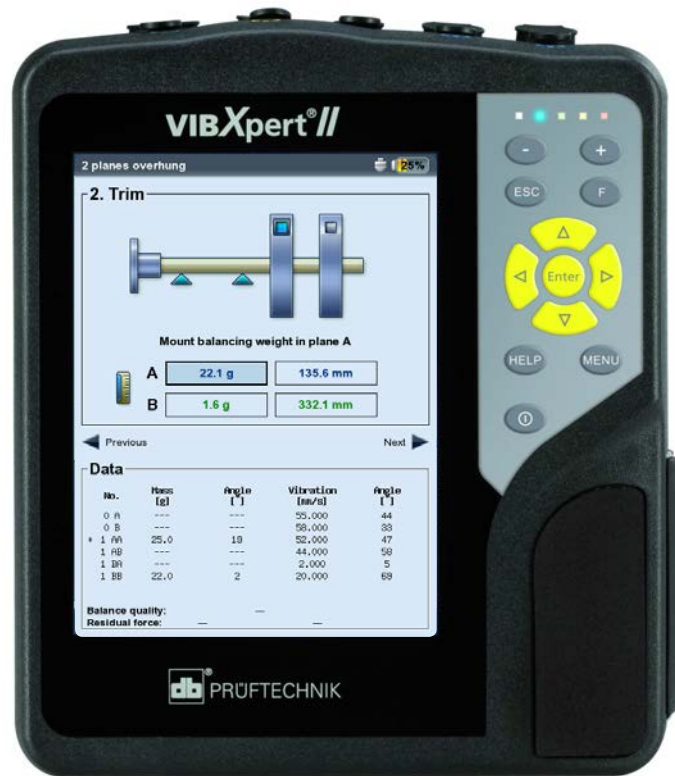
Each further VIBXPERT EX is registered with a separate **VIB 5.312-P** PC license.

Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

Chapter 3

VIBXPert II Balancer

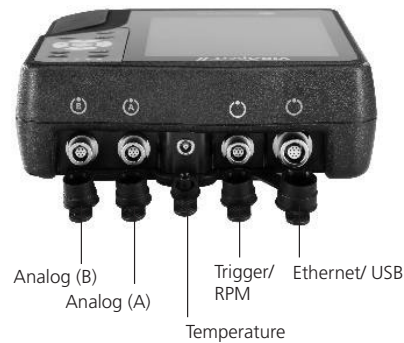


VIBXPERT II Balancer - Field balancing in one plane or two planes

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VIBXPERT II Balancer is a high performance, full-featured portable dual channel measurement device for field balancing of rotating machinery in one plane or two planes. In addition to the balancing procedure, the device provides extensive vibration analyses, resonance tests and phase measurements for fault diagnosis and acceptance of equipment. VIBXPERT II balancer can be upgraded by password to VIBXPERT II FFT data collector and signal analyzer (see Chapter 1).

Key features

- **Intuitive** to operate on its graphical user interface and effective use of color.
- **Fast** thanks to optimized measuring workflow and advanced processor technology.
- **Ergonomic** with a handy design and brilliant color display.
- **Powerful** due to many practical analysis functions and measuring templates.
- **Long-lived** with a long battery life and a large data memory.

Application

- One- or two-plane field balancing
- Vibration analysis
- Resonance analysis

Analysis functions

- Overall values and process parameters
- Time waveform
- Amplitude spectrum
- Envelope acceleration spectrum
- Phase incl. recording
- Bump test, 1-channel
- Coast-down/run-up test
- Signal post-processing for time waveform (overalls)
- ISO standards for evaluation

Valuable additional features

- Balancing reports can be stored on a USB memory stick and printed out
- Rugged hard case
- Extensive accessories
- Upgrade firmware modules available

Hardware

- Two true synchronous channels
- Replaceable compact flash card
- Dust and splash proof (IP65) - ideal for use in demanding environments
- Connector for type K thermocouples
- Signal output for strobe light

Ergonomics

- Large backlit VGA color display for easy reading, comprehensive data presentation and interpretation
- LED traffic light display: results evaluation according to ISO standards or user-defined alarm thresholds
- Daylight sensor controls keyboard illumination
- Easy-to-use navigation key pad
- Icon based user interface
- Color-coded cable connectors
- Online context-sensitive HELP.

Power supply

- Powered by the latest Lithium-Ion battery technology for at least 8 hours operation
- Smart internal battery charging
- Power management (display illumination)

Communication

- Fully networkable
- PC connection via USB, Ethernet, RS232.

VIBXPRT II Balancer firmware

The VIBXPRT II Balancer firmware (VIB 5.317 B) provides all measurement function required to diagnose and correct an imbalance on rotating machinery.

The ‚Balancer‘ firmware can be upgraded to ‚Advanced‘ firmware at any time by registering the required VIBXPRT II firmware module (see Chapter 1).

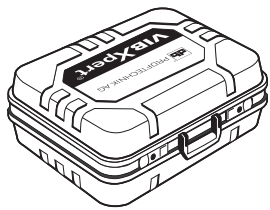


Balancer firmware feature

PARAMETER		VIB 5.317-B
Operating modes	Multimode, Analysis	<ul style="list-style-type: none"> • Overall value of acceleration, velocity, displacement • Amplitude spectrum w/ fixed parameters for accel., velocity, displacement • Run-up/ Coast-down analysis for acceptance checks and for the evaluation of resonances; phase over RPM (Bode or Nyquist diagram); overall value over RPM (RMS and either 0-p, p-p or crest factor) • Vibration pointer (phase - speed) with recording function for the evaluation and documentation of the time response, the speed dependency of vibrations and for the quick evaluation of the phase reference of measurement points.
	Multimode, Signals	<ul style="list-style-type: none"> • Time waveform for acceleration, velocity, displacement
	Multimode, Advanced	<ul style="list-style-type: none"> • Envelope spectrum of acceleration (f_{max}: 800 Hz / HP: 10kHz) for bearing analysis and analysis of shock-excited vibrations. • Phase measurement w/ recording • Temperature • Impact test w/o recording of the exciting force, 1 channel • Overall value for user-defined quantity (AC) • Amplitude spectrum w/ fixed parameters for user-defined quantity (AC) • Time waveform for user-defined quantity (AC)
	Balancing	<ul style="list-style-type: none"> • One-plane balancing; optional: vibration minimization in the second plane • Balancing in two planes under operating conditions • Correction type: Fixed location, Fixed mass, Tape measure, Free correction • Calculation of balancing grade and residual centrifugal force • Balancing speed: 30-199,000 1/min • Balancing report with selectable options
Analysis funct.	Cursor	<ul style="list-style-type: none"> • Single, delta, harmonics, sub harmonics, sideband cursor
	Max 10 values	<ul style="list-style-type: none"> • List of the 10 highest amplitudes in the spectrum
	Result display	<ul style="list-style-type: none"> • Linear scaling, Logarithmic scaling (Y axis) • Trend, Cascade diagram (waterfall), Polar plot • Order scaling for amplitude / envelope spectrum
Measurement functions	Averaging	<ul style="list-style-type: none"> • none (not for temperature), • linear (not for time waveform), • peak hold (not for time waveform & temperature), • exponential (not for time waveform & temperature), • time-synchronous (time waveform, balancing) • Unlimited averaging if the imbalance pointer is unstable (balancing)
	Trigger modes	<ul style="list-style-type: none"> • Free running, external (time-synchronous), internal • Amplitude, Edge, Pre and post triggered.
	FFT	<ul style="list-style-type: none"> • F_{min}: 1 / 2 / 10 Hz, selectable acc. to meas. quantity • F_{max}: 0,2 / 0,4 / 0,8 / 1,6 / 12,8 kHz, selectable acc. to meas. quantity • Lines: 800 / 1600 / 3200 / 6400, selectable acc. to meas. quantity • Window: Hanning

VIB 5.310 B: VIBXPERT II Balancer package

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VIB 5.328



VIB 8.970

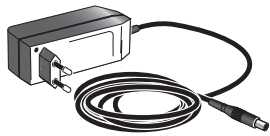


LIT 01.800

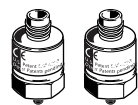


VIB 5.310

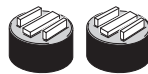
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VIB 5.320-INT



VIB 6.147



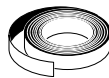
VIB 3.420



VIB 6.631



VIB 6.632



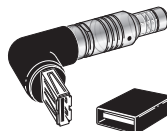
VIB 3.306



LIT 53.203
LIT 53.103



VIB 5.317-B



VIB 5.330 MEM
VIB 5.330-USB



VIB 5.330 SUSB



VIB 5.436



VIB 5.437-2,9



VIB 5.339



VIB 5.432-2,9



VIB 4.750 - 5

Description

The Balancer package includes the equipment for single / dual plane balancing and machine diagnostics with VIBXPERT II. The instrument features the 'Balancer' firmware.

Scope of supply

- VIB 5.310 VIBXPERT II instrument, incl. rechargeable battery
- VIB 5.317-B Balancer firmware certificate
- VIB 5.320-INT VIBXPERT II charger
- VIB 5.328 VIBXPERT II case
- VIB 5.330MEM Adapter for USB pen drive
- VIB 5.330-USB USB pen drive
- VIB 5.330SUSB USB cable, PC communication
- VIB 5.356 VIBXPERT II carrying bag

- VIB 3.306 Reflective tape
- VIB 3.420 Magnetic holder for curved mounting surfaces, 2x
- VIB 4.750-5 Cable extension for trigger cable, 5 m
- VIB 5.339 Cable extension for CLD-type accelerometers, 8 m

- VIB 5.432-2,9 Trigger cable
- VIB 5.436 Spiral cable, CLD-type accelerometers
- VIB 5.437-2,9 Straight cable, CLD-type accelerometers
- VIB 6.147 CLD-type accelerometer for low-speed machinery, 2x
- VIB 6.631 Laser trigger / Laser RPM sensor
- VIB 6.632 Trigger stand
- LIT 53.203.EN VIBXPERT II Balancer manual
- LIT 53.103.EN VIBXPERT II Balancer short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 8.970 CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

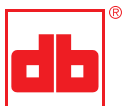
Upgrade to 'Advanced 2-channel' with **VIB 5.310-UGB:**

- VIB 5.311 Firmware certificate, 1-channel
- VIB 5.311-CH2 Firmware certificate, 2-channel
- VIB 5.316-BAL Firmware certificate, Balancing
- LIT 53.201.EN VIBXPERT II operating instructions
- LIT 53.202.EN VIBXPERT II balancing instructions

Index by order number

Order no.	Page	Order no.	Page
LIT 01.800	10	VIB 5.345-6	30
LIT 53.101.EN	54	VIB 5.346	42
LIT 53.102.EN	10	VIB 5.346-MUX	42
LIT 53.103.DE	76	VIB 5.354-CL	25
LIT 53.103.EN	76	VIB 5.354-GT	25
LIT 53.201.EN	10	VIB 5.354-HS	25
LIT 53.202.EN	10	VIB 5.354-LD	65
LIT 53.203.EN	76	VIB 5.355	65
VIB 3.420	10	VIB 5.356	25
VIB 4.750-5	31	VIB 5.360-1EEX	54
VIB 5.300 EX	50	VIB 5.360-1EX	56
VIB 5.310	6	VIB 5.360-2EX	57
VIB 5.310-1	12	VIB 5.364-1EEX	55
VIB 5.310-1E	10	VIB 5.364-1EX	58
VIB 5.310-2	14	VIB 5.364-2EX	59
VIB 5.310 B	76	VIB 5.382	52
VIB 5.310-UGB	76	VIB 5.383-RTE	54, 55
VIB 5.311	8, 12, 13, 15	VIB 5.386-FM	53
VIB 5.311-1UG	16	VIB 5.386-HW	19
VIB 5.311-2UG	16	VIB 5.386-XHW	61
VIB 5.311-CH2	8, 14	VIB 5.387-HW	18
VIB 5.311-UOM	16	VIB 5.387-TW	54, 55
VIB 5.312-P	46, 72	VIB 5.387-XHW	60
VIB 5.314-1	13	VIB 5.388-HW	20
VIB 5.314-1E	11	VIB 5.388-XHW	62
VIB 5.314-2	15	VIB 5.422	30
VIB 5.315-FM	53	VIB 5.430-2	45
VIB 5.315-REC	9	VIB 5.431	32
VIB 5.316-BAL	9	VIB 5.432-2	31
VIB 5.317-B	75	VIB 5.433	33
VIB 5.318-E	10, 11, 76	VIB 5.433-X	69
VIB 5.319-ODS	9, 53	VIB 5.434	33
VIB 5.320-INT	21	VIB 5.436	27
VIB 5.322	63	VIB 5.437-2,9	27
VIB 5.323	63	VIB 5.437-5	27
VIB 5.324-SET	23	VIB 5.438-0,5	30
VIB 5.325	22	VIB 5.443	31
VIB 5.328	24	VIB 5.444-5	28
VIB 5.329-X	64	VIB 5.449	35
VIB 5.330 MEM	43, 76	VIB 6.142 R	10
VIB 5.330 MUSB	42, 43	VIB 6.142 RSET	17
VIB 5.330 SUSB	42, 43	VIB 6.655	41
VIB 5.330-UNV	66	VIB 6.670	26
VIB 5.330-USB	43, 76	VIB 8.115	13
VIB 5.332	34	VIB 8.746-VS	38
VIB 5.332-X	68	VIB 8.970	10, 56
VIB 5.333	39	VIB 8.981	46, 72
VIB 5.336	40	VIB 8.981-DR	46, 72
VIB 5.338	66	VIB 8.982	46, 72
VIB 5.339	29	VIB 8.986	47
VIB 5.341	36	VIB 9.631.G	11
VIB 5.342	36	VIB 9.805.G	54
VIB 5.343	36	VIB 9.806.G	54
VIB 5.344	36		

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Productive maintenance technology

VIBSCANNER®

Machine diagnostics
Data collection
Field balancing

Catalog



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Contents

VIBSCANNER - Signal analyzer and FFT data collector	4
VIBSCANNER firmware structure	6
VIBSCANNER firmware features	7

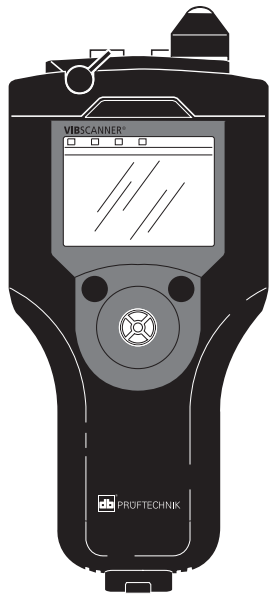
Order no.	Product description	Page
VIB 5.460 :	VIBSCANNER Maintenance package.....	8
VIB 5.460 EX :	Maintenance package with intrinsic safety	9
VIB 5.464 :	VIBSCANNER Trending package	10
VIB 5.464 EX :	VIBSCANNER Trending package with intrinsic safety.....	11
VIB 5.466 :	VIBSCANNER VIBCODE package	12
VIB 5.466 EX :	VIBSCANNER VIBCODE package with intrinsic safety.....	13
VIB 5.465 :	Additional VIBCODE package for VIBSCANNER	14
VIB 5.465 EX :	Additional VIBCODE package for VIBSCANNER with intrinsic safety	15
VIB 5.460-B1P :	VIBSCANNER balancing package with one measuring channel	16
VIB 5.460-B2P :	VIBSCANNER balancing package with two measuring channels.....	17
VIB 5.486-HW :	VIBSCANNER transducer set for 1-plane balancing	18
VIB 5.486-XHW :	VIBSCANNER transducer set for 1-plane balancing with intrinsic safety	19
VIB 5.487-HW :	VIBSCANNER transducer set for 2-plane balancing	20
VIB 6.142 RSET :	Transducer set for vibration measurements.....	21
VIB 5.420-INT :	VIBSCANNER battery charger	22
VIB 5.425 :	Rechargeable battery for VIBSCANNER.....	23
VIB 5.425 EX :	Rechargeable battery for VIBSCANNER EX.....	23
VIB 5.428 :	Standard case for VIBSCANNER.....	24
VIB 5.429 :	Accessory case for VIBSCANNER	24
VIB 5.454 :	VIBSCANNER pouch.....	25
VIB 6.670 :	Headphones	26
VIB 5.445 :	Manual channel switch for 2-plane balancing with VIBSCANNER	27
VIB 5.446 :	Automatic channel switch for 2-plane balancing with VIBSCANNER	27
VIB 5.447 :	PC adapter for the VIBSCANNER training tool	28
VIB 8.955 :	OMNITREND for VIBSCANNER, Software package	29
VIB 8.956 :	OMNITREND ‚View‘ for VIBSCANNER, Software package	29
VIB 5.481 :	VIBSCANNER device driver for OMNITREND	29
VIB 5.480-P :	PC licence for VIBSCANNER	29
VIB 8.962 :	OMNITREND Signal Analysis module	30
VIB 5.430-2 :	Serial PC cable	31
VIB 5.448 :	Adapter cable, serial to USB	31
VIB 5.431 :	Cable for analog signal output	32
VIB 5.432-2,9 :	Connection cable for RPM sensors	33
VIB 4.750-5 :	Cable extension for VIB 5.432-2,9.....	33
VIB 5.443 :	Connection cable for TTL trigger sensors.....	33
VIB 5.433 :	Cable adapter for the measurement of signal-low voltage with VIBSCANNER.....	34
VIB 5.434 :	Cable adapter for the measurement of signal-low current with VIBSCANNER	34
VIB 5.433-X :	Cable adapter for the measurement of signal-low voltage with VIBSCANNER EX.....	35
VIB 5.332-X :	Keyphaser adapter for machine protection systems (VIBSCANNER EX).....	36
VIB 5.436 :	Spiral connection cable for current line-drive accelerometer	37
VIB 5.437-2,9 :	Straight connection cable for current line-drive accelerometer, 2.9 meters	37
VIB 5.437-5 :	Straight connection cable for current line-drive accelerometer, 5 meters.....	37
VIB 5.438-0,5 :	Straight connection cable for ICP-type accelerometer, 0.5 meters, BNC-connector	38
VIB 5.422 :	Spiral connection cable for ICP-type accelerometer, MIL-connector.....	38
VIB 5.345-6 :	Cable extension for VIB 5.422, 6 meters, MIL-connector	38
VIB 5.439 :	Connection cable for Pt100 temperature probe	39
VIB 5.444-5 :	Universal extension for analog sensor cable, 5 meters	40
VIB 5.339 :	Cable extension for Current Linedrive accelerometer, 8 meters	41
VIB 5.449-CLD :	Cable adapter for accelerometer VIB 6.195	42
VIB 8.746-VS :	SPM cable adapter for VIBSCANNER	43










Index

Index by order number	44
-----------------------------	----

VIBSCANNER - Signal analyzer and FFT data collector

1
2



-  **Vibration velocity / acceleration / displacement**
acc. to ISO 10816-3
-  **Bearing condition**
-  **Temperature**
-  **Rotational speed**
-  **Pump cavitation**
-  **Process parameters**
-  **Windows PC software**
-  **Location recognition**
-  **Intrinsic safety (option)**

Smart data collection with the joystick

VIBSCANNER (VIB 5.400) is a vibration analyzer and data collector for machine condition monitoring. With its comprehensive measurement and analysis functions and convenient joystick navigation, this handy instrument is ideal for daily measurement and inspection rounds.

Together with the OMNITREND PC software, VIBSCANNER provides an important contribution in avoiding unplanned machine standstills and expensive loss of production within the framework of a foresighted maintenance program.

What can the VIBSCANNER do?

VIBSCANNER measures the most important variables of machine conditions:

- Vibration velocity / displacement / acceleration (according to ISO 10816-3 and also for low-speed machines from 2 Hz*)
- Shock pulse (bearing condition)
- Cavitation (e.g. in pumps)
- Temperature
- Rotational speed - RPM.

Further process variables can be entered manually via user-defined tasks or recorded as extra-low voltages/currents (DC/AC).

Balance, FFT & signal analysis (option)

If required, the VIBSCANNER can also be upgraded to an FFT or signal analyzer or balancing instrument. Simply enter the password - and the appropriate measuring functions are activated in the firmware, e.g. Time waveform and spectrum analysis, phase measurements.

Inspection data

VIBSCANNER processes the input of events (e.g. "oil loss") and process parameters (e.g. pressure).

One for all

Inputs and outputs for analog signals are provided on the top of the VIBSCANNER: An universal input for almost every type of transducer (current, voltage, CLD, ICP**,...) also processes extra-low voltage and DC signals. A headset or an analyzer can be connected to the analog output.

Thresholds according to the ISO norm

After measurement, 3 LEDs on the display indicate whether the results lie in the valid, justifiable or invalid range.

VIBCODE-compatible

The patented VIBCODE transducer is the standard transducer for all PRUFTECHNIK measurement devices. VIBCODE recognizes coded measurement locations reliably and ensures reproducible results with its stable coupling.

Machine scan

The collection of machine data is more than simplified with the new and patented user guidance: In the "Machine scanning" mode the measuring locations are graphically depicted in a machine image and sequentially scanned.

* only with suitable external sensors

** ICP-type transducers may not be operated with VIBSCANNER EX

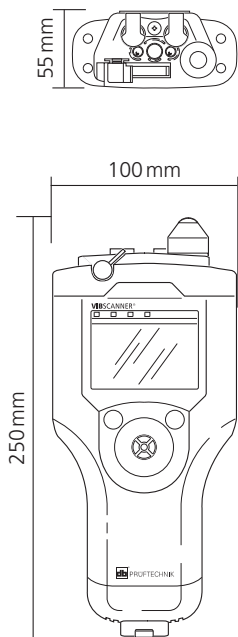
Abbreviations

- PCS: Process control system
- CMS: Condition Monitoring System
- ICP: Integrated Circuit Piezoelectric (sensor w/ voltage output)
- CLD: Current Line Drive (sensor w/ current output)

Technical data

PARAMETER		VIB 5.400	VIB 5.400 EX
Interfaces	Analog meas. channel	Vibration transducer (CLD, ICP) Temperature probe (Pt100, NiCrNi) Transducer & instrument output: AC (± 30 V; 0 - 20 mA) DC (± 30 V; 0 - 20 mA)	Vibration transducer (CLD) Temperature probe (NiCrNi)
	Digital meas. channel	Laser trigger (VIB 6.631); 5V TTL (optical or inductive sensor)	
	Output	RS 232 (PC connection); Headset; Analog signal ($4 V_{pp}$; $R_{out} = 200$ Ohm)	
Internal sensors	Vibration / Shock pulse	Tandem piezo accelerometer	
	Frequency range $\pm 10\%$	10 Hz ... 10 kHz (in cone sinking)	
	Resonance frequency	36 kHz (in cone sinking)	
	Noise, from 10 Hz	0.1 mm/s effective; 2 μ m effective (Instrument + Sensor); < 0 dB _{sv} , peak value	
	RPM	IR sensor with pointer for adjustment	
	Temperature	NiCrNi temperature probe	
Signal processing	Meas. quantities / Methods	r.m.s., 0-p, p-p, max/carpet, envelope, rectification	
	High pass filter	2 Hz / 10 Hz; 1 kHz / 5 kHz	
	Low pass filter	1 / 5 / 10 / 40 kHz	1 / 5 / 40 kHz (10 kHz as an option)
	Sampling frequency	up to 64 kHz (depends on the meas. range)	
	Integrator	Two stages switchable	
Meas. range / Accuracy	Vibration	The following applies to the internal sensor and external sensors (CLD: 1 μ A/ms ² ; ICP: 100mV/g) and to external measuring instruments (1mV/ms ²):	
	Acceleration	< 961 m/s ² (p-p) / 1% (internal sensor) < 6000 m/s ² (p-p) / 1% (external sensors)	
	Velocity	< 9000 mm/s (p-p) / 1%	
	Displacement	< 9000 μ m (p-p) / 1%	
	Shock pulse	< 81 dB _{sv} / ± 3 dB	
	RPM	60 ... 60000 min ⁻¹ / 0.1‰	
	Temperature Pt 100	-50 ... +600°C / 1°+ Sensor%	n/a
	NiCrNi (int.)	-50 ... +100°C / 0.5° + 3%	
	NiCrNi (ext.)	-50 ... +100°C / 0.5° + Sensor% +100 ... +1000°C / 1° + Sensor%	
	Extra-low voltage (AC/DC)	-9 ... +9 V / 2% ($R_i = 30$ kOhm, w/ cable VIB 5.440) -30 ... +30 V / 2% ($R_i = 100$ kOhm, w/ cable VIB 5.433)	n/a
	Extra-low current (AC/DC)	-20 ... +20 mA; 4...20 mA / 2% ($R_i = 100$ kOhm, w/ cable VIB 5.433)	n/a
	Fulfilled standards	Frequency response according to ISO 2954 – other parameters and measured variables according to DIN 45662 class 1	
	Display	Type	Graphic pixel display w/ background illumination
Dimensions		54 x 27 mm / 128 x 64 px	
Contrast & Illumination		adjustable	
Power supply	Type	NiMH battery pack (7.2 V / 1.5 Ah)	
	Charging duration	< 6 hours	< 10 hours
	Operating duration	> 10 hours of intermittent use > 6 hours of continuous use with illumination	
	Charge display	2 LEDs (green, red)	
	Charging temperature	$+10^\circ\text{C}$... $+40^\circ\text{C}$	
	Sleep mode	adjustable	
General parameters	Operating elements	1 joystick & 2 function keys	
	Status display	4 LEDs for instrument status and signal evaluation	
	Data storage	512 MB	4 MB
	Case material	ABS, reinforced with steel fibre	
	Relative humidity	10 ... 90%	
	Environmental protection	IP 65	
	Operation temperature	0°C ... $+60^\circ\text{C}$	0°C ... $+45^\circ\text{C}$
	Storage temperature	-20°C ... $+80^\circ\text{C}$	0°C ... $+45^\circ\text{C}$
	Weight	approx. 690 g	
Intrinsic safety	n/a	Ⓢ II 2 G Ex ib IIC T4 U.S. equivalent NEC 505: Class I, Zone 1, AEx em ib IIC, T4	

Dimensions



VIBSCANNER firmware structure

1

VIBSCANNER Standard

The functionality of the modular VIBSCANNER firmware can be expanded as required by a password. The basic firmware (VIB 5.480) can be upgraded with the following firmware modules:

2

- FFT analysis (VIB 5.485-FM)
- Balancing (VIB 5.486-FM)
- Signal analysis* (VIB 5.488-FM)

* For data evaluation in OMNITREND the OMNITREND module 'Signal analysis' (VIB 8.962) is also required.

VIBSCANNER Balancer

In addition to the basic version, VIBSCANNER is available as a pure balancing instrument in one of the two Balancing packages (VIB 5.460-B1P or VIB 5.460-B2P respectively). The appropriate firmware, 'Balance limited' (VIB 5.489) has a limited functionality. In addition to the balancing function, it features the measurement tasks required for diagnosing an imbalance, such as spectra or characteristic overall values. An upgrade to the basic version is possible with the upgrade package VIB 5.480-UG at any time.

'Balance limited' firmware features:

- Balancing in one or two planes
- Overall vibration velocity (2/10Hz - 1kHz)
- Overall vibration displacement (2/10Hz - 1kHz)
- Evaluation according to ISO 10816-3
- Temperature / RPM with internal sensor only
- Balancing with external trigger only
- Multimode import in OMNITREND
- Spectra (2/10Hz - 1kHz) with
 - F_{max} : 400 Hz and 1600 lines,
 - F_{max} : 200 Hz and 800 lines

Applies to all measurements:

- Measurement setups and transducers are permanently adjusted and cannot be edited.
- Balance reports can be printed out on a standard printer with a printer driver provided free of charge on the Condition Monitoring CD.



VIBSCANNER Balancer

Balance limited
VIB 5.489

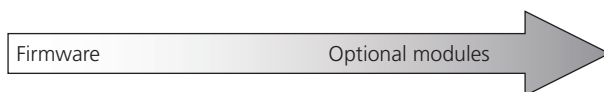
Basic

Balancing

Signal analysis

FFT analysis

,Basic' must be registered



VIBSCANNER Standard

Basic
VIB 5.480

Alignment

Balancing

Signal analysis

FFT analysis



VIBSCANNER firmware features

BASIC		VIB 5.480
Measurement	Meas. quantities	Velocity / displacement / acceleration as machine-specific measurement tasks Shock pulse (Bearing condition) Cavitation Temperature RPM
	Process parameters	Manual input of parameter values, Extra-low voltage / current (AC/DC: ±30 V; -20..+20 mA) as user-defined measurement tasks
	Averaging	Free-running, linear, exponential, peak hold, time synchronous (signal analysis module)
	Averaging number & time	Adjustable
	Meas. time	Adjustable
	Amplitude range	autorange
Setup & Evaluation	Meas. setups	Predefined, knowledge-based meas. settings for machine, bearing and gear diagnosis Freely selectable meas. functions
	Data processing	Evaluation functions for characteristic overall values Bearing diagnosis with shock pulse measurement Machine condition evaluation according to ISO standards (vibration according to ISO 10816-3) Data collection function for characteristic overall values and for machine inspection
	Units	ISO and US units, selectable
	Comments	User-defined events with comments
Operation	User interface	Icons for measurement tasks; Graphic route guidance using machine graphics (machine scan) Integrated help function
	Languages	English, German, French, Italian, Spanish, Polish, Swedish

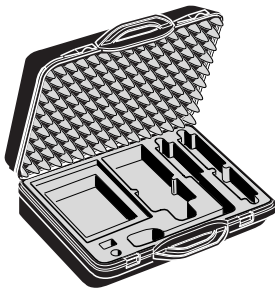
FFT ANALYSIS		VIB 5.485-FM
Spectrum	Meas. quantities	Velocity / displacement / acceleration as machine-specific measurement tasks
	Signal processing	Amplitude and Envelope spectra
	Frequency range	5 ranges: 0,1 / 0,2 / 0,4 / 1 / 5 / 10 kHz (10 kHz is an option for VIBSCANNER EX)
	Number of lines	400 to 6400 lines
	Line width	> 0,03 Hz
Evaluation	Display	Linear axis in the frequency range
	Zoom	X/ Y axis, continuously scalable
	Envelope	For bearing, gear and machine diagnosis
	Meas. setups	Optimized setups for various machine types

BALANCING		VIB 5.486-FM
Balancing	Meas. quantities	Velocity / displacement / acceleration
	Types of balancing	1-plane balancing Sequential 2-plane balancing
	Types of correction	Free, fixed location, fixed weight, tape measure
	Operation	Graphical operator guidance with machine images and instructive text

SIGNAL ANALYSIS		VIB 5.488-FM
Time waveform	f _{max}	200/ 500/ 1000/ 2000/ 5000 Hz
	Meas. time	[125 - 4000] ... [7.8 - 250] ms
	Additional averaging	time synchronous
	Meas. types	Time waveform, Phase, Orbit (sequential)
Recording	Start delay	adjustable
	Repetitions	adjustable (limited by memory capacity)
	Pause	adjustable
	Meas. types	can be activated for overall values and spectra

VIB 5.460 : VIBSCANNER Maintenance package

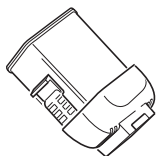
1
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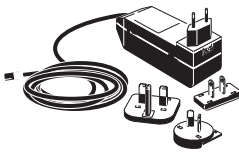
VIB 5.428



VIB 8.970



VIB 5.425



VIB 5.420-INT



VIB 5.430-2



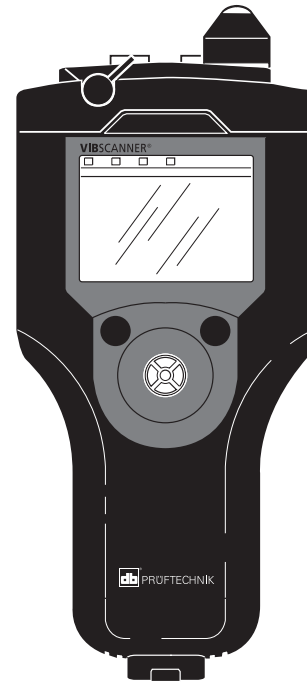
VIB 5.448



VIB 9.638
VIB 9.664
VIB 9.669



LIT 01.800



VIB 5.400



Description

The 'Maintenance' package contains the basic components for data collection and machine diagnosis with VIBSCANNER.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBSCANNER. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and service magazines in PDF format.

Scope of supply

- VIB 5.400 VIBSCANNER instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 Rechargeable battery
- VIB 5.428 Case
- VIB 5.430-2 PC cable, serial
- VIB 5.448 Adapter cable, serial to USB
- VIB 8.970 Condition Monitoring CD-ROM

- VIB 9.638.G VIBSCANNER operating instructions
- VIB 9.664.G VIBSCANNER operating instructions 'Balancing, FFT & signal analysis'
- VIB 9.669.G VIBSCANNER short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines

- Not shown
- VIB 5.480 VIBSCANNER basic firmware
- VIB 5.480-L Basic firmware license
- VIB 5.485-FM VIBSCANNER firmware FFT

Applies to the U.S. market:

- The VIB 5.460 LUD package includes U.S. versions of:
- VIB 5.420-INT Battery charger
- VIB 8.970 US Condition Monitoring CD-ROM, U.S.

VIB 5.460 EX : Maintenance package with intrinsic safety

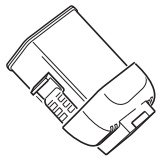
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2



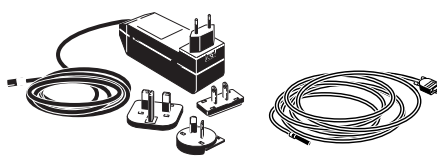
VIB 5.428



VIB 8.970



VIB 5.425 EX



VIB 5.420-INT

VIB 5.430-2



VIB 5.448



VIB 9.638
VIB 9.664
VIB 9.669



LIT 01.800



VIB 5.400 EX



Description

The 'Maintenance' package contains the basic components for data collection and machine diagnosis with VIBSCANNER EX.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBSCANNER EX. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and service magazines in PDF format.

Scope of supply

- VIB 5.400 EX VIBSCANNER EX instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 EX Rechargeable battery, EX version
- VIB 5.428 Case
- VIB 5.430-2 PC cable, serial
- VIB 5.448 Adapter cable, serial to USB
- VIB 8.970 Condition Monitoring CD-ROM
- VIB 9.638.G VIBSCANNER operating instructions
- VIB 9.664.G VIBSCANNER operating instructions 'Balancing, FFT & signal analysis'

- VIB 9.669.G VIBSCANNER short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines

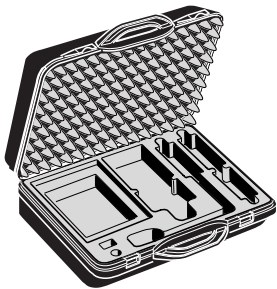
- Not shown
- VIB 5.480 VIBSCANNER basic firmware
- VIB 5.480-L Basic firmware license
- VIB 5.485-FM VIBSCANNER firmware FFT

Applies to the U.S. market:

- The VIB 5.460 XLUD package includes U.S. versions of:
- VIB 5.420-INT Battery charger
- VIB 8.970 US Condition Monitoring CD-ROM, U.S.

VIB 5.464 : VIBSCANNER Trending package

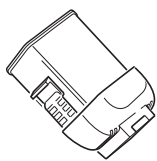
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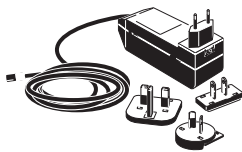
VIB 5.428



VIB 8.955



VIB 5.425



VIB 5.420-INT



VIB 5.430-2



VIB 5.448



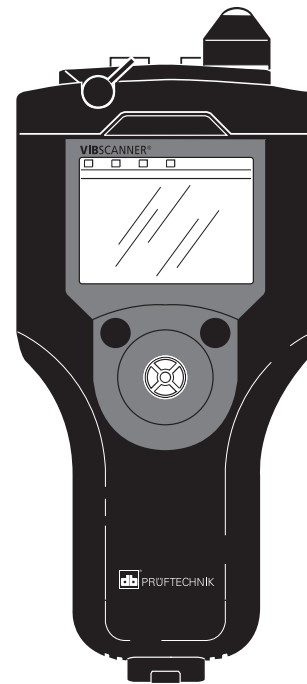
VIB 9.638
VIB 9.664
VIB 9.669



VIB 9.631



LIT 01.800



VIB 5.400



Description

The 'Trending' package contains the full version of the OMNITREND PC software. This enables measurement data to be transferred to a PC and archived there for evaluation.

Note

A basic licence for PC communication (VIB 5.480-P) is contained in OMNITREND. Each additional VIBSCANNER instrument requires another licence.

Scope of supply

- VIB 5.400 VIBSCANNER instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 Rechargeable battery
- VIB 5.428 Case
- VIB 5.430-2 PC cable, serial
- VIB 5.448 Adapter cable, serial to USB
- VIB 8.955 OMNITREND for VIBSCANNER

- VIB 9.631 G OMNITREND, Getting started
- VIB 9.638 G VIBSCANNER instructions
- VIB 9.664.G VIBSCANNER operating instructions 'Balancing, FFT & signal analysis'
- VIB 9.669 G VIBSCANNER short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- Not shown
- VIB 5.480 VIBSCANNER basic firmware
- VIB 5.480-L Basic firmware license
- VIB 5.480-P PC license
- VIB 5.485-FM VIBSCANNER firmware FFT

Applies to the U.S. market:

- The VIB 5.464 LUD package includes U.S. versions of:
- VIB 5.420-INT Battery charger
- VIB 8.955 US OMNITREND for VIBSCANNER, U.S.

VIB 5.464 EX : VIBSCANNER Trending package with intrinsic safety

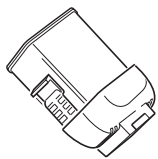
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2



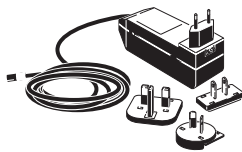
VIB 5.428



VIB 8.955



VIB 5.425 EX



VIB 5.420-INT



VIB 5.430-2



VIB 5.448



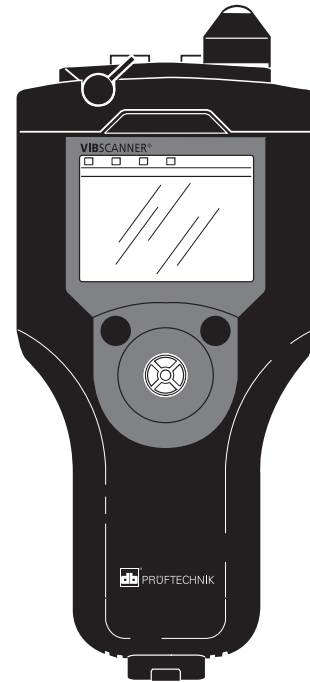
VIB 9.638
VIB 9.664
VIB 9.669



VIB 9.631



LIT 01.800



VIB 5.400 EX



Description

The 'Trending' package contains the full version of the OMNITREND PC software. This enables measurement data to be transferred to a PC and archived there for evaluation.

Note

A basic licence for PC communication (VIB 5.480-P) is contained in OMNITREND. Each additional VIBSCANNER instrument requires another licence.

Scope of supply

- VIB 5.400 EX VIBSCANNER EX instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 EX Rechargeable battery, EX version
- VIB 5.428 Case
- VIB 5.430-2 PC cable, serial
- VIB 5.448 Adapter cable, serial to USB
- VIB 8.955 OMNITREND for VIBSCANNER

- VIB 9.631 G OMNITREND, Getting started
- VIB 9.638.G VIBSCANNER instructions
- VIB 9.664.G VIBSCANNER operating instructions 'Balancing, FFT & signal analysis'
- VIB 9.669.G VIBSCANNER short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines

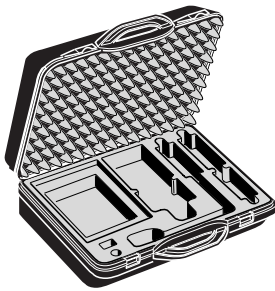
- Not shown
- VIB 5.480 VIBSCANNER basic firmware
- VIB 5.480-L Basic firmware license
- VIB 5.480-P PC license
- VIB 5.485-FM VIBSCANNER firmware FFT

Applies to the U.S. market:

- The VIB 5.464 XLUD package includes U.S. versions of:
- VIB 5.420-INT Battery charger
- VIB 8.955 US OMNITREND for VIBSCANNER, U.S.

VIB 5.466 : VIBSCANNER VIBCODE package

1
2



VIB 5.428



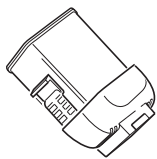
VIB 8.660 VS



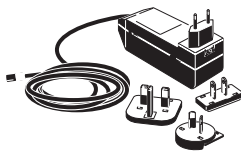
VIB 8.955



VIB 5.400



VIB 5.425



VIB 5.420-INT



VIB 5.430-2



VIB 5.448



VIB 9.638
VIB 9.664
VIB 9.669
VIB 9.834



VIB 9.631



LIT 01.800

Description

The VIBCODE package allows quick and reliable data collection with the VIBCODE transducer system and a comprehensive evaluation and archiving with the OMNITREND PC software. The VIBCODE transducer recognizes measurement locations uniquely from their coding. Its bayonet socket ensures a reproducible coupling for the reliable and accurate replication of measurement results.

Note

A basic licence for PC communication (VIB 5.480-P) is contained in OMNITREND. Each additional VIBSCANNER instrument requires another licence.

Scope of supply

- VIB 5.400 VIBSCANNER instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 Rechargeable battery
- VIB 5.428 Case
- VIB 5.430-2 PC cable, serial
- VIB 5.448 Adapter cable, serial to USB
- VIB 8.660 VS VIBCODE transducer incl. cable

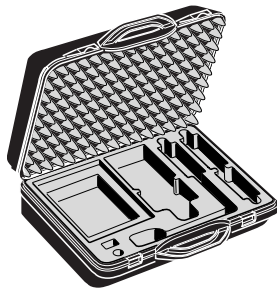
- VIB 8.955 OMNITREND for VIBSCANNER
- VIB 9.631.G OMNITREND, Getting started
- VIB 9.638.G VIBSCANNER operating instructions
- VIB 9.664.G VIBSCANNER operating instructions 'Balancing, FFT & signal analysis'
- VIB 9.669.G VIBSCANNER short instructions
- VIB 9.834.G VIBCODE operating instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines

- Not shown
- VIB 5.480 VIBSCANNER basic firmware
- VIB 5.480-L Basic firmware license
- VIB 5.480-P PC license
- VIB 5.485-FM VIBSCANNER firmware FFT

Applies to the U.S. market:

- The VIB 5.466 LUD package includes U.S. versions of:
- VIB 5.420-INT Battery charger
- VIB 8.955 US OMNITREND for VIBSCANNER, U.S.

VIB 5.466 EX : VIBSCANNER VIBCODE package with intrinsic safety



VIB 5.428



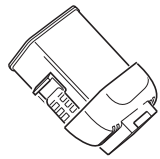
VIB 8.660 XVS



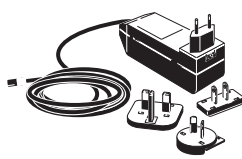
VIB 8.955



VIB 5.400 EX



VIB 5.425 EX



VIB 5.420-INT



VIB 5.430-2



VIB 5.448



VIB 9.638
VIB 9.664
VIB 9.669
VIB 9.834



VIB 9.631



LIT 01.800



Description

The VIBCODE package allows quick and reliable data collection in hazardous areas with the VIBCODE transducer system and a comprehensive evaluation and archiving with the OMNITREND PC software. The VIBCODE transducer recognizes measurement locations uniquely from their coding. Its bayonet socket ensures a reproducible coupling for the reliable and accurate replication of measurement results.

Note

A basic licence for PC communication (VIB 5.480-P) is contained in OMNITREND. Each additional VIBSCANNER instrument requires another licence.

Scope of supply

- VIB 5.400 EX VIBSCANNER EX instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 Rechargeable battery
- VIB 5.428 Case
- VIB 5.430-2 PC cable, serial
- VIB 5.448 Adapter cable, serial to USB
- VIB 8.660 XVS VIBCODE EX transducer incl. cable

- VIB 8.955 OMNITREND for VIBSCANNER
- VIB 9.631.G OMNITREND, Getting started
- VIB 9.638.G VIBSCANNER operating instructions
- VIB 9.664.G VIBSCANNER operating instructions 'Balancing, FFT & signal analysis'
- VIB 9.669.G VIBSCANNER short instructions
- VIB 9.834.G VIBCODE operating instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines

Not shown

- VIB 5.480 VIBSCANNER basic firmware
- VIB 5.480-L Basic firmware license
- VIB 5.480-P PC license
- VIB 5.485-FM VIBSCANNER firmware FFT

Applies to the U.S. market:

- The VIB 5.466 XLUD package includes U.S. versions of:
- VIB 5.420-INT Battery charger
- VIB 8.955 US OMNITREND for VIBSCANNER, U.S.

VIB 5.465 : Additional VIBCODE package for VIBSCANNER

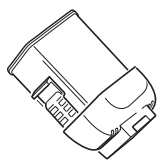
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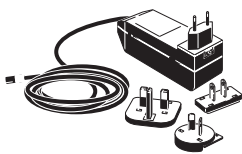
VIB 5.428



VIB 8.660 VS



VIB 5.425



VIB 5.420-INT



VIB 5.430-2



VIB 5.448



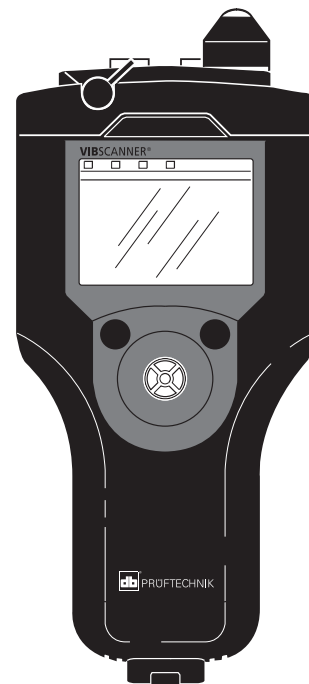
VIB 9.638
VIB 9.664
VIB 9.669
VIB 9.834



VIB 9.631



LIT 01.800



VIB 5.400



Description

This additional VIBCODE package includes all components of the VIBCODE package (VIB 5.466) except the OMNITREND full version.

Scope of supply

- VIB 5.400 VIBSCANNER instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 Rechargeable battery
- VIB 5.428 Case
- VIB 5.430-2 PC cable, serial
- VIB 5.448 Adapter cable, serial to USB
- VIB 8.660 VS VIBCODE transducer incl. cable
- VIB 8.970 Condition Monitoring CD-ROM
- VIB 9.631.G OMNITREND, Getting started
- VIB 9.638.G VIBSCANNER operating instructions
- VIB 9.664.G VIBSCANNER operating instructions 'Balancing, FFT & signal analysis'

- VIB 9.669.G VIBSCANNER short instructions
- VIB 9.834.G VIBCODE operating instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines

- Not shown
- VIB 5.480 VIBSCANNER basic firmware
 - VIB 5.480-L Basic firmware license
 - VIB 5.480-P PC license
 - VIB 5.485-FM VIBSCANNER firmware FFT

Applies to the U.S. market:

- The VIB 5.465 LUD package includes U.S. versions of:
- VIB 5.420-INT Battery charger
 - VIB 8.970 US Condition Monitoring CD-ROM, U.S.

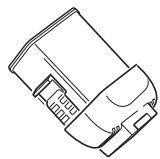
VIB 5.465 EX : Additional VIBCODE package for VIBSCANNER with intrinsic safety



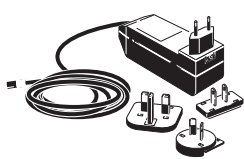
VIB 5.428



VIB 8.660 XVS



VIB 5.425 EX



VIB 5.420-INT



VIB 5.430-2



VIB 5.448



VIB 9.638
VIB 9.664
VIB 9.669
VIB 9.834



VIB 9.631



LIT 01.800



VIB 5.400 EX



Description

This additional VIBCODE package includes all components of the VIBCODE package with intrinsic safety (VIB 5.466 EX) except the OMNITREND full version.

Scope of supply

- VIB 5.400 EX VIBSCANNER EX instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 Rechargeable battery
- VIB 5.428 Case
- VIB 5.430-2 PC cable, serial
- VIB 5.448 Adapter cable, serial to USB
- VIB 8.660 XVS VIBCODE EX transducer incl. cable
- VIB 8.970 Condition Monitoring CD-ROM
- VIB 9.631.G OMNITREND, Getting started
- VIB 9.638.G VIBSCANNER operating instructions
- VIB 9.664.G VIBSCANNER operating instructions 'Balancing, FFT & signal analysis'

- VIB 9.669.G VIBSCANNER short instructions
- VIB 9.834.G VIBCODE operating instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines

Not shown

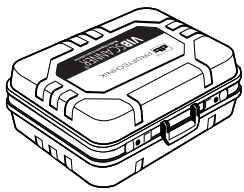
- VIB 5.480 VIBSCANNER basic firmware
- VIB 5.480-L Basic firmware license
- VIB 5.480-P PC license
- VIB 5.485-FM VIBSCANNER firmware FFT

Applies to the U.S. market:

- The VIB 5.465 XLUD package includes U.S. versions of:
- VIB 5.420-INT Battery charger
- VIB 8.970 US Condition Monitoring CD-ROM, U.S.

VIB 5.460-B1P : VIBSCANNER balancing package with one measuring channel

1
2



VIB 5.429



VIB 5.425



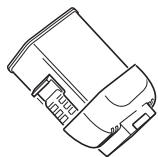
VIB 6.632



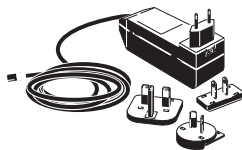
VIB 6.147



VIB 5.400



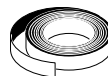
VIB 5.425



VIB 5.420-INT



VIB 3.420



VIB 3.306



VIB 5.448



VIB 5.430-2



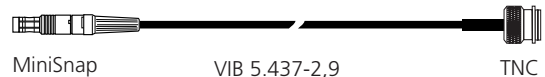
VIB 9.638
VIB 9.664
VIB 9.669



LIT 01.800



VIB 8.970



MiniSnap

VIB 5.437-2,9

TNC



MiniSnap

VIB 5.432-2,9

BINDER

Description

This package is used for 1-plane balancing and includes the required equipment for one measuring channel. VIBSCANNER, featuring the firmware 'Balance limited' (VIB 5.489), can be upgraded to the basic firmware as shown on page 8.

Scope of supply

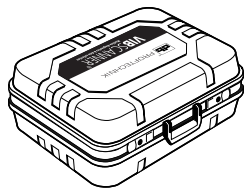
- VIB 3.306 Reflective tape, 10 mm
- VIB 3.420 Magnetic holder for curved mounting surfaces
- VIB 5.400 VIBSCANNER instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 Rechargeable battery
- VIB 5.429 Accessory case
- VIB 5.430-2 PC cable, serial
- VIB 5.432-2,9 Trigger cable, 2.9 m
- VIB 5.437-2,9 Cable for Current line-drive transducer, 2.9 m

- VIB 5.448 Adapter cable, serial to USB
- VIB 6.147 Accelerometer for low-speed machines
- VIB 6.631 Laser Trigger Sensor
- VIB 6.632 Trigger stand
- VIB 8.970 Condition Monitoring CD
- VIB 9.638.G Operating instructions
- VIB 9.664.G Operating instructions 'Balancing, FFT & signal analysis'
- VIB 9.669.G Short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- Not shown
- VIB 5.485-FM VIBSCANNER firmware FFT
- VIB 5.486-B Password certificate 'Balancing'
- VIB 5.489 Firmware 'Balance limited'

Accessory

- VIB 5.480-UG Firmware upgrade to 'Basic'

VIB 5.460-B2P : VIBSCANNER balancing package with two measuring channels



VIB 5.429



VIB 6.631



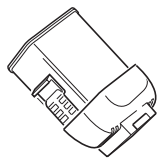
VIB 6.632



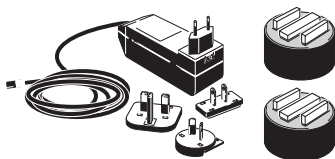
VIB 6.147



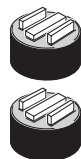
VIB 5.400



VIB 5.425



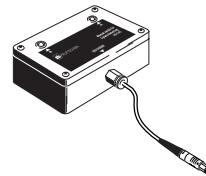
VIB 5.420-INT



VIB 3.420



VIB 3.306



VIB 5.446



VIB 5.448



VIB 5.430-2



MiniSnap

VIB 5.436

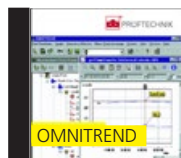
TNC



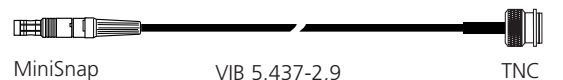
VIB 9.638
VIB 9.664
VIB 9.669



LIT 01.800



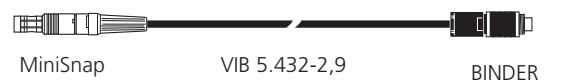
VIB 8.970



MiniSnap

VIB 5.437-2,9

TNC



MiniSnap

VIB 5.432-2,9

BINDER

Description

This package is used for 1- and 2-plane balancing and includes the required equipment for two measuring channels. VIBSCANNER, featuring the firmware 'Balance limited' (VIB 5.489), can be upgraded to the basic firmware as shown on page 8.

Scope of supply

- VIB 3.306 Reflective tape, 10 mm
- VIB 3.420 Magnetic holder for curved mounting surfaces, 2x
- VIB 5.400 VIBSCANNER instrument (w/o battery)
- VIB 5.420-INT Battery charger
- VIB 5.425 Rechargeable battery
- VIB 5.429 Accessory case
- VIB 5.430-2 PC cable, serial
- VIB 5.432-2,9 Trigger cable, 2.9 m
- VIB 5.436 Spiral cable for Current line-drive transducers
- VIB 5.446 Automatic switch for 2-plane balancing
- VIB 5.437-2,9 Cable for Current line-drive transducer,

- VIB 5.448 Adapter cable, serial to USB
- VIB 6.147 Accelerometer for low-speed mach., 2x
- VIB 6.631 Laser Trigger Sensor
- VIB 6.632 Trigger stand
- VIB 8.970 Condition Monitoring CD
- VIB 9.638.G Operating instructions
- VIB 9.664.G Operating instructions 'Balancing, FFT & signal analysis'
- VIB 9.669.G Short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines

Not shown

- VIB 5.485-FM VIBSCANNER firmware FFT
- VIB 5.486-B Password certificate 'Balancing'
- VIB 5.489 Firmware 'Balance limited'

Accessory

- VIB 5.480-UG Firmware upgrade to 'Basic'

VIB 5.486-HW : VIBSCANNER transducer set for 1-plane balancing

1

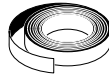
2



VIB 6.147



VIB 3.420



VIB 3.306



VIB 6.631



VIB 6.632



MiniSnap VIB 5.437-2,9 TNC



MiniSnap VIB 5.432-2,9 BINDER

Description

This transducer set includes the required measurement equipment for balancing with VIBSCANNER in one plane.

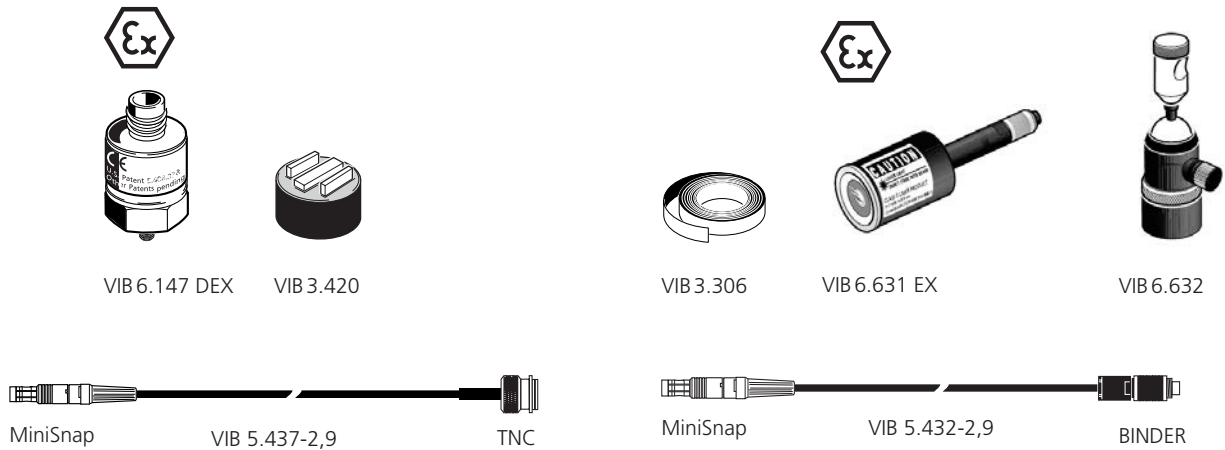
Scope of supply

- VIB 3.306 Reflective tape, 10 mm
- VIB 3.420 Magnetic holder for curved mounting surfaces
- VIB 5.432-2,9 Trigger cable, 2.9 m
- VIB 5.437-2,9 Cable for Current line-drive transducer, 2.9 m
- VIB 6.147 Accelerometer for low-speed machines
- VIB 6.631 Laser Trigger Sensor
- VIB 6.632 Trigger stand

Note

The balancing firmware module VIB 5.486-FM is not included in the transducer set.

VIB 5.486-XHW: VIBSCANNER transducer set for 1-plane balancing with intrinsic safety



Description

This transducer set includes the required measurement equipment for balancing with VIBSCANNER in one plane in hazardous areas.

Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 5.437-2,9	Cable for Current line-drive transducer, 2.9 m
VIB 6.147 DEX	Accelerometer for low-speed machines, intrinsically safe
VIB 6.631 EX	Laser Trigger Sensor, intrinsically safe
VIB 6.632	Trigger stand

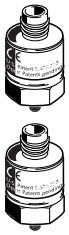
Note

The balancing firmware module VIB 5.486-FM is not included in the transducer set.

VIB 5.487-HW : VIBSCANNER transducer set for 2-plane balancing

1

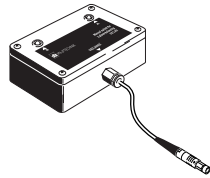
2



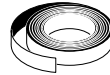
VIB 6.147



VIB 3.420



VIB 5.446



VIB 3.306



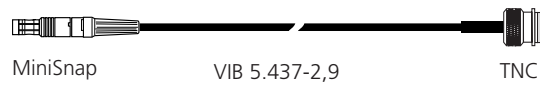
VIB 6.631



VIB 6.632



VIB 5.436



VIB 5.437-2,9



VIB 5.432-2,9

Description

This transducer set includes the required measurement equipment for balancing with VIBSCANNER in two planes.

Scope of supply

- VIB 3.306 Reflective tape, 10 mm
- VIB 3.420 Magnetic holder for curved mounting surfaces, 2x
- VIB 5.432-2,9 Trigger cable, 2.9 m
- VIB 5.436 Spiral cable for Current line-drive transducers
- VIB 5.437-2,9 Cable for Current line-drive transducer, 2.9 m
- VIB 5.446 Automatic switch for 2-plane balancing
- VIB 6.147 Accelerometer for low-speed machines, 2x
- VIB 6.631 Laser Trigger Sensor
- VIB 6.632 Trigger stand

Note

The balancing firmware module VIB 5.486-FM is not included in the transducer set.

VIB 6.142 RSET : Transducer set for vibration measurements



VIB 6.142 R



VIB 3.420



VIB 5.436

Description

This transducer set includes the required measurement equipment for vibrations measurements with an external accelerometer.

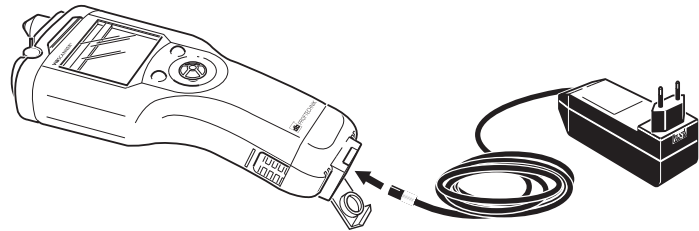
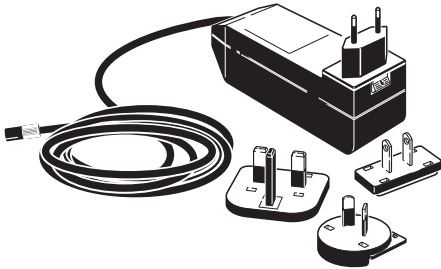
Scope of supply

VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 5.436	Spiral cable for Current line-drive transducers
VIB 6.142 R	Accelerometer for standard machines

VIB 5.420-INT : VIBSCANNER battery charger

1

2



VIB 5.420-INT

Description

The VIBSCANNER battery (VIB 5.425 / VIB 5.425 EX) is recharged with the charger VIB 5.420-INT when the VIBSCANNER instrument is switched off.

The VIBSCANNER battery charger VIB 5.320-INT has several interchangeable AC plugs for the most international plug types.

After charging, the charger switches automatically to trickle-mode in order to protect the rechargeable battery.

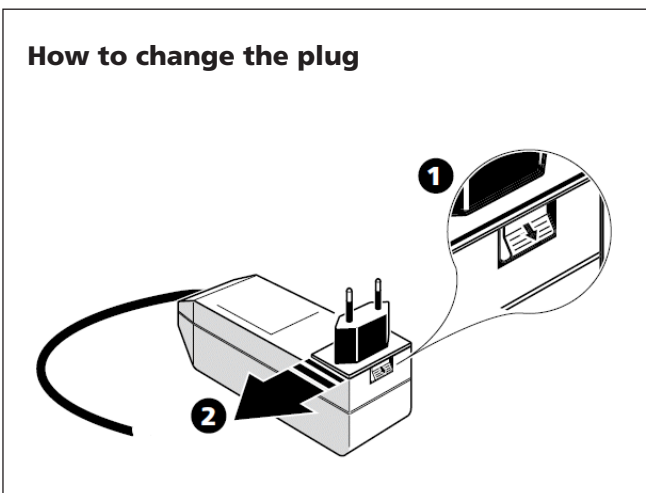
ATTENTION!

Rechargeable batteries must not be charged in hazardous areas!

Technical data

PARAMETER		VIB 5.420-INT
Electrical	Primary voltage	100 - 240 VAC; 50 - 60 Hz; 620 mA
	Secondary voltage	12.1 VDC / 250 mA
	Charging duration	< 5 hours, depends on battery charge condition
General	Environmental protection	IP 20
	Temperature range, operation	-5°C ... +40°C
	Temperature range, storage	-30°C ... +80°C
	Dimensions (WxHxL)	42 x 42 x 105 mm
	Cable length	approx. 1.5 m

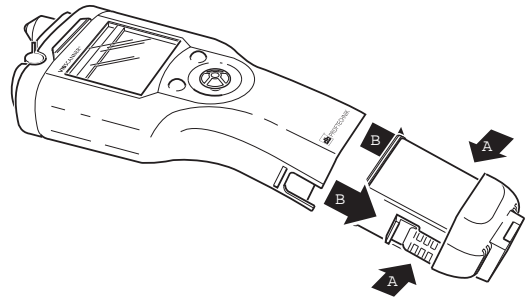
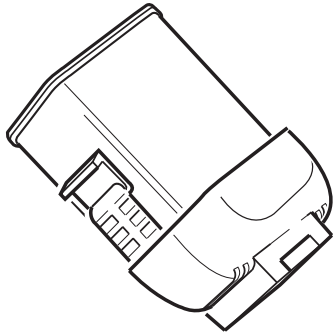
How to change the plug



VIBSCANNER rechargeable battery

VIB 5.425 : Rechargeable battery for VIBSCANNER

VIB 5.425 EX : Rechargeable battery for VIBSCANNER EX



Description

The VIBSCANNER rechargeable battery is built into the handle of the instrument. The practical spring catch enables the battery to be easily removed and re-inserted again in a single action.

The battery is recharged using the VIBSCANNER charger VIB 5.420. 'Charge level' and 'Battery status' are indicated by two LEDs on the battery.

ATTENTION!

Rechargeable batteries must not be charged in hazardous areas!

Technical data

PARAMETER		VIB 5.425	VIB 5.425 EX
Electrical	Type	NiMH	
	Nominal voltage	7,2 V	
	Nominal capacity	1,5 Ah	
	Operating duration	> 10 hours in intermittent operation > 6 hours in continuous operation with illumination	
	Charging duration	< 6 hours	< 10 hours
General	Charging temp.	+10°C ... +40°C	
	Status display	2 LEDs (red/ green) for charging and batt. status	
	Weight	approx. 260 g	
	Dimensions	approx. 9 x 6.5 x 4 cm	

VIBSCANNER cases

1

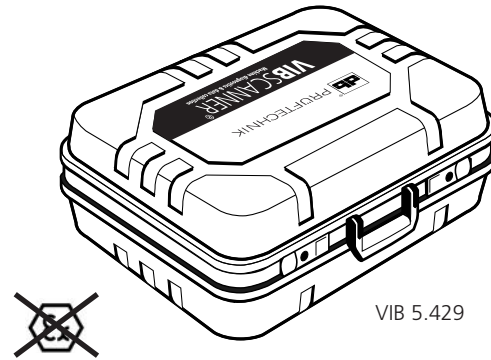
VIB 5.428 : Standard case for VIBSCANNER

VIB 5.429 : Accessory case for VIBSCANNER

2



VIB 5.428



VIB 5.429

Description

The handy size, compact standard case VIB 5.428 is included with the Standard packages. It is durable and protects the measuring equipment in a harsh industrial environment.

The lockable accessory cases VIB 5.429 is included with the Balancing packages. Its sturdy shells (ABS) and shock-absorbing foam inserts provide protection for of all major components and all accessories for balancing. The case is drop tested up to 2 meters.

ATTENTION!

The cases are not allowed in hazardous areas!

Technical data

PARAMETER		VIB 5.428	VIB 5.429
General	Material	Polypropylene (PP)	ABS plastic
	Dimensions (W x D x H)	390 x 340 x 90 mm	470 x 400 x 195 mm
	Empty weight	1 kg	3 kg

VIB 5.454 : VIBSCANNER pouch

1

2

Description

This practical and robust pouch lets you carry the VIBSCANNER data collector safely and comfortably on your daily inspection rounds. The pouch has an adjustable belt that is attached by snap hooks and has a side pocket for the VIBCODE transducers.

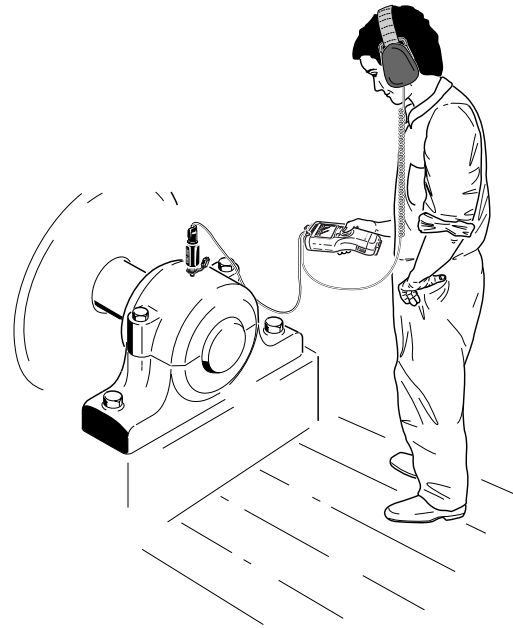
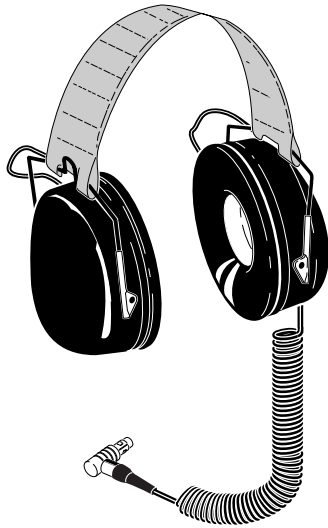
Material

CORDURA (Polyamide textile)

VIB 6.670 : Headphones

1

2



Description

The headphones can be used to listen to the machines and, in particular, roller bearings for the characteristic noises that indicate damage. The buffered transducer signal is picked up with the headphones at the analog output (yellow socket).

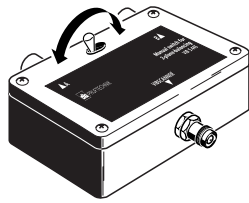
Technical data

PARAMETER		VIB 6.670
Electrical	Impedance	450 Ohm
	Frequency range	125 - 8000 Hz
	Volume limit (0.5 V / 1 kHz)	81 dB (A)
General	Connection	1 spiral cable for VIBSCANNER (MiniSnap)
	Weight	approx. 360 g

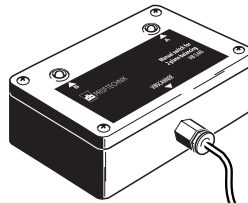
VIBSCANNER channel switches

VIB 5.445 : Manual channel switch for 2-plane balancing with VIBSCANNER

VIB 5.446 : Automatic channel switch for 2-plane balancing with VIBSCANNER



VIB 5.445



VIB 5.446



Application and function

The channel switch provides two inputs for accelerometers, which are merged into one output channel. The channel switching is done either via a toggle switch (VIB 5.445) or automatically controlled by the VIBSCANNER application program (VIB 5.446).

This simplifies e.g. the (sequential) balancing in two planes, because the accelerometers do not have to be unplugged when changing the balancing plane.

Connection

With the manual channel switch VIB 5.445, the accelerometers are connected each with a coaxial cable with TNC connector (VIB 311221-L). The channel switch itself

is plugged in VIBSCANNER with the connection cable for line-drive accelerometers VIB 5.436.

The automatic channel switch VIB 5.446 is connected directly to VIBSCANNER. For each sensor, a connection cable for line-drive accelerometers (VIB 5.436) is required.

Note

The automatic switch cannot be operated with VIBSCANNER EX!

Accessories

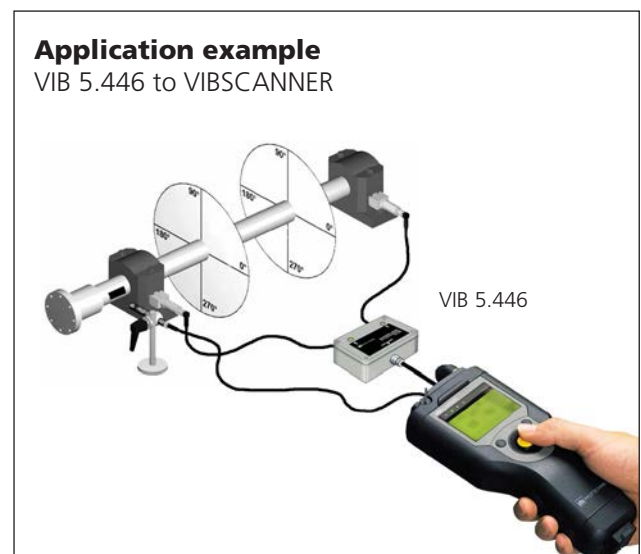
- VIB 5.436 Conn. cable for line-drive accelerometers
- VIB 311221-L Coaxial cable, TNC (2x), L= cable length

Technical data

PARAMETER		VIB 5.445	VIB 5.445
Mechanical	Case material	Aluminium	
	Connections	1x TNC socket, 2x TNC socket	1x Cable with MiniSnap plug 2x MiniSnap sockets
	Dimensions L x B x H	97 x 63 x 35 mm	
	Weight	approx. 230 g	

Application example

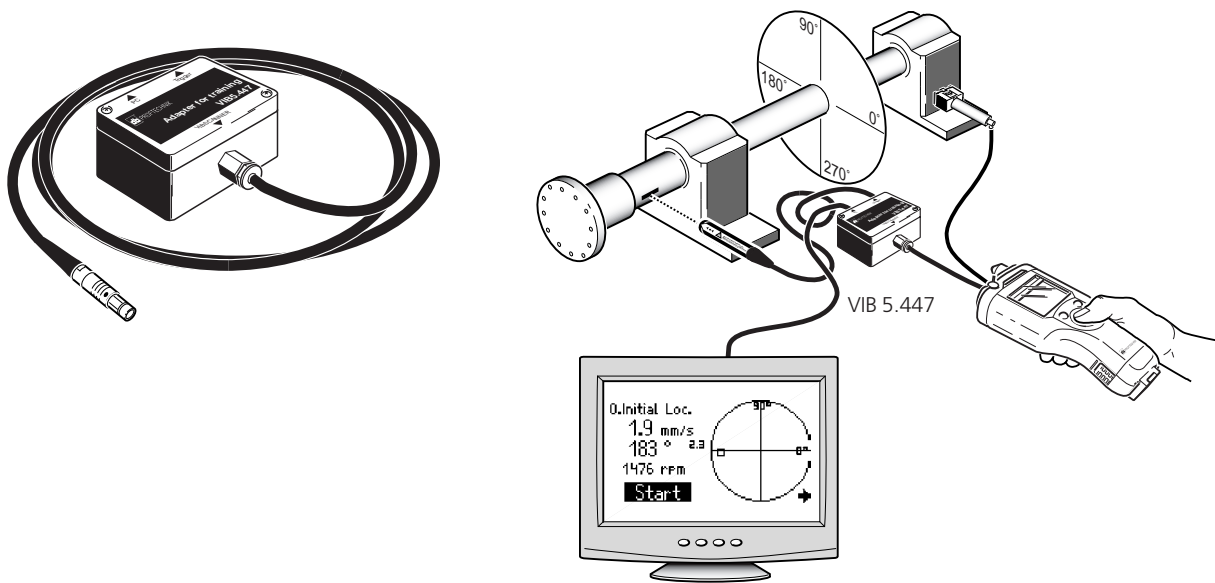
VIB 5.446 to VIBSCANNER



VIB 5.447 : PC adapter for the VIBSCANNER training tool

1

2



Description

The VIBSCANNER training tool can be used to show the VIBSCANNER display on a PC monitor for demonstrations and training courses. The digital input on the VIBSCANNER (yellow socket) is used to make the connection to the PC.

Since this interface is also used for RPM measurements, the PC adapter VIB 5.447, providing two inputs, must be used for the demonstration of the corresponding measurement tasks (e.g. balancing, RPM measurement).

Technical data

PARAMETER		VIB 5.447
General	Connections	1 cable for VIBSCANNER 2 sockets for trigger and PC cable
	Dimensions (L x W x H)	approx. 65 x 50 x 35 mm
	Cable length	2.9 m
	Weight	approx. 130 g
	Case material	Macrolon

OMNITREND for VIBSCANNER

VIB 8.955 :	OMNITREND for VIBSCANNER, Software package
VIB 8.956 :	OMNITREND ‚View‘ for VIBSCANNER, Software package
VIB 5.481 :	VIBSCANNER device driver for OMNITREND
VIB 5.480-P :	PC licence for VIBSCANNER



Description

The OMNITREND software package **VIB 8.955** contains the CD ROM and the following items:

- VIB 5.480-P PC licence
(Communication password for one VIB-SCANNER instrument)
- VIB 5.480-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.
- VIB 9.631.G OMNITREND, Getting started

With the OMNITREND View software package **VIB 8.956** only multimode measurement can be imported in the database (no route data). The VIB 8.956 package contains the CD ROM and the following items:

- VIB 5.480-P PC licence
(Communication password for one VIB-SCANNER instrument)
- VIB 8.956-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.
- VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 5.481** is required to operate the OMNITREND software already available with the VIB-SCANNER. VIB 5.481 contains:

- VIB 5.480-P PC licence
(Communication password for one VIB-SCANNER instrument)
- VIB 5.480-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.
- VIB 9.631.G OMNITREND, Getting started

Each further VIBSCANNER is registered with a separate **VIB 5.480-P** PC license.

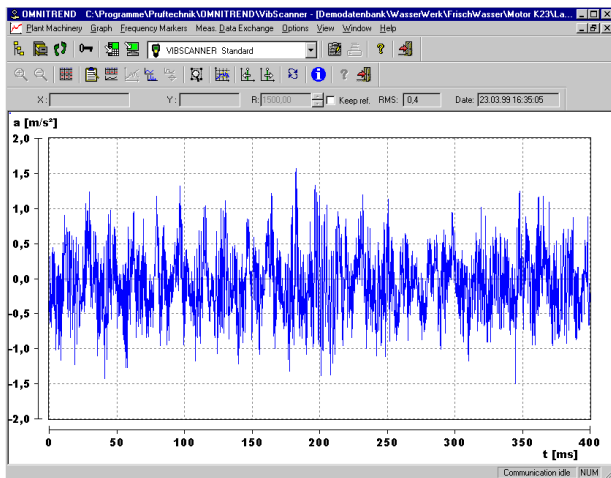
Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

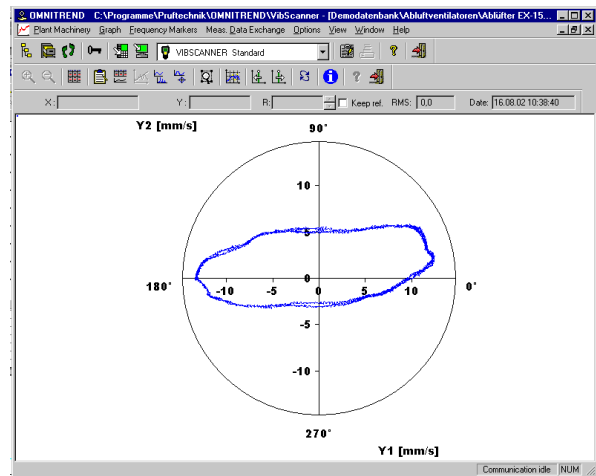
VIB 8.962 : OMNITREND Signal Analysis module

1

2



Zeitsignal



Orbit-Diagramm

Description

The OMNITREND Signal Analysis module is available as an upgrade for an already registered OMNITREND installation. This software module enables the display and evaluation of the following measured data, which were recorded with the VIBSCANNER:

If OMNITREND for VIBSCANNER **VIB 8.955** is registered, then

- Time waveform (Multimode & Route)
- Orbit (Multimode)

can be evaluated.

if OMNITREND 'View' for VIBSCANNER **VIB 8.956** is registered, then

- Recording data

can be evaluated.

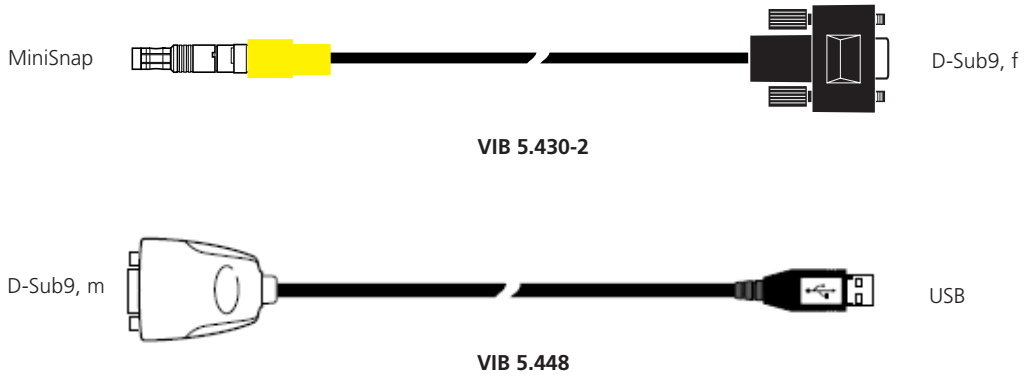
The registration of the Signal Analysis module also activates the gear editor VIB 8.961.

Order information

The 'Signal analysis' module is only available if an OMNITREND version is ordered at the same time, or is already registered. Therefore, please also fax us the existing OMNITREND registration certificate when ordering an upgrade.

Serial PC cables for VIBSCANNER

- VIB 5.430-2 :Serial PC cable
- VIB 5.448 : Adapter cable, serial to USB



Application

These cables are used for data transmission via the serial interface.

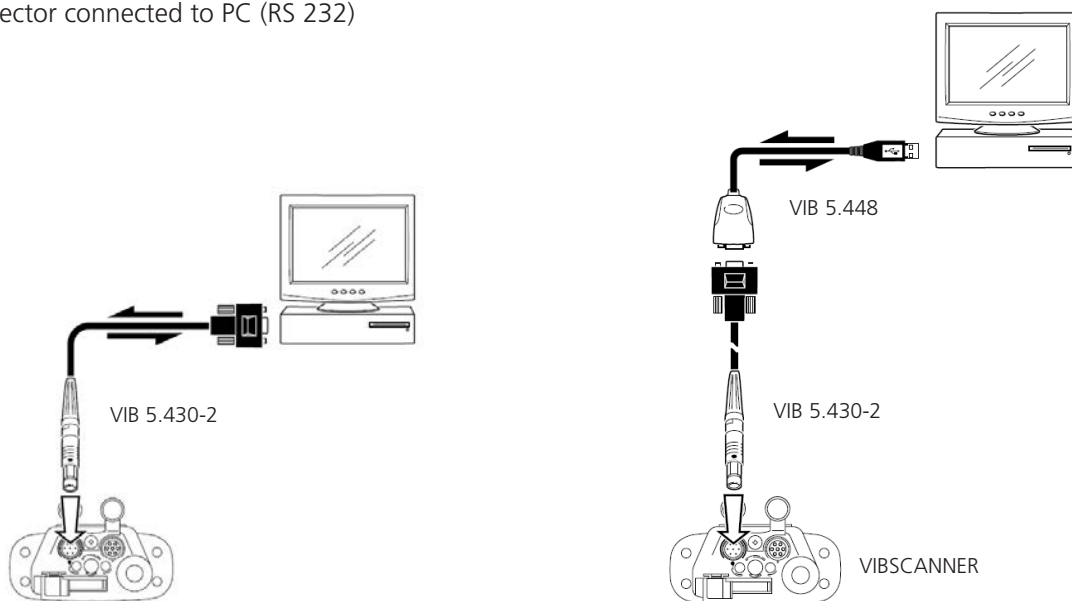
The adapter cable VIB 5.448 is additionally required if the PC or the laptop only has a USB port.

Cable lengths

- VIB 5.430-2 approx. 2 m
- VIB 5.448 approx. 0.2 m

Application example

Data collector connected to PC (RS 232)



VIB 5.431 : Cable for analog signal output

1**2**

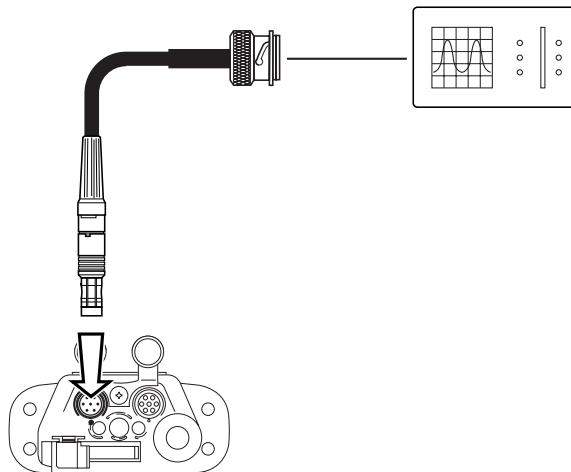
Application

In order to analyze the measured analog signal, a head-set (> 450 Ohm) or an analytical instrument (e.g. oscilloscope) can be connected with this cable to the following data collectors:

- VIBXPART II
- VIBXPART I
- VIBXPART EX
- VIBSCANNER
- VIBSCANNER EX

Cable length: 0.7 to 1.8 meters

Application example

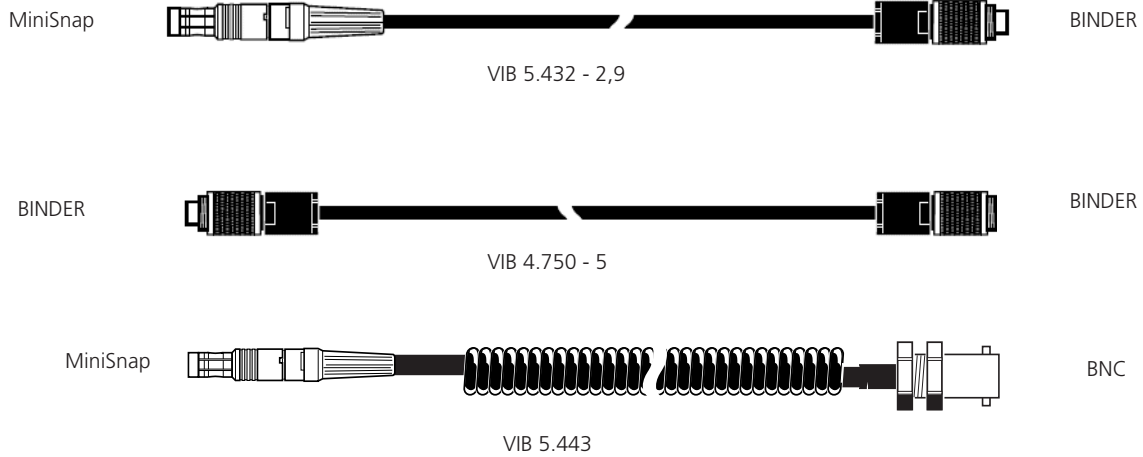


Connection cables for RPM sensors and trigger sensors

VIB 5.432-2,9 : Connection cable for RPM sensors

VIB 4.750-5 : Cable extension for VIB 5.432-2,9

VIB 5.443 : Connection cable for TTL trigger sensors



Application

The VIB 5.432-2,9 cable is used to connect the PRÜFTECHNIK RPM sensors VIB 6.631 or VIB 6.631 EX to the following data collectors:

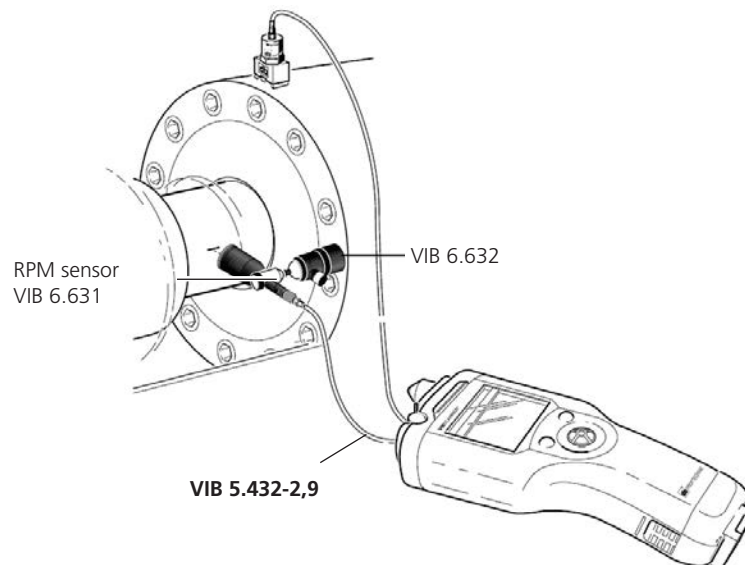
- VIBXPART II
- VIBXPART I
- VIBXPART EX
- VIBSCANNER
- VIBSCANNER EX

The VIB 5.443 cable is used to connect a trigger sensor from other manufacturers.

Cable lengths

VIB 5.432-2,9	2.5 m
VIB 4.750-5	5.0 m
VIB 5.443	0.45 - 1.6 m

Application example



Cable adapters for the measurement of signal-low voltage / current with VIBSCANNER

1

VIB 5.433 : Cable adapter for the measurement of signal-low voltage with VIBSCANNER

VIB 5.434 : Cable adapter for the measurement of signal-low current with VIBSCANNER

2



Application

These cable adapters are used to measure signal-low voltage (AC: 0-30V) or signal levels (DC: 0-30V; 0-30 mA) provided by other measuring instruments.

An additional cable with at least one BNC plug is required to connect the adapter cable to the signal-measuring instrument.

The length of the spiral cable is 0.7 to 1.8 meters.

Safety note

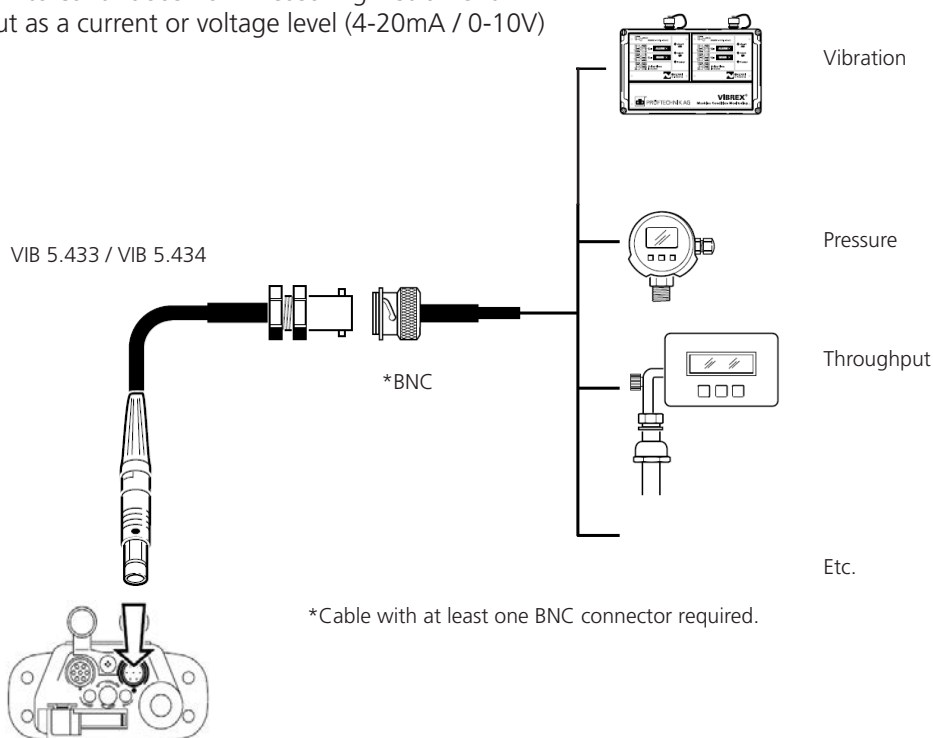
The cable adapters may not be used in hazardous areas!

Application examples

- Connection to VIBREX: Vibration as a current level (4-20mA)
- Connection to pressure transmitter: Pressure as a current level (4-20mA)
- Connection to continuous flow measuring instrument: Throughput as a current or voltage level (4-20mA / 0-10V)



VIB 5.433 / VIB 5.434



*Cable with at least one BNC connector required.

VIB 5.433-X : Cable adapter for the measurement of signal-low voltage with VIBSCANNER EX



Application

This cable adapter is used to measure signal-low voltage (AC/DC: 0-30V) provided by other measuring instruments.

An additional cable with at least one BNC plug is required to connect the adapter cable to the signal-measuring instrument.

Safety notes

The cable adapter may not be used in hazardous areas!

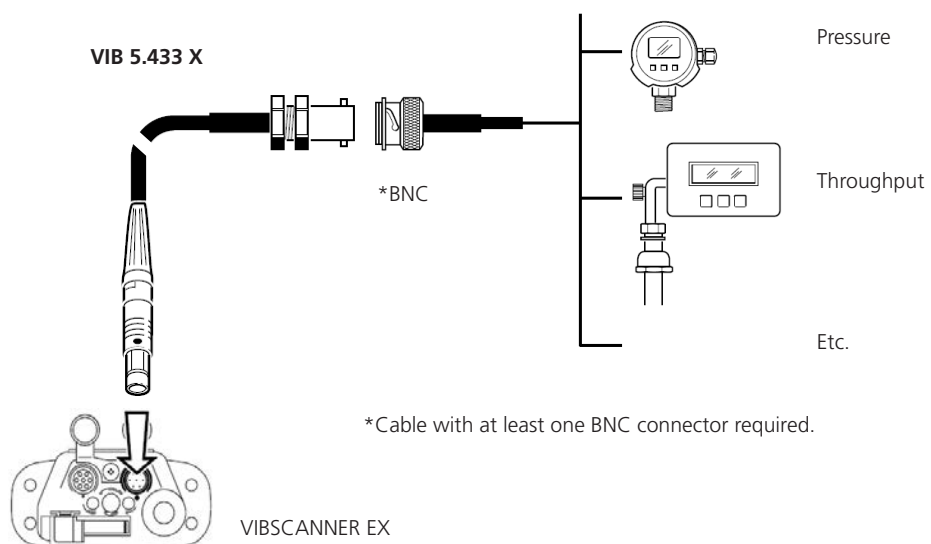
The cable adapter protects the analog port of the data collector (VIBSCANNER EX) against surges. The adapter must be connected with the data collector only outside the hazardous area to an electrical circuit, whose maximum voltage does not exceed $265 V_{rms}$ when a malfunction occurs.

Technical data

PARAMETER		VIB 5.433-X
General	Cable length	0.7 ... 1.8 m
	Temperature range	0°C ... + 40°C
	Maximum measurement error	-2.0% / +2.7%
	Upper frequency for AC measurements	5 kHz

Application example

Pressure / Throughput as a voltage level (0-10V)



VIB 5.332-X : Keyphaser adapter for machine protection systems (VIBSCANNER EX)

1

2



Application

This adapter converts a pulse signal (including the DC level) to a 5V rectangular signal. This makes it possible to connect keyphaser, such as from the Bently Nevada, with measuring devices from PRÜFTECHNIK:

- VIBXPERT EX
- VIBSCANNER EX

Connection

On the device side, the adapter is equipped with an 8-pin binder socket that is connected to trigger cable VIB 5.432-2,9. The signal input side provides a BNC socket.

Safety notes

The cable adapter may not be used in hazardous areas!

The cable adapter protects the digital port of the data collector (VIBXPERT EX or VIBSCANNER EX) against surges. The adapter must be connected with the data collector only outside the hazardous area to an electrical circuit, whose maximum voltage does not exceed 265 V_{rms} when a malfunction occurs.

Ambient temperature: 0°C to + 40°C.

Technical data

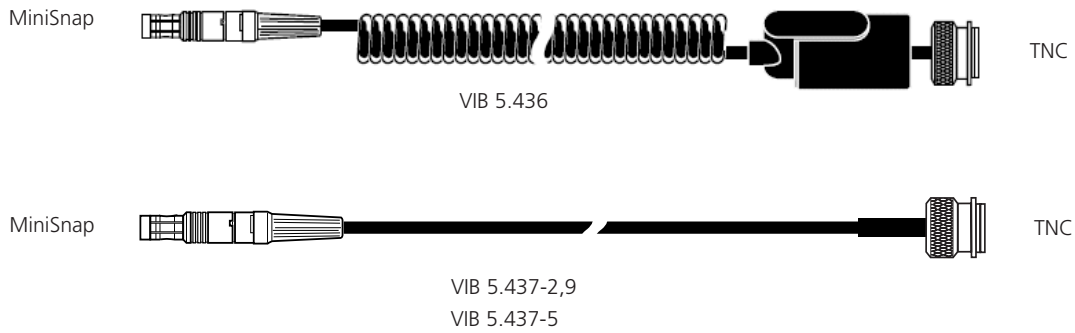
PARAMETER		VIB 5.332-X
Electrical	Operating voltage	5.4 V ± 10%
	Power consumption	0,5 mA
	Input signal, Pulse width	> 100 µs
	- , Pulse level	> 500 mV _{pp}
	- , DC fraction	+8 V to -30 V
	Output signal	5 V, rectangular signal
	Input resistance	200 kOhm
	Output resistance	1 kOhm
Mechanical	Housing material	Stainless steel, VA 1.4301
	Length, incl. connectors	130 mm
	Diameter	15 mm
	Weight	30 g
	Env. protection class	IP 65
	Temperature range	0°C ... +40°C
Interfaces	Input signal	Binder connector, 8 pin, 712 series
	- , Pin allocation	2 / 5V, 4 / rectangular signal, 7 / GND
	Output signal	BNC connector
	- , Pin allocation	internal contact / signal, external contact / GND

Connection cables for current line-drive accelerometers

VIB 5.436 :	Spiral connection cable for current line-drive accelerometer
VIB 5.437-2,9 :	Straight connection cable for current line-drive accelerometer, 2.9 meters
VIB 5.437-5 :	Straight connection cable for current line-drive accelerometer, 5 meters

1

2



Application

These cables are used to connect mobile industrial accelerometers with current line-drive output to the following PRÜFTECHNIK data collectors:

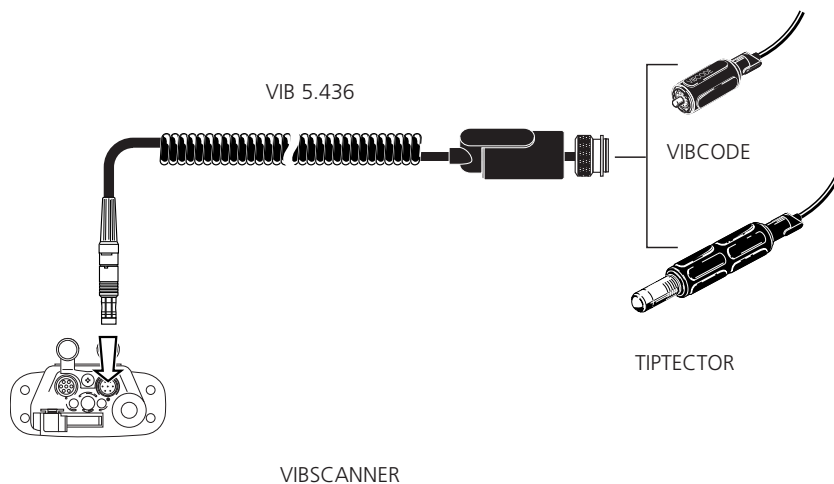
- VIBXPART II
- VIBXPART I
- VIBXPART EX
- VIBSCANNER
- VIBSCANNER EX

Cable lengths

VIB 5.436	0.7 ... 1.8 m
VIB 5.437-2,9	2.9 m
VIB 5.437-5	5 m

Connection examples

VIBCODE / TIPECTOR connected to VIBSCANNER

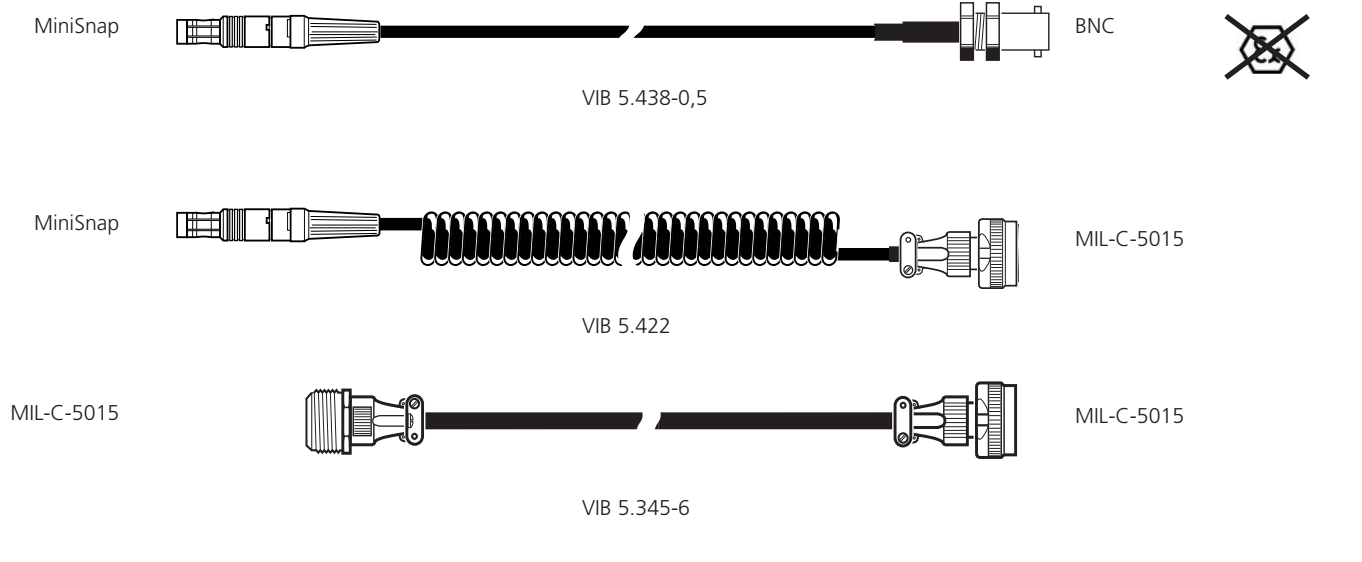


Connection cables for ICP-type accelerometers

1

- VIB 5.438-0,5 : Straight connection cable for ICP-type accelerometer, 0.5 meters, BNC-connector
- VIB 5.422 : Spiral connection cable for ICP-type accelerometer, MIL-connector
- VIB 5.345-6 : Cable extension for VIB 5.422, 6 meters, MIL-connector

2



Application

Standard sensor cables for connecting an ICP-type accelerometer or a microphone to VIBSCANNER.

Cable lengths

VIB 5.438-0,5	0.5 m
VIB 5.422	0.7 ... 1.8 m
VIB 5.345-6	6 m

Notes

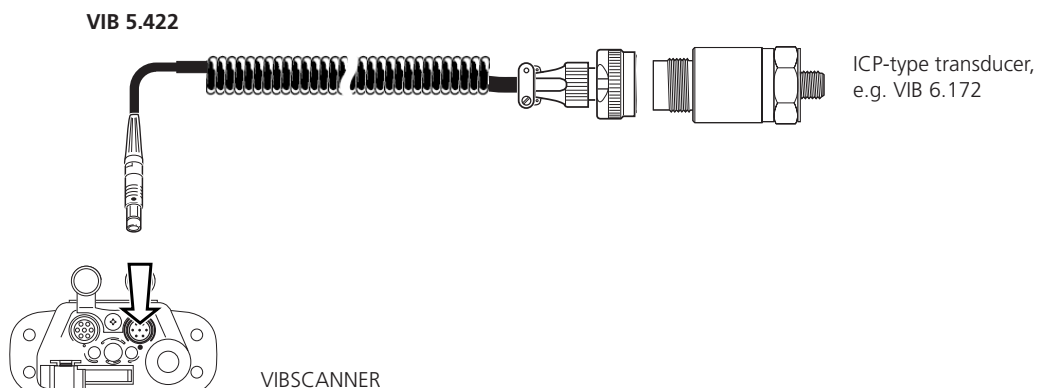
Applies to cable VIB 5.438-0,5: Depending on which type of connector the accelerometer has (e.g. Microdot, BNC, MIL-C-5015,...), a suitable cable must have at least one BNC connector.

ATTENTION:

ICP-type accelerometers may not be used in hazardous areas.

Connection examples

ICP-type transducer connected to VIBSCANNER



VIB 5.439 : Connection cable for Pt100 temperature probe



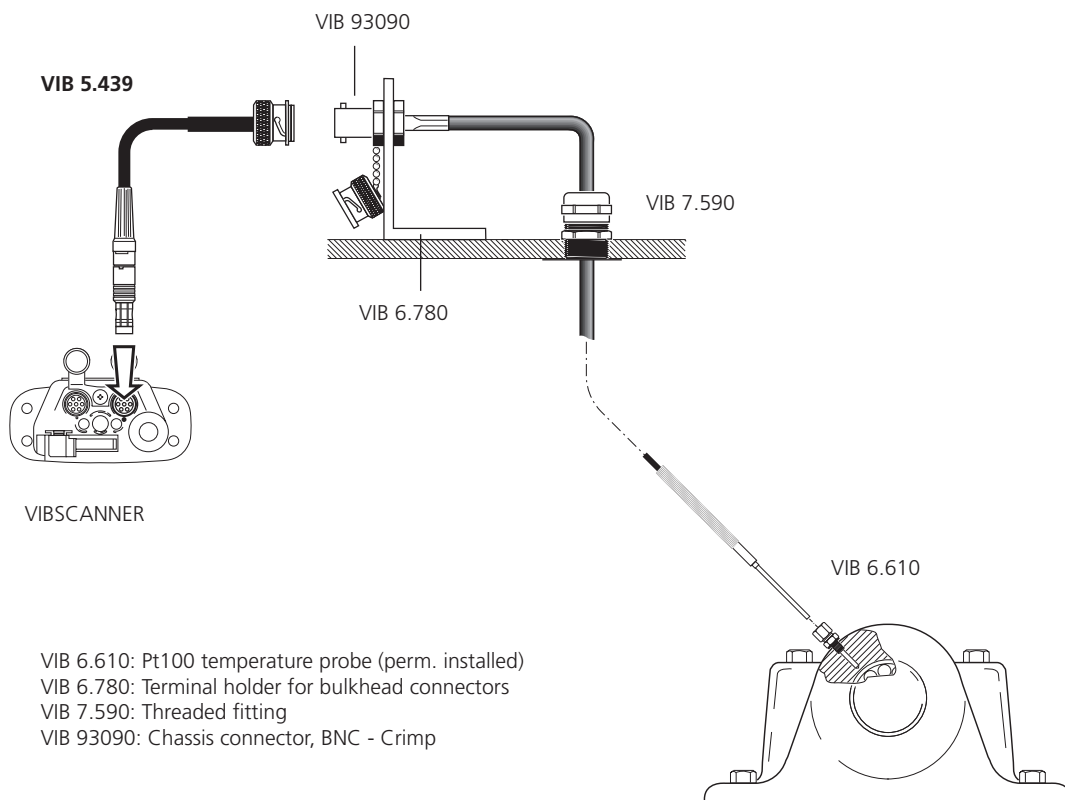
Application

This cable is used to connect a Pt100 temperature probe to VIBSCANNER for temperature measurements.

Cable length: 0.7 ... 1.8 meters

Connection example

Pt100 probe connected to VIBSCANNER



VIB 5.444-5 : Universal extension for analog sensor cable, 5 meters

1

2

MiniSnap



MiniSnap

Application

This cable is used to extend the analog sensor cable by up to 5 meters.

Extendable sensor cables:

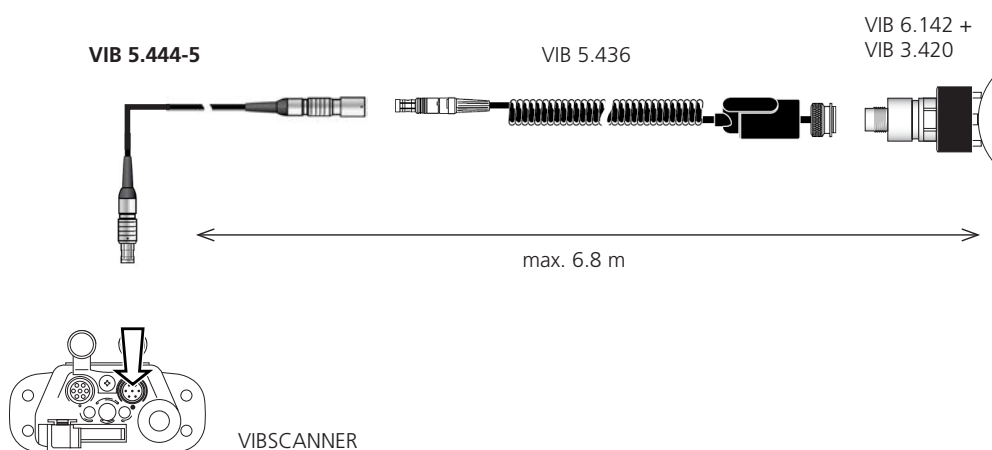
- VIB 5.436 Spiral cable for current line-drive transd.
- VIB 5.437-2,9 Straight cable, Current line-drive, 2.9 m
- VIB 5.437-5 Straight cable, Current line-drive, 5 m
- VIB 5.438-0,5 Straight cable, ICP-type, BNC connector
- VIB 5.422 Spiral cable, ICP-type, MIL connector

- VIB 5.440 VIBREX cable (mV)
- VIB 5.433 Signal-low voltage cable adapter
- VIB 5.433 X Signal-low voltage cable adapter, VIBSCANNER EX
- VIB 5.434 Signal-low current cable adapter
- VIB 5.342 Cable for VST 24V adapter

Applies to all cables, except current line-drive:

For cable lengths greater than 2.9 meters, the EMC immunity of the signal path can not be guaranteed.

Connection example



VIB 5.339: Cable extension for Current Linedrive accelerometer, 8 meters

1
2



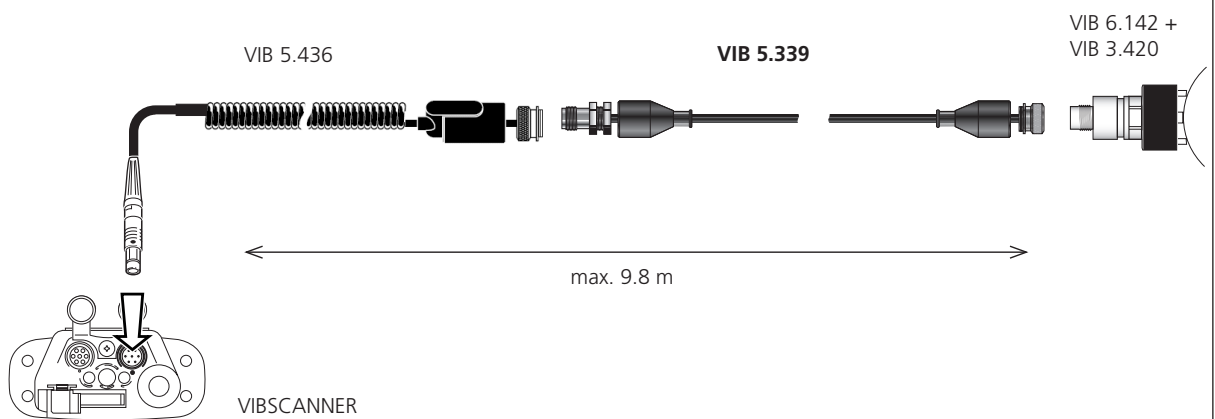
Application

With this cable, the Current Linedrive sensor cables can be extended by up to eight meters.

Extendable sensor cables:

- VIB 5.436 Linedrive spiral cable
- VIB 5.437-2,9 Linedrive cable, straight, 2.9m
- VIB 5.437-5 Linedrive cable, straight, 5m

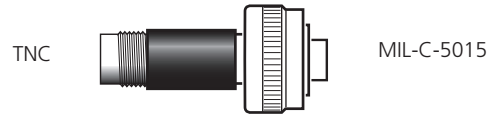
Connection example



VIB 5.449-CLD: Cable adapter for accelerometer VIB 6.195

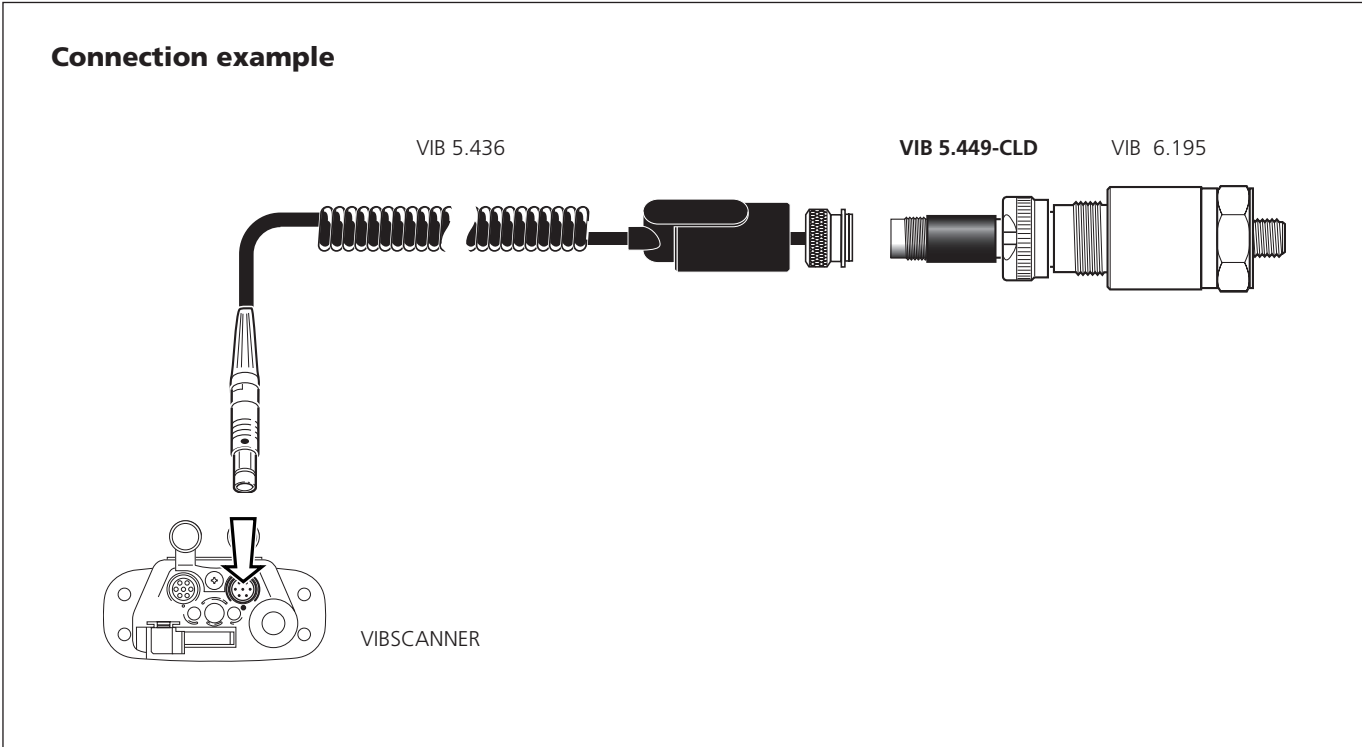
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Application

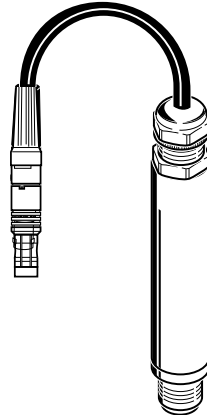
This adapter is used to connect accelerometers with Mil-type connectors, e.g. VIB 6.195 (CLD type) to VIBSCANNER.



VIB 8.746-VS: SPM cable adapter for VIBSCANNER

1

2



Application

The SPM cable adapter is used to connect the VIBSCANNER data collector to existing SPM 40000 or TRA 30 measurement sensors by converting the voltage signal to a current signal.

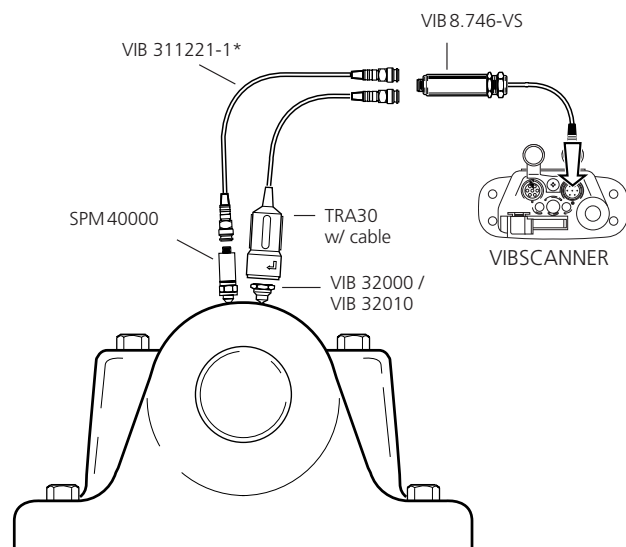
Note

The SPM cable adapter may not be used in hazardous areas!

Technical data

PARAMETER		VIB 8.746-VS
General	Input	MiniSnap
	Output	TNC
	Length	approx. 240 mm
	Diameter	16 mm

Connection example



* This cable is not included in the scope of delivery

Index by order number

Order no.	Page		
LIT 01.800	8	VIB 5.439	39
VIB 3.306	16	VIB 5.443	33
VIB 3.420	16	VIB 5.444-5	40
VIB 4.750-5	33	VIB 5.445	27
VIB 5.332-X	36	VIB 5.446	27
VIB 5.339	41	VIB 5.447	28
VIB 5.345-6	38	VIB 5.448	8, 31
VIB 5.400	4	VIB 5.449-CLD	42
VIB 5.400 EX	5	VIB 5.454	25
VIB 5.420-INT	8, 22	VIB 5.460	8
VIB 5.422	38	VIB 5.460-B1P	16
VIB 5.425	8, 23	VIB 5.460-B2P	17
VIB 5.425 EX	23	VIB 5.460 EX	9
VIB 5.428	8, 24	VIB 5.464	10
VIB 5.429	24	VIB 5.464 EX	11
VIB 5.430-2	8, 31	VIB 5.465	14
VIB 5.431	32	VIB 5.465 EX	15
VIB 5.432-2	33	VIB 5.466	12
VIB 5.433	34	VIB 5.466 EX	13
VIB 5.433-X	35	VIB 5.480	6
VIB 5.434	34	VIB 5.480-L	8
VIB 5.436	37	VIB 5.480-P	29
VIB 5.437-2	37	VIB 5.480-UG	16, 17
VIB 5.437-5	37	VIB 5.481	29
VIB 5.438-0	38	VIB 5.485-FM	7
		VIB 5.486-B	16, 17
		VIB 5.486-FM	7
		VIB 5.486-HW	18
		VIB 5.486-XHW	19
		VIB 5.487-HW	20
		VIB 5.488-FM	7
		VIB 5.489	6
		VIB 6.142 RSET	21
		VIB 6.147	16
		VIB 6.147 DEX	19
		VIB 6.631	16
		VIB 6.631 EX	19
		VIB 6.632	16
		VIB 6.670	26
		VIB 8.660 VS	12
		VIB 8.660 XVS	13
		VIB 8.746-VS	43
		VIB 8.955	10, 29
		VIB 8.956	29
		VIB 8.962	30
		VIB 8.970	8
		VIB 9.638	8
		VIB 9.664	8
		VIB 9.669	8
		VIB 9.834.G	12

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Productive maintenance technology

VIBROTIP®
VIBTOOL®

Machine diagnostics
Data collection

Catalog



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Contents

Order no.	Product description	Page
Chapter 1		
VIBROTIP Data collector		
	VIBROTIP - Machine analyzer and data collector	6
VIB 8.635 :	VIBROTIP 'Multimeter' package.....	8
VIB 8.820 :	VIBROTIP 'Maintenance' package.....	9
VIB 8.820 EX :	VIBROTIP 'Maintenance' package with intrinsic safety.....	10
VIB 8.830 :	VIBROTIP 'Trending' package.....	11
VIB 8.840 :	VIBROTIP 'VIBCODE' package.....	12
VIB 8.841 :	Additional VIBCODE package for VIBROTIP	13
VIB 4.701-2 :	Straight connection cable for CLD-type accelerometer, BNC angled plug, 2 meters	14
VIB 4.701-5 :	Straight connection cable for CLD-type accelerometer, BNC angled plug, 5 meters	14
VIB 4.702-2 :	Straight connection cable for CLD-type accelerometer, Microdot angled plug, 2 meters	14
VIB 4.702-5 :	Straight connection cable for CLD-type accelerometer, Microdot angled plug, 5 meters	14
VIB 4.704-2 :	Straight connection cable for CLD-type accelerometer, TNC angled plug, 2 meters.....	14
VIB 4.704-5 :	Straight connection cable for CLD-type accelerometer, TNC angled plug, 5 meters	14
VIB 321926-2 :	Spiral connection cable for CLD-type accelerometer, TNC plug, 2 meters.....	14
VIB 8.618-1,5 :	TIPTECTOR cable, straight, 1.5 meters long	15
VIB 8.618-5 :	TIPTECTOR cable, straight, 5 meters long	15
VIB 8.605:	Spare temperature probe for VIBROTIP.....	16
VIB 4.705 :	BNC to QLA adapter	17
VIB 8.617 :	QLA angled plug.....	17
VIB 8.746-VD:	SPM adapter for VIBROTIP	18
VIB 8.619-USB :	Serial to USB cable adapter for VIBROTIP EX.....	19
VIB 8.862 :	OMNITREND for VIBROTIP, software package	20
VIB 8.863 :	VIBROTIP device driver for OMNITREND.....	20
VIB 8.862-P :	PC licence for VIBROTIP.....	20
Chapter 2		
VIBTOOL PDA measurement transducer		
	VIBTOOL PDA measurement transducer with Bluetooth communication.....	22
VIB 2.760 EU :	VIBTOOL delivery package for the E.C.	24
VIB 2.760 UK :	VIBTOOL delivery package for the United Kingdom.....	24
VIB 2.760 US :	VIBTOOL delivery package for the U.S.A.....	24
VIB 6.142RVTSET :	Transducer set for VIBTOOL and VIBROTIP EX.....	25
Index		
	Index by order number	26

Chapter 1

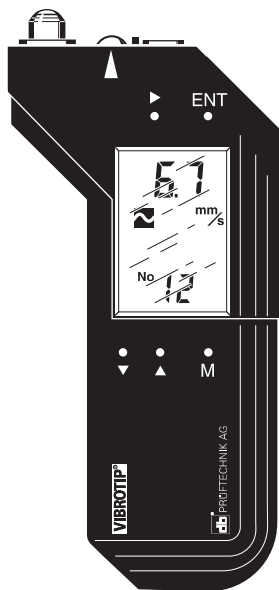
VIBROTIP Data collector



VIBROTIP - Machine analyzer and data collector

1

2



Vibration severity



Bearing condition



Temperature



Rotational speed



Pump cavitation



Windows software



Location identification



Intrinsic safety (option)

Five most-wanted measurements and a data collector in one!

VIBROTIP offers a rational approach to measuring, displaying and storing five of the most vital indications of rotating equipment condition. Imagine measuring vibration level, bearing condition, cavitation, rotation speed and temperature with only one instrument! Together with the OMNITREND PC software VIBROTIP provides detailed analysis and reporting capabilities on the PC. For route-based data collection VIBROTIP can be programmed from the OMNITREND database with many measurement tasks.

Designed for industrial use

VIBROTIP is rugged: its extremely robust, rubberized IP65 housing withstands shocks, chemicals, water spray and dirt. All sensors are already built into the instrument, with no cumbersome cables or fragile plugs. If desired, however, external sensors may be plugged into a socket on the top of the VIBROTIP. An intrinsically safe version is available as an option.

Keep abreast of changing conditions

VIBROTIP automatically shows you the change in signal level since the previous reading stored in the same memory location.

Rugged, accurate built-in sensors

The patented Tandem-Piezo® dual function accelerometer is ideal for both vibration severity readings as well as reliable shock pulse measurement (for bearing condition and pump cavitation); the contoured tip minimizes contact resonance.

The non-contact contrast sensor measures RPM at distances up to 1 m (39"), with no need for a power-consuming light source of its own.

The flexible temperature probe flips out of the way when not in use and maintains proper probe contact regardless of application angle. It can also be used to measure the temperature of liquids.

Trending version or multimeter?

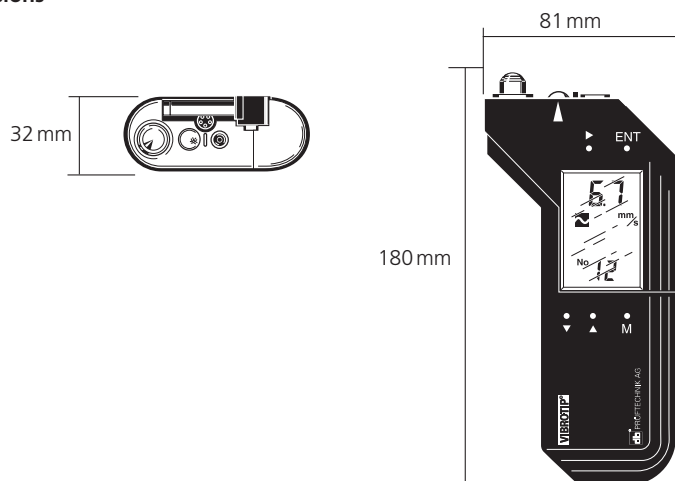
The standard model (VIB 8.650) allows data transfer with a PC via RS-232C interface for reliable automated trending when used with OMNITREND software for Windows. It also accepts the VIBCODE intelligent probe for automatic recognition of measurement locations.

Extremely easy to use, the VIBROTIP multimeter (VIB 8.630) provides the ideal solution for those looking for a rugged, yet affordable machine condition multimeter. It provides all the basic advantages described above at an economical price. It is not, however, capable of transferring measurements to a PC or using VIBCODE for automatic location recognition, nor may it be upgraded to include these capabilities.

Technical data

PARAMETER		VIB 8.650	VIB 8.650 EX	VIB 8.630
Vibration	Sensor	Built-in tandem piezo accelerometer		
	Meas. range (r.m.s.)	≤ 50 mm/s; max. value depends on sensor type and signal frequency		
	Meas. quantities	RMS or peak-peak or 0-peak		
	Frequency range	10 Hz ... 1 kHz		
	Resolution	0,1 mm/s		
	Accuracy	± 5% (DIN 45666)		
Bearing c. / Cavitation	Sensor	Built-in tandem piezo accelerometer		
	Meas. range	- 9 ... +80 dB		
	Meas. quantities	Carpet value, Max value (bearing measurements only)		
	Meas. units	dB _{sv} , dB _N , dB _c		
	Resolution	1 dB		
Temperature	Sensor	Built-in NiCrNi temperature probe; external probes available		
	Meas. range	-30°C ... +270°C		
	Meas. units	°C, °F (selectable)		
	Accuracy	± 3% / ± 1 digit		
Rotational speed	Sensor	Built-in optical tachometer		
	Meas. range	60 ... 30,000 rpm		
	Meas. units	1 rpm		
	Resolution	1 rpm / 0,1%		
	Meas. distance	< 1 meter		
Data collector	Capacity	> 1000 locations w/o trending software (or 398 per function)		--
	Routing	< 6144 measurement values may be stored		--
	Interface	Serial - RS-232C		--
	Data rate	9600 Baud		--
General parameters	Display	LCD segment		
	Env. protection	IP 65 (water-proofed / dust-proofed); chemical protection; shock resistant		
	Temperature range, op.	0°C ... + 60°C		
	Weight	300 g		
	Dimensions	see figure below		
	Power supply	9V battery: IEC 6LR61 (Alkaline / Lithium); opt. rechargeabel batteries (NiCd / NiMH)	9V battery: IEC 6LR61 (Alkaline) DURACELL Procell MN1604	9V battery: IEC 6LR61 (Alkaline / Lithium); opt. rechargeabel batteries (NiCd / NiMH)
	Operation	approx. 10 h (Alkaline) / 20 h (Lithium) / 3 h (rechargeabel batteries)		
	Automatic shut off	yes		
	Intrinsic safety	--	Ex II 2 G Ex ib IIC T4	--

Dimensions



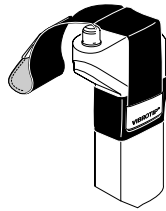
VIB 8.635 : VIBROTIP 'Multimeter' package

1

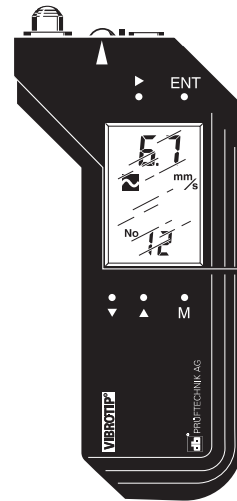
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VIB 8.829



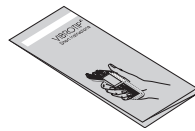
VIB 8.612



VIB 8.630



VIB 9.538.G



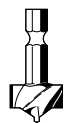
VIB 9.542.G



LIT 01.800



VIB 8.697



VIB 8.610



90109

Description

The VIBROTIP 'multimeter' provides a low-priced and easy-to-use, yet powerful way to reliably determine machine operating condition. This multimeter contains all the basic features of VIBROTIP, but cannot be used with VIBCODE measurement studs or the OMNITREND PC program (nor can it be updated later to do so.)

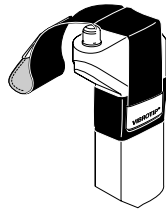
Scope of supply

- VIB 8.610 Countersink bit for preparation of measurement points
- VIB 8.612 Carrying strap holds VIBROTIP on trouser belt
- VIB 8.630 VIBROTIP multimeter
- VIB 8.697 Torx screwdriver for battery replacement, size 10
- VIB 8.829 VIBROTIP case
- VIB 9.538.G VIBROTIP multimeter, operating instructions
- VIB 9.542.G VIBROTIP multimeter short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- 90109 9V battery

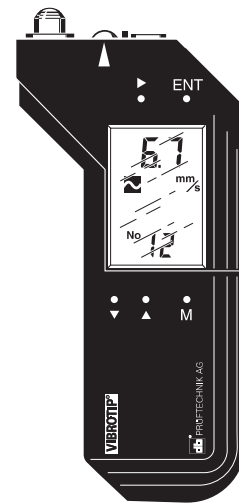
VIB 8.820 : VIBROTIP 'Maintenance' package



VIB 8.829



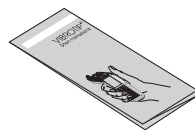
VIB 8.612



VIB 8.650



VIB 9.498.G



VIB 9.519.G



LIT 01.800



VIB 8.697



VIB 8.610



90109

Description

The VIBROTIP 'maintenance' package offers an economical means of obtaining all the basic benefits of the VIBROTIP instrument (including trend data collection) while retaining the option of upgrading later for use with VIB-CODE measurement studs or the OMNITREND PC program.

Scope of supply

VIB 8.610	Countersink bit for preparation of measurement points
VIB 8.612	Carrying strap, holds VIBROTIP on trouser belt
VIB 8.650	VIBROTIP instrument
VIB 8.697	Torx screwdriver for battery replacement, size 10
VIB 8.829	VIBROTIP case
VIB 9.498.G	VIBROTIP operating instructions
VIB 9.519.G	VIBROTIP short instructions
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
90109	9V battery

Not shown:

VIB 4.305	Contrast marking fluid for rpm measurement
-----------	--

May be upgraded to trending package with:

VIB 8.646	OMNITREND upgrade package VIBROTIP 'maintenance' to 'trend'
-----------	---

consists of:

VIB 8.619-USB	VIBROTIP USB cable
VIB 8.862	OMNITREND PC software
VIB 8.862-P	VIBROTIP basic license for PC communication

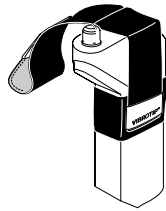
VIB 8.820 EX : VIBROTIP 'Maintenance' package with intrinsic safety

1

2



VIB 8.829



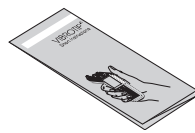
VIB 8.612



VIB 8.650 EX



VIB 9.498.G



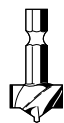
VIB 9.519.D



LIT 01.800



VIB 8.697



VIB 8.610



90109

Description

The VIBROTIP 'maintenance' package with intrinsic safety offers an economical means of obtaining all the basic benefits of the VIBROTIP EX instrument (including trend data collection) while retaining the option of upgrading later for use with VIBCODE measurement studs or the OMNITREND PC program.

Scope of supply

- VIB 8.610 Countersink bit for preparation of measurement points
- VIB 8.612 Carrying strap , holds VIBROTIP on trouser belt
- VIB 8.650 EX VIBROTIP EX instrument
- VIB 8.697 Torx screwdriver for battery replacement, size 10
- VIB 8.829 VIBROTIP case
- VIB 9.498.G VIBROTIP operating instructions
- VIB 9.519.G VIBROTIP short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- 90109 9V battery

Not shown:

- VIB 4.305 Contrast marking fluid for rpm measurement

May be upgraded to trending package with:

- VIB 8.646 OMNITREND upgrade package VIBROTIP 'maintenance' to 'trend'

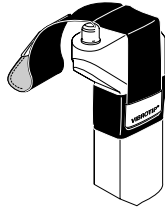
consists of:

- VIB 8.619-USB VIBROTIP USB cable
- VIB 8.862 OMNITREND PC software
- VIB 8.862-P VIBROTIP basic license for PC communication

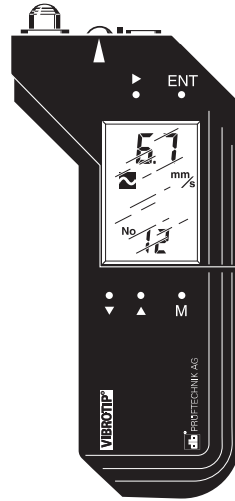
VIB 8.830 : VIBROTIP 'Trending' package



VIB 8.829



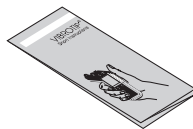
VIB 8.612



VIB 8.650



VIB 9.498.G
VIB 9.631.G



VIB 9.519.G



VIB 8.697



VIB 8.610



90109



VIB 8.862



LIT 01.800



VIB 8.619-USB

Description

The VIBROTIP 'trending' package provides full VIBROTIP trending features (including automated trend data evaluation with the OMNITREND PC program) while retaining the option of upgrading later for use with VIBCODE measurement studs.

Scope of supply

- VIB 8.610 Countersink bit for preparation of measurement points
- VIB 8.612 Carrying strap, holds VIBROTIP on trouser belt
- VIB 8.619-USB VIBROTIP USB cable
- VIB 8.650 VIBROTIP instrument
- VIB 8.697 Torx screwdriver for battery replacement, size 10
- VIB 8.829 VIBROTIP case
- VIB 8.862 OMNITREND pc software
- VIB 9.498.G VIBROTIP operating instructions
- VIB 9.519.G VIBROTIP short instructions

- VIB 9.631.G OMNITREND, Getting started
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- 90109 9V battery

Not shown:

- VIB 4.305 Contrast marking fluid for rpm measurement
- VIB 8.862-P VIBROTIP basic license for PC communication

May be upgraded to 'VIBCODE' package with VIB 8.660 VD VIBCODE transducer

Note

A basic licence for PC communication (VIB 8.862-P) is contained in OMNITREND. Each additional VIBROTIP instrument requires another licence.

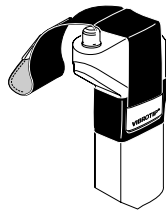
VIB 8.840 : VIBROTIP 'VIBCODE' package

1

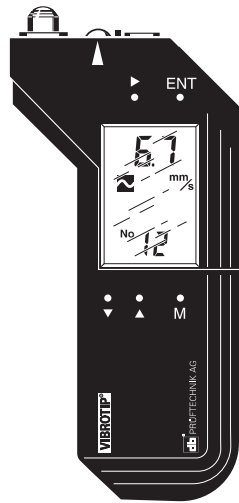
2



VIB 8.829



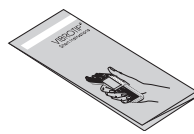
VIB 8.612



VIB 8.650



VIB 9.498.G
VIB 9.631.G
VIB 9.834.G



VIB 9.519.G



LIT 01.800



VIB 8.697



VIB 8.610



90109



VIB 8.862



VIB 8.660 VD



VIB 8.619-USB

Description

The VIBCODE package provides full VIBROTIP trending features with the unique advantage of VIBCODE intelligent stud recognition, which guarantees completely reliable measurement readings.

Scope of supply

- VIB 8.610 Countersink bit for preparation of measurement points
- VIB 8.612 Carrying strap
- VIB 8.619-USB VIBROTIP USB cable
- VIB 8.650 VIBROTIP instrument
- VIB 8.660 VD VIBCODE transducer
- VIB 8.697 Hex screwdriver for battery replacement, size 10
- VIB 8.829 VIBROTIP case
- VIB 8.862 OMNITREND PC software
- VIB 9.498.G VIBROTIP operating instructions

- VIB 9.519.G VIBROTIP short instructions
- VIB 9.631.G OMNITREND, Getting started
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB 9.834.G VIBCODE operating instructions
- 90109 9V battery

- Not shown: VIB 4.305 Contrast marking fluid f.rpm measurement, not shown
- VIB 8.862-P VIBROTIP basic licence for PC communication

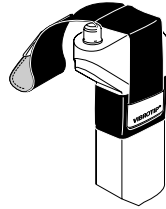
Note

A basic licence for PC communication (VIB 8.862-P) is contained in OMNITREND. Each additional VIBROTIP instrument requires another licence.

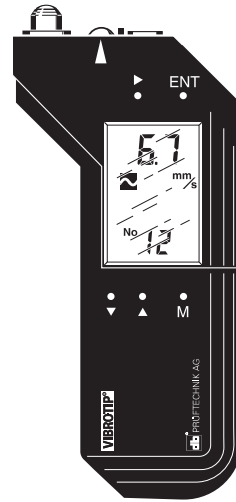
VIB 8.841 : Additional VIBCODE package for VIBROTIP



VIB8.829



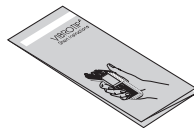
VIB8.612



VIB8.650



VIB9.498.G
VIB9.834.G



VIB9.519.D



LIT 01.800



VIB8.697



VIB8.610



90109



VIB8.660 VD



VIB 8.619-USB

Description

This additional VIBCODE package contains all components of the VIBCODE standard package (VIB 8.840) except for the OMNITREND software.

Scope of supply

- VIB8.610 Countersink bit for preparation of measurement points
- VIB8.612 Carrying strap
- VIB8.619-USB VIBROTIP USB cable
- VIB8.650 VIBROTIP instrument
- VIB8.660 VD VIBCODE transducer
- VIB8.697 Hex screwdriver for battery replacement, size 10
- VIB8.829 VIBROTIP case

- VIB9.498.G VIBROTIP operating instructions
- VIB9.519.G VIBROTIP short instructions
- LIT 01.800 CD ROM, Condition Monitoring catalogs, brochures, magazines
- VIB9.834.G VIBCODE operating instructions
- 90109 9V battery

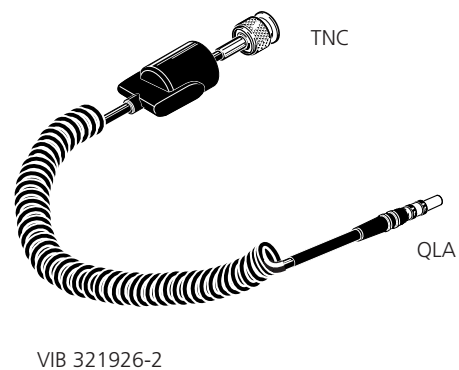
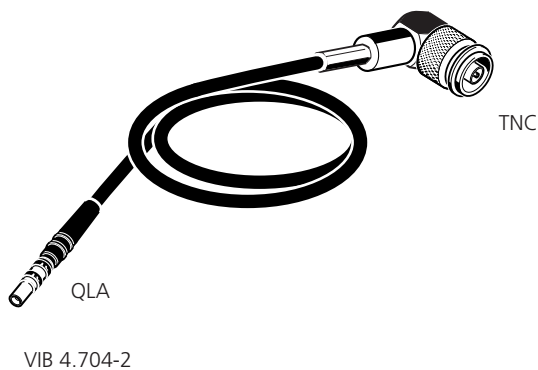
- Not shown:
- VIB4.305 Contrast marking fluid f.rpm measurement, not shown
- VIB 8.862-P VIBROTIP basic license for PC communication

Connection cables for current line-drive (CLD) accelerometers

1

VIB 4.701-2 :	Straight connection cable for CLD-type accelerometer, BNC angled plug, 2 meters
VIB 4.701-5 :	Straight connection cable for CLD-type accelerometer, BNC angled plug, 5 meters
VIB 4.702-2 :	Straight connection cable for CLD-type accelerometer, Microdot angled plug, 2 meters
VIB 4.702-5 :	Straight connection cable for CLD-type accelerometer, Microdot angled plug, 5 meters
VIB 4.704-2 :	Straight connection cable for CLD-type accelerometer, TNC angled plug, 2 meters
VIB 4.704-5 :	Straight connection cable for CLD-type accelerometer, TNC angled plug, 5 meters
VIB 321926-2 :	Spiral connection cable for CLD-type accelerometer, TNC plug, 2 meters

2



Application

Standard sensor cable for connecting mobile CLD-type accelerometers to the VIBROTIP data collector.

Cable length

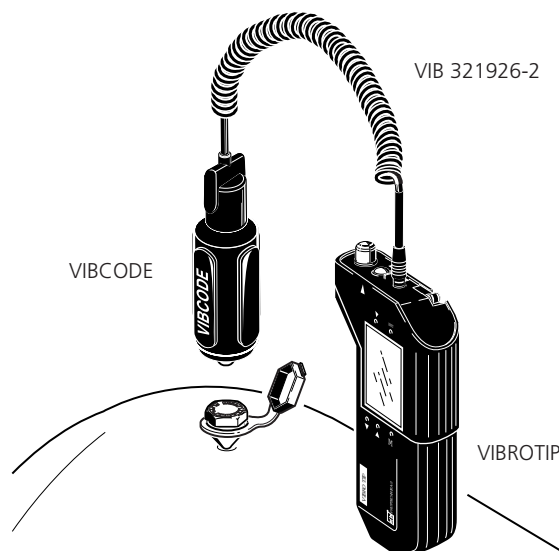
VIB 4.70x-2 /-5 2 m / 5 m
 VIB 321926-2 0.4 ... 2.0 m

Accessories

VIB 8.617 QLA angled plug for VIBROTIP

Connection example

VIBCODE to VIBROTIP

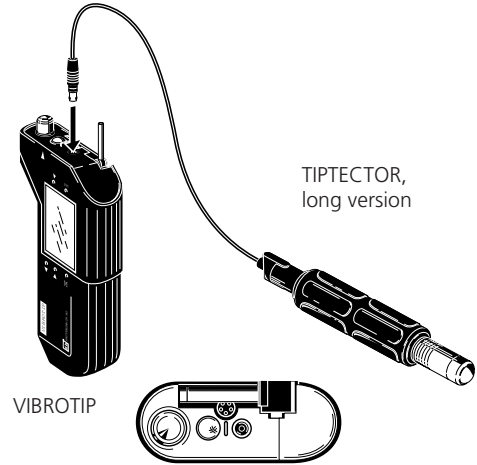
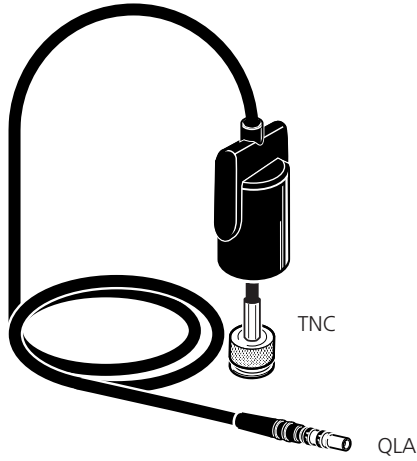


TIPECTOR cables to be connected to VIBROTIP

VIB 8.618-1,5 : TIPECTOR cable, straight, 1.5 meters long
VIB 8.618-5 : TIPECTOR cable, straight, 5 meters long

1

2



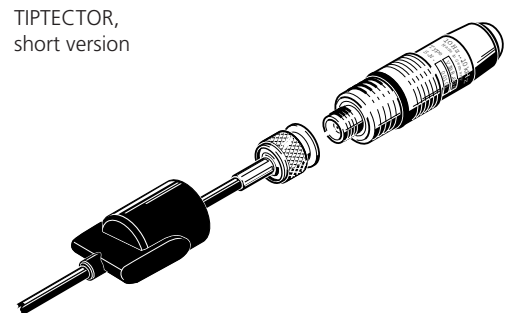
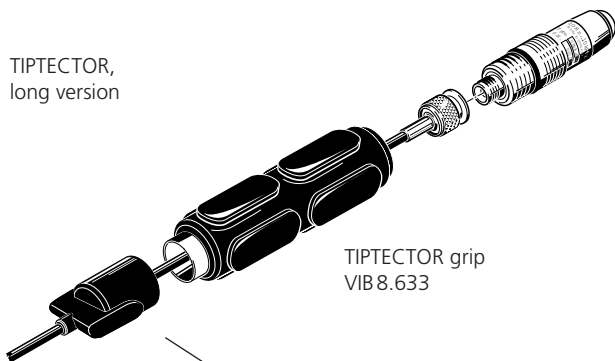
Application

Spare connection cable for the TIPECTOR probe.

Note

To disconnect the cable, first pull off the cap, and, with the long version, unscrew the handle. Then unscrew the TNC connector.

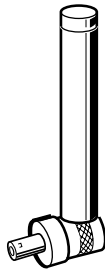
Connection example



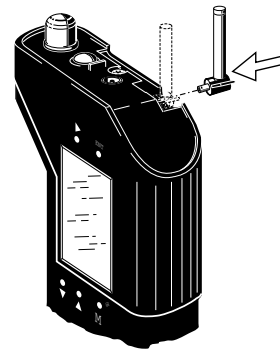
VIB 8.605: Spare temperature probe for VIBROTIP

1

2



Temperature



How to replace the VIBROTIP temperature probe

Application

The temperature probe VIB 8.605 is a spare part for the built-in sensor, which can easily be levered out with a screw driver. Its flexible, rubberized neck allows optimum contact with the measuring location and temperature measurements in liquids.

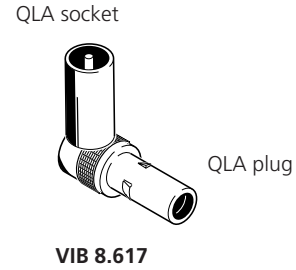
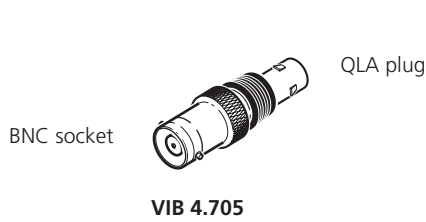
Technical data

PARAMETER		VIB 8.605
Measurement	Type	NiCrNi thermo couple
	Meas. range	-30°C.. +270°C
	Sensitivity	--
	Accuracy	< 3%
Mechanical	Dimensions (L x Ø)	25 mm x 11 mm
	Cable length	--
	Weight	6 g
	Connection	QLA plug

QLA adapters for VIBROTIP

VIB 4.705 : BNC to QLA adapter

VIB 8.617 : QLA angled plug



Application

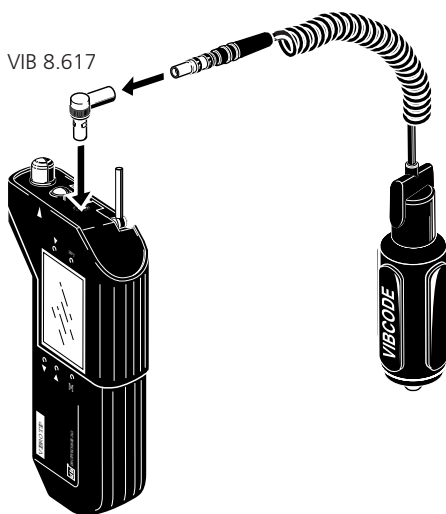
These adapters extend the connection options at the QLA input of the VIBROTIP data collector.

The VIB 4.705 adapter connects transducers with BNC connector to the data collector. The VIB 8.617 adapter is

used to connect external vibration sensors to VIBROTIP so that they do not interfere with measurements using the built-in temperature probe or RPM sensor.

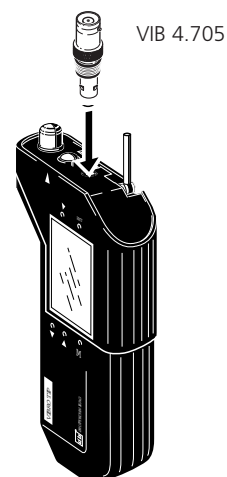
Connection example

VIB 8.617 to VIBROTIP and VIBCODE



Connection example

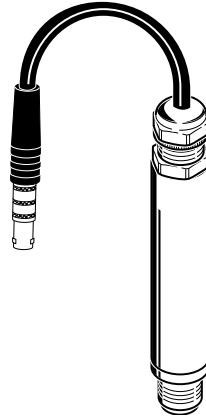
VIB 4.705 to VIBROTIP



VIB 8.746-VD: SPM adapter for VIBROTIP

1

2



Application

The SPM adapter is used to connect the VIBROTIP data collector to existing SPM 40000 or TRA 30 measurement sensors by converting the voltage signal to a current signal.

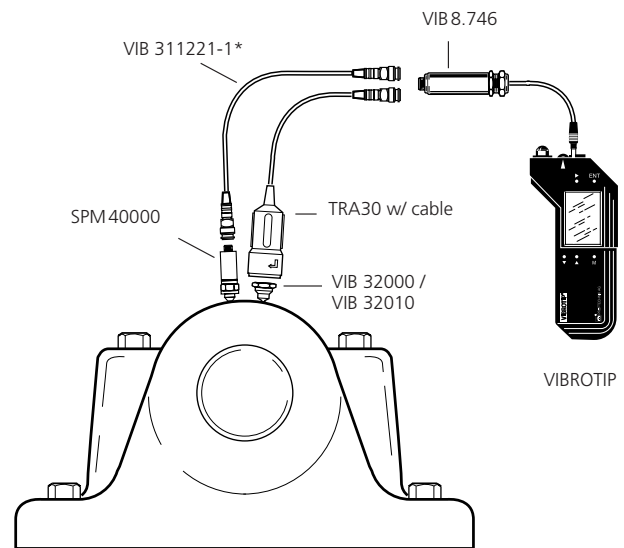
Note

The SPM adapter may not be used in hazardous areas!

Technical data

PARAMETER		VIB 8.746-VD
General	Input	QLA
	Output	TNC
	Length	approx. 240 mm
	Diameter	16 mm

Application example



* This cable is not included in the scope of delivery

VIB 8.619-USB : Serial to USB cable adapter for VIBROTIP EX

1

2



Application

This cable adapter is used with the VIBROTIP EX data collector for data transfer to a PC via an USB port. It protects the data collector from damage caused by surges and may only be connected temporarily - i.e. not permanent - to the USB port of a standard computer. The maximum voltage U_m on the USB port must not be greater than 60 volts, even under fault conditions.

Cable length approx. 1.5 m

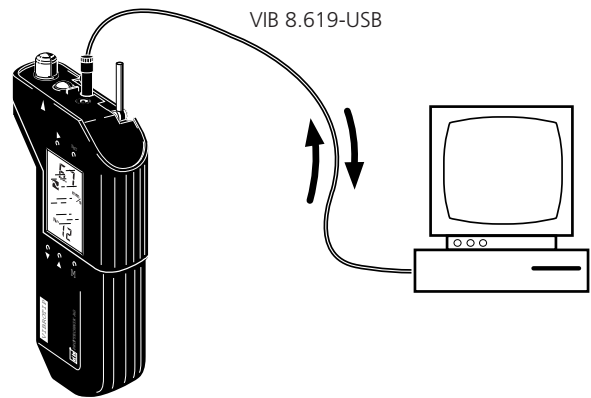
Note

This cable adapter may only be connected outside the hazardous area.

This cable adapter can also be used with VIBROTIP without intrinsic safety!

Technical data

PARAMETER		VIB 8.619-USB
Electrical	Connectors	USB plug / Binder plug 5p
	Supply	5 VDC, from PC USB port
General	Length	approx. 1.5 m
	Operating temperature	-20°C ... + 50°C
	Storage temperature	-30°C ... + 80°C
	Relative humidity	< 95%
	Protection class	IP 50



VIBROTIP EX

OMNITREND for VIBROTIP

1

VIB 8.862 : OMNITREND for VIBROTIP, software package

VIB 8.863 : VIBROTIP device driver for OMNITREND

VIB 8.862-P : PC licence for VIBROTIP

2



The OMNITREND software package **VIB 8.862** contains the CD ROM and the following items:

- VIB 8.862-P PC licence
(Communication password for one VIBROTIP instrument)
- VIB 8.862-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 8.863** is required to operate the OMNITREND software already available with the VIBROTIP. VIB 8.863 contains:

- VIB 8.862-P PC licence
(Communication password for one VIBROTIP instrument)
- VIB 8.862-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

Each further VIBROTIP is registered with a separate **VIB 8.862-P** PC license.

Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

Chapter 2

VIBTOOL PDA measurement transducer



VIBTOOL PDA measurement transducer with Bluetooth communication

1
2



Transducer with wireless data transmission

VIBTOOL PDA (VIB 2.700 EX) is a handy, multi-functional tool for recording the most important condition parameters of rotating machines. Vibration, bearing condition, temperature and RPM can be measured with the integrated sensors. These values can then be displayed on the LCD display, and transferred wirelessly via a Bluetooth interface to any commercially-available PDA computer for evaluation and archiving. The PDA computer contains the corresponding application program which is separately available for programming the measurement tasks and for the administration of measurement locations in a database.

Designed for industrial use

VIBTOOL is rugged: its extremely robust, rubberized IP65 housing withstands shocks, chemicals, water spray and dirt (IP 65). All sensors are already built into the instrument, with no cumbersome cables or fragile plugs. If desired, however, external sensors may be plugged into a socket on the top of the instrument. VIBTOOL is available as an intrinsically safe version only.

Rugged, accurate built-in sensors

The patented Tandem-Piezo® dual function accelerometer is ideal for both vibration severity readings as well as reliable shock pulse measurement (for bearing condition); the contoured tip minimizes contact resonance.

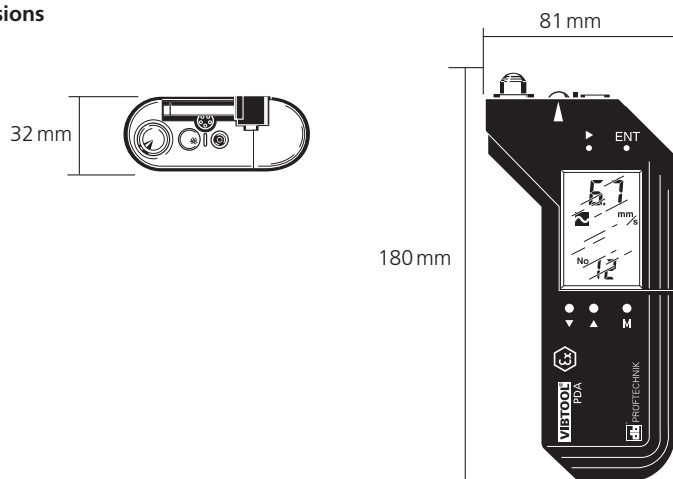
The non-contact contrast sensor measures RPM at distances up to 0.2 meter, with no need for a power-consuming light source of its own.

The flexible temperature probe flips out of the way when not in use and maintains proper probe contact regardless of application angle. It can also be used to measure the temperature of liquids.

Technical data

PARAMETER		VIB 2.700 EX
Vibration	Sensor	Built-in tandem piezo accelerometer
	Meas. range, vibration velocity	≤ 50 mm/s; max. value depends on sensor type and signal frequency
	Meas. range, vibration acceleration	≤ 961 m/s ² ; max. value depends on sensor type and signal frequency
	Frequency range, vibration velocity	2/10 Hz to 1/10 kHz
	Frequency range, vibration acceleration	2/10/500 Hz to 1/10 kHz ; 1 kHz to 10 kHz
	Meas. quantities	RMS or 0-peak
	Accuracy	± 5% (DIN 45666)
Bearing c. / Cavitation	Sensor	Built-in tandem piezo accelerometer
	Meas. range	- 9 ... +80 dB
	Meas. quantities	Carpet value, Max value (bearing measurements only)
	Meas. units	dB _{sw} , dB _N , dB _C
	Resolution	1 dB
Temperature	Sensor	Built-in NiCrNi temperature probe; external probes available
	Meas. range	-30°C ... +270°C
	Meas. units	°C, °F (selectable)
	Accuracy	± 3% / ± 1 digit
Rotational speed	Sensor	Built-in optical tachometer
	Meas. range	60 ... 30,000 rpm
	Meas. units	1 rpm / 0,1%
	Resolution	1 rpm
	Meas. distance	< 0.2 meters
General parameters	Display	LCD segment
	Interfaces	Bluetooth - class 2 / serial (RS 232)
	Env. protection	IP 65 (water-proofed / dust-proofed); chemical protection; shock resistant
	Operating temperature	-20°C ... + 60°C
	Charging temperature	0°C ... + 40°C
	Weight	300 g
	Dimensions	s. figure below
	Power supply	Li ion rechargeable battery
	Operating time	approx. 8 hours
	Automatic shut off	yes
EX	Marking, explosive gas atmosphere	Ex II 2 G Ex ib IIC T4
	Marking, explosive dust atmosphere	Ex II 3 D T65°C IP65

Dimensions

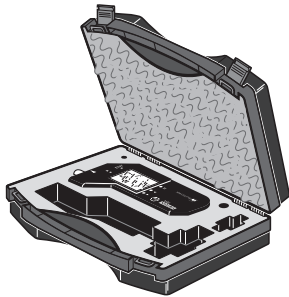


VIBTOOL delivery packages

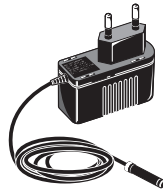
1

- VIB 2.760 EU : VIBTOOL delivery package for the E.C.
- VIB 2.760 UK : VIBTOOL delivery package for the United Kingdom
- VIB 2.760 US : VIBTOOL delivery package for the U.S.A.

2



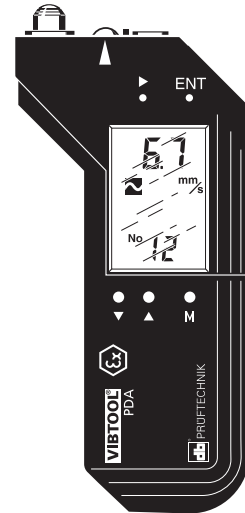
VIB 2.729



VIB 2.720, or
VIB 2.721, or
VIB 2.722



VIB 9.497



VIB 2.700 EX

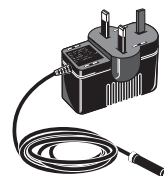


Scope of delivery - VIB 2.760 EU:

- VIB 2.700 EX VIBTOOL instrument incl. rechargeable battery, intrinsically safe
- VIB 2.720 VIBTOOL charger, EC version
- VIB 2.729 VIBTOOL case
- VIB 9.497.G VIBTOOL operating instructions

Scope of delivery - VIB 2.760 UK:

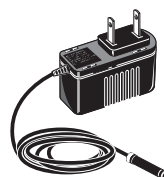
- VIB 2.700 EX VIBTOOL instrument incl. rechargeable battery, intrinsically safe
- VIB 2.722 VIBTOOL charger, UK version
- VIB 2.729 VIBTOOL case
- VIB 9.497.G VIBTOOL operating instructions



VIB 2.721

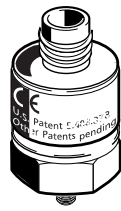
Scope of delivery - VIB 2.760 US:

- VIB 2.700 EX VIBTOOL instrument incl. rechargeable battery, intrinsically safe
- VIB 2.721 VIBTOOL charger, US version
- VIB 2.729 VIBTOOL case
- VIB 9.497.G VIBTOOL operating instructions

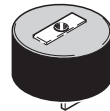


VIB 2.721

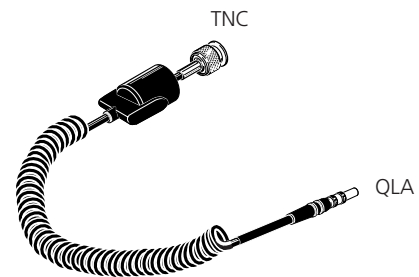
VIB 6.142RTSET : Transducer set for VIBTOOL and VIBROTIP EX



VIB 6.142 DEX



VIB 3.420



VIB 321926-2

Description

This package contains the hardware components for vibration measurements with VIBTOOL und VIBROTIP EX.

Scope of supply

- VIB 6.142 DEX Accelerometer for standard machines, intrinsically safe
- VIB 3.420 Magnetic holder for curved mounting surfaces
- VIB 321926-2 Spiral connection cable for CLD-type accelerometer, TNC plug, 2 meters

Index by order number

Order no.	Page
VIB 2.700 EX	24
VIB 2.760 EU	24
VIB 2.760 UK.....	24
VIB 2.760 US.....	24
VIB 4.701-2	14
VIB 4.701-5	14
VIB 4.702-2	14
VIB 4.702-5	14
VIB 4.704-2	14
VIB 4.704-5	14
VIB 4.705	17
VIB 5.955-X.....	20
VIB 5.957-2	20
VIB 5.957-5	20
VIB 6.142RVTSET	25
VIB 8.605	16
VIB 8.610	8
VIB 8.617	17
VIB 8.618-1,5	15
VIB 8.618-5	15
VIB 8.619-USB.....	19
VIB 8.630	8
VIB 8.635	8
VIB 8.650 EX	10
VIB 8.660 VD.....	12
VIB 8.746-VD	18
VIB 8.820	9
VIB 8.820 EX	10
VIB 8.830	11
VIB 8.840	12
VIB 8.841	13
VIB 8.862	11, 20
VIB 8.862-P	20
VIB 8.863	20
VIB 321926-2	14

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Productive maintenance technology

VIBRONET[®] Signalmaster

Online Condition Monitoring
for industrial plants and dis-
tributed operating facilities

Catalog



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Condition Monitoring
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Contents

Chapter 1

VIBRONET Signalmaster System

VIBRONET Signalmaster - Online Condition Monitoring for up to 108 meas. locations 6

Order no.	Product	Page
VIB 5.890-1 :	VIBRONET Signalmaster standard package for 9-channel field multiplexers and one string line	8
VIB 5.890-3 :	VIBRONET Signalmaster standard package for 9-channel field multiplexers and three string lines.....	9
VIB 5.802 :	VIBRONET Signalmaster basic unit.....	10
VIB 5.962 :	Power supply for VIBRONET Signalmaster, 5 VDC	13
VIB 5.963 :	Power supply for VIBRONET Signalmaster, 12 VDC	13
VIB 5.956-X :	System bus cable for VIBRONET Signalmaster with X connectors	14
VIB 5.815-1 :	Shock pulse module with one Current Linedrive input for VIBRONET Signalmaster	15
VIB 5.815-3 :	Shock pulse module with three Current Linedrive inputs for VIBRONET Signalmaster	15
VIB 8.310 :	Temperature module for VIBRONET field multiplexer	17
VIB 8.312 :	Process parameters module (current/ voltage) for VIBRONET field multiplexer	17
VIB 8.313 :	RPM module for VIBRONET field multiplexer	17
VIB 8.310 EX :	Temperature module for VIBRONET field multiplexer, intrinsically safe.....	17
VIB 8.313 EX :	RPM module for VIBRONET field multiplexer, intrinsically safe.....	17
VIB 8.314 EX :	Vibration module for VIBRONET field multiplexer, intrinsically safe.....	17
VIB 8.306 :	Field multiplexer with threaded fitting M12 for VIBRONET Signalmaster	18
VIB 8.306 S :	Field multiplexer with threaded fitting M20 for VIBRONET Signalmaster	18
VIB 8.306 V :	Field multiplexer with stainless steel housing for VIBRONET Signalmaster	18
VIB 8.306 EX :	Field multiplexer for VIBRONET Signalmaster, aluminium housing, intrinsically safe, 224x120 mm	19
VIB 5.917 :	Output module with two SPDT relays for VIBRONET Signalmaster	20
VIB 5.973 :	Terminal with voltage limitation, 5 Volt	21

Chapter 2

VIBRONET Signalmaster accessories

VIB 5.818-N :	16-channel multiplexers for ICP-type or Current LineDrive accelerometers	24
VIB 5.818-NEV :	16-channel multiplexers for event recording	24
VIB 5.819-4x4 :	16-channel multiplexers with 4x4 synchronous inputs	24
VIB 5.819-8x2 :	16-channel multiplexers with 8x2 synchronous inputs	24
VIB 5.816 :	Connection module for Current LineDrive accelerometers	27
VIB 5.812-ICP :	Connection module for ICP-type accelerometers	28
VIB 5.910 :	Add-on module for digital output	29
VIB 5.959 :	Industrial 5-Port ethernet switch for VIBRONET Signalmaster.....	32
VIB 5.955-X :	Patch cable	33
VIB 5.957-2 :	Crossover ethernet cable, 2 m.....	33
VIB 5.957-5 :	Crossover ethernet cable, 5 m.....	33
VIB 5.964-1,5 :	Power supply for VIBRONET Signalmaster, 24 V / 1,5 A	34
VIB 5.964-2,5 :	Power supply for VIBRONET Signalmaster, 24 V / 2,5 A	34
VIB 5.964-5 :	Power supply for VIBRONET Signalmaster, 24 V / 5 A	34
VIB 5.920-MOD:	Slave connection module for Modbus Plus fieldbus system.....	35
VIB 5.970-M :	Terminal with high-voltage fuse and transient protection for the signal cable	36
VIB 5.970-P12 :	Terminal with high-voltage fuse and transient protection for the 12VDC power supply	36
VIB 5.970-P24 :	Terminal with high-voltage fuse and transient protection for the 24VDC power supply	36
VIB 5.970-P250:	Terminal with high-voltage fuse and transient protection for the 250VAC power supply.....	36
VIB 5.972 :	Terminal for conversion of 20mA signals into voltage signals.....	37
VIB 5.974-T2 :	Terminal with voltage divider 1 / 2.....	38
VIB 5.974-T3 :	Terminal with voltage divider 1 / 3.....	38
VIB 5.974-T4 :	Terminal with voltage divider 1 / 4.....	38
VIB 5.975 :	Connection terminal for potential-free contact signals	39
VIB 8.957 :	OMNITREND for VIBRONET Signalmaster Standard, software package.....	40
VIB 5.883 :	VIBRONET Signalmaster device driver for OMNITREND	40
VIB 8.957-P :	PC licence for VIBRONET Signalmaster	40
	Installation examples.....	41

Index

Index by order number 47










Chapter 1

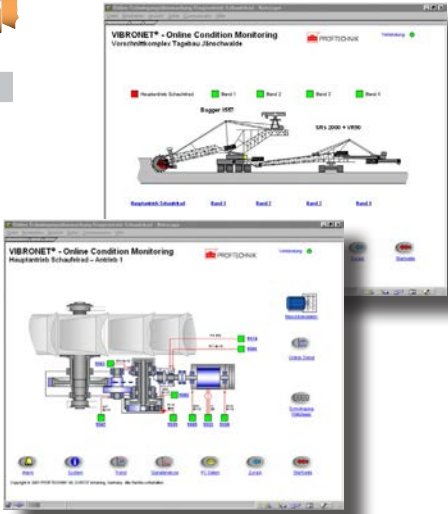
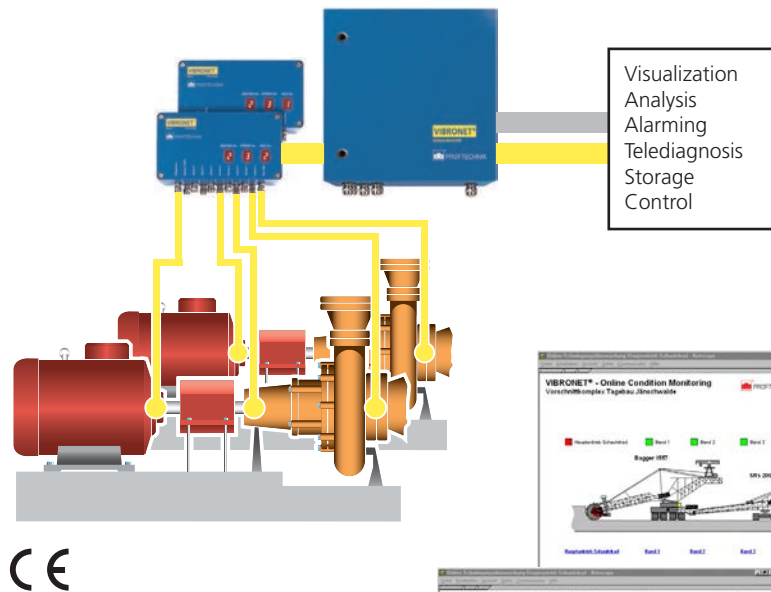
VIBRONET Signalmaster System



VIBRONET Signalmaster - Online Condition Monitoring for up to 108 meas. locations

1
2

-  **Vibration**
-  **Bearing condition**
-  **Temperature**
-  **RPM**
-  **Process parameters**
-  **FFT spectrum**
-  **Envelope**
-  **Time waveform**
-  **Intrinsic safety (option)**



The VIBRONET Signalmaster is an online condition monitoring and diagnostic system for machines in industrial plants and distributed operating facilities. The system can be expanded by a series of program modules that are specific to the application:

- Band analysis module for the automatic evaluation of complex vibration processes in rolling bearings, gears or special machines.
- Cepstrum analysis
- Orbit analysis
- Data server for the automatic or event-controlled read out of data and for transferring them to higher systems

Software

All functions are provided by Java applets. The following range of functions is included in the standard version:

- Standardized graphic user interface
- List of all locations in the alarm state
- List of all locations in the warning state
- List of all locations with sensor error
- Trend history for each aggregate showing all essential events (with OMNITREND PC software only)
- Trend export of the data to the PC
- Online diagnosis: Velocity, acceleration and envelope spectrums, as well as time records for all acceleration transducers.
- Alarm spectrum: The system measures and stores alarm signals (e.g. alarm spectra) automatically if alarm or warning limits are exceeded for the measuring location concerned.

Option

- Condition overview indicated on the machine diagram by a change of colors (red, yellow, green)
- Online trend: General overview of the characteristic values and their current trend.
- Online meter: Displays the current overall values; change of colors when threshold values are exceeded.

Automation

The VIBRONET Signalmaster is not only a monitoring system. Due to its programming capability, it can operate as an automated system that is also in a position to control process and measurement parameters and performs detailed analyses on complex systems (optional).

The VIBRONET Signalmaster can be programmed so that it only indicates the possible initial indications of specific damage. Instead of the message "Vibration monitoring registers alarm", the VIBRONET Signalmaster can send "Damage beginning on 2nd. gear stage mixer gear 5, material preparation" as an SMS to a cell phone or to a fault reporting system in the control room.

External connection

VIBRONET Signalmaster operates as a web server. Therefore, the standard data interface is the TCP/IP Internet protocol. Thus, the VIBRONET Signalmaster can be integrated directly as another computer in an existing net-

work. Data can then be accessed from any point in the network or, even from outside the network via a router. Data exchange on site is possible via an Ethernet patch cable (TCP/IP) or a serial cable connection via the RS232 interface (PPP protocol).

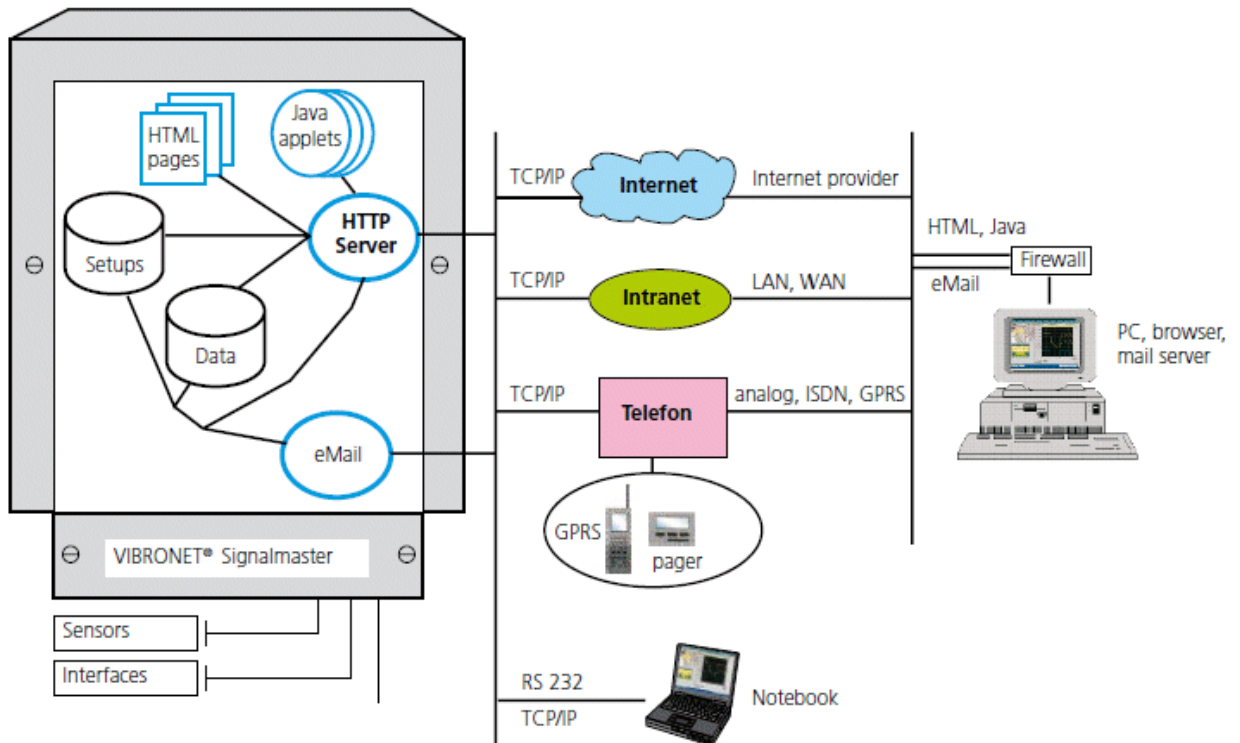
Further possibilities for communication include:

- GPRS router
- WLAN
- Satellite communication
- Fieldbus connection
- DDE connection to the PLC

Configuration

The system is pre-configured according to the requirements of the machines to be monitored. This includes the programming, creating HTML pages as the user interface and the initial configuration of the warning and alarm values.

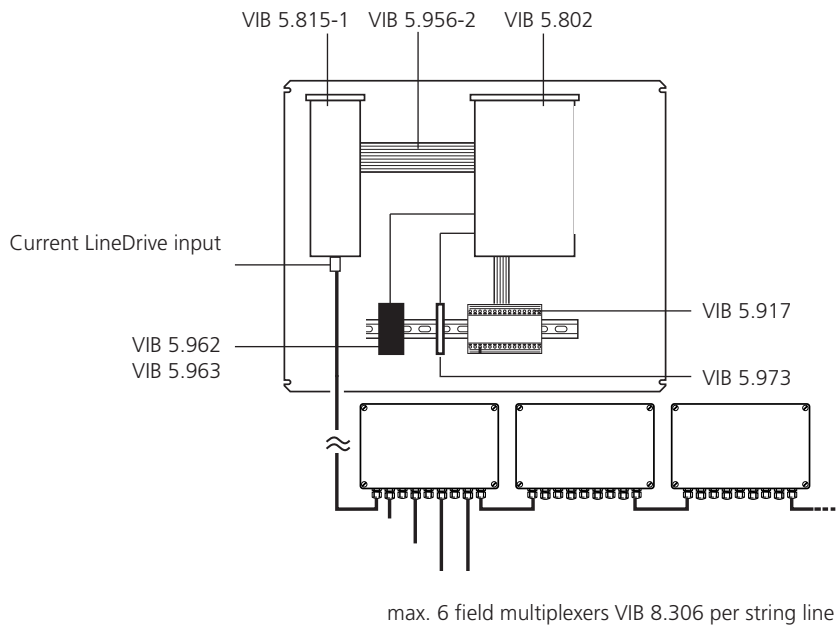
VIBRONET Signalmaster: Functionality and communication



VIB 5.890-1 : VIBRONET Signalmaster standard package for 9-channel field multiplexers and one string line

1

2



This package provides up to 54 measurement channels to monitor standard machinery (i.e. motor, pump, blower,...). Up to six field multiplexers (VIB 8.306) with nine transducers can be connected in a string. All components are mounted and wired in a robust cabinet.

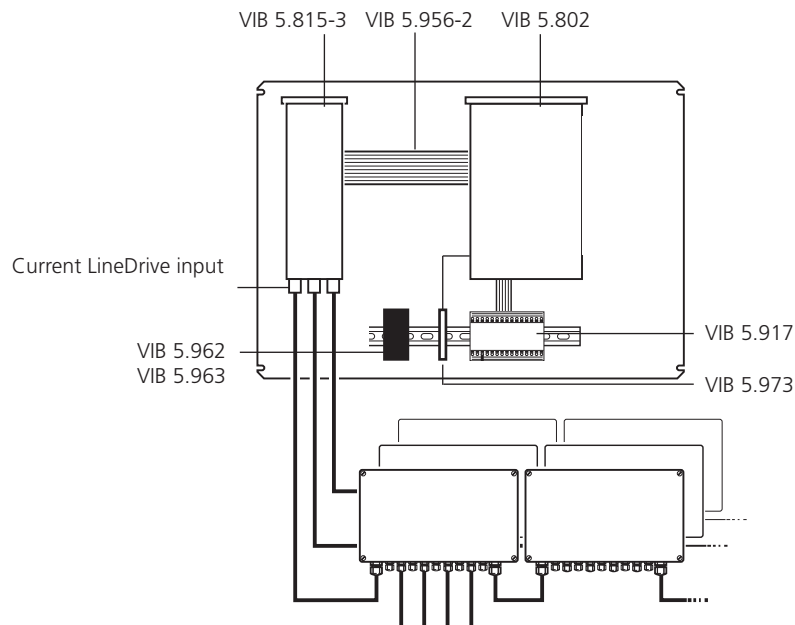
Field multiplexer with 9 channels

- Connection via module VIB 5.815-1 (1 current LineDrive input)
- Up to 6 multiplexers with up to 54 transducers can be connected to the basic unit.
- Long cabling between multiplexers and the VIBRONET Signalmaster basic unit.

Scope of delivery

VIB 5.802	VIBRONET Signalmaster basic unit
VIB 5.962	Power supply, 5V
VIB 5.963	Power supply, 12V
VIB 5.956-2	Systembus cable with two connectors
VIB 5.815-1	Shock pulse module for one string line
VIB 5.917	Output module with two SPDT relays
VIB 5.973	Terminal with voltage limitation 5V, 5 pcs.
VIB 9.520.G	Installation instructions
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
Not shown	
055060160	Cabinet
003370073	Patch cable, 1 m

VIB 5.890-3 : VIBRONET Signalmaster standard package for 9-channel field multiplexers and three string lines



max. 6 field multiplexers VIB 8.306 per string line

This package provides up to 108 measurement channels to monitor standard machinery (i.e. motor, pump, blower,...). Up to six field multiplexers (VIB 8.306) with nine transducers can be connected in a string. All components are mounted and wired in a robust cabinet.

Field multiplexer with 9 channels

- Connection via module VIB 5.815-3 (3 current Line-Drive inputs)
- Up to 3x6 multiplexers can be connected to the basic unit.
- Long cabling between multiplexers and the VIBRONET Signalmaster basic unit.

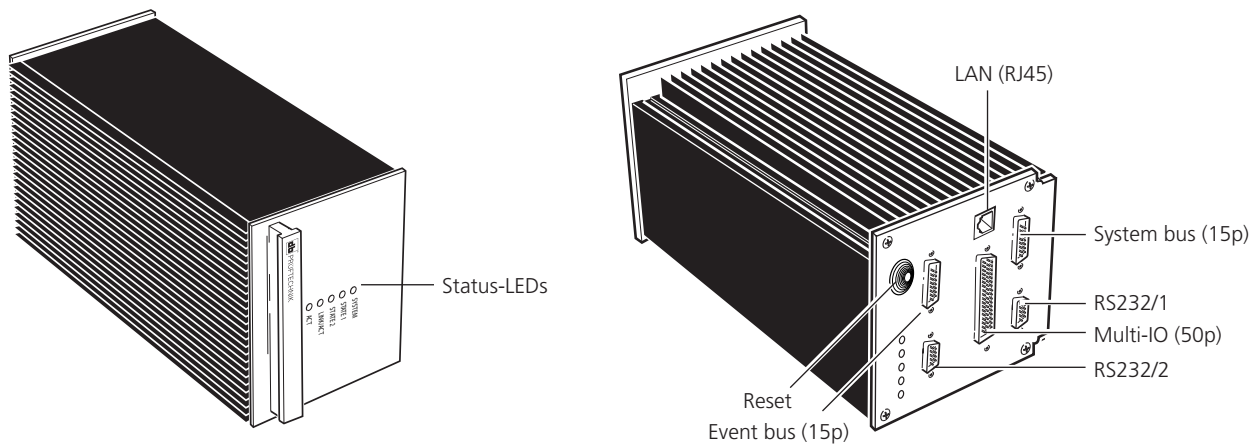
Scope of delivery

VIB 5.802	VIBRONET Signalmaster basic unit
VIB 5.962	Power supply, 5V
VIB 5.963	Power supply, 12V
VIB 5.956-2	Systembus cable with two connectors
VIB 5.815-3	Shock pulse module for three string lines
VIB 5.917	Output module with two SPDT relays
VIB 5.973	Terminal with voltage limitation 5V, 5 pcs.
VIB 9.520.G	Installation instructions
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
Not shown	
055060160	Cabinet
003370073	Patch cable, 1 m

VIB 5.802 : VIBRONET Signalmaster basic unit

1

2



Application

Online Condition Monitoring and Diagnosis of rotating machinery in industrial plants and distributed operating facilities.

Short description

- The VIBRONET Signalmaster basic unit combines the features of intelligent data loggers, transient recorders, classifying instruments, programmable control units and recording systems.
- Sensors (e.g. for temperature, pressure, flow, power, RPM, torque, acceleration, etc.) can be directly connected.
- Digital outputs are available for controlling actors.
- Analog outputs are provided by add-on modules.
- External data devices can be connected via standard interfaces such as RS-232 or Ethernet.
- Several basic units can be networked either with one another via Ethernet or with other devices.

- TCP/IP, Web server (HTTP and FTP) and Email server.
- Operation, visualization and evaluation can be performed on the basic unit.
- TCP/IP communication via Inter-/ Intranet, LAN, WLAN, phone, mobile phone and RS232.
- The basic unit is connected to field bus systems and process control systems via appropriately configured connection modules.
- The real time multi-tasking operating system coordinates the interplay of application programs, data processing, data storage, communication and system monitoring.
- The user can comfortably set up and optimize the measurement parameters and limiting values with the OMNITREND PC software.
- Suitable for autonomous use in an industrial environment.
- Tested for tropical climate resistance and electromagnetic compatibility.

Technical data

PARAMETER		VIB 5.802
Interfaces	Meas. channels, analog	6 differential inputs (3 of them synchronous)
	Meas. channels, digital	RPM / Counter: 2 x TTL...30 V Keyphaser: ± 30 V AC and DC
	Input channels, digital	4 x, TTL...30 V
	Output channels, digital	8 x, 5 V, 5 mA
	Ethernet	1, data rate: 100 Mbit
	Serial - RS 232	2, data rate: 115,2 kBit
	FET switching output	12 V DC, 1 A, switchable
	Expanded no. of channels	External multiplexer for analog and digital outputs
Measurement	Meas. range, analog	± 10 V, ± 1 V, ± 100 mV, ± 10 mV
	Dynamic Range / Resolution	96 dB / 16 bit ADC
	Accuracy, analog input	0.05% of full scale
	Common mode rejection	> 115 dB at an amplification of 60 dB
	Temperature coefficient, analog input	20 ppm / K
	Input protection	Differential input: ± 12 V Digital input: + 30 V
	SW-Downsampling	4.8 / 2.4 / 1.2 / 0.6 / 0.3 / 0.15 kHz
	Phase error, synchronous analog inputs	< 0,05 %
	Crosstalk between analog inputs	< -100 dB
	Dynamic amplitude errors	< -0.1 dB (up to 50% of the max. signal frequency) < - 0.5 dB (up to 75% of the max. signal frequency) < -1.0 dB (up to 80% of the max. signal frequency) < - 3.0 dB (up to 100% of the max. signal frequency)
	Counter frequency	< 10 kHz
	Signal coupling	DC (AC/DC on the differential synchr. inputs)
	Sampling rate, analog inputs	153.6 / 76.8 / 38.4 / 19.2 / 9.6 kHz
	Frequency range	0...50 Hz to 0...50 kHz, sub-divided into 11 areas
	Frequency resolution	400, 800, 1600, 3200, 6400, 12800 lines
	Anti-aliasing	Dynamic adaptation
	Envelope	Digital input filter, selectable
	Measurement functions	Time waveform, spectrum, integration of the spectrum, envelope, orbit, Overall values: shock pulse, acceleration (RMS), vibration velocity (peak, RMS)
Operation modes	Frequency band analysis, transient memory, online classification, trending	
General parameters	Power supply	5.05V / 1.5A max. and 12V / 1.2A max.
	Memory	RAM: 128 MB / Flash: 1000 MB
	Temperature range, operation	- 20°C ... +60°C
	Humidity	10% to 100%, dew permitted
	Mechanical load	Shock:30 g / constant vibration: 2 g (10-150 Hz)
	Protection class	IP 66 (EN 60529) / NEMA 4
	Dimensions	approx. 260 x 130 x 150 mm (L x W x H)
	Total weight	approx. 1.5 kg

Connection plan for VIB 5.802

1

RS 232 (Sub-D 9)

Sub-D no.	RS232-1	RS232 -2
1	-	-
2	TxD	TxD
3	RxD	RxD
4	-	-
5	Gnd	Gnd
6	-	-
7	-	-
8	-	RTS
9	-	-

Eventbus (Sub-D 15)

Sub-D no.	Channel
1	Hi3 (AD3)
2	Lo3 (AD3)
3	AG
4	CLK-AD3
5	12V
6	PG
7	
8	
9	RST-AD3
10	
11	
12	
13	
14	
15	

Systembus (Sub-D 15)

Sub-D no.	Channel
1	Hi3 (AD3)
2	Lo3 (AD3)
3	AG
4	MUX-CLK (OUT12)
5	12V
6	PG
7	SDM1 (OUT9)
8	SDM2 (OUT10)
9	SDM3 (OUT11)
10	Hi4 (AD1)
11	Lo4 (AD1)
12	Hi1 (AD1)
13	Lo1 (AD1)
14	Hi2 (AD2)
15	Lo2 (AD2)

Multi functional interface (Sub-D 50)

Sub-D no.	Channel	Sub-D no.	Channel	Sub-D no.	Channel
1	LAN:Tx+	18	LAN:Rx+	34	PE
2	LAN:Tx-	19	LAN:Rx-	35	KP/DC
3	12V Switch	20	OUT8	36	12V
4	5V	21	PG	37	PG
5	IN1	22	PG	38	IN3
6	IN2	23	PG	39	IN4
7	OUT1	24	PG	40	OUT3
8	OUT2	25	PG	41	OUT4
9	P1	26	PG	42	P2
10	KP/AC	27	OUT6	43	SYNC
11	OUT5	28	Lo1 (AD1)	44	OUT7
12	Hi1 (AD1)	29	Lo2 (AD2)	45	AG
13	Hi2 (AD2)	30	Lo3 (AD3)	46	AG
14	Hi3 (AD3)	31	Lo4 (AD1)	47	AG
15	Hi4 (AD1)	32	Lo5 (AD1)	48	AG
16	Hi5 (AD1)	33	Lo6 (AD1)	49	AG
17	Hi6 (AD1)			50	AG

- 12V Voltage supply for Event bus and System bus
- PG Ground potential for power supply and digital signal line
- AG Ground potential for analog signal line
- MUX-CLK Multiplexer control line
- SDM Address bus
- HiLo Analog signal line
- CLK, RST Event multiplexer control line

Power supply

- 5V 5.05V / 1.5A max.
- 12V 12V / 1.2A max.
- Power input depends on the attached accessory equipment.
- PG Ground potential for power supply and digital signal line
- AG Ground potential for analog signal line

Digital interfaces

- IN's**
- IN1-IN4 TTL - 30V
- P1, P2 TTL - 30 V
- KP/AC $U_{bias} \pm 30V, dU_{min} 0,5V, dT_{min} 100\mu s, dU/dT_{min} 1V/ms$
- KP/DC $U_{bias} \pm 30V, dU_{min} 0,5V, dT_{min} 100\mu s$
- SYNC TTL-30V

OUT's

- OUT1-OUT8 5V/ 5mA Sink and Source
- 12VSwitch 12V/ 1,0A

Analog interfaces

- HiLo1-HiLo6 IN: $\pm 10V; \pm 1V; \pm 0,1V; \pm 0,01V$

Communication

- Ethernet-LAN, 100 Mbit

Power supply for VIBRONET Signalmaster

VIB 5.962 : Power supply for VIBRONET Signalmaster, 5 VDC

VIB 5.963 : Power supply for VIBRONET Signalmaster, 12 VDC



Application

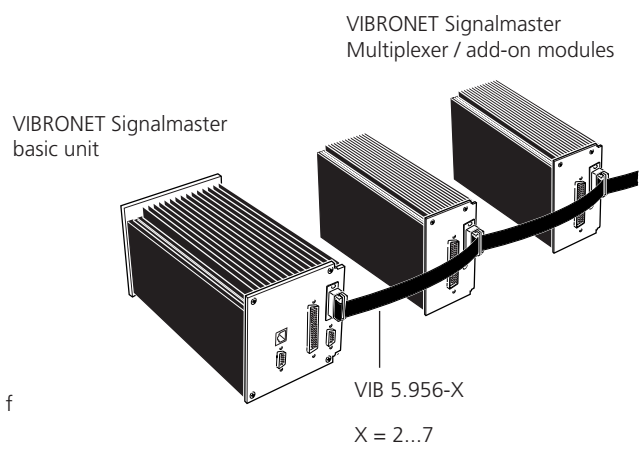
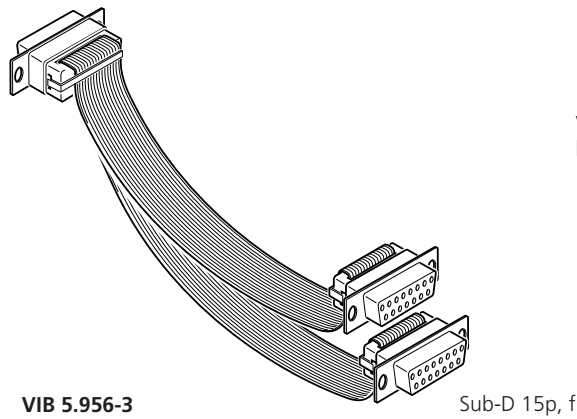
Power supply for the VIBRONET Signalmaster basic unit.

Technical data

PARAMETER		VIB 5.962	VIB 5.963
Input	Voltage, nominal	100 - 240 VAC	
	AC range	85 - 264 VAC (Power reduction of 5% / V when operating at an input voltage below 90 VAC)	
	Mains frequency	47...63 Hz	
Output	Voltage, nominal	5 VDC	12 VDC
	Power	< 12 W	< 15 W
	Current	< 2,4 A	< 1,25 A
	Setting range	5.0 - 5.2 VDC	12 - 16 VDC
General parameters	Temperature range, Operation	-25°C ... +70°C max.	
	Temperature range, Storage	-40°C ... +85°C max.	
	Power reduction	2.5% / K above 60°C	
	Humidity	5 - 95 % (non-condensing)	
	Protection class	Class II (IEC/EN 61140)	
	Environmental protection	IP 20	
	Housing material	Plastic FR2010-110C (UL 94 V-O-class)	
	Mounting	35 mm DIN rail (snapable)	
	Connection terminal	Screw-type, cross section 0.5-1.5 mm ²	
	Dimensions	approx. 60 x 26 x 90 mm (LxWxH)	

VIB 5.956-X : System bus cable for VIBRONET Signalmaster with X connectors

1
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Application

Connection of the 16-channel multiplexers and add-on modules to the VIBRONET Signalmaster for the transmission of analog and digital measurement and control signals.

Description

The system bus cable is a 15-wire ribbon cable. At a distance of about 0.5 meter 15-pole Sub-D connectors are attached for connecting system components.

Note

The expansion of an existing system bus requires a system bus cable with the relevant number of connectors.

Pin allocation: System bus cable

PIN	Function
1	Hi3
2	Lo3
3	AG
4	MUX-CLK
5	12 V
6	PG
7	SDM1
8	SDM2
9	SDM3
10	AG
11	AG
12	Hi1
13	Lo1
14	Hi2
15	Lo2

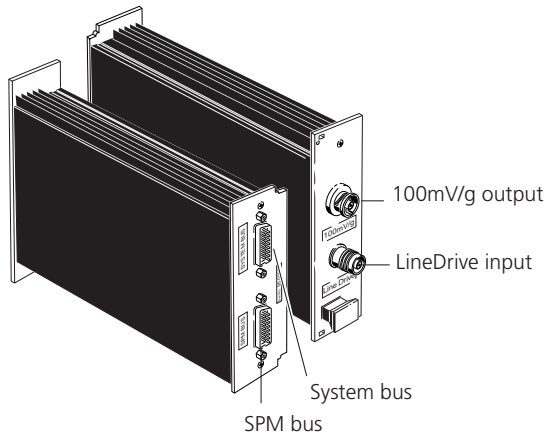
12VDC/15mA 12V DC current supply
 PG Reference zero for the 12V supply
 AG Analog reference zero
 MUX-CLK Impulse for channel switching
 SDM A-wire for triggering
 HiLo Analog signal line

Shock pulse modules for VIBRONET Signalmaster

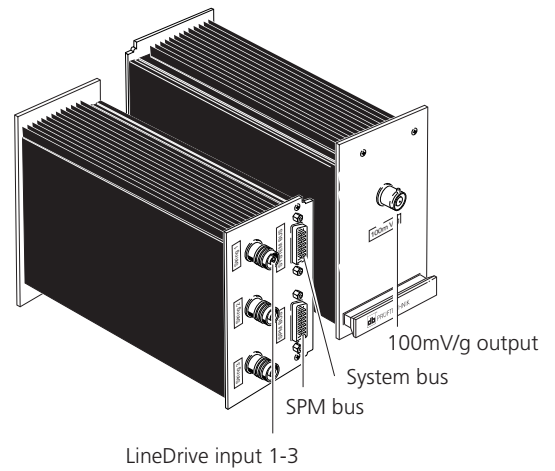
VIB 5.815-1 : Shock pulse module with one Current Linedrive input for VIBRONET Signalmaster

VIB 5.815-3 : Shock pulse module with three Current Linedrive inputs for VIBRONET Signalmaster

VIB 5.815-1



VIB 5.815-3



Application

These modules are used for connecting 9-channel field multiplexers (VIB 8.306) or transducers with current linedrive output to the VIBRONET Signalmaster basic unit. In conjunction with 16-channel multiplexers (VIB 5.818 / VIB 5.819), the modules can be used for shock pulse measurements

Function

The current linedrive signals from the transducer/ multiplexer are converted into a voltage signal for the VIBRONET Signalmaster by a current mirror circuit integrated in the module.

The module has a buffered analog output (100 mV/g), at which the transducer signal can be displayed using a suitable measuring device.

The module obtains the control signals for further channel switching via the system bus from the VIBRONET Signalmaster.

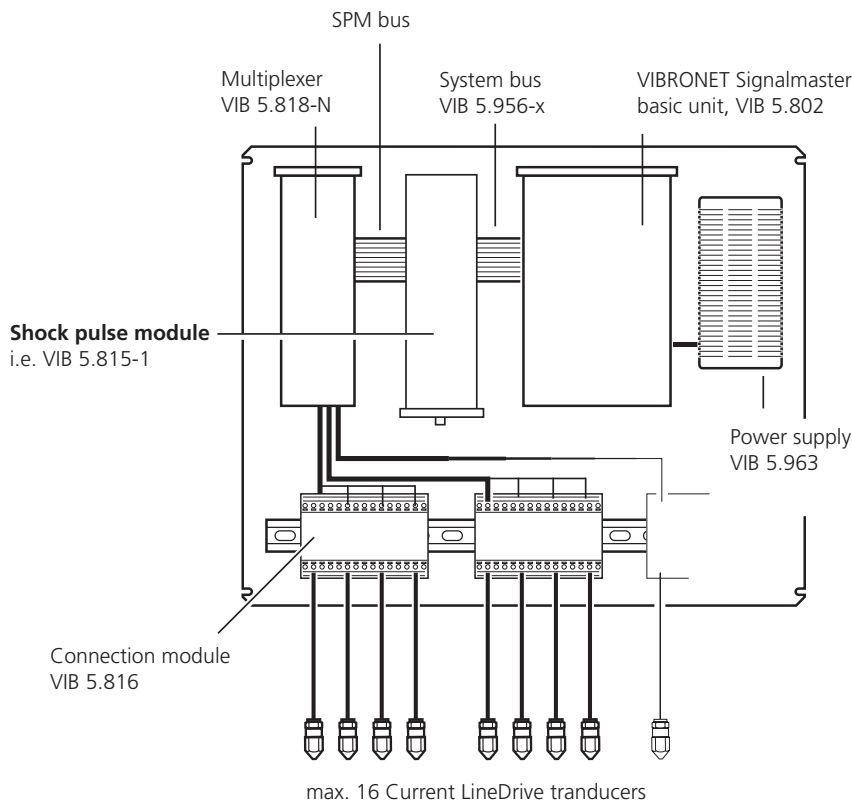
Technical data

PARAMETER		VIB 5.815-1	VIB 5.815-3
Interfaces	Inputs	1x SPM bus, Sub-D-15 1x TNC, Current LineDrive	1x SPM bus, Sub-D-15 3x TNC, Current LineDrive
	Electrically isolated	No	
	Control input	System bus	
	Outputs	1x System bus, Sub-D-15 1x BNC, 100mV/g, referred to 1µA sensor	
	Connections	1x 6 field multiplexers with up to 54 channels, or 1x 16-channel multiplexer	3x 6 field multiplexers with up to 108 channels, or 1x 16-channel multiplexer
Electrical	Power supply	12 VDC from system bus	
	Current consumption	< 250 mA	
	Detection of short circuit	with DC measurement, > 5.5V	
	Detection of open circuit	with DC measurement, < 500 mV	
	Current limitation (sensor short circuit)	yes	
General	Temperature range, operation	0°C ... +50°C	
	Housing material	Aluminium	
	Mounting (option)	Adapter for top hat rail (NS35/15)	
	Dimensions	approx. 130 x 240 x 35 mm (HxWxD)	approx. 130 x 240 x 70 mm (HxWxD)

Application example 1:

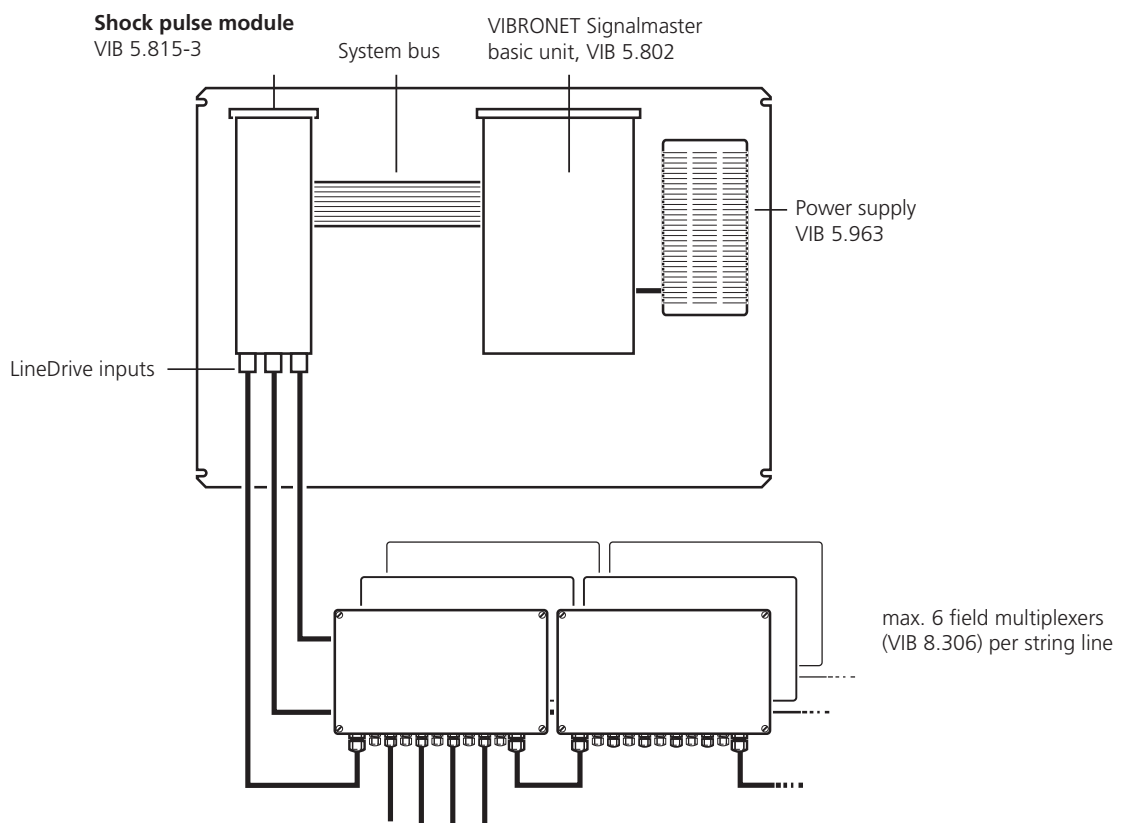
Shock pulse measurement with Current LineDrive transducer and 16-channel multiplexer

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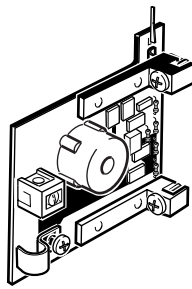
Application example 2:

Connection of 9-channel field multiplexers

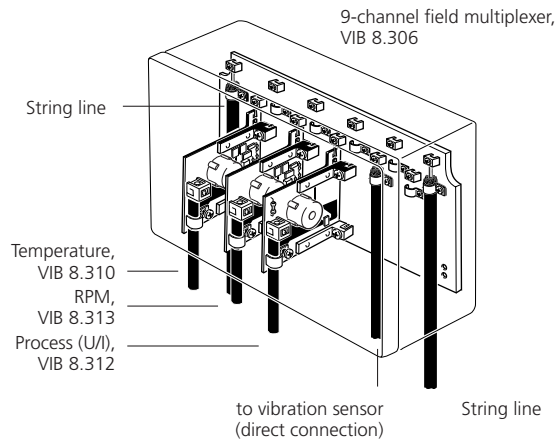


Connection modules for VIBRONET field multiplexers

VIB 8.310 :	Temperature module for VIBRONET field multiplexer
VIB 8.312 :	Process parameters module (current/ voltage) for VIBRONET field multiplexer
VIB 8.313 :	RPM module for VIBRONET field multiplexer
VIB 8.310 EX :	Temperature module for VIBRONET field multiplexer, intrinsically safe
VIB 8.313 EX :	RPM module for VIBRONET field multiplexer, intrinsically safe
VIB 8.314 EX :	Vibration module for VIBRONET field multiplexer, intrinsically safe



VIB 8.310



CE 0044

Application

These modules are required for the connection of the appropriate sensor cable in the VIBRONET field multiplexer.

Description

The VIB 8.310 module converts the resistance value of the Pt100 temperature probe (VIB 6.610) into a digital current signal.

The VIB 8.312 module allows connection to measurement instruments with a standard current or standard voltage output (4-20 mA, 0-10V). This allows monitoring of process parameters, e.g. pressure, flow rate, etc..

The VIB 8.313 module is used to connect a RPM sensor to the multiplexer.

CLD-type accelerometers are connected directly to the multiplexer board. In hazardous areas the connection module VIB 8.314 EX is required for this type of sensor.

Notes on intrinsic safety

The details in the examination certificate of the VIBRONET field multiplexer (type: VIB ..- 8.3 EX) TÜV 02 ATEX 1962 must be considered.

Additionally the following documents must be observed:

- European installation instructions (EN 60079-14:1997, EN 61241-14:2004)
- Installation notes for hazardous areas annexed in the sensor catalog LIT 01.700.EN.
- VIBRONET installation instructions VIB 9.520.G

Abbreviation

CLD: Current Line Drive

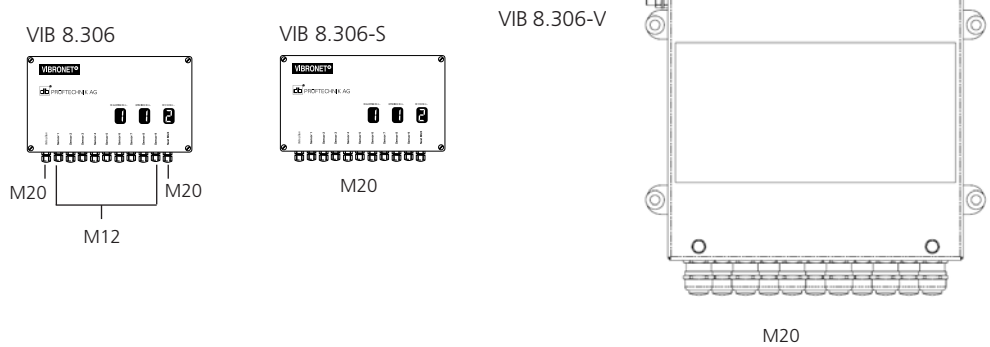
Technical data

PARAMETER		VIB 8.310	VIB 8.312	VIB 8.313	VIB 8.314 EX
Electrical	Input	Pt100 temperature probe	Current / Voltage	Inductive proximity sensor	CLD-type accelerometer
	Output	Digitalized current signal			
	Sensitivity	0,385 Ohm/°C	--	2 mA	--
	Current output to sensor	< 2 mA	--	< 4 mA	--
	Voltage output to sensor	< 1 V	< 2.2 V (at connector, current module) 10 kOhm (Input resistance, voltage module)	< 8 V	--
	Balancing resistor	--			100 W
General	Temperature range, operation	-20C° ...+80°C			-20C° ...+70°C
	Dimensions	46 x 50 x 2 mm			

Field multiplexers for VIBRONET Signalmaster

1
2

- VIB 8.306 : Field multiplexer with threaded fitting M12 for VIBRONET Signalmaster
- VIB 8.306 S : Field multiplexer with threaded fitting M20 for VIBRONET Signalmaster
- VIB 8.306 V : Field multiplexer with stainless steel housing for VIBRONET Signalmaster



Application

These field multiplexers are used as channel switch selectors in the VIBRONET Signalmaster online CMS. The industrial-proofed field multiplexer for up to nine measuring channels reduces the number of signal lines to one single connection and, thus, saves installation costs. The channel is switched automatically by the online CMS. The stainless steel housing enables the multiplexer to be installed in chemically aggressive environments.

Modularity and Connections

Up to six multiplexers can be connected in series to form a single string line. Up to three string lines can be connected to the VIBRONET Signalmaster where a total of 108 measurement channels are allowed.

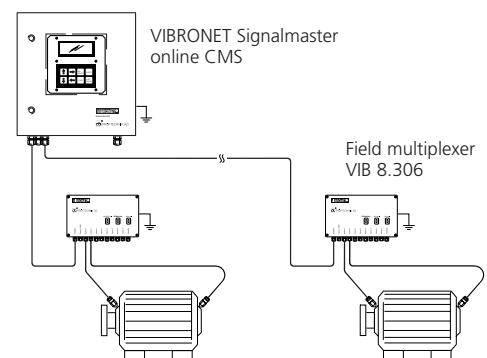
Sensor cables for vibration measurements are directly connected to the multiplexer board. For the connection of RPM, temperature, current and voltage sensors special multiplexer modules are required.

Accessories

- VIB 7.590 Metric fitting M16, 5x
- VIB 7.592 Metric fitting M20, 2x
- VIB 8.310 Temperature modul
- VIB 8.312 Process parameters module (current / voltage)
- VIB 8.313 RPM module
- VIB 8.361 LED labels 0-9

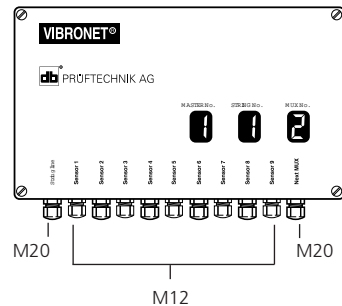
Technical data

PARAMETER		VIB 8.306	VIB 8.306 S	VIB 8.306 V
General	Housing material	Cast aluminum housing, powder coated		Stainless steel (VA)
	Inputs / Outputs	9 sensor inputs, 1 string input, 1 string output		
	Env. protection	IP 65		IP 66
	Temperature range	-40C° ... +80°C		
	Clamping range M12	3.0 ... 6.5 mm		--
	-, M20	7.0 ... 12.0 mm		
	Dimensions LxWxD	224 x 120 x 98 mm		253 x 253 x 120 mm
	Weight	approx. 3 kg		approx. 5 kg
Electrical	Power supply	Approx. 10 V from VIBRONET Signalmaster 'string' output		
	Current consumption	In µA range		
	Interference protect.	Inputs and outputs protected by suppressor diodes		



Field multiplexers with intrinsic safety for VIBRONET Signalmaster

VIB 8.306 EX : Field multiplexer for VIBRONET Signalmaster, aluminium housing, intrinsically safe, 224x120 mm



Application

These field multiplexers can be installed in hazardous areas and are used as channel switch selectors in the VIBRONET Signalmaster online CMS. The industrial-proofed field multiplexer for up to nine measuring channels reduces the number of signal lines to one single connection and, thus, saves installation costs. The channel is switched automatically by the online CMS.

Modularity and connections

The number of multiplexers in a string line is limited by the interface conditions for installation in hazardous areas and by the OMNITREND software. From the software side a maximum of 6 multiplexers can be connected to a single string line. All sensor cables are connected via appropriate connection modules in the multiplexer.

Notes on intrinsic safety

The details in the examination certificate of the VIBRONET field multiplexer (type: VIB ..- 8.3 EX) TÜV 02 ATEX 1962 must be considered.

Additionally the following documents must be observed:

- European installation instructions (EN 60079-14:1997, EN 61241-14:2004)
- Installation notes for hazardous areas in this catalog.
- VIBRONET installation instructions VIB 9.520.G

Accessories

- VIB 7.590 Metric fitting M16, 5x
- VIB 7.592 Metric fitting M20, 2x
- VIB 8.310 EX Temperature module, intr. safe
- VIB 8.313 EX RPM module, intr. safe
- VIB 8.314 EX Vibration module, intr. safe
- VIB 3.550 Limiting device for Current LineDrive accelerometers with intrinsic safety
- VIB 8.361 LED labels 0-9

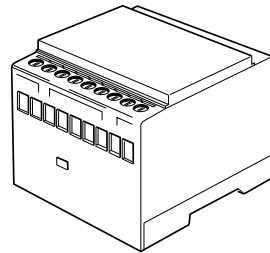
Technical data

PARAMETER		VIB 8.306 EX
General	Housing material	Cast aluminum housing, powder coated
	Inputs / Outputs	9 sensor inputs, 1 string input, 1 string output
	Env. protection	IP 65
	Temperature range	-20°C ... +70°C
	Clamping range M12	3.0 ... 6.5 mm
	- , M20	7.0 ... 12.0 mm
	Dimensions LxWxD	224 x 120 x 98 mm
	Weight	approx. 3 kg
Electrical	Power supply	Approx. 10V from VIBRONET Signalmaster 'string' output
	Current consumption	In µA range
	Interference protect.	Inputs and outputs protected by suppressor diodes
EX	Marking	II 2 G EEx ib IIC T4

VIB 5.917 : Output module with two SPDT relays for VIBRONET Signalmaster

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Application

This module provides two SPDT relays for the output of binary signals.

Function

The module has an LED display and two independent SPDT relays that can each be controlled by a digital output of the VIBRONET Signalmaster.

Technical data

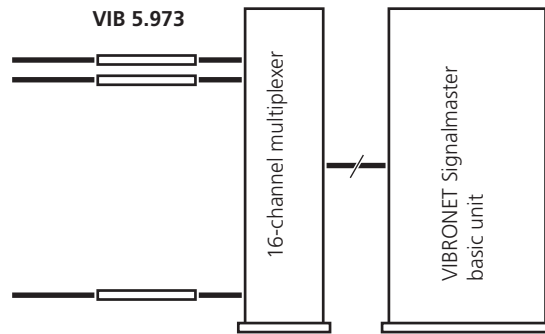
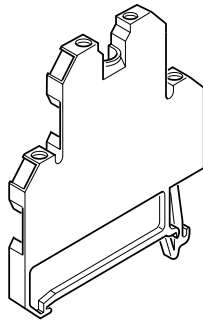
PARAMETER		VIB 5.917
Electrical	Number of relay outputs	2
	Supply voltage	12 VDC
	Supply current	< 50 mA
	Permanent current of relay contact	< 5 A
	Voltage at relay contact	< 50 V
	Voltage at relay contact	< 20 W
	Bounce time of relay contact	5 ms
	Voltage endurance between contact and coil	750 V-
	Number of switching cycles	2 x 10 ⁸
General	Operating temperature	-40°C ... +85°C
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz
	Screw connection	Fine wire 2.5 mm ² AWG 12, Single wire 4 mm ² AWG 12
	Tightening torque	0.5 - 1.0 Nm
	Weight	100 g
	Housing material	Polyamide
	Mounting (Option)	Supporting rail TS35
	Dimensions (L x W x H)	approx. 50 x 125 x 55 mm

Terminal connections

Terminal	Function
1	12 VDC
2	PG
3	SW1
4	SW2
5	Opener1
6	COM1
7	COM1
8	Closer1
9	Opener2
10	COM2
11	COM2
12	Closer2

12VDC/60mA 12V DC current supply
 PG Reference zero for the 12V supply
 SW Control input for relay (5-24V)
 Opener Opener of the change-over contact
 COM Root of the change-over contact
 Closer Closer of the change-over contact

VIB 5.973 : Terminal with voltage limitation, 5 Volt



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Application and function

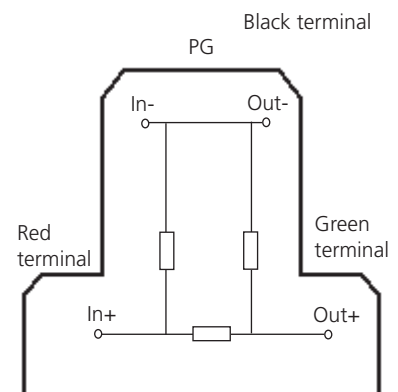
This terminal limits the voltage to a maximum value of 5 volt. The output voltage of the terminal follows the linear input voltage up to a level of 5 volt. Higher input voltages lead to no further increase of the output voltage.

Uses include, e.g. the connection of 24V signals to the digital inputs of a VIBRONET Signalmaster system or the connection of pulse signals with amplitudes of more than 5 volt to the counter inputs of a VIBRONET Signalmaster system.

Technical data

PARAMETER		VIB 5.973
Electrical	Input voltage	< 40 V
	Output voltage	< 5 V
	Input resistance	1200 Ohm
	Contact resistance	4700 Ohm
General	Operating temperature	-40°C ... +85°C
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz
	Screw connection	0.5 .. 4 mm ² / AWG 22..12
	Color coding	IN+ red, IN- black, OUT+ green, OUT- black
	Tightening torque	0.5 - 1.0 Nm
	Weight	18 g
	Housing material	Polyamide
	Mounting (Option)	Supporting rail TS35
	Dimensions (H x D x W)	approx. 50 x 53 x 7.7 mm

Terminal connections:



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Chapter 2

VIBRONET Signalmaster accessories



16-channel multiplexers for VIBRONET Signalmaster

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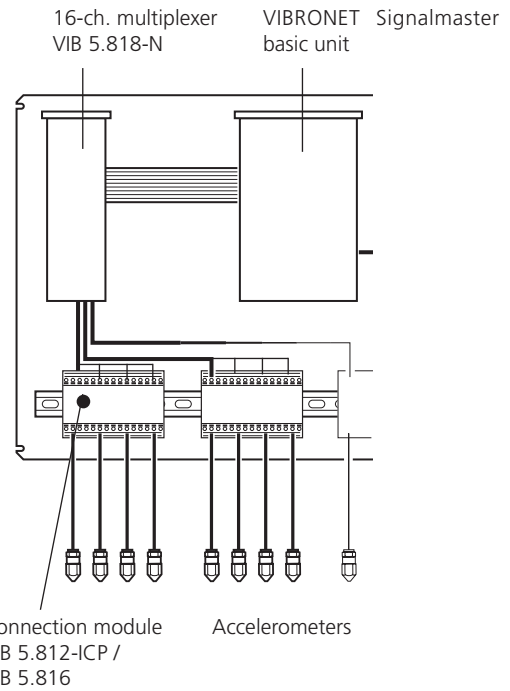
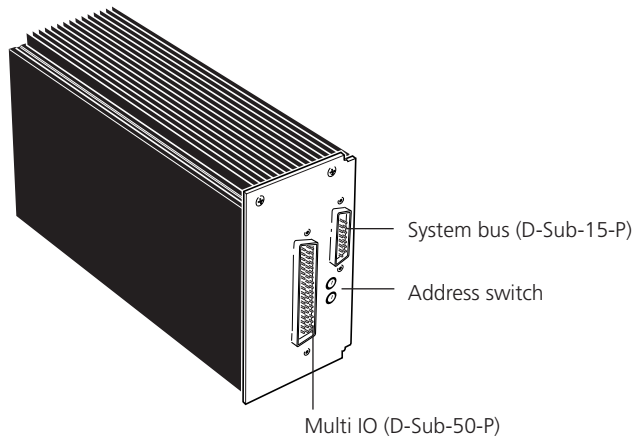
VIB 5.818-N : 16-channel multiplexers for ICP-type or Current LineDrive accelerometers

VIB 5.818-NEV : 16-channel multiplexers for event recording

VIB 5.819-4x4 : 16-channel multiplexers with 4x4 synchronous inputs

VIB 5.819-8x2 : 16-channel multiplexers with 8x2 synchronous inputs

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Application

A multiplexer multiplies the analog inputs of the VIBRONET Signalmaster basic unit by joining a freely selectable combination of 16 channels.

- VIB 5.818-N:
The 16 channels are joined to a single analog input of the basic unit.

- VIB 5.818-NEV:
This multiplexer is used for the fast event-controlled data recording of up to 16 analog channels. Further characteristics: Event, rainflow, dwell continuous count

Sampling rate depends on the number of channels:

CHANNELS		Sampling rate in Hz
VIB 5.818-NEV	16	400, 300, 200, 150, 100, 75, 50, 40, 30, 20, 15, 10, 2, 1
	8	800, 600
	4	1600, 1200
	2	3200, 2400
	1	6400, 4800

VIB 5.819-4x4:

The 16 channels are combined in four banks, each with four channels, and fed to four* synchronous inputs of the basic unit.

* 3 analog inputs, 1 TTL input for key phaser

VIB 5.819-8x2:

The 16 channels are joined to form two banks, each with 8 channels, and fed to two synchronous inputs of the basic unit.

Description

Semiconductor elements are used to switch over the channels that are characterized by a minimum current consumption and short switchover times. The current supply and addressing follow via the system bus. The multiplexer modules are suitable for autonomous use in an industrial environment.

Expansion

Up to 8 multiplexers (theoretical: 254) can be connected to the VIBRONET Signalmaster unit. Thus, multiplexers multiplies an analog input to a total of 128 (=16 x 8) analog inputs.

General notes

Optionally, an individual voltage divider and voltage limiter can be inserted in front of each channel. This enables status and analog signals >10V to be recorded at the same time using a multiplexer.

Note on differential measurements

For signals from signal sources with their own voltage supply that are not connected via PG, low inputs above 10 kOhm must be connected using PGs.

Notes on the preamplifier

For the multiplexer VIB 5.818-N and the multiplexer VIB 5.819-8x2, a preamplifier can be inserted for each bank. The preamplifier has the ranges 1, 10, 100, 1000. For the multiplexer VIB 5.819-4x4, a preamplifier can be integrated in bank 1 and in bank 3.

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Technical data

PARAMETER		VIB 5.818-N / VIB 5.818-NEV / VIB 5.819-4x4 / VIB 5.819-8x2
Electrical	Power supply	12 VDC / 2 mA
	Voltage range, analog inputs	± 10 V
	Max. over voltage, analog inputs	± 20 V
	No. of analog inputs	16 differential, freely combinable
General	Operating temperature	-20°C ... +60°C
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz
	Humidity	20% to 100%, dewfall is allowed
	Weight	approx. 1 kg
	Housing material	Aluminum
	Dimensions	approx. 130 x 70 x 240 mm (H x T x B)

Addressing the multiplexers

The multiplexers are addressed via the system bus using the SDM protocol.

Theoretical up to 254 multiplexers can be connected to the VIBRONET Signalmaster. Practically the number is limited to 8 multiplexers per unit.

The count begins with the first multiplexer with address 1 ascending to 254. However, this sequence is not mandatory as any addresses in the available range can also be used.

The (decimal) addresses must be set in hexadecimal code using the coding switch on the back of the multiplexer (see figure).

Thus, hexadecimal can be used to set the decimal addresses 1-254 in hexadecimal 01 – FE:

- 1 (dec.) = 01 (hex) = x01
- 254 (dec.) = FE (hex) = xFE.

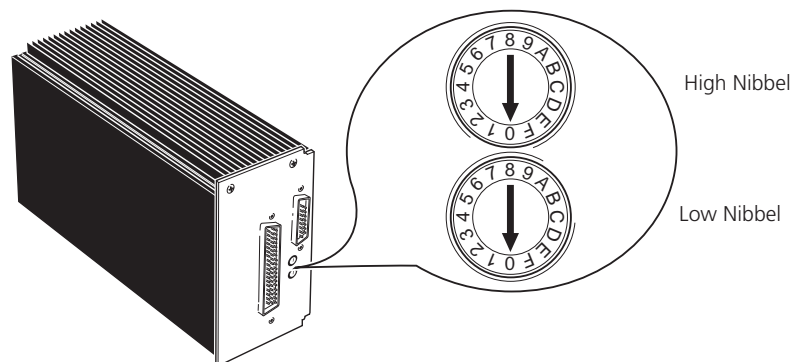
The first symbol (numeral or letter) in hexadecimal code corresponds to the 'high nibble', and the second symbol corresponds to the 'low nibble'.

Example: FE where F = high nibble and E = low nibble. This represents the decimal address 254.

The address 255 (dec.) or FF (hex) cannot be used as it is reserved for a collective reset.

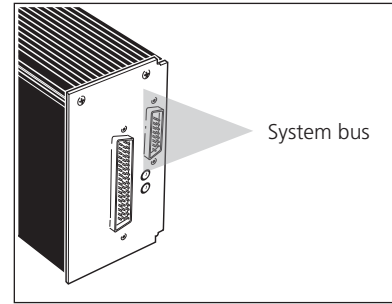
With the operation of two multiplexers, the addresses are set up as follows:

- 1st multiplexer: High nibble = 1
Low nibble = 0
- 2nd multiplexer: High nibble = 2
Low nibble = 0



Terminal connections: System bus (Sub-D 15)

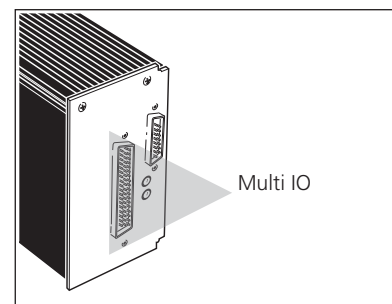
SUB-D 15	VIB 5.818-N	VIB 5.818-NEV	VIB 5.819-4x4	VIB 5.819-8x2
1	nc	Hi3	Hi3	Hi3
2	nc	Lo3	Lo3	Lo3
3	AG	AG	AG	AG
4	nc	MUX-CLK	nc	nc
5	12 V	12 V	12 V	12 V
6	PG	PG	PG	PG
7	SDM1	nc	SDM1	SDM1
8	SDM2	MUX-Reset	SDM2	SDM2
9	SDM3	nc	SDM3	SDM3
10	nc	nc	Hi4	nc
11	nc	nc	Lo4	nc
12	Hi1	nc	Hi1	Hi1
13	Lo1	nc	Lo1	Lo1
14	nc	nc	Hi2	nc
15	nc	nc	Lo2	nc



- 12V 12V DC current supply
- AG Analog reference zero
- PG Power ground
- SDM A-wire for triggering
- HiLo Analog signal line
- MUC-CLK Impulse for channel switching

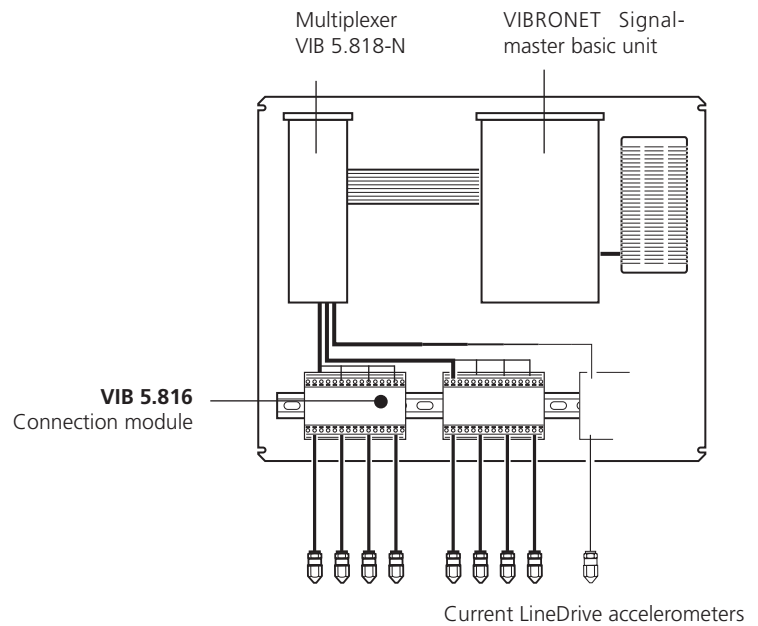
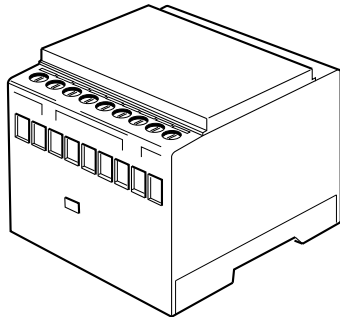
Terminal connections: Multi IO (Sub-D 50)

SUB-D 50	VIB 5.818-N	VIB 5.818-NEV	VIB 5.819-4x4	VIB 5.819-8x2
1	B1-In-H1	B1-In-H1	B1-In-H1	B1-In-H1
2	B1-In-H2	B1-In-H2	B1-In-H2	B1-In-H2
3	B1-In-H3	B1-In-H3	B1-In-H3	B1-In-H3
4	B1-In-H4	B1-In-H4	B1-In-H4	B1-In-H4
5	B1-In-H5	B1-In-H5	B2-In-H1	B1-In-H5
6	B1-In-H6	B1-In-H6	B2-In-H2	B1-In-H6
7	B1-In-H7	B1-In-H7	B2-In-H3	B1-In-H7
8	B1-In-H8	B1-In-H8	B2-In-H4	B1-In-H8
9	B1-In-H9	B1-In-H9	B3-In-H1	B2-In-H1
10	B1-In-H10	B1-In-H10	B3-In-H2	B2-In-H2
11	B1-In-H11	B1-In-H11	B3-In-H3	B2-In-H3
12	B1-In-H12	B1-In-H12	B3-In-H4	B2-In-H4
13	B1-In-H13	B1-In-H13	B4-In-H1	B2-In-H5
14	B1-In-H14	B1-In-H14	B4-In-H2	B2-In-H6
15	B1-In-H15	B1-In-H15	B4-In-H3	B2-In-H7
16	B1-In-H16	B1-In-H16	B4-In-H4	B2-In-H8
17	AG	AG	AG	AG
18	B1-In-L1	B1-In-L1	B1-In-L1	B1-In-L1
19	B1-In-L2	B1-In-L2	B1-In-L2	B1-In-L2
20	B1-In-L3	B1-In-L3	B1-In-L3	B1-In-L3
21	B1-In-L4	B1-In-L4	B1-In-L4	B1-In-L4
22	B1-In-L5	B1-In-L5	B2-In-L1	B1-In-L5
23	B1-In-L6	B1-In-L6	B2-In-L2	B1-In-L6
24	B1-In-L7	B1-In-L7	B2-In-L3	B1-In-L7
25	B1-In-L8	B1-In-L8	B2-In-L4	B1-In-L8
26	B1-In-L9	B1-In-L9	B3-In-L1	B2-In-L1
27	B1-In-L10	B1-In-L10	B3-In-L2	B2-In-L2
28	B1-In-L11	B1-In-L11	B3-In-L3	B2-In-L3
29	B1-In-L12	B1-In-L12	B3-In-L4	B2-In-L4
30	B1-In-L13	B1-In-L13	B4-In-L1	B2-In-L5
31	B1-In-L14	B1-In-L14	B4-In-L2	B2-In-L6
32	B1-In-L15	B1-In-L15	B4-In-L3	B2-In-L7
33	B1-In-L16	B1-In-L16 Eventbus	B4-In-L4	B2-In-L8
34 - 50	AG	AG	AG	AG



- B1-In Hx, Lx
- 16x analog input (±10V)
 - 4x4 analog input (±10V); Synchronous through switching of the channels (bank 1 B1 to bank 4 B4) to the system bus.
 - 8x2 analog input (±10V); Synchronous through switching of the channels (bank 2 B2 to bank 2 B2) to the system bus.
- AG Analog reference zero
Event Bus Supply, control and analog signal

VIB 5.816 : Connection module for Current LineDrive accelerometers



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Application

Connection of transducers with current line drive output to the VIBRONET Signalmaster.

Function

The current line drive signals from the transducer are converted into a voltage signal for the VIBRONET Signalmaster by a current mirror circuit integrated in the module.

Technical data

PARAMETER		VIB 5.816
Electrical	Number of signal inputs	4
	Supply voltage	12 VDC
	Current cons. with 4 transducers	< 50 mA
	Transducer type	Current LineDrive
	Scaling	1µA = 1mV
General	Operating temperature	-40°C ... +85°C
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz
	Screw connection	Fine wire 2.5 mm ² AWG 12, Single wire 4 mm ² AWG 12
	Tightening torque	0.5 - 1.0 Nm
	Weight	100 g
	Housing material	Polyamide
	Mounting	Supporting rail TS35
Dimensions (L x W x H)	approx. 50 x 75 x 55 mm	

Terminal connections

Terminal	Function	
VIB 5.816	1	12 VDC / 50 mA
	2	+OUT1
	3	-OUT1
	4	+OUT2
	5	-OUT2
	6	+OUT3
	7	-OUT3
	8	+OUT4
	9	-OUT4

Terminal	Function	
VIB 5.816	10	PG
	11	+IN1
	12	-IN1
	13	+IN2
	14	-IN2
	15	+IN3
	16	-IN3
	17	+IN4
18	-IN4	

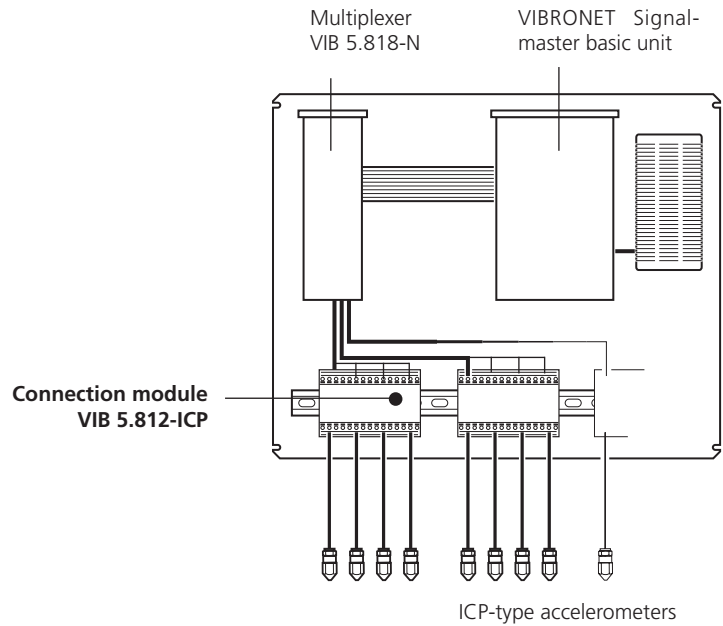
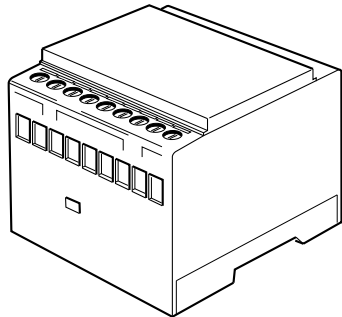
Terminal description

12VDC/50mA 12V DC power supply
 PG Reference zero for the 12V power supply
 OUT Output signal
 IN Connection for accelerometer

VIB 5.812-ICP : Connection module for ICP-type accelerometers

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Application

Connection of transducers with ICP-type output to the VIBRONET Signalmaster.

The module provides four inputs with an ICP power supply. ICP-type accelerometers and microphones can be connected.

Function

The input signal runs through a high pass filter with a 0.3 Hz cutoff frequency and an impedance transformer for buffering the output signals.

Technical data

PARAMETER		VIB 5.812-ICP
Electrical	Number of signal inputs	4 ICP signal inputs
	Number of signal outputs	4 voltage outputs
	Power supply	12 VDC / 40 mA
	ICP supply	2 mA / 24 V
	Transmission factor	1 mV/mV
	Transmission accuracy	0.1% of input
	Signal filter	HP: 0.3 Hz
	Input range	DC range with $6V_{rms}$ + AC component
General	Operating temperature	-40°C ... +85°C
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz
	Screw connection	Fine wire 2.5 mm ² AWG 12, Single wire 4 mm ² AWG 12
	Tightening torque	0.5 - 1.0 Nm
	Weight	100 g
	Housing material	Polyamide
	Mounting (Option)	Supporting rail TS35
	Dimensions (L x W x H)	approx. 125 x 75 x 55 mm

Terminal connections

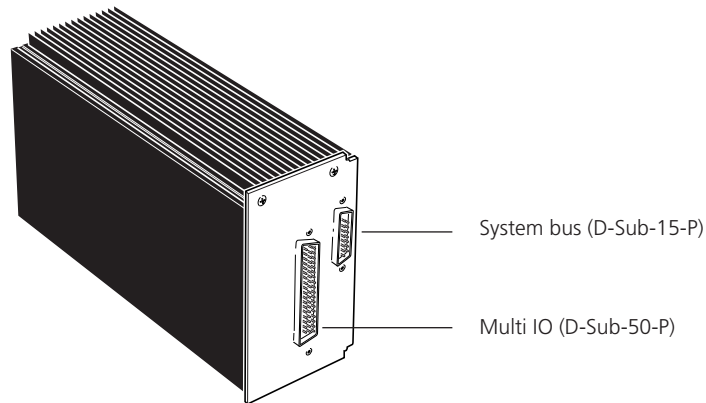
Terminal	Function	Terminal	Function		
VIB 5.812-ICP	1	12 VDC / 40 mA	VIB 5.812-ICP	13	IN_Sensor1-
	2	PG		14	Shielding 1
	3	Sensor OK		15	IN_Sensor2+
	4	OUT_a1Hi		16	IN_Sensor2-
	5	OUT_a1Lo		17	Shielding 2
	6	OUT_a2Hi		18	IN_Sensor3+
	7	OUT_a2Lo		19	IN_Sensor3-
	8	OUT_a3Hi		20	Shielding 3
	9	OUT_a3Lo		21	IN_Sensor4+
	10	OUT_a4Hi		22	IN_Sensor4-
	11	OUT_a4Lo		23	Shielding 4
	12	IN_Sensor1+			

Terminal description

12VDC/40mA	12V DC current supply
PG	Reference zero for the 12V supply
OUT_a	Buffered signal
IN sensor	Connection for acceleration transducer
Shielding	Reference zero for shielding

VIB 5.910 : Add-on module for digital output

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Application

This module is used to expand the number of digital outputs in the VIBRONET Signalmaster by 16 outputs.

Function

The digital outputs are configured as semiconductor switches with a fuse. The maximum switching voltage is 40 VDC. The maximum switching power is 20W. The self-restoring thermal fuse holds the current up to 0.5 A.

Expansion

Up to 14 modules can be connected to a Signalmaster base unit.

Note

The connecting line to the VIBRONET Signalmaster can be up to 6 meters long.

Technical data

PARAMETER		VIB 5.910
Electrical	Power supply	12 VDC / 2 mA
	Digital outputs	16
	Type	FET switch
	Switching voltage	< 40 V
	Switching power	< 20 W
	PullUp resistors	3 kOhm
	Output fuse	self-restoring thermic fuse
	Holding current	< 0.5 A
	Release current	2 A
General	Operating temperature	-20°C ... +50°C
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz
	Relative humidity	10% to 100%, dewfall is allowed
	Weight	approx. 1 kg
	Housing material	Aluminium
	Dimensions (H x D x W)	approx. 130 x 70 x 250 mm

Terminal connections: System bus (Sub-D 15)

CHANNEL	Function
1	nc
2	nc
3	nc
4	nc
5	12 V
6	PG
7	SDM1
8	SDM2
9	SDM3
10	nc
11	nc
12	nc
13	nc
14	nc
15	nc

nc not connected
 12 V 12V DC current supply
 PG Reference zero for the 12V supply
 SDM A-wire for triggering

Terminal connections: Multi IO (Sub-D 50)

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CHANNEL	Function
1	Port_1
2	Port_2
3	Port_3
4	Port_4
5	Port_5
6	Port_6
7	Port_7
8	Port_8
9	Port_9
10	Port_10
11	Port_11
12	Port_12
13	Port_13
14	Port_14
15	Port_15
16	Port_16
17	nc

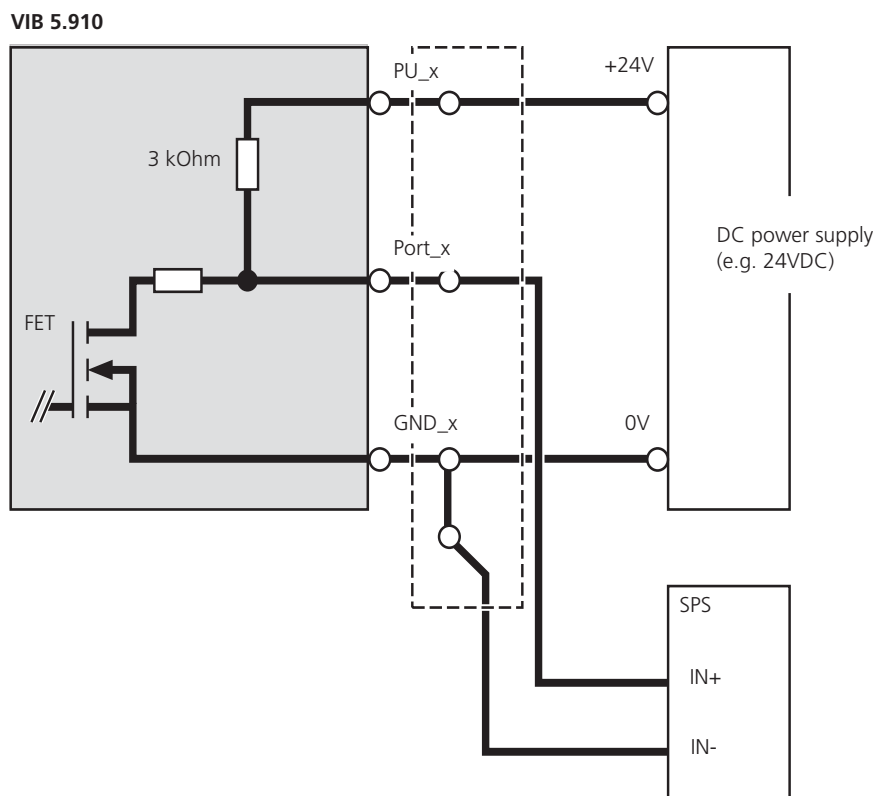
CHANNEL	Function
18	GND_1
19	GND_2
20	GND_3
21	GND_4
22	GND_5
23	GND_6
24	GND_7
25	GND_8
26	GND_9
27	GND_10
28	GND_11
29	GND_12
30	GND_13
31	GND_14
32	GND_15
33	GND_16

CHANNEL	Function
34	PU_1
35	PU_2
36	PU_3
37	PU_4
38	PU_5
39	PU_6
40	PU_7
41	PU_8
42	PU_9
43	PU_10
44	PU_11
45	PU_12
46	PU_13
47	PU_14
48	PU_15
49	PU_16
50	nc

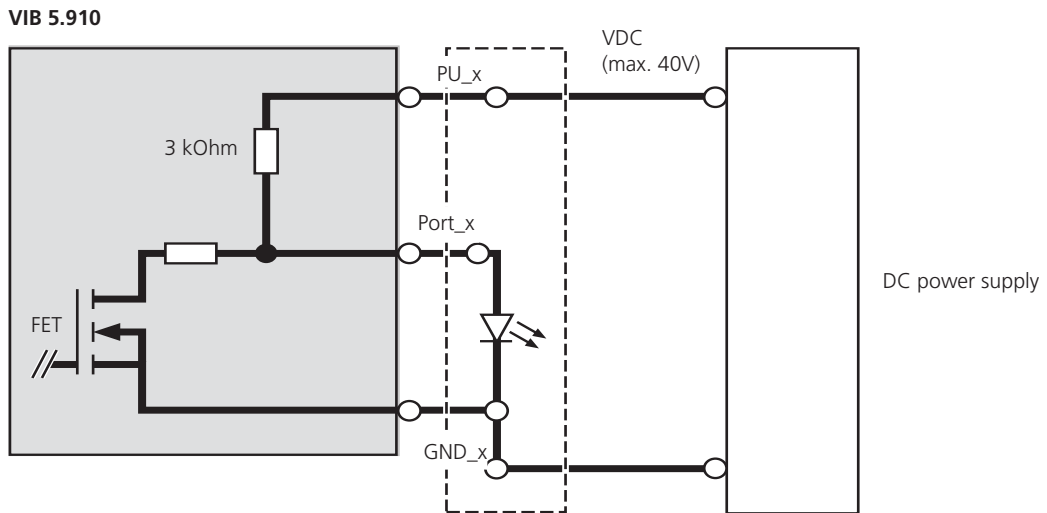
Port_x Digital output (Open Drain)
 GND_x Reference ground for digital output (Source)
 PU_x Internal Pull Up resistor

Switching of levels

Connection to PLC



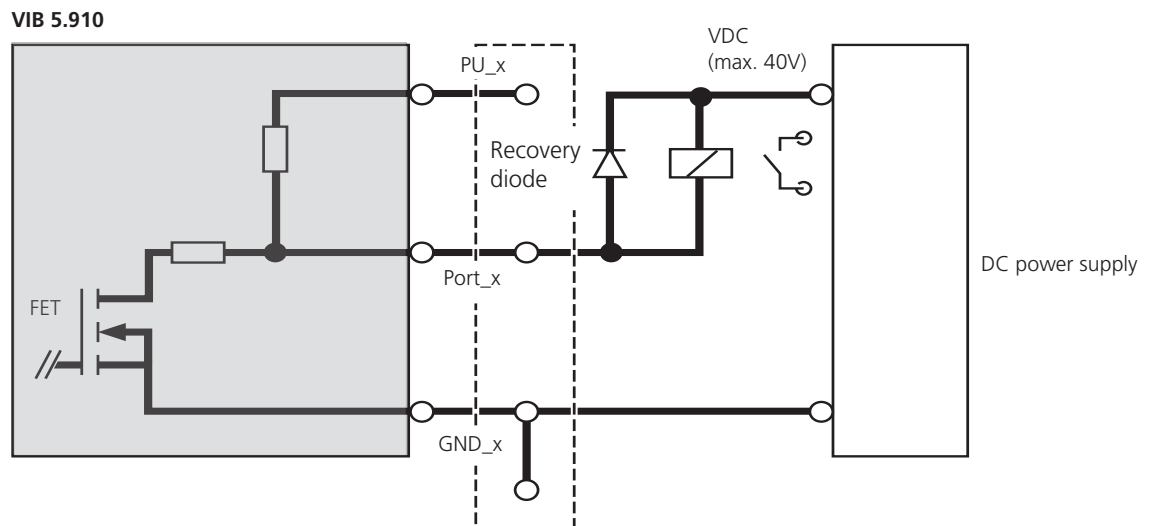
Switching of LEDs



Note

The internal pull up resistor is used as a multiplier resistor for the LED.

Switching of inductive loads



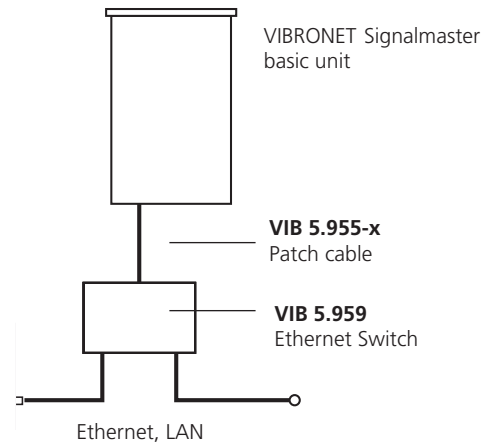
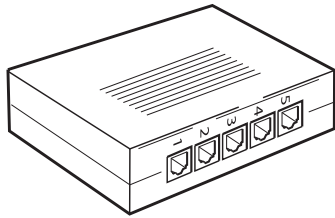
Note

When switching inductive loads (e.g. relays), a recovery diode must be switched parallel to the load.

VIB 5.959 : Industrial 5-Port ethernet switch for VIBRONET Signalmaster

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Application

The Ethernet switch is used to integrate the VIBRONET Signalmaster in a local area network.

Function

A network switch is a computer networking device that connects computers and network segments.

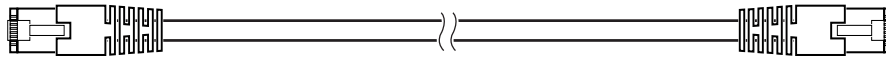
Technical data

PARAMETER		VIB 5.959
Data transmission	Industrial standard	IEEE 802.3, 802.3u, 802.3x
	Processing Type	Store & forward, wire speed switching
	MAC Addresses	1024
	Memory Bandwidth	1 Gbps
	Frame Buffer Memory	256 Kbit
	Flow Control	IEEE 802.3x flow control, back pressure flow control
	RJ-45 Ports	5 ports with 10/100 Base-TX auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection
	LED Indicators	Power, 10/100M, Link/Act
General	Operating temperature	-40°C ... +75°C
	Relative humidity	max. 90%, non-condensing
	Input voltage	10 ... 30 VDC
	Power consumption	0.1 A @ 24 VDC, ±5%, 10M Full duplex 0.09A @24 VDC, ±5%, 100M Full duplex
	Weight	100 g
	Housing material	Plastic
	Dimensions (HxWxD)	approx. 99 x 33 x 78 mm

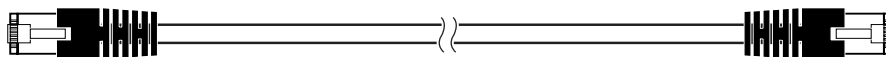
Network cables for VIBRONET Signalmaster

VIB 5.955-X : Patch cable
VIB 5.957-2 : Crossover ethernet cable, 2 m
VIB 5.957-5 : Crossover ethernet cable, 5 m

X = 2,5,10,30 m



VIB 5.955-2



VIB 5.957-2

Application

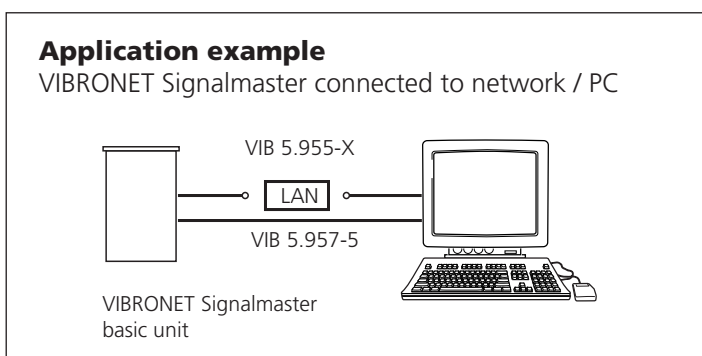
The Patch cable VIB 5.955-X is used to connect the VIBRONET Signalmaster basic unit to a data network - either directly or via a switch.

The crossover ethernet cable VIB 5.957-X is used to connect the VIBRONET Signalmaster basic unit directly to a PC.

Technical data

PARAMETER		VIB 5.955-X	VIB 5.957-2 / -5	
Electrical	Charact. impedance	100 Ohm ±15%		
	Loop resistance	188 Ohm		
	Conductor resistance	< 94 Ohm/km		
Layout and Environment	Wire	0.52 mm Cu blk AWG24		
	Wire insulation	PE, color coding acc. to IEC 708		
	Formation	4 pairs, twisted		
	Shielding	Aluminium compound foil		
	Earth lead	0.5 mm Cu vzn		
	Sheath	FR-PVC, gray (flame resistant)	FR-LSOH, yellow (flame resistant, low-smoke, halogen-free)	
	External diameter	6.3 mm		
	Model	TP patch cable, shielded Category 5 - 100 Mbit/s, Allocation acc. to EIA/TIA 568, 4 x 2 x AWG 24/7 RJ 45 connector w/ sprayed on cable sleeve	S/FTP Crossover cable, double shielded Category 5 - 100 Mbit/s, Crossover allocation (100BASE-T4)*, 4 x 2 x AWG 26/7 RJ 45-'HIROSE' connector, yellow	
	Temperature range	-5°C ... +50°C (laying)		-30°C ... +70°C (operation)
	Cable length	2, 5, 10 or 30 meters		2 meters or 5 meters

*Crossover pin allocation (100BASE-T4):
 1 - 3
 2 - 6
 3 - 1
 4 - 7
 5 - 8
 6 - 2
 7 - 4
 8 - 5



24V power supplies for VIBRONET Signalmaster

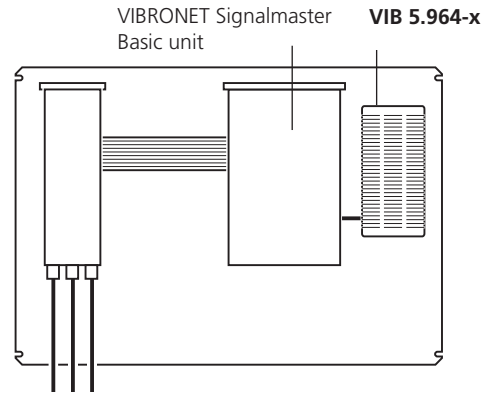
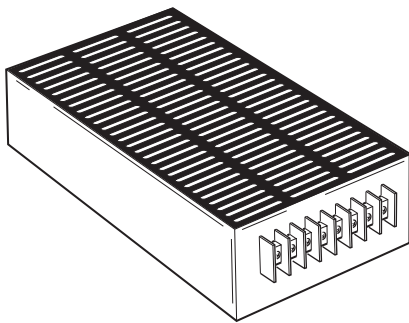
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VIB 5.964-1,5 : Power supply for VIBRONET Signalmaster, 24 V / 1,5 A

VIB 5.964-2,5 : Power supply for VIBRONET Signalmaster, 24 V / 2,5 A

VIB 5.964-5 : Power supply for VIBRONET Signalmaster, 24 V / 5 A

2



Application

The power supply is used for the power supply of 24 V devices with a maximum of 1.5 / 2.5 / 5A current consumption.

Function

The power supply has a voltage output (+24 VDC). If -24 VDC are required, the output must be reverse connected.

Notes

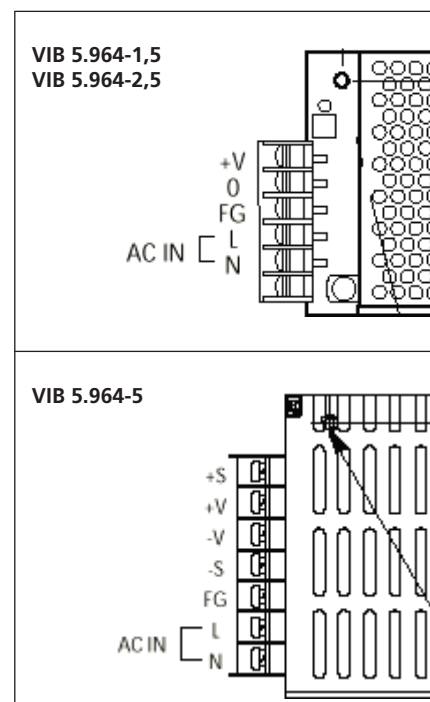
A top hat rail adapter for supporting rails TS 35x16 is provided on the power supply for simple assembly.

If the ambient temperature is above 50°C, the power supply must be designed with approx. double the power because power supplies are subject to a power reduction of 5% for each °C above 50°C. Furthermore, for operation with 115 VAC, a power reduction of 10-15% must be considered.

Technical data

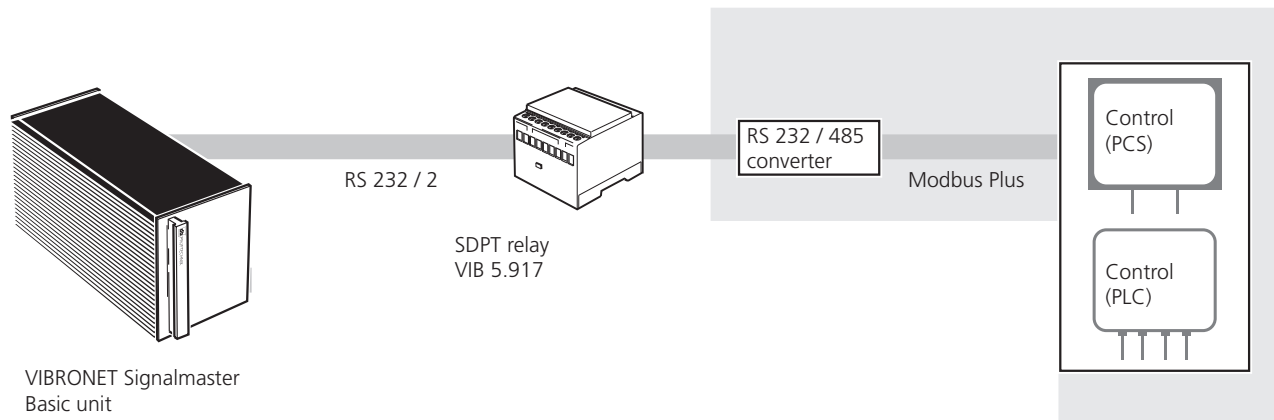
PARAMETER		VIB 5.964-1,5	VIB 5.964-2,5	VIB 5.964-5
Electrical	Input voltage	85...264 VAC / 50...60Hz		
	Input current	0.7 A (115 VAC) 0.48 A (230 VAC)	1.2 A (115 VAC) 0.75 A (230 VAC)	--
	Switch-on peak	--	--	10 A (115 VAC) 25 A (230 VAC)
	Output	24 VDC / 1,5 A	24 VDC / 2,5 A	24 VDC / 5 A
	Power	36 W	60 W	120 W
General	Operating temperature	-10°C ... +60°C		
	Connections	Screw terminals		
	Dimensions (LxWxH)	139 x 79 x 33 mm	179 x 79 x 33 mm	213 x 111 x 39 mm

Connection terminals



VIB 5.920-MOD: Slave connection module for Modbus Plus fieldbus system

Connection to other field bus systems (Profibus, DevNet,...) is available on request.



Application

To connect the VIBRONET Signalmaster system to Modbus Plus field bus.

Function

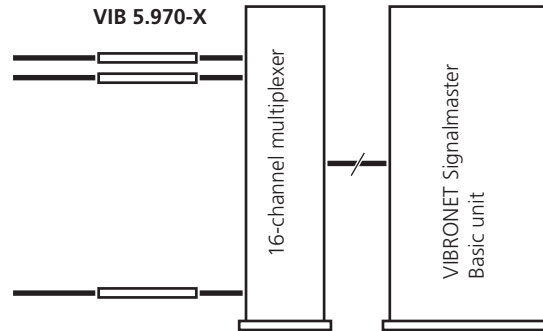
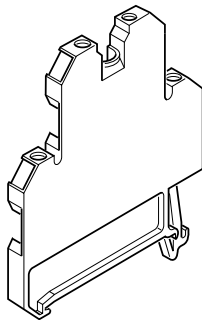
The connection to the Modbus Plus field bus is carried out internally by a special software module. The connection to the field bus is made via the second serial interface (RS 232/2) of the VIBRONET Signalmaster and an RS 232 / 485 converter.

Terminals with high-voltage fuse and transient protection

1

2

VIB 5.970-M :	Terminal with high-voltage fuse and transient protection for the signal cable
VIB 5.970-P12 :	Terminal with high-voltage fuse and transient protection for the 12VDC power supply
VIB 5.970-P24 :	Terminal with high-voltage fuse and transient protection for the 24VDC power supply
VIB 5.970-P250:	Terminal with high-voltage fuse and transient protection for the 250VAC power supply



Application

VIB 5.970-M:

This terminal protects measuring inputs and transducers against excess voltages as a result of electromagnetic discharges such as lightning strikes or transients.

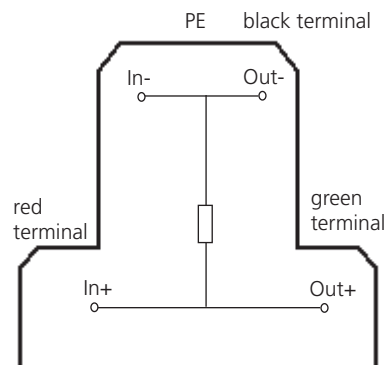
VIB 5.970-P12 / VIB 5.970-24:

These terminals protect 12 volt or 24 volt DC power supply inputs and DC power supply modules against excess voltages as a result of electromagnetic discharges such as lightning strikes or transients.

VIB 5.970-P250:

This terminal protects 250 volt AC power supply inputs against excess voltages as a result of electromagnetic discharges such as lightning strikes or transients.

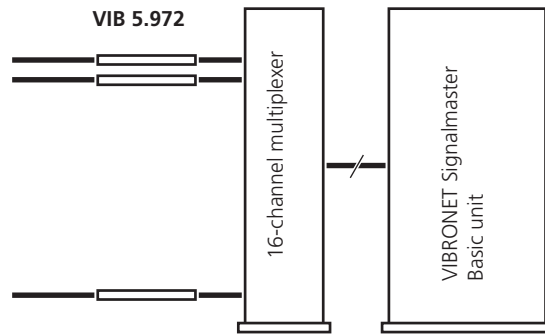
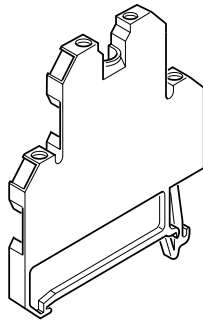
Terminal connections:



Technical data

PARAMETER		VIB 5.970-M	VIB 5.970-P12	VIB 5.970-P24	VIB 5.970-P250
Electrical	Derivation current	5 kA	0.5 kA	0.5 kA	2.5 kA
	Response voltage	90 VDC ±25%	18 VDC	38 VDC	320 VAC
	Response time	--	< 25 ns		
	Off-state voltage	11.1 V	--		
	Breakdown voltage	13.7 V	--		
	Static current	< 5 µA	--		
General	Operating temperature	-40°C ... +85°C			
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz			
	Screw connection	0.5 .. 4 mm² / AWG 22..12			
	Color coding	IN red, OUT green, PE black			
	Tightening torque	0.5 - 1.0 Nm			
	Weight	18 g			
	Housing material	Polyamide			
	Mounting (Option)	Supporting rail TS35			
	Dimensions (H x D x W)	approx. 50 x 53 x 7.7 mm			

VIB 5.972 : Terminal for conversion of 20mA signals into voltage signals



1
2

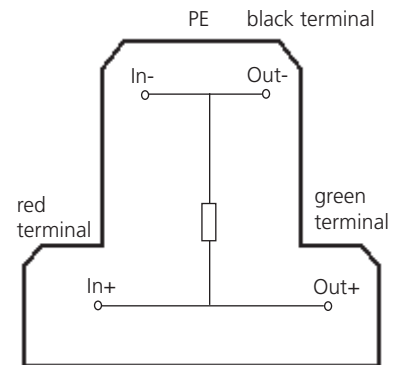
Function

This terminal converts 0-20 mA or 4-20 mA signals into voltage signals that the VIBRONET Signalmaster can handle.

Technical data

PARAMETER		VIB 5.972
Electrical	Input current	< 21 mA
	Output voltage	< 1 V
	Shunt or burden resistance	47 Ohm
	Basic accuracy of shunt resistor	0.1%
	Temperature drift of shunt resistor	25 ppm / °K
General	Operating temperature	-40°C ... +85°C
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz
	Screw connection	0.5 .. 4 mm ² / AWG 22..12
	Color coding	IN+ red, IN- black, OUT+ green, OUT- black
	Tightening torque	0.5 - 1.0 Nm
	Weight	18 g
	Housing material	Polyamide
	Mounting (Option)	Supporting rail TS35
	Dimensions	approx. 50 x 53 x 7.7 mm (H x T x B)

Terminal connections:

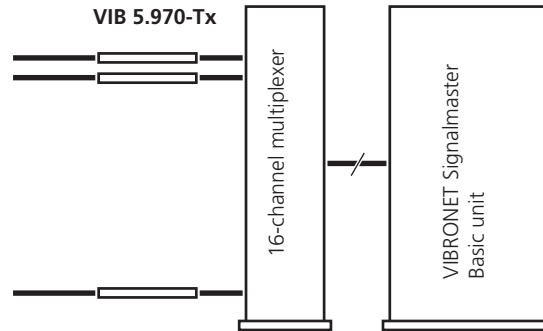
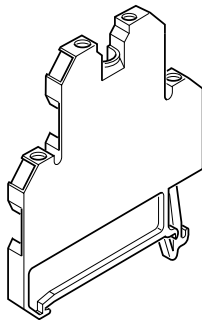


Terminals with voltage divider

1

- VIB 5.974-T2 : Terminal with voltage divider 1 / 2
- VIB 5.974-T3 : Terminal with voltage divider 1 / 3
- VIB 5.974-T4 : Terminal with voltage divider 1 / 4

2

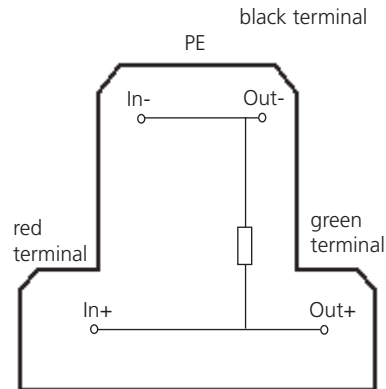


Application and function

These terminals contain a precision voltage divider with a dividing factor of 1/2 or 1/3 or 1/4 respectively. The output signal of the terminal closely follows the input signal, but with only the corresponding fraction of the input level.

The terminal VIB 5.974-T3 is suitable for transducers that operate, e.g. with unregulated ± 24 V to match their range to the VIBRONET Signalmaster.

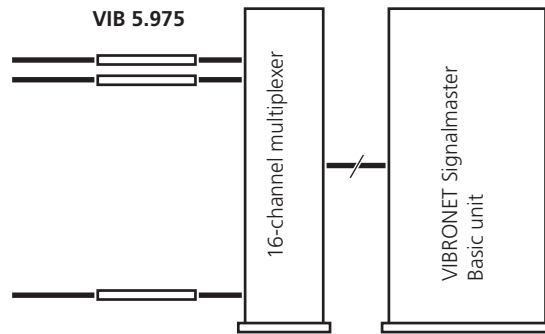
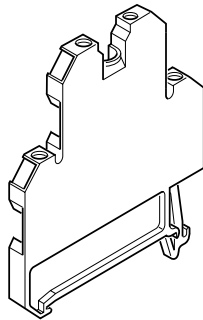
Terminal connections:



Technical data

PARAMETER		VIB 5.974-T2	VIB 5.974-T3	VIB 5.974-T4
Electrical	Input voltage	< 20 V	< 30 V	< 40 V
	Output voltage	< 10 V		
	Input resistance	136 kOhm	102 kOhm	136 kOhm
	Basic precision of voltage divider	0.2 %		
	Temperature drift of shunt resistor	30 ppm / °K		
General	Operating temperature	-40°C ... +85°C		
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz		
	Screw connection	0,5 .. 4 mm² / AWG 22..12		
	Color coding	IN+ red, IN- black, OUT+ green, OUT- black		
	Tightening torque	0.5 - 1.0 Nm		
	Weight	18 g		
	Housing material	Polyamide		
	Mounting (Option)	Supporting rail TS35		
	Dimensions (H x D x W)	approx. 50 x 53 x 7.7 mm		

VIB 5.975 : Connection terminal for potential-free contact signals



1
2

Application

This terminal is used to connect potential-free contact signals to analog multiplexers. This enables status signals to be processed, e.g. Alarm *Yes/No*, Motor running *Yes/No* or Sensor measuring *Yes/No*.

Function

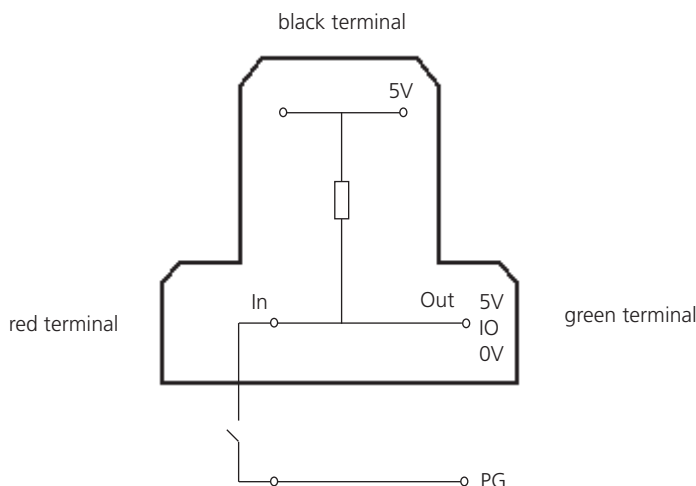
Depending on the switch setting (e.g. relay contact), the terminal provides +5 volt or 0 volt at the output (IO):

Switch is closed: 0 V
 Switch is open: +5 V

Technical data

PARAMETER		VIB 5.975
General	Operating temperature	-40°C ... +85°C
	Mechanical load	Shock: 30g / Vibration: 2 g constant acceleration at 10 to 150Hz
	Screw connection	0.5 .. 4 mm ² / AWG 22..12
	Color coding	IN red, OUT green, 5V black
	Tightening torque	0.5 - 1.0 Nm
	Weight	15 g
	Housing material	Polyamide
	Mounting (Option)	Supporting rail TS35
	Dimensions	approx. 50 x 53 x 7.7 mm (H x D x W)

Terminal connections:

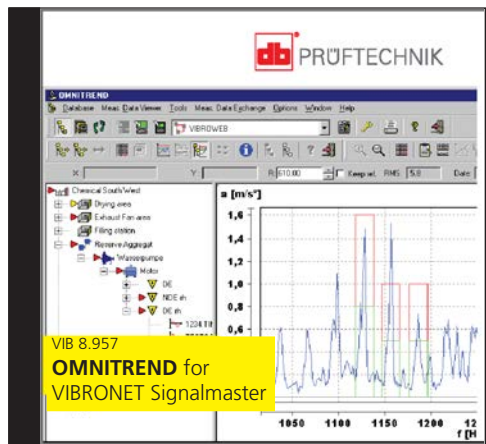


OMNITREND for VIBRONET Signalmaster, Standard

1

VIB 8.957 :	OMNITREND for VIBRONET Signalmaster Standard, software package
VIB 5.883 :	VIBRONET Signalmaster device driver for OMNITREND
VIB 8.957-P :	PC licence for VIBRONET Signalmaster

2



The OMNITREND software package **VIB 8.957** contains the CD ROM and the following items:

- VIB 8.957-P PC licence
(Communication password for a VIBRONET Signalmaster basic unit)
- VIB 8.957-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 5.883** is required to operate the OMNITREND software already available with the VIBRONET Signalmaster. The VIB 5.883 contains:

- VIB 8.957-P PC licence
(Communication password for a VIBRONET Signalmaster basic unit)
- VIB 8.957-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

Each further VIBRONET Signalmaster basic unit is registered with a separate **VIB 8.957-P** PC license.

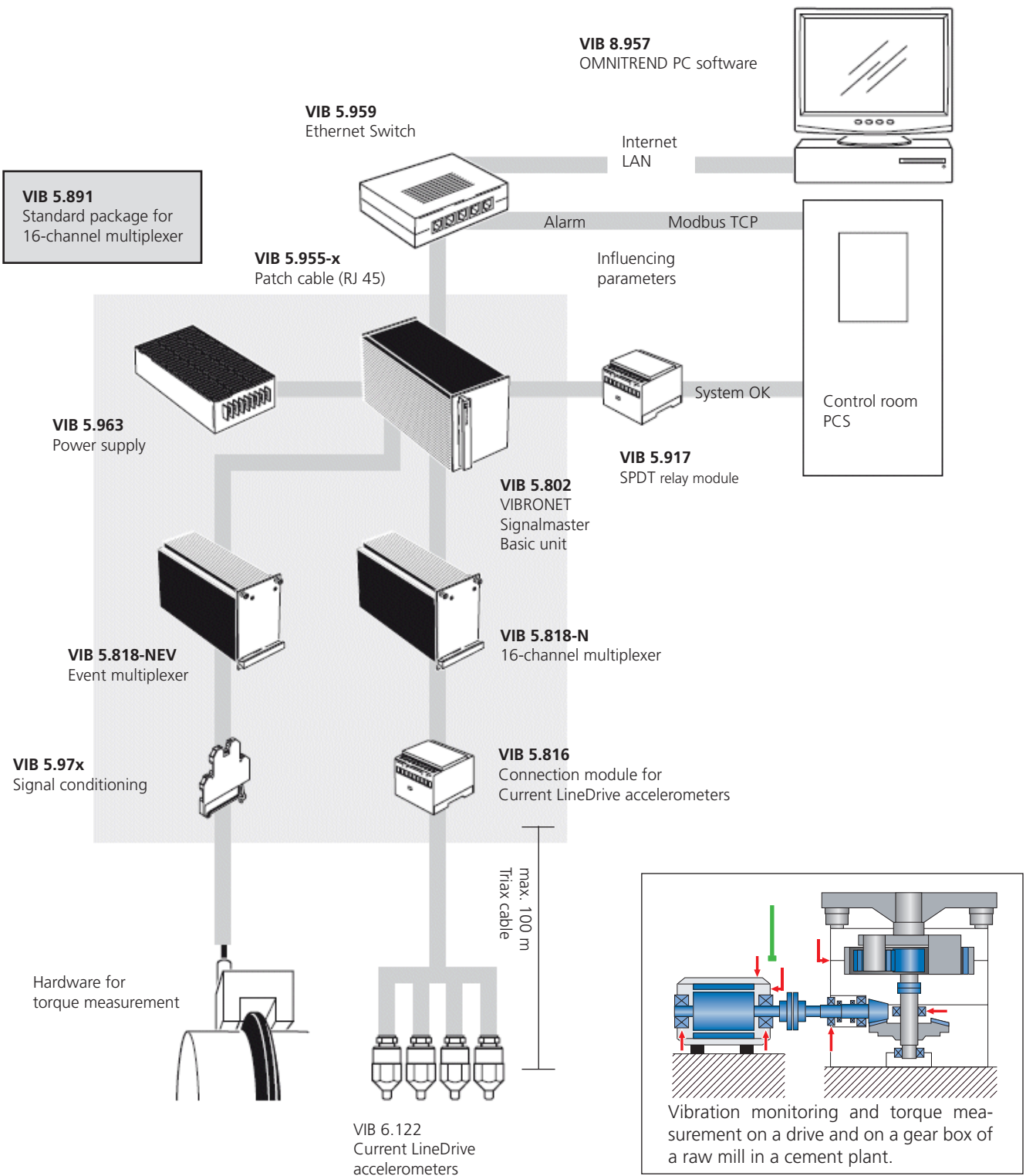
Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

Installation examples

Installation example A:

Monitoring of complex individual aggregates or smaller groups of aggregates (max. 37 sensors).

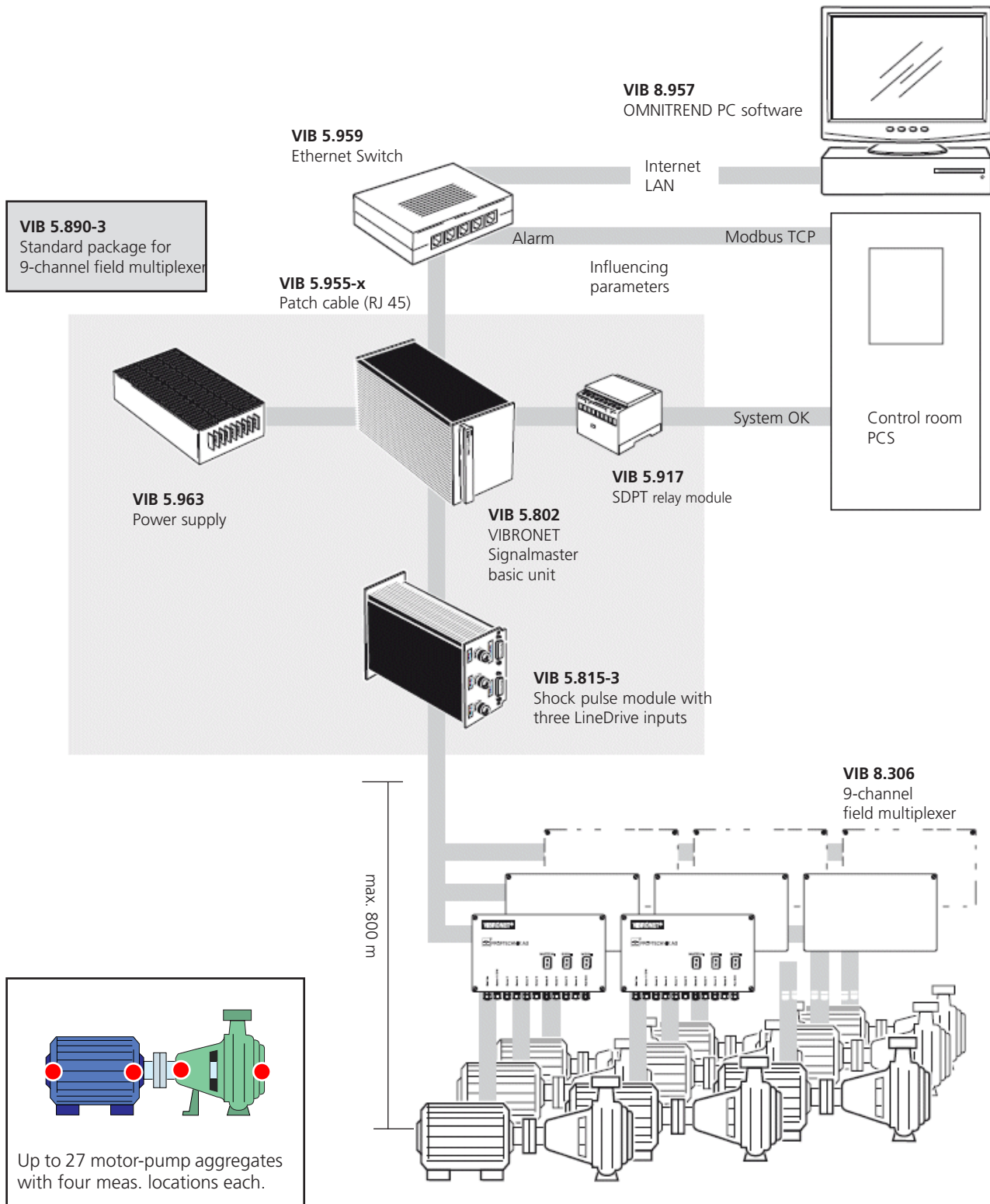


Installation example B:

Monitoring of many individual aggregates in widespread systems (max. 108 sensors in multiplexed operation).

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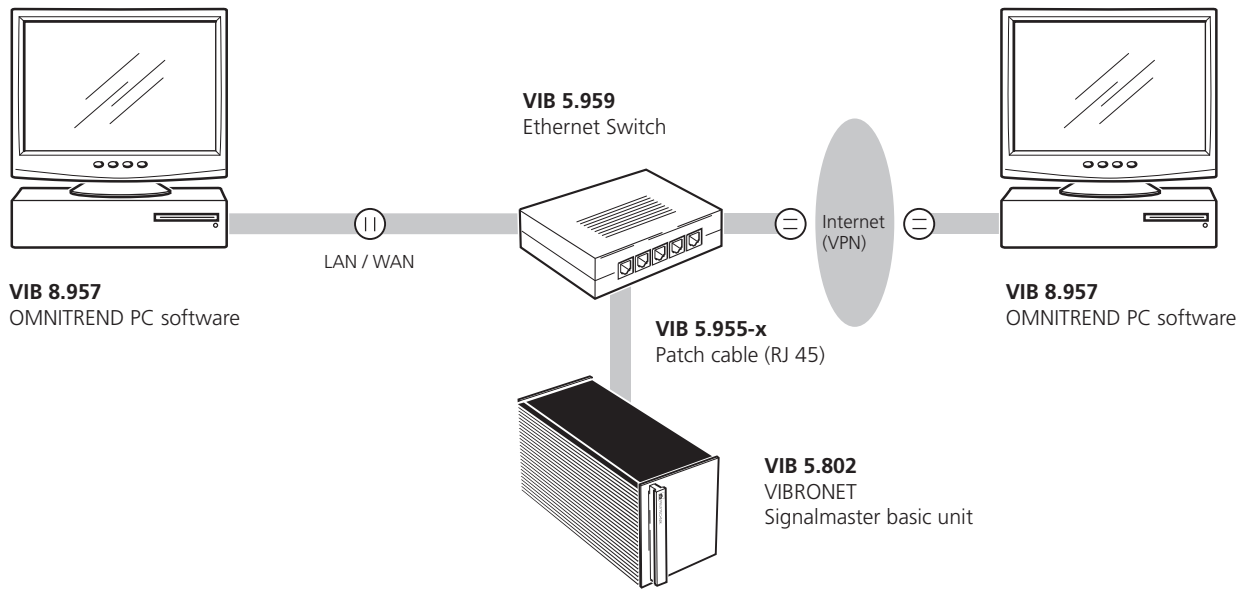


Communication example:

Local communication via ethernet (LAN/ WAN), global data exchange via internet.

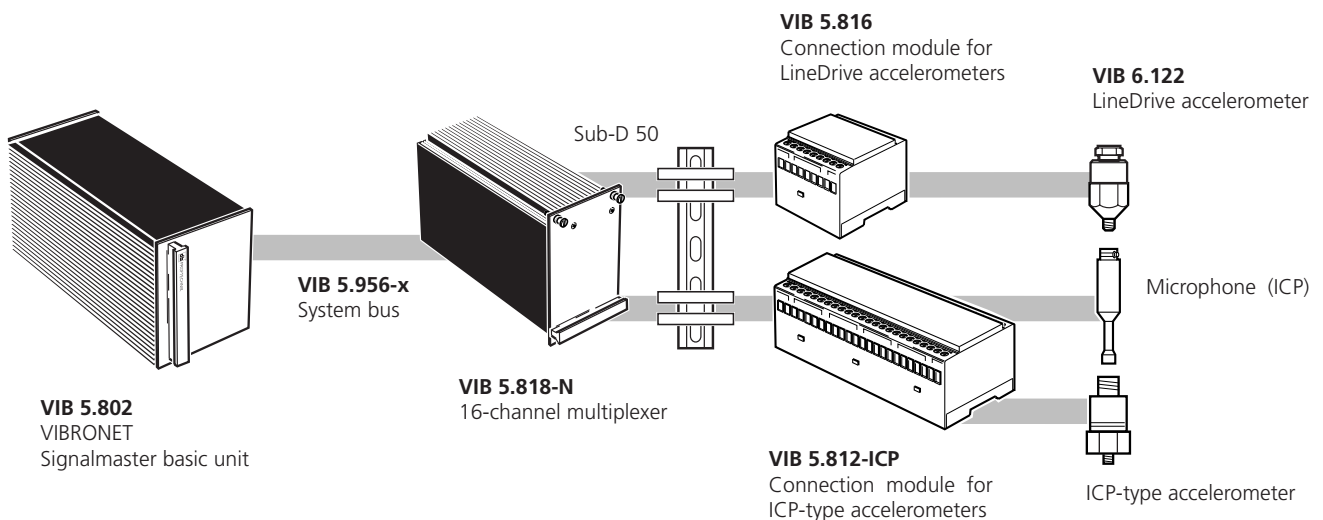
Note:

Special communication solutions upon request (e.g. GPRS router with fixed IP address and secure connection via VPN).



Interfaces to transducers:

Connection to accelerometers (ICP, Current LineDrive) and microphone via connection module.

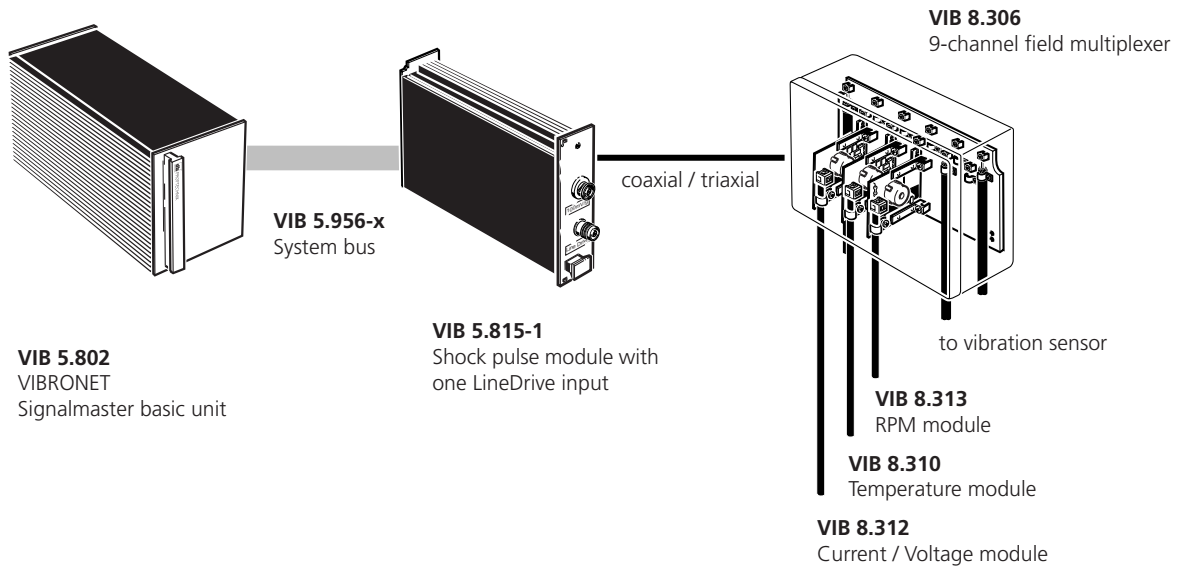


Interfaces to transducers:

Connection via field multiplexer (VIB 8.306) and shock pulse module (VIB 5.815-1).

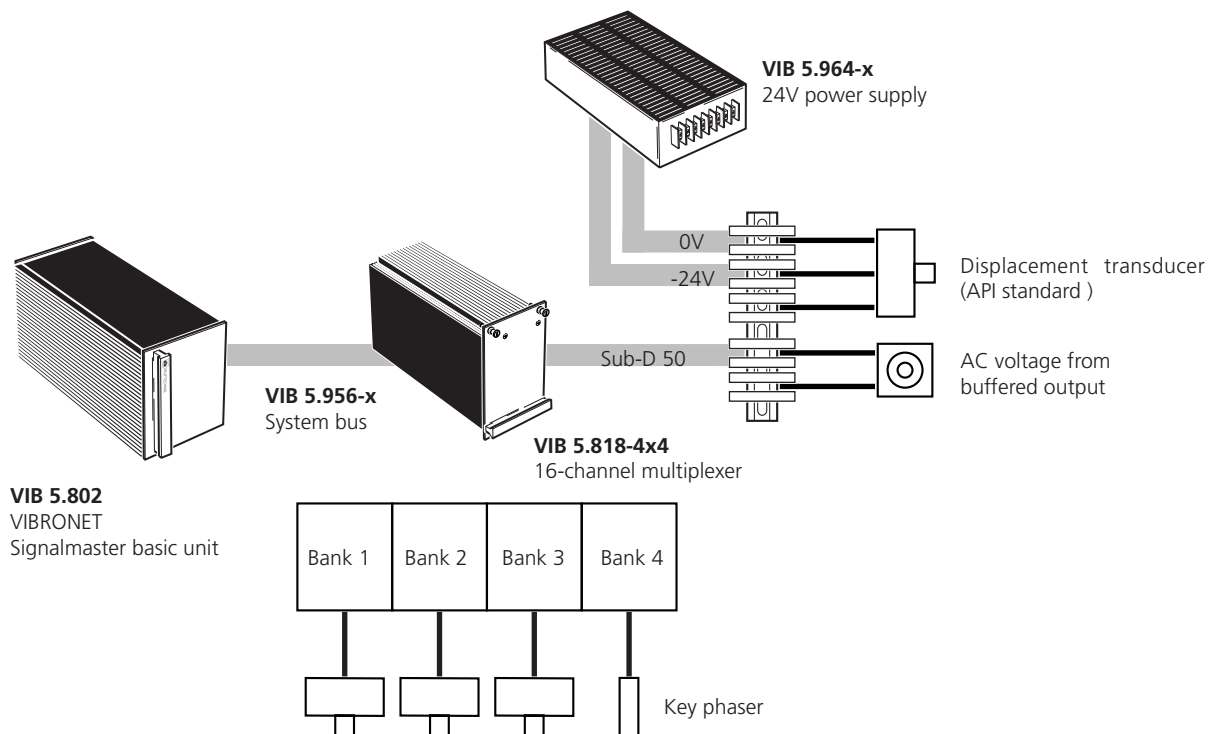
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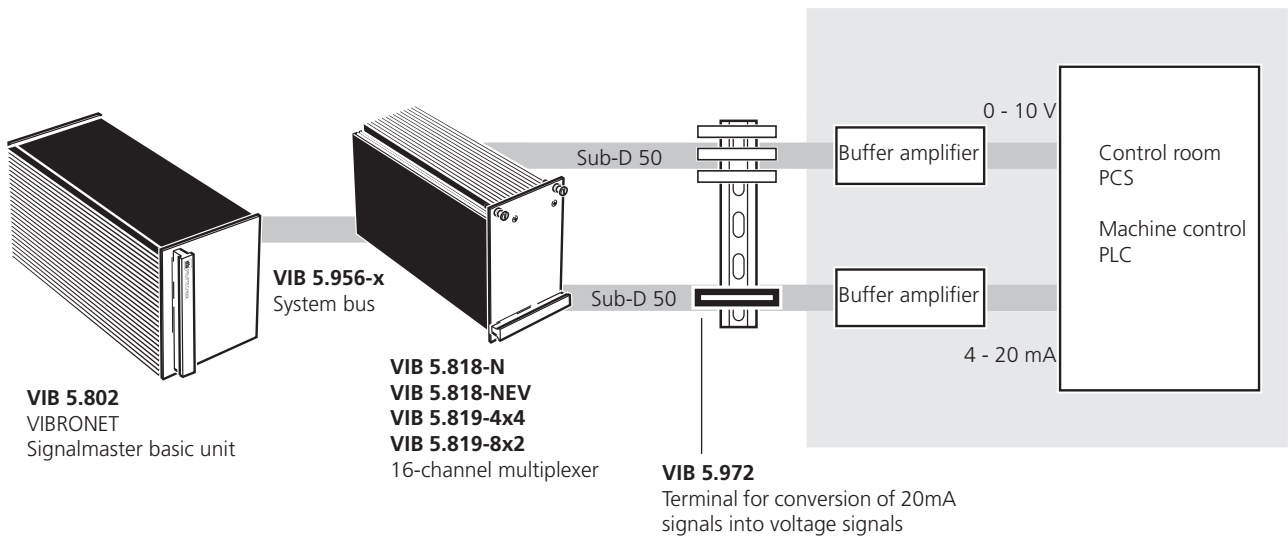
Interfaces to transducers:

Displacement measurement via multiplexer with 4x4 synchronous inputs. Orbit with displacement transducers and key phaser.



Interfaces to PCS / PLC:

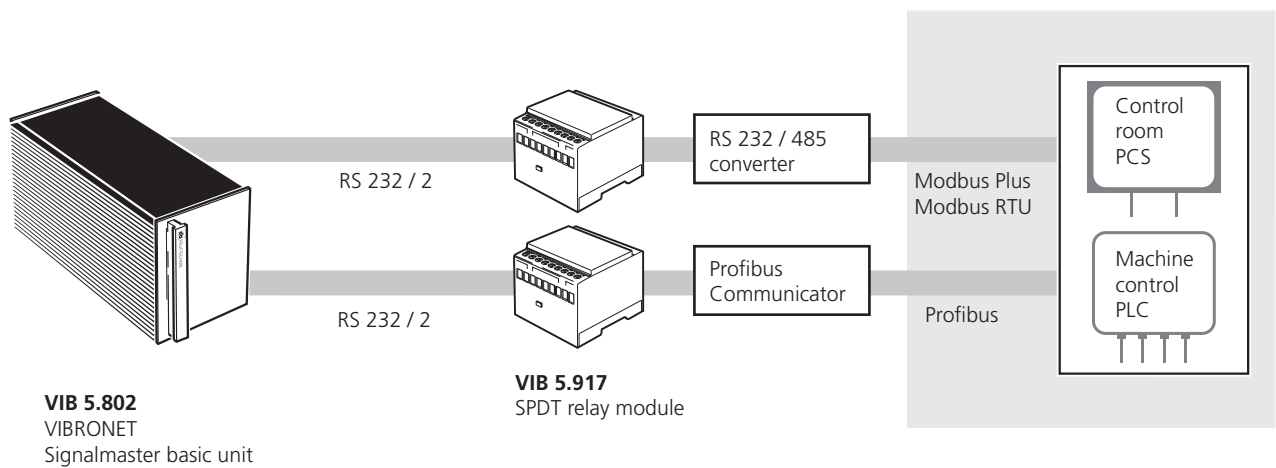
Connection to control systems via multiplexer and digital input modules (up to 16 inputs per module).



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Interfaces to PCS / PLC:

Connection to fieldbus via internal software module (Modbus Plus, Modbus RTU, ProfiNET, Profibus).

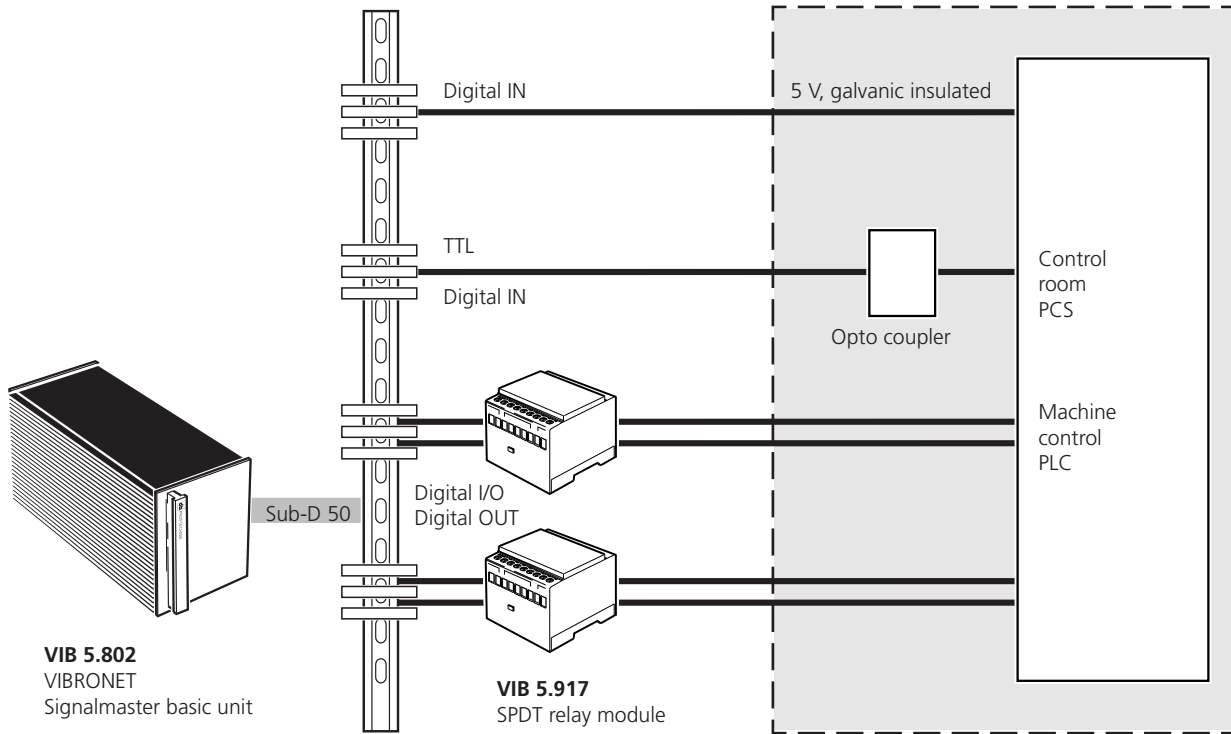


Interfaces to PCS / PLC:

Direct connection to control systems via internal digital In-/ Outputs (up to 4 dig. I/O and 4 dig. Out).

1

2



Index by order number

Order no.	Page		Page
VIB 5.802	10	VIB 5.970-M.....	36
VIB 5.812-ICP	28	VIB 5.970-P12	36
VIB 5.815-1	15	VIB 5.970-P24	36
VIB 5.815-3	15	VIB 5.970-P250	36
VIB 5.816	27	VIB 5.972	37
VIB 5.818-N.....	24	VIB 5.973	21
VIB 5.818-NEV.....	24	VIB 5.974-T2	38
VIB 5.819-4x4	24	VIB 5.974-T3	38
VIB 5.819-8x2	24	VIB 5.974-T4	38
VIB 5.883	40	VIB 5.975	39
VIB 5.890-1	8	VIB 8.306	18
VIB 5.890-3	9	VIB 8.306 EX	19
VIB 5.910	29	VIB 8.306 S	18
VIB 5.917	20	VIB 8.306 V	18
VIB 5.920-MOD.....	35	VIB 8.310	17
VIB 5.955-X.....	33	VIB 8.310 EX	17
VIB 5.956-X.....	14	VIB 8.312	17
VIB 5.957-2	33	VIB 8.313	17
VIB 5.957-5	33	VIB 8.313 EX	17
VIB 5.959	32	VIB 8.314 EX	17
VIB 5.962	13	VIB 8.361	18
VIB 5.963	13	VIB 8.957	40
VIB 5.964-1	34	VIB 8.957-P	40
VIB 5.964-2	34		
VIB 5.964-5	34		

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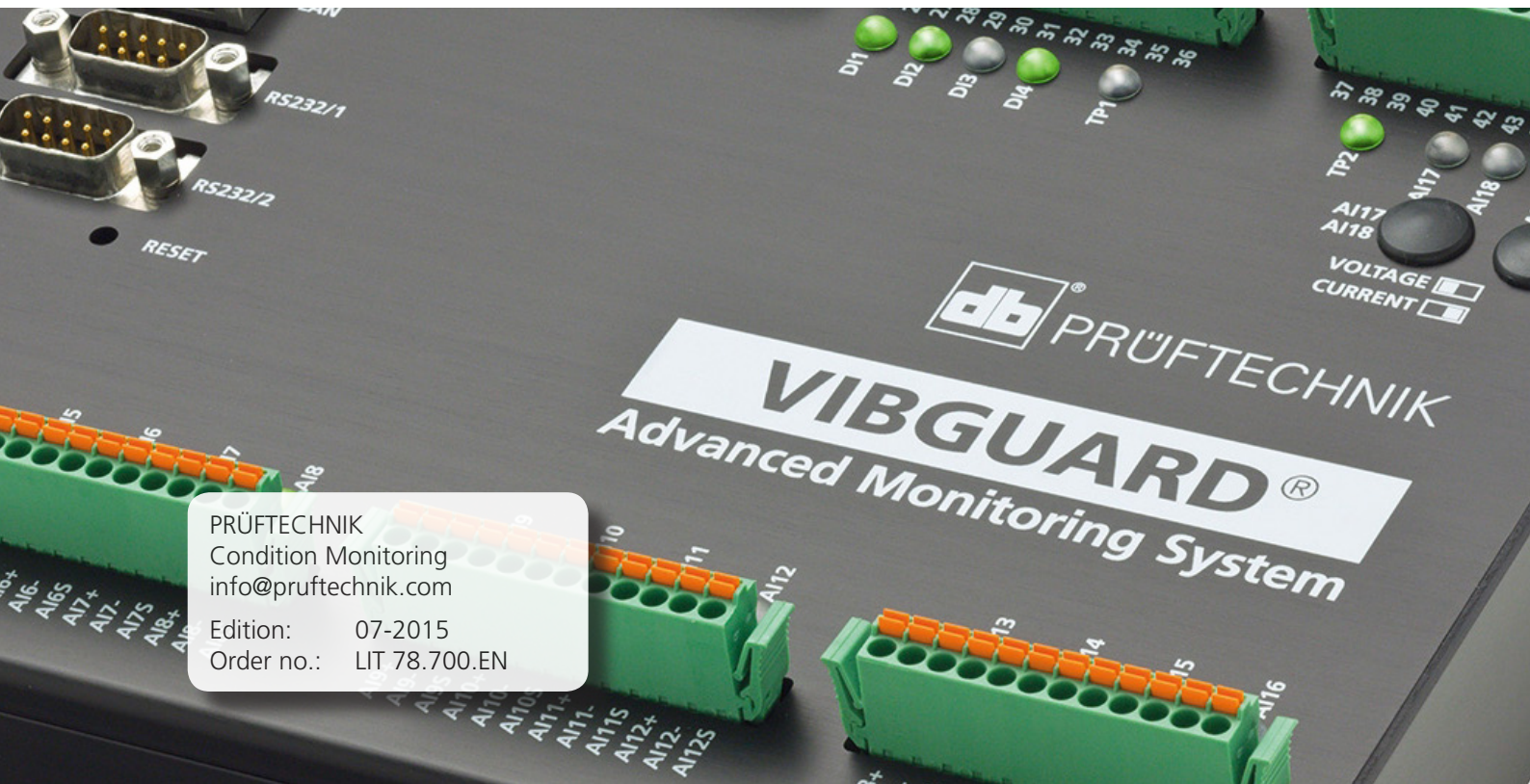
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Productive maintenance technology

VIBGUARD®

Advanced Condition Monitoring

Catalog



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Contents

Order no.	Product description	Page
Chapter 1: VIBGUARD Scope of delivery		
VIB 7.800-PS :	VIBGUARD module (16 x U and 4 x U/I) incl. power supply	8
VIB 7.800-LH :	VIBGUARD module (16 x U and 4 x U/I) in protective housing ,compact'	8
VIB 7.800-SDH :	VIBGUARD module (16 x U and 4 x U/I) in protective housing ,standard'	8
VIB 7.810-PS :	VIBGUARD module (16 x ICP and 4 x U/I) incl. power supply	9
VIB 7.810-LH :	VIBGUARD module (16 x ICP and 4 x U/I) in protective housing ,compact'	9
VIB 7.810-SDH :	VIBGUARD module (16 x ICP and 4 x U/I) in protective housing ,standard'	9
VIB 7.815-PS :	VIBGUARD module (8 x ICP, 8 x U, 4 x U/I) incl. power supply	10
VIB 7.815-LH :	VIBGUARD module (8 x ICP, 8 x U, 4 x U/I) in protective housing ,compact'	10
VIB 7.815-SDH :	VIBGUARD module (8 x ICP, 8 x U, 4 x U/I) in protective housing ,standard'	10
VIB 7.820-PS :	VIBGUARD module (16 x CLD and 4 x U/I) incl. power supply	11
VIB 7.820-LH :	VIBGUARD module (16 x CLD and 4 x U/I) in protective housing ,compact'	11
VIB 7.820-SDH :	VIBGUARD module (16 x CLD and 4 x U/I) in protective housing ,standard'	11
VIB 7.825-PS :	VIBGUARD module (8 x CLD, 8 x U, 4 x U/I) incl. power supply	12
VIB 7.825-LH :	VIBGUARD module (8 x CLD, 8 x U, 4 x U/I) in protective housing ,compact'	12
VIB 7.825-SDH :	VIBGUARD module (8 x CLD, 8 x U, 4 x U/I) in protective housing ,standard'	12
VIB 7.800-MOB :	VIBGUARD portable	13
VIB 7.800-MOBIPC :	VIBGUARD portable with integrated industrial PC	13

Chapter 2: VIBGUARD accessories

VIB 7.830-CLD :	VIBGUARD connection module for 4 additional CLD-type accelerometers	16
VIB 7.830-ICP :	VIBGUARD connection module for 4 additional ICP-type accelerometers	16
VIB 7.835:	DC-DC converter for 24V power supply	17
VIB 8.170:	Online VIEW 4.0 for up to 100 data points	18
VIB 8.171:	Online VIEW 4.0 for up to 250 data points	18
VIB 8.172:	Online VIEW 4.0 for up to 500 data points	18
VIB 8.173:	Online VIEW 4.0 for up to 1000 data points	18
VIB 8.200 :	OMNITREND Center Client / Server	19
VIB 8.210 :	OMNITREND Center Single User	19
VIB 8.201 :	OMNITREND Center Client / Server: 1 floating user license	19
VIB 8.202 :	OMNITREND Center Client / Server: 5 floating user licenses	19
VIB 8.205 :	OMNITREND Center: 1 additional workspace license	19
VIB 8.206 :	OMNITREND Center: 1 additional server license	19
VIB 8.207 :	OMNITREND Center: Email Center module	19
VIB 8.215 :	OMNITREND Center: online devices support	19
VIB 8.217 :	OMNITREND Center: VIBXPERT support	19
VIB 8.240-X :	X OMNITREND Center credits (X = 4, 8, 12, 16, 32, 64, 128, 256)	19

Index

Index by order number	20
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Chapter 1

VIBGUARD

Scope of delivery



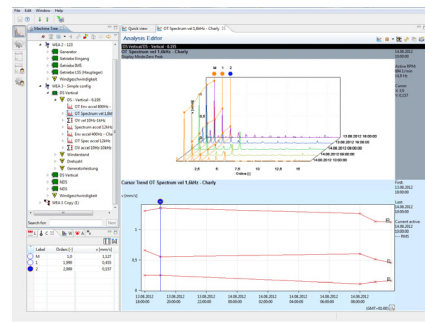
VIBGUARD - Online Condition Monitoring at top level

1

2



VIBGUARD module



OMNITREND Center PC software

VIBGUARD is a high performance system for the monitoring and diagnosis of operating conditions on machines with rotating parts. The permanently installed system works continuously and autonomously and records up to 20 measurement channels simultaneously!

VIBGUARD achieves a new level of Online Condition Monitoring that for the first time allows critical machines with highly dynamic processes and complex monitoring tasks to be included in a reliability-oriented maintenance schedule.

Features

- 20 synchronous measurement channels
- Applies for each channel:
 - 1 AD converter for independent measurements.
 - Up to 6 parameters per second.
 - One envelope spectrum or two separately filtered time signals.
 - Continuous sensor check is independent of the measurement.
 - Continuous data recording on every channel
- Digital inputs and outputs
- Tachometer pulse channels for triggered measurements
- Digital filters
- Several module types for ICP-type and CLD-type accelerometers and shaft vibration sensors with voltage output.
- Compact system module suitable for switching cabinet installation
- No active cooling required
- Optional pre-assembled in a rugged protective housing
- Networkable (Ethernet, Modbus TCP)

OMNITREND Center PC Software

OMNITREND Center is the perfect companion for configuration of measurement channels, data analysis and reporting. A clear structure makes it very easy to use and provides a working environment where the user feels at home immediately. Advanced functions and the perfectly tailored user interface fulfill even the highest requirements

Overview:

- User friendly
- Single or multi user version
- Modern system architecture: Ideal for distributed networks and ready for cloud solutions
- Advanced Modbus support
- Asset status at a glance including findings
- Intelligent search filtering facilitates navigation
- Practical analytical tools
- Interactive reports provide hyperlinks to data source and enables resetting the alarm status from the report
- Open reporting formats (HTML,...).

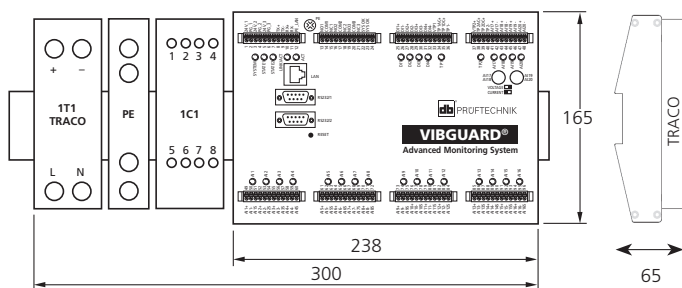
Technical data

PARAMETER	VIB 7.800..	VIB 7.810..	VIB 7.815..	VIB 7.820..	VIB 7.825..
Inputs and Outputs	Analog inputs				
	20 synchronous channels: 16 x vibration, 4 x process parameters (Process channels configurable pairwise for voltage or current signal)				
	Signal type				
	16 x U, 4 x U/I	16 x U (ICP), 4 x U/I	8 x U (ICP) + 8 x U, 4 x U/I	16 x I (CLD*), 4 x U/I	8 x I (CLD) + 8 x U, 4 x U/I
	Sensor types				
	Sensor w/ current or voltage output, Displacement sensor		ICP-type sensor, Sensor w/ current or voltage output, Displacement sensor		CLD-type sensor, Sensor w/ current or voltage output, Displacement sensor
	Digital inputs				
	4 optocoupler inputs 0-30V, Threshold 3V				
	Tacho/ pulse inputs				
	2 frequency inputs ±30V DC and AC. Threshold DC: 2,5V (default)				
	Digital outputs				
	3 relay changeover contacts, 30VDC/30VAC/2A				
System OK output					
Relay NC, 30VDC/30VAC/2A					
Ethernet					
Data rate: 100 MBit, half duplex					
Serial interface					
2x RS232, 115200 baud					
Services					
Modbus/TCP					
LED indicators					
20x Analog-IN, 1x System, 2x Status, 2x Ethernet, 4x Digital-IN, 2x Tacho-IN					
Measurement	Dynamic range				
	110 dB @ 24 bit				
	Sampling rate				
	131 kHz / 50 kHz bandwidth				
	FFT lines				
6400 (standard), 102400 (analysis)					
Measuring range, process channels					
± 24V or 4-20 mA, ±20mA					
Measuring range, analog inputs					
± 24V	--	± 24V	--	± 24V	
General	Ambient temperature				
	Stand-alone module: -20°C ... +70°C Module in protective housing: -20°C ... +60°C				
	System power supply				
	24±6 VDC / 0.5 A				
	Sensor power supply				
	CLD (Current Linedrive), ICP				
	Memory capacity				
Flash: 2 GB (expandable), RAM: 128 MB					
Case material					
Aluminum					
Weight					
approx. 1.2 kg (system module) approx. 4.0 kg (system module in protective housing 'Compact', VIB 7.8... LH) approx. 13.0 kg (system module in protective housing 'Standard', VIB 7.8... SDH)					
Environmental protection					
IP 20 (IP 65 in protective housing)					

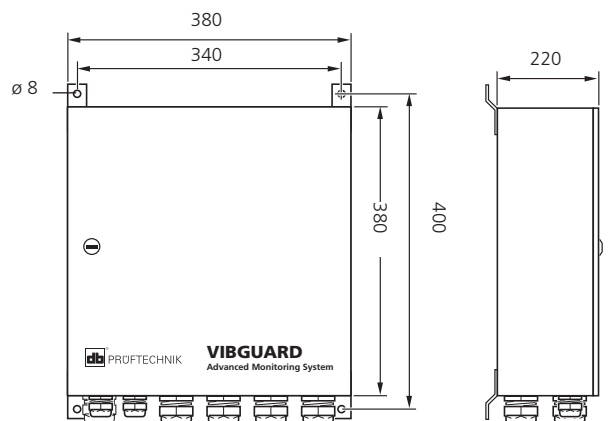
* CLD: Current Linedrive

Dimensions in mm

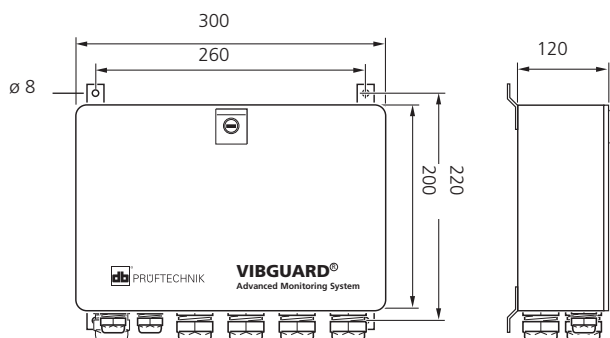
VIBGUARD system module for switching cabinet installation - VIB 7.8xx-PS



VIBGUARD protective housing 'standard', VIB 7.8xx-SDH



VIBGUARD protective housing 'compact', VIB 7.8xx-LH



VIBGUARD module for shaft vibration monitoring (16 x U and 4 x U/I)

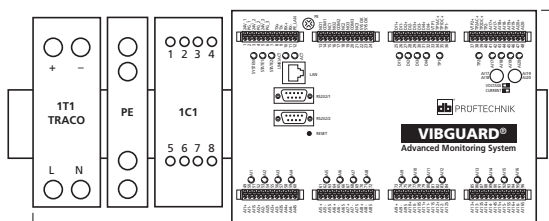
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VIB 7.800-PS : VIBGUARD module (16 x U and 4 x U/I) incl. power supply

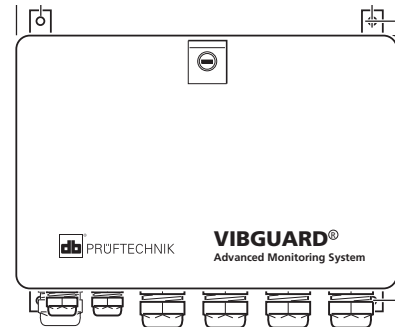
VIB 7.800-LH : VIBGUARD module (16 x U and 4 x U/I) in protective housing ,compact'

VIB 7.800-SDH : VIBGUARD module (16 x U and 4 x U/I) in protective housing ,standard'

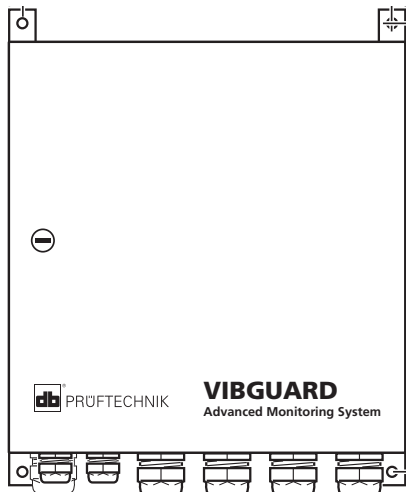
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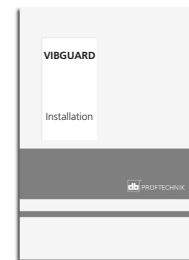
VIB 7.800-PS



VIB 7.800-LH



VIB 7.800-SDH



LIT 78.200

Application

This module is used for monitoring of shaft vibrations which are measured by sensors with voltage output. A total of 16 analog channels for voltage signals are available. Four additional channels can be configured in pairs for current or voltage signals.

Scope of supply

VIBGUARD comes in the following versions:

- Standalone module incl. power supply completely wired and mounted on DIN rail for installation in an existing switching cabinet.
- Module and power supply components completely wired and assembled in the PRÜFTECHNIK protective housing "Compact" or "Standard".

The „Standard“ protective housing provides sufficient space when more than 50% of the terminals must be wired to the module. The smaller „Compact“ housing is sufficient for installations with fewer measurement channels.

Also included:

LIT 78.200.EN VIBGUARD Installation Guide

Accessories

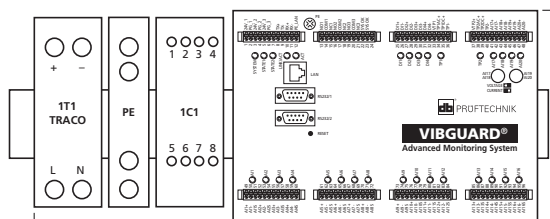
OMNITREND Center, PC software (Chapter 2).

VIBGUARD module for machine vibration monitoring (16 x ICP und 4 x U/I)

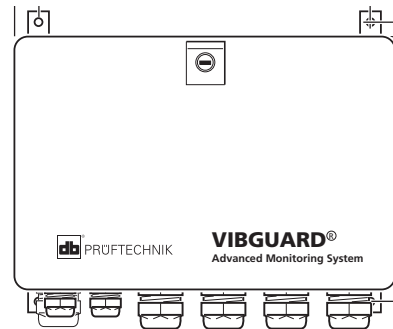
VIB 7.810-PS : VIBGUARD module (16 x ICP and 4 x U/I) incl. power supply

VIB 7.810-LH : VIBGUARD module (16 x ICP and 4 x U/I) in protective housing ‚compact‘

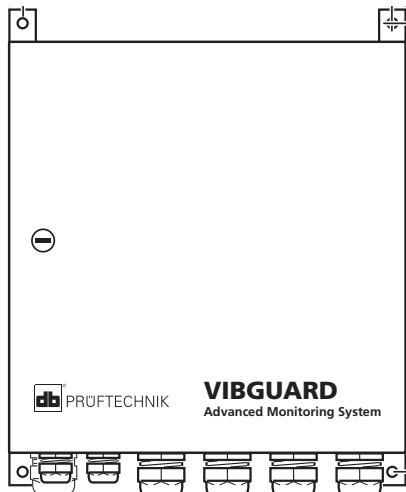
VIB 7.810-SDH : VIBGUARD module (16 x ICP and 4 x U/I) in protective housing ‚standard‘



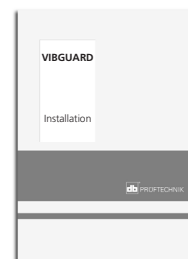
VIB 7.810-PS



VIB 7.810-LH



VIB 7.810-SDH



LIT 78.200

Application

This module is used for monitoring of machine vibration parameters which are measured by ICP-type accelerometers. A total of 16 analog channels for ICP signals are available. Four additional channels can be configured in pairs for current or voltage signals.

Scope of supply

VIBGUARD comes in the following versions:

- Standalone module incl. power supply completely wired and mounted on DIN rail for installation in an existing switching cabinet.
- Module and power supply components completely wired and assembled in the PRUFTECHNIK protective housing "Compact" or "Standard".

The „Standard“ protective housing provides sufficient space when more than 50% of the terminals must be wired to the module. The smaller „Compact“ housing is sufficient for installations with fewer measurement channels.

Also included:

LIT 78.200.EN VIBGUARD Installation Guide

Accessories

OMNITREND Center, PC software (Chapter 2).

VIBGUARD module for process parameters / vibration monitoring (8 x ICP, 8 x U, 4 x U/I)

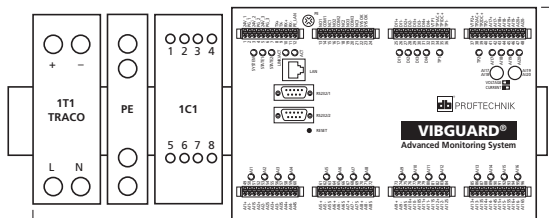
1

VIB 7.815-PS : VIBGUARD module (8 x ICP, 8 x U, 4 x U/I) incl. power supply

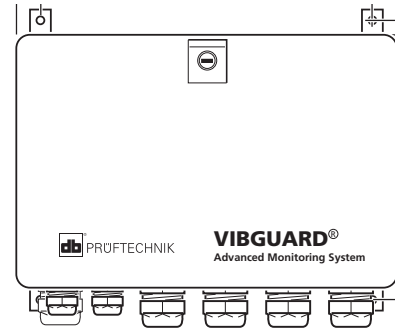
VIB 7.815-LH : VIBGUARD module (8 x ICP, 8 x U, 4 x U/I) in protective housing ‚compact‘

VIB 7.815-SDH : VIBGUARD module (8 x ICP, 8 x U, 4 x U/I) in protective housing ‚standard‘

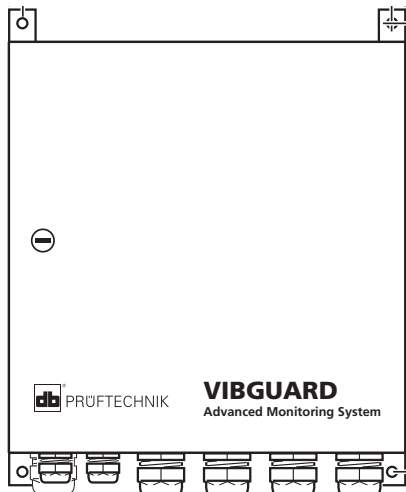
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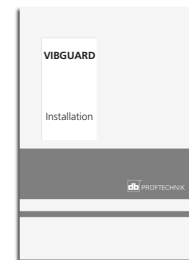
VIB 7.815-PS



VIB 7.815-LH



VIB 7.815-SDH



LIT 78.200

Application

This module is used for monitoring of machine vibration process parameters which are measured by ICP-type accelerometers and sensors with voltage output respectively. In each case eight analog channels for ICP and voltage signals are available. Four additional channels can be configured in pairs for current or voltage signals.

Scope of supply

VIBGUARD comes in the following versions:

- Standalone module incl. power supply completely wired and mounted on DIN rail for installation in an existing switching cabinet.
- Module and power supply components completely wired and assembled in the PRUFTECHNIK protective housing „Compact“ or „Standard“.

The „Standard“ protective housing provides sufficient space when more than 50% of the terminals must be wired to the module. The smaller „Compact“ housing is sufficient for installations with fewer measurement channels.

Also included:

LIT 78.200.EN VIBGUARD Installation Guide

Accessories

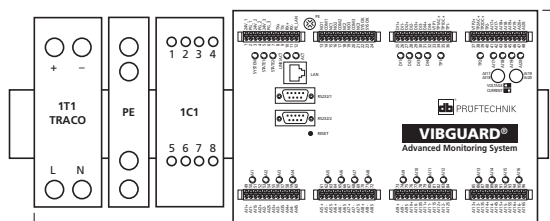
OMNITREND Center, PC software (Chapter 2).

VIBGUARD module for machine vibration monitoring (16 x CLD und 4 x U/I)

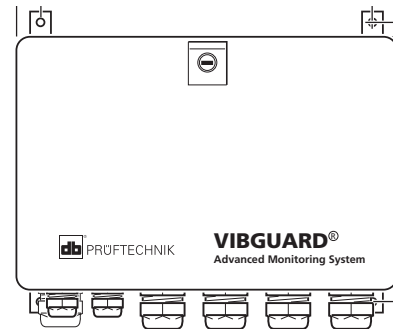
VIB 7.820-PS : VIBGUARD module (16 x CLD and 4 x U/I) incl. power supply

VIB 7.820-LH : VIBGUARD module (16 x CLD and 4 x U/I) in protective housing ‚compact‘

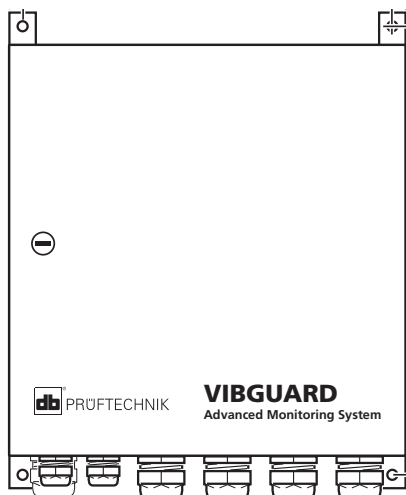
VIB 7.820-SDH : VIBGUARD module (16 x CLD and 4 x U/I) in protective housing ‚standard‘



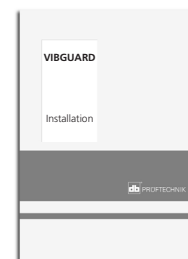
VIB 7.820-PS



VIB 7.820-LH



VIB 7.820-SDH



LIT 78.200

Application

This module is used for monitoring of machine vibration parameters which are measured by CLD*-type accelerometers. A total of 16 analog channels for CLD signals are available. Four additional channels can be configured in pairs for current or voltage signals.

Scope of supply

VIBGUARD comes in the following versions:

- Standalone module incl. power supply completely wired and mounted on DIN rail for installation in an existing switching cabinet.
- Module and power supply components completely wired and assembled in the PRÜFTECHNIK protective housing „Compact“ or „Standard“.

The „Standard“ protective housing provides sufficient space when more than 50% of the terminals must be wired to the module. The smaller „Compact“ housing is sufficient for installations with fewer measurement channels.

Also included:

LIT 78.200.EN VIBGUARD Installation Guide

Accessories

OMNITREND Center, PC software (Chapter 2).

* CLD: Current Linedrive

VIBGUARD module for process parameters / vibration monitoring (8 x CLD, 8 x U, 4 x U/I)

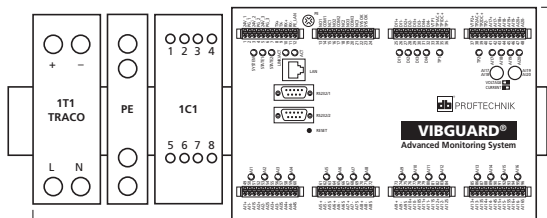
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VIB 7.825-PS : VIBGUARD module (8 x CLD, 8 x U, 4 x U/I) incl. power supply

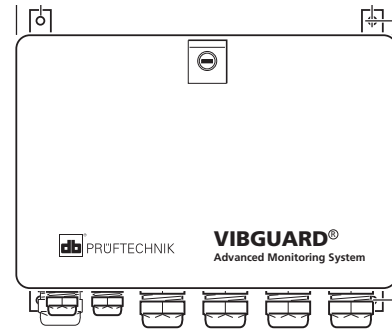
VIB 7.825-LH : VIBGUARD module (8 x CLD, 8 x U, 4 x U/I) in protective housing ‚compact‘

VIB 7.825-SDH : VIBGUARD module (8 x CLD, 8 x U, 4 x U/I) in protective housing ‚standard‘

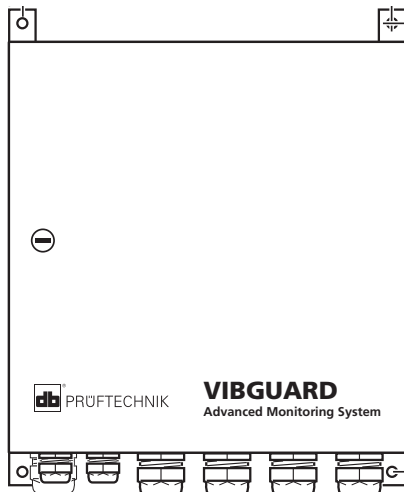
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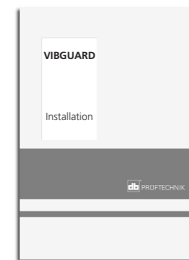
VIB 7.825-PS



VIB 7.825-LH



VIB 7.825-SDH



LIT 78.200

Application

This module is used for monitoring of machine vibration process parameters which are measured by CLD-type accelerometers and sensors with voltage output respectively. In each case eight analog channels for CLD and voltage signals are available. Four additional channels can be configured in pairs for current or voltage signals.

Scope of supply

VIBGUARD comes in the following versions:

- Standalone module incl. power supply completely wired and mounted on DIN rail for installation in an existing switching cabinet.
- Module and power supply components completely wired and assembled in the PRUFTECHNIK protective housing "Compact" or "Standard".

The „Standard“ protective housing provides sufficient space when more than 50% of the terminals must be wired to the module. The smaller „Compact“ housing is sufficient for installations with fewer measurement channels.

Also included:

LIT 78.200.EN VIBGUARD Installation Guide

Accessories

OMNITREND Center, PC software (Chapter 2).

* CLD: Current Linedrive

VIBGUARD portable – portable online condition monitoring system (CMS)

VIB 7.800-MOB : VIBGUARD portable

VIB 7.800-MOBIPC : VIBGUARD portable with integrated industrial PC

1

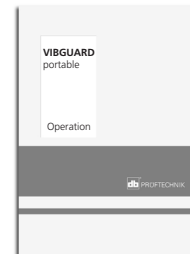
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VIB 7.800-MOB



VIB 7.800-MOBIPC



LIT 78.202

Application

The portable version of the VIBGUARD condition monitoring system is ideal for temporary diagnosis and troubleshooting of machines for which multiple channels have to be recorded and analyzed simultaneously over an extended period.

Features

VIBGUARD portable can accommodate all available VIBGUARD modules. All components are installed in a robust, industrial-proofed aluminum case. The sensor, communication and power supply connections are wired internally at the factory and can be accessed via a convenient side compartment. A cover protects the connections against environmental influences.

The standard method of data transfer is via the local wired network (LAN, Ethernet). Alternatively, the system can be connected directly to a laptop PC. At locations without a network infrastructure, a wireless connection provided by the customer can also be used.

The second version features an integrated industrial PC for data backups and data processing.

Configuration of the measurement tasks and analysis of the measurement data can be performed on an external computer with the OMNITREND Center PC software (not included).

Scope of delivery

VIBGUARD portable is available in the following versions:

- VIBGUARD module (VIB 7.8xx-PS) including power pack and switch, completely wired and mounted on standard rails in a case.
- VIBGUARD module (VIB 7.8xx-PS) including power pack, switch and industrial PC, completely wired and mounted on standard rails in a case.

Also included:

LIT 78.202.EN VIBGUARD portable, operating manual

Additions

- OMNITREND Center PC software (VIB 8.200-USB).
- VIBGUARD Device points (VIB 8.161)
- Standard cable for CLD-type accelerometers, L meters long (VIB 311231-L)
- TNC/BNC adapter (VIB 93062)

Technical data

PARAMETER		VIB 7.800-MOB	VIB 7.800-MOBIPC
Environment / Case	Technical data: VIBGUARD module	see page 7	
	Temperature range	-20 °C ... +60 °C	-20 °C ... +45 °C
	Weight	approx. 11 kg	approx. 14 kg
	Protection type	IP 64 (also when side compartment is open)	
	Dimensions, case (L x W x D)	445 x 220 x 355 mm	
	Material, case	Aluminium	
	Connectors	20x TNC (Sensors), 8x M12 (dig. I/O; Tacho pulse), 1x power supply, 1x Ethernet (RJ45)	

Information on all other components, such as industrial PC, switch and power pack, is available on request.

1

2

Chapter 2 VIBGUARD accessories

- 1
- 2



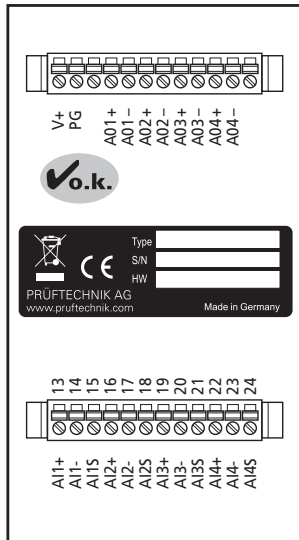
Connection modules for VIBGUARD (4 x CLD / 4 x ICP)

1

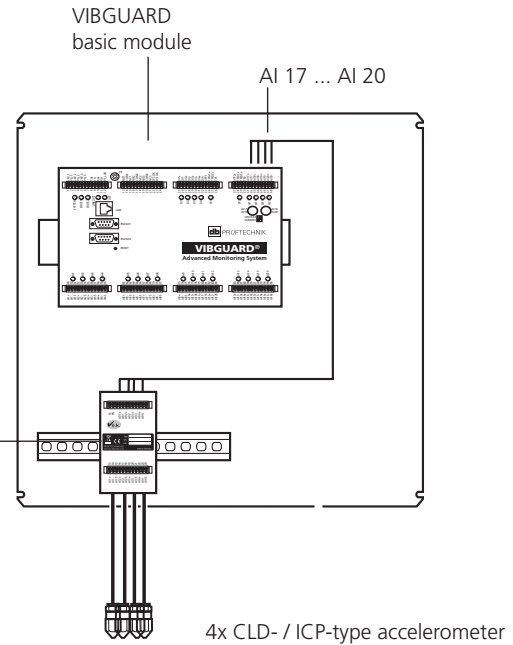
VIB 7.830-CLD : VIBGUARD connection module for 4 additional CLD-type accelerometers

VIB 7.830-ICP : VIBGUARD connection module for 4 additional ICP-type accelerometers

2



**VIB 7.830-CLD
VIB 7.830-ICP**
Connection module



Application

These modules are used to connect up to four accelerometers on up to four analog voltage inputs

on VIBGUARD. The modules are universal and can be used with any VIBGUARD version in any combination.

Terminal assignment

TERM	Function	TERM	Function		
VIB 7.830-CLD / VIB 7.830-ICP	1	V+	VIB 7.830-CLD / VIB 7.830-ICP	13	AI1+
	2	PG		14	AI1-
	3	nc		15	AI1S
	4	nc		16	AI2+
	5	AO1+		17	AI2-
	6	AO1-		18	AI2S
	7	AO2+		19	AI3+
	8	AO2-		20	AI3-
	9	AO3+		21	AI3S
	10	AO3-		22	AI4+
	11	AO4+		23	AI4-
	12	AO4-		24	AI4S

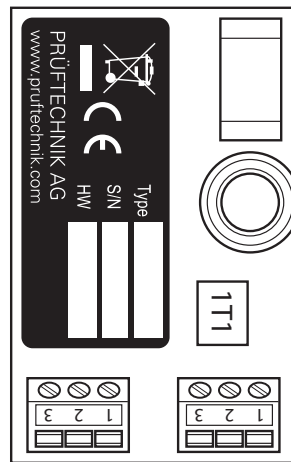
- V+ Supply voltage 24VDC (+10V ...+30V)
- PG Power Ground (0V)
- nc not connected
- AO Sensor signal
- AI Sensor connection
- AI_S Shield (insulated on the sensor side)

Technical data

PARAMETER	VIB 7.830-CLD	VIB 7.830-ICP	
Electrical	Inputs	4 analog inputs (U_0 : 10 V; I_{max} : 9.5 mA)	4 analog inputs (U_0 : 22.5 V; I_{const} : 4.5 mA)
	Outputs	4 analog sensor signals outputs (impedance-converted & rescaled: 1mV/1µA)	4 analog sensor signal outputs (impedance-converted)
	Supply	+24 VDC (+10 V...+30 V)	
	Power input	1150 mW (max 1850 mW)	1250 mW (max 1400 mW)
	Insulation	Module supply and sensor supply are electrically isolated	
Mechanical	Temperature range	-20 °C...+70 °C	
	Terminals	Spring-loaded connection (0.25mm ² ..1.5mm ²)	
	Housing	Aluminum housing IP20 for TS35 top hat rail mounting	
	Dimensions	66 x 105 x 48 mm	
Weight	220 g		

VIB 7.835: DC-DC converter for 24V power supply

1
2



Application

The DC-DC converter converts DC voltage from an external 24V supply into a 24V DC voltage, which is virtually

free of noise. The converter is installed by default when VIBGUARD is supplied with 24V provided by the customer.

Terminal assignment

TERM	Function	
VIB 7.835	1	VIN+
	2	VIN-
	3	nc
	4	VOUT+
	5	DNC
	6	VOUT-

VIN+ Input voltage +24VDC
 VIN- Input voltage 0V
 nc not connected
 VOUT+ Output voltage +24VDC
 DNC DO NOT connect!
 VOUT- Output voltage 0V

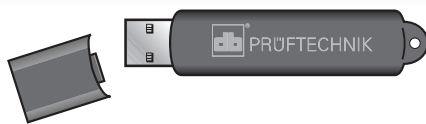
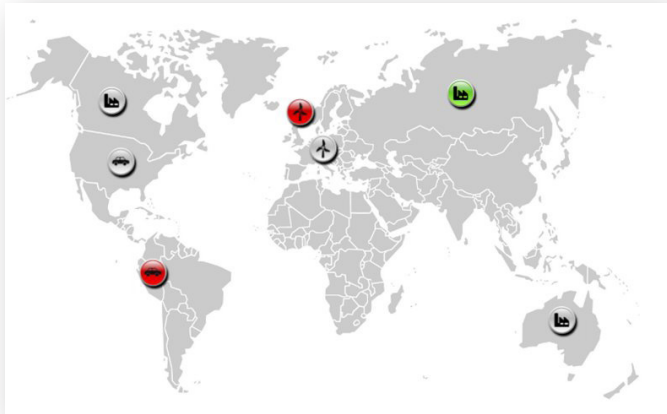
Technical data

PARAMETER	VIB 7.835	
Electrical	Output voltage	+ 24 VDC
	Output current	max. 800 mA; short-circuit protection
	Input voltage	+24VDC (+18V...+30V)
	Input current on VIN	+24VDC max +950 mA; fuse T2A
	Insulation	Input and Output are electrically isolated
Mechanical	Temperature range	-20 °C...+70 °C
	Terminals	Screw terminals (0.25mm ² ...2.5mm ²)
	Housing	Plastic housing IP20 for TS35 and TS15 top hat rail mounting
	Dimensions	45 x 77.5 x 46 mm
Weight	95g	

Online VIEW 4.0 - Visualization software for Online CMS

1
2

VIB 8.170:	Online VIEW 4.0 for up to 100 data points
VIB 8.171:	Online VIEW 4.0 for up to 250 data points
VIB 8.172:	Online VIEW 4.0 for up to 500 data points
VIB 8.173:	Online VIEW 4.0 for up to 1000 data points



VIB 8.140-USB

Application

This web-based software is used for online visualization of machine condition data that is collected with PRUFTECHNIK online CMS* and provided via Modbus TCP. The data is displayed in real time on a PC or mobile devices.

Online VIEW 4.0 runs in a current browser, where the monitored assets, machines and the relevant status information are presented clearly and attractively.

Scope of supply:

VIB 8.140-USB Online VIEW 4.0 USB pendrive

Note

The individual software packages are available based on the required data points. A data point corresponds to a Modbus address, i.e. a characteristic overall value, or an alarm, or a warning is one data point.

* CMS: Condition Monitoring System

Overview

- Client-Server application
- No additional client software required, web browser with Silverlight plug-in is sufficient.
- Visualization on mobile devices as an option
- Configuration and commissioning done by PRUFTECHNIK
- User interface in more than 150 languages
- Visualization of three levels (asset, machine train, machine) plus status overview
- Status overview with traffic light function
- Several display options for data visualization (bar chart, digital meters, analog instrument)
- Historical data and live data, each as a trend
- Compatible online CMS:
 - VIBGUARD
 - WEARSCANNER
 - VIBNODE
 - VIBROWEB
 - VIBROWEB XP
 - VIBCONNECT RF

OMNITREND Center: Condition Monitoring PC software

VIB 8.200 : OMNITREND Center Client / Server
VIB 8.210 : OMNITREND Center Single User
VIB 8.201 : OMNITREND Center Client / Server: 1 floating user license
VIB 8.202 : OMNITREND Center Client / Server: 5 floating user licenses
VIB 8.205 : OMNITREND Center: 1 additional workspace license
VIB 8.206 : OMNITREND Center: 1 additional server license
VIB 8.207 : OMNITREND Center: Email Center module
VIB 8.215 : OMNITREND Center: online devices support
VIB 8.217 : OMNITREND Center: VIBXPERT support
VIB 8.240-X : X OMNITREND Center credits (X = 4, 8, 12, 16, 32, 64, 128, 256)



Application

OMNITREND Center is a newly developed condition monitoring software for condition monitoring and diagnostics on rotating machinery.

The current version of OMNITREND Center works with the following PRÜFTECHNIK measuring devices:

Online Condition Monitoring systems

- VIBGUARD
- VIBROWEB XP
- VIBRONET Signalmaster

Portable instruments

- VIBXPERT II
- VIBXPERT EX
- VIBXPERT I

The software is modular. Certain applications as well as the number of access-authorized users are activated using respective licenses.

In order to extend the software function scope for on-line devices, a certain number of credits (bundled in fixed package sizes) is required.

Scope of supply

VIB 8.200-USB OMNITREND Center USB pendrive for installation

VIB 8.201-USB OMNITREND Center USB pendrive for licenses

LIT 82.201.EN OMNITREND Center installation and start-up instructions

Index by order number

Order no.	Page
-----------	------

L

LIT 78.200.EN	8
LIT 82.201.EN	19

V

VIB 7.800-LH	8
VIB 7.800-MOB	13
VIB 7.800-MOBIPC	13
VIB 7.800-PS	8
VIB 7.800-SDH	8
VIB 7.810-LH	9
VIB 7.810-PS	9
VIB 7.810-SDH	9
VIB 7.815-LH	10
VIB 7.815-PS	10
VIB 7.815-SDH	10
VIB 7.820-LH	11
VIB 7.820-PS	11
VIB 7.820-SDH	11
VIB 7.825-LH	12
VIB 7.825-PS	12
VIB 7.825-SDH	12
VIB 7.830-CLD	16
VIB 7.830-ICP	16
VIB 7.835	17
VIB 8.140-USB	18
VIB 8.170	18
VIB 8.171	18
VIB 8.172	18
VIB 8.173	18
VIB 8.200	19
VIB 8.201	19
VIB 8.202	19
VIB 8.205	19
VIB 8.206	19
VIB 8.207	19
VIB 8.210	19
VIB 8.215	19
VIB 8.217	19
VIB 8.240-X	19

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Productive maintenance technology

VIBCONNECT® RF

Wireless Condition Monitoring

Catalog



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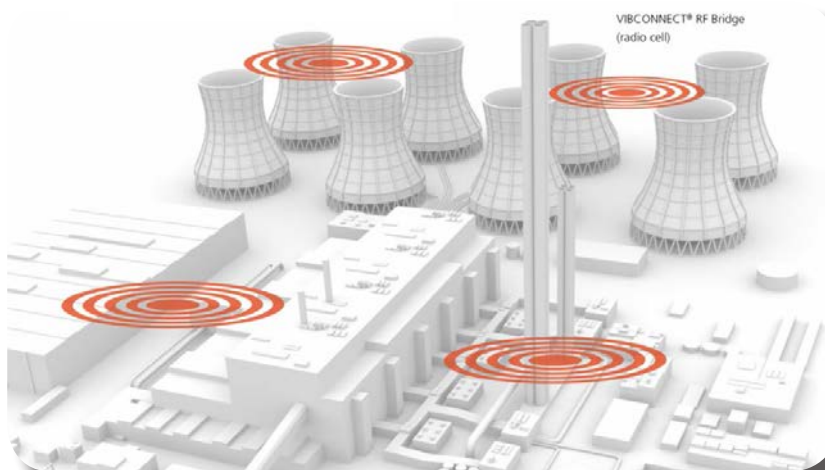
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Contents

Order no.	Product description	Page
Chapter 1: VIBCONNECT RF delivery sets		
VIB 7.220 SET :	VIBCONNECT RF Bridge Set.....	9
VIB 7.225 SET :	VIBCONNECT RF 2.4 GHz Bridge Set.....	10
VIB 7.200 SET :	VIBCONNECT RF Sensor Unit Set.....	11
VIB 7.205 SET :	VIBCONNECT RF 2.4 GHz Sensor Unit Set.....	12

Chapter 1

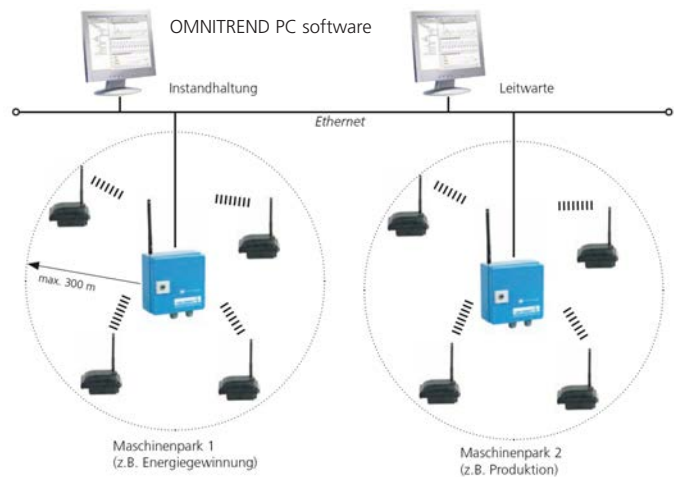
VIBCONNECT RF delivery sets



VIBCONNECT RF - Wireless Online Condition Monitoring

1

2



VIBCONNECT RF is a wireless online system for machine condition monitoring and diagnosis. It does away with costly cabling of the sensors and also saves time and money during operation. VIBCONNECT RF is fully automated and comes with a low-maintenance, self-contained power source.

VIBCONNECT RF overview

- Easy and quick installation without cabling
- Low purchasing, installation and operating costs
- Ideal to cover distant or difficult to reach locations
- Free OMNITREND PC software for visualization, analysis and configuration
- Up to 50 Sensor Units communicate with each Bridge
- Each Sensor Unit connects to two 3-in-1 sensors for vibration, roller bearing condition and temperature
- Separation of radio module and sensors for optimized signal reception
- Measures time waveform and temperature simultaneously
- FFT spectrum and envelope spectrum (bearing condition)
- Overall and narrow-band characteristic values
- 3 power options: Long-life batteries, 24 VDC or Harvester*
- Battery life approx. 4 years thanks to energy-efficient sensor technology and intelligent power management
- Battery load monitoring
- Radio frequency is ideal for applications without a permanent radio communication
- Maximum radio range: 300 meters
- Upgradable with additional sensor units at any time

* Version is not available yet

VIBCONNECT RF components

VIBCONNECT RF Bridge

The bridge is the core unit of the radio cell, which receives the measurement signals from the sensor units and calculates the characteristic values, spectra and envelopes. The data is then transmitted via Ethernet to the OMNITREND software platform for further analysis, reporting and archiving. The sensor units are provided through the bridge with the measuring configurations programmed in the OMNITREND software.

VIBCONNECT RF Sensor Unit and sensors

The sensor unit and the sensors are installed on the machine and connected to each other with short cables. These components can be positioned wherever the measuring signal is strongest and radio reception is best. Each sensor simultaneously records vibration, roller bearing condition and temperature, with minimum power consumption. Between the measuring cycles, the sensor unit is set to standby mode to ensure long battery life.

OMNITREND

The OMNITREND analysis software ensures round-the-clock access to the machine condition data. The software comes with an intuitive interface for fast and user-friendly analysis and archiving of the measurements. Its reporting functions highlight critical conditions and enable you to summarize all relevant information in properly formatted reports. Configuration of the measuring functions is made easy as the software guides you through the various dialogs.

Technical data

VIBCONNECT RF Sensor Unit - VIB 7.200

* Version is not available yet

		Battery		24V supply		Energy harvester	
PARAMETER		Standard	FCC	Standard	FCC	Standard	FCC
Measurement	Radio frequency	868 MHz (Europa)	916 MHz (America)	868 MHz (Europe)	916 MHz (America)	868 MHz (Europe)	916 MHz (America)
	Meas. channels	Two synchronised channels. Each channel allows measurement of vibration and temperature.					
	Dynamic range	24 bit ADC					
	Radio range	< 300 m, line of sight					
Supply	Power source	3.6 V lithium batteries, 2 pcs. (not included)		24 VDC		Energy harvester*, optimized to vibration frequency 50/60/100/120 Hz	
	Battery service life	approx. 4 years, at one meas. sequence / 2h (2x vibration + 2x temperature at 20 °C)		---			
	Standby mode	Yes					
General	Operating temp.	-25°C ... +80°C					
	Relative humidity	< 95%, non-condensed					
	Case material	ABS plastics, shock-proof					
	Weight	approx. 450 g		approx. 360 g			
	Protection class	IP 65					
	Dimensions	approx. 14 x 10 x 8 cm (LxWxH)					



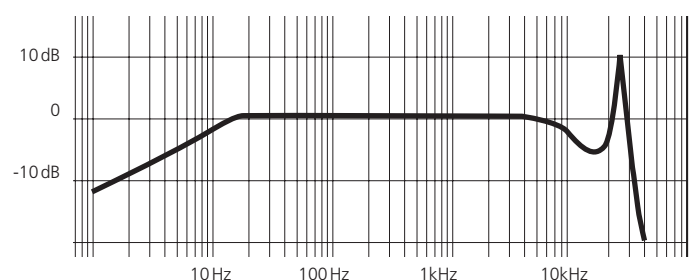
VIBCONNECT RF Sensor - VIB 7.205-2,9

PARAMETER		VIB 7.205-2,9	
Measurement, Vibration	Sensortype	Combined accelerometer / temperature sensor with low power consumption	
	Output ± 10%	3.5 mV / ms ²	
	Max. measuring range ± 10%	500 m/s ² rms	
	Offset	2.5 VDC	
	Frequency range ± 10%	10 Hz ... 8 kHz	
		± 3dB	5 Hz ... 10 kHz
	Resonance frequency	23 kHz (Resonance rise: 9 dB)	
Temperature	Temperature meas. range	-40 °C ... +85 °C	
	Output ± 3%	-5.5 mV/K	
	Benchmark	898 mV at 25°C	
Electrical	Power requirement	5 VDC / < 0.5 mA	
	Temperature sensitivity	< 0.08 ms ² /K	
	Electrical noise, rms	< 0.1 ms ² from 2 Hz	
Environment	Case material	Stainless steel VA 1.4305 / Grivory HTV (resistant amongst others to diesel, crude oil, hydraulic and engine oil, lubricants, tar, turpentine)	
	Environmental protection	IP 65	
	Shock limit	< 250 kms ⁻²	
	Relative humidity	< 95%, non-condensed	
	Weight	22 g	
	Dimensions	see figure	
	Mounting	Adapter w/ UNF 1/4 thread	
	Connection cable		
	Specification	3 wire, shielded	
	Outer diameter	2.9 mm	
	Length	2.9 m	
	Material	ETFE	
	Chemical resistance	Highly resistant to acid, alkali, oil, fuel	

VIBCONNECT RF Bridge - VIB 7.220

PARAMETER		Standard	FCC
General	Radio frequency	868 MHz (Europe)	916 MHz (America)
	Ethernet, Data rate	10 / 100 MBit	
	Memory capacity	256 MB	
	Capacity	up to 50 Sensor Units / Bridge	
	Power supply	100 ... 240 VAC / 50-60 Hz	
	Operating temp.	-25°C ... +60°C	
Environment	Relative humidity	< 95%, non-condensed	
	Case material	Steel sheet, powder coated	
	Weight	approx. 1.8 kg	
	Protection class	IP 66	
	Dimensions	200 x 200 x 135 mm (L x W x H)	

Frequency response - VIB 7.205-2,9



1

Technical data

VIBCONNECT RF 2.4 GHz Sensor Unit - VIB 7.205

* Version is not available yet

2

PARAMETER		Battery	24V supply	Energy harvester
Measurement	Radio frequency	2.4 GHz	2.4 GHz	2.4 GHz
	Meas. channels	Two synchronised channels. Each channel allows measurement of vibration and temperature.		
	Dynamic range	24 bit ADC		
	Radio range	< 300 m, line of sight		
Supply	Power source	3.6 V lithium batteries, 2 pcs. (not included)	24 VDC	Energy harvester*, optimized to vibration frequency 50/60/100/120 Hz
	Battery service life	approx. 4 years, at one meas. sequence / 2h (2x vibration + 2x temperature at 20 °C)	---	
	Standby mode	Yes		
General	Operating temp.	-25°C ... +80°C		
	Relative humidity	< 95%, non-condensed		
	Case material	ABS plastics, shock-proof		
	Weight	approx. 450 g	approx. 360 g	
	Protection class	IP 65		
	Dimensions	approx. 14 x 10 x 8 cm (LxWxH)		

VIBCONNECT RF 2.4 GHz Bridge - VIB 7.225

PARAMETER		2.4 GHz version
General	Radio frequency	2.4 GHz
	Ethernet, Data rate	10 / 100 MBit
	Memory capacity	256 MB
	Capacity	up to 50 Sensor Units / Bridge
	Power supply	100 ... 240 VAC / 50-60 Hz
	Operating temp.	-25°C ... +60°C
Environment	Relative humidity	< 95%, non-condensed
	Case material	Steel sheet, powder coated
	Weight	approx. 1.8 kg
	Protection class	IP 66
	Dimensions	200 x 200 x 135 mm (L x W x H)

VIB 7.220 SET : VIBCONNECT RF Bridge Set



VIB 7.220



VIB8.970



LIT 72.200

Order information

This set consists of the Bridge unit, the OMNITREND PC software and the VIBCONNECT RF operating instructions.

The Bridge is available with two different radio frequencies. When ordering the following information is required:

- Order number: **VIB 7.220 SET**
- Radio frequency: 868 MHz (**Standard**, Europe), or 916 MHz (**FCC**, America)

Order example: VIB 7.220 SET / FCC

Radio frequency certification

VIBCONNECT RF is certified for Europe (CE), the USA (FCC) and Canada (CSA). The FCC certification is valid for United States, but is accepted in many countries in Latin America.

VIB 7.225 SET : VIBCONNECT RF 2.4 GHz Bridge Set

1

2



VIB 7.225



VIB8.970



LIT 72.200

Scope of supply

This set consists of the Bridge unit, the OMNITREND PC software and the VIBCONNECT RF operating instructions.

Radio frequency certification

VIBCONNECT RF is certified for Europe (CE), the USA (FCC) and Canada (CSA). The FCC certification is valid for United States, but is accepted in many countries in Latin America.

VIB 7.200 SET : VIBCONNECT RF Sensor Unit Set



Order information

This set consists of the Sensor Unit and two 3-in1 sensors for machine vibration, bearing condition and temperature measurements.

The Sensor Unit is available with three different power supply options, each with two different radio frequencies. When ordering the following information is required:

- Order number: **VIB 7.200 SET**
- Supply option: **Battery**, or **24 VDC**, or **Harvester***
- Radio frequency: 868 MHz (**Standard**, Europe), or 916 MHz (**FCC**, America)

Order example: VIB 7.200 SET / Battery / FCC

* Version is not available yet

Accessories

In the battery version no lithium batteries are included for security reasons. The batteries must be purchased locally. Recommended battery type:

3.6V Lithium - Size C (e.g. Tadiran, Type: SL-2770)

The Harvester* required to power the Harvester version is available as an accessory.

Radio frequency certification

VIBCONNECT RF is certified for Europe (CE), the USA (FCC) and Canada (CSA). The FCC certification is valid for United States, but is accepted in many countries in Latin America.

VIB 7.205 SET : VIBCONNECT RF 2.4 GHz Sensor Unit Set

1

2



Order information

This set consists of the Sensor Unit and two 3-in-1 sensors for machine vibration, bearing condition and temperature measurements.

The Sensor Unit is available with three different power supply options. When ordering the following information is required:

- Order number: **VIB 7.205 SET**
- Supply option: **Battery**, or **24 VDC**, or **Harvester***

Order example: VIB 7.205 SET / Battery

Accessories

In the battery version no lithium batteries are included for security reasons. The batteries must be purchased locally. Recommended battery type:

3.6V Lithium - Size C (e.g. Tadiran, Type: SL-2770)

The Harvester* required to power the Harvester version is available as an accessory.

Radio frequency certification

VIBCONNECT RF is certified for Europe (CE), the USA (FCC) and Canada (CSA). The FCC certification is valid for United States, but is accepted in many countries in Latin America.

* Version is not available yet

Index by order number**1****Order no. Page**

LIT 72.200	8
VIB 7.200	7, 9
VIB 7.200 SET	9
VIB 7.205-2,9	7, 9
VIB 7.210-50	12
VIB 7.210-60	12
VIB 7.210-100	12
VIB 7.210-120	12
VIB 7.212-L	13
VIB 7.220	7, 8
VIB 7.220 SET	8
VIB 8.970	8

2

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Productive maintenance technology

VIBNODE[®]

Online Condition Monitoring
for standard machinery

Catalog



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Contents

Chapter 1

VIBNODE

VIBNODE - Online Condition Monitoring System for standard machines 6

Order no.	Product description	Page
VIB 7.100 :	VIBNODE 6 Basic unit for Current LineDrive (CLD) accelerometers with 6 analog measurement channels.....	7
VIB 7.101 :	VIBNODE 6 Basic unit for ICP accelerometers with 6 analog measurement channels.....	7
VIB 7.150 :	VIBNODE 12 Basic unit for Current LineDrive (CLD) accelerometers with 12 analog measurement channels.....	7
VIB 7.151 :	VIBNODE 12 Basic unit for ICP accelerometers with 12 analog measurement channels.....	7
VIB 7.100 SET :	VIBNODE delivery package for Current LineDrive (CLD) accelerometers and 6 analog meas. channels.....	9
VIB 7.150 SET :	VIBNODE delivery package for Current LineDrive (CLD) accelerometers and 12 analog meas. channels.....	9
VIB 7.101 SET :	VIBNODE delivery package for ICP-type accelerometers and 6 analog meas. channels.....	10
VIB 7.151 SET :	VIBNODE delivery package for ICP-type accelerometers and 12 analog meas. channels.....	10

Chapter 2

VIBNODE accessories

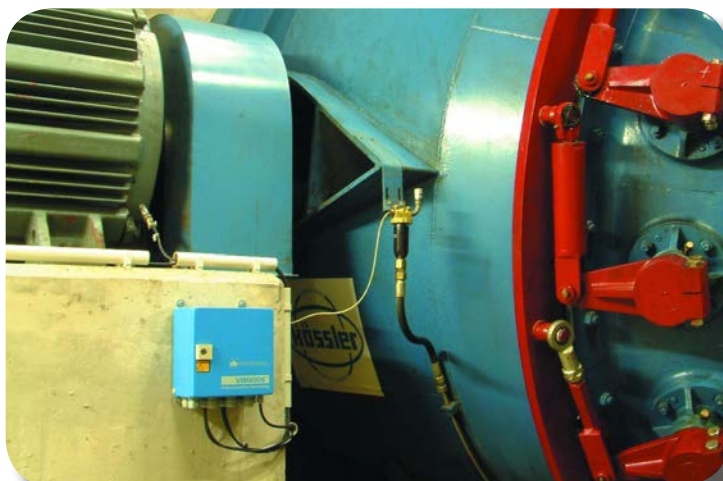
VIB 7.125-LS6 :	Low-Speed option for VIBNODE with 6 analog measurement channels.....	12
VIB 7.125-LS12 :	Low-Speed option for VIBNODE with 12 analog measurement channels.....	12
VIB 6.645 VSET :	Displacement sensor upgrade set for VIBNODE.....	13
VIB 7.112 :	Two analog outputs (4-20 mA) for VIBNODE.....	14
VIB 7.117 :	Direct connection for buffered ICP-type outputs.....	15
VIB 7.126 :	Memory expansion for VIBNODE.....	16
VIB 5.964-0,8 :	Switching power supply for VIBNODE, 24 VDC.....	17
VIB 7.580 :	Open ring wrench (14 x 17).....	18
VIB 7.583 :	Open ring wrench (24 x 25).....	18
VIB 81060 :	Screw driver (2.5 x 35).....	18
VIB 309007-6 :	Sensor cable for VIBNODE, assembled, twisted-pair (TP), PUR coat, 6 meters long.....	19
VIB 309007-10 :	Sensor cable for VIBNODE, assembled, TP, PUR coat, 10 meters long.....	19
VIB 309007-15 :	Sensor cable for VIBNODE, assembled, TP, PUR coat, 15 meters long.....	19
VIB 309007-20 :	Sensor cable for VIBNODE, assembled, TP, PUR coat, 20 meters long.....	19
VIB 7.115-6 :	Sensor cable for VIBNODE, assembled, coaxial, PVC coat, 6 meters long.....	19
VIB 7.115-12 :	Sensor cable for VIBNODE, assembled, coaxial, PVC coat, 12 meters long.....	19
VIB 7.180 :	OMNITREND for VIBNODE, Software package.....	20
VIB 7.180-DR :	VIBNODE device driver for OMNITREND.....	20
VIB 7.100-P :	PC licence for VIBNODE 6.....	20
VIB 7.150-P :	PC licence for VIBNODE 12.....	20
VIB 7.120 EU :	VIBNODE Demo set, EC version.....	21
Installation examples.....		22

Index

Index by order number 25

Chapter 1

VIBNODE



VIBNODE - Online Condition Monitoring System for standard machinery

1

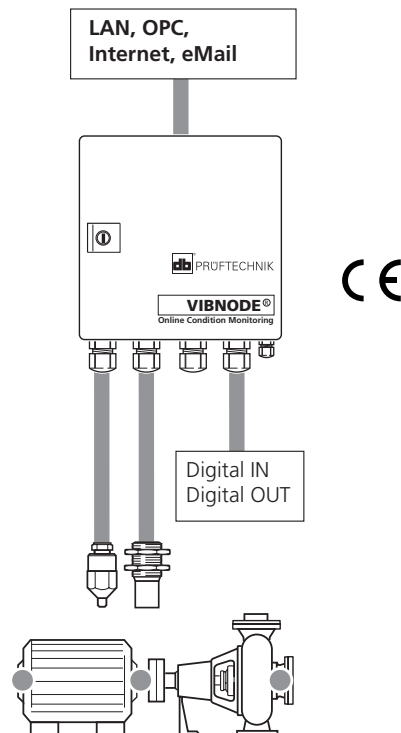
2

Communication
Ethernet, RS 232
Web server, eMail server, Modbus
TCP, TCP/ IP

Base unit
Signal conditioning
Signal analysis
Data processing
Data storage

Inputs / Outputs
Analog
Key phasor / Counter
Digital IN / OUT

Sensors
LineDrive, ICP (acceleration)
Current (0/4-20mA)
Voltage ($\pm 5V$)
RPM (5-30V)



Machine Condition Monitoring – compact, economical, modular

VIBNODE is a small monitoring system which was specially developed for production-critical standard machinery:

- Motors
- Fans
- Pumps
- Roller bearings
- Simple gearings

Application

Online monitoring of the machine condition by trending broad- and narrowband overall values and monitoring the programmed alarm thresholds. Automatic alarm and recording of machine signals for diagnosis if threshold values are exceeded.

VIBNODE key features

- Economical solution with 6 or 12 channels
- Simple installation directly on the machine – lower installation costs
- Standard interfaces – connection to Ethernet
- Easy operation with the proven OMNITREND software
- Broadband and narrowband monitoring
- Masks out noise signals
- RPM-dependent tracking of frequency bands
- Intelligent data reduction
- Independent alarm generation
- On-site intelligence: complete signal processing in VIBNODE

What makes VIBNODE worthwhile?

Economical solution

Individual machines are particularly cost-effective to monitor with 6 or 12 channels. The number of channels can be increased if required.

Decentralized – directly on-site

VIBNODE is installed directly on the machine, does not require a PC and is integrated in the company data network (Ethernet, Modbus TCP, OPC).

Quick installation

Short cable lengths, robust connection technology and ready-made cables make VIBNODE quick to install.

Flexible measurement process

The recording of broadband overall values provides information on the overall condition of the machine. On the other hand, the selective monitoring of specific damage frequencies permits reliable fault diagnosis. For variable RPM, the frequency bands are tracked. The effect of interfering signals on the trend curve can be eliminated by skillful selection of the frequency bands.

Spectrum only for alarms

To keep data traffic low, machine signals are only saved for FFT or envelope analysis if an alarm occurs.

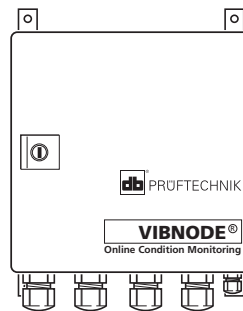
Prompt alarming

Maintenance personnel are informed independently of alarms via Ethernet, eMail or SMS when threshold values are exceeded.

VIBNODE basic unit

VIB 7.100 :	VIBNODE 6 Basic unit for Current LineDrive (CLD) accelerometers with 6 analog measurement channels
VIB 7.101 :	VIBNODE 6 Basic unit for ICP accelerometers with 6 analog measurement channels
VIB 7.150 :	VIBNODE 12 Basic unit for Current LineDrive (CLD) accelerometers with 12 analog measurement channels
VIB 7.151 :	VIBNODE 12 Basic unit for ICP accelerometers with 12 analog measurement channels

- FFT spectra
- Time waveform
- Envelope
- RPM
- Current (0/4 - 20 mA)
- Voltage (± 5 V)



- 6 or 12 channels
- Current LineDrive or ICP accelerometer
- Process parameters (current / voltage)
- RPM / Counter input
- Digital inputs and outputs
- Ethernet, RS 232
- Data transfer via HTTP
- 24 V DC power supply
- Ring buffer (16.000 overalls / 48 FFT spectra)
- Industrial proof, IP 66

Analog measurement channels

VIBNODE is available with up to 6 analog measurement channels or with up to 12 analog measurement channels. Both versions are configured in the factory for the connection of accelerometers of the 'Current LineDrive (CLD)' type or 'ICP (Voltage)' type. Each measurement channel can be reconfigured at any time for the measurement of current or voltage signals (0/4-20mA/ ± 5 V). This enables the comprehensive monitoring of all important condition and process parameters. The measurement times are reduced to a minimum (no settling time for sensor) by the constant supply of each measurement channel.

Digital measurement channels

VIBNODE 6 has a digital tacho input for triggered measurements or for RPM tracking of the band for vibration measurements. VIBNODE 12 has two tacho inputs.

Digital inputs / outputs

Two digital inputs and three digital outputs can be used as a trigger or for control (PCS, relay,..). In addition, there is an output for system monitoring (open drain) and a switchable 24V output.

Analog outputs (optional)

Measurement parameters can be output as a 4-20mA signal via 2 analog outputs.

Serial interfaces (RS 232)

Both interfaces are designed for serial communication (Laptop, modem) as well as for intelligent sensors and field bus systems.

Configuration & data evaluation

The measurement channels as well as the setting of the alarm and warning levels are configured with the OMNI-TREND PC software. This program is also used to transfer, display and archive the recorded measurement data. Overall values and status information can be read from the HTML pages in VIBNODE, which can be called up with a standard browser (Internet Explorer).

Measurement functions

Up to four measurement tasks can be defined per measurement location:

- 3x vibration acceleration spectra
- 3x vibration velocity spectra, each with 400Hz/ 1kHz / 5kHz / 10kHz F_{max}
- 3x envelope spectrum (500 Hz, 1 kHz, 4 kHz)
- Process parameters* as current or voltage

* Temperature transmitters (4-20mA) can be used for temperature measurements with PT100 sensor

Suitably adapted bands can be defined for the calculation of vibration overall values in the spectrum. The effective value (RMS) or the peak value (Peak) can be generated as a result. The individual bands can overlap or can be tracked with the RPM or can be set as fixed.

External connection

VIBNODE communicates via Ethernet (TCP/IP) so the system can easily be integrated in any existing network. The 'Modbus TCP' network protocol is used to transfer status information and characteristic overall values directly to a process control system. Process control systems that do not directly support the Modbus TCP can be connected via OPC. VIBNODE can establish an Internet connection (PPP) by modem, ISDN, GSM or HSCSD adapter and send eMails with file attachments.

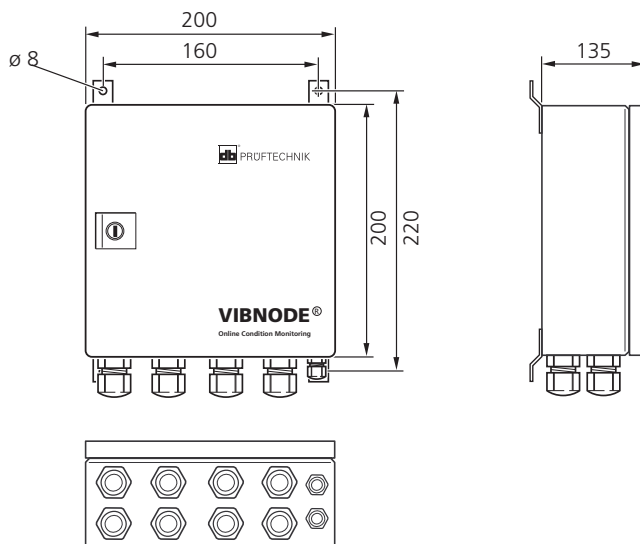
Technical data

1

2

PARAMETER		VIB 7.100 / VIB 7.101	VIB 7.150 / VIB 7.151
Interfaces	Meas. channel, analog	6 single-ended inputs configurable for: Vibration acceleration (CLD / ICP) Current: 0/4-20mA Voltage: ±5V AC/DC	12 single-ended inputs configurable for: Vibration acceleration (CLD / ICP) Current: 0/4-20mA Voltage: ±5V AC/DC
	Meas. channel, digital	One RPM / counter input	Two RPM / counter inputs
	Digital inputs	Two, 5 V to 30 V	
	Digital outputs	Three, Open-Collector; holding current: < 100 mA, switching voltage: <. 30 V	
	Analog outputs (option)	Two, 4-20mA, not electrically insulated Insulation is available as additional option.	
	Ethernet interface	Two, data rate: 10 Mbit	
	RS 232 interface	Two, data rate: 115 kBit	
	Switching output	24 V DC, switchable	
	System OK output	Open-Drain, switching voltage: < 30 V, breaking capacity: < 15 W	
Measurement	Measurement range, analog	±5 V, ±500 mV, ±50 mV, ±5 mV	
	Dynamic range / Resolution	96 dB / 16 bit ADC	
	Frequency range	F _{max} : 400, 1000, 5000, 10000 Hz	
	Filter (only with ‚Low-speed‘ option)	25 Hz low pass filter, switchable for setups with F _{max} = 400 Hz	
	Frequency resolution	3200 lines	
	Band analysis	Up to 12 frequency-selective bands per spectrum; calculation of the RMS or peak value in each band	
	Envelope	2 setups for high- and medium-speed machines, fix input filters: 2kHz - 10kHz / F _{max} : 1kHz 3kHz - 10kHz / F _{max} : 4kHz Additional for low-speed machines („Low-speed‘ option): 100 Hz - 10 kHz / F _{max} : 1 kHz	
	Time waveform (with ‚Low-speed‘ option)	Signal length: 3200 ms, 800 ms, 200 ms, 100 ms	
	Measurement functions	FFT spectrum, time signal (with ‚low-speed‘ option only), envelope spectrum, process parameters, overall values (Peak, RMS) via evaluation of narrowband / broadband spectral regions.	
General parameters	Power supply	21-30 VDC / 0.8 A	
	Memory	Ring buffer for up to 48 FFT spectra / time signals Ring buffer for up to 16000 measurement values (trending)	
	Temperature range	- 25°C ... +60°C	
	Environmental protection	IP 66 (EN 60529) / NEMA 4	
	Total weight	approx. 3.5 kg	

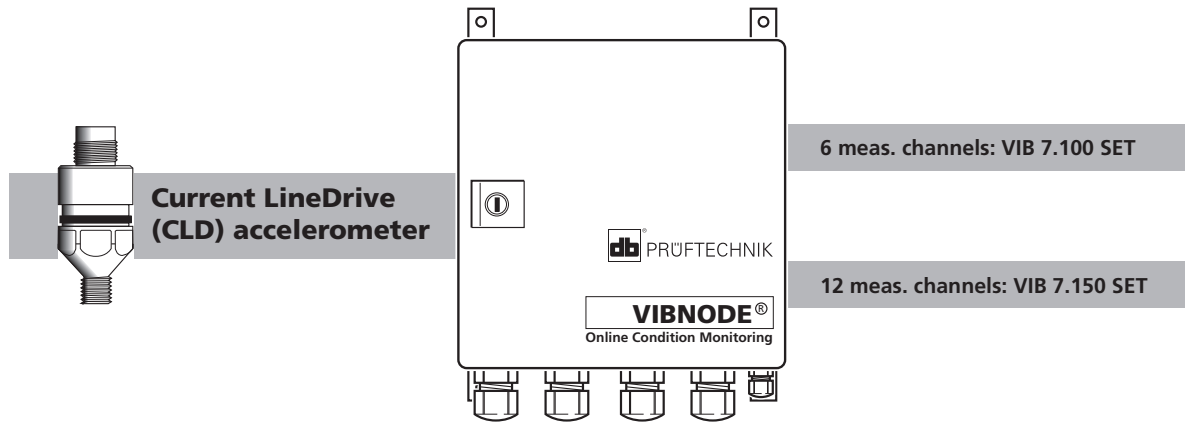
Dimensions
in mm



VIBNODE delivery packages for Current LineDrive accelerometers

VIB 7.100 SET : VIBNODE delivery package for Current LineDrive (CLD) accelerometers and 6 analog meas. channels

VIB 7.150 SET : VIBNODE delivery package for Current LineDrive (CLD) accelerometers and 12 analog meas. channels



Scope of delivery - VIB 7.100 SET

- VIB 7.100 VIBNODE 6 base unit (6 channels) for Current LineDrive (CLD) accelerometers
- VIB 7.100-P PC license for VIBNODE
- VIB 9.813.G VIBNODE Installation instructions, english

Scope of delivery - VIB 7.150 SET

- VIB 7.150 VIBNODE 12 base unit (12 channels) for Current LineDrive (CLD) accelerometers
- VIB 7.100-P PC license for VIBNODE
- VIB 9.813.G VIBNODE Installation instructions, english

Notes

The VIB 7.100-P PC license is used to register the VIBNODE base unit in the OMNITREND PC software (VIB 7.180).

Cables and transducers are not included in the VIBNODE packages and must be ordered separately!

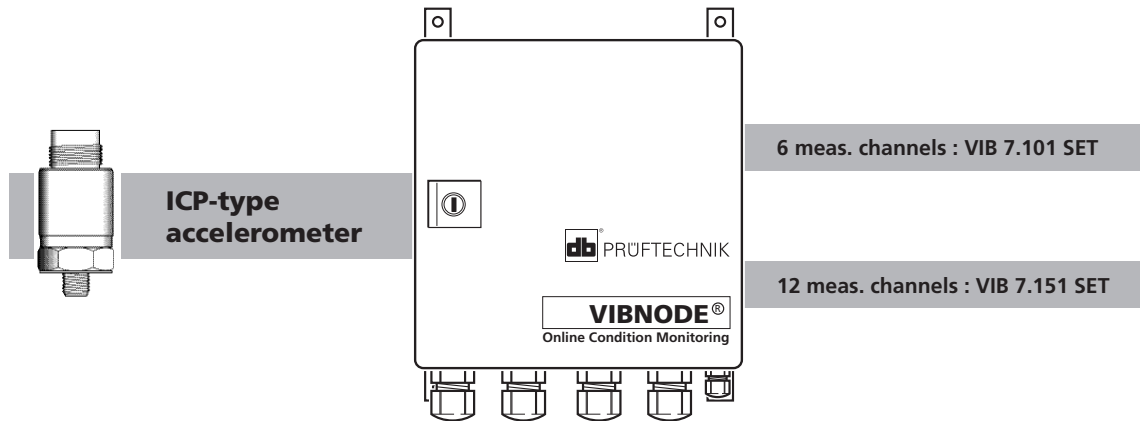
VIBNODE delivery packages for ICP-type accelerometers

1

VIB 7.101 SET : VIBNODE delivery package for ICP-type accelerometers and 6 analog meas. channels

VIB 7.151 SET : VIBNODE delivery package for ICP-type accelerometers and 12 analog meas. channels

2



Scope of delivery - VIB 7.101 SET

- VIB 7.101 VIBNODE 6 base unit (6 channels) for ICP-type accelerometers
- VIB 7.100-P PC license for VIBNODE
- VIB 9.813.G VIBNODE Installation instructions, english

Scope of delivery - VIB 7.151 SET

- VIB 7.151 VIBNODE 12 base unit (12 channels) for ICP-type accelerometers
- VIB 7.100-P PC license for VIBNODE
- VIB 9.813.G VIBNODE Installation instructions, english

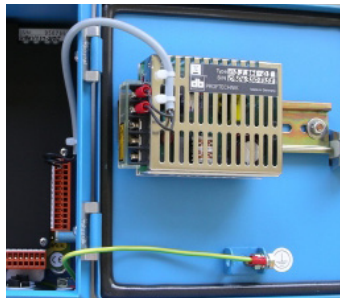
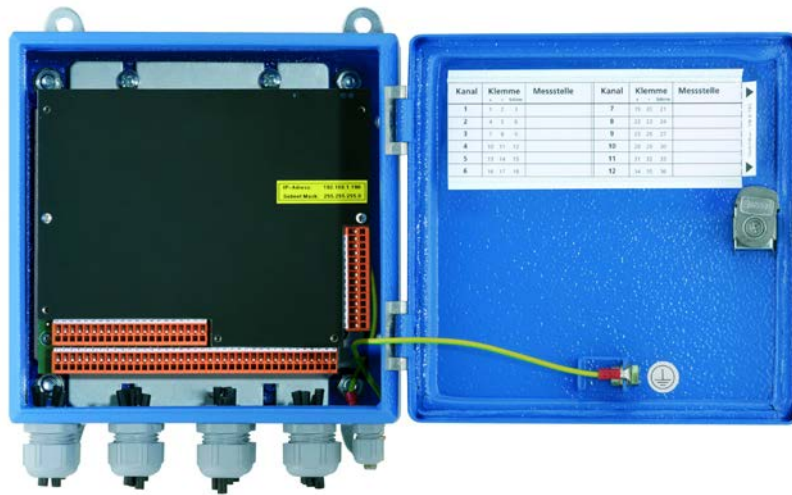
Notes

The VIB 7.100-P PC license is used to register the VIBNODE base unit in the OMNITREND PC software (VIB 7.180).

Cables and transducers are not included in the VIBNODE packages and must be ordered separately!

Chapter 2

VIBNODE accessories



'Low-Speed option' : VIBNODE measurement functions for low-speed machinery

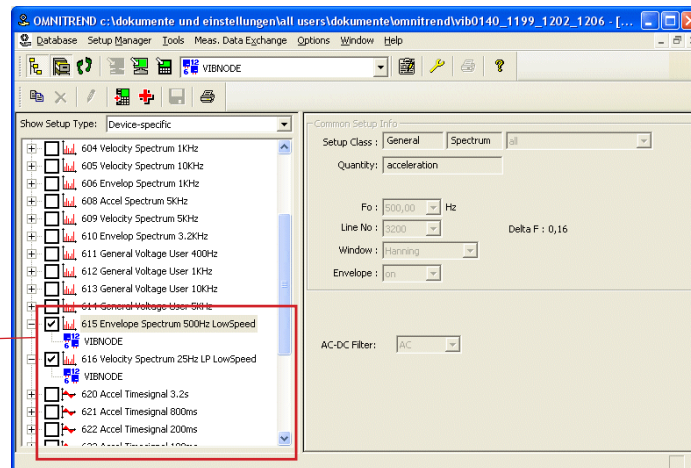
1

VIB 7.125-LS6 : Low-Speed option for VIBNODE with 6 analog measurement channels

VIB 7.125-LS12 : Low-Speed option for VIBNODE with 12 analog measurement channels

2

VIBNODE measurement tasks for low-speed machinery in the OMNITREND setup manager.



Application

VIBNODE is also suitable for monitoring low-speed machinery. The corresponding measurement functions are optional and can be activated by a password via the OMNITREND PC software.

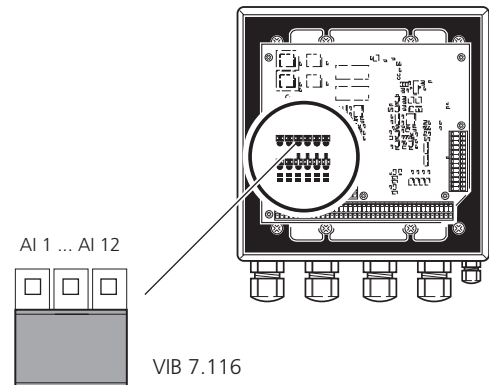
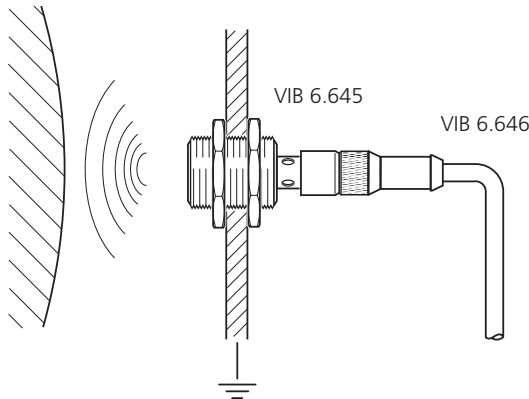
The Low-speed option provides the following, additional features:

- Envelope spectrum (100Hz - 10kHz, F_{max} : 500 Hz).
- Time waveform signals can be measured and stored (acceleration, velocity).
- 25 Hz low pass filter for low-frequency vibration signals.
- Hardware integration of the time waveform signal (acceleration) prevents bit noise in the velocity spectrum.

VIB 6.645 VSET : Displacement sensor upgrade set for VIBNODE



Distance / Displacement



Application and function

This retrofit set can be used to install an additional displacement transducer in VIBNODE.

The displacement transducer can determine the position of metallic objects within the specified range (2 - 10 mm). The transducer is an inductive sensor that delivers a linear voltage output signal over the entire working range that is proportional to the distance from the measured object.

The included jumper must be installed on the slot of the input channel (AI 1...AI 12) on the VIBNODE board and is used as a voltage divider for the sensor signal.

Mounting

The thread enables the simple mounting and positioning of the sensor. The minimum distance to the non-measured metal surface is 3 x Se.

Scope of delivery - VIB 6.645VSET

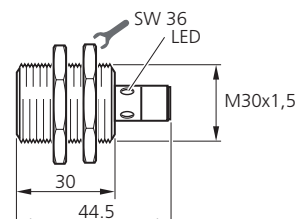
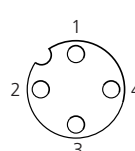
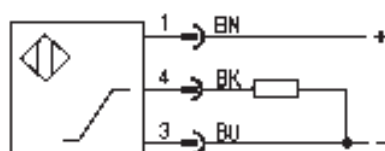
- VIB 6.645 Displacement transducer (2-10mm)
- VIB 6.646 Connection cable, 10m
- VIB 7.116 Jumper for connecting additional transducer

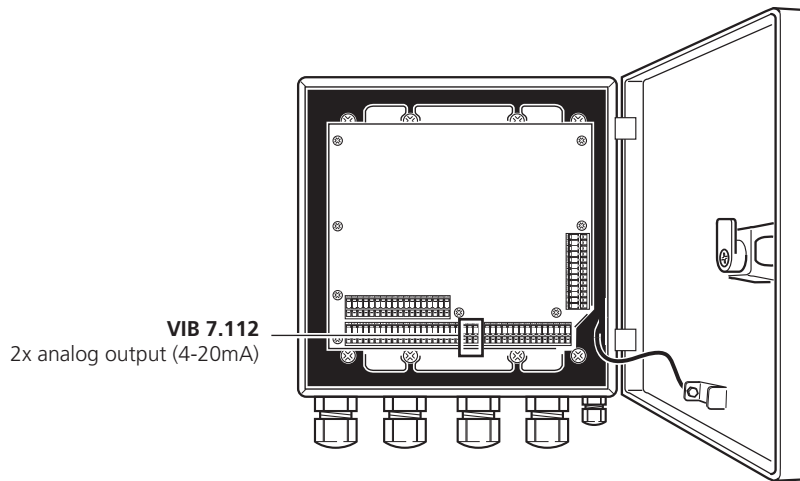
Technical data

PARAMETER		VIB 6.645 SET
Measurement	Measurement principle	Inductive
	Measurement quantity	rel. distance / displacement
	Linearity range Si	2 ... 10 mm
	Rated operating distance Se	6 mm
	Max. non-linearity at Se	± 3% from Ua max.
	Repeat accuracy	± 10µm
	Limit frequency	500 Hz
	Adjusting indication	yes, LED
	Temperature range	-10 °C ... +70 °C
	Temperature drift	< 5% from Ua max

PARAMETER		VIB 6.645 SET
Electrical	Operating voltage Ub	24 VDC
	No-load supply current	< 10 mA
	Output signal Ua	0 ... 10 VDC
	Output resistance	> 2 kOhm
Mechanical	Housing material	CnZn nickel plated
	Material of sensing face	PBT
	Environmental protection	IP 67
	Mounting in steel	flush
	Connection	10 m PUR cable + plug
Dimensions	in mm; see figure below	

Wiring diagram



VIB 7.112 : Two analog outputs (4-20 mA) for VIBNODE**Description**

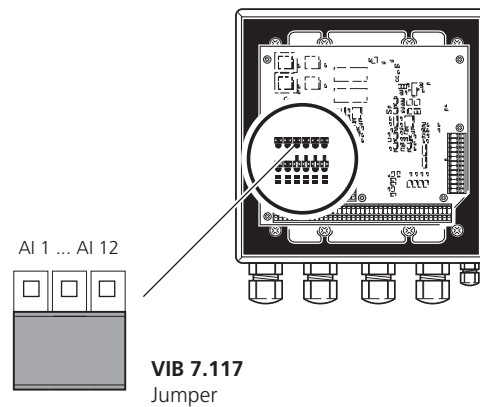
VIBNODE can provide the measured signals as current level signals (0/4-20mA) on two output channels for further evaluation. Neither of the analog outputs are electrically insulated.

The measurement channels are assigned to the respective analog output in the OMNITREND PC software.

Order information

This option must be ordered together with the delivery package. A retrofit is not possible!

VIB 7.117 : Direct connection for buffered ICP-type outputs



Description

This jumper is used to measure the buffered output signal of an ICP-type sensor. The scaling of the sensor is unaffected, the bias voltage for the sensor control is passed.

Notes

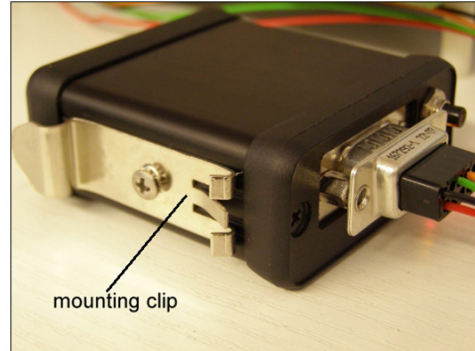
The jumper must be installed on the slot of the input channel (AI 1...AI 12) on the VIBNODE board.

The input voltage must not exceed 22 volts!

VIB 7.126 : Memory expansion for VIBNODE

1

2



Description

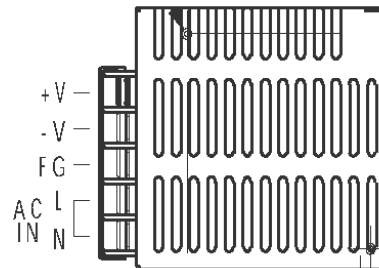
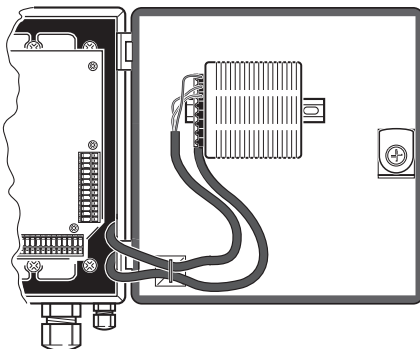
With this storage medium, measurement data can be permanently stored over long periods and can be manually transmitted to a PC via USB using the OMNITREND software.

This accessory is usually used when the measurement data in the ring buffer can not be read out automatically. This avoids gaps in the database.

Technical data

PARAMETER		VIB 7.126
General	Storage capacity	512 MB; sufficient for more than three years measurement time (with a data volume of 50 files per day)
	USB standard	1.1
	Operating elements	Push button to safely remove the USB/RS232 stick
	Status display	Two LEDs: RED=Ready, YELLOW=Write
	Interfaces	USB connector for PC data import RS232 socket (D-Sub9) for serial connection to VIBNODE
	Mounting	in the VIBNODE cabinet via a DIN rail clip
	Compatibility	VIBNODE firmware 3.0.0 / OMNITREND software 2.50 and higher

VIB 5.964-0,8 : Switching power supply for VIBNODE, 24 VDC



Description

VIBNODE is connected as standard to an existing 24VDC supply (e.g. from the machine control unit). If no 24V supply is available, the switching power supply is mounted in the VIBNODE housing and connected with the mains supply.

Notes

The switching power supply is mounted on carrier rails on the VIBNODE housing door. The carrier rails are included in the delivery package.

This switching power supply may not be used if VIBNODE is connected to an EX safety barrier! For this type of installation a linear regulated power supply should be used.

Technical data

PARAMETER		VIB 5.964-0,8
Electrical	Input	85 - 264 VAC (110 - 350 VDC)
	Mains frequency	47 - 63 Hz
	Input current (full load)	0.33 A (115 VAC) / 0.23 A (230 VAC)
	Line safety switch	5 A
	Output power	18 W
	Output voltage	24 VDC
	Output current	0.8 A (230 VAC) / 0.7 A (115 VAC)
Mechanical	Housing material	stainless steel
	Temperature range, operation	0°C ... + 50°C
	Temperature range, storage	-20°C... + 85°C
	Anschlüsse	terminal screw
	Dimensions (LxWxD)	86.5 x 71 x 32 mm

Installation tools for VIBNODE

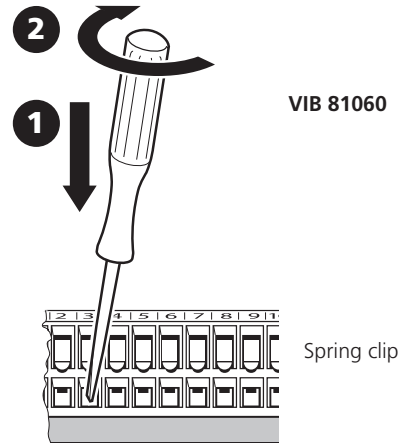
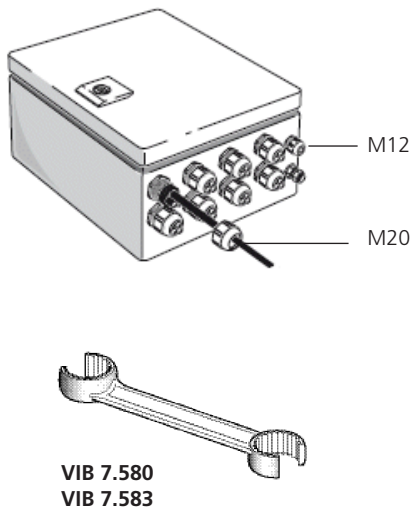
1

VIB 7.580 : Open ring wrench (14 x 17)

VIB 7.583 : Open ring wrench (24 x 25)

VIB 81060 : Screw driver (2.5 x 35)

2



Application

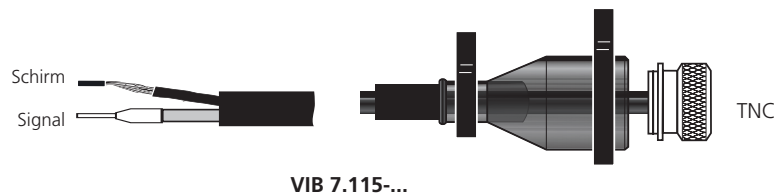
The open ring wrench 24 x 25 (VIB 7.583) fits the metric cable glands (M20) on the VIBNODE housing. The matching ring wrench (14 x 17) for the smaller glands (M12) can be obtained under the order number VIB 7.580.

The sensor cables are mounted on the VIBNODE housing with spring clips which can be opened using a screwdriver with a flat blade (size 2.5).

Sensor cables for VIBNODE Online CMS, assembled

VIB 309007-6	: Sensor cable for VIBNODE, assembled, twisted-pair (TP), PUR coat, 6 meters long
VIB 309007-10	: Sensor cable for VIBNODE, assembled, TP, PUR coat, 10 meters long
VIB 309007-15	: Sensor cable for VIBNODE, assembled, TP, PUR coat, 15 meters long
VIB 309007-20	: Sensor cable for VIBNODE, assembled, TP, PUR coat, 20 meters long
VIB 7.115-6	: Sensor cable for VIBNODE, assembled, coaxial, PVC coat, 6 meters long
VIB 7.115-12	: Sensor cable for VIBNODE, assembled, coaxial, PVC coat, 12 meters long

1
2



Application

These assembled sensor cables are normally used to connect to the following accelerometers to the VIBNODE basic unit:

- Sensor cable, coaxial, VIB 7.115-...:
- VIB 6.1xx Industrial accelerometer, TNC connector
- Sensor cable, Twisted-pair (TP), VIB 309007-...:
- VIB 6.195 CLD accelerometer, MIL connector
- VIB 6.172 ICP-type accelerometer, MIL connector

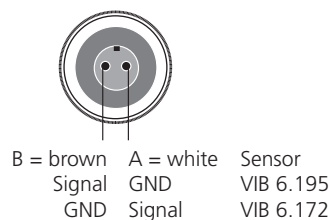
Cable types

- Twisted pair - TP: Cable type VIB 90061
- Coaxial: Cable type VIB 90005

Accessories

- VIB 6.770/9 Junction box for the extension of a sensor cable, coaxial.
- VIB 6.775/9 Junction box for the extension of two sensor cables, coaxial.
- VIB 6.776 Junction box for the extension of a sensor cable, twisted pair.

Plug pin allocation and sensor pin assignment for VIBNODE cable VIB 309007-...



OMNITREND for VIBNODE

1

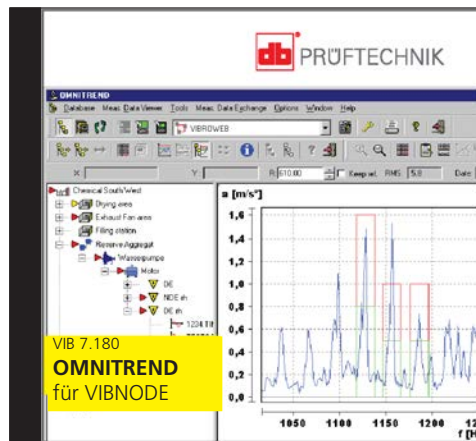
VIB 7.180 : OMNITREND for VIBNODE, software package

VIB 7.180-DR : VIBNODE device driver for OMNITREND

VIB 7.100-P : PC licence for VIBNODE 6

2

VIB 7.150-P : PC licence for VIBNODE 12



The OMNITREND software package **VIB 7.180** contains the CD ROM and the following items:

VIB 7.100-P PC licence
(Communication password for a VIBNODE 6 basic unit)

or

VIB 7.150-P PC licence
(Communication password for a VIBNODE 12 basic unit)

VIB 7.180-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.

VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 7.180-DR** is required to operate the OMNITREND software already available with the VIBNODE. The VIB 7.180-DR contains:

VIB 7.180-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.

VIB 9.631.G OMNITREND, Getting started

Each further VIBNODE basic unit is registered with a separate **VIB 7.100-P** or **VIB 7.150-P** PC license.

Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

Notes

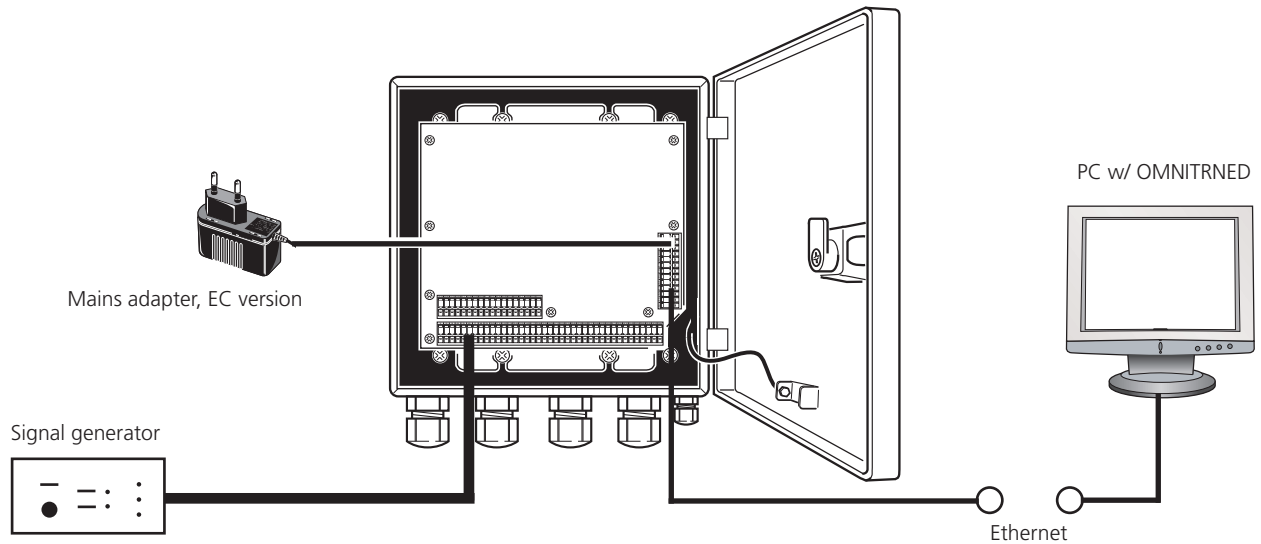
The measurement data are exported via HTTP to the PC and imported into OMNITREND.

In OMNITREND for VIBNODE, the following restrictions must be observed when programming the measurement cycles:

Maximum of four measurement tasks per measurement location.

- 7 signal measurement tasks can be selected
 - 3x vibration acceleration spectra
 - 3x vibration velocity spectra, each with 400Hz/1kHz / 5kHz* / 10kHz F_{max}
 - 1x envelope spectrum (1kHz)
- Characteristic overall value generation via evaluation of bands in the spectrum.
- Maximum of 12 bands per spectrum.

VIB 7.120 EU : VIBNODE Demo set, EC version



Description

The VIBNODE Demo Set is used to demonstrate the functionality of the monitoring system. The signals are generated by a signal generator that is already connected to the terminal block in the VIBNODE control cabinet. The following are also already installed:

- Accelerometer (100mV/g)
- Ethernet cable
- Mains adapter

The signal generator generates the following signals:

- 4-20 mA
- RPM
- Vibration velocity
- Digital input signals
- Digital output signals (LED display)

The VIBNODE PC license (VIB 7.100-P) is included in the Demo Set to enable communication with OMNITREND and to read the measurement data.

Installation examples

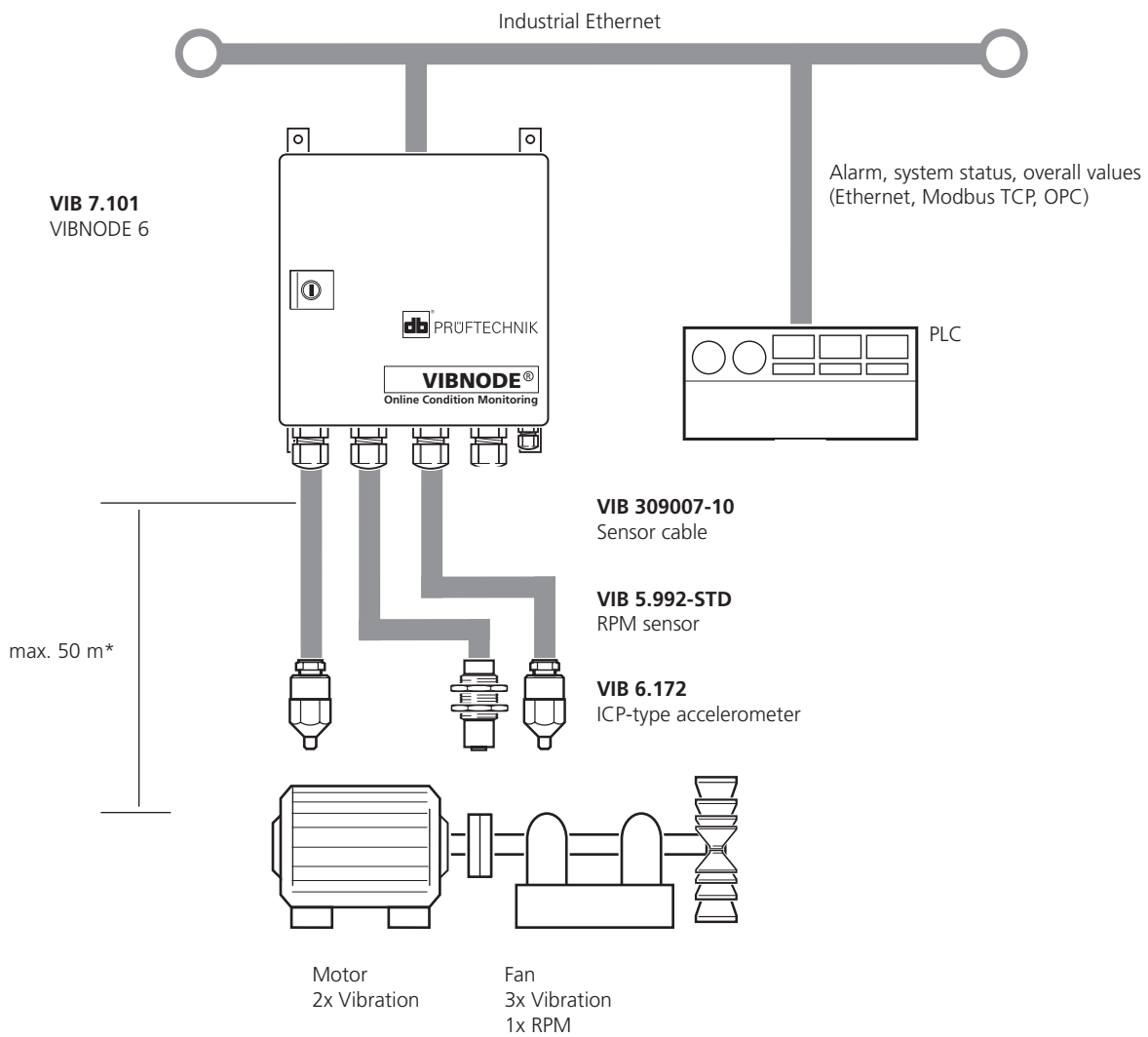
1

Vibration monitoring on an industrial fan
with up to 6 analog measurement channels.

Sensors:

- 5x ICP-type accelerometer VIB 6.172
- 5x Sensor cabel VIB 309007-x (x=length in meter)
- 1x RPM sensor VIB 5.992-STD

2



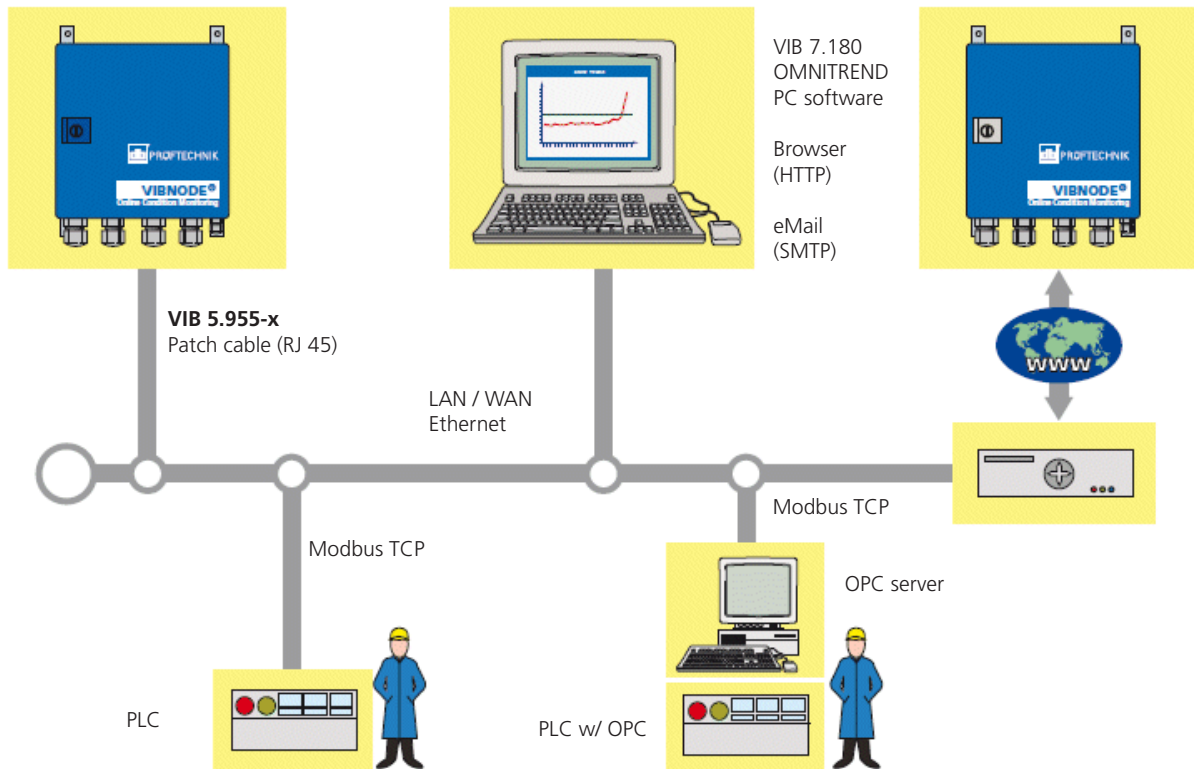
* cable length recommended purely because of installation reasons

Communication example 1:

Communication via Ethernet. Overall values and system condition via Modbus TCP (OPC) to PCS and via HTTP to

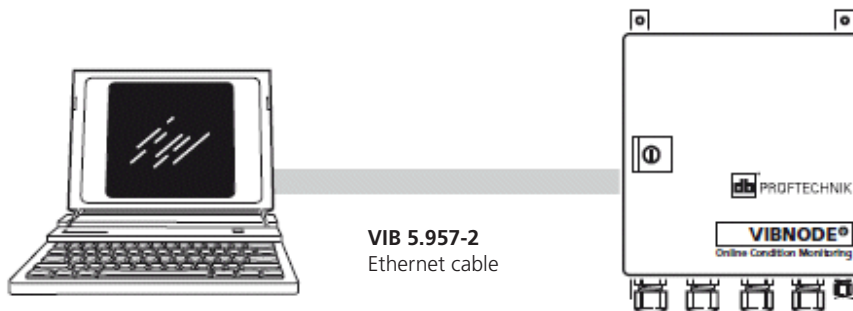
OMNITREND and browser. eMail transmission via in-house SMTP-Server (fix IP address or server name).

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2



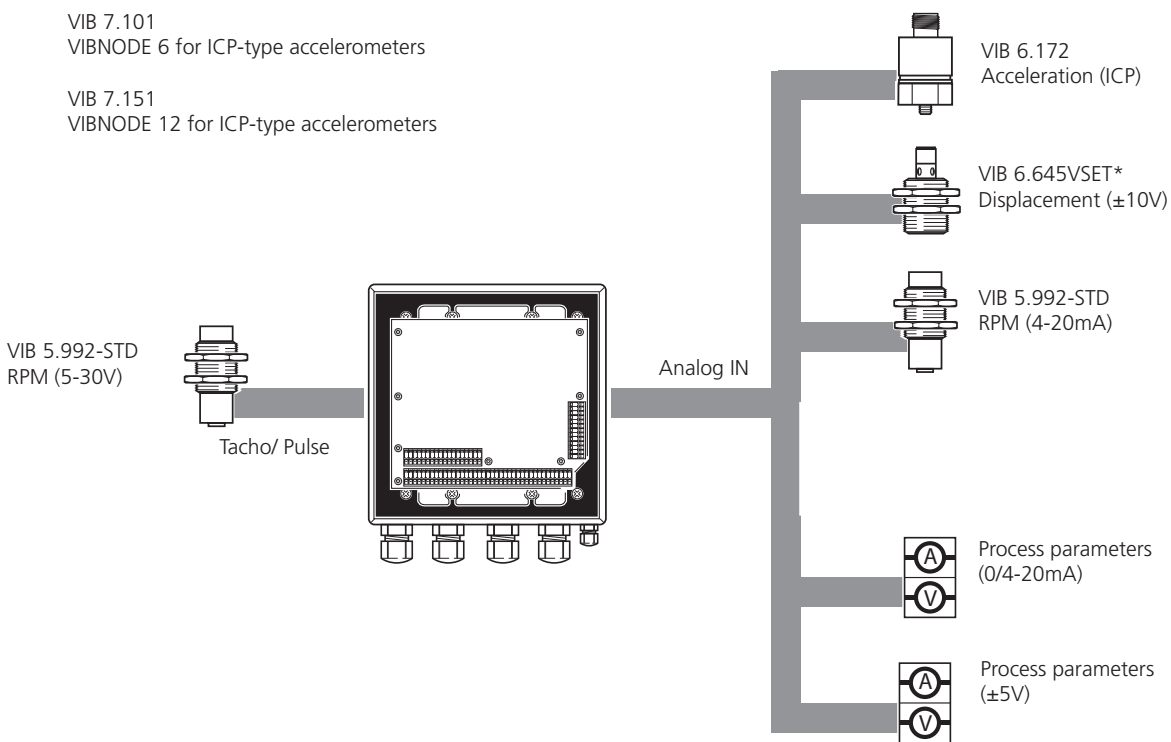
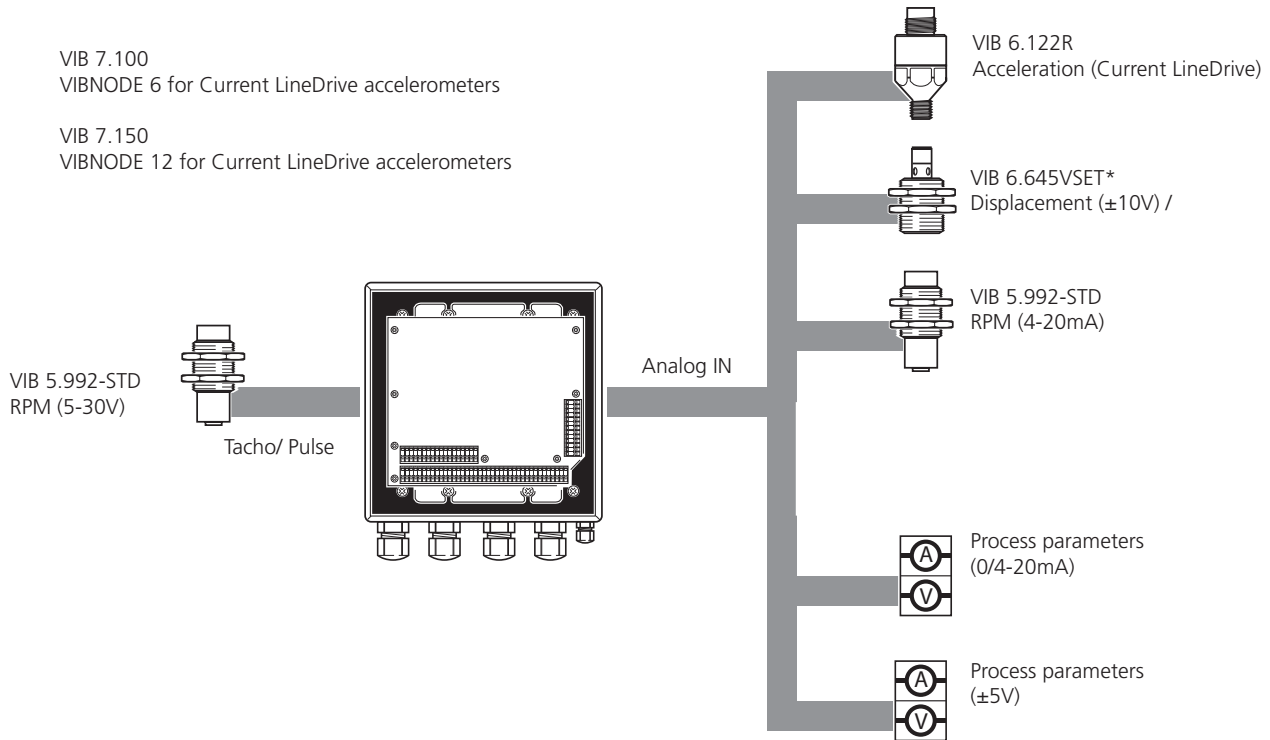
Communication example 2:

Direct connection via ethernet interface



1 Interfaces for signals and process parameter
 Configuration of the analog measurement channels via jumper (acceleration / 0/4-20mA / ±5V).

2



* incl. voltage divider (VIB 7.116)

Index by order number

Order no.	Page
VIB 5.964-08	17
VIB 6.645	13
VIB 6.645 VSET.....	13
VIB 6.646	13
VIB 7.100	7
VIB 7.100-P	20
VIB 7.100 SET.....	9
VIB 7.101	7
VIB 7.101 SET.....	10
VIB 7.112	14
VIB 7.115-6.....	19
VIB 7.115-12.....	19
VIB 7.116	13
VIB 7.117	15
VIB 7.120 EU.....	21
VIB 7.125-LS6.....	12
VIB 7.125-LS12.....	12
VIB 7.126	16
VIB 7.150	7
VIB 7.150-P	20
VIB 7.150 SET.....	9
VIB 7.151	7
VIB 7.151 SET.....	10
VIB 7.180	20
VIB 7.180-DR.....	20
VIB 7.580	18
VIB 7.583	18
VIB 9.813.G.....	9
VIB 81060	18
VIB 309007-6.....	19
VIB 309007-10.....	19
VIB 309007-15.....	19
VIB 309007-20.....	19

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Productive maintenance technology

VIBROWEB[®]
VIBROWEB[®] XP

Online Condition Monitoring
for critical machinery and
special applications

Catalog



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Contents

Chapter 1

VIBROWEB

VIBROWEB - Online Condition Monitoring System for critical machinery	6
VIB 7.500 : VIBROWEB basic unit	7

Order no.	Product description	Page
VIB 7.520 :	Adapter card for Current Linedrive accelerometer (CLD)	10
VIB 7.521 :	Adapter card for ICP-type accelerometer	11
VIB 7.522 :	Adapter card for voltage signals 10 VAC / 10 VDC	12
VIB 7.523 :	Adapter card for voltage signals 10 VAC / 30 VDC	12
VIB 7.524 :	Adapter card for current signals 20 mA (AC/DC)	12
VIB 7.525 :	Adapter card for strain gauges	13
VIB 7.526 :	Adapter card for PT100 temperature sensor, 4-wire system	14
VIB 7.527 :	Adapter card for PT100 temperature sensor, 2-wire system	14
VIB 7.528 :	Adapter card for thermocouples	15
VIB 7.529 :	PT100 junction temperature module for adapter card VIB 7.528	15
VIB 7.530 :	Adapter card for inductive displacement transducer	16
VIB 7.535 :	Adapter card for inductive Keyphaser	17
VIB 7.536 :	Adapter card for Keyphaser with TTL signals up to 30 V	18
VIB 7.539 :	Adapter card for Keyphaser (Hall sensor)	19
VIB 7.540 :	Digital IN adapter card for potential-free contacts	20
VIB 7.542 :	Digital IN adapter card for TTL signals up to 30 V incl. electrical insulation	20
VIB 7.545 :	Digital OUT adapter card for DC relay	21
VIB 7.546 :	Digital OUT adapter card for relay output	21
VIB 7.547 :	Digital OUT adapter card for TTL signals	22
VIB 7.548 :	Digital OUT adapter card for +24V signals	22
VIB 7.560 :	VIBROWEB connection box	23
VIB 7.580 :	Open ring spanner, 14x17	24
VIB 7.581 :	Open ring spanner, 19x22	24
VIB 7.582 :	Open ring spanner, 24x27	24
VIB 7.583 :	Open ring spanner, 24x25	24
VIB 7.590 :	Metric cable fitting M 16, 5 pieces	25
VIB 7.591 :	Metric cable fitting M 25, 2 pieces	25
VIB 7.592 :	Metric cable fitting M 20, 5 pieces	25
VIB 7.593 :	Metric cable fitting M 12, 5 pieces	25
VIB 7.595 :	Shield clamp SK8, 5 pieces	25
VIB 81060 :	Screw driver 2.5 x 35	25
VIB 5.955-X :	Patch cable	26
VIB 5.957-2 :	Crossover ethernet cable, 2 m	26
VIB 5.957-5 :	Crossover ethernet cable, 5 m	26
VIB 8.980 :	OMNITREND für VIBROWEB, software package	27
VIB 8.980-DR :	VIBROWEB device driver for OMNITREND	27
VIB 8.980-P :	PC licence for VIBROWEB	27
Installation examples	28	

Chapter 2

VIBROWEB XP

VIBROWEB XP - online condition monitoring and diagnosis for special machinery	34
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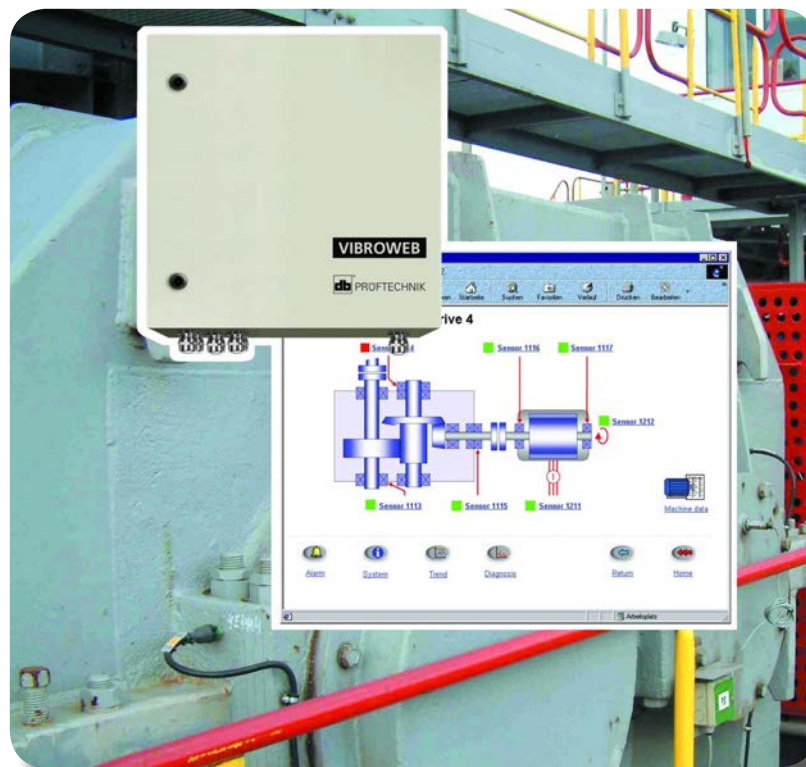
Order no.	Product description	Page
VIB 7.710 :	VIBROWEB XP basic unit for 8 Current LineDrive accelerometers	35
VIB 7.725 :	VIBROWEB XP basic unit for 10 ICP-type accelerometers	35
VIB 7.780 :	OMNITREND for VIBROWEB XP, software package	37
VIB 7.780-DR :	VIBROWEB XP device driver for OMNITREND	37
VIB 7.780-P :	PC licence for VIBROWEB XP	37

Index

Index by order number	38
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Chapter 1

VIBROWEB



VIBROWEB - Online Condition Monitoring System for critical machinery

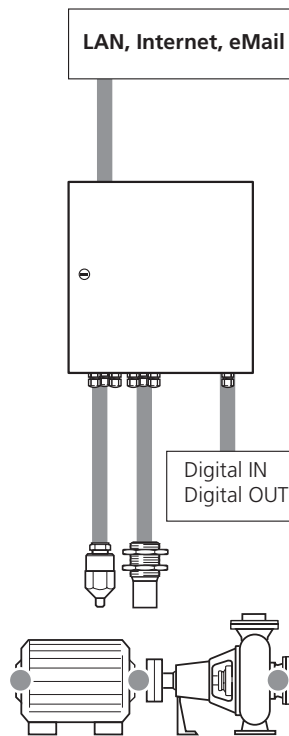
1
2

Communication
Ethernet, RS 232
Web server, eMail server, TCP/ IP

Basic unit
Signal conditioning
Signal analysis
Data processing
Data storage

Inputs / Outputs
Analog
Key phaser / Counter
Digital IN / OUT

Sensors
Current LineDrive, ICP (accelerometers)
Current (4-20 mA)
Voltage (± 10 V, ± 30 V AC/DC)
Temperature (PT100)
Strain gauge
Displacement (inductive)
RPM (inductive)
andere...



Online Condition Monitoring – fast, flexible and powerful

VIBROWEB is an intelligent machine condition monitoring system which can perform measurements, evaluation, storage and alarm warnings independently – even without a PC connection. VIBROWEB was specially developed for production-critical and process-critical machinery which require optimized monitoring routines and diagnostic procedures.

- Standard machines: Motors, Pumps, Fans,.
- Machines with variable speed/ load: Gears, Extruders
- Shafts with journal bearings
- Special machines

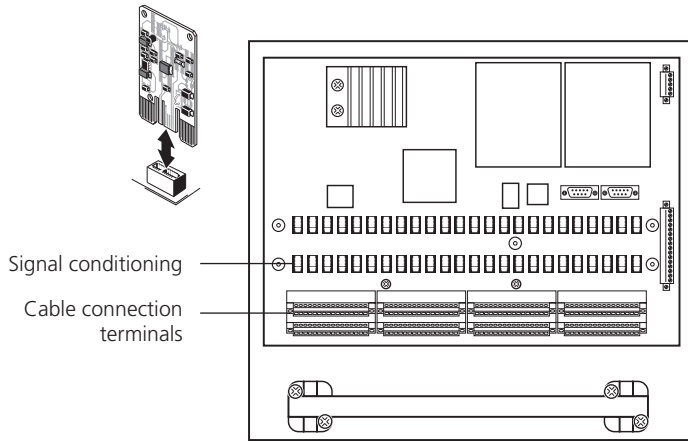
Application

Continuous monitoring of the machine condition by trending overall values and monitoring the programmed limit values. Automatic alarm and recording of machine signals for diagnosis if limit values are exceeded.

VIBROWEB is...

- **intelligent** – signal analysis and alarming take place automatically
- **autonomous** – measurement, evaluation, storing, alarming without PC connection
- **universal** – suitable for nearly all sensors
- **configurable** – plug-in cards for signal conditioning for every sensor type
- **compatible** – simple integration in existing installation
- **fast** – ideal for dynamic processes, and changing loads and RPMs
- **communicative** – data transfer via Ethernet, RS232, PPP, radio, fieldbus, ...
- **user-friendly** – data evaluation and measurement settings in OMNITREND

VIB 7.500 : VIBROWEB basic unit



- 2x16 analog measurement channels
- Permanent sensor power supply
- Fast channel switching
- LineDrive or ICP-type accelerometers
- Process parameters (current / voltage)
- RPM / Counter input
- Removable terminals
- Digital inputs and outputs
- Web server & eMail server
- Mains supply
- Industrial proof, IP 66

- Vibration velocity (Peak, RMS)
- Vibration acceleration (Peak, RMS)
- Shock pulse (bearing condition)
- Displacement
- Torque
- Time waveform
- Spectrum
- Envelope
- RPM
- Temperature
- Voltage (mV) & Current (mA) level

Analog measurement channels

A total of 32 analog measurement channels for all common physical sensors (e.g. for acceleration, temperature, pressure, flow, power, torque, etc.) enable comprehensive monitoring of all important condition and process parameters. Two channels can be recorded at the same time in order, for example, to perform complex monitoring tasks (e.g. shaft vibration). The measurement times are reduced to a minimum (no settling time) by the constant supply of each channel.

Digital measurement channels

Eight digital tacho pulse inputs are available for triggered measurements, for synchronous RPM signal averaging (noise suppression) or for order analysis.

Digital inputs / outputs

Four digital inputs and four digital outputs can be used as a trigger or for control (PLS, actors, relays,...). A relay contact for system monitoring and a switchable 12V output are also available.

Serial interfaces (RS 232)

The two interfaces are designed for on-site data analysis (Laptop, PPP) as well as for remote access via modem (analog/ISDN) or telephone line (Internet) and for connection to field bus systems (e.g. Modbus).

Signal processing

Signal processing for the analog and digital channels is carried out with the aid of special plug-in cards which are installed on the motherboard.

Configuration & data evaluation

The measurement channels as well as the setting of the alarm and warning levels are configured with the OMNITREND PC software. This program is also used to display and archive the recorded measurement data. The machine signals measured online are displayed via HTML pages which can be called up with a standard browser.

Automation

VIBROWEB is not only a monitoring system. Due to its programming capability, it can operate as an automated system that is also in a position to control process and measurement parameters and performs detailed analyses on complex systems (optional).

External connection

VIBROWEB communicates via TCP/IP and Ethernet so that it can be directly integrated in any existing Ethernet network. VIBROWEB can establish an Internet connection (PPP) by telephone modem, ISDN, GSM or HSCSD adapter and also send eMails with data attachments. On site, data exchange is possible over one of the two serial connections (RS232).

Further communication options are:

- WLAN
- Radio modem (GSM/ HSCSD)
- Satellite (Immarsat M/ A)
- Field bus connection (option)

Technical data

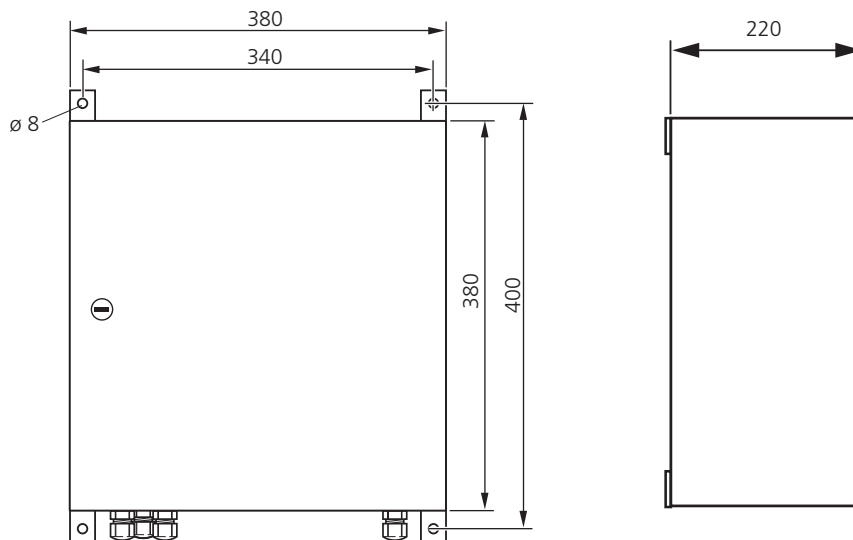
1

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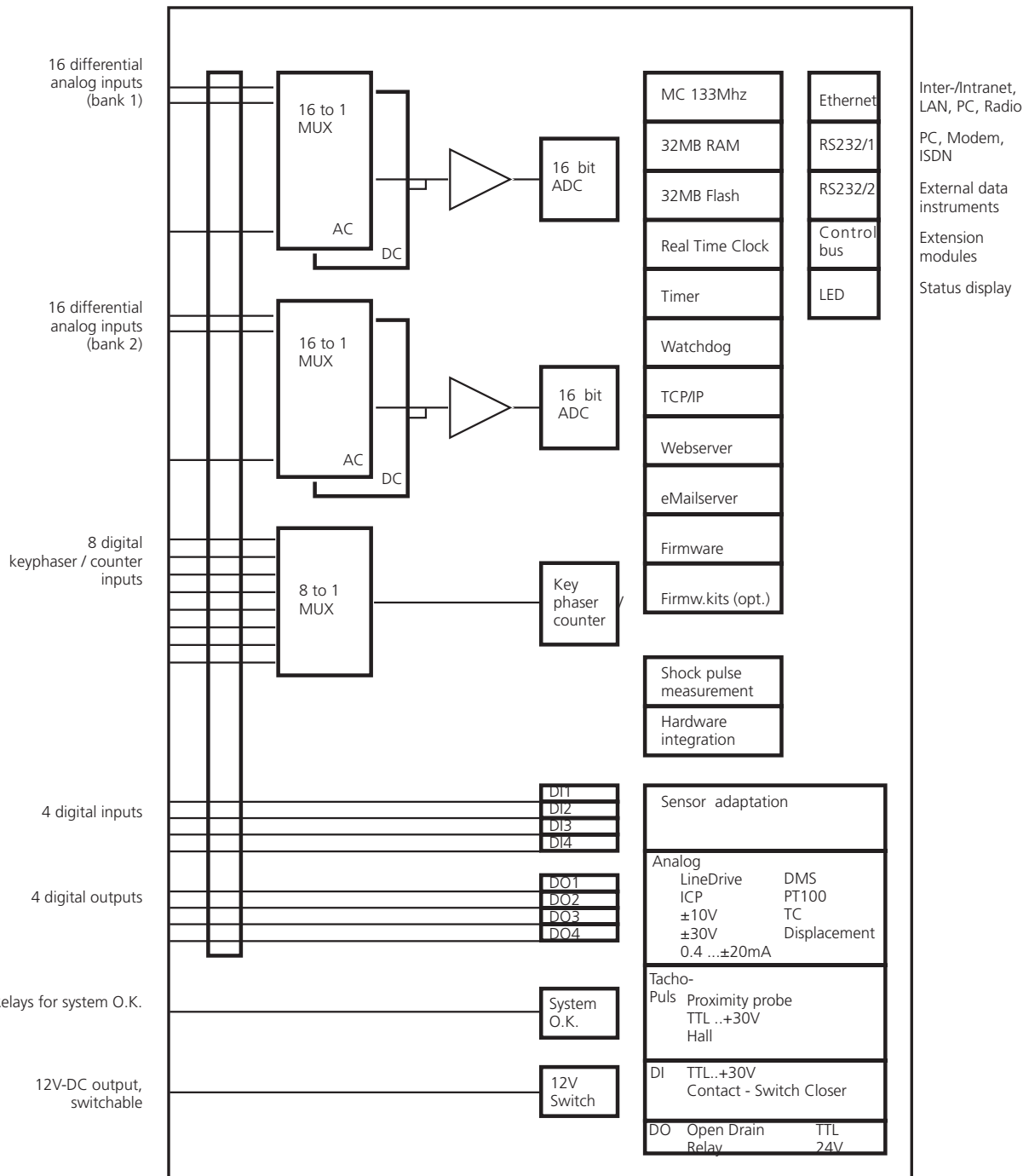
PARAMETER		VIB 7.500
Interfaces	Meas. channels, analog	2x16 differential inputs (2 of them synchronous)
	Meas. channels, digital	8 keyphaser / counter inputs
	Input channels, digital	4
	Output channels, digital	4
	Ethernet	1, data rate: 10 Mbit
	Serial - RS 232	2, data rate: 38.4 kBit
	FET switching output	12 V DC, 1 A, switchable
	System OK relay	change-over contact
Measurement	Meas. range, analog	±10 V, ±1 V, ±100 mV, ±10 mV
	Dynamic Range / Resolution	96 dB / 16 bit ADC
	Accuracy, analog input	0.05% of full scale
	Signal coupling	AC/DC for each channel
	Sampling rate, analog inputs	153.6 / 76.8 / 38.4 / 19.2 / 9.6 kHz
	Frequency range	0...50 Hz to 0...50 kHz, sub-divided into 11 areas
	Frequency resolution	400, 800, 1600, 3200, 6400, 12800 lines
	Anti aliasing	Dynamic adaptation
	Envelope	Digital input filter, selectable
	Measurement functions	Time waveform, spectrum, integration of the spectrum, envelope, order spectrum, Overall values: shock pulse, acceleration (RMS), vibration velocity (peak, RMS)
General parameters	Power supply	90-260 VAC / 50-60 Hz
	Memory	RAM: 32 MB / Flash: 32 MB
	Temperature range, operation	- 20°C ... +60°C
	Temperature range, storage	- 40°C ... +80°C
	Humidity	95 %
	Mechanical load	Shock:15g / Constant vibration: 2g (12-150 Hz at 1 octave/minute)
	Protection class	IP 66 (EN 60529) / NEMA 4
	Total weight	approx. 10 kg

Dimensions

in mm

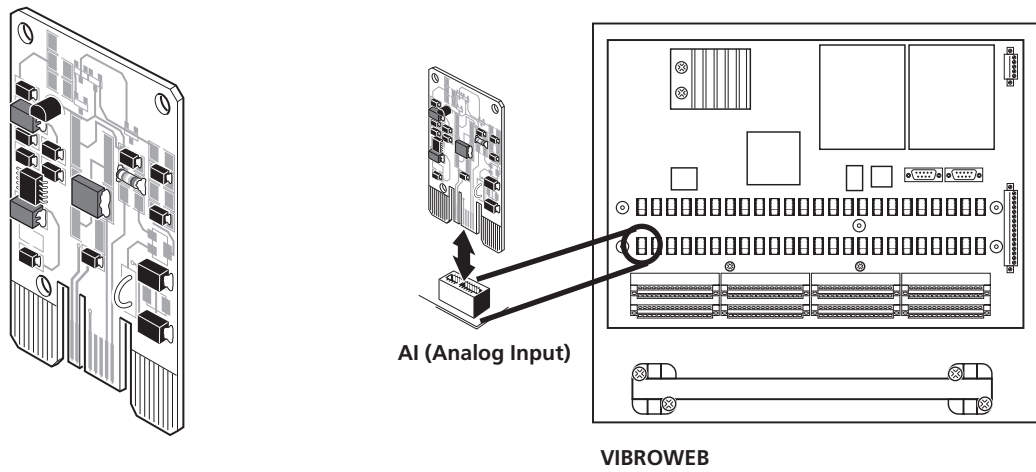


Structure: VIBROWEB (VIB 7.500)



VIB 7.520 : Adapter card for Current Linedrive accelerometer (CLD)

1
2



Application

Signal conditioning for accelerometers with current 'Line-drive' amplification

Notes

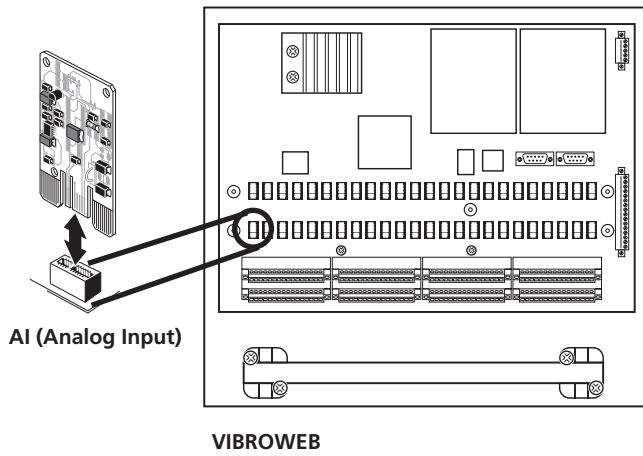
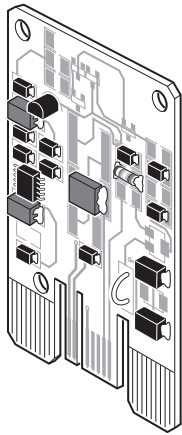
The adapter card has short circuit and line break monitoring that can be analyzed separately.

The adapter card is suitable for LineDrive sensors with 1µA and 5µA sensitivity. The sensitivity is set up in the software.

Technical data

PARAMETER		VIB 7.520
General	Scaling, AC channel	1 mV/µA
	Scaling, DC channel	1 mV/µA
	Sensor check short circuit	yes
	Sensor check open circuit	yes
	Slots	max. 32 (AI)
	Connector type	2

VIB 7.521 : Adapter card for ICP-type accelerometer



1
2

Application

Signal conditioning for ICP-type accelerometers.

Note

The adapter card has short circuit and line break monitoring that can be analyzed separately.

Technical data

PARAMETER		VIB 7.521
General	Scaling, AC channel	1 V/V
	Scaling, DC channel	0.263 V / source voltage
	Sensor power supply	+4.7 mA
	Sensor check short circuit	yes
	Sensor check open circuit	yes
	Slots	max. 32 (AI)
	Connector type	2
	Cable length	< 200 m

Adapter cards for voltage and current signals

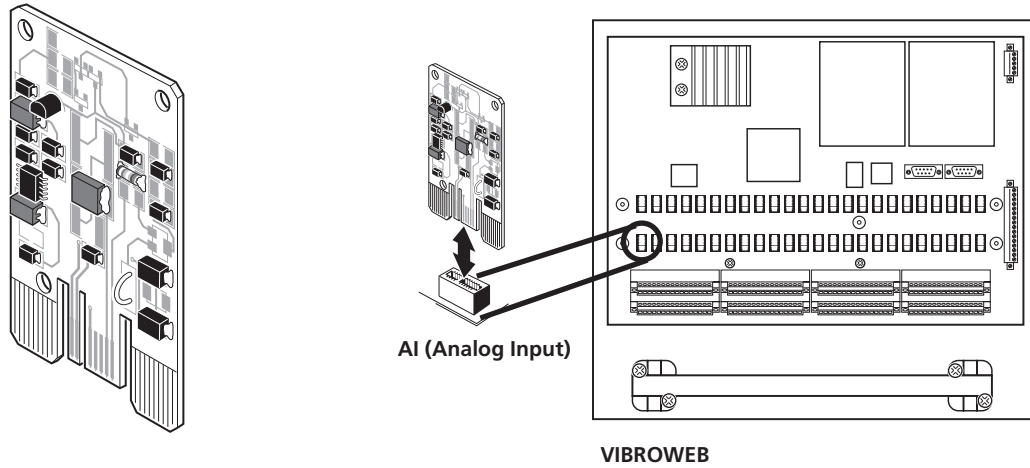
1

VIB 7.522 : Adapter card for voltage signals 10 VAC / 10 VDC

VIB 7.523 : Adapter card for voltage signals 10 VAC / 30 VDC

VIB 7.524 : Adapter card for current signals 20 mA (AC/DC)

2



Application

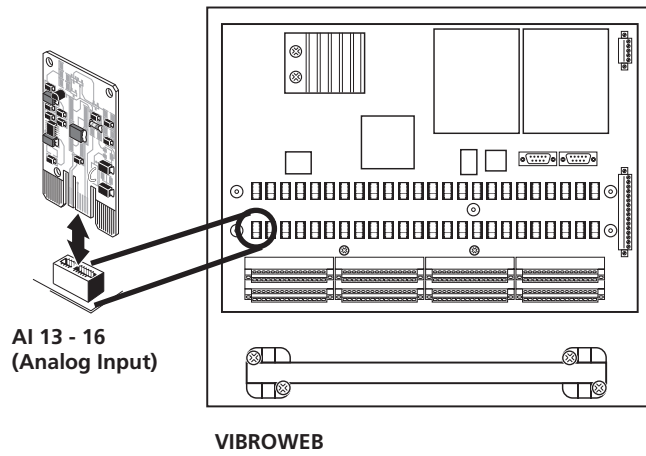
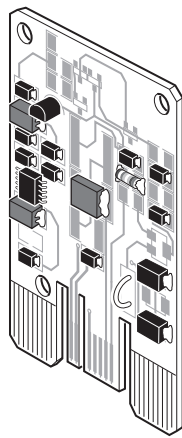
Conditioning of voltage and current signals (AC / DC).
The adapter cards for voltage signals are equipped with a protective system.

Technical data

PARAMETER		VIB 7.522	VIB 7.523
General	Signal range	max. ±10 V AC max. ±10 V DC	max. ±10 V AC max. ±30 V DC
	Slots	max. 32 (AI)	
	Connector type	2	

PARAMETER		VIB 7.524
General	Label/Sensor	0/4..±20 mA
	Sensor check LowLevel	I < -21.2 mA bzw. < 3 mA
	Sensor check HighLevel	I > 21.2 mA
	Slots	max. 32 (AI)
	Connector type	2

VIB 7.525 : Adapter card for strain gauges



Application

Connection of strain gages in full bridge circuit.

Note

The connection is only possible for channel 13-16 of one of the AD converter banks.

Technical data

PARAMETER		VIB 7.525
General	Label/Sensor	DMS
	Sensor power supply	+20 mA (R_{max} 400 Ohm)
	Sensor check short circuit	$U_{Bsensor} < 1$ V
	Sensor check open circuit	$U_{Bsensor} > 9$ V
	Slots	max. 8 (AI)
	Connector type	4

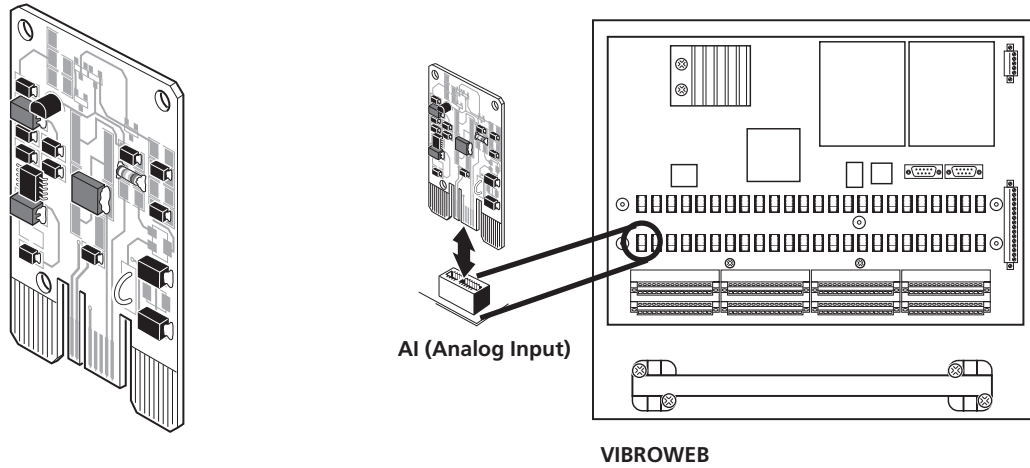
Adapter cards for PT100 temperature sensors

1

VIB 7.526 : Adapter card for PT100 temperature sensor, 4-wire system

VIB 7.527 : Adapter card for PT100 temperature sensor, 2-wire system

2



Application

Signal conditioning for PT100 temperature sensors with four-wire system (VIB 7.526) or two-wire system (VIB 7.527) respectively.

Note

The connection of sensors with four-wire system is only possible for channel 13-16 of one of the AD converter banks.

Technical data

PARAMETER		VIB 7.526	VIB 7.527
General	Label/sensor	PT100	PT100 (e.g. VIB 6.610)
	Sensor power supply	+0.65 mA (R_{max} 13 kOhm)	
	Sensor check short circuit	$U_{Bsensor} < 0.02$ V	
	Sensor check open circuit	$U_{Bsensor} > 1$ V	
	Slots	max. 8 (AI)	max. 32 (AI)
	Connector type	4	2

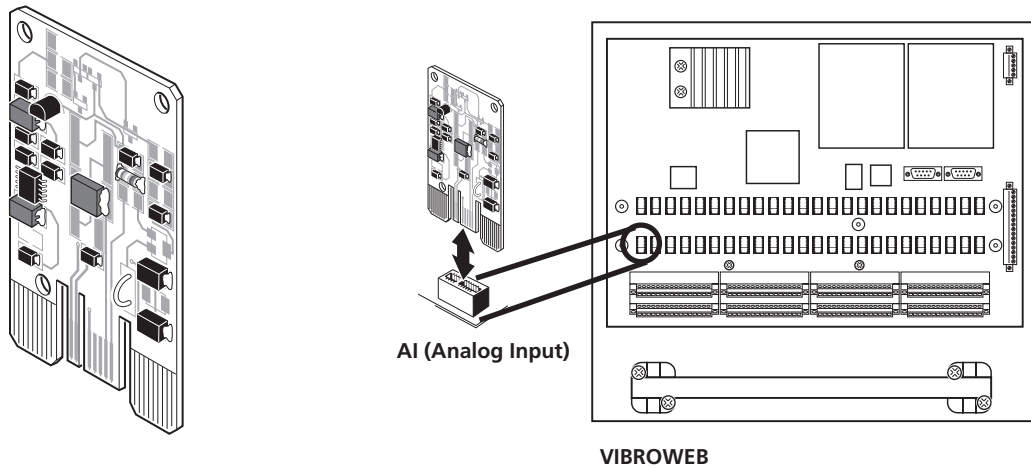
Adapter cards for thermocouples

VIB 7.528 : Adapter card for thermocouples

VIB 7.529 : PT100 junction temperature module for adapter card VIB 7.528

1

2



Application

Signal conditioning for thermocouples. The reference temperature of the connecting terminals is recorded with

a PT100 probe which is built into the temperature module (VIB 7.529). Therefore, no additional probe is required.

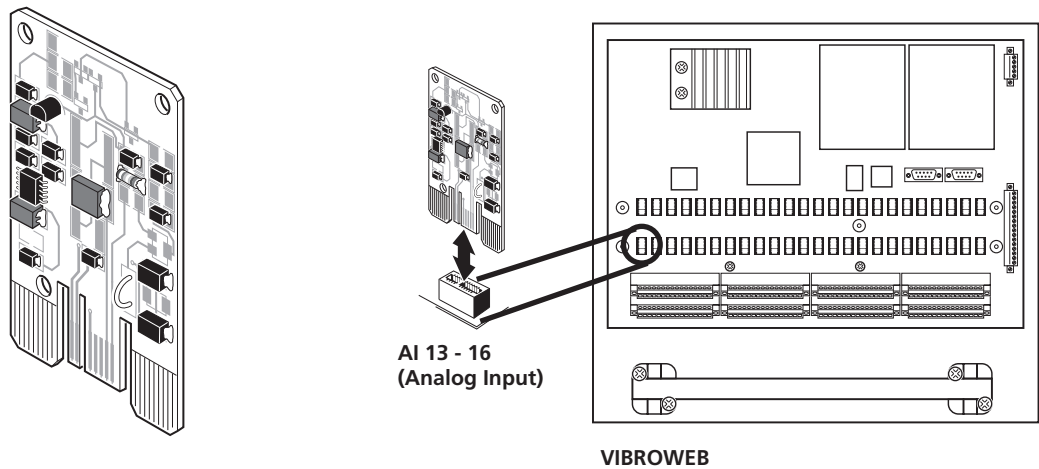
Technical data

PARAMETER		VIB 7.528	VIB 7.529
General	Label/sensor	TC (thermocouple)	PT100 on Board
	Slots	max. 31 (AI)	max. 1 (AI)
	Connector type	2	
	Note	---	No sensor required

VIB 7.530 : Adapter card for inductive displacement transducer

1

2



Application

Signal conditioning and power supply for an inductive displacement transducer with current output.

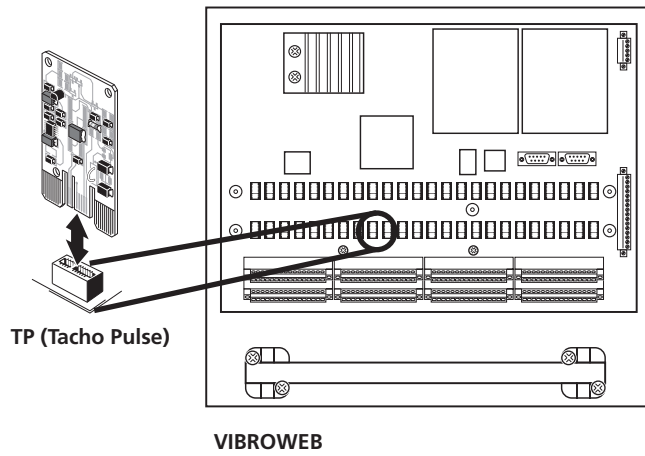
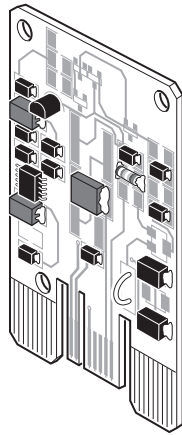
Note

The adapter card can be connected to channel 13-16 of one of the AD converter banks (AI).

Technical data

PARAMETER		VIB 7.530
General	Label/sensor	Balluff 0..+20mA (e.g. VIB 5.991-DIS)
	Sensor power supply	+24 V DC
	Sensor check short circuit	I > 15 mA
	Sensor check open circuit	I < 1 mA
	Slots	max. 8 (AI)
	Connector type	3 + nc

VIB 7.535 : Adapter card for inductive Keyphaser



1
2

Application

Connection of the inductive proximity probe (VIB 5.992-ENC) for RPM measurements.

Note

The sensor is supplied with voltage via the adapter card.

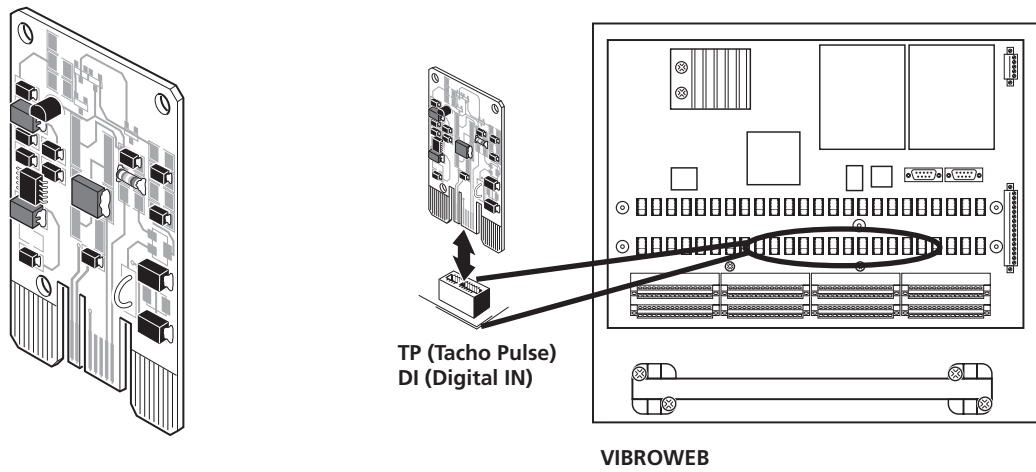
Technical data

PARAMETER		VIB 7.535
General	Label/sensor	RPM (VIB 5.992-ENC)
	Sensor power supply	+24 V DC
	Switching level	+3 V
	Sensor check short circuit	$I_{B\text{sensor}} > 20 \text{ mA}$
	Sensor check open circuit	$I_{B\text{sensor}} < 1 \text{ mA}$
	Slots	max. 8 (TP)
	Connector type	3

VIB 7.536 : Adapter card for Keyphaser with TTL signals up to 30 V

1

2



Application

Signal conditioning for TTL signals which are fed galvanically insulated to the tacho/pulse (TP) or digital input (DI).

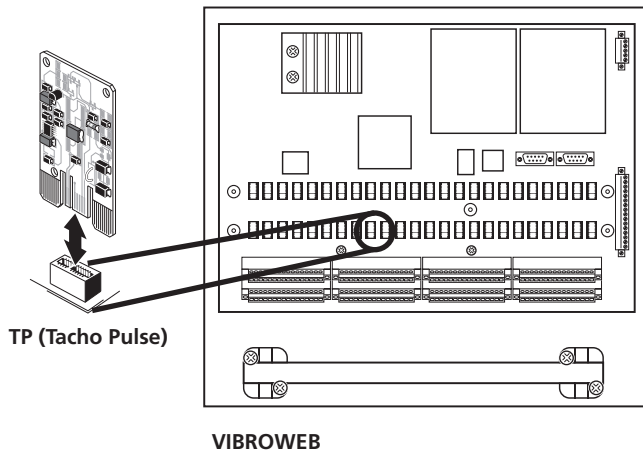
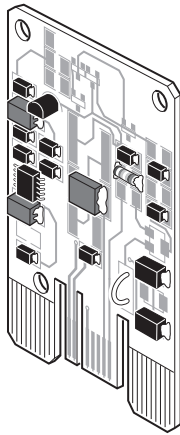
Note

No voltage supply is provided.

Technical data

PARAMETER		VIB 7.536
General	Label/sensor	TTL...+30V
	Switching level	+3 V
	Slots	max. 8 (TP) max. 4 (DI)
	Connector type	2 + nc

VIB 7.539 : Adapter card for Keyphaser (Hall sensor)



1
2

Application

Signal conditioning for Hall sensors with open collector output.

Note

The sensor is supplied with voltage via the adapter card.

Technical data

PARAMETER		VIB 7.539
General	Label/sensor	Hall (OpenColector) -TPI
	Sensor power supply	+24 V DC
	Switching level	+3 V
	High	> 3 V
	Low	< 3 V
	Sensor check short circuit	$I_{Bsensor} > 20 \text{ mA}$
	Sensor check open circuit	$I_{Bsensor} < 1 \text{ mA}$
	Slots	max. 8 (TP)
	Connector type	3

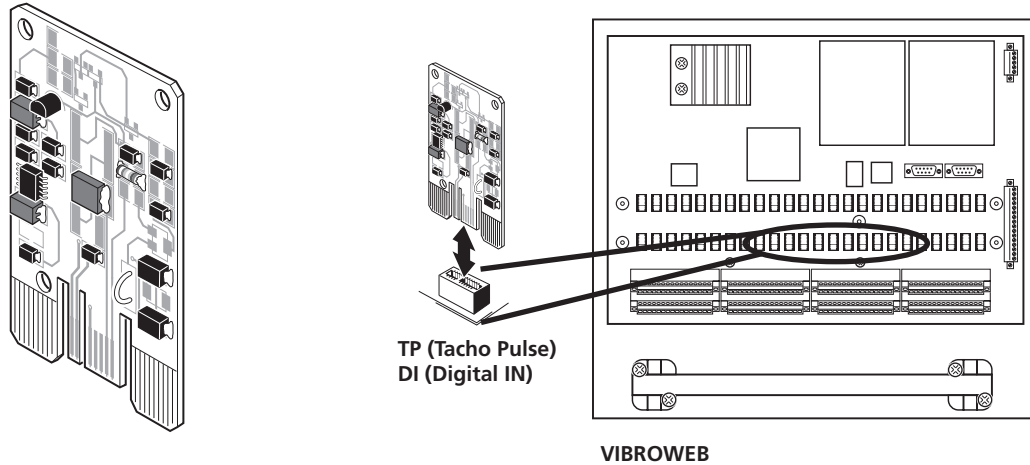
Adapter cards for digital inputs (DI)

1

VIB 7.540 : Digital IN adapter card for potential-free contacts

VIB 7.542 : Digital IN adapter card for TTL signals up to 30 V incl. electrical insulation

2



Application

Signal conditioning for TTL signals (VIB 7.542) and evaluation of potential-free contacts (VIB 7.540) at the digital input (DI) or TachoPulse (TP) input.

Note

The adapter card VIB 7.542 also has integrated galvanic insulation.

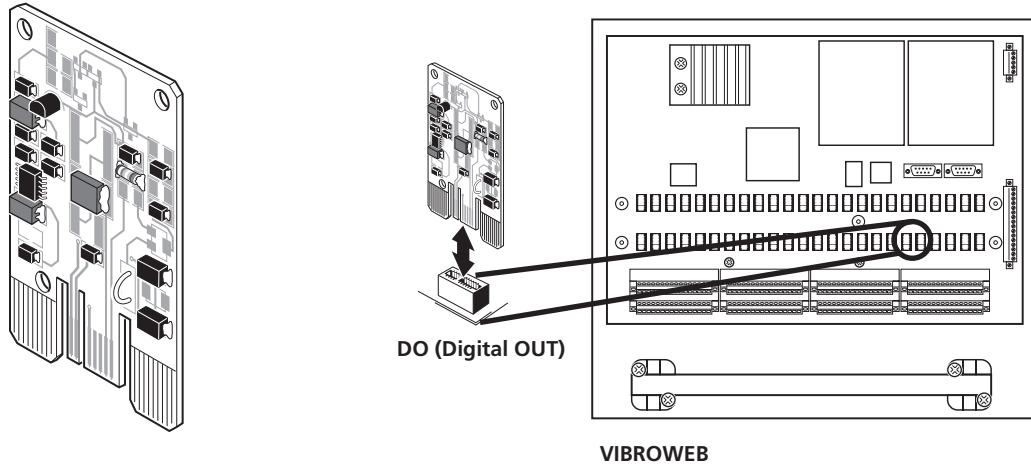
Technical data

PARAMETER		VIB 7.540	VIB 7.542
General	Label/sensor	SWCL (Switch Closer) -DI	TTL..+30V; SWCL-GG -DI
	Switching level	+3 V	
	High	> 3 V	
	Low	< 3 V	
	Slots	max. 8 (TP) max. 4 (DI)	
	Connector type	2 + nc	3
	Note	---	Switch Closer (SWCL) with external burden supply possible, burden voltage +12...+30V, internal burden 4K7

Relay adapter cards for digital outputs (DO)

VIB 7.545 : Digital OUT adapter card for DC relay

VIB 7.546 : Digital OUT adapter card for relay output



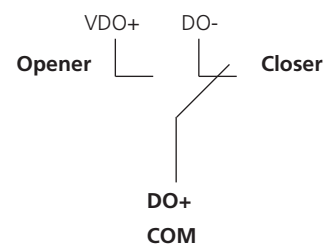
Application

VIB 7.545: Open Drain output with recovery diode switches DC relay.

VIB 7.546: Relay output provides potential-free contacts.

Technical data

PARAMETER		VIB 7.545	VIB 7.546
General	Label/sensor	Open Drain -DO	Relay -DO
	Switching voltage	+30 V	
	Switching current	+0.5 A	+2 A
	Slots	max. 4 (DO)	
	Connector type	3	
	Note	FET via self-resetting, surge-proofed fuse (1A), recovery diode for inductive load	Change-over contact



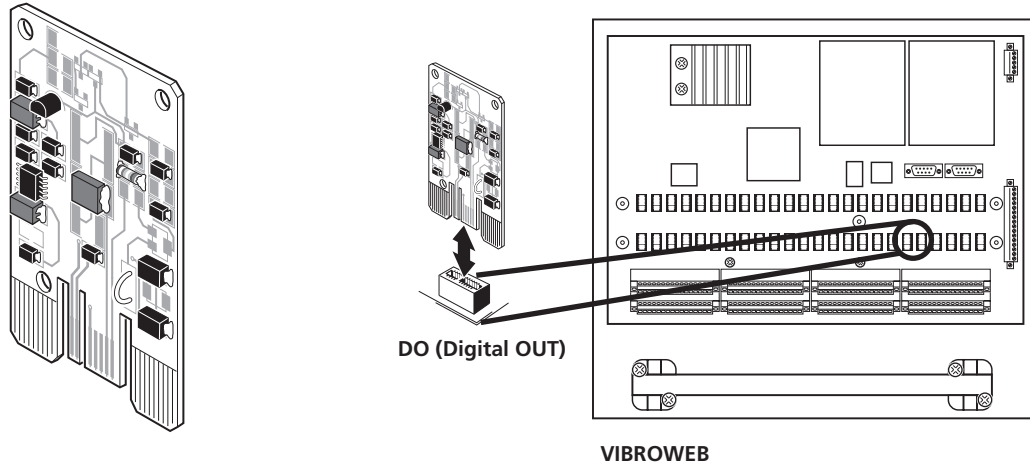
Signal adapter cards for digital outputs (DO)

1

VIB 7.547 : Digital OUT adapter card for TTL signals

VIB 7.548 : Digital OUT adapter card for +24V signals

2



Application

VIB 7.547: Provides TTL signals at the digital output.

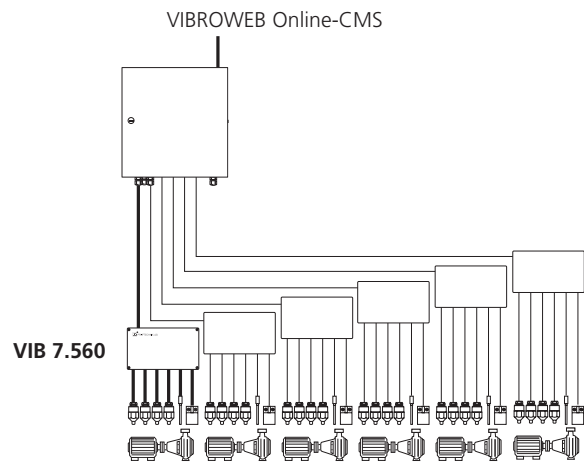
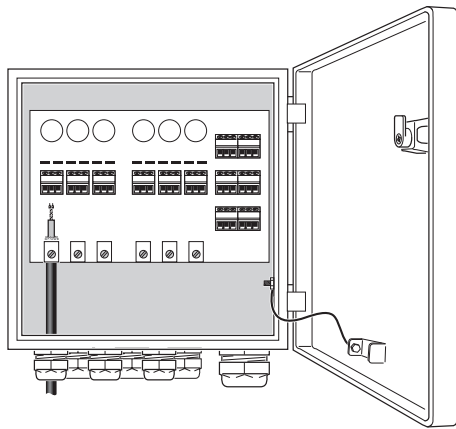
VIB 7.548: Provides 24V signals at the digital output.

Technical data

PARAMETER		VIB 7.547	VIB 7.548
General	Label/sensor	TTL -DO	24V -DO
	Switching voltage	+5 V	+ 24 V
	Switching current	5 mA	1 mA
	Slots	max. 4 (DO)	
	Connector type	2 + nc	
	Note	R _i : 200 Ohm	Level output via internal PullUp 4K7; FET via self-resetting, surge-proofed fuse (0,1A)

VIB 7.560 : VIBROWEB connection box

1
2



Application

Up to 6 sensor lines are connected in the VIBROWEB connection box and fed to the VIBROWEB switching cabinet via a multicore shielded cable. If the connection box is mounted near the measurement locations, installation costs can be reduced by avoiding long cables.

If electromagnetic interference is present within the vicinity of the sensor lines, its influence on the measured signals can be suppressed by chokes. All components and connection terminals are provided on a board in an in-

dustrial housing. The glands for the sensor cables and the multicore electrical cable are already installed.

Up to:

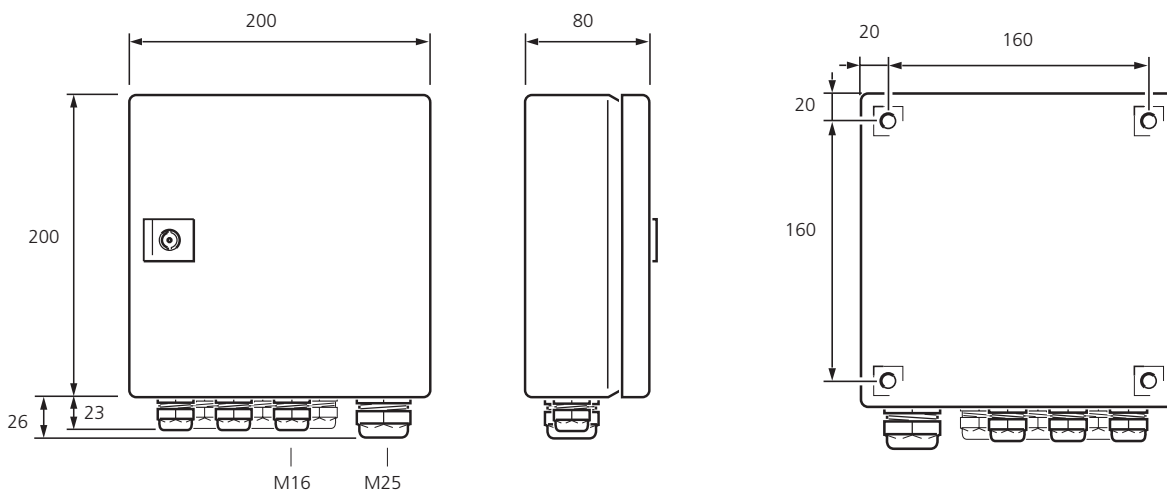
- six sensors with 2-line or 3-line connection, or
- three sensors with 4-line connection can be connected in the VIBROWEB connection box.

Accessories

- VIB 7.590 Metric fitting M16, 5 pcs.
- VIB 7.591 Metric fitting M25, 2 pcs.

Dimensions and drilling template

Dimensions in mm



Installation tools for metric cable fittings

1

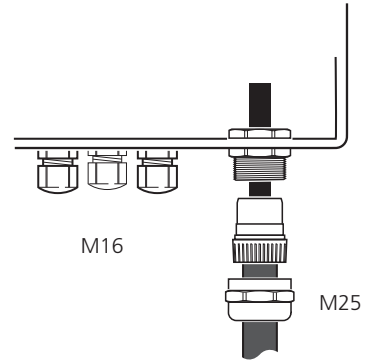
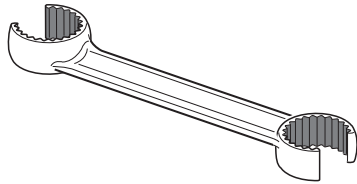
VIB 7.580 : Open ring spanner, 14x17

VIB 7.581 : Open ring spanner, 19x22

VIB 7.582 : Open ring spanner, 24x27

VIB 7.583 : Open ring spanner, 24x25

2



Application

Open ring spanners are used for the installation of metric cable fittings.

Note

Recommended key sizes for metric cable fittings:

Fitting	Key size
M12	17
M16	22
M20	25
M25	27

Metric cable fittings and shield clamps

VIB 7.590 : Metric cable fitting M 16, 5 pieces

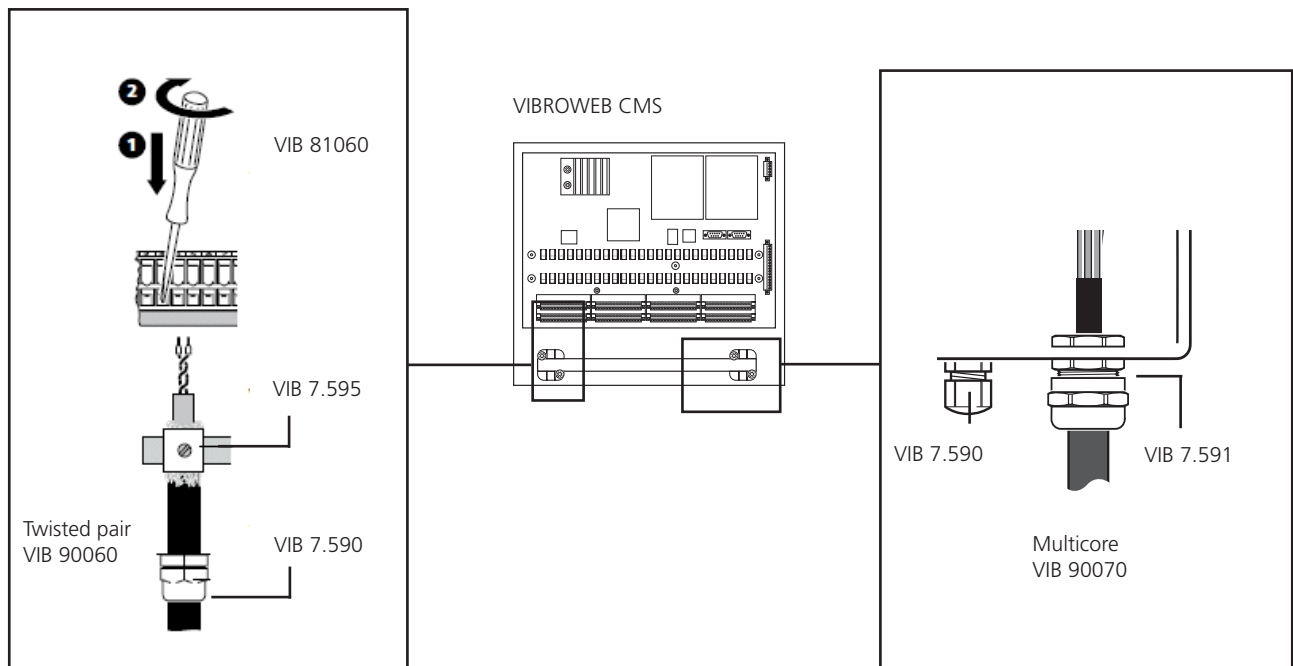
VIB 7.591 : Metric cable fitting M 25, 2 pieces

VIB 7.592 : Metric cable fitting M 20, 5 pieces

VIB 7.593 : Metric cable fitting M 12, 5 pieces

VIB 7.595 : Shield clamp SK8, 5 pieces

VIB 81060 : Screw driver 2.5 x 35



Application

For the installation of the sensor cable in the CMS switching cabinet, metric threaded fittings in different sizes are available:

M16 is suitable for standard coaxial cable (VIB 90008), standard twisted-pair cable (VIB 90061) and cables with similar dimensions.

The multicore twisted-pair cable (VIB 90070) fits in the M25 threaded fitting.

The M12 threaded fitting is suitable for ethernet cables and control lines.

The shield clamping clips SK8 are mounted on the shield rails in the CMS switching cabinet and are intended for the shield of the twisted-pair cable, the inner shields of the multicore cable and other potential-free shields.

Accessories

VIB 7.580	Open ring spanner, 14x17
VIB 7.581	Open ring spanner, 19x22
VIB 7.582	Open ring spanner, 24x27
VIB 7.583	Open ring spanner, 24x25

Abbreviation

CMS: Condition Monitoring system

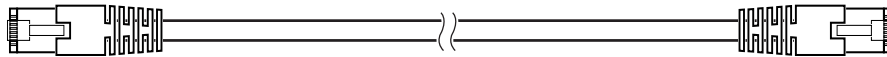
Network cables for VIBROWEB

1

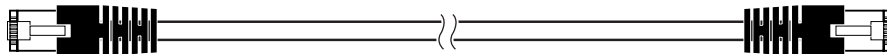
- VIB 5.955-X : Patch cable
- VIB 5.957-2 : Crossover ethernet cable, 2 m
- VIB 5.957-5 : Crossover ethernet cable, 5 m

2

X = 2,5,10,30 m



VIB 5.955-2



VIB 5.957-2

Application

The Patch cable VIB 5.955-X is used to connect the VIBROWEB basic unit to a data network - either directly or via a switch.

The crossover ethernet cable VIB 5.957-X is used to connect the VIBROWEB basic unit directly to a PC.

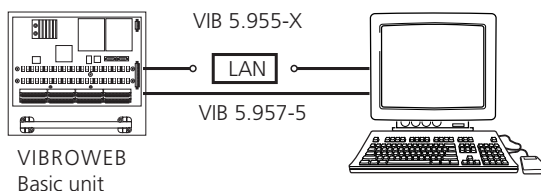
Technical data

PARAMETER		VIB 5.955-X	VIB 5.957-2 / -5
Electrical	Charact. impedance	100 Ohm ±15%	
	Loop resistance	188 Ohm	
	Conductor resistance	< 94 Ohm/km	
Layout and Environment	Wire	0.52 mm Cu blk AWG24	
	Wire insulation	PE, color coding acc. to IEC 708	
	Formation	4 pairs, twisted	
	Shielding	Aluminium compound foil	
	Earth lead	0.5 mm Cu	
	Sheath	FR-PVC, gray (flame resistant)	FR-LS0H, yellow (flame resistant, low-smoke, halogen-free)
	External diameter	6.3 mm	
	Model	TP patch cable, shielded Category 5 - 100 Mbit/s, Allocation acc. to EIA/TIA 568, 4 x 2 x AWG 24/7 RJ 45 connector w/ sprayed on cable sleeve	S/FTP Crossover cable, double shielded Category 5 - 100 Mbit/s, Crossover allocation (100BASE-T4)*, 4 x 2 x AWG 26/7 RJ 45-'HIROSE' connector, yellow
	Temperature range	-5°C ... +50°C (laying)	-30°C ... +70°C (operation)
	Cable length	2, 5, 10 or 30 meters	2 meters or 5 meters

*Crossover pin allocation (100BASE-T4):
 1 - 3
 2 - 6
 3 - 1
 4 - 7
 5 - 8
 6 - 2
 7 - 4
 8 - 5

Application example

VIBROWEB connected to network / PC



OMNITREND for VIBROWEB

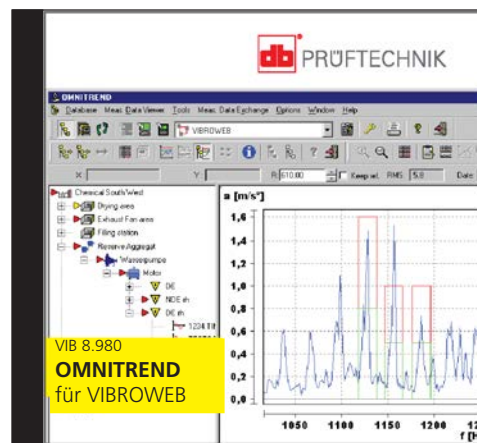
VIB 8.980 : OMNITREND für VIBROWEB, software package

VIB 8.980-DR : VIBROWEB device driver for OMNITREND

VIB 8.980-P : PC licence for VIBROWEB

1

2



The OMNITREND software package **VIB 8.980** contains the CD ROM and the following items:

- VIB 8.980-P PC licence
(Communication password for a VIBROWEB basic unit)
- VIB 8.980-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 8.980-DR** is required to operate the OMNITREND software already available with the VIBROWEB. The VIB 8.980-DR contains:

- VIB 8.980-P PC licence
(Communication password for a VIBROWEB basic unit)
- VIB 8.980-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

Each further VIBROWEB basic unit is registered with a separate **VIB 8.980-P** PC license.

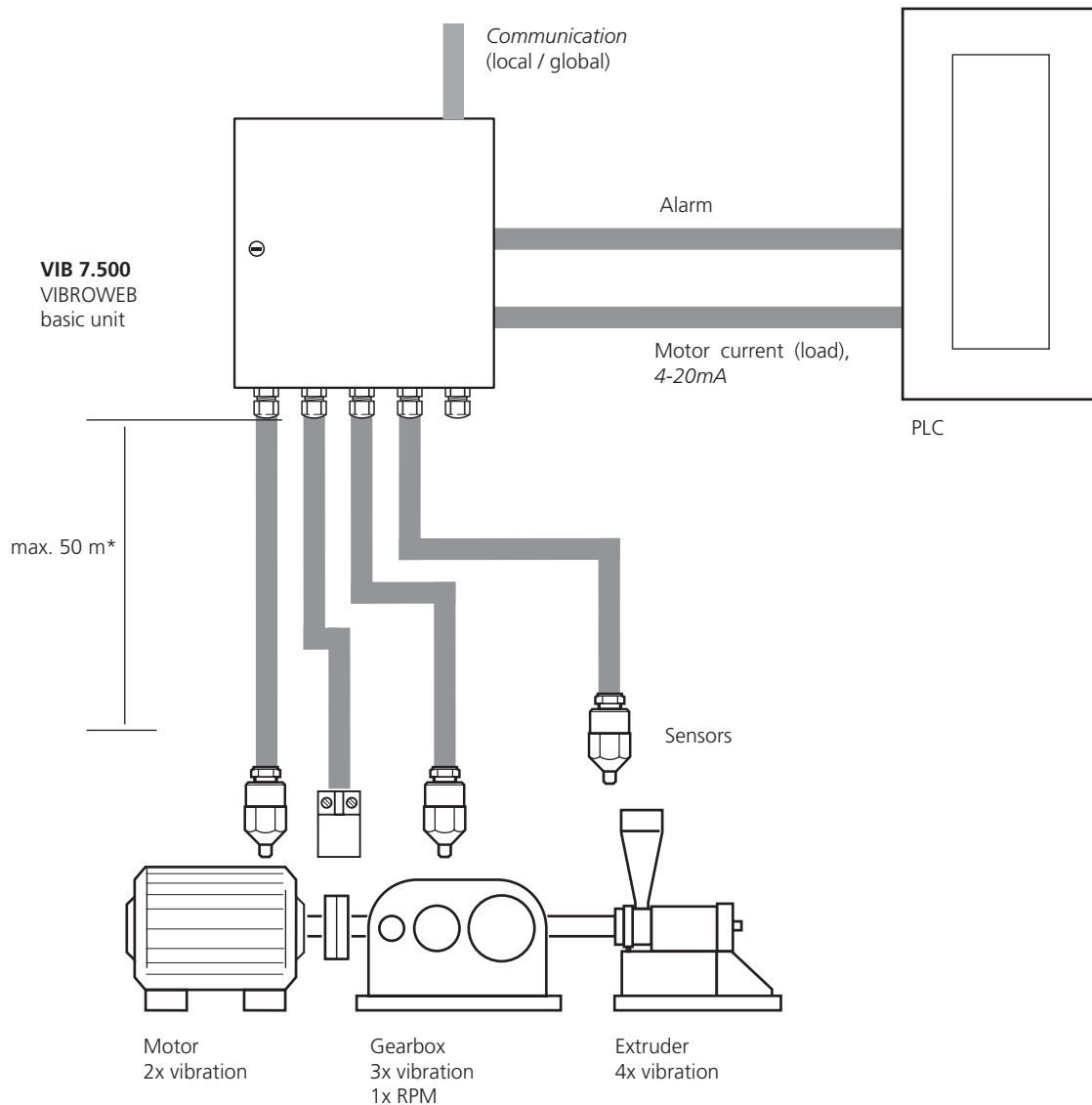
Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

Installation examples

1 Installation example 1:
 Direct cabling for short cable lengths; monitoring of individual aggregates with few measurement locations or smaller groups of aggregates.

2

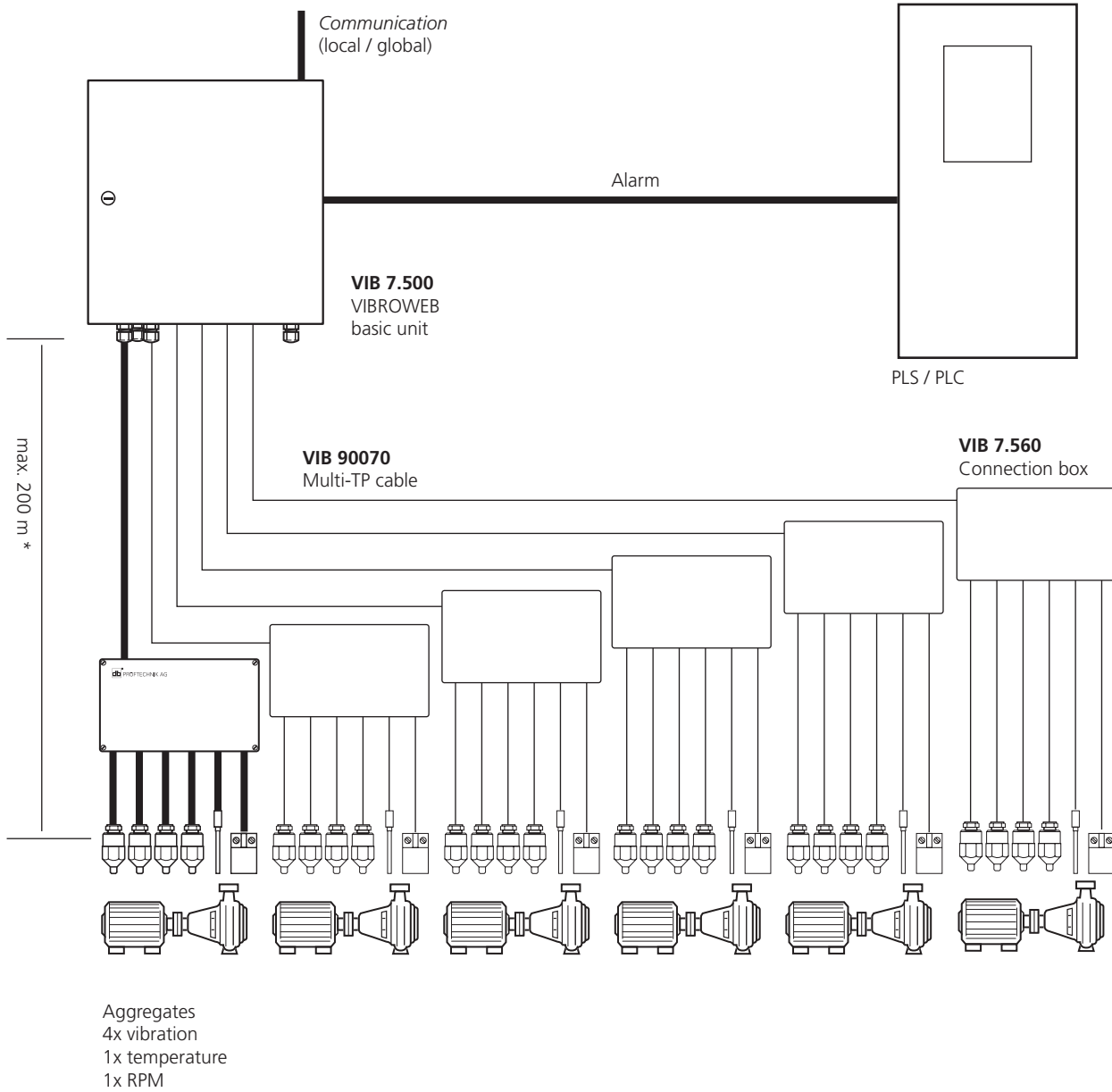


* cable length recommended purely because of installation reasons

Installation example 2:

Monitoring of many individual aggregates in widespread systems with cost saving interface boxes: one multi-core cable for up to six analog/ digital signals

1
2



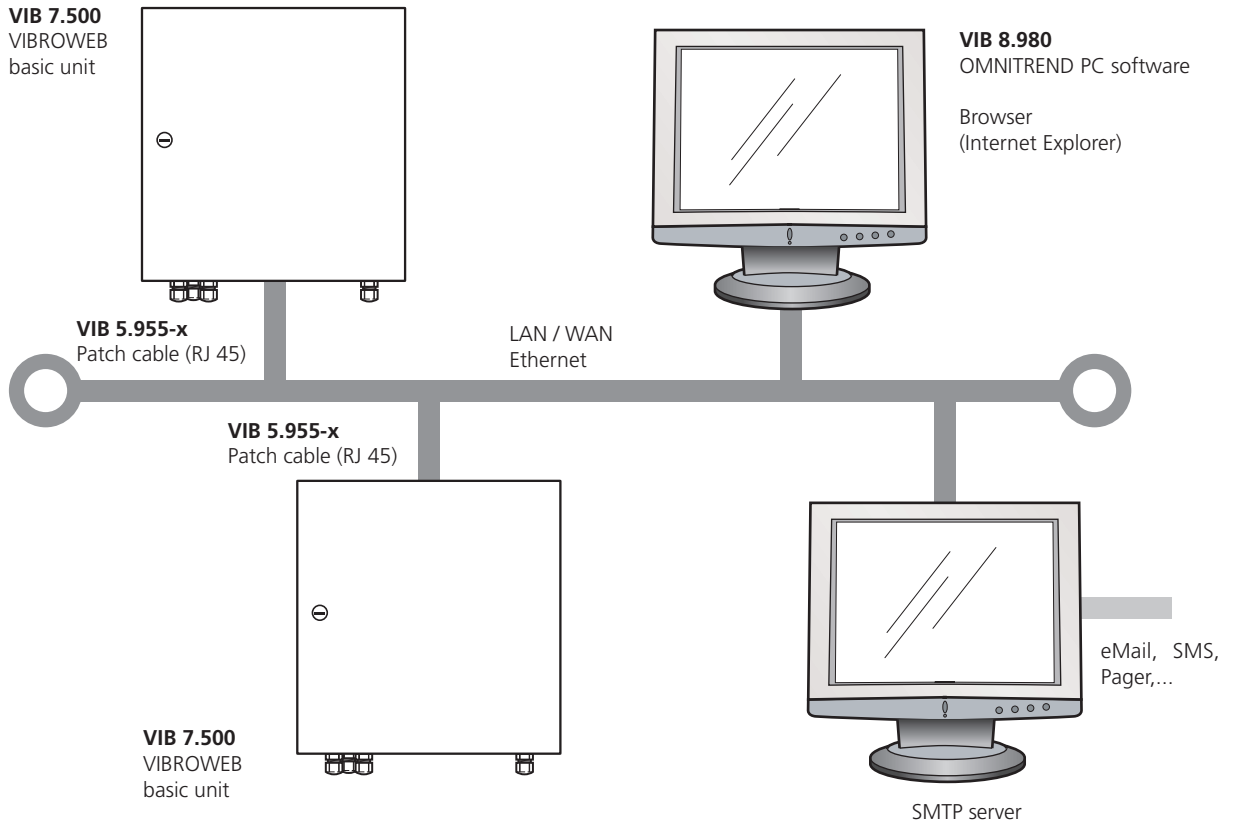
* cable length recommended purely because of installation reasons

Communication example 1:

Communication in the company network via ethernet (LAN/ WAN). eMail transmission via in-house SMTP server (fix IP address or server name).

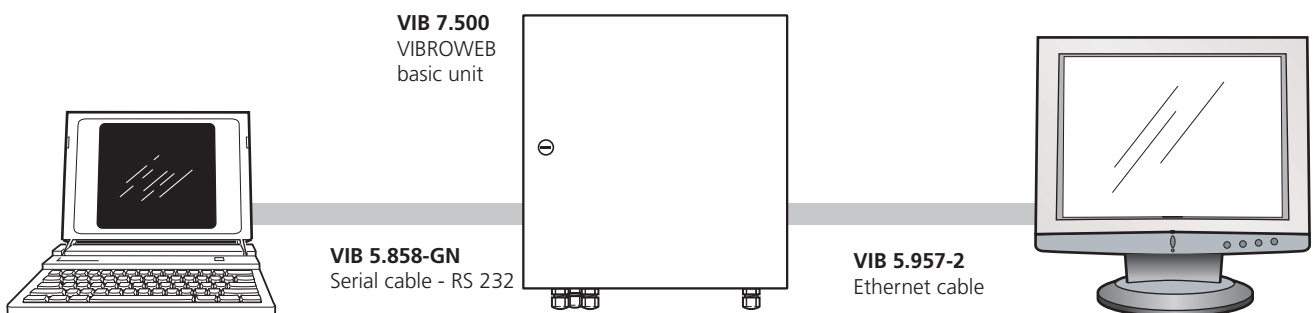
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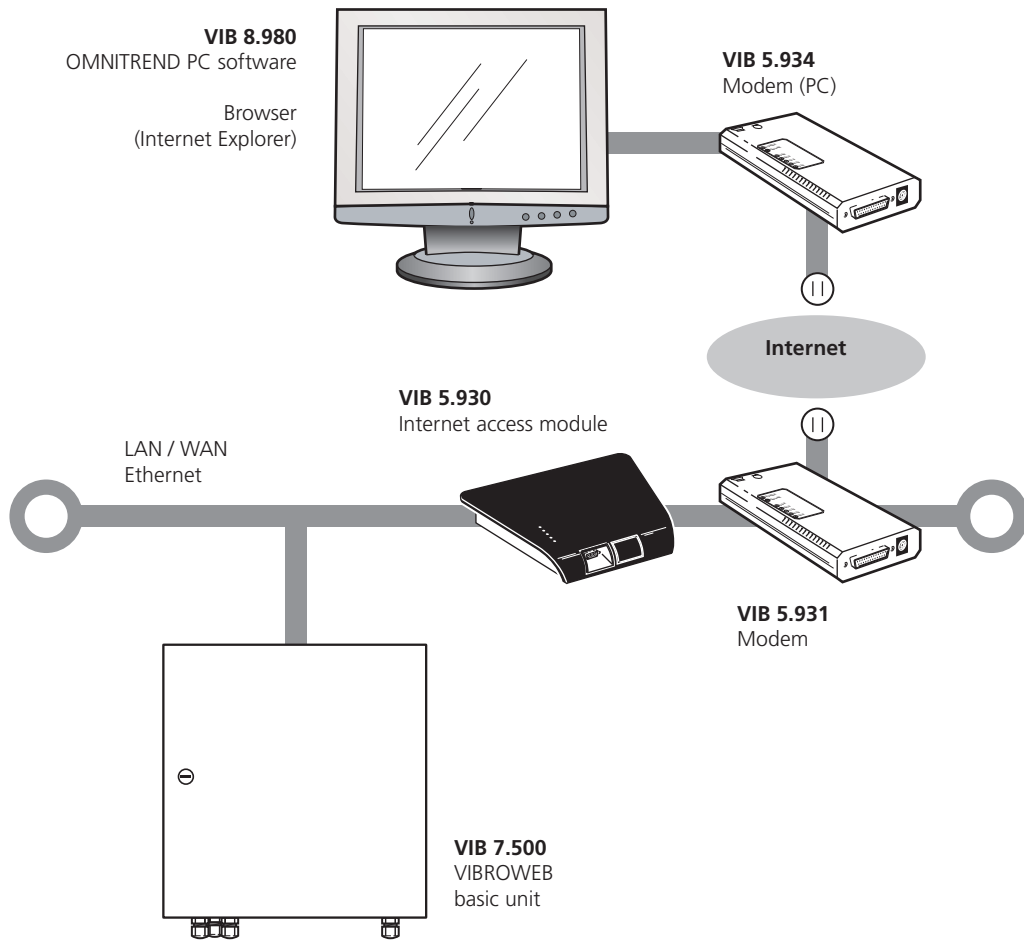
Communication example 2:

Direct connection via RS 232 or ethernet interface.



Communication example 3:

Global communication via internet using modem and telephone line. In a company network the Internet access module (VIB 5.930) is required additionally.



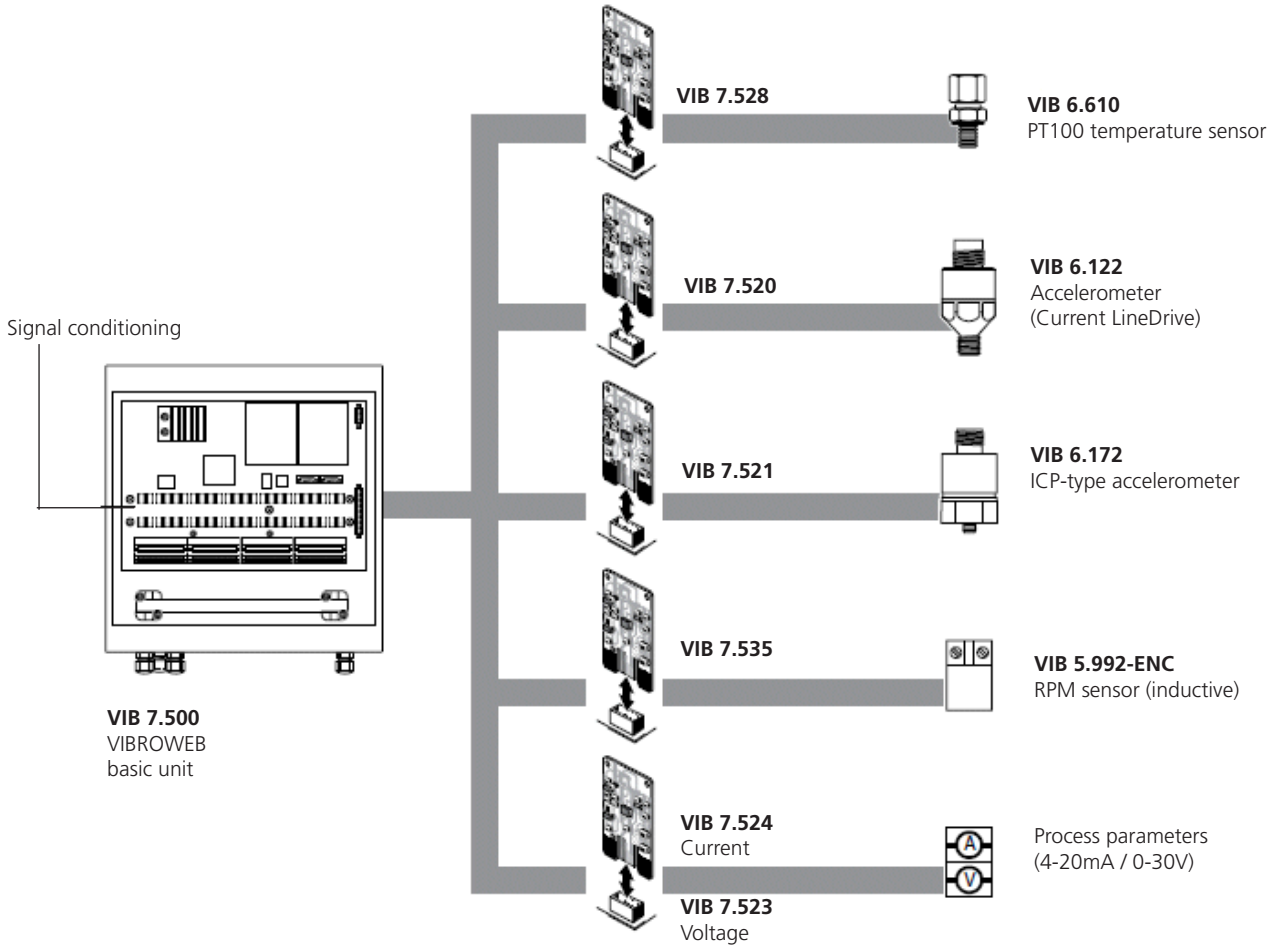
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2

Interfaces for signals / process parameters

Connection to sensors and signal conditioning via adapter cards.

1

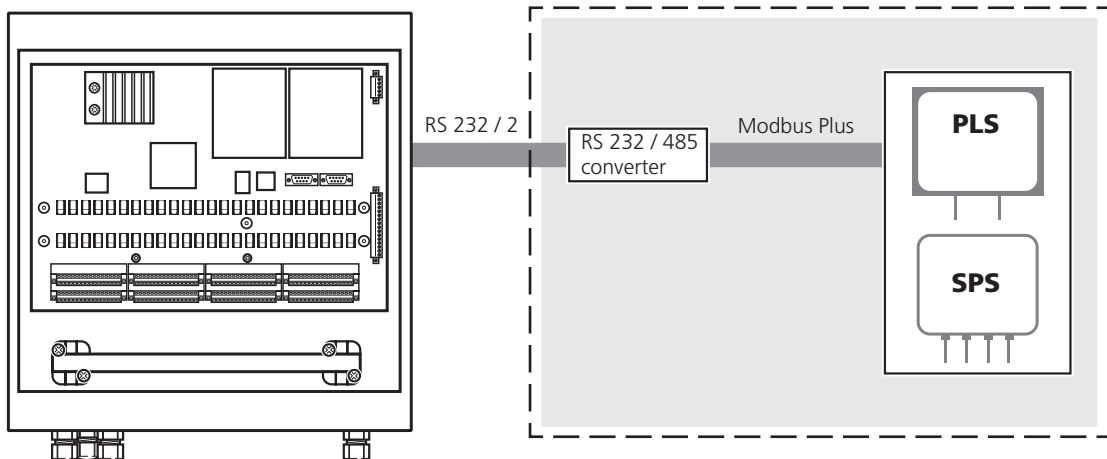
2



Interfaces to PCS / PLC

Connection to Modbus Plus field bus via internal software module.

VIB 7.500
VIBROWEB
basic unit



Chapter 2

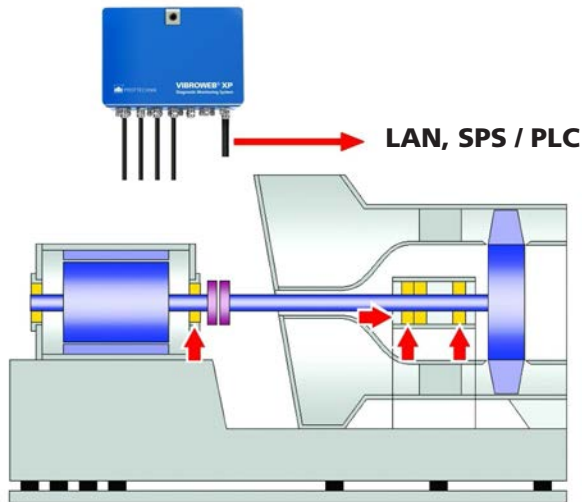
VIBROWEB XP



VIBROWEB XP - online condition monitoring and diagnosis for special machinery

1

2



Connection for

- 8 x accelerometers
- 3 x process data (0/4-20 mA)
- 2 x displacement probe
- 1 x RPM
- 1 x trigger

Diagnostic Condition Monitoring

VIBROWEB XP is a robust and proven Condition Monitoring System for remote monitoring and diagnosis of production-critical or process-critical special machines:

- Wind turbines (onshore / offshore)
- Extruders
- Process ventilators
- Special drives
- Remote pumping stations
- Emergency power supplies (UPS)

Proven and certified technology from PRÜFTECHNIK

VIBROWEB XP in conjunction with OMNITREND Condition Monitoring software is certified by Germanische Lloyd (GL) for use on wind turbines since 2005. Insurance companies recognize the use of certified systems by lowering premiums.

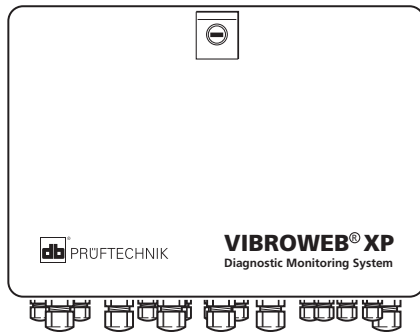
VIBROWEB XP key features

- Real time, operating-state-dependent measurement and alarms
- Machine diagnostics are supported by smart measurement functions (e.g. envelope, order spectrum, cepstrum).
- Variable operating conditions – such as changes in load & RPM – are under control due to fast measurement channel switchover
- Also suitable for machines with low RPM
- Compact, simple installation – ideal for individual aggregates
- Connection for Current LineDrive or ICP-type accelerometers
- Automatic alarm notification by eMail, SMS, Fax.
- Autonomous in operation - measurement, evaluation, saving, alarm notification without a PC connection
- Sending of measurement data, remote access and remote control via Ethernet, modem or radio – ideal for service staff
- User-friendly data evaluation and measurement settings with OMNITREND PC software.

VIBROWEB XP basic units

VIB 7.710 : VIBROWEB XP basic unit for 8 Current LineDrive accelerometers

VIB 7.725 : VIBROWEB XP basic unit for 10 ICP-type accelerometers



- Vibration acceleration
- Displacement
- RPM
- Process parameters (0-20mA)



Analog measurement channels

VIBROWEB XP provides 8 fast differential analog input channels. Two channels can be sampled in parallel with the speed reference input. In addition, the system has two synchronous channels for inductive displacement sensors as well as three inputs for current level signals.

Digital measurement channels

Two digital tacho pulse inputs are available for triggered measurements, for synchronous RPM signal averaging (noise suppression) or for order analysis.

Digital inputs / outputs

VIBROWEB XP provides two digital inputs for TTL signals. An open-drain output can be used for switching inductive loads with an external free-running diode. A relay contact for system monitoring and a switchable and a non-switchable 12V output for DC power supply are also available.

Serial interfaces (RS 232)

The two interfaces are designed for on-site data analysis (Laptop, PPP) and for connection to field bus systems (e.g. Modbus).

Configuration & data evaluation

The measurement channels as well as the setting of the alarm and warning levels are configured with the OMNI-TREND PC software. This program is also used to display and archive the recorded measurement data. The machine signals measured online are displayed via HTML pages which can be called up with a Internet Explorer browser.

External connection

VIBROWEB XP communicates via TCP/IP and Ethernet so that it can be directly integrated in any existing Ethernet network. On site, data exchange is possible over one of the two serial connections (RS232).

Further communication options are:

- Field bus connection (option)

Technical data

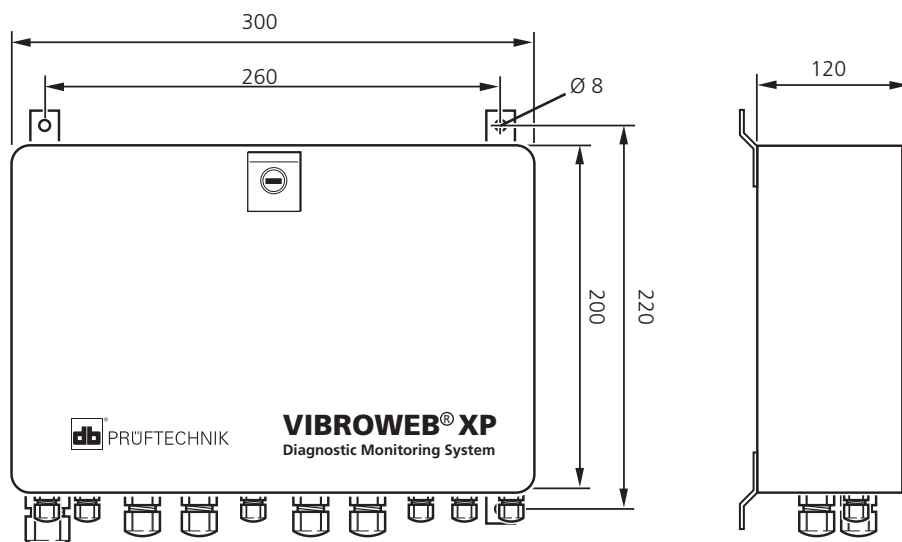
1

2

PARAMETER		VIB 7.710	VIB 7.725
Interfaces	Meas. channels, analog	2x4 differential inputs for accelerometers, 2 of them synchronous 2x1 input for inductive displacement sensors (2 of them synchronous); AC/DC coupling 3x1 input for 0/4...20 mA signals	2x5 differential inputs for accelerometers, 2 of them synchronous 3x1 input for 0/4...20 mA signals
	Vibration sensor type	Current LineDrive accelerometer	ICP-type accelerometer
	Meas. channels, digital	Key Phasor: 1x TTL ...+30V Counter : 1x TTL ...+30V	
	Input channels, digital	2x TTL ...+30V	
	Output channels, digital	1x OpenDrain 0.5A / 30VDC	
	Ethernet	1, data rate: 100 Mbit	
	Serial - RS 232	2, data rate: 115.2 kBit	
	USB (2.0)	1, for external memory (available as accessory)	
	FET switching output	1x 12 V DC, 1A, switchable	
	System OK relay	1x 4 A / 30 VAC, 3 A / 30 VDC opener	
Measurement	Meas. range, analog	±10 V, ±1 V, ±100 mV, ±10 mV	
	Dynamic Range / Resolution	96 dB / 16 bit ADC	
	Accuracy, analog input	0.05% of full scale	
	Sampling rate, analog inputs	153.6 / 76.8 / 38.4 / 19.2 / 9.6 kHz	
	Frequency range	0...50 Hz to 0...50 kHz, sub-devided into 11 areas	
	Frequency resolution	400, 800, 1600, 3200, 6400, 12800 lines	
	Antialiasing	Dynamic adaptation	
	Envelope	Variable software demodulation filter	
General parameters	Measurement functions	Time waveform, spectrum (amplitude, envelope), integration of the spectrum, order spectrum, cepstrum Overall values: acceleration (RMS), vibration velocity (peak, RMS)	
	Power supply	90-260 VAC / 50-60 Hz	
	Memory	RAM: 256 MB / Flash: 4 GB	
	Temperature range, operation	- 20°C ... +60°C	
	Temperature range, storage	- 40°C ... +80°C	
	Humidity	95 %	
	Mechanical load	Shock: 20g / Constant vibration: 2g (12-150 Hz at 1 octave/minute)	
	Protection class	IP 66 (EN 60529) / NEMA 4	
Total weight	approx. 5.3 kg		

Dimensions

in mm



OMNITREND for VIBROWEB XP

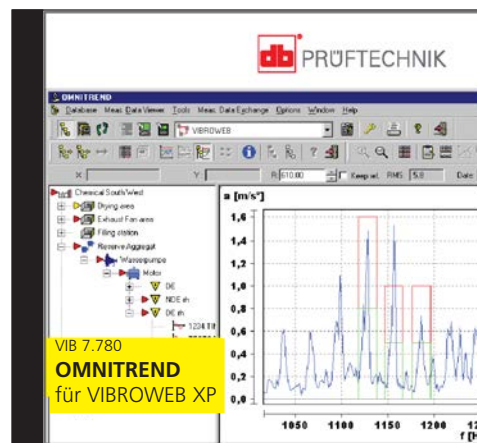
VIB 7.780 : OMNITREND for VIBROWEB XP, software package

VIB 7.780-DR : VIBROWEB XP device driver for OMNITREND

VIB 7.780-P : PC licence for VIBROWEB XP

1

2



The OMNITREND software package **VIB 7.780** contains the CD ROM and the following items:

- VIB 7.780-P PC licence
(Communication password for a VIBROWEB XP basic unit)
- VIB 7.780-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 7.780-DR** is required to operate the OMNITREND software already available with the VIBROWEB. The VIB 7.780-DR contains:

- VIB 7.780-P PC licence
(Communication password for a VIBROWEB XP basic unit)
- VIB 7.780-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.)
- VIB 9.631.G OMNITREND, Getting started

Each further VIBROWEB XP basic unit is registered with a separate **VIB 7.780-P** PC license.

Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

Index by order number

Order no.	Page
VIB 5.955-X.....	26
VIB 5.957-2.....	26
VIB 5.957-5.....	26
VIB 7.500.....	7
VIB 7.520.....	10
VIB 7.521.....	11
VIB 7.522.....	12
VIB 7.523.....	12
VIB 7.524.....	12
VIB 7.525.....	13
VIB 7.526.....	14
VIB 7.527.....	14
VIB 7.528.....	15
VIB 7.529.....	15
VIB 7.530.....	16
VIB 7.535.....	17
VIB 7.536.....	18
VIB 7.539.....	19
VIB 7.540.....	20
VIB 7.542.....	20
VIB 7.545.....	21
VIB 7.546.....	21
VIB 7.547.....	22
VIB 7.548.....	22
VIB 7.560.....	23
VIB 7.580.....	24
VIB 7.581.....	24
VIB 7.582.....	24
VIB 7.583.....	24
VIB 7.590.....	25
VIB 7.591.....	25
VIB 7.592.....	25
VIB 7.593.....	25
VIB 7.595.....	25
VIB 7.710.....	35
VIB 7.725.....	35
VIB 7.780.....	37
VIB 7.780-DR.....	37
VIB 7.780-P.....	37
VIB 8.980.....	27
VIB 8.980-DR.....	27
VIB 8.980-P.....	27
VIB 81060.....	25

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Fax: +49 8999616-300
eMail: info@pruftechnik.com



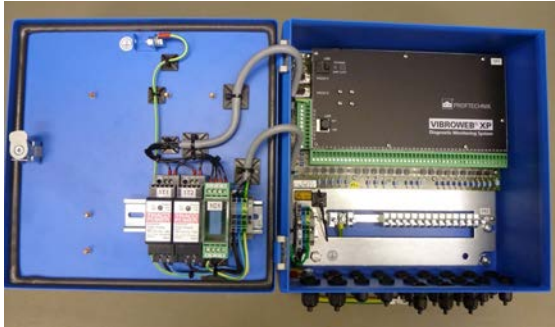
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Productive maintenance technology

VIBROWEB XP basic units

VIB 7.725-NCV : VIBROWEB XP basic unit for 10 ICP-type accelerometers, normal climate version

VIB 7.725-CCV : VIBROWEB XP basic unit for 10 ICP-type accelerometers, cold climate version



VIB 7.725-NCV



VIB 7.725-CCV

VIBROWEB XP is a compact monitoring and diagnostic system which was specially developed for production-critical or process-critical special machines.

VIBROWEB XP runs through the programmed measurement tasks autonomously – even without a PC connection. As an intelligent diagnostic robot, it detects different operating states of a system and independently adapts the recording and evaluation of the measured data to these states.

CCV - cold climate version

The CCV version is suitable for use at low temperatures down to -40 °C. The basic unit has a heater (50 W), which is controlled by a bimetal thermostatic switch.

Prerequisites for the proper operation at temperatures down to -40°C:

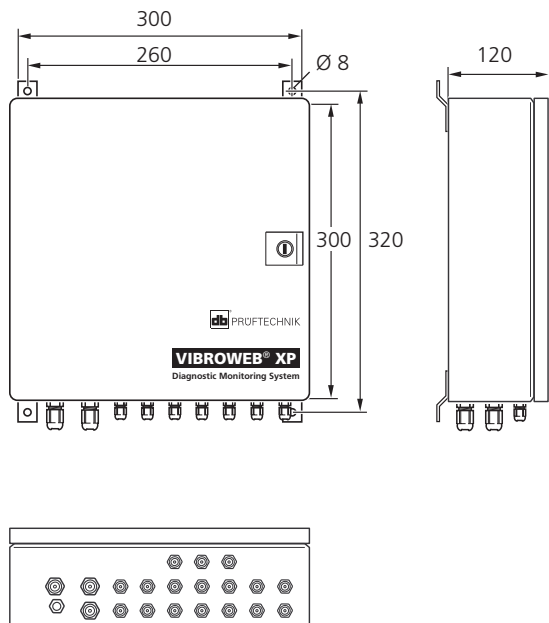
System commissioning is performed within the temperature range -20°C to +60°C and the base unit is supplied continuously.

Technical data

1
2

PARAMETER		VIB 7.725-NCV	VIB 7.725-CCV
Interfaces	Meas. channels, analog	2x5 differential inputs for accelerometers, 2 of them synchronous 3x1 input for 0/4...20 mA signals	
	Vibration sensor type	ICP-type accelerometer	
	Meas. channels, digital	Key Phasor: 1x TTL ...+30V Counter : 1x TTL ...+30V	
	Input channels, digital	2x TTL ...+30V	
	Output channels, digital	1x OpenDrain 0.5A / 30VDC	
	Ethernet	1, data rate: 100 Mbit	
	Serial - RS 232	2, data rate: 115.2 kBit	
	FET switching output	1x 12 V DC, 1A, switchable	
	System OK relay	1x 4 A / 30 VAC, 3 A / 30 VDC opener	
Measurement	Meas. range, analog	±10 V, ±1 V, ±100 mV, ±10 mV	
	Dynamic Range / Resolution	96 dB / 16 bit ADC	
	Accuracy, analog input	0.05% of full scale	
	Sampling rate, analog inputs	153.6 / 76.8 / 38.4 / 19.2 / 9.6 kHz	
	Frequency range	0...50 Hz to 0...50 kHz, sub-divided into 11 areas	
	Frequency resolution	400, 800, 1600, 3200, 6400, 12800 lines	
	Antialiasing	Dynamic adaptation	
	Envelope	Variable software demodulation filter	
	Measurement functions	Time waveform, spectrum (amplitude, envelope), integration of the spectrum, order spectrum, cepstrum Overall values: acceleration (RMS), vibration velocity (peak, RMS)	
General parameters	Power supply	100 - 230 VAC / 0.71 - 0.43A 50-60 Hz	100 - 230 VAC / 0.71 - 0.43A + the current for a thermostat controlled 50W PTC heating 50-60 Hz
	Memory	RAM: 256 MB / Flash: 2 GB	
	Temperature range, operation	- 20°C ... +60°C	-40°C ... +60°C
	Temperature range, storage	- 40°C ... +80°C	
	Humidity	95 %	
	Mechanical load	Shock: 20g / Constant vibration: 2g (12-150 Hz at 1 octave/minute)	
	Protection class	IP 66 (EN 60529) / NEMA 4	
	Total weight	6.8 kg	7.3 kg

Dimensions
in mm



VIBREX®

Machine vibration
Bearing condition
Machine protection

Catalog



PRÜFTECHNIK
Condition Monitoring
info@pruftechnik.com

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Contents

Chapter 1: VIBREX delivery packages

VIBREX - Flexibility in machine protection and monitoring	6
VIBREX delivery packages (overview)	9

Order no.	Product description	Page
VIB 5.761 I :	VIBREX vibration monitoring ISO, 1 channel, standard version	10
VIB 5.761 IX :	VIBREX vibration monitoring ISO, 1 channel, intrinsic safety	10
VIB 5.761 IUS :	VIBREX vibration monitoring ISO, 1 channel, standard U.S. version	10
VIB 5.761 ICP :	VIBREX vibration monitoring ISO, 1 channel, ICP version	10
VIB 5.761 L :	VIBREX vibration monitoring for low-speed machines (> 60 rpm), 1 channel	11
VIB 5.761 ML :	VIBREX vibration monitoring for low-speed machines (> 120 rpm), 1 channel	11
VIB 5.761 G :	VIBREX vibration monitoring for gear boxes (> 60 rpm), 1 channel	12
VIB 5.761 GF :	VIBREX vibration monitoring for gear boxes (> 120 rpm), 1 channel	12
VIB 5.761 :	VIBREX 1-channel ordering package for vibration monitoring with one sensor	13
VIB 5.761 X :	VIBREX 1-channel ordering package for vibration monitoring with one sensor, intrinsic safe	13
VIB 5.762 I :	VIBREX vibration monitoring ISO, 2 channels, standard version	14
VIB 5.762 IX :	VIBREX vibration monitoring ISO, 2 channels, intrinsic safety	14
VIB 5.762 IUS :	VIBREX vibration monitoring ISO, 2 channels, standard U.S. version	14
VIB 5.762 ICP :	VIBREX vibration monitoring ISO, 2 channels, ICP version	14
VIB 5.762 L :	VIBREX vibration monitoring for low-speed machines (> 60 rpm), 2 channels	15
VIB 5.762 ML :	VIBREX vibration monitoring for low-speed machines (> 120 rpm), 2 channels	15
VIB 5.762 G :	VIBREX vibration monitoring for gearboxes (> 60 rpm), 2 channels	16
VIB 5.762 GF :	VIBREX vibration monitoring for gearboxes (> 120 rpm), 2 channels	16
VIB 5.763 I :	VIBREX bearing condition monitoring, standard version, 1 channel	17
VIB 5.763 IX :	VIBREX bearing condition monitoring, intrinsic safety, 1 channel	17
VIB 5.764 I :	VIBREX bearing condition monitoring, standard version, 2 channels	18
VIB 5.764 IX :	VIBREX bearing condition monitoring, intrinsic safety, 2 channels	18
VIB 5.765 I :	Combined VIBREX bearing and ISO vibration monitoring, 1 channel, standard version	19
VIB 5.765 IUS :	Combined VIBREX bearing and ISO vibration monitoring, 1 channel, U.S. version	19
VIB 5.765 IX :	Combined VIBREX bearing and ISO vibration monitoring, 1 channel, intrinsic safety	19
VIB 5.765 GF :	Combined VIBREX bearing and ISO vibration monitoring for gearboxes, 1 channel	20
VIB 5.765 ML :	Combined VIBREX bearing and ISO vibration monitoring for low-speed machines, 1 channel	21
VIB 5.766 I :	VIBREX bearing condition and vibration monitoring acc. to ISO standards, 2 channels, standard version	22
VIB 5.766 IUS :	VIBREX bearing condition and vibration monitoring acc. to ISO standards, 2 channels, U.S. version	22
VIB 5.766 IX :	VIBREX bearing condition and vibration monitoring acc. to ISO standards, 2 channels, intrinsic safety	22

Chapter 2: VIBREX spare parts and accessories

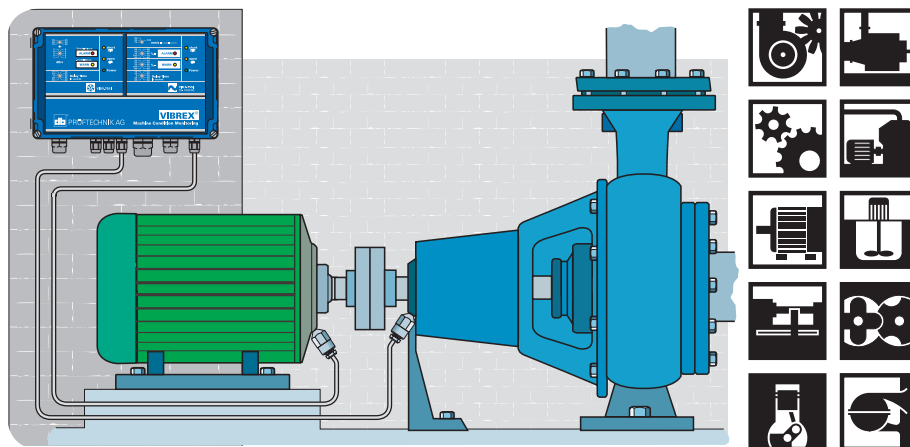
VIB 5.790 :	VIBREX basic unit with signal output (mV)	24
VIB 5.751 SET :	VIBREX mounting kit	25
VIB 5.771 :	VIBREX sensor cable, 3 meters long	26
VIB 3.550 :	PRÜFTECHNIK limiting device for hazardous areas	27

Index

Index by order number	29
-----------------------------	----

Chapter 1

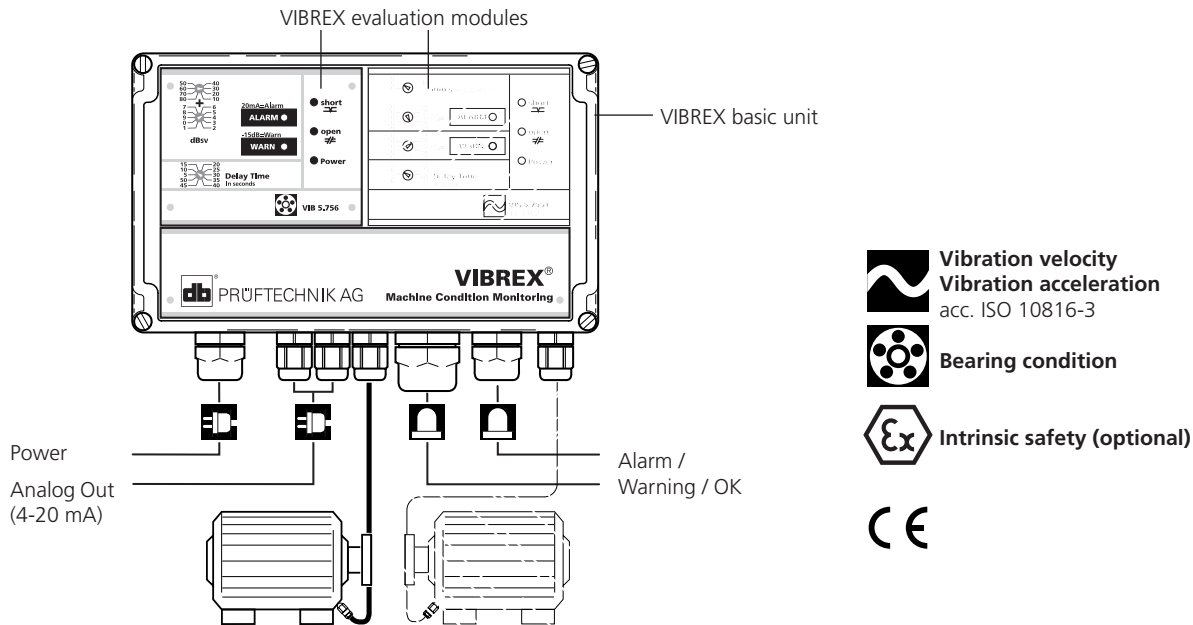
VIBREX delivery packages



VIBREX - Flexibility in machine protection and monitoring

1

2



VIBREX provides a modular solution for one- or two-channel monitoring of RMS vibration severity, bearing condition or other important machine health indicators and performs automated alarm-based switching as well. This approach brings reliable control into an affordable range for the vast majority of rotating equipment. Even inaccessible machines can now be monitored at a fraction of the usual expense.

VIBREX features overview

- One or two measurement channels
- Machine vibration and bearing condition monitoring
- Budget-priced components and installation
- Simple installation and commissioning
- Industry-standard components
- Plug-in modules for many applications
- Potential free relay outputs
- Automatic alarming
- Adjustable alarm / warning thresholds
- Adjustable alarm delay avoids false alarms due to transient signal elevations (e.g. when the machine is switched on).
- Self-diagnostic routines automatically alert you to short-circuit, open lines and disrupting power supply
- 4-20 mA output signal level
- Buffered signal output (mV) for analysis as an option
- Special version for ICP-type accelerometers available
- Intrinsically safe version as an option

VIBREX components

Basic units

- VIB 5.750 Basic unit, standard
- VIB 5.752 Basic unit with mV output, standard
- VIB 5.753 ICP Basic unit with mV output, ICP-type

Vibration modules

- VIB 5.755 G Vibration module for gear boxes (1 Hz ... 3 kHz)
- VIB 5.755 GF Vibration module for gear boxes (2 Hz ... 3 kHz)
- VIB 5.755 GS Vibration module for refiners, quick shut off
- VIB 5.755 I Vibration module for standard machines, ISO 10816-3
- VIB 5.755 ICP Vibration module for standard machines, ISO 10816-3, ICP-type accelerometer
- VIB 5.755 IH Vibration module for high vibration levels (< 2000 mm/s), ISO 10816-3
- VIB 5.755 IS Vibration module for standard machines, ISO 10816-3, quick shut off
- VIB 5.755 IUS Vibration module for standard machines, ISO 10816-3, U.S. version, imperial units
- VIB 5.755 IV Vibration module for high vibration levels (< 600 mm/s), ISO 10816-3
- VIB 5.755 L Vibration module for low-speed machines (1 Hz ... 1 kHz)
- VIB 5.755 ML Vibration module for low-speed machines (2 Hz ... 1 kHz)

Bearing modules

- VIB 5.756 I Bearing condition module

Acceleration modules

- VIB 5.757 G Acceleration module for high-speed gear stages
- VIB 5.757 R Acceleration module for high-speed refiner disks

Technical data, VIBREX evaluation modules

PARAMETER		VIB 5.755 I	VIB 5.755 IS	VIB 5.755 IH	VIB 5.755 IUS	VIB 5.755 IV
Meas.	Measurement quantity	RMS vibration velocity				
	Frequency range	10 Hz ... 1 kHz (ISO)				
	Measurement range, adjustable	0 ... 10 / 20 / 50 / 100 mm/s		0 ... 200 / 400 / 1000 / 2000 mm/s	0 ... 0.4 / 0.8 / 2 / 4 inch/s	0 ... 60 / 120 / 300 / 600 mm/s
Electrical	Operating voltage	18 ... 30 V DC				
	Max. current	approx. 35 mA				
	Output	4-20 mA, analog; with basic unit				
Settings	Status / Alarm display	5 LEDs for alarm/warning, short circuit, open circuit and power supply status				
	Alarm / Warning outputs	Alarm and warning limits adjustable as percentage of total measurement range in steps of 10%				
	Alarm / Warning delay	5 ... 50 s	50 ... 500 ms	5 ... 50 s		
	Sensor type	Current LineDrive accelerometer, Sensitivity: 1,0 $\mu\text{A}/\text{ms}^2$				

PARAMETER		VIB 5.755 G	VIB 5.755 L	VIB 5.755 ML	VIB 5.755 GF	VIB 5.755 GS
Meas.	Measurement quantity	RMS vibration velocity				
	Frequency range	1 Hz ... 3 kHz	1 Hz ... 1 kHz	2 Hz ... 1 kHz	2 Hz ... 3 kHz	10 Hz ... 3 kHz
	Measurement range, adjustable	0 ... 10 / 20 / 50 / 100 mm/s				
Electrical	Operating voltage	18 ... 30 V DC				
	Max. current	approx. 35 mA				
	Output	4-20 mA, analog; with basic unit				
Settings	Status / Alarm display	5 LEDs for alarm/warning, short circuit, open circuit and power supply status				
	Alarm / Warning outputs	Alarm and warning limits adjustable as percentage of total measurement range in steps of 10%				
	Alarm / Warning delay	5 ... 50 s				50 ... 500 ms
	Sensor type	Current LineDrive (CLD) accelerometer, Sensitivity: 5,35 $\mu\text{A}/\text{ms}^2$		CLD accelerometer, Sensitivity: 1,0 $\mu\text{A}/\text{ms}^2$		

PARAMETER		VIB 5.756 I	VIB 5.757 G	VIB 5.757 R
Meas.	Measurement quantity	Shock pulse (Max value in dB_{sv})	RMS vibration acceleration	
	Frequency range	---	2 Hz ... 20 kHz	500 Hz ... 20 kHz
	Measurement range, adjustable	20 - 79 dB_{sv}	0 ... 60 / 120 / 300 / 600 m/s^2	0 ... 200/ 400/ 1000/ 2000 m/s^2
Electrical	Operating voltage	18 ... 30 V DC		
	Max. current	approx. 35 mA		
	Output	4-20 mA, analog; with basic unit		
Settings	Status / Alarm display	5 LEDs for alarm/warning, short circuit, open circuit and power supply status		
	Alarm / Warning outputs	Alarm limit adjustable from 20 to 79 dB_{sv} Warning level fixed 15 dB_{sv} , below 'Alarm'	Alarm and warning limits adjustable as percentage of total measurement range in steps of 10%	
	Alarm / Warning delay	5 ... 50 s		
	Sensor type	Current LineDrive accelerometer, Sensitivity: 1,0 $\mu\text{A}/\text{ms}^2$		

PARAMETER		VIB 5.755 ICP
Meas.	Measurement quantity	RMS vibration velocity
	Frequency range	10 Hz ... 1 kHz (ISO)
	Measurement range, adjustable	0 ... 10 / 20 / 50 / 100 mm/s
Electrical	ICP current	5,8 mA ... 8,3 mA
	Sensor supply	24 V \pm 5%
	AC signal output	< 50 g
Settings	Status / Alarm display	5 LEDs for alarm/warning, short circuit, open circuit and power supply status
	Alarm / Warning outputs	Alarm and warning limits adjustable as percentage of total measurement range in steps of 10%
	Alarm / Warning delay	5 ... 50 s
	Sensor type	ICP-type accelerometer, Sensitivity: 100 mV/g

Typical application of the VIBREX modules

1

VIB 5.755 G

Gear mesh monitoring on the low-speed stage (> 1 Hz) or on the high-speed stage (< 3 kHz).

VIB 5.755 GF

Gear mesh monitoring on the low-speed stage (> 2 Hz) or on the high-speed stage (< 3 kHz).

2

VIB 5.755 GS

Vibration monitoring of low-speed disk refiners. This module enables shorter delay times to be set up for the relay output contacts (50 - 500 ms, standard: 5-50s).

Note: The product of the RPM (in Hz) and the number of teeth in the refiner disks should lie within the range of 3 kHz.

VIB 5.755 I

Vibration monitoring on high-speed machines (> 600 rpm) acc. to ISO 10816-3.

VIB 5.755 ICP

Vibration monitoring on high-speed machines (>600 rpm) acc. to ISO 10816-3.

VIB 5.755 IH

Vibration monitoring on machines with very high vibration levels (e.g. shaking table)

VIB 5.755 IS

Vibration monitoring on high-speed machines (> 600 rpm) acc. to ISO 10816-3. This module enables shorter

delay times to be set up for the relay output contacts (50 - 500 ms, standard: 5-50s).

VIB 5.755 IUS

Vibration monitoring on high-speed machines (> 600 rpm) acc. to ISO 10816-3. US version of the standard module; measuring range in inch/s.

VIB 5.755 IV

Vibration monitoring on vibro mixers in the pharmaceutical industry.

Note: The high vibration level places high demands on the installation of the sensor and cable.

VIB 5.755 L

Vibration monitoring on very low-speed machines such as cooling tower fans, mixers, stirrers, etc.

VIB 5.755 ML

Vibration monitoring on medium-speed and low-speed machines (> 120 rpm) acc. to ISO 10816-3.

VIB 5.756 I

This module is used for bearing monitoring.

VIB 5.757 G

This module can be used to monitor high-speed gearboxes (turbo gearboxes, compressors)

VIB 5.757 R

This module can be used to monitor high-speed disk refiners, for example.

Technical data, VIBREX basic units

PARAMETER		VIB 5.750	VIB 5.752	VIB 5.753 ICP
Interfaces	Slots	1 or 2 modules		
	Inputs	Current LineDrive-type accelerometer, 2x Mains supply 24 VDC supply		ICP-type accelerometer, 2x Mains supply 24 VDC supply
	Outputs	1 alarm relay 1 OK relay for self diagnosis / warning 1 analog level output (4-20mA)	1 alarm relay 1 OK relay for self diagnosis / warning 1 analog level output (4-20mA) mV output for signal analysis	
	Switching power	max. 3 A @ 250 V AC		
	Operating modes	combined bearing condition / vibration monitoring (1- / 2-channel), pure bearing condition / vibration monitoring (1- / 2-channel)		
Electrical	Power supply	AC: 115V/230V, 6VA switchable; 50/60 Hz, 10-15% (IEC 93) DC: 24V, <300 mA, 10-15% (IEC 93)		
	Overload protection	Thermal fuse in transformer and resistance fuse (160 mA slow-acting)		
	Signal output (mV), from HW 2.10	n/a	direct sensor signal (buffered, 100 Ohm)	
	Transmission	---	1.0 mV _{eff} /ms ⁻² (=10 mV/g)* 5.35 mV _{eff} /ms ⁻² (=52 mV/g)**	10,2 mV _{eff} /ms ⁻² (=100 mV/g)
Frequency response	---	corresponds to sensor		
Environment	Operating temperature	-10 °C ... +60 °C		
	Environmental protection	IP 65 (dustproof / spray waterproof)		
	Vibration limit	< 50 m/s ² (med. freq.: 60 Hz, bandw.: 100 Hz)		
	Housing material	Plastic (polycarbonate, Macrolon) with transparent lid, Protection class II		
	Dimensions	200 mm x 120 mm x 77 mm (B x H x T)		
	Intrinsic safety	optional, with safety barrier and intrinsically safe sensors		

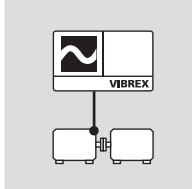
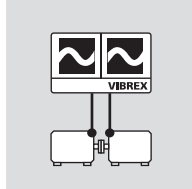
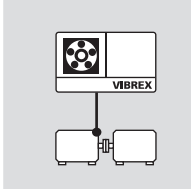
* Current LineDrive-type accelerometer (1.0 µA/ms²)


** Current LineDrive-type accelerometer (5.35 µA/ms²)


VIBREX delivery packages (overview)

1

2

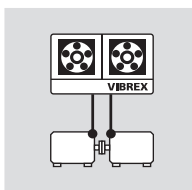
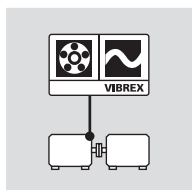
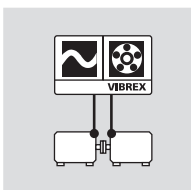
Module configuration			
Description	Vibration monitoring for 1 measurement location incl. 1 sensor and 1 cable (3 m)	Vibration monitoring for 2 measurement locations incl. 2 sensors and 2 cables (3 m)	Bearing condition monitoring for 1 meas. location incl. 1 sensor and 1 cable (3 m)
Standard version (ISO)	VIB 5.761¹	VIB 5.762¹	VIB 5.763¹
Standard for EX application	VIB 5.761 IX	VIB 5.762 IX	VIB 5.763 IX
Standard for ICP accelerom.	VIB 5.761 ICP	VIB 5.762 ICP	n/a
Low-speed (n > 60 min⁻¹)	VIB 5.761 L²	VIB 5.762 L²	n/a
Low-speed (n > 120 min⁻¹)	VIB 5.761 ML³	VIB 5.762 ML³	VIB 5.763 I
Gear box (n > 60 min⁻¹)	VIB 5.761 G⁴	VIB 5.762 G⁴	n/a
Gear box (n > 120 min⁻¹)	VIB 5.761 GF⁵	VIB 5.762 GF⁵	VIB 5.763 I
Ordering package*	VIB 5.761	n/a	n/a

 Vibration module

 Bearing module

- ¹ 10Hz - 1kHz
- ² 1Hz - 1kHz (n > 60 rpm)
- ³ 2Hz - 1kHz (n > 120 rpm)
- ⁴ 1 Hz - 3 kHz
- ⁵ 2 Hz - 3 kHz
- n/a = not available

* Further VIBREX combinations can be ordered with special modules (e.g. acceleration module) using the ordering packages.

Module configuration			
Description	Bearing condition monitoring for 2 meas. location incl. 2 sensor and 2 cable (3 m)	Combined vibration and bearing condition monitoring for 1 meas. location incl. 1 sensor and 1 cable (3 m)	Combined vibration and bearing condition monitoring for 2 meas. location incl. 2 sensor and 2 cable (3 m)
Standard version (ISO)	VIB 5.764 I	VIB 5.765 I	VIB 5.766 I
Standard for EX application	VIB 5.764 IX	VIB 5.765 IX	VIB 5.766 IX
Gear box (n > 120 min⁻¹)	VIB 5.764 I	VIB 5.765 GF	n/a
Low-speed (n > 120 min⁻¹)	VIB 5.764 I	VIB 5.765 ML	n/a

VIBREX vibration monitoring acc. to ISO standards, 1 channel

1

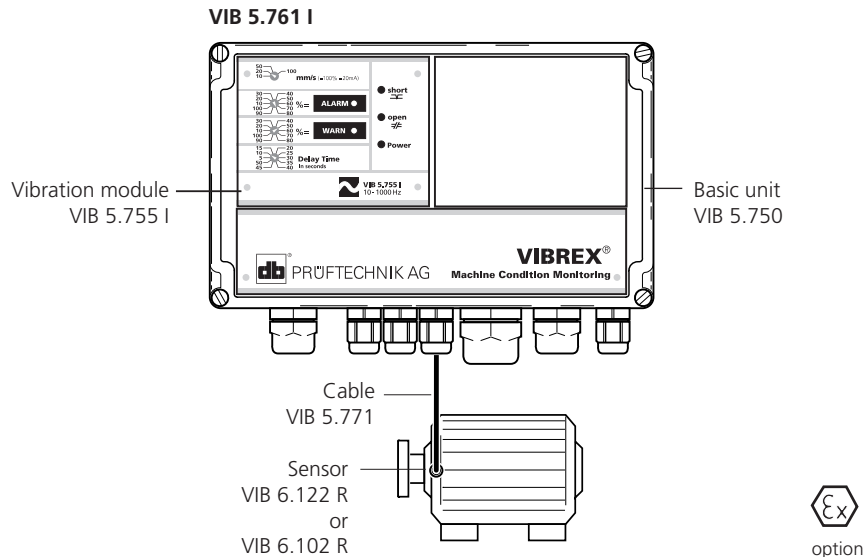
VIB 5.761 I : VIBREX vibration monitoring ISO, 1 channel, standard version

VIB 5.761 IX : VIBREX vibration monitoring ISO, 1 channel, intrinsic safety

VIB 5.761 IUS : VIBREX vibration monitoring ISO, 1 channel, standard U.S. version

VIB 5.761 ICP : VIBREX vibration monitoring ISO, 1 channel, ICP version

2



Description

The VIBREX standard package **VIB 5.761 I** is used to monitor vibration severity on standard machines. The U.S. package **VIB 5.761 IUS** provides imperial units.

The VIBREX package **VIB 5.761 IX** contains the required components for use in hazardous environments. The VIBREX basic unit is mounted outside the intrinsically safe area and connected to the sensor within the intrinsically safe area via the PRÜFTECHNIK current limiting device (VIB 3.550).

The package **VIB 5.761 ICP** allows the connection of ICP-type accelerometers with the following specifications:

Power supply: 2-10 mA DC

Sensitivity: 100 mV/g

Scope of delivery **VIB 5.761 I**:

- VIB 5.750 VIBREX basic unit
- VIB 5.754 Empty module
- VIB 5.755 I Vibration module (10 Hz...1 kHz, ISO)
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.122 R* Industrial accelerometer for standard machines, M8 mounting bolt, or
- VIB 6.102 R* Industrial accelerometer for standard machines, adhesive base
- VIB 9.610.G VIBREX instructions

Scope of delivery **VIB 5.761 IUS**:

- VIB 5.750 VIBREX basic unit
- VIB 5.754 Empty module
- VIB 5.755 IUS Vibration module, U.S. version (10 Hz...1 kHz, ISO)
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.132 R Industrial accelerometer for standard machines, UNC 5/16" mounting bolt
- VIB 9.610.G VIBREX instructions

Scope of delivery **VIB 5.761 IX**:

- VIB 3.550 PRÜFTECHNIK current limiting device
- VIB 5.750 VIBREX basic unit
- VIB 5.754 Empty module
- VIB 5.755 I Vibration module (10 Hz...1 kHz, ISO)
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.122DEX* Industrial accelerometer with M8 mounting bolt, intrinsically safe or
- VIB 6.102DEX* Industrial accelerometer with adhesive base, intrinsically safe
- VIB 9.610.G VIBREX instructions

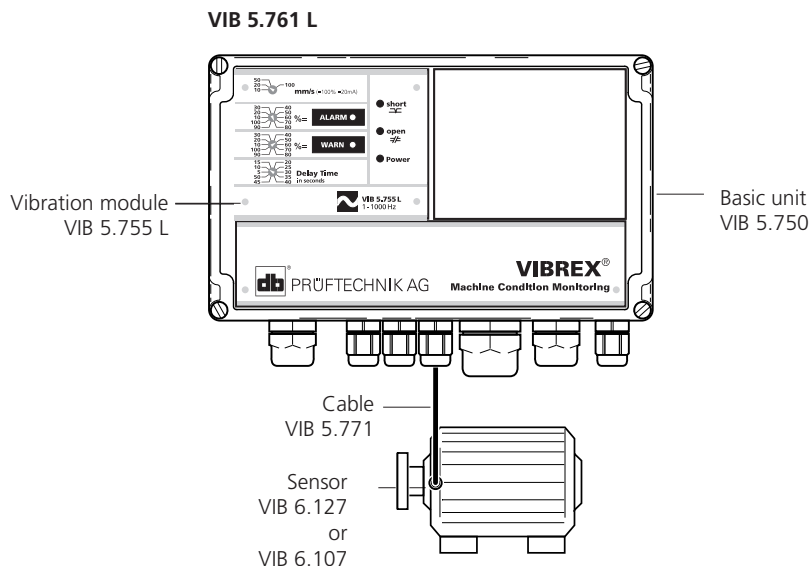
Scope of delivery **VIB 5.761 ICP**:

- VIB 5.753 VIBREX ICP basic unit
- VIB 5.754 Empty module
- VIB 5.755 ICP ICP Vibration module (10 Hz ... 1 kHz)
- VIB 9.610.G VIBREX instructions

* When ordering, please specify the required sensor. Other sensor types and cable lengths are available at a surcharge

VIBREX vibration monitoring for low-speed machines, 1 channel

- VIB 5.761 L : VIBREX vibration monitoring for low-speed machines (> 60 rpm), 1 channel
- VIB 5.761 ML : VIBREX vibration monitoring for low-speed machines (> 120 rpm), 1 channel



Description

The VIBREX package **VIB 5.761 L** is used for vibration monitoring on very low-speed machines such as cooling tower fans, mixers, stirrers, etc.

The VIBREX package **VIB 5.761 ML** is used for vibration monitoring on medium-speed and low-speed machines (> 120 rpm) acc. to ISO 10816-3.

Scope of delivery **VIB 5.761 L**:

- VIB 5.750 VIBREX basic unit
- VIB 5.754 Empty module
- VIB 5.755 L Vibration module (1 Hz...1 kHz)
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.127* Industrial accelerometer for low-speed machines, M8 mounting bolt, or
- VIB 6.107* Industrial accelerometer for low-speed machines, adhesive base
- VIB 9.610.G VIBREX instructions

Scope of delivery **VIB 5.761 ML**:

- VIB 5.750 VIBREX basic unit
- VIB 5.754 Empty module
- VIB 5.755 ML Vibration module (2 Hz...1 kHz)
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.122 R* Industrial accelerometer for standard machines, M8 mounting bolt, or
- VIB 6.102 R* Industrial accelerometer for standard machines, adhesive base
- VIB 9.610.G VIBREX instructions

* When ordering, please specify the required sensor. Other sensor types and cable lengths are available at a surcharge

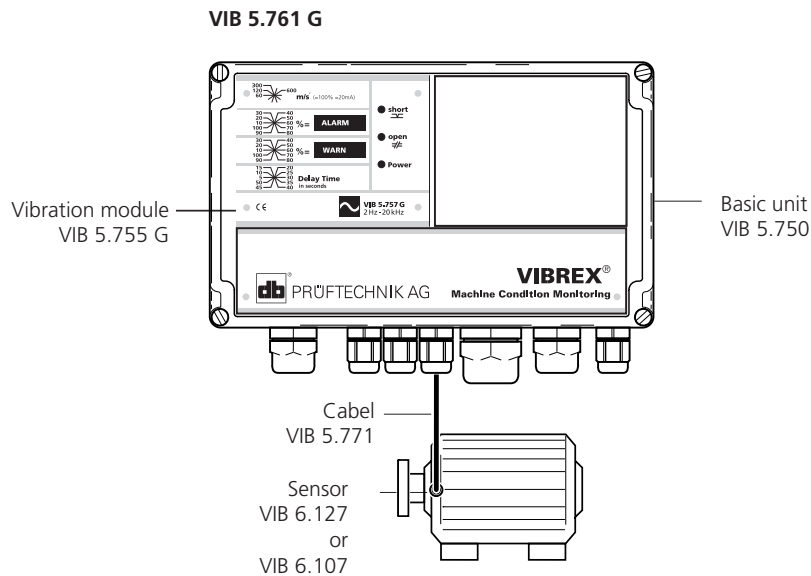
VIBREX vibration monitoring for gear boxes, 1 channel

1

VIB 5.761 G : VIBREX vibration monitoring for gear boxes (> 60 rpm), 1 channel

VIB 5.761 GF : VIBREX vibration monitoring for gear boxes (> 120 rpm), 1 channel

2



Description

The VIBREX package **VIB 5.761 G** is used for vibration monitoring on low-speed gear stages (> 60 rpm).

The VIBREX package **VIB 5.761 GF** is used for vibration monitoring on medium-speed gear stages (> 120 rpm).

Scope of delivery **VIB 5.761 G**:

- VIB 5.750 VIBREX basic unit
- VIB 5.754 Empty module
- VIB 5.755 G Vibration module (1 Hz...3 kHz)
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.127* Industrial accelerometer for low-speed machines, M8 mounting bolt, or
- VIB 6.107* Industrial accelerometer for low-speed machines, adhesive base
- VIB 9.610.G VIBREX instructions

Scope of delivery **VIB 5.761 GF**:

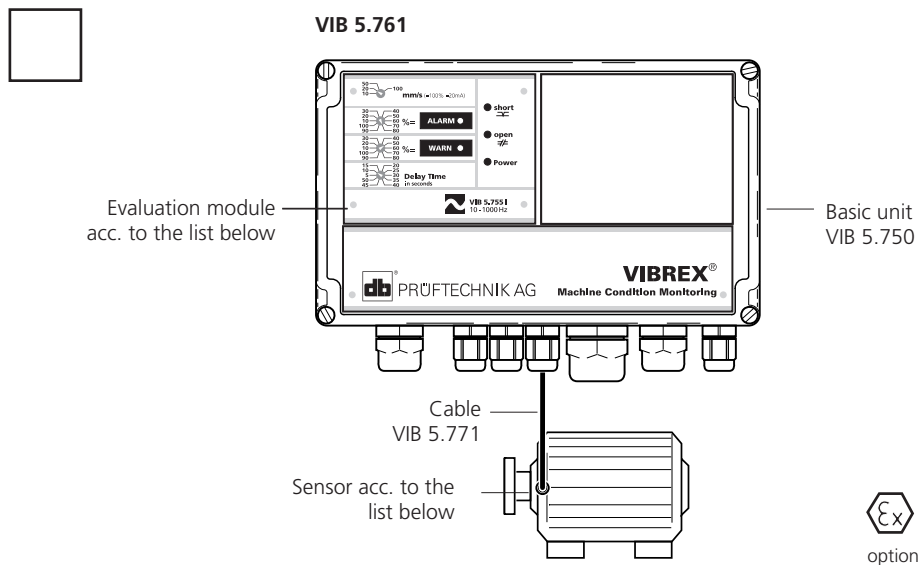
- VIB 5.750 VIBREX basic unit
- VIB 5.754 Empty module
- VIB 5.755 GF Vibration module (2 Hz...3 kHz)
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.122 R* Industrial accelerometer for standard machines, M8 mounting bolt, or
- VIB 6.102 R* Industrial accelerometer for standard machines, adhesive base
- VIB 9.610.G VIBREX instructions

* When ordering, please specify the required sensor. Other sensor types and cable lengths are available at a surcharge

VIBREX 1-channel ordering packages for vibration monitoring

VIB 5.761 : VIBREX 1-channel ordering package for vibration monitoring with one sensor

VIB 5.761 X : VIBREX 1-channel ordering package for vibration monitoring with one sensor, intrinsic safe



Description

The VIBREX 1-channel ordering packages **VIB 5.761** and **VIB 5.761 X** are intended for monitoring tasks that are not covered by the pre-configured delivery packages.

The ordering packages consist of basic components and freely selectable components*, such as the below listed special evaluation modules and the appropriate sensors.

Basic components for VIB 5.761

- VIB 5.750 VIBREX basic unit
- VIB 5.754 Empty module
- VIB 5.771 Cable, TNC, 3 meters
- VIB 9.610.G VIBREX instructions

Basic components for VIB 5.761 X

- VIB 3.550 PRÜFTECHNIK current limiting device
- VIB 5.750 VIBREX basic unit
- VIB 5.754 Empty module
- VIB 5.771 Cable, TNC, 3 meters
- VIB 9.610.G VIBREX instructions

* When ordering, please specify the required evaluation module and the appropriate sensor. Other sensor types and cable lengths are available at a surcharge

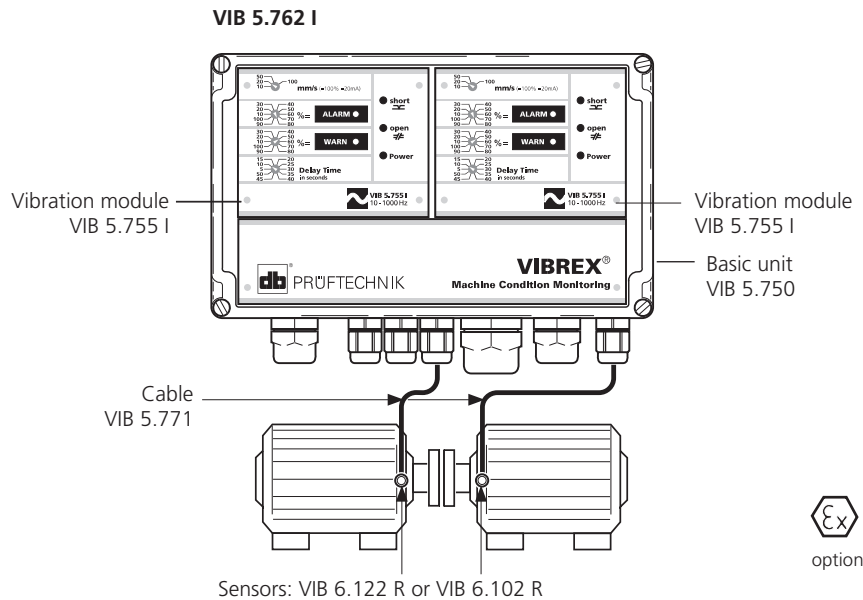
EVALUATION MODULE		Order no.	Meas. quantity	Frequency range	Sensor
Short description	Vibration acc. to ISO, 2000 mm/s	VIB 5.755 IH	Vibration velocity	10 Hz ... 1 kHz	VIB 6.122 R or VIB 6.122 DEX
	Vibration acc. to ISO, 600 mm/s	VIB 5.755 IV	Vibration velocity	10 Hz ... 1 kHz	VIB 6.122 R or VIB 6.122 DEX
	Vibration acc. to ISO, quick shutoff	VIB 5.755 IS	Vibration velocity	10 Hz ... 1 kHz	VIB 6.122 R or VIB 6.122 DEX
	Vibration on gearboxes, quick shutoff	VIB 5.755 GS	Vibration velocity	10 Hz ... 3 kHz	VIB 6.122 R or VIB 6.122 DEX
	High-speed gearboxes, 600 m/s ²	VIB 5.757 G	Vibration acceleration	2 Hz ... 20 kHz	VIB 6.122 R or VIB 6.122 DEX
	High-speed refiner, 2000 m/s ²	VIB 5.757 R	Vibration acceleration	500 Hz ... 20 kHz	VIB 6.122 R or VIB 6.122 DEX

VIBREX vibration monitoring acc. to ISO standards, 2 channels

1

- VIB 5.762 I : VIBREX vibration monitoring ISO, 2 channels, standard version
- VIB 5.762 IX : VIBREX vibration monitoring ISO, 2 channels, intrinsic safety
- VIB 5.762 IUS : VIBREX vibration monitoring ISO, 2 channels, standard U.S. version
- VIB 5.762 ICP : VIBREX vibration monitoring ISO, 2 channels, ICP version

2



Description

The VIBREX standard package VIB 5.762 I is used to monitor vibration severity on standard machines. The U.S. package VIB 5.762 IUS provides imperial units.

The VIBREX package VIB 5.762 IX contains the required components for use in hazardous environments. The VIBREX basic unit is mounted outside the intrinsically safe area and connected to the sensors within the intrinsically safe area via the PRÜFTECHNIK current limiting devices (VIB 3.550).

The package VIB 5.762 ICP allows the connection of ICP-type accelerometers with the following specifications:

Power supply: 2-10 mA DC
Sensitivity: 100 mV/g

Scope of delivery VIB 5.762 I:

- VIB 5.750 VIBREX basic unit
- VIB 5.755 I Vibration module (10 Hz...1 kHz, ISO), 2x
- VIB 5.771 Cable, TNC, 3 meters, 2x
- VIB 6.122 R* Industrial accelerometer with M8 mounting bolt, 2x, or
- VIB 6.102 R* Industrial accelerometer with adhesive base, 2x
- VIB 9.610.G VIBREX instructions

Scope of delivery VIB 5.762 IUS:

- VIB 5.750 VIBREX basic unit
- VIB 5.755 IUS Vibration module, U.S. version (10 Hz...1 kHz, ISO), 2x
- VIB 5.771 Cable, TNC, 3 meters, 2x
- VIB 6.132 R* Industrial accelerometer for standard machines, UNC 5/16 mounting bolt, 2x, VIBREX instructions
- VIB 9.610.G VIBREX instructions

Scope of delivery VIB 5.762 IX:

- VIB 3.550 PRÜFTECHNIK current limiting device, 2x
- VIB 5.750 VIBREX basic unit
- VIB 5.755 I Vibration module (10 Hz...1 kHz, ISO), 2x
- VIB 5.771 Cable, TNC, 3 meters, 2x
- VIB 6.122DEX* Industrial accelerometer with M8 mounting bolt, intrinsically safe, 2x, or
- VIB 6.102DEX* Industrial accelerometer with adhesive base, intrinsically safe, 2x
- VIB 9.610.G VIBREX instructions

Scope of delivery VIB 5.762 ICP:

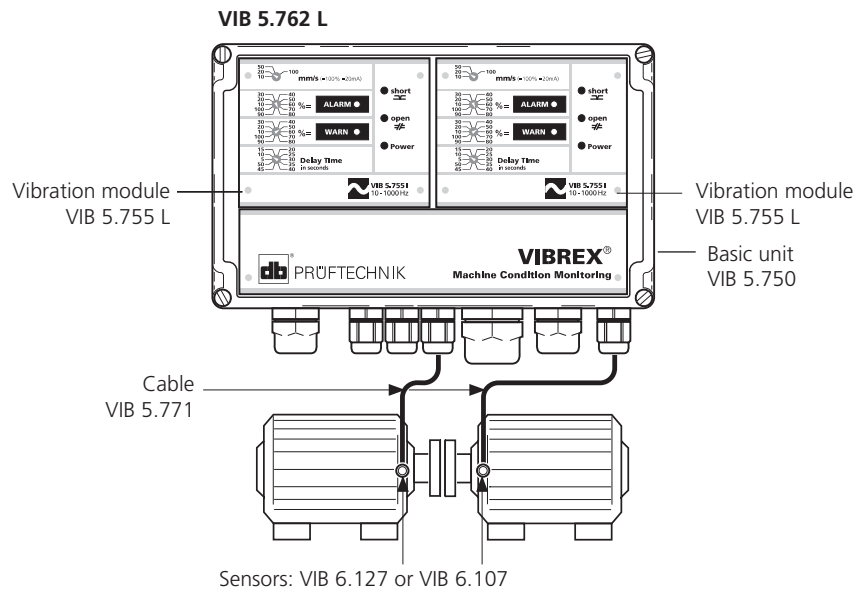
- VIB 5.753 VIBREX ICP basic unit
- VIB 5.755 ICP ICP Vibration module (10 Hz ... 1 kHz), 2x
- VIB 9.610.G VIBREX instructions

* When ordering, please specify the required sensor. Other sensor types and cable lengths are available at a surcharge

VIBREX vibration monitoring for low-speed machines, 2 channels

VIB 5.762 L : VIBREX vibration monitoring for low-speed machines (> 60 rpm), 2 channels

VIB 5.762 ML : VIBREX vibration monitoring for low-speed machines (> 120 rpm), 2 channels



Description

The VIBREX package **VIB 5.762 L** is used for vibration monitoring on very low-speed machines such as cooling tower fans, mixers, stirrers, etc.

The VIBREX package **VIB 5.762 ML** is used for vibration monitoring on medium-speed and low-speed machines (> 120 rpm) acc. to ISO 10816-3.

Scope of delivery **VIB 5.762 L**:

VIB 5.750	VIBREX basic unit
VIB 5.755 L	Vibration module (1 Hz...1 kHz), 2x
VIB 5.771	Cable, TNC, 3 meters, 2x
VIB 6.127*	Industrial accelerometer for low-speed machines, M8 mounting bolt, 2x, <u>or</u>
VIB 6.107*	Industrial accelerometer for low-speed machines, adhesive base, 2x
VIB 9.610.G	VIBREX instructions

Scope of delivery **VIB 5.762 ML**:

VIB 5.750	VIBREX basic unit
VIB 5.755 ML	Vibration module (2 Hz...1 kHz), 2x
VIB 5.771	Cable, TNC, 3 meters, 2x
VIB 6.122 R*	Industrial accelerometer for standard machines, M8 mounting bolt, 2x, <u>or</u>
VIB 6.102 R*	Industrial accelerometer for standard machines, adhesive base, 2x
VIB 9.610.G	VIBREX instructions

* When ordering, please specify the required sensor.
Other sensor types and cable lengths are available at a surcharge

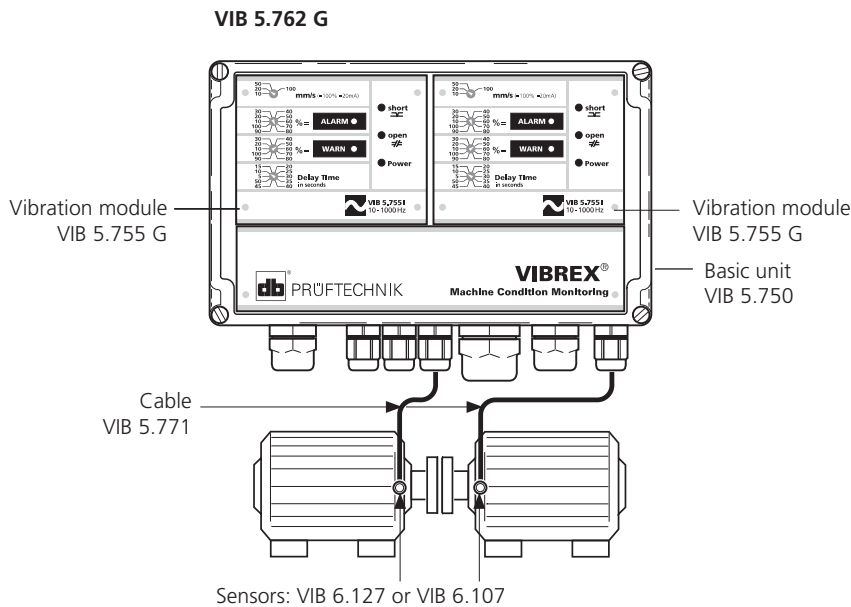
VIBREX vibration monitoring for gearboxes, 2 channels

1

VIB 5.762 G : VIBREX vibration monitoring for gearboxes (> 60 rpm), 2 channels

VIB 5.762 GF : VIBREX vibration monitoring for gearboxes (> 120 rpm), 2 channels

2



Description

The VIBREX package **VIB 5.762 G** is used for vibration monitoring on low-speed gearboxes (> 60 rpm).

The VIBREX package **VIB 5.762 GF** is used for vibration monitoring on medium-speed gearboxes (> 120 rpm).

Scope of delivery VIB 5.762 G:

- VIB 5.750 VIBREX basic unit
- VIB 5.755 G Vibration module (1 Hz...1 kHz), 2x
- VIB 5.771 Cable, TNC, 3 meters, 2x
- VIB 6.127* Industrial accelerometer for low-speed machines, M8 mounting bolt, 2x, or
- VIB 6.107* Industrial accelerometer for low-speed machines, adhesive base, 2x
- VIB 9.610.G VIBREX instructions

Scope of delivery VIB 5.762 GF:

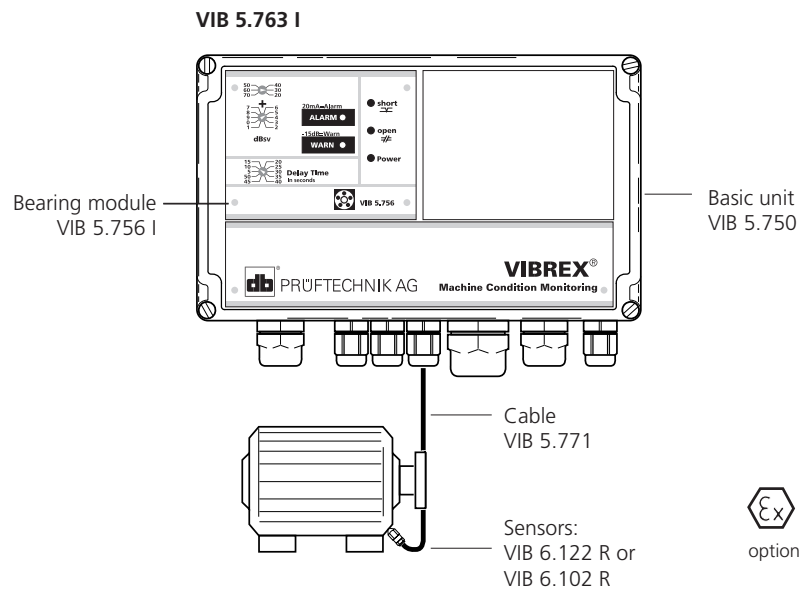
- VIB 5.750 VIBREX basic unit
- VIB 5.755 GF Vibration module (2 Hz...1 kHz), 2x
- VIB 5.771 Cable, TNC, 3 meters, 2x
- VIB 6.122 R* Industrial accelerometer for standard machines, M8 mounting bolt, 2x, or
- VIB 6.102 R* Industrial accelerometer for standard machines, adhesive base, 2x
- VIB 9.610.G VIBREX instructions

* When ordering, please specify the required sensor. Other sensor types and cable lengths are available at a surcharge

VIBREX bearing condition monitoring, 1 channel

VIB 5.763 I : VIBREX bearing condition monitoring, standard version, 1 channel

VIB 5.763 IX : VIBREX bearing condition monitoring, intrinsic safety, 1 channel



Description

The VIBREX package **VIB 5.763 I** is used for bearing condition monitoring.

The VIBREX package **VIB 5.763 IX** contains the required components for use in hazardous environments. The VIBREX basic unit is mounted outside the intrinsically safe area and connected to the sensor within the intrinsically safe area via the PRÜFTECHNIK current limiting device (VIB 3.550).

Scope of delivery **VIB 5.763 I**:

VIB 5.750	VIBREX basic unit
VIB 5.754	Empty module
VIB 5.756 I	Bearing module
VIB 5.771	Cable, TNC, 3 meters
VIB 6.122 R*	Industrial accelerometer for standard machines, M8 mounting bolt, <u>or</u>
VIB 6.102 R*	Industrial accelerometer for standard machines, adhesive base
VIB 9.610.G	VIBREX instructions

Scope of delivery **VIB 5.763 IX**:

VIB 3.550	PRÜFTECHNIK current limiting device
VIB 5.750	VIBREX basic unit
VIB 5.754	Empty module
VIB 5.756 I	Bearing module
VIB 5.771	Cable, TNC, 3 meters
VIB 6.122DEX*	Industrial accelerometer with M8 mounting bolt, intrinsically safe <u>or</u>
VIB 6.102DEX*	Industrial accelerometer with adhesive base, intrinsically safe
VIB 9.610.G	VIBREX instructions

* When ordering, please specify the required sensor.
Other sensor types and cable lengths are available at a surcharge

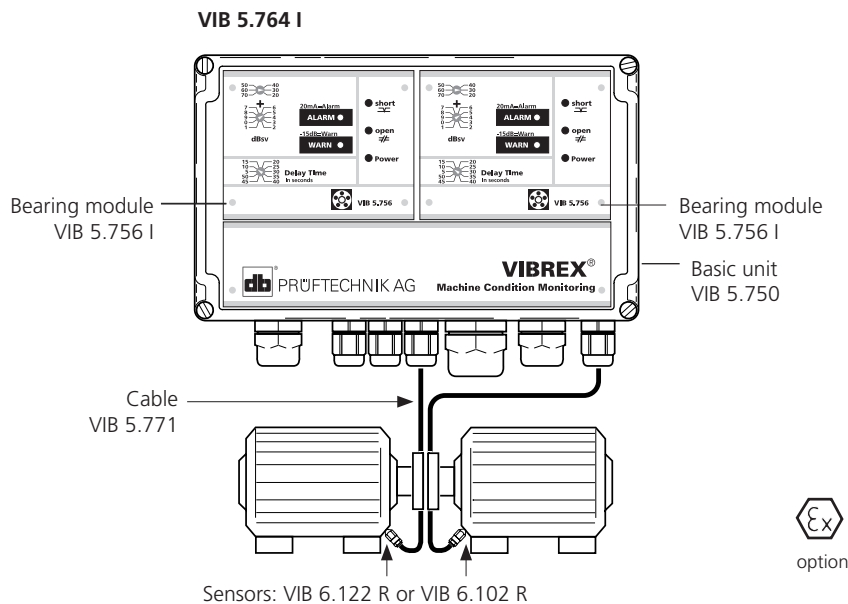
VIBREX bearing condition monitoring, 2 channels

1

VIB 5.764 I : VIBREX bearing condition monitoring, standard version, 2 channels

VIB 5.764 IX : VIBREX bearing condition monitoring, intrinsic safety, 2 channels

2



Description

The VIBREX package **VIB 5.764 I** is used for bearing condition monitoring.

The VIBREX package **VIB 5.764 IX** contains the required components for use in hazardous environments. The VIBREX basic unit is mounted outside the intrinsically safe area and connected to the sensors within the intrinsically safe area via the PRÜFTECHNIK current limiting devices (VIB 3.550).

Scope of delivery **VIB 5.764 I**:

VIB 5.750	VIBREX basic unit
VIB 5.756 I	Bearing module, 2x
VIB 5.771	Cable, TNC, 3 meters, 2x
VIB 6.122 R*	Industrial accelerometer with M8 mounting bolt, 2x, <u>or</u>
VIB 6.102 R*	Industrial accelerometer with adhesive base, 2x
VIB 9.610.G	VIBREX instructions

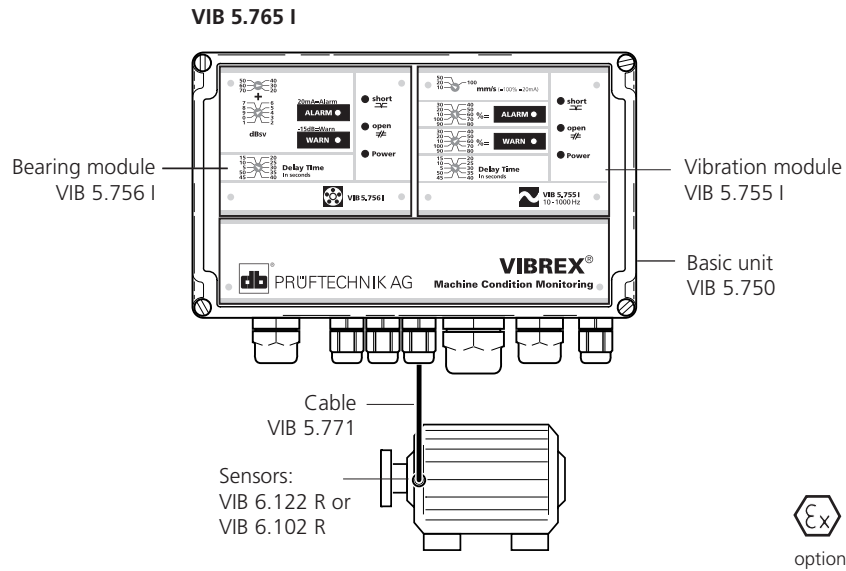
Scope of delivery **VIB 5.764 IX**:

VIB 3.550	PRÜFTECHNIK current limiting device, 2x
VIB 5.750	VIBREX basic unit
VIB 5.756 I	Bearing module, 2x
VIB 5.771	Cable, TNC, 3 meters, 2x
VIB 6.122DEX*	Industrial accelerometer with M8 mounting bolt, intrinsically safe, 2x, <u>or</u>
VIB 6.102DEX*	Industrial accelerometer with adhesive base, intrinsically safe, 2x
VIB 9.610.G	VIBREX instructions

* When ordering, please specify the required sensor.
Other sensor types and cable lengths are available at a surcharge

Combined VIBREX bearing and ISO vibration monitoring, 1 channel

VIB 5.765 I :	Combined VIBREX bearing and ISO vibration monitoring, 1 channel, standard version
VIB 5.765 IUS :	Combined VIBREX bearing and ISO vibration monitoring, 1 channel, U.S. version
VIB 5.765 IX :	Combined VIBREX bearing and ISO vibration monitoring, 1 channel, intrinsic safety



Description

The VIBREX package **VIB 5.765 I** is used to monitor both bearing condition and ISO vibration severity using only one sensor. The U.S. package **VIB 5.765 IUS** provides imperial units.

The VIBREX package **VIB 5.765 IX** contains the required components for use in hazardous environments. The VIBREX basic unit is mounted outside the intrinsically safe area and connected to the sensor within the intrinsically safe area via the PRÜFTECHNIK current limiting device (VIB 3.550).

Scope of delivery **VIB 5.765 IUS:**

- VIB 5.750 VIBREX basic unit
- VIB 5.755 IUS Vibration module, U.S. version (10 Hz...1 kHz, ISO)
- VIB 5.756 I Bearing module
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.132 R Industrial accelerometer for standard machines, UNC 5/16" mounting bolt
- VIB 9.610.G VIBREX instructions

Scope of delivery **VIB 5.765 I:**

- VIB 5.750 VIBREX basic unit
- VIB 5.755 I Vibration module (1 Hz...1 kHz)
- VIB 5.756 I Bearing module
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.122 R* Industrial accelerometer for standard machines, M8 mounting bolt, or
- VIB 6.102 R* Industrial accelerometer for standard machines, adhesive base
- VIB 9.610.G VIBREX instructions

Scope of delivery **VIB 5.765 IX:**

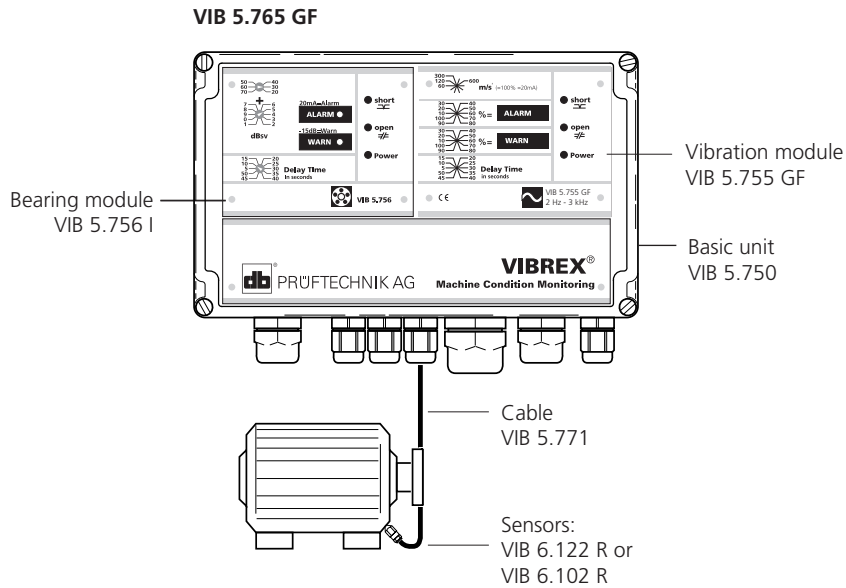
- VIB 3.550 PRÜFTECHNIK current limiting device
- VIB 5.750 VIBREX basic unit
- VIB 5.755 I Vibration module (1 Hz...1 kHz)
- VIB 5.756 I Bearing module
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.122DEX* Industrial accelerometer with M8 mounting bolt, intrinsically safe or
- VIB 6.102DEX* Industrial accelerometer with adhesive base, intrinsically safe
- VIB 9.610.G VIBREX instructions

* When ordering, please specify the required sensor. Other sensor types and cable lengths are available at a surcharge

VIB 5.765 GF : Combined VIBREX bearing and ISO vibration monitoring for gearboxes, 1 channel

1

2



Description

The VIBREX package **VIB 5.765 GF** is used to monitor both bearing condition and vibration on medium-speed gear stages (> 120 rpm) using only one sensor.

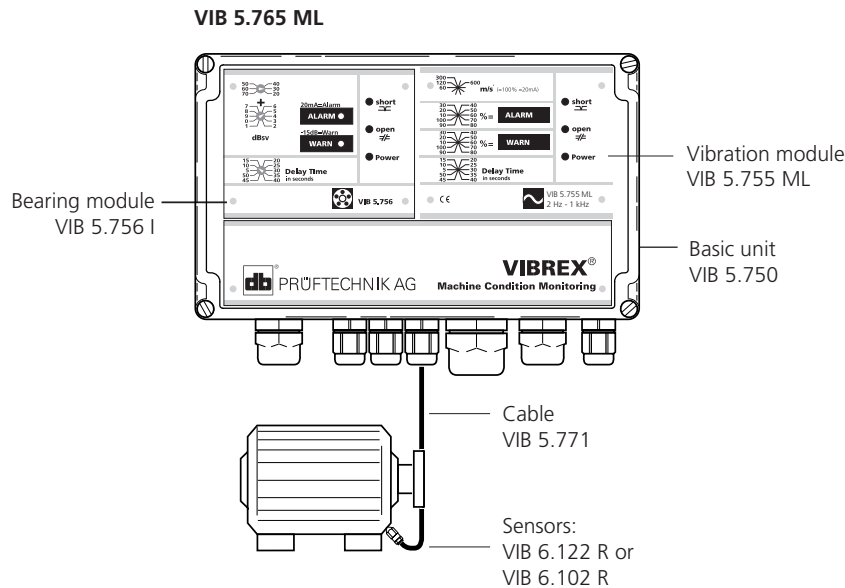
Scope of delivery **VIB 5.765 GF:**

- VIB 5.750 VIBREX basic unit
- VIB 5.755 GF Vibration module (2 Hz...3 kHz)
- VIB 5.756 I Bearing module
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.122 R* Industrial accelerometer for standard machines, M8 mounting bolt, or
- VIB 6.102 R* Industrial accelerometer for standard machines, adhesive base
- VIB 9.610.G VIBREX instructions

* When ordering, please specify the required sensor. Other sensor types and cable lengths are available at a surcharge

VIB 5.765 ML : Combined VIBREX bearing and ISO vibration monitoring for low-speed machines, 1 channel

1
2



Description

The VIBREX package **VIB 5.765 ML** is used to monitor both bearing condition and ISOvibration severity on medium-speed machines (> 120 rpm) using only one sensor.

Scope of delivery VIB 5.765 ML:

- VIB 5.750 VIBREX basic unit
- VIB 5.755 ML Vibration module (2 Hz...1 kHz)
- VIB 5.756 I Bearing module
- VIB 5.771 Cable, TNC, 3 meters
- VIB 6.122 R* Industrial accelerometer for standard machines, M8 mounting bolt, or
- VIB 6.102 R* Industrial accelerometer for standard machines, adhesive base
- VIB 9.610.G VIBREX instructions

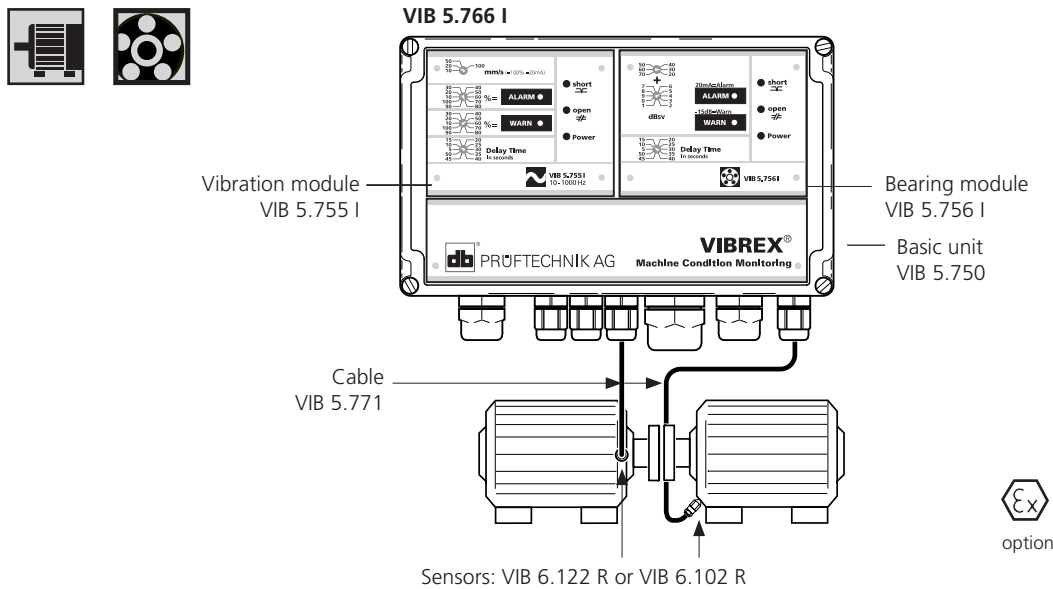
* When ordering, please specify the required sensor. Other sensor types and cable lengths are available at a surcharge

VIBREX bearing condition and vibration monitoring acc. to ISO standards, 2 channels

1

- VIB 5.766 I : VIBREX bearing condition and vibration monitoring acc. to ISO standards, 2 channels, standard version
- VIB 5.766 IUS : VIBREX bearing condition and vibration monitoring acc. to ISO standards, 2 channels, U.S. version
- VIB 5.766 IX : VIBREX bearing condition and vibration monitoring acc. to ISO standards, 2 channels, intrinsic safety

2



Description

The VIBREX 2-channel package **VIB 5.766 I** is used to monitor both ISO vibration severity and bearing condition at two separate measurement locations. The U.S. package **VIB 5.766 IUS** provides imperial units.

The VIBREX package **VIB 5.765 IX** contains the required components for use in hazardous environments. The VIBREX basic unit is mounted outside the intrinsically safe area and connected to the sensors within the intrinsically safe area via the PRÜFTECHNIK current limiting devices (VIB 3.550).

The sensor types can be combined (e.g. VIB 6.122 R and VIB 6.102 R).

Scope of delivery VIB 5.766 I:

- VIB 5.750 VIBREX basic unit
- VIB 5.755 I Vibration module (1 Hz...1 kHz)
- VIB 5.756 I Bearing module
- VIB 5.771 Cable, TNC, 3 meters, 2x
- VIB 6.122 R* Industrial accelerometer for standard machines, M8 mounting bolt, 1x/2x and/ or
- VIB 6.102 R* Industrial accelerometer for standard machines, adhesive base, 1x/2x
- VIB 9.610.G VIBREX instructions

Scope of delivery VIB 5.766 IUS:

- VIB 5.750 VIBREX basic unit
- VIB 5.755 IUS Vibration module, U.S. version (10 Hz...1 kHz, ISO)
- VIB 5.756 I Bearing module
- VIB 5.771 Cable, TNC, 3 meters, 2x
- VIB 6.132 R Industrial accelerometer for standard machines, UNC 5/16" mounting bolt, 2x
- VIB 9.610.G VIBREX instructions

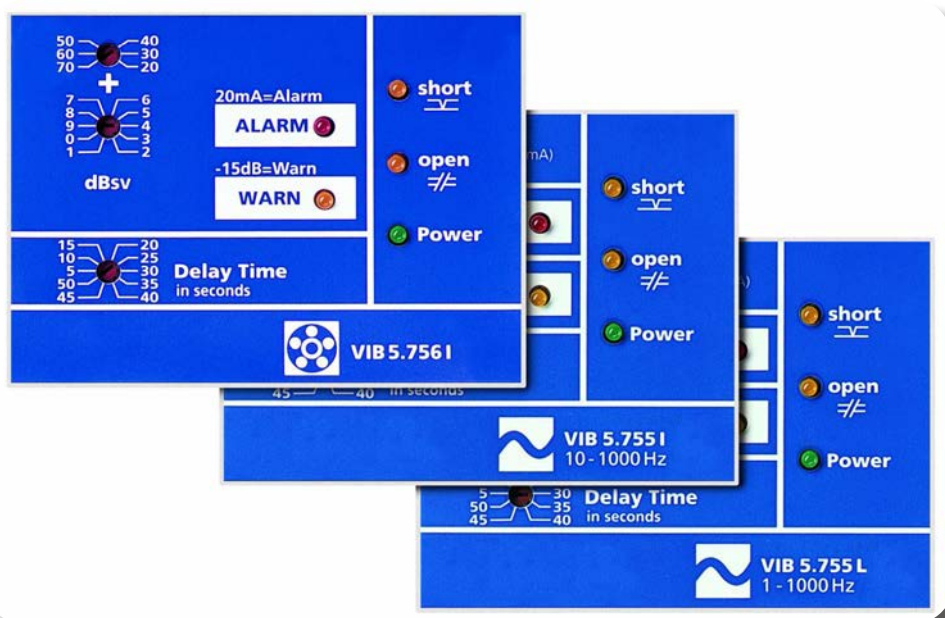
Scope of delivery VIB 5.766 IX:

- VIB 3.550 PRÜFTECHNIK current limiting device, 2x
- VIB 5.750 VIBREX basic unit
- VIB 5.755 I Vibration module (1 Hz...1 kHz)
- VIB 5.756 I Bearing module
- VIB 5.771 Cable, TNC, 3 meters, 2x
- VIB 6.122DEX* Industrial accelerometer with M8 mounting bolt, intrinsically safe 1x/2x and/ or
- VIB 6.102DEX* Industrial accelerometer with adhesive base, intrinsically safe, 1x/2x
- VIB 9.610.G VIBREX instructions

* When ordering, please specify the required sensor. Other sensor types and cable lengths are available at a surcharge

Chapter 2

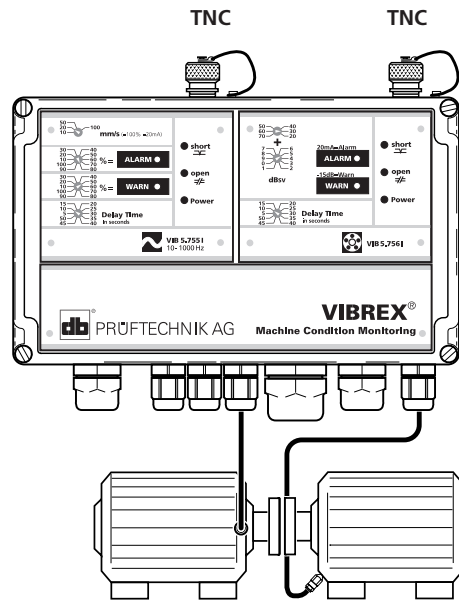
VIBREX spare parts and accessories



VIB 5.790 : VIBREX basic unit with signal output (mV)

1

2



Description

VIBREX is also available with optional separate mV outputs for each module. This output allows, for example, analysis of measurement signals or checking of sensor function. The signal is output via the TNC plug located on top of the corresponding module.

Ordering notes

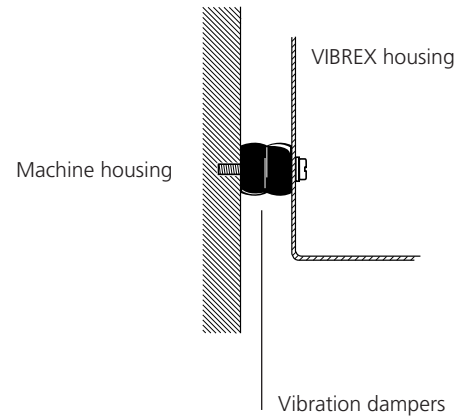
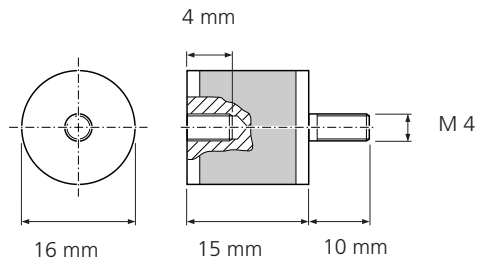
This order number must be added to the regular VIBREX order number in order to obtain the mV output version.

Example: 2-channel vibration monitoring (ISO) with mV output would be ordered as: VIB 5.762 I / VIB 5.790

The VIBREX packages for ICP-type sensors (VIB 5.761 ICP and VIB 5.762 ICP) are equipped with a mV output by default.

PARAMETER		VIB 5.790
Measurement	Output	direct sensor signal (from HW version 2.10 buffered, 100 Ohm)
	Transmission, LineDrive (1µA/ms ²)	1.0 mV/ms ² (= 9,8 mV/g)
	Transmission, LineDrive (5.35 µA/ms ²)	5.35 mV/ms ² (= 52 mV/g)
	Transmission, ICP	10.2 mV/ms ² (= 100 mV/g)
	Frequency response	corresponds to sensor

VIB 5.751 SET : VIBREX mounting kit



Description

The VIBREX housing can be mounted either on a stable, vibration-free wall or attached directly to the machine housing.

If it is mounted on the machine housing, VIBREX must be mounted with vibration dampers to avoid damage from knocks and vibration.

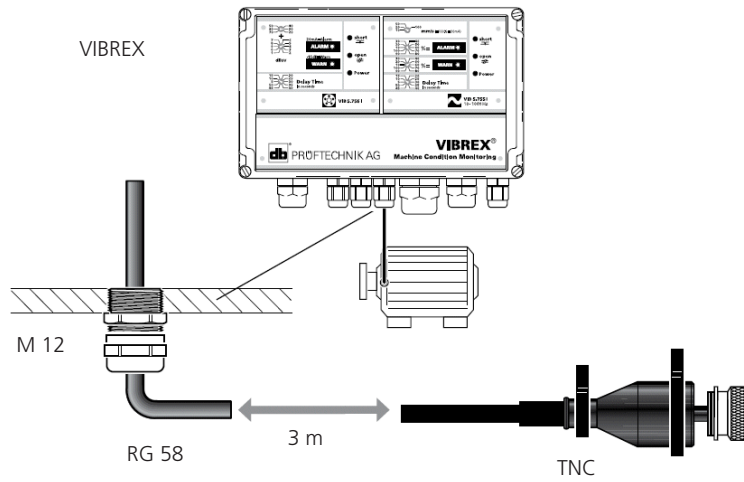
These small parts and the screws required are included in the VIBREX assembly set (VIB 5.751 SET).

Commercial bolts and screws are required for the wall mounting. These small parts are not included in the VIBREX assembly set (VIB 5.751 SET) nor are they contained in the basic packages.

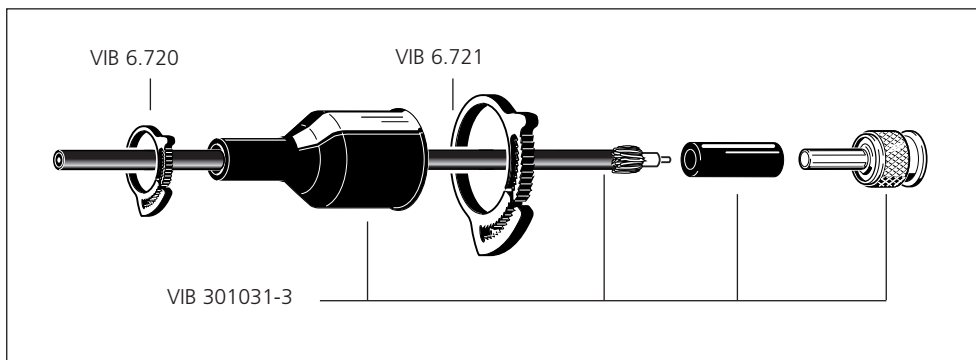
VIB 5.771 : VIBREX sensor cable, 3 meters long

1

2



VIB 5.771 =

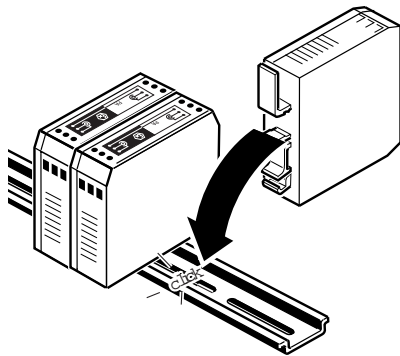


Description

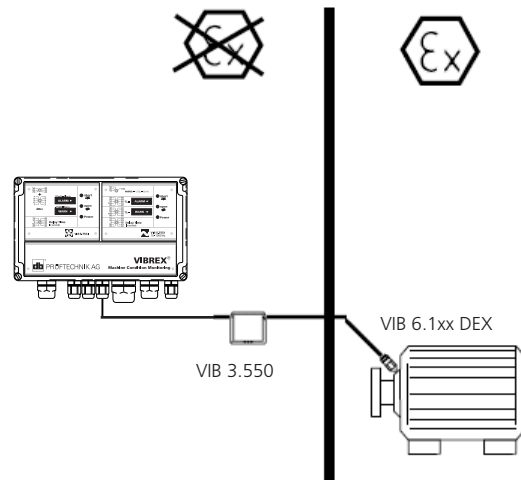
Standard cable for the connection of an industrial accelerometer to VIBREX.

PARAMETER		VIB 5.771
General	Cable type	Coaxial (RG 58)
	Length	3 meters
	Connector	Sensor side: TNC plug VIBREX side: open end

VIB 3.550 : PRÜFTECHNIK limiting device for hazardous areas



CE 0044



Application

The PRÜFTECHNIK limiting device VIB 3.550 is necessary for the safe operation of Current LineDrive accelerometers (type: 6.1xx DEX) mounted in a hazardous area.

The limiting device VIB 3.550 separates an intrinsically safe circuit from a non-intrinsically safe circuit. The limiting device limits the current and the voltage in the intrinsically safe sensor circuit.

Notes

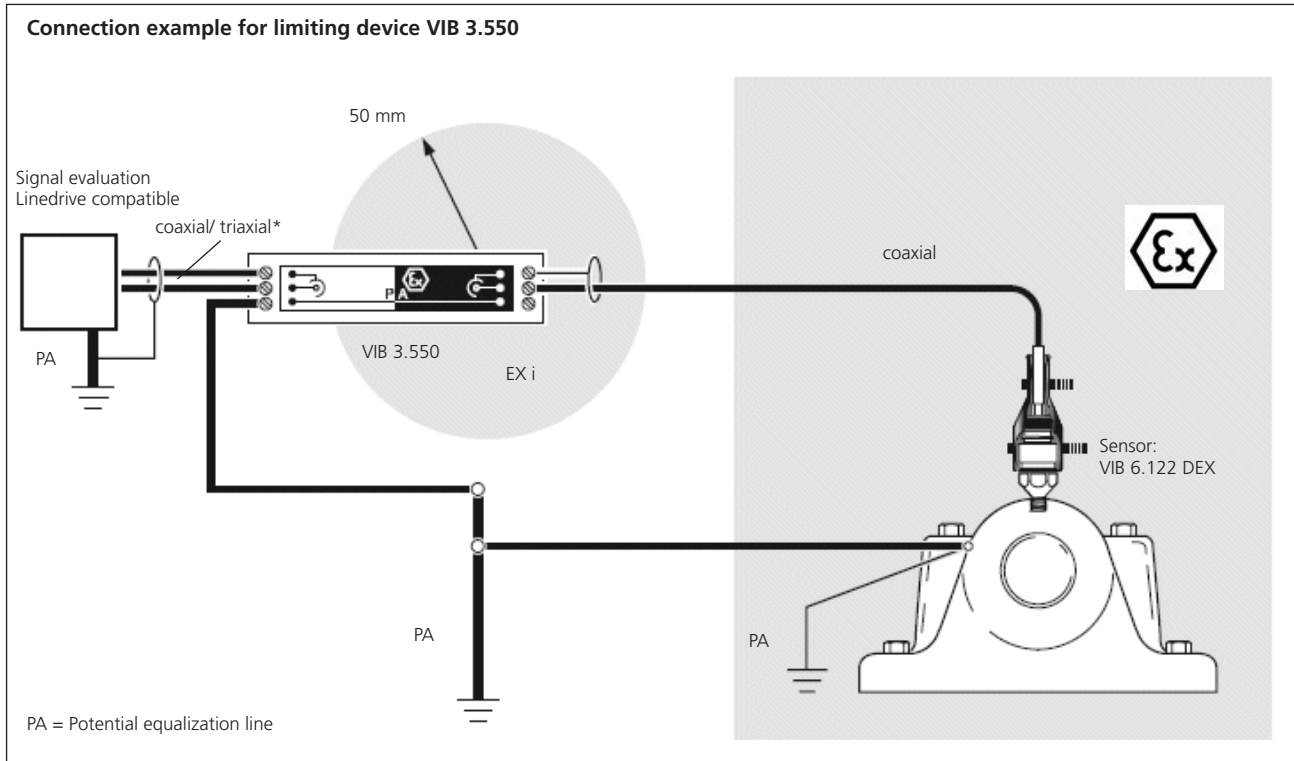
The EC type-examination certificate TÜV 02 ATEX 1849 must be observed.

In particular the european installation instructions (EN 60079-14:1997 and EN 61241-14:2004) and the installations notes for hazardous areas in the PRÜFTECHNIK catalog „Sensors, cables and accessories - LIT 01.700.EN must be followed.

Technical data

PARAMETER		VIB 3.550
Electrical	Nominal supply U_n	12V DC ($\pm 10\%$)
	Current drain	3.5mA DC + AC Signal
	Signal	Current Linedrive (e.g. $1\mu\text{A}/\text{ms}^2$)
	Accuracy	Signal sensor accuracy
	Non-intrinsically safe circuit (terminals IN+ IN- PA1)	$U_m = 250\text{ V AC}$
	Intrinsically safe circuit (terminals OUT+ OUT- PA2)	in type of protection Intrinsic Safety EEx ib IIC Maximum values: $U_0 = 13\text{ V}$ $I_0 = 18\text{ mA}$ $P_0 = 240\text{ mW}$ $C_0 = 300\text{ nF}$ $L_0 = 1\text{ mH}$
General	Ambient temperature, T_A	$-10^\circ\text{C} \dots +50^\circ\text{C}$
	Case material	PA6.6, green
	Environmental protection	IP 20
	Dimensions (HxWxT)	85 x 79 x 22.5 mm
EX	Intrinsic safety	II (2) G [EEx ib] IIC

1
2



Index by order number

Order no.	Page	Order no.	Page
VIB 3.550	10, 27	VIB 5.761 X.....	13
VIB 5.573 ICP	8	VIB 5.762 G.....	16
VIB 5.750	8, 10	VIB 5.762 GF	16
VIB 5.751 SET.....	25	VIB 5.762 I	14
VIB 5.752	8	VIB 5.762 ICP	14
VIB 5.753	10	VIB 5.762 IX.....	14
VIB 5.754	10	VIB 5.762 L.....	15
VIB 5.755 G.....	7	VIB 5.762 ML	15
VIB 5.755 GF.....	7	VIB 5.763 I	17
VIB 5.755 GS.....	7	VIB 5.763 IX.....	17
VIB 5.755 I	7	VIB 5.764 I	18
VIB 5.755 ICP	7	VIB 5.764 IX.....	18
VIB 5.755 IH	7	VIB 5.765 GF	20
VIB 5.755 IS.....	7	VIB 5.765 I	19
VIB 5.755 IV	7	VIB 5.765 IX.....	19
VIB 5.755 L.....	7	VIB 5.765 ML	21
VIB 5.755 ML	7	VIB 5.766 I	22
VIB 5.756 I	7	VIB 5.766 IX.....	22
VIB 5.757 G.....	7	VIB 5.771	10, 26
VIB 5.757 R	7	VIB 5.790	24
VIB 5.761	13	VIB 6.102DEX.....	10
VIB 5.761 G.....	12	VIB 6.102 R	10
VIB 5.761 GF	12	VIB 6.107	11
VIB 5.761 I	10	VIB 6.122DEX.....	10
VIB 5.761 ICP	10	VIB 6.122 R	10
VIB 5.761 IX.....	10	VIB 6.127	11
VIB 5.761 L.....	11	VIB 6.132 R	10
VIB 5.761 ML	11	VIB 9.610.G.....	10

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Productive maintenance technology