

PRÜFTECHNIK Catalog

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CONTENTS

What's new	8
INDEX	13
VIBXPART II – Dual channel FFT data collector	18
VIBSCANNER 2 – Data acquisition ingeniously simple	26
VIBXPART EX – Condition monitoring in explosive atmospheres (Zone 1)	31
VIBSCANNER – Data collector and signal analyzer	40
SONOCHEK - Digital Ultrasonic Measuring Device	47
Airborne Sound Sensor DBS10	54
Structure-borne Sound and Temperature Sensor DBS20	56
SONOCHEK Parabolic Sensor DBS30	58
Ultrasonic Transmitter DBT10	60
SONOLEVEL DATAVIEWER	62
Case for VIBSCANNER	66
Case for VIBSCANNER 2	67
Wheeled case for VIBXPART II	68
Case for VIBXPART EX	69
Carrying pouch for VIBSCANNER 2	70
Carrying bag and strap for VIBXPART EX	71
Carrying pouch with accessories for VIBXPART II	72
VIBSCANNER pouch	73
Charger for VIBSCANNER	74
Charger for VIBXPART EX	75
Charger for VIBXPART II	76
Charging station for VIBXPART II rechargeable battery	77
Rechargeable battery for VIBSCANNER	78
Rechargeable battery for VIBXPART II	79
VIBGUARD – Simultaneous monitoring and diagnosis	82
VIBGUARD compact – Condition Monitoring for individual assets	85
VIBGUARD portable – on the road diagnosis specialist	87
VIBREX – Continuous monitoring of one or two locations	89
Mounting kit for VIBREX basic unit	94

Industrial CLD accelerometers for permanent installation	98
Mobile industrial CLD accelerometer	101
Industrial CLD accelerometers for use in liquid media	104
Industrial CLD accelerometer with built-in temperature sensor	107
Mini CLD accelerometer	110
"Wind" CLD accelerometer	113
Accelerometer (IEPE)	116
Hybrid triaxial accelerometers, permanent mounting	119
Hybrid triaxial accelerometer, mobile version	122
VIBCODE vibration transducer	124
Accelerometer with quick fitting coupling	126
Triaxial accelerometer	128
Mono headphones	131
VIBROTECTOR vibration transmitters	132
RPM sensors for VIBRONET Signalmaster	136
Laser trigger / RPM sensor	139
LED stroboscope	141
Displacement sensor for VIBXPERT II	143
Displacement sensor (for VIBGUARD)	145
Default RPM sensor for stationary measurement systems	147
Current clamp (400 A AC / 600 A DC)	149
Temperature probes	151
WEARSCANNER particle distribution counter	152
IP68 option for industrial accelerometers	156
Mounting adapters for vibration sensors	158
Dust caps for industrial CLD accelerometers	164
Stand and accessories for laser trigger / RPM sensor	167
VIBCODE measurement studs	169
Accessories for VIBCODE measurement studs	172
Measurement studs	174
Tools for installation of accelerometers	176
Ethernet cable for VIBXPERT II	178
VIBSCANNER channel switches	179
Communication adapter and USB cable for VIBXPERT EX	181

Serial PC cables - RS232	183
USB cables for VIBXPERT II	185
Pre-assembled sensor cables and adapters for CLD accelerometers (portable devices)	188
Cable adapter for VIBXPERT II	189
Pre-assembled sensor cables for measuring low signal voltage/low signal current, portable measuring devices	191
Cables for signal output – handheld devices	194
Pre-assembled sensor cable and adapter for trigger / RPM sensor (portable devices)	195
Pre-assembled sensor cables and adapters for voltage-supplied sensors (handheld devices)	199
Connection cable for field multiplexer on VIBXPERT II	201
Extension cable for analog measuring channel, portable devices	202
Sensor cables and adapters for VIBSCANNER 2	203
Overview: Sensor cables for portable instruments	205
Partly pre-assembled connection cable for WEARSCANNER	212
Partly pre-assembled sensor cable for VIBREX	213
Sensor cable with 2-pin MIL connector	214
Partly pre-assembled sensor cable with 4-pole M12 plug-in connector, angled	216
Partly pre-assembled sensor cable with 4-pole M12 plug-in connector, straight	217
Industrial Ethernet cable CAT5	220
Coaxial cable	221
Multi-core sensor cable (Multi-TP)	223
Triaxial cable	225
Two-core sensor cables	226
Intrinsic safety barriers	230
Junction boxes for the extension of cables	232
Protective sleeve und heat shrink sleeve	236
Shield connector for sensor cables	237
Conduit for coaxial cable	239
Plugs, sockets, terminal holders for bulkhead connectors	240
Switchbox channel switch for 12 channels	243
Tools for cable installation	245
OMNITREND Center	248
OMNITREND PC Software	249

VIBXPERT utility	251
ROTALIGN touch– Intelligent Shaft Alignment	254
OPTALIGN touch– Shaft alignment	257
OPTALIGN smart RS5 BT– Exact shaft alignment	260
ROTALIGN touch EX– Shaft alignment in Zone 1	265
ROTALIGN smart RS5 EX– Shaft alignment in explosive atmospheres	270
SHAFTALIGN OS3– fast and cost-effective shaft alignment	275
tab@lign– Shaft alignment on mobile devices	280
Live Trend Add-on	283
Multi-Coupling add-on (sensALIGN 7)	284
Multi-Coupling add-on (sensALIGN 5)	287
PULLALIGN – Precise belt pulley alignment	289
touch device	294
sensALIGN 5	295
sensALIGN 7	297
AC power supply / Battery charger	299
Vibration measuring probe	300
ROTALIGN Ultra Computer	301
INCLINEO – High-precision Inclination Measurements	304
INCLINEO & ROTALIGN Ultra Hydropower	307
ROTALIGN Ultra iS - Flatness (LEVALIGN Add-on)	309
ROTALIGN Ultra iS – Add-on for Straightness Measurement	313
LEVALIGN expert – Geometrical 2D Measurements	314
CENTRALIGN Ultra – Bore Alignment	317
Long Range Laser	322
Brackets selection guide	326
Chain-type Brackets	327
Measuring Fixtures for Cardan Shafts	330
Compact Magnetic Bracket	333
Sensor Bracket for Small Bore Measurements	335
Extra-thin Brackets	337
Universal Holder	339
Large Bore Bracket - LBB	341
Magnetic Foot Holder for Laser and Sensor	344

Universal Magnetic Bracket	347
Magnetic Bracket for Horizontal and Vertical Surfaces	350
Magnetic Sliding Bracket for Shafts and Flanges	351
Universal Magnetic Sliding Bracket	353
CENTRALIGN Mounting Bridge	355
Universal Mounting Bridge	357
PERMAFIX Bracket	359
Universal Pointer Bracket - UPB	361
Floor stand with rotatable sensor holder	365
Tripod stand for LEVALIGN Laser	366
Rotatable Magnetic Bracket	370
Anti-torsion Bridges	371
Mounting Adapters	373
Plunger for Flatness Measurement	376
Sensor holder for flatness measurements (LEVALIGN expert)	377
Posts	379
PERMABLOC Precut Shims	382
LAMIBLOC Laminated Shims	386
ARC 4.0 - ALIGNMENT RELIABILITY CENTER 4.0	388
ALIGNMENT CENTER	389
GEO CENTER	391
INCLINEO - Technical Data	399
LEVALIGN expert - Technical Data	400
EDDYTHERM Portable – Simple bearing assembly	402
EDDYTHERM 2x – Reliable bearing assembly	404
EDDYTHERM 4x – Professional assembly	407

What's new

The following additions and changes are reflected in version **10.2019**.

New

- "EDDYTHERM 4x – Professional assembly", **p. 407** - powerful, induction heater for large workpieces

Corrected

- "Laser trigger / RPM sensor", **p. 139** - technical data updated
- "VIBSCANNER 2 – Data acquisition ingeniously simple ", **p. 26** - in the Triaxial package VIB 5.212 the magnetic holder VIB 6.656 replaces VIB 6.657.

Discontinued

- LEVALIGN Ultra, among others also the GEO Center packages ALI 13.231, ALI 13.232
- PENTALIGN, among others also the GEO Center packages ALI 6.949-IS, ALI 6.950
- EDDYTHERM Portable package 120V 60Hz, ETH 15.120-CSA
- EDDYTHERM 2x package 120V 60Hz, ETH 16.120-CSA

PREVIOUS VERSIONS

08.2019

- "ROTALIGN touch EX– Shaft alignment in Zone 1", **p. 265** - New shaft alignment tool for hazardous areas

06.2019

New

- "GEO CENTER", **p. 391**- sensALIGN 7 add-on, ALI 13.241.
- "Universal Pointer Bracket - UPB", **p. 361** - UPB version for sensALIGN 7, ALI 2.719-GEO

04.2019

New

- "Mounting adapters for vibration sensors", **p. 158** - magnetic holder w/ M6 mounting hole, VIB 6.656.
- "Mounting Adapters", **p. 373** - 2 new offset adapters for shaft alignment, ALI 2.244-IS and ALI 2.244-LIS.
- "Sensor holder for flatness measurements (LEVALIGN expert)", **p. 377**, ALI 6.963-1 and ALI 6.964-1 added to the catalog.
- Vibration sensors: technical data revised.

Discontinued

- Coaxial cable for EX zone, VIB 90006.
- Multi server license for OMNITREND Center, VIB 8.206.
- VIBSCANNER accessories case, VIB 5.429.

02.2019

New

- "VIBSCANNER 2 – Data acquisition ingeniously simple ", **p. 26** - New variant "VIBSCANNER 2 Hybrid Triaxial, VIB 5.213"

Discontinued / Replaced

- "PERMABLOC Precut Shims", **p. 382** - PERMABLOC cases **ALI 2.86x-P** are replaced by PERMABLOC ruggedized trolley cases **ALI 2.86x-KP** (x= 0-4,6).

Year 2018

12.2018

New

- "VIBGUARD – Simultaneous monitoring and diagnosis ", **p. 82** - New 16-channel module, available in two variants: VIB 7.811-PS and VIB 7.811-SDH.

Corrected

- "Switchbox channel switch for 12 channels", **p. 243** - VIBSCANNER 2 added to compatibility list.
- "Extra-thin Brackets", **p. 337** - minimum shaft diameter and illustration added.
- "ROTALIGN smart RS5 EX– Shaft alignment in explosive atmospheres", **p. 270** - battery type changed

Discontinued / Replaced

- "Pre-assembled sensor cable and adapter for trigger / RPM sensor (portable devices)", **p. 195** - Keyphaser adapter VIB 5.332 is replaced by VIB 5.332 X.
- "USB cables for VIBXPERT II", **p. 185** - USB pendrive (1 GB), VIB 5.330-USB is replaced by USB pendrive (4 GB), VIB 5.350-USB
- "CENTRALIGN Ultra – Bore Alignment", **p. 317** - Cable for BT module ALI 4.505-0.5 replaced by cable ALI 3.905-0.5
- "Multi-Coupling add-on (sensALIGN 7)", **p. 284** - In variant ALI 40.900 the case ALI 4.820 has been replaced by case ALI 4.826.
- "Mini CLD accelerometer", **p. 110** - the following mini accelerometers are discontinued:
 - VIB 6.202-3
 - VIB 6.202-20
 - VIB 6.202-3XD
 - VIB 6.203-3
 - VIB 6.203-20
 - VIB 6.203-3XD
 - VIB 6.203-20XD

10.2018

New

- "SONOLEVEL DATAVIEWER ", **p. 62**
- "Ultrasonic Transmitter DBT10 ", **p. 60**

Corrected

- "Shield connector for sensor cables ", **p. 237** - VIB 6.726-100 replaces VIB 6.725-100
- "Sensor cable with 2-pin MIL connector", **p. 214** - Sensor cables VIB 5.742 and VIB 5.743 removed, new sensor cable: VIB 309007-L

- "SONOCHEK - Digital Ultrasonic Measuring Device", **p. 47** - scope of delivery has changed
- "Live Trend Add-on", **p. 283** - scope of delivery has changed
- Terminology: The abbreviation "ICP" is replaced by the abbreviation "IEPE".

09.2018

- "OPTALIGN touch- Shaft alignment", **p. 257**- ALI 51.000 xxx
- "Multi-Coupling add-on (sensALIGN 5)", **p. 287**- ALI 50.901
- Renaming of the Shaft alignment sensors family:
 - sensALIGN = sensALIGN 7
 - RS 5 BT = sensALIGN 5

06.2018

New

- "Long Range Laser", **p. 322**
- "Brackets selection guide", **p. 326**
- "Overview: Sensors for portable instruments", **p. 95**
- "Overview: Sensor cables for portable instruments", **p. 205**

Corrected

- "Live Trend Add-on", **p. 283**- PERMAFIX case - ALI 2.197 replaces ALI 2.192
- "USB cables for VIBXPART II", **p. 185**- Cable for USB pen drive - VIB 5.330AMEM replaces VIB 5.330-MEM
- "Accessories for VIBCODE measurement studs", **p. 172**- Technical data for protective cap and code ring added.
- "Sensor cable with 2-pin MIL connector", p. 214- Sensor cable replacement - VIB 5.742 replaces VIB 5.740 and VIB 5.741 replaces VIB 5.743.
- sensALIGN sensor ALI 4.900I replaces ALI 4.900 - various delivery packages
- Various corrections and additions.

02.2018

New

- "VIBSCANNER 2 – Data acquisition ingeniously simple ", **p. 26** - VIB 5.200
- "Tripod stand for LEVALIGN Laser", **p. 366** - ALI 6.956
- "Floor stand with rotatable sensor holder ", **p. 365** - ALI 6.967
- " Three-point magnetic holder,", **p. 340** - ALI BV26.MP
- "Accelerometer with quick fitting coupling", **p. 126** - VIB 8.666 R
- "Measurement studs", **p. 174** - VIB 32xxx / VIB 33000
- "Numerical Index", p. 1

Corrected

- "VIBREX – Continuous monitoring of one or two locations", **p. 89**
- "Dust caps for industrial CLD accelerometers", **p. 164**
- Various corrections and additions

INDEX

A

- ALI 12.010 EX - p. 270
ALI 12.011 EX - p. 270
ALI 12.015-RS5 - p. 260
ALI 12.015-RS5R - p. 260
ALI 12.200 - p. 260
ALI 12.200 EX - p. 270
ALI 12.500 - p. 271
ALI 12.551 - p. 262
ALI 12.651-I - p. 299
ALI 12.713 - p. 262
ALI 12.715 - p. 262
ALI 12.718 - p. 262
ALI 12.723 - p. 262
ALI 12.725 - p. 262
ALI 12.731 - p. 262
ALI 12.807 - p. 262
ALI 12.809 EX - p. 271
ALI 13.000-21 - p. 389
ALI 13.000-4 - p. 389
ALI 13.000-7 - p. 389
ALI 13.000-9 - p. 389
ALI 13.200-USB - p. 391
ALI 13.211 - p. 393
ALI 13.212 - p. 393
ALI 13.221 - p. 393
ALI 13.241 - p. 393
ALI 13.500 - p. 390
ALI 13.510 - p. 390
ALI 13.520 - p. 390
ALI 13.530 - p. 390
ALI 13.540 - p. 390
ALI 14.310 - p. 350
ALI 17.000-21 - p. 388
ALI 17.000-4 - p. 388
ALI 17.000-50 - p. 388
ALI 17.000-7 - p. 388
ALI 18.000 - p. 304
ALI 18.003 - p. 304
ALI 18.201 - p. 304
ALI 18.500 - p. 304
ALI 18.501-150 - p. 304
ALI 18.502-150 - p. 304
ALI 2.002SET - p. 289
ALI 2.003SET - p. 289
ALI 2.004 SET - p. 289
ALI 2.100 - p. 289
ALI 2.109 SET - p. 337
ALI 2.109LSET - p. 337
ALI 2.112 - p. 333
ALI 2.112 SET-S - p. 333
ALI 2.113 SET - p. 327
ALI 2.114 - p. 328
ALI 2.115 - p. 328
ALI 2.116 - p. 328
ALI 2.117 - p. 328
ALI 2.118 - p. 327
ALI 2.131 - p. 289
ALI 2.170 - p. 379
ALI 2.171 - p. 379
ALI 2.172 - p. 379
ALI 2.173 - p. 379
ALI 2.174 - p. 379
ALI 2.175 - p. 379
ALI 2.177 - p. 379
ALI 2.178 - p. 379
ALI 2.179 - p. 379
ALI 2.190 - p. 359
ALI 2.191 - p. 371
ALI 2.193 - p. 283
ALI 2.194 - p. 359
ALI 2.197 - p. 283
ALI 2.2117 - p. 379
ALI 2.220 - p. 353
ALI 2.220 SET - p. 353
ALI 2.230-1 - p. 351
ALI 2.244-IS - p. 373
ALI 2.244-LIS - p. 373
ALI 2.300 - p. 289
ALI 2.302 - p. 289
ALI 2.303 - p. 289
ALI 2.450 - p. 330
ALI 2.451 - p. 327
ALI 2.452 - p. 328
ALI 2.460 - p. 330
ALI 2.461 - p. 327
ALI 2.462 - p. 328
ALI 2.463 - p. 372
ALI 2.464 - p. 372
ALI 2.480 - p. 331
ALI 2.500 - p. 382
ALI 2.521 - p. 386
ALI 2.522 - p. 386
ALI 2.523 - p. 386
ALI 2.524 - p. 386
ALI 2.525 - p. 386
ALI 2.526 - p. 386
ALI 2.527 - p. 386
ALI 2.528 - p. 386
ALI 2.529 - p. 386
ALI 2.715 - p. 357
ALI 2.716 - p. 357
ALI 2.717 - p. 357
ALI 2.718 - p. 357
ALI 2.719 - p. 361
ALI 2.719-GEO - p. 361
ALI 2.760 SET - p. 361
ALI 2.761-IS - p. 347
ALI 2.761 SETIS - p. 347
ALI 2.766 - p. 362
ALI 2.772 - p. 362
ALI 2.773-110 - p. 362
ALI 2.773-270 - p. 361
ALI 2.773-415 - p. 362
ALI 2.777-255 - p. 362
ALI 2.777-500 - p. 362
ALI 2.778 - p. 371
ALI 2.782-1 - p. 362
ALI 2.782-2 - p. 362
ALI 2.782-3 - p. 362
ALI 2.783-M - p. 362
ALI 2.783-P - p. 362
ALI 2.783-S - p. 361-362
ALI 2.784-M - p. 362
ALI 2.789 - p. 361, 374
ALI 2.789-GEO - p. 362,
375
ALI 2.803 - p. 290
ALI 2.805 - p. 289
ALI 2.860-KP - p. 385
ALI 2.861-KP - p. 385
ALI 2.862-KP - p. 385
ALI 2.863-KP - p. 385
ALI 2.864-KP - p. 385
ALI 2.866-KP - p. 385
ALI 2.874 SETIS - p. 330
ALI 2.875 - p. 331
ALI 2.876 - p. 331
ALI 2.893 SETIS - p. 330
ALI 2.894 - p. 331
ALI 2.896 - p. 331
ALI 21.003 - p. 275
ALI 21.003-BR - p. 275
ALI 21.200 - p. 276
ALI 21.210 - p. 276
ALI 21.713 - p. 276
ALI 21.715 - p. 276
ALI 21.718 - p. 276
ALI 21.719 - p. 276
ALI 21.720 - p. 276
ALI 21.721 - p. 276
ALI 21.722 - p. 276
ALI 21.726 - p. 277
ALI 21.900 - p. 280
ALI 24.651 - p. 299
ALI 25.003 - p. 280
ALI 25.804 - p. 280
ALI 3.115-C - p. 342
ALI 3.115-O - p. 342
ALI 3.116... - p. 342
ALI 3.194-IS - p. 374
ALI 3.231-075 - p. 355
ALI 3.231-100 - p. 355
ALI 3.231-200 - p. 355
ALI 3.241-075 SET - p. 355
ALI 3.241-100 SET - p. 355
ALI 3.242-075 SET - p. 355
ALI 3.242-100 SET - p. 355
ALI 3.274 - p. 343
ALI 3.298 - p. 342
ALI 3.389-130 - p. 343
ALI 3.400 - p. 342
ALI 3.889 - p. 363
ALI 3.900 EX - p. 265, 271
ALI 3.901 - p. 260
ALI 3.905-0.28 - p. 277
ALI 3.910 - p. 260
ALI 3.910 EX - p. 265, 271
ALI 3.953 - p. 260
ALI 4.005/2-10 - p. 283
ALI 4.005/2-20 - p. 283
ALI 4.040/2 - p. 314
ALI 4.046 - p. 309
ALI 4.050/2 - p. 307
ALI 4.056 - p. 307
ALI 4.060 - p. 317
ALI 4.061 - p. 317
ALI 4.500 - p. 374
ALI 4.501-IS - p. 344
ALI 4.621 EX - p. 265, 272

ALI 4.621i - p. 276-277	ALI BV26.MP - p. 339	SON 6.110-1 - p. 48, 54	VIB 3.570-L - p. 214
ALI 4.651 - p. 299	ALI BV26.RE - p. 339	SON 6.110-2 - p. 48, 54	VIB 3.575-10 - p. 216
ALI 4.900I - p. 255	ALI BV26.xx - p. 339	SON 6.110-3 - p. 48, 54	VIB 3.575-20 - p. 216
ALI 4.905 - p. 300	ALI BV27.xx.yy - p. 339	SON 6.120 - p. 56	VIB 309007-L - p. 214
ALI 4.910 - p. 255		SON 6.120-3 - p. 56	VIB 32000 - p. 174
ALI 4.960 - p. 255	E	SON 6.120-4 - p. 56	VIB 32010 - p. 174
ALI 40.006 - p. 309	ETH 15.010 - p. 402	SON 6.120-5 - p. 56	VIB 32200 - p. 174
ALI 40.007 - p. 313	ETH 15.015 - p. 402	SON 6.121 - p. 56	VIB 32210 - p. 174
ALI 40.900 - p. 284	ETH 15.023 - p. 402	SON 6.200 - p. 47	VIB 32310 - p. 174
ALI 5.106 - p. 277	ETH 15.100 - p. 402	SON 6.401 - p. 47	VIB 32410 - p. 174
ALI 50.000 CAM - p. 254	ETH 15.115 - p. 402	SON 6.402 - p. 47	VIB 33000 - p. 174
ALI 50.000 FULL - p. 254	ETH 15.230 - p. 402	SON 6.403 - p. 47	VIB 4.750-5 - p. 195
ALI 50.000 MOB - p. 254	ETH 15.330 - p. 405	SON 6.501 - p. 48	VIB 5.200 - p. 26
ALI 50.000 STD - p. 254	ETH 15.340 - p. 405	SON 6.502 - p. 48	VIB 5.210 - p. 26
ALI 50.200-CAM - p. 255, 258	ETH 15.390 - p. 402	SON 6.510 - p. 48	VIB 5.212 - p. 26
ALI 50.200-FULL - p. 255, 258	ETH 16.012 - p. 405	SON 6.520 - p. 60	VIB 5.213 - p. 26
ALI 50.200-MOB - p. 255, 258	ETH 16.020 - p. 405	SON 6.600 - p. 47	VIB 5.214 - p. 26
ALI 50.200-STD - p. 255, 258	ETH 16.040 - p. 405	SON 6.601 - p. 47	VIB 5.222 - p. 204
ALI 50.250 - p. 256, 259	ETH 16.050 - p. 405	SON 6.701 - p. 48	VIB 5.228 - p. 67
ALI 50.651 - p. 299	ETH 16.120 - p. 404	SON 6.702 - p. 48	VIB 5.234 - p. 204
ALI 50.801 - p. 255	ETH 16.200 - p. 404	SON 6.703 - p. 48	VIB 5.236 - p. 203
ALI 50.900 - p. 284	ETH 16.301 - p. 405	SON 6.710-USB - p. 62	VIB 5.237 - p. 203
ALI 50.901 - p. 287	ETH 16.302 - p. 405	SON 6.800 - p. 48	VIB 5.238 - p. 203
ALI 51.000 CAM - p. 257	ETH 16.303 - p. 405	V	VIB 5.239 - p. 203
ALI 51.000 FULL - p. 257	ETH 16.310 - p. 405	VIB 10473 - p. 241	VIB 5.256 - p. 70
ALI 51.000 MOB - p. 257	ETH 16.314 - p. 405	VIB 3.306 - p. 167	VIB 5.300 EX - p. 32
ALI 51.000 STD - p. 257	ETH 16.320 - p. 405	VIB 3.411 - p. 158	VIB 5.310 - p. 18
ALI 51.800 - p. 258	ETH 16.328 - p. 405	VIB 3.412 - p. 158	VIB 5.310-1 - p. 18
ALI 52.000-Z1 - p. 265	ETH 16.340 - p. 405	VIB 3.413 - p. 158	VIB 5.310-1E - p. 18
ALI 52.000-Z1.NA - p. 265	ETH 16.355 - p. 405	VIB 3.417-M5 - p. 159	VIB 5.310-2 - p. 18
ALI 52.800 EX - p. 266	ETH 16.400 - p. 404	VIB 3.417-M6 - p. 159	VIB 5.310 B - p. 18
ALI 6.773 - p. 376	ETH 16.500 - p. 404	VIB 3.418 - p. 159	VIB 5.311 - p. 18
ALI 6.954 - p. 370	ETH 17.440 - p. 407	VIB 3.420 - p. 159	VIB 5.311-CH2 - p. 18
ALI 6.956 - p. 366	ETH 17.441 - p. 407	VIB 3.422 - p. 159	VIB 5.312-P - p. 249
ALI 6.957 - p. 366	ETH 7305 - p. 407	VIB 3.423 - p. 160	VIB 5.315-REC - p. 20
ALI 6.958 - p. 366	ETH 7640 - p. 407	VIB 3.430 - p. 159	VIB 5.316-BAL - p. 20
ALI 6.959 - p. 367	ETH 7641 - p. 407	VIB 3.431 - p. 158	VIB 5.317-B - p. 18
ALI 6.960 - p. 366	ETH 7647 - p. 407	VIB 3.433 - p. 160	VIB 5.318-E - p. 18
ALI 6.963-1 - p. 377	ETH 7648 - p. 407	VIB 3.435 - p. 159	VIB 5.319-ODS - p. 20
ALI 6.964-1 - p. 377	L	VIB 3.436 - p. 159	VIB 5.320-INT - p. 76
ALI 6.966 - p. 373	LI 52.200-Z1 - p. 265	VIB 3.437 - p. 160	VIB 5.322-INT - p. 75
ALI 6.967 - p. 365	S	VIB 3.438 - p. 160	VIB 5.322-X - p. 75
ALI 6.968 - p. 367	SON 6.001 - p. 47	VIB 3.439 - p. 160	VIB 5.324 - p. 77
ALI BV25 - p. 335	SON 6.010 - p. 58	VIB 3.440 - p. 159	VIB 5.325 - p. 79
ALI BV26 - p. 339	SON 6.020 - p. 56	VIB 3.450 - p. 159	VIB 5.327 - p. 68
	SON 6.110 - p. 48, 54	VIB 3.480 - p. 160	VIB 5.329-X - p. 69
		VIB 3.550 - p. 230	VIB 5.330 MEM - p. 185
			VIB 5.330 SUSB - p. 185

VIB 5.330 UNV - p. 181	VIB 5.436 - p. 188	VIB 6.129 IP - p. 104	VIB 6.775/9 - p. 232
VIB 5.331 - p. 178	VIB 5.437-2,9 - p. 188	VIB 6.142 DEX - p. 101	VIB 6.776 - p. 232
VIB 5.332 X - p. 195	VIB 5.437-5 - p. 188	VIB 6.142 R - p. 101	VIB 6.780 - p. 241
VIB 5.333 - p. 195	VIB 5.438-0,5 - p. 189	VIB 6.147 - p. 101	VIB 6.785 - p. 243
VIB 5.336 - p. 189	VIB 5.443 - p. 195	VIB 6.147 DEX - p. 101	VIB 7.780 - p. 249
VIB 5.338 - p. 181	VIB 5.444-5 - p. 202	VIB 6.163 - p. 107	VIB 7.780-DR - p. 249
VIB 5.339 - p. 202	VIB 5.445 - p. 179	VIB 6.164-10 - p. 217	VIB 7.780-P - p. 249
VIB 5.341 - p. 199	VIB 5.446 - p. 179	VIB 6.172 - p. 116	VIB 7.800 - p. 82
VIB 5.342 - p. 199	VIB 5.448 - p. 183	VIB 6.195 - p. 113	VIB 7.800-MOB - p. 87
VIB 5.343 - p. 199	VIB 5.449-CLD - p. 188	VIB 6.202 - p. 110	VIB 7.800-MOBIPC - p. 87
VIB 5.344 - p. 199	VIB 5.449-ICP - p. 189	VIB 6.203 - p. 110	VIB 7.810 - p. 82
VIB 5.345-6 - p. 189	VIB 5.454 - p. 73	VIB 6.210 - p. 116	VIB 7.811 - p. 82
VIB 5.346 - p. 201	VIB 5.460 - p. 40	VIB 6.215 - p. 119	VIB 7.815 - p. 82
VIB 5.346-MUX - p. 201	VIB 5.460 EX - p. 40	VIB 6.216 - p. 119	VIB 7.820 - p. 82
VIB 5.350-USB - p. 185	VIB 5.480-P - p. 249	VIB 6.411 - p. 152	VIB 7.825 - p. 82
VIB 5.354-CL - p. 72	VIB 5.481 - p. 249	VIB 6.420-L - p. 212	VIB 7.830-CLD - p. 83
VIB 5.354-GT - p. 72	VIB 5.731 - p. 132	VIB 6.426-L - p. 212	VIB 7.830-ICP - p. 83
VIB 5.354-HS - p. 72	VIB 5.731 EX - p. 132	VIB 6.430 - p. 152	VIB 7.832-5 - p. 195
VIB 5.354-LD - p. 71	VIB 5.736 - p. 132	VIB 6.620 - p. 136	VIB 7.835 - p. 83
VIB 5.355 - p. 71	VIB 5.736 EX - p. 132	VIB 6.621 - p. 136	VIB 7.900 - p. 85
VIB 5.356 - p. 72	VIB 5.745-L - p. 214	VIB 6.622 - p. 136	VIB 7.900-LH - p. 85
VIB 5.360-1EEX - p. 31	VIB 5.746-L - p. 214	VIB 6.631 - p. 139	VIB 7.900-PS - p. 85
VIB 5.360-1EX - p. 31	VIB 5.752 - p. 90	VIB 6.631 EX - p. 139	VIB 8.200 - p. 248
VIB 5.360-2EX - p. 31	VIB 5.755 I - p. 90	VIB 6.632 - p. 167	VIB 8.201 - p. 248
VIB 5.380 - p. 32	VIB 5.755 IUS - p. 91	VIB 6.640 - p. 143	VIB 8.203 - p. 248
VIB 5.382 - p. 32	VIB 5.755 L - p. 91	VIB 6.645 - p. 145	VIB 8.205 - p. 248
VIB 5.382-FM - p. 32	VIB 5.755 ML - p. 91	VIB 6.646 - p. 145	VIB 8.207 - p. 248
VIB 5.383-FM - p. 32	VIB 5.756 I - p. 90	VIB 6.655 - p. 128	VIB 8.210 - p. 248
VIB 5.384-FM - p. 20, 33	VIB 5.757 G - p. 91	VIB 6.656 - p. 161	VIB 8.563 A25 - p. 172
VIB 5.385-FM - p. 33	VIB 5.761 V - p. 89	VIB 6.657 - p. 160	VIB 8.566 - p. 172
VIB 5.386-FM - p. 33	VIB 5.761 VIP - p. 89	VIB 6.671 - p. 131	VIB 8.571 - p. 170
VIB 5.387-FM - p. 32	VIB 5.762 V - p. 89	VIB 6.672 - p. 141	VIB 8.572 - p. 170
VIB 5.389-FM - p. 33	VIB 5.762 VIP - p. 89	VIB 6.673 - p. 149	VIB 8.573 - p. 170
VIB 5.390-FM - p. 33	VIB 5.763 B - p. 89	VIB 6.675 - p. 194	VIB 8.576 - p. 170
VIB 5.391-FM - p. 33	VIB 5.764 B - p. 89	VIB 6.700 - p. 164	VIB 8.577 - p. 170
VIB 5.400 - p. 40	VIB 5.765 VB - p. 89	VIB 6.701 - p. 164	VIB 8.578 - p. 170
VIB 5.420-INT - p. 74	VIB 5.775-5 - p. 213	VIB 6.710 - p. 164	VIB 8.586 - p. 158
VIB 5.422 - p. 189	VIB 5.933-UMTS - p. 88	VIB 6.711 - p. 164	VIB 8.587 - p. 158
VIB 5.425 - p. 40, 78	VIB 5.965-2,5 - p. 82	VIB 6.720 - p. 164	VIB 8.588 - p. 158
VIB 5.425 EX - p. 78	VIB 5.992-STD - p. 147	VIB 6.721 - p. 164	VIB 8.589 - p. 158
VIB 5.428 - p. 66	VIB 6.122 DEX - p. 98	VIB 6.722 - p. 164	VIB 8.605 - p. 151
VIB 5.430-2 - p. 183	VIB 6.122 R - p. 98	VIB 6.726-100 - p. 237	VIB 8.607-1,5 - p. 151
VIB 5.430-USB - p. 183	VIB 6.125 IDEX - p. 104	VIB 6.730 - p. 239	VIB 8.608 - p. 151
VIB 5.431 - p. 194	VIB 6.125 R - p. 98	VIB 6.760 - p. 156	VIB 8.610 - p. 176
VIB 5.432-2,9 - p. 195	VIB 6.125 RIP - p. 104	VIB 6.761 - p. 156	VIB 8.660 - p. 124
VIB 5.433 - p. 191	VIB 6.127 - p. 98	VIB 6.770/13 - p. 232	VIB 8.660 HEX - p. 124
VIB 5.433 X - p. 191	VIB 6.127 DEX - p. 98	VIB 6.770/9 - p. 232	VIB 8.666 R - p. 126
VIB 5.434 - p. 191	VIB 6.129 IDEX - p. 104	VIB 6.775/13 - p. 232	VIB 8.679 SET - p. 169

VIB 8.680 A25 - p. 169	VIB 93062 - p. 240
VIB 8.680 SET - p. 169	VIB 93067 - p. 240
VIB 8.685 A25 - p. 169	VIB 93077 - p. 240
VIB 8.685 SET - p. 169	VIB 93090 - p. 241
VIB 8.690 A25 - p. 169	VIB 94010 - p. 240
VIB 8.690 SET - p. 169	VIB 94011 - p. 240
VIB 8.692 - p. 172	
VIB 8.693 - p. 176	
VIB 8.694 - p. 176	
VIB 8.696 - p. 176	
VIB 8.718 - p. 239	
VIB 8.772 - p. 158	
VIB 8.955 - p. 249	
VIB 8.956 - p. 249	
VIB 8.961 - p. 249	
VIB 8.962 - p. 249	
VIB 8.981 - p. 249	
VIB 8.981-OMT - p. 249	
VIB 8.981-P - p. 249	
VIB 8.982 - p. 249	
VIB 8.984 - p. 251	
VIB 8.986 - p. 251	
VIB 81018 - p. 236	
VIB 81025 - p. 175	
VIB 81026 - p. 245	
VIB 81052 - p. 245	
VIB 90007 - p. 221	
VIB 90008 - p. 221	
VIB 90009 - p. 221	
VIB 90030 - p. 220	
VIB 90061 - p. 226	
VIB 90065 - p. 226	
VIB 90070 - p. 223	
VIB 90080 - p. 225	
VIB 90093 - p. 221	
VIB 91000 - p. 241	
VIB 91002 - p. 240	
VIB 91009 - p. 240	
VIB 93022 - p. 240	
VIB 93033 - p. 240	
VIB 93035 - p. 241	
VIB 93036 F - p. 241	
VIB 93036 S - p. 241	
VIB 93047 - p. 240	
VIB 93055 - p. 240	
VIB 93056 - p. 241	
VIB 93060 - p. 240	
VIB 93061 - p. 241	

Handheld devices

VIBXPERT II – Dual channel FFT data collector	18
VIBSCANNER 2 – Data acquisition ingeniously simple	26
VIBXPERT EX – Condition monitoring in explosive atmospheres (Zone 1)	31
VIBSCANNER – Data collector and signal analyzer	40
SONOCHEK - Digital Ultrasonic Measuring Device	47

VIBXPert II – Dual channel FFT data collector

VIBXPert II is the expert system for performing vibration analysis, machinery diagnosis and balancing of rotors. This handy and versatile system is easy to operate, and its many functionalities and analysis tools make it unique.



Application

- Route-based data collection
- Automatic data acquisition with a multiplexer
- Vibration-based condition monitoring
- Field balancing (1 or 2 planes)
- Acceptance measurement with machine templates
- Troubleshooting
- Multimeter
- Data logging
- Visual inspection

Ordering information

Depending on application and functionalities, VIBXPert II is available in four variants.

Item No.	Variant
VIB 5.310-1E	VIBXPert II data collector, 1 channel
VIB 5.310-1	VIBXPert II data collector and signal analyser, 1 channel
VIB 5.310-2	VIBXPert II data collector and signal analyser, 2 channels
VIB 5.310 B	VIBXPert II Balancer, 2 channels

The items delivered within the box are shown in the following overview.

Scope of supply

Item No.	Description	Details	Variant			
			Data	Signal 1 ch	Signal 2 ch	Balancer
VIB 5.310	VIBXPert II instrument	p. 21	✓	✓	✓	✓
VIB 5.318-E	Firmware "E-Registration" incl. certificate	---	✓	✗	✗	✗
VIB 5.311	Firmware "1 channel" incl. certificate	p. 23	✗	✓	✓	✗
VIB 5.311-CH2	Firmware "2 channels" incl. certificate	p. 23	✗	✗	✓	✗
VIB 5.317-B	Firmware "Balancer" incl. certificate	p. 23	✗	✗	✗	✓
VIB 5.325	Battery (built-in)	p. 79	✓	✓	✓	✓
VIB 5.327	Wheeled case	p. 68	✓	✓	✓	✓
VIB 5.356	Carrying pouch	p. 72	✓	✓	✓	✓
VIB 5.320-INT	Charger, International	p. 76	✓	✓	✓	✓
VIB 5.330SUSB	USB cabel	p. 185	✓	✓	✓	✓
VIB 5.350-USB	USB pen drive	p. 185	✗	✗	✗	✓

Content			Variant			
Item No.	Description	Details	Data	Signal		Balancer
				1 ch	2 ch	
VIB 5.330AMEM	Connection cable for USB pen drive	p. 185	✗	✗	✗	✓
VIB 6.142 R	Mobile Industrial accelerometer, 1 $\mu\text{A}/\text{ms}^{-2}$	p. 101	✓	✓	✓, 2x	✗
VIB 6.147	Mobile Industrial accelerometer, 5,35 $\mu\text{A}/\text{ms}^{-2}$	p. 101	✗	✗	✗	✓, 2x
VIB 3.420	Magnetic holder for curved surfaces	p. 158	✓	✓	✓, 2x	✓, 2x
VIB 5.436	Sensor cable for CLD-type accelerometer, spirialized	p. 188	✓	✓	✓, 2x	✓
VIB 5.437-2,9	Sensor cable for CLD-type accelerometer, straight, 2.9m/9.5ft	p. 188	✗	✗	✗	✓
VIB 5.339	Cable extension for analog measurement channel, 8 m	p. 188	✗	✗	✗	✓
VIB 6.631	Laser trigger / RPM sensor	p. 139	✗	✗	✗	✓
VIB 6.632	Stand for Laser trigger	p. 167	✗	✗	✗	✓
VIB 5.432-2,9	Sensor cable for laser trigger / RPM sensor, straight, 2.9 m / 9.5 ft	p. 195	✗	✗	✗	✓
VIB 4.750-5	Extension for Laser Trigger sensor cable, straight, 5 m / 16 ft	p. 195	✗	✗	✗	✓
VIB 3.306	Reflective tape, 10 mm wide	p. 167	✗	✗	✗	✓
LIT 53.102	Short instructions, VIBXPERT II	---	✓	✓	✓	✗
LIT 53.103	Short instructions, VIBXPERT II Balancer	---	✗	✗	✗	✓
LIT 01.801	Condition Monitoring Documentation, USB pen drive	---	✓	✓	✓	✓
LIT 66.200	Manual, Laser trigger	---	✗	✗	✗	✓
VIB 9.831	Manual, Industrial accelerometers	---	✓	✓	✓	✓
VIB 2.520.G	VIBXPERT inspection certificate	---	✓	✓	✓	✓
VIB 2.567.G	Inspection certificate for Industrial accelerometer	---	✓	✓	✓, 2x	✓, 2x

Note: The items in the box for the four variants are fixed. A customized configuration is possible.

Optional items may be ordered for any of the four variants:

Optional accessories

Item No.	Description – optional accessories	Note	Details
OMNITREND Center PC software			
VIB 8.200	OMNITREND Center Client Server		p. 248
VIB 8.201/ 8.202	Floating user licences: 1 / 5		p. 248
VIB 8.203 / 8.204	Fix user licences: 1 / 5		p. 248
VIB 8.205	10 additional database licences		p. 248
VIB 8.210	OMNITREND Center single user		p. 248
VIBXPERT II Firmware Upgrade			

Item No.	Description – optional accessories	Note	Details
VIB 5.315-REC	Firmware "Recording"	incl. certificate and USB pen drive. Required: " VIBXPRT-Utility Advanced File Export (PC licence)" for data export (p. 251)	p. 25
VIB 5.316-BAL	Firmware "Balancing"	incl. certificate and USB pen drive.	p. 25
VIB 5.319-ODS	Firmware "ODS - Modal analysis"	incl. certificate and USB pen drive. Only with firmware "2 channels". Required: " VIBXPRT-Utility Advanced File Export (PC licence)" for data export.	p. 25
VIB 5.384-FM	Firmware "Machine Templates"	incl. certificate and USB pen drive.	---
OMNITREND PC software			
VIB 8.981	OMNITREND for VIBXPRT		p. 249
VIB 8.982	OMNITREND View for VIBXPRT		p. 249
VIB 8.982-B	OMNITREND View Basic for VIBXPRT		p. 249
VIB 8.981-OMT	VIBXPRT device driver for OMNITREND	= device type licence	p. 249
VIB 5.312-P	PC licence for VIBXPRT II	= communication licence	p. 249
VIB 8.970	OMNITREND Demo CD		---
VIBXPRT utility PC software			
VIB 8.984	VIBXPRT-Utility Advanced File Export	PC licence	p. 251
VIB 8.986	VIBXPRT-Utility Excel Report module	PC licence	p. 251
Sensors			
VIB 8.660	VIBCODE sensor	w/o connection cable	p. 124
VIB 6.655	Triaxial accelerometer for mobile applications	required: Connection adapter	p. 128
VIB 6.640	Inductive proximity probe	incl. cable	p. 143
VIB 8.607-1,5	Temperature probe with magnetic attachment	incl. connection cable (1.5 m)	p. 151
VIB 8.608	Handheld temperature probe	incl. connection cable	p. 151
VIB 6.172	Accelerometer 100mV/g (IEPE-type) with MIL-type connector		p. 116
Cables and connection adapters			
VIB 5.331	Ethernet cable		p. 178
VIB 5.332-X	Keyphase adapter for machine protection systems	Required: Sensor cable for laser trigger / RPM sensor	p. 195
VIB 5.333	Connection adapter for LED strobe light	Required: Sensor cable for laser trigger / RPM sensor	p. 195
VIB 5.336	Sensor cable for triaxial accelerometer VIB 6.655		p. 189
VIB 5.345-6	Extension for sensor cable with MIL connector, 6 m, MIL plug to MIL socket		p. 189
VIB 5.346	Connection cable for VIBRONET field multiplexer		p. 201
VIB 5.346-MUX	Cable adapter for the connection cable VIB 5.346		p. 201
VIB 5.422	Sensor cable for accelerometer (IEPE), spiral, 1.8 m, MIL connector to MiniSnap		p. 189
VIB 5.430-2	Serial PC cable		p. 183

Item No.	Description – optional accessories	Note	Details
VIB 5.431	Connection cable for external analyzers to analogOUT		p. 194
VIB 5.433	Sensor cable for measuring low voltage signals		p. 191
VIB 5.434	Sensor cable for measuring low current signals		p. 191
VIB 5.437-5	Sensor cable for CLD-type accelerometer, straight, 5 m / 16 ft		p. 188
VIB 5.438-0.5	Sensor cable for IEPE-type accelerometer		p. 189
VIB 5.443	Sensor cable for TTL trigger (foreign manufacturer)		p. 195
VIB 5.444-5	Cable extension for analog channel, 5 m / 16 ft		p. 202
VIB 5.449-CLD	Connection adapter for CLD-type accelerometer (VIB 6.195)		p. 188
VIB 6.675	Connection cable for Mono headphones		p. 194
Miscellany			
VIB 3.450	Probe tip for Mobile Industrial accelerometer VIB 6.14x		p. 158
VIB 5.324	Charging station		p. 77
VIB 5.354-GT	Carrying strap		p. 72
VIB 5.354-HS	Hand strap for VIBXPERT pouch		p. 72
VIB 5.354-CL	Sensor clip for VIBXPERT pouch		p. 72
VIB 6.671	Mono headphones, jack 3.5 m	Required: Connection cable for Mono headphones	p. 131
VIB 6.672	LED-Stroboscope	Required: Connection adapter for LED strobe light and sensor cable for laser trigger	p. 141
VIB 6.673	Current clamp 600A DC	Required: Sensor cable for measuring low voltage signals	p. 149

TECHNICAL INFORMATION

Technical data

Parameter	Technical data VIBXPERT II instrument (VIB 5.310)
INPUT	
Analog, Vibration, 2x	Voltage (AC/DC, ±30 V max.) Current (AC/DC, ±30 mA max.) IEPE-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, with cable VIB 5.433

Parameter	Technical data VIBXPART II instrument (VIB 5.310)
Analog, Temperature, 1x	Thermocouple (type K)
Digital, 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	
Stroboscope control	TTL
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
MEASUREMENT RANGE / ACCURACY	
Vibration acceleration	depends on the sensor connected
Shock pulse	-10 ...80 dBsv / ± 3dBsv
RPM	10 ... 200 000 min-1 / ±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 acc 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 (7.3V / 5.3Ah - 38.7 Wh)
Charging time	< 5 hours in the instrument
Charger, input	110-240 V / 50-60 Hz
Charging temperature	0°C ... +50°C [32 °F ... 122°F]
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 to 8 GB (interchangeable)
Serial interface	RS 232, <115 kBaud
USB interface	USB 2.0
Ethernet interface	100 Mbit (100Base T), 10 Mbit (10Base T)

Parameter	Technical data VIBXPERT II instrument (VIB 5.310)
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), [7 5/16" x 6 3/8" x 2 1/16"]
Weight	approx. 1.1 kg [39 oz]
Environmental protection	IP65, dust and splash-proofed
Temperature range	-10°C ... +60°C (Operation), [14 °F ... 140°F] -20°C ... +60°C (Storage), [-4 °F ... 140°F]

Firmware features

Parameter	Standard firmware 1 channel/ 2 channels (VIB 5.311 / VIB 5.311-CH2)	Balancer firmware (VIB 5.317-B)
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 	<ul style="list-style-type: none"> • Vibration (Acceleration, Velocity, Displacement) • Temperature • Overall value for user-defined quantity (AC)
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). <p>with 2-channel firmware only (VIB 5.311-CH2):</p> <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* <p>* requires optional firmware module VIB 5.319-ODS</p>	<ul style="list-style-type: none"> • 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. • Time waveform for acceleration, velocity, displacement • Time waveform for user-defined quantity (AC) • Phase measurement w/ recording • Impact test w/o recording of the exciting force, 1 channel • Amplitude spectrum w/ fixed parameters for user-defined quantity (AC) • Envelope spectrum of acceleration (fmax.: 800 Hz / HP: 10kHz) for bearing analysis and analysis of shock-excited vibrations.

Parameter	Standard firmware 1 channel/ 2 channels (VIB 5.311 / VIB 5.311-CH2)	Balancer firmware (VIB 5.317-B)
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
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), not for balancing 	
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) • 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. 	

Parameter	Standard firmware 1 channel/ 2 channels (VIB 5.311 / VIB 5.311-CH2)	Balancer firmware (VIB 5.317-B)
FFT	<ul style="list-style-type: none"> Fmin: between 0.5 Hz and 10 Hz programmable Fmax: 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 	<ul style="list-style-type: none"> Fmin: 1 / 2 / 10 Hz, selectable acc. to meas. quantity Fmax: 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

Parameter	Optional firmware modules
RECORDING - VIB 5.315-REC	
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
Requirements	Use of the time waveform recorder requires registration of either the "E-Registration" firmware (VIB 5.318-E) or the 1-channel firmware (VIB 5.311). The software module "VIBXPERT utility - Advanced file export - VIB 8.984" is required for data export.
BALANCING - VIB 5.316-BAL	
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
RPM range	30 to 199.000 min ⁻¹
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
ODS / MODALANALYSIS - VIB 5.319-ODS	
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
Requirements	Standard firmware "1-channel" and "2 channels " must be registered; The software module "VIBXPERT utility - Advanced file export - VIB 8.984" is required for data export.

VIBSCANNER 2 – Data acquisition ingeniously simple

VIBSCANNER 2 is the new PRÜFTECHNIK data collector for preventive machine condition monitoring. The handy device convinces with a simple intuitive operation and very short measuring times.



Applications

- Data acquisition with guided routine measurement tasks.

Features

- Intuitive operation
- Fast measurement and signal processing
- Comprehensive data acquisition for maximum status information
- Automatic identification of measurement location (RFID, VIBCODE)
- Shockproofed, waterproofed housing (IP65)
- Speed determination without tachometer
- Triaxial accelerometer

Ordering information

VIBSCANNER 2 is available in the following variants.

Item No.	Variant
VIB 5.210	VIBSCANNER 2, Data Collector
VIB 5.212	VIBSCANNER 2, Triaxial
VIB 5.213	VIBSCANNER 2, Hybrid Triaxial
VIB 5.214	VIBSCANNER 2, VIBCODE

The items delivered within the box are shown in the following overview.

Scope of supply

Item No.	Content		Variant			
	Description	Details	Data Collector	Triaxial	Hybrid Tri-axial	VIBCODE
VIB 5.200	VIBSCANNER 2 instrument incl. battery	p. 28	✓	✓	✓	✓
VIB 2.581.G	VIBSCANNER 2 inspection certificate	---	✓	✓	✓	✓
VIB 5.256	VIBSCANNER 2 pouch	p. 70	✓	✓	✓	✓
VIB 5.228	VIBSCANNER 2 case	p. 67	✓	✓	✓	✓
ALI 3.952	Micro USB cable		✓	✓	✓	✓
ALI 50.651	Power supply / Charger	p. 299	✓	✓	✓	✓
ALI 50.628-25	RFID transponder / tags - 25 pieces		✓	✓	✓	✓

Content			Variant			
Item No.	Description	Details	Data Col-lector	Triaxial	Hybrid Tri-axial	VIBCODE
VIB 5.239	VIBSCANNER 2 safety release cable	p. 203	✓	✓	✓	✓
LIT 52.100	VIBSCANNER 2 short instructions	---	✓	✓	✓	✓
VIB 6.142 R	Mobile Industrial accelerometer, standard version,	p. 101	✓	✗	✗	✗
VIB 3.420	Magnetic adapter for curved surfaces	p. 158	✓	✗	✗	✗
VIB 5.236	Sensor cable for CLD-type accelerometer, TNC connector, spiralized	p. 203	✓	✗	✗	✓
VIB 6.655	Triaxial accelerometer for mobile applications	p. 128	✗	✓	✗	✗
VIB 6.656	Magnetic holder for Triaxial accelerometer VIB 6.655	p. 160	✗	✓	✗	✗
VIB 5.237	Sensor cable for triaxial accelerometer, 4P Mini-MIL connector, spiralized	p. 203	✗	✓	✗	✗
VIB 6.221	Hybrid triaxial accelerometer for mobile applications	p. 122	✗	✗	✓	✗
VIB 8.660	VIBCODE accelerometer without cable	p. 124	✗	✗	✗	✓

Note: The items in the box for all variants are fixed.

Optional items may be ordered for either variant:

Optional accessories

Item No.	Description- optional accessories	Details
OMNITREND Center PC software		
VIB 8.200	OMNITREND Center Client Server	p. 248
VIB 8.201/ 8.202	Floating user licences: 1 / 5	p. 248
VIB 8.203 / 8.204	Fix user licences: 1 / 5	p. 248
VIB 8.205	10 additional database licences	p. 248
VIB 8.210	OMNITREND Center single user	p. 248
Cabels and connection adapters		
VIB 5.222	Sensor cable for IEPE-type accelerometer, MIL connector, spiralized	p. 203
VIB 5.234	Sensor cable for measuring low voltage signals with VIBSCANNER 2, spiralized	p. 203
VIB 5.238	Sensor cable for IEPE-type accelerometer, BNC connector, spiralized	p. 203

TECHNICAL INFORMATION

Technical data

Parameter	VIBSCANNER 2
	Measurement channels
Number	3 synchronous analog channels (X/Y/Z)
Z channel (0 ... 50 kHz)	-20 .. +20 V, input impedance: 78 kOhm IEPE Linedrive
X/Y channel (0 ... 10 kHz)	-20 .. +20 V, input impedance: 78 kOhm IEPE
Dynamic range	109.5 dB (total)
Sampling rate	up to 131 kHz per channel
Signal processing	3 x 24 bit ADCs
Measuring range / Accuracy	Vibration acceleration: dependent on used sensor Shock pulse: -10 dBsv to 80 dBsv +/- 2 dBsv
Fulfilled standard	DIN ISO 2954:2012 (2-1 kHz, 10 Hz -1 kHz, 10-10 KHz)
	Display
Type	Capacitive touchscreen Optically bonded for high contrast and increased shock resistance
Active area	95 x 54 mm [3 3/4" x 2 1/8"]
Size	10.9 cm [4 1/3"]
Color depth	16 million colors
Viewing angle	< 140°
Operation	Multi touch – gesture control Glove-compatible
Illumination	Background lighting, adjustable
Ambient light sensor	Yes
	Supply
Type	Li ion rechargeable battery
Rated voltage	7.2 V
Energy density	72 Wh
Charge time, typical	5.0 h (0 ... 100 % @ 25 °C / 77 °F) 3.5 h (0 ... 80 % @ 25 °C / 77 °F)
Charging temperature	10 °C ... 40 °C [50 °F ... 104 °F]
Operating time, typical	12 h (continuous operation, rechargeable battery 100 %) 6 h (continuous operation, rechargeable battery 50 %)
Power adapter	100-240 V~, 50-60 Hz (input) 12 V 3 A (output)
Energy saving mode	Yes

Parameter	VIBSCANNER 2
	Computer
Processor	ARM A9 - Quadcore 1 GHz
Operating elements	Touchscreen, ON/OFF key, Enter key
Memory	microSD card, 32 GB for measurement data, permanently installed 2 GB RAM
USB	1 x USB 2.0, device interface
RFID	RFID reader module for PRÜFTECHNIK transponder ALI 50.628-25 Complies with ISO 14443a and ISO 15693 Reading distance: 2...3 cm (13/16" ... 1 3/16")
WiFi	IEEE 802.11a/b/g/n/ac Throughput: < 200 Mbps Security: WPA2
Stroboscope	Frequency range: 0.1 – 1000 Hz Resolution: 0.06 1/min. LEDs: Risk group 1 per IEC 62471
LED	1x RGB LED (display for battery status and charging process)
	Environment / Mechanical system
Connections	Socket for power adapter Micro USB for data cable Plug-in connector (8-pole) for signal cable
Housing	2-component housing: PC and ABS Sheath: TPE, black
Dimensions	203 x 143 x 76mm (LxWxH) [8 x 5 5/8 x 3"]
Weight	approx. 1.0 kg [35.3 oz]
Degree of protection	IP65, dust-proof and spray water-protected
Temperature range	Operation: -10 °C ... +50 °C [14 °F ...122°F] Storage: -20 °C ... +60 °C [-4 °F ... +140°F]
Air humidity	0 ... 90 %, non-condensing
Certifications	CE, RoHS, FCC, FCC/IC

Firmware features

Parameter	Standard firmware (VIB 5.283-FM)
Route	<ul style="list-style-type: none"> • Set of measurement tasks for machine condition monitoring and diagnosis. • Automatic identification of the measurement location using RFID transponder tags or VIBCODE sensor system. • Determining the rotational speed without tachometer via evaluation of the measured vibration signal. Verification of the speed value via integrated stroboscope.
Measuring parameters and signals	<ul style="list-style-type: none"> • Vibration acceleration, velocity, displacement • Shock pulse (bearing condition) • Amplitude Trending Spectrum for machine diagnosis • Envelope Trending Spectrum for bearing condition diagnosis and analysis of shock-excited vibration • Time waveform
Process parameters and visual inspection	<ul style="list-style-type: none"> • Low-voltage signal (AC/DC: ± 20 V) as user-defined measurement task • Manual input of reading values • Checklists for visual inspection tasks
Averaging	linear, exponential, peak-hold
Alarm bands	Monitoring of narrow band characteristic defect frequencies
FFT	<ul style="list-style-type: none"> • F_{\min}: between 0.5 Hz and 10 Hz programmable • F_{\max}: between 100 Hz and 51.2 kHz programmable • Lines: 400, 800, 1600, 3200, 6400, 12800, 25600 • Window: Rectangular, Hanning, Hamming, Flattop, Kaiser
SETUP & EVALUATION	
Units	ISO and US units, selectable
Comments	Given events with editable comments
OPERATION	
User interface	<ul style="list-style-type: none"> • Touchscreen with gesture control • User guidance via graphical interface with realistic machine images and display of the measurement location position. • Online help
Languages	German, English, French, Spanish, Italian, Portuguese, Dutch, Polish, Turkish, Russian, Japanese, Chinese

VIBXPert EX – Condition monitoring in explosive atmospheres (Zone 1)

The intrinsically safe VIBXPert is the expert system for performing vibration analysis, machinery diagnosis and balancing of rotors within "hazardous areas". This robust and versatile system is easy to operate, and its many functionalities and analysis tools make it unique.



Application

- Route-based data collection
- Vibration-based condition monitoring
- Field balancing (1 or 2 planes)
- Acceptance measurement with machine templates
- Troubleshooting
- Multimeter
- Data logging
- Visual inspection

Ordering information

Depending on application and functionalities, the intrinsically safe VIBXPert is available in three variants.

Item No.	Variant
VIB 5.360-1EEX	VIBXPert EX data collector, 1 channel
VIB 5.360-1EX	VIBXPert EX data collector and signal analyser, 1 channel
VIB 5.360-2EX	VIBXPert EX data collector and signal analyser, 2 channels

The items delivered within the box are shown in the following overview.:

Scope of supply

Content			Variants		
Item No.	Description	Details	Data collector	Signal analyser	
			1 ch	1 ch	2 ch
VIB 5.300 EX	VIBXPERT EX instrument incl. battery and 1 GB CF card*, fix installed	p. 35	✓	✓	✓
VIB 5.382-FM	Firmware "FFT analysis" incl. certificate	---	✓	✗	✗
VIB 5.383-FM	Firmware "Route" incl. certificate	---	✓	✗	✗
VIB 5.387-FM	Firmware "Time waveform analysis" incl. certificate	---	✓	✗	✗
VIB 5.380	Firmware "1 channel" incl. certificate	p. 37	✗	✓	✓
VIB 5.382	Firmware "2 channels " incl. certificate	p. 37	✗	✗	✓
VIB 5.329-X	Case	p. 71	✓	✓	✓
VIB 5.354-LD	Leather carrying strap	p. 71	✓	✓	✓
VIB 5.322-INT	Charger, International	p. 75	✓	✓	✓
VIB 5.330-UNV	Universal communication adapter	p. 181	✓	✓	✓
VIB 5.338	USB cabel	p. 181	✓	✓	✓
VIB 6.142 DEX	Mobile Industrial accelerometer, standard version, intrinsically safe	p. 101	✓	✓	✓, 2x
VIB 3.420	Magnetic holder for curved surfaces	p. 158	✓	✓	✓, 2x
VIB 5.436	Sensor cable for CLD-type accelerometer, spirialized	p. 188	✓	✓	✓, 2x
LIT 53.101	Short instructions, VIBXPERT EX	---	✓	✓	✓
LIT 01.801	Condition Monitoring Documentation, USB pen drive	---	✓	✓	✓
VIB 9.831	Manual, Industrial accelerometers	---	✓	✓	✓
VIB 2.520.G	VIBXPERT inspection certificate	---	✓	✓	✓
VIB 2.567.G	Inspection certificate for Industrial accelerometer	---	✓	✓	✓, 2x
LIT 53.501	EC Declaration of conformity, VIBXPERT EX	---	✓	✓	✓
LIT 61.501	EC Declaration of conformity, accelerometer	---	✓	✓	✓

Note: The items in the box for the three variants are fixed. A customized configuration is possible.

*The intrinsically safe VIBXPERT may also be delivered with a larger storage CF memory card (4 GB) – refer to optional accessories.

Optional items may be ordered for any of the three variants.

Optional accessories

Item No.	Description - optional Accessories	Notes	Details
VIBXPERT EX instrument			
VIB 5.300 EX-4	VIBXPERT EX instrument with 4 GB CF card	Alternative for instrument with 1 GB CF card	---
OMNITREND Center PC software			
VIB 8.200	OMNITREND Center Client Server		p. 248
VIB 8.201/ 8.202	Floating user licences: 1 / 5		p. 248
VIB 8.203 / 8.204	Fix user licences: 1 / 5		p. 248
VIB 8.205	10 additional database licences		p. 248
VIB 8.210	OMNITREND Center single user		p. 248
Firmware Upgrade			
VIB 5.384-FM	Firmware "Machine Templates"	incl. certificate and USB pen drive. Included in firmware "1-channel".	p. 38
VIB 5.390-FM	Firmware "Coastdown analysis"	incl. certificate and USB pen drive. Included in firmware "1-channel".	p. 38
VIB 5.391-FM	Firmware "Analysis Tools Professional"	incl. certificate and USB pen drive. Included in firmware "1-channel".	p. 38
VIB 5.385-FM	Firmware "Recording"	incl. certificate and USB pen drive. Required: " VIBXPERT-Utility Advanced File Export (PC licence)" for data export (p. 251)	p. 38
VIB 5.386-FM	Firmware "Balancing"	incl. certificate and USB pen drive.	p. 38
VIB 5.389-FM	Firmware "ODS - Modal analysis"	incl. certificate and USB pen drive. Only with firmware "2 channels" and firmware "Analysis Tools Professional,". Required: " VIBXPERT-Utility Advanced File Export (PC licence)" for data export.	p. 38
OMNITREND PC software			
VIB 8.981	OMNITREND for VIBXPERT		p. 249
VIB 8.982	OMNITREND View for VIBXPERT		p. 249
VIB 8.982-B	OMNITREND View Basic for VIBXPERT		p. 249
VIB 8.981-OMT	VIBXPERT device driver for OMNITREND	= device type licence	p. 249
VIB 8.981-P	PC licence for VIBXPERT EX	= communication licence	p. 249
VIB 8.970	OMNITREND Demo CD		---
VIBXPERT utility PC software			
VIB 8.984	VIBXPERT-Utility Advanced File Export	PC licence	p. 251
VIB 8.986	VIBXPERT-Utility Excel Report module	PC licence	p. 251
Sensors			

Item No.	Description - optional Accessories	Notes	Details
VIB 8.660 HEX	VIBCODE sensor, intrinsically safe	w/o connection cable	p. 124
VIB 6.147 DEX	Mobile Industrial accelerometer, intrinsically safe	Sensitivity: 5,35 $\mu\text{A}/\text{ms}^{-2}$	p. 101
VIB 6.631 EX	Laser trigger / RPM sensor, intrinsically safe		p. 139
VIB 6.632	Stand for Laser trigger		p. 167
VIB 8.607-1,5	Temperature probe with magnetic attachment	incl. connection cable (1.5 m)	p. 151
VIB 8.608	Handheld temperature probe	incl. connection cable	p. 151
Cabels and connection adapters			
VIB 5.332 X	Keyphase adapter for machine protection systems	Required: Sensor cable for laser trigger / RPM sensor	p. 195
VIB 5.433 X	Sensor cable for measuring low voltage signals		p. 191
VIB 5.339	Cable extension for analog measurement channel, 8 m		p. 188
VIB 5.422	Sensor cable for IEPE-type accelerometers		p. 189
VIB 5.431	Connection cable for external analyzers to analogOUT		p. 194
VIB 5.443	Sensor cable for TTL trigger (foreign manufacturer)		p. 195
VIB 5.437-2,9	Sensor cable for CLD-type accelerometer, straight, 2.9m/9.5ft		p. 188
VIB 5.437-5	Sensor cable for CLD-type accelerometer, straight, 5 m / 16 ft		p. 188
VIB 5.444-5	Cable extension for analog channel, 5 m / 16 ft		p. 202
VIB 5.432-2,9	Sensor cable for laser trigger / RPM sensor, straight, 2.9 m / 9.5 ft		p. 195
VIB 4.750-5	Extension for Laser Trigger sensor cable, straight, 5 m /16 ft		p. 195
Miscellany			
VIB 3.450	Probe tip for Mobile Industrial accelerometer VIB 6.14x		p. 158
VIB 3.306	Reflective tape, 10 mm wide		p. 167
VIB 5.355	Leather carrying bag for VIBXPERT EX		p. 71

TECHNICAL INFORMATION

Technical data

Parameter	Technical data VIBXPERT EX instrument (VIB 5.300 EX)
INPUT	
Analog, Vibration, 2x	Voltage (AC/DC, ± 30 V max.) Current (AC/DC, ± 30 mA max.) IEPE-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, Temperature, 1x	Thermocouple (type K)
Digital, 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	
Stroboscope control	TTL output level
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
MEASUREMENT RANGE / ACCURACY	
Vibration acceleration	depends on the sensor 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 acc to ISO 2954
DISPLAY	
Type	LCD, backlit
Pixel area	115 x 78 mm [4 1/2" x 3 1/16"]
Resolution	1/2 VGA (480 x 320 pixel)
Color depth	16 grey scales

Parameter	Technical data VIBXPRT EX instrument (VIB 5.300 EX)
POWER SUPPLY	
Battery type	Li Ion rechargeable battery pack (7.2V / 4.8Ah - 34 Wh)
Charging time	< 5 hours in the instrument
Charger, input	110-240 V / 50-60 Hz
Charging temperature	0°C ... +50°C [32 °F ... 122 °F]
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), 10 Mbit (10Base T)
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 [9 13/16" x 8 11/16" x 1 7/16"] (LxWxH)
Weight	approx. 2.3 kg [81 oz]
Environmental protection	IP65, dust and splash-proofed
Temperature range	-10°C ... +60°C (Operation), [14 °F ... 140°F] -20°C ... +60°C (Storage), [-4 °F ... 140°F]

Intrinsic safety details

VIBXPRT EX, Typ VIB 5.300 EX	
Marking 	II 2G Ex ib IIC T4
Temperature range	-10 °C ...+60 °C

Firmware features

Parameter	Standard firmware 1 channel/ 2 channels (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)) <p>with 2-channel firmware only (VIB 5.382):</p> <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* <p>* requires optional firmware module VIB 5.389-FM</p>
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.

Parameter	Standard firmware 1 channel/ 2 channels (VIB 5.380 / VIB 5.382)
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	<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"> • Fmin: between 0.5 Hz and 10 Hz programmable • Fmax: 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

Parameter	Optional firmware modules
RECORDING - VIB 5.385-FM	
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
Requirements	Use of the time waveform recorder requires registration of the 'Time waveform' module (VIB 5.387-FM), which is included in the standard firmware (VIB 5.380); The software module "VIBXPERT utility - Advanced file export - VIB 8.984" is required for data export.
BALANCING- VIB 5.386-FM	
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
RPM range	30 to 199.000 min ⁻¹
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
ODS / MODALANALYSIS - VIB 5.389-FM	
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

Parameter	Optional firmware modules
Requirements	Standard firmware "2 channels" (VIB 5.381) and firmware module "Special analyses" (VIB 5.391-FM) must be registered; The software module "VIBXPRT utility - Advanced file export - VIB 8.984" is required for data export.

VIBSCANNER – Data collector and signal analyzer

VIBSCANNER is a multi-purpose measurement and analysis device used for monitoring vibrations and for the inspection of machines. The operation of this handy device is intuitive, and its many functionalities and analysis tools make it unique.



Application

- Route-based data collection
- Vibration-based condition monitoring
- Field balancing
- Multimeter
- Visual inspection

Features

- Intuitive single-handed operation using joystick
- Built-in sensors for vibration, rpm and temperature
- FFT spectrum, time waveform and recording
- Housing is shockproof and water jets resistant (IP65)
- VIBCODE-compatible with automatic location recognition
- ATEX certified for Zone 1

Ordering information

Depending on application and functionalities, VIBSCANNER is available in two variants.

Item No.	Variant
VIB 5.460	VIBSCANNER standard
VIB 5.460 EX	Intrinsically safe VIBSCANNER

The items delivered within the box are shown in the following overview.

Scope of supply

Item No.	Content Description	Details	Variant	
			Standard	Intrinsically safe
VIB 5.400	VIBSCANNER device without rechargeable battery	p. 43	✓	✗
VIB 5.425	VIBSCANNER rechargeable battery	p. 78	✓	✗
VIB 5.400 EX	Intrinsically safe VIBSCANNER device without rechargeable battery	p. 43	✗	✓
VIB 5.425 EX	Intrinsically safe VIBSCANNER rechargeable battery	p. 78	✗	✓
VIB 5.420-INT	Universal battery charger	p. 74	✓	✓
VIB 5.485-FM	"FFT Analysis" firmware including certificate	p. 46	✓	✓

Item No.	Content		Variant	
	Description	Details	Standard	Intrinsically safe
VIB 5.428	Case	p. 66	✓	✓
VIB 5.430-2	PC cable (serial)	p. 183	✓	✗
VIB 5.448	Adapter cable USB to serial (VIBSCANNER)	p. 183	✓	✗
VIB 5.430-USB	Adapter cable USB to serial (Intrinsically safe VIBSCANNER)	p. 183	✗	✓
VIB 9.669	Short instructions	---	✓	✓
VIB 9.638	Operating instructions	---	✓	✓
VIB 9.664	Operating instructions for 'Balancing, FFT and signal analysis'	---	✓	✓
PT 99.402	Seminar schedule	---	✓	✓
VIB 2.580.G	VIBSCANNER inspection certificate	---	✓	✓
LIT 54.500	Declaration of conformity for intrinsically safe VIBSCANNER	---	✗	✓

Note: The items in the box for both variants are fixed.

Optional items may be ordered for either variant.:

Optional accessories

Item No.	Description - optional accessories	Note	Details
Firmware upgrade			
VIB 5.486-FM	"Balancing" firmware	Includes certificate and a USB memory stick	p. 46
VIB 5.488-FM	"Signal analysis" firmware	Includes certificate and a USB memory stick	p. 46
OMNITREND PC software			
VIB 8.955	OMNITREND for VIBSCANNER		p. 249
VIB 8.956	OMNITREND View for VIBSCANNER		p. 249
VIB 5.481	VIBSCANNER device driver for OMNITREND	= Device license	p. 249
VIB 5.480-P	PC license for VIBSCANNER	= Communication password	p. 249
VIB 8.961	OMNITREND "Gear Editor" module		---
VIB 8.962	OMNITREND "Signal Analysis" module	Includes "Gear Editor"	p. 249
VIB 8.970	OMNITREND demo CD		---
Sensors			
VIB 8.660	VIBCODE sensor	Without connection cable; for VIBSCANNER standard	p. 124
VIB 6.142 R	Mobile accelerometer, 1 $\mu\text{A}/\text{ms}^{-2}$	For VIBSCANNER standard	p. 101
VIB 6.147	Mobile accelerometer, 5.35 $\mu\text{A}/\text{ms}^{-2}$	For VIBSCANNER standard	p. 101
VIB 3.420	Magnetic holder for ridged mounting surfaces		p. 158

Item No.	Description - optional accessories	Note	Details
VIB 8.660 HEX	Intrinsically safe VIBCODE sensor	Without connection cable; for intrinsically safe VIBSCANNER	p. 124
VIB 6.142 DEX	Intrinsically safe mobile accelerometer, 1 $\mu\text{A}/\text{ms}^{-2}$	For intrinsically safe VIBSCANNER	p. 101
VIB 6.147 DEX	Intrinsically safe mobile accelerometer, 5.35 $\mu\text{A}/\text{ms}^{-2}$	For intrinsically safe VIBSCANNER	p. 101
VIB 6.631	Laser trigger / RPM sensor	For VIBSCANNER standard	p. 139
VIB 6.631 EX	Intrinsically safe laser trigger / RPM sensor	For intrinsically safe VIBSCANNER	p. 139
VIB 6.632	Laser trigger stand		p. 167
VIB 8.607-1,5	Temperature probe with magnetic holder	Includes connection cable (1.5 m)	p. 151
VIB 8.608	Handheld temperature detector	Includes connection cable	p. 151
Cables and connection adapters			
VIB 5.436	Spiral connection cable for CLD accelerometers		p. 188
VIB 5.437-2,9	Straight connection cable for CLD accelerometers, 2.9 m (9 ft 6")		p. 188
VIB 5.437-5	Straight connection cable for CLD accelerometers, 5 m (16 ft 5")		p. 188
VIB 5.444-5	Universal extension cable for analog measurement channel 5 m (16 ft 5")		p. 202
VIB 5.339	Extension cable for CLD accelerometer cables, 8 m (26 ft 3")		p. 188
VIB 5.432-2,9	Connection cable for laser trigger, 2.9 m (9 ft 6")		p. 195
VIB 4.750-5	Extension for laser trigger cable 5 m (16 ft 5")		p. 195
VIB 5.443	Connection cable for TTL trigger sensor (third party manufacturer)		p. 195
VIB 5.332 X	Keyphaser adapter for machine protection systems	requires sensor cable for laser trigger	p. 195
VIB 5.445	Manual channel switch for 2-plane balancing		p. 179
VIB 5.446	Automatic channel switch for 2-plane balancing	For VIBSCANNER standard only	p. 179
VIB 5.433	Sensor cable adapter for the measurement of signal-low voltage	For VIBSCANNER standard	p. 191
VIB 5.433 X	Sensor cable adapter for the measurement of signal-low voltage	For intrinsically safe VIBSCANNER	p. 191
VIB 5.434	Sensor cable adapter for the measurement of signal-low current	For VIBSCANNER standard only	p. 191
VIB 5.438-0.5	Straight connection cable for 100mV/g sensor (IEPE); 0.5 m (1 ft 8"); BNC	For VIBSCANNER standard only	p. 189
VIB 5.422	Spiral connection cable for accelerometer (IEPE), MIL connector	For VIBSCANNER standard only	p. 189
VIB 5.345-6	Extension cable for sensor cables using MIL connector	For VIBSCANNER standard only	p. 189
VIB 5.431	Connection cable for analog signal output	For VIBSCANNER standard only	p. 194

Item No.	Description - optional accessories	Note	Details
VIB 5.443	Connection cable for TTL trigger sensor (third party manufacturer)		p. 195
VIB 6.675	Cable adapter for headphones	Used with headphones only	p. 194
Miscellany			
VIB 3.450	Probe tip for mobile industrial sensors type VIB 6.14x		p. 158
VIB 3.306	Reflective tape, width 10 mm (25/64")		p. 167
VIB 5.454	VIBSCANNER carrying pouch		p. 73
VIB 6.671	Mono headphones	Requires an adapter cable for headphones	p. 131

TECHNICAL INFORMATION


Technical data

Parameter	VIBSCANNER technical data
INTERFACES	
Analog	Vibration sensors (CLD, IEPE) Temperature probe (Pt100, NiCrNi) Current/Voltage: AC (± 30 V; 0 - 20 mA) DC (± 30 V; 0 - 20 mA)
Digital	Laser trigger/ RPM sensor; 5 V TTL (optical or inductive sensors)
Output	Serial (RS 232), Headphones, Analog signal (4 Vpp; Rout= 200 Ohm)
INTERNAL SENSORS	
Vibration / Shock pulse	Tandem piezo accelerometer (CLD)
Frequency range	10 Hz to 10 kHz (in cone sinking)
Resonance frequency	36 kHz (in cone sinking)
Electrical noise, as from 10 Hz	0.1 mm/s effective; 2 μ m effective (instrument + sensor); < 0 dBsv , peak value
RPM	IR sensor with pointer for adjustment
Temperature	NiCrNi temperature probe
SIGNAL PROCESSING	
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 (For intrinsically safe VIBSCANNER, 10 kHz is an option)
Sampling frequency	Up to 64 kHz (depends on the measurement range)
Integrator	Two stages (switchable)
MEASUREMENT RANGE / ACCURACY	
Vibration	The following applies to internal and external sensors (CLD: 1 μ A/ms ⁻² ; IEPE: 100 mV/g) as well as external measurement devices (1 mV/ms ⁻²):

Parameter	VIBSCANNER technical data
Acceleration	< 961 m/s ² (p-p) / 1% (internal sensor) < 6000 m/s ² (p-p) / 1% (external sensor)
Velocity	< 9000 mm/s (p-p) / 1%
Displacement	< 9000 μm (p-p) / 1%
Shock pulse	< 81 dBsv / ± 3 dB
RPM	60 to 60000 min ⁻¹ / 0.1‰
Temperature	
NiCrNi internal	-50 °C to 100 °C / 0.5° + 3%
NiCrNi external	-50 °C to 100°C / 0.5° + Sensor% 100 °C to 1000 °C / 1° + Sensor%
Pt 100	-50 °C to 600 °C / 1° + Sensor%
Extra-low voltage	-30 V to +30 V / 2% (Ri = 100 kOhm, using the cable VIB 5.433)
Extra-low current	-20 mA to +20 mA; 4 to 20 mA / 2% (Ri = 100 kOhm, using the cable VIB 5.433)
Fulfilled standards	Frequency response according to ISO 2954; other parameters and measured quantities according to DIN 45662 class 1
DISPLAY	
Type	Pixel display with background illumination
Dimensions	54 x 27 mm [2 1/8" x 1 1/16"] / 128 x 64 px
Contrast und illumination	Adjustable
POWER SUPPLY	
Rechargeable battery	NiMH battery pack (7.2 V / 1.5 Ah)
Charging time	< 6 h (intrinsically safe VIBSCANNER < 10 h)
Operating time	> 10 hours for alternating operation > 6 hours for continuous use with illumination
Charging status display	2 LEDs (green, red)
Charging temperature	10 °C to 40 °C [50 °F to 104 °F]
Sleep mode	Adjustable
COMPUTER	
Operating elements	1 joystick and 2 function keys
Display indicators	4 LEDs for device status and signal evaluation
Connectors	Analog and digital channels: MiniSnap connector Temperature probe (NiCrNi): QLA connector
Data storage	512 MB (intrinsically safe VIBSCANNER: 4 MB)
ENVIRONMENT / GENERAL	
Housing	ABS, reinforced with steel fibre
Relative humidity	10% to 90%

Parameter	VIBSCANNER technical data
Environmental protection	IP65, dustproof and water jets resistant
Temperature range	Operation: 0 °C to 60 °C [32 °F to 140 °F] Storage: -20 °C to 60 °C [-4 °F to 140 °F]
Weight	approx. 690 g [24 oz]
Dimensions	250 x 100 x 55 mm [9 27/32" x 3 15/16" x 2 11/64"] LxWxH

Intrinsic safety details

VIBSCANNER EX, Typ VIB 5.400 EX	
Marking 	II 2 G Ex eb ib mb IIC T4 Gb
Temperature range	0 °C to 45 °C [32 °F to 113 °F]

Firmware features

Parameter	Basic firmware (VIB 5.480)
MEASUREMENT	
Measurement quantities	<ul style="list-style-type: none"> • Velocity, displacement, acceleration as machine-specific measurement tasks • Shock pulse (bearing condition) • Cavitation • Temperature • RPM
Process parameters	<ul style="list-style-type: none"> • Manual input of parameter values • Extra-low voltage/current (AC/DC: ±30 V; -20 to +20 mA) as user-defined measurement tasks
Averaging	Free-running, linear, exponential, peak hold, time synchronous (signal analysis module)
Averaging number and time	Adjustable
Measurement range	Adjustable
Amplitude range	Autorange
SETUP AND EVALUATION	
Measurement setups	<ul style="list-style-type: none"> • Predefined, knowledge-based measurement settings for the diagnosis of machines, bearings and gear • Freely selectable measurement functions
Data processing	<ul style="list-style-type: none"> • Evaluation functions for characteristic overall values • Bearing diagnosis with shock pulse measurement • Machine condition evaluation 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	

Parameter	Basic firmware (VIB 5.480)
User interface	<ul style="list-style-type: none"> • Icons for measurement tasks • Graphic route guidance using machine graphics (machine scan) • On-board help
Languages	English, German, French, Italian, Spanish, Polish, Swedish

Parameter	Optional firmware modules
FFT-ANALYSIS VIB 5.485-FM	
Measurement 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 intrinsically safe VIBSCANNER)
Number of lines	400 to 6400 lines
Line width	> 0.03 Hz
Display	Linear axes in the frequency range
Zoom	X/ Y axis, continuously scalable
Envelope	For the diagnosis of bearings, gears and machines
Measurement setups	Optimized setups for various machine types
BALANCING VIB 5.486-FM	
Measurement 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	
fmax.	200/ 500/ 1000/ 2000/ 5000 Hz
Measurement time	[125 - 4000] ... [7.8 - 250] ms
Additional averaging	Time synchronous
Measurement types	Time waveform, Phase, Orbit (sequential)
Recording	
Start delay	Adjustable
Repetitions	Adjustable (limited by data storage capacity)
Pause	Adjustable
Measurement types	May be activated for overall values and spectra

SONOCHEK - Digital Ultrasonic Measuring Device

SONOCHEK is a handy digital measuring device for detecting, recording and evaluating ultrasonic signals. Applications range from the "simple" leak check to the monitoring tasks of complex processes.

SONOCHEK saves different readings and records spectra as a function over time (spectrograms). In addition, photos, voice memos or comments can be saved for each process. An individual measurement report can be compiled with just a few clicks. Each application is optimally supported by software tailored to the measurement task in combination with the adjusted sensor system.



Features


- Detection and evaluation of leaks on compressed air, gas and vacuum systems
- Detection of leaks on windows, doors, cabins, vehicles or containers
- Detection of electrical partial discharges and insulation damage
- Intuitive operation per touchscreen
- Broadband air- and structure-borne sound sensors
- Frequency range: 20 kHz to 100 kHz
- Saving of readings and spectrograms
- Photos, voice memos, and comments
- Measurement reports with a few clicks
- Temperature measurement via IR sensor
- Multilingual user interface and documentation in 12 languages

Order information

Item No.	Name
SON 6.001	SONOCHEK Ultrasonic measurement system Airborne

Scope of delivery - SON 6.001

Item No.	Name	Details
SON 6.200	SONOCHEK Digital ultrasonic measuring device with sensor module, 1 channel,	p. 49
SON 6.401	SONOCHEK Rechargeable Li-ion battery, 7.75 Wh (installed in measuring device)	---
SON 6.600	SONOCHEK Power adapter, 2 A, including international plug adapters and sensor cables	---
SON 6.601	Micro-USB cable for SONOCHEK power adapter	---
SON 6.402	SONOCHEK Lanyard (attached to measuring device)	---
SON 6.403	SONOCHEK Bumper, red (attached to measuring device)	---

Item No.	Name	Details
SON 6.110	SONOCHEK DBS10 Broadband airborne sound sensor	p. 54
SON 6.111	Calibration certificate for DBS10 sensor	---
SON 6.510	SONOCHEK Sensor cable, DBS10	---
SON 6.110-1	SONOCHEK Seaker: precision locator DBS10-1 including adapter cap	p. 54
SON 6.110-2	SONOCHEK Small seaker: small acoustic horn DBS10-2	p. 54
SON 6.110-3	SONOCHEK Large seaker: large acoustic horn DBS10-3	p. 54
SON 6.701	SONOLEAK app, measurement software	p. 49
SON 6.702	SONOLEVEL app, measurement software	p. 49
SON 6.703	SONOCHEK Config app, software manager to install and deinstall the apps	
SON 6.501	SONOCHEK headphones	
SON 6.502	Audio cable for SONOCHEK headphones	
LIT 06.100	SONOCHEK pocket guide	
LIT 06.200	SONOCHEK Operating instructions (in PDF format available on measuring device)	
SON 6.800	SONOCHEK ruggedized case	
Overview		

Optional accessories

Item No.	Name	Application	Details
SON 6.010	SONOCHEK Parabolic sensor DBS30, set	Localization of damaged points across large distances up to 25 meters (82 ft)	p. 58
SON 6.020	SONOCHEK sensor kit DBS20	Monitoring of bearing wear and functional check of condensate drains and valves.	p. 56
SON 6.520	Ultrasonic Transmitter DBT10	Detection of leaks in sealed assets.	p. 60
SON 6.710-USB	SONOLEVEL DataViewer, PC software incl. USB pen drive	Visualization and evaluation of measurement data recorded with the SONOLEVEL App	p. 62

TECHNICAL INFORMATION

SONOCHEK technical data

Parameter	Digital ultrasonic measuring device - SONOCHEK
Display	5" TFT display, resolution WVGA 800 x 480 pixels
Touchscreen	PCT, 5-point multi-touch controller
Acoustic output of the signals	Via speaker or wired headphones
Memory	8 GB flash system memory; 16 GB flash internal measurement data memory; 2 GB SDRAM
Connections and interfaces	Ultrasonic sensors: Lemo; Charger: USB 2.0 Micro-B; Jack for stereo headphones: 3.5 mm; Memory for data export: Slot for micro SD card (up to 32 GB)
Operating system	Android 4.4.2
Application software	"SONOLEVEL App" for basic maintenance tasks "SONOLEAK App" for leak detection and evaluation
Other	5 megapixel camera on the back side of the device; integrated microphone; integrated position sensor
Rechargeable battery	Type: Lithium polymer battery; 3.7 V; 4.05 Ah (7.75 Wh)
Power supply	Charger with micro USB connection (5 V, 2 A)
Operating time	8 ... 12 h in practical use, 4 h in continuous operation
Charge duration	Typically 4 hours
Dimensions (W x H x D)	90 x 174 x 25 mm [3 ^{9/16} x 6 ^{7/8} x 1 inch]
Weight	370 g / 13.1 oz (including rechargeable battery)
Material	Plastic (polycarbonate: ABS); chemically hardened glass
Ambient conditions	Temperature range: -10 ... + 40 °C (operation); -20 ... + 60 °C (storage); 0 ... + 20 °C (charging) 14 ... + 104 °F (operation); -4 ... + 140 °F (storage); 32 ... + 68°F (charging) Degree of protection: IP 40

SONOLEVEL app – technical data

Parameter	SONOLEVEL measurement software
Functions	<ul style="list-style-type: none"> • Taking photos to add to data sets or measurements • Inserting markers immediately after taking photos • Recording voice memos to add to data sets and measurements • Storing text comments • Selection of the current application (leak, storage, etc.) as context for measurements • Creation of PDF reports of selected data sets • Exporting selected data sets for further processing on the computer • Adding pictures from the gallery • Adjusting the coloring of amplitudes in the spectrogram • Setting the sampling rate from 4 ms to 128 ms
Saving and recording	<p>Audio data: Format: *.mp3</p> <p>Storage location: Internal measurement memory</p>
Displays	<ul style="list-style-type: none"> • Level profile (only "main" level - marked in green, freely selectable) • Level wheel and level bar (only current level) • Level table, configurable with respect to arrangement, number (max. 5) and type of the displayed level <p>The following sound pressure level and the temperature can be shown (T, only active with structure-borne sound sensor DBS20):</p> <ul style="list-style-type: none"> • L – Current level • LF – Time-evaluated current level (smoothed) • Lpk – Peak level • Leq – Energy-equivalent continuous sound pressure level • Lmin – Minimum level of the current level • Lmax – Maximum level of the current level <p>(in dB, reference $p_0 = 20 \mu\text{Pa}$, temporal resolution: 16 ms per level value)</p> <ul style="list-style-type: none"> • Spectrogram (temporal resolution: 4-128 ms per frequency spectrum) • Change from portrait / landscape • Measurement time, playback position • Temperature in °C and °F
Operating modes	<ul style="list-style-type: none"> • Live – Display of the current readings • Recording – Display and saving of the current readings • Playback – Playing back the saved readings
Languages	<p>German, English, Spanish, French, Portuguese, Turkish, Italian, Chinese, Dutch, Russian, Polish, Japanese, Czech, Hungarian</p>

SONOLEAK app – technical data

Parameter	SONOLEAK measurement software
Functions	<ul style="list-style-type: none"> • Taking photos to add to data sets or measurements • Inserting markers immediately after taking photos • Recording voice memos to add to data sets and measurements • Input of pressure and gas of the system to be measured • Setting the audio mode heterodyne/phasevocoder • Creation of PDF reports of selected data sets • Exporting selected data sets for further processing on the computer • Adding pictures from the gallery • Adjusting the coloring of amplitudes in the spectrogram • Evaluating leaks by means of user-defined leakage classes
Saving and recording	<p>Audio data: Format: *.mp3</p> <p>Storage location: Internal measurement memory</p>
Displays	<ul style="list-style-type: none"> • Level wheel and level bar (only current level) • L – Current level table (in dB, reference $p_0 = 20 \mu\text{Pa}$, temporal resolution: 16 ms per level value) • Spectrogram (temporal resolution: 16 ms per frequency spectrum)
Operating modes	<ul style="list-style-type: none"> • Live – Display of the current readings • Recording – Display and saving of the current readings
Languages	German, English, Spanish, French, Portuguese, Turkish, Italian, Chinese, Dutch, Russian, Polish, Japanese, Czech, Hungarian

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SONOCHEK accessories

Airborne Sound Sensor DBS10	54
Structure-borne Sound and Temperature Sensor DBS20	56
SONOCHEK Parabolic Sensor DBS30	58
Ultrasonic Transmitter DBT10	60
SONOLEVEL DATAVIEWER	62

Airborne Sound Sensor DBS10

The DBS10 sensor is used to detect airborne ultrasonic signals. The sensor features exchangeable attachments, target laser and LED light to locate damaged points. Depending on the measurement application, it can be used for the following applications:

- Detection and evaluation of leaks on compressed air, gas and vacuum systems.
- Detection of leaks on windows, doors, cabins, vehicles or containers.
- Detection of electrical partial discharges and insulation damage.



Airborne sound sensor DBS10 with attached precision locator DBS10-1. Small acoustic horn DBS10-2 (rear left) and large acoustic horn DBS10-3 (rear right).

Overview

- Bandwidth 20 ... 100 kHz
- Function keys for remote controlling the SONOCHEK
- Integrated target laser and LED light
- Diverse attachments to increase acoustic signal strength for precise localization of damaged points.

Order information

Item No.	Name
SON 6.110	SONOCHEK DBS10 Broadband airborne sound sensor
SON 6.110-1	SONOCHEK Sensor attachment: precision locator DBS10-1 including adapter cap
SON 6.110-2	SONOCHEK Sensor attachment: small acoustic horn DBS10-2
SON 6.110-3	SONOCHEK Sensor attachment: large acoustic horn DBS10-3

TECHNICAL INFORMATION

The volume of the acoustic playback can be controlled via the function keys. The start and stop of the measurement can also be controlled. The integrated target laser and the LED light help to precisely localize the damaged points.

Technical data

Parameter	Airborne sound sensor DBS10
Frequency range	20 ... 100 kHz
Measurement resolution	1 dB
Max. measurement distance	15 cm with precision locator DBS10-1 3 meters with small acoustic horn DBS10-2 8 meters with large acoustic horn DBS10-3
Dimensions (W x H x D)	30 x 155 x 30 mm (1 3/16 x 6 1/8 x 1 3/16 inch)
Weight	80 g / 2.8 oz (without accessories)
Material	Sensor housing: Plastic (polycarbonate: ABS), gray; Attachments: synthetic rubber (EPDM), black
Ambient conditions	Temperature range: -10 ... + 40 °C (operation); -20 ... + 60 °C (storage) 14 ... + 104 °F (operation); -4 ... + 140 °F (storage) Degree of protection: IP 40

Structure-borne Sound and Temperature Sensor DBS20

The optionally available DBS20 sensor is used to detect structure-borne sound signals. The sensor features exchangeable waveguides, an infrared temperature sensor as well as a LED light to illuminate the measured object. Together with the SONOCHEK measuring device, the sensor can be used for the following applications:

- Condition monitoring of machines and plants.
- Functional check of condensate drains and valves.
- Monitoring of bearing wear and malfunctions.
- Monitoring of lubrication conditions



DBS20 sensor with waveguide, magnetic adapter and toolkit.

Overview

- Bandwidth 20 ... 100 kHz
- Function keys for remote controlling the SONOCHEK
- Integrated LED light
- Infrared thermometer for non-contact measurement of the surface temperature
- Exchangeable stainless steel waveguides for measurement of structure-borne sound signals

Order information

Item No.	Name
SON 6.020	SONOCHEK sensor kit DBS20

Scope of delivery - SON 6.020

Item No.	Name	Application
SON 6.120	SONOCHEK DBS20 broadband structure-borne sound and temperature sensor	
SON 6.121	Calibration certificate for DBS20 sensor	
SON 6.120-3	SONOCHEK Magnetic adapter DBS20-3	Coupling at the measurement location for long-term measurements and for ensuring a uniform contact pressure
SON 6.120-4	SONOCHEK Toolkit for DBS20 sensor	For replacing the waveguide and the magnetic adapter.
SON 6.120-5	SONOCHEK waveguide 150 mm (5 ⁷ / ₈ inch), DBS20-5	For difficult-to-reach places and high-temperature applications

TECHNICAL INFORMATION

The volume of the acoustic playback can be controlled via the function keys. The start and stop of the measurement can also be controlled. The integrated temperature sensor improves the reliability of the measurement data with many measurement procedures, for example for measurements of condensate drains.

Technical data

Parameter	Structure-borne sound and temperature sensor DBS20
Frequency range	20 ... 100 kHz
Temperature measurement range	-70 ...+380 °C object temperature -94 ...+716 °F
Measurement resolution	Ultrasound: 1 dB; Temperature: 1 °C/ °F
Dimensions (W x H x D)	330 x 155 x 30 mm (1 3/16 x 6 1/8 x 1 3/16 inch)
Weight	140 g / 4.9 oz (without accessories)
Material	Sensor housing: Plastic (polycarbonate: ABS), gray; Waveguides: Stainless steel
Ambient conditions	Temperature range: -10 ... + 40 °C (operation); -20 ... + 60 °C (storage) 14 ... + 104 °F (operation); -4 ... + 140 °F (storage) Degree of protection: IP 40

SONOCHEK Parabolic Sensor DBS30

The optionally available parabolic sensor DBS30 is used to precisely detect ultrasound from a distance of up to 25 m. The parabolic sensor is delivered in a transport bag together with a printed pocket guide.



Overview

- Detection of damaged points across large distances up to 25 meters
- Bandwidth 20 ... 100 kHz
- Function keys for remote controlling the SONOCHEK
- Target laser and light spot target device integrated

Parabolic sensor DBS30 for the detection of airborne ultrasonic signal across large distances up to 25 meters.

Order information

Item No.	Name	Scope of delivery
SON 6.010	SONOCHEK DBS30 Parabolic sensor, set	SONOCHEK Parabolic Sensor DBS30 Calibration certificate DBS30 pocket guide (operating instructions in PDF format available on measuring device) Transport bag

TECHNICAL INFORMATION

Functional principle

The parabolic mirror reflects ultrasonic waves and focuses them on the ultrasonic microphone.

The ultrasonic microphone in the sensor converts sound pressure fluctuations in the air into an electrical signal over a broad frequency range. This electrical signal is already amplified and digitized in the sensor. Further data processing and output is carried out in the measuring device SONOCHEK.

The target laser and the light spot target device assist in precise localization of damaged points: If the sensor points towards the damaged point during the search, this point can be detected by using acoustic signals by pivoting the sensor and searching for a local sound level maximum. The target laser and the light spot target device mark the position of the damaged point.

Measurements can be easily started and stopped using the function key on the sensor handle. The target laser can be switched on via a separate button.

Technical data

Parameter	Parabolic sensor DBS30
Frequency range	20 ... 100 kHz
Measurement resolution	1 dB
Max. measurement distance	25 m
Dimensions (W x H x D)	270 x 440 x 390 mm (10 ^{5/8} x 17 ^{5/16} x 15 ^{3/8} inch)
Mirror diameter	270 mm (10 ^{5/8} inch)
Weight	750 g / 26.5 oz
Materials	Aluminum, plastic (polycarbonate: ABS)
Ambient conditions	Temperature range: -10 ... + 40 °C (operation); -20 ... + 60 °C (storage) 14 ... + 104 °F (operation); -4 ... + 140 °F (storage) Degree of protection: IP 40

Ultrasonic Transmitter DBT10

The optionally available ultrasonic transmitter DBT10 is used to detect leaks in windows, doors, cabins, climatic cabinets, vehicles or containers.



Overview

- Ultrasonic transmitter incl. protective cover
- Compact dimensions
- Battery operation for approx. 24 hours
- 40 kHz - signal with frequency modulation

DBT10 Ultrasonic Transmitter for leak detection in enclosed systems.

Order information

Item No.	Name
SON 6.520	SONOCHEK DBT10 Ultrasonic Transmitter

TECHNICAL INFORMATION

Functional principle

The DBT10 sends out signals in the ultrasonic range. If positioned in an enclosed system, the signals leak from unsealed points and can be detected using the SONOCHEK ultrasonic measuring device. Two levels of sound intensity can be selected.

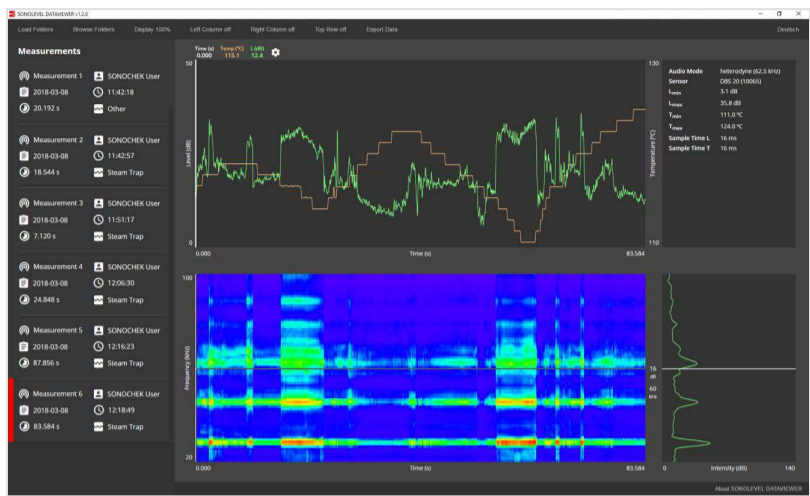
Technical data

Parameter	Ultrasonic Transmitter DBT10
Design	Ultrasonic transmitter with two sound intensity levels and LED display
Operation	Via touch button on the front side of the device
Dimensions (W x H x D)	69 x 115 x 19.5 mm, [2 11/16" x 4 1/2" x 3/4"] 74 x 120 x 24 mm, [2 15/16" x 4 3/4" x 15/16"] (with protective cover)
Weight	approx. 130 g (including batteries)
Materials	Housing: Plastic (ABS), protective cover: silicone
Power supply	3 AAA 1.5 V (battery operation not provided)

Parameter	Ultrasonic Transmitter DBT10
Signal	40 kHz with frequency modulation (pulsating) for the sound intensities of loud (≥ 70 dB) and quiet (≥ 40 dB)
Operating duration	approx. 24 hours on battery power
Operating temperature	-10 °C ... +60 °C, [14 °F ... 140 °F]
Storage temperature	-20 °C ... +60 °C, [-4 °F ... 140 °F]
Degree of protection	IP54
Standards and guidelines	2014/30/EU, Electromagnetic compatibility; 2011/65/EU, regarding Restricting the Use of Certain Hazardous Substances in Electrical and Electronic Equipment (RoHS)

SONOLEVEL DATAVIEWER

The optional PC software is used for visualization and evaluation of measurement data recorded with the SONOLEVEL App.



Overview

- Visualization of the SONOLEVEL measurement data
- Diagrams for level plot and spectrogram
- Playback of audio signals
- Selective CSV data export for further processing
- Installation via USB pen drive

Order information

Item No.	Name
SON 6.710-USB	SONOLEVEL DATAVIEWER, PC software incl. USB pen drive

TECHNICAL INFORMATION

Features

List view - display of measurement files and additional information

- Display of folders with the respective measurements
- Display of additional information e.g. person, date, location, measurement time
- Display of photos, notes and playback of voice memos (.mp3)

Detailed view - Audiovisual evaluation of measurements using diagrams

- Audio playback of measurements (.mp3)
- Display diagram for level recording and temperature. The temperature (T, only active with sensor DBS20) and the following sound pressure levels can be displayed as required:
 - L - actual level
 - LF - time-weighted actual level (smoothed)
 - Leq - energy equivalent continuous sound level
 - Lmax - Maximum value of the actual level
 - Lmin - minimum value of the actual level
 - Lpk - Peak value level
- Display metadata of the measurement
 - Audio mode e.g. PhaseVocoder or Heterodyn
 - Sensor type used
 - Minimum and maximum value of the actual level (Lmin, Lmax)
 - Minimum and maximum temperature (Tmin, Tmax in °C or °F)
 - Sampling rate
- Display spectrogram and spectrum

- Manual editing of the diagram axes for scaling of level plot, spectrogram and spectrum
- Data export in CSV format

Languages

- German, English

Operating system

- Compatible with Windows 7 and higher

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Spare parts for portable measuring devices

Case for VIBSCANNER	66
Case for VIBSCANNER 2	67
Wheeled case for VIBXPERT II	68
Case for VIBXPERT EX	69
Carrying pouch for VIBSCANNER 2	70
Carrying bag and strap for VIBXPERT EX	71
Carrying pouch with accessories for VIBXPERT II	72
VIBSCANNER pouch	73
Charger for VIBSCANNER	74
Charger for VIBXPERT EX	75
Charger for VIBXPERT II	76
Charging station for VIBXPERT II rechargeable battery	77
Rechargeable battery for VIBSCANNER	78
Rechargeable battery for VIBXPERT II	79

Case for VIBSCANNER

This robust case is intended for storage and transportation of the measuring equipment. The unbreakable hard shells and shock absorbing insert foam ensure safe protection of the components.



Overview

- Standard case contains scope of delivery from the variants

Ordering information

Item No.	Description
VIB 5.428	VIBSCANNER standard case

Note: The case may not be entered into the EX zone.

TECHNICAL INFORMATION

Technical data

Parameter	Standard case
Material	Polypropylene (PP)
Dimensions	approx. 390 x 340 x 90 mm [15 3/8" x 13 3/8" x 3 9/16"]
Weight (empty)	approx 1 kg [35.3 oz]

Case for VIBSCANNER 2

This robust case is intended for storage and transportation of the measuring equipment. The unbreakable hard shells and shock absorbing insert foam ensure safe protection of the components.



Features

- Lightweight strong HPX® resin
- Watertight
- Meets Carry-on regulations
- Vortex® valve
- Padlockable hasp
- Lifetime guarantee
- Weight (empty): 2.7 kg (6 lb)
- Dimensions: 411 x 322 x 168 mm
[16 3/16" x 12 11/16" x 6 5/8"]

Ordering information

Item No.	Description
VIB 5.228	VIBSCANNER 2 ruggedized case

Wheeled case for VIBXPERT II

This robust wheeled case is intended for storage and transportation of the measuring equipment. The unbreakable hard shells and shock absorbing insert foam ensure safe protection of the components.



Wheeled case for VIBXPERT II.

Features

- Lightweight strong HPX® resin
- Watertight
- Meets Carry-on regulations
- Vortex® valve
- Padlockable hasp
- Lifetime guarantee
- In-line wheels
- Telescopic pull-out handle
- Weight (empty): 5.8 kg (12.8 lb)
- Dimensions: 551 x 358 x 226 mm [21 11/16" x 14 1/8" x 8 7/8"]

Ordering information

Item No.	Description
VIB 5.327	Wheeled case for VIBXPERT II

Case for VIBXPERT EX

This robust case is intended for storage and transportation of the measuring equipment. The unbreakable hard shells and shock absorbing insert foam ensure safe protection of the components.



VIBXPERT EX case.

Features

- Case shells made of unbreakable plastic (ABS).
- Low empty weight (3 kg / 105,8 oz)
- Passed drop test from 2 meters
- Dimensions: 470 x 400 x 195
[18 1/2" x 15 3/4" x 7 11/16"]

Ordering information

Item No.	Description
VIB 5.329-X	Case for VIBXPERT EX

Note: The case may not be entered into the EX zone.

Carrying pouch for VIBSCANNER 2

The robust carrying pouch protects the instrument in an industrial environment. The carrying strap and the hand strap can be adjusted continuously via Velcro fastener.



Features

- Nylon blended fabric
- Velcro fastener
- Sturdy
- Washable

Ordering information

Item No.	Description
VIB 5.256	VIBSCANNER 2 pouch

Carrying bag and strap for VIBXPERT EX

Carrying case and strap are made of sturdy leather and approved for the EX zone. The carrying strap can be adjusted continuously via Velcro fastener.



Features

- Leather
- Velcro fastener
- Sturdy
- Washable

VIBXPERT EX with carrying bag and shoulder strap.

Ordering information

Item No.	Description
VIB 5.355	VIBXPERT EX carrying bag, leather
VIB 5.354-LD	VIBXPERT EX carrying strap, leather

Carrying pouch with accessories for VIBXPert II

The robust carrying pouch features a side pocket for sensors, cables, and tools. The carrying strap and hand strap can be adjusted continuously via Velcro fastener.



Features

- Nylon blended fabric
- Velcro fastener
- Sturdy
- Washable

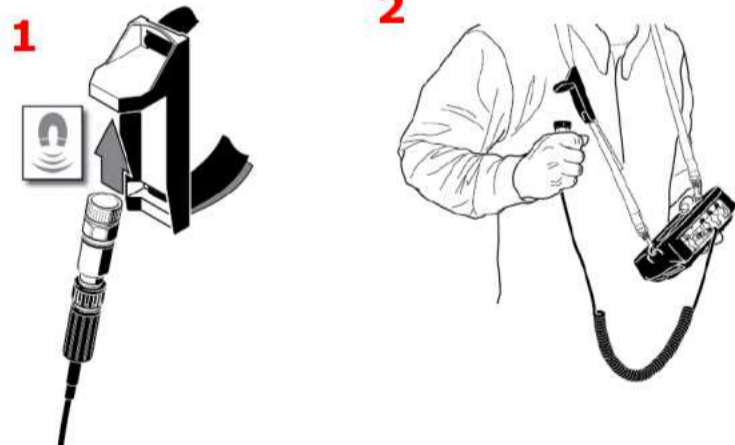
Carrying pouch (A) with shoulder strap (B) and hand strap (C).

Ordering information

Item No.	Description
VIB 5.356	VIBXPert II carrying pouch
VIB 5.354-GT	VIBXPert II shoulder strap
VIB 5.354-HS	VIBXPert II hand strap
VIB 5.354-CL	Sensor clip for VIBXPert pouch

Application example

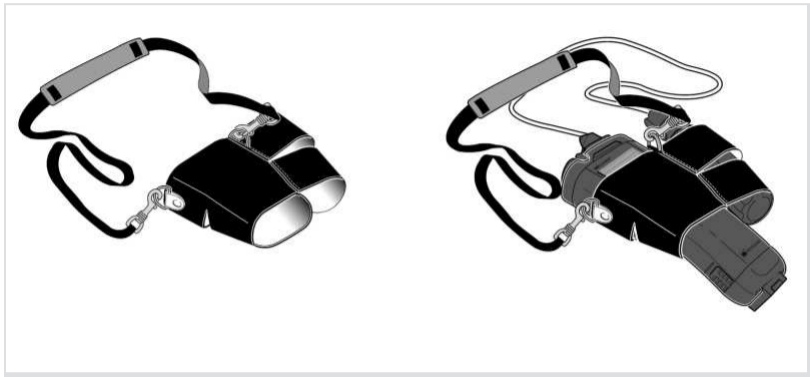
Sensor clip for VIBXPert pouch



- 1: Sensor connects magnetically to the sensor clip.
- 2: Sensor clip is a practical sensor holder between the measurements.

VIBSCANNER pouch

The robust pouch features a side pocket for the VIBCODE sensor. The carrying strap can be adjusted continuously via Velcro fastener.



Pouch without content (left) and with VIBSCANNER and VIBCODE (right).

Features

- Polyamide fabric (CORDURA)
- Side pocket for VIBCODE sensor
- Sturdy
- Washable

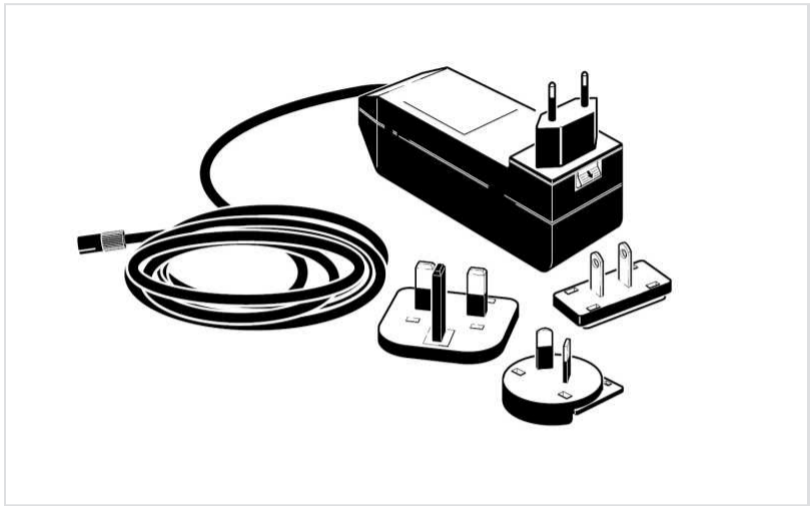
Ordering information

Item No.	Description
VIB 5.454	VIBSCANNER pouch

Note: The pouch may not be entered into the EX zone.

Charger for VIBSCANNER

Using this charger, the rechargeable battery is charged in the measuring device. The charger is also suited for the rechargeable battery with explosion protection.



Charger for VIBSCANNER including plug adapter.

Features

- Output: 12 V / 250 mA
- Four international plug adapters:
 - North America, Japan
 - Australia
 - UK
 - EU

Ordering information

Item No.	Description
VIB 5.420-INT	Charger for VIBSCANNER

Note: Only charge rechargeable battery outside of the EX-zone!

TECHNICAL INFORMATION

Technical data

Parameter	Charger for VIBSCANNER - VIB 5.420-INT
Input	100 - 240 VAC / 50 - 60 Hz / 620 mA
Output	12.1 VDC / 250 mA
Charge time	< 5 h
Degree of protection	IP 20
Temperature range	Operation: -5°C ... +40°C [23...104 °F] Storage: -30°C ... +80°C [-22...176 °F]
Connection cable, length	approx. 1.5 m (59")

Charger for VIBXPART EX

Using this charger, the measuring device can be operated with mains power (e.g., in the office) or the rechargeable battery can be charged in the measuring device.



Charger for VIBXPART EX including plug adapter.

Features

- Protection class II
- Output: 12 V / 3 A
- Five international plug adapters:
 - North America, Japan
 - Australia
 - UK
 - EU
 - China

Ordering information

Item No.	Description
VIB 5.322-INT	Charger for VIBXPART EX, international
VIB 5.322-X	Adapter cable for VIBXPART EX charger

TECHNICAL INFORMATION

Technical data

Parameter	Charger for VIBXPART EX - VIB 5.322-INT
Input	100 - 240 VAC / 50 - 60 Hz / 1.0 A
Output	12 VDC / 3.0 A / 36 W
Connection on measuring device	Analog channel A or B
Protection class	II / IP 52

Charger for VIBXPERT II

Using this charger, the measuring device can be operated with mains power (e.g., in the office) or the rechargeable battery for VIBXPERT-II can be charged, either in the measuring device or in the charging station available as accessory item.



Charger for VIBXPERT II including plug adapter.

Features

- Protection class II
- Output: 12 V / 3 A
- Five international plug adapters:
 - North America, Japan
 - Australia
 - UK
 - EU
 - China

Ordering information

Item No.	Description
VIB 5.320-INT	Charger for VIBXPERT II, international

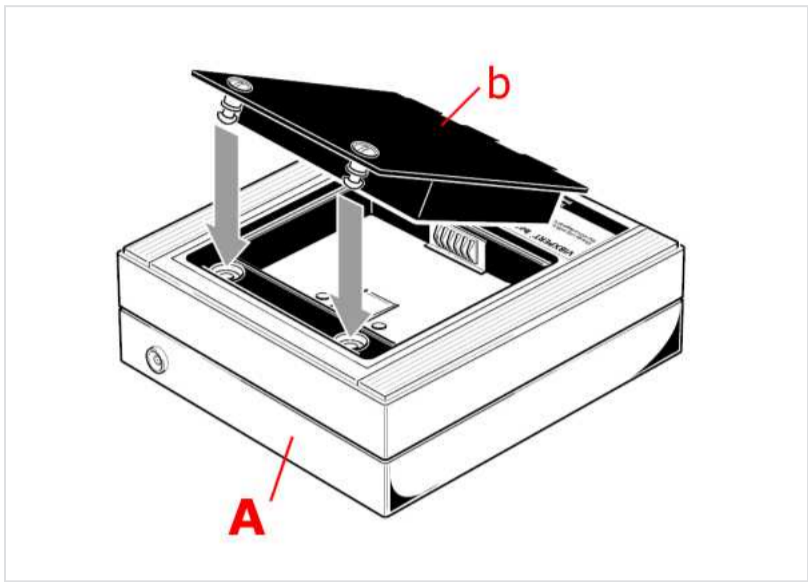
TECHNICAL INFORMATION

Technical data

Parameter	Charger for VIBXPERT II - VIB 5.320-INT
Input	100 - 240 VAC / 50 - 60 Hz / 1.0 A
Output	12 VDC / 3.0 A / 36 W
Connection on measuring device	Analog channel A or B
Protection class	II / IP 52

Charging station for VIBXPERT II rechargeable battery

Using this charging station, the VIBXPERT-II rechargeable battery is charged outside of the measuring device, while you can continue working with the VIBXPERT II and a second, fully charged rechargeable battery.



Charging station (A) for VIBXPERT II rechargeable battery (b).

Features

- LED display for battery status.
- Connection for VIBXPERT II charger
- Compact design
- Spare rechargeable battery available as accessory item

Ordering information

Item No.	Description
VIB 5.324	Charging station for VIBXPERT II rechargeable battery

TECHNICAL INFORMATION

Technical data

Parameter	Charger for VIBXPERT II rechargeable battery - VIB 5.324
Mains connection	MiniSnap socket for VIBXPERT II charger
Battery status displays	3 LEDs: green = charging completed; yellow = rechargeable battery is being charged; red = fault during charging
Charge temperature range	0 °C ... + 50 °C [32 ... 122 °F]
Charge time	< 5 hours
Dimensions	approx. 150 x 150 x 60 mm [5 7/8" x 5 7/8" x 2 3/8"]

Rechargeable battery for VIBSCANNER

The compact rechargeable battery is integrated in the device handle and supplies VIBSCANNER on your daily inspection route.



Features

- Easily replaceable
- Status display via LEDs
- Operating time typically 8 hours
- Charge time < 6 hours

The VIBSCANNER rechargeable battery can be easily replaced.

Ordering information

Item No.	Description
VIB 5.425	VIBSCANNER rechargeable battery
VIB 5.425 EX	VIBSCANNER EX rechargeable battery

Note: Rechargeable batteries may not be charged or replaced in the EX zone!

TECHNICAL INFORMATION

Technical data

Parameter	VIBSCANNER rechargeable battery - VIB 5.425 / VIB 5.425 EX
Type	NiMH
Rated voltage	7.2 V
Rated capacitance	1.5 Ah
Rated output	10.8 Wh
Charge temperature range	+10 °C ... + 40 °C [50 ... 104°F]
Operating time	> 10 hours in alternating mode > 6 hours in continuous mode with illumination
Charge time	< 6 h (EX: < 10 h)
Status displays	2 LEDs (red/ green) for charge and rechargeable battery state
Weight	approx 260 g [9.2 oz]

Rechargeable battery for VIBXPART II

The powerful rechargeable Li-ion battery supplies VIBXPART II on your daily measurement route. Intelligent power saving functions in the measuring device preserve rechargeable battery reserves and ensure long operating times. The rechargeable battery can be charged in the measuring device or in the charging station available as accessory item.



Lithium-ion rechargeable battery for VIBXPART II.

Features

- Operating time typically 8 hours
- Lithium ion cells
- Charge time < 5 hours

Ordering information

Item No.	Description
VIB 5.325	VIBXPART II rechargeable battery

TECHNICAL INFORMATION

Technical data

Parameter	VIBXPART II rechargeable battery - VIB 5.325
Type	Li ion rechargeable battery
Rated voltage	7.3 V
Rated capacitance	5.3 Ah
Rated output	38.7 Wh
Charge temperature range	0 °C ... + 50 °C [32 ... 122 °F]
Charge time	< 5 hours

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Stationary systems

VIBGUARD – Simultaneous monitoring and diagnosis	82
VIBGUARD compact – Condition Monitoring for individual assets	85
VIBGUARD portable – on the road diagnosis specialist	87
VIBREX – Continuous monitoring of one or two locations	89
Mounting kit for VIBREX basic unit	94

VIBGUARD – Simultaneous monitoring and diagnosis

VIBGUARD is a condition monitoring system for monitoring and diagnosis of operating conditions on machines with rotating components. The permanently installed system works continuously and autonomously, and records up to 20 measurement channels simultaneously.



Features

- Ideal for machines with critical parameters and highly dynamic processes
- Synchronous quick scanning of up to 20 channels
- Up to 6 operation states taken into account
- Variants for voltage and current driven accelerometers (IEPE, CLD) as well as process signals (voltage)
- Mounting with protective housing or on DIN rail inside a switching cabinet
- Intelligent data reduction

Ordering information

VIBGUARD is available in many variants differentiated by the following features:

- **Channel distribution / Type of signal:** CLD; IEPE; Voltage
- **Mounting:** DIN rail or protective housing 'M' size or 'L' size

The following table shows the corresponding **item numbers**.

Channel distribution / Type of signal	Mounting		
	DIN rail	Protective housing 'M'	Protective housing 'L'
16xU + 4xU/I	VIB 7.800-PS	VIB 7.800-LH	VIB 7.800-SDH
16xIEPE + 4xU/I	VIB 7.810-PS	VIB 7.810-LH	VIB 7.810-SDH
12xIEPE + 4xU/I	VIB 7.811-PS	---	VIB 7.811-SDH
8xIEPE + 8xU + 4xU/I	VIB 7.815-PS	VIB 7.815-LH	VIB 7.815-SDH
16xCLD + 4xU/I	VIB 7.820-PS	VIB 7.820-LH	VIB 7.820-SDH
8xCLD + 8xU + 4xU/I	VIB 7.825-PS	VIB 7.825-LH	VIB 7.825-SDH

Scope of supply

Item No.	Description	Details
VIB 7.800...7.825	VIBGUARD system module; Channel distribution / Type signal (variable)	p. 83
---	DIN rail OR protective housing 'M' OR protective housing 'L'	Dimensions: 380 x 380 mm (M size); 500 x 500 mm (L size)
VIB 5.965-2,5	VIBGUARD switch-mode power supply	
LIT 78.220..223 LIT 78.23x	Instructions (installation, operation, commissioning, maintenance) Protocols (x= 0,1,3)	

Optional items may be ordered for any variant.

Optional accessories

Item No.	Description	Hint	Details
VIB 7.830-CLD	VIBGUARD connection module for 4 additional CLD-type accelerometers	These modules are used to connect up to four accelerometers on the four current/voltage analog inputs (4xU/I). The modules are universal and can be used with any VIBGUARD variant in any combination.	---
VIB 7.830-ICP	VIBGUARD connection module for 4 additional IEPE (ICP)-type accelerometers		
VIB 7.835	DC-DC converter	required when using an external 24 V DC supply	

TECHNICAL INFORMATION

Technical data

	VIB 7.800	VIB 7.810	VIB 7.811	VIB 7.815	VIB 7.820	VIB 7.825
INPUTS AND OUTPUTS						
Analog IN	20 synchronous channels: 16 x vibration, 4 x process parameter		16 syn. ch.: 12x Vib. 4 x Process	20 synchronous channels: 16 x vibration, 4 x process parameter		
Signal type, Ch. variations	16 x U, 4 x U/I	16 x U (IEPE), 4 x U/I	12 x U (IEPE), 4 x U/I	8 x U (IEPE) + 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 type	Sensor w/ current or voltage output, Displacement sensor	IEPE-type sensor, Sensor w/ current or voltage output, Displacement sensor		CLD-type sensor, Sensor w/ current or voltage output, Displacement sensor		
Digital IN	4 optocoupler inputs 0-30V, Threshold 3V					
Tacho-Puls IN	2 frequency inputs ±30V DC and AC. Threshold ±30V DC (default 2.5V)					
Digital OUT	3 relay changeover contacts, 30VDC/30VAC/2A					
System OK OUT	Relais NC, 30VDC/30VAC/2A					
Ethernet	Data rate: 100 MBit, half duplex					
Serial ports	2x RS232, 115200 baud					
Services	Modbus-TCP, Modbus RTU (RS232)					
LED indicators	20x Analog-IN (VIB 7.811: 16x 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 band width					
FFT lines	6400 (Standard), 102400 (Analysis)					
Meas. range, process channels	± 24V or 4-20 mA, ±20mA					

	VIB 7.800	VIB 7.810	VIB 7.811	VIB 7.815	VIB 7.820	VIB 7.825
Meas. range, vibration channels	± 24V	---	---	± 24V	---	± 24V
GENERAL						
Ambient temperature	Operation: -20°C ... +70°C (-4°F ... + 158°F) Storage: -40°C ... +80°C (-40°F ... + 176°F)					
Relative humidity	max. 95 % (at 25°C [77°F], no condensation)					
System supply	24±6 VDC / 0.5 A					
Sensor supply	Current (CLD = Current Linedrive), Voltage (IEPE)					
Memory capacity	Flash: 2 GB, RAM: 128 MB					
Case material	Aluminum					
Weight	approx. 1.2 kg (2.65 lb)					
Env. protection	IP 20					

Information on intrinsic safety

When monitoring machines in explosive atmospheres, intrinsically safe sensors must be used and a limiting device is necessary for every measurement channel. VIBGUARD basic unit must be installed outside the hazardous area.

VIBGUARD compact – Condition Monitoring for individual assets

VIBGUARD compact is the 6-channel version of the VIBGUARD CMS and ideal for continuous diagnostic monitoring of complex individual assets.



Features

- 6 fully synchronous measuring channels for continuous data acquisition
- Monitors up to 6 operating conditions
- Stores data trends with adjustable data reduction and Intelligent Event Recording
- Specially for individual assets with high asset value, complex drives, and variable operating conditions
- Wi-Fi Ready Solution

Ordering information

Item No.	Description
VIB 7.900-PS	VIBGUARD compact, system module, incl power supply; mounted on DIN rail
VIB 7.900-LH	VIBGUARD compact, system module, incl power supply; mounted in protective housing

Items delivered in the box for any given variant is derived from the overview below.

Scope of supply

CONTENT- VIB 7.900-PS		
Item No.	Description	Details
VIB 7.900	VIBGUARD compact system module	p. 86
---	Power supply, PE clamp, DIN rail	mounted on DIN rail
LIT 79.210	Operating instructions	

CONTENT - VIB 7.900-LH		
Item No.	Description	Details
VIB 7.900	VIBGUARD compact system module	p. 86
---	Power supply, PE clamp, DIN rail	mounted on DIN rail
---	Protective housing	includes DIN rail and mounted components
LIT 79.210	Operating instructions	

TECHNICAL INFORMATION

Technical data - VIBGUARD compact system module

Parameter	VIB 7.900
INPUTS AND OUTPUTS	
Analog inputs	6 synchronous channels
Type of signal, channel distribution	6 x U / IEPE (ICP), selectable
Type of sensor	IEPE sensor; Sensor with voltage output
Tacho / pulse input	Frequency input: $\pm 30V$; Threshold $\pm 30V$ DC (default 2.5V)
Tacho / pulse output	Sensor voltage supply
Digital inputs	Optocoupler input: -3V to +30V, switching thresholds 6.5V to 8.5V DIN EN 61131-2 operating range DC 24V type I and II
Digital outputs	Relay turnkey: 30V DC / 30V AC / 2A DIN EN 61131-2 utilization category AC15 and DC13
System OK output	Relay opener: 30V DC / 30V AC / 2A DIN EN 61131-2 utilization category AC15 and DC13
Ethernet	Data rate: 100 MBit, half duplex
Serial interface	RS232, 115200 baud
Services	Modbus-TCP
LED indicators	6x analog IN, 1x tachometer IN, 1x system, 1x event, 2x Ethernet, 1x digital IN, 1x system OK, 1x digital OUT
MEASUREMENT	
Dynamic range	110 dB @ 24 bit
Sampling rate	131 kHz / 50 kHz range
FFT lines	6400 (default), 102400 (analysis)
Measuring range	$\pm 24V$
GENERAL	
Ambient temperature	Operation: -20°C ... +70°C [-4 °F ...+ 158 °F] Storage: -40°C ... +80°C [-40 °F ...+ 176 °F]
Relative humidity	max. 95 % (25°C [77°F], no condensation)
System supply	24 \pm 6 VDC / 0.25 A
Memory	Flash: 2 GB, RAM: 256 MB
Housing material	Aluminum
Weight	approx. 0.7 kg [24,7 oz]
Protection class	IP 20

Information on intrinsic safety

When monitoring machines in explosive atmospheres, intrinsically safe sensors must be used and a limiting device is necessary for every measurement channel. VIBGUARD must be installed outside the hazardous area.

VIBGUARD portable – on the road diagnosis specialist

VIBGUARD portable is the transportable version of VIBGUARD condition monitoring system. It is ideal for troubleshooting, in-depth diagnoses and continuous diagnostics monitoring of complex machinery. It provides service and maintenance specialists with a wide range of means to fast and accurate machine diagnosis.



Features

- Portable system for machinery diagnosis
- Straightforward and quick to install
- Robust aluminium case (IP 64)
- 20 synchronous measurement channels
- Continuous data collection
- Different configurations are available
- Integrated industrial PC – optional

Ordering information

Item No.	Description
VIB 7.800-MOB	VIBGUARD portable
VIB 7.800-MOBIPC	VIBGUARD portable with built-in Industrial PC

Items delivered in the box for any given variant is derived from the overview below.

Scope of supply

Item No.	Description	Details
VIB 7.800...7.825	VIBGUARD system module, channel distribution / type of signal, variable	p. 83
VIB 7.843	VIBGUARD portable case without industrial PC OR	
VIB 7.844	VIBGUARD portable case with industrial PC	
LIT 78.202	Operating manual	

Optional items may be ordered for any variant.

Optional accessories

Item No.	Description	Hint	Details
VIB 7.830-CLD	VIBGUARD connection module for 4 additional CLD-type accelerometers	These modules are used to connect up to four accelerometers on the four current/voltage analog inputs (4xU/I). The modules are universal and can be used with any VIBGUARD variant in any combination.	---
VIB 7.830-ICP	VIBGUARD connection module for 4 additional IEPE (ICP)-type accelerometers		
VIB 5.933-UMTS	UMTS Router		

TECHNICAL INFORMATION

Information on intrinsic safety

When monitoring machines in explosive atmospheres, intrinsically safe sensors must be used and a limiting device is necessary for every measurement channel. VIBGUARD basic unit must be installed outside the hazardous area.

VIBREX – Continuous monitoring of one or two locations

VIBREX is a compact monitoring system with a modular design. It is used in machines with antifriction bearings and running at constant operating conditions.



Features

- Machine vibration and bearing condition monitoring
- One or two measurement channels
- Straightforward installation and commissioning
- Analog level outputs (4 – 20 mA)
- Relay outputs
- Signal outputs (mV)
- Sensors and safety barrier for explosive atmospheres

Ordering information

VIBREX is available in application-dependent variants.

Item No.	Variant
VIB 5.761 V	VIBREX vibration monitor, 1 channel
VIB 5.761 VIP	VIBREX vibration monitor, 1 channel, incl. high-temperature industrial accelerometer
VIB 5.762 V	VIBREX vibration monitor, 2 channels
VIB 5.762 VIP	VIBREX vibration monitor, 2 channels, incl. high-temperature industrial accelerometer
VIB 5.763 B	VIBREX bearing condition monitor, 1 channel
VIB 5.764 B	VIBREX bearing condition monitor, 2 channels
VIB 5.765 VB	VIBREX combined vibration and bearing condition monitor, 1 channel

Items delivered in the box is derived from the overview below.

Scope of delivery- VIBREX vibration monitor

CONTENTS			VARIANT			
Item No.	Description	Details	VIB 5.761 ...		VIB 5.762 ...	
			V	VIP	V	VIP
VIB 5.752	Basic unit incl. mounting kit (p. 94)	p. 92	✓	✓	✓	✓
VIB 5.755 I	Evaluation module for vibration monitoring according to ISO 10816-3, 10 Hz – 1 kHz	p. 93	✓	✓	✓, 2x	✓, 2x
VIB 5.754	Empty module	---	✓	✓	✗	✗
VIB 6.125 RIP	High-temperature industrial accelerometer, permanent installation, for IP 68 option	p. 104	✗	✓	✗	✓, 2x
VIB 5.775-5	Connection cable 5 m (196 7/8")	p. 213	✗	✓	✗	✓, 2x
VIB 9.610	VIBREX operating manual	---	✓	✓	✓	✓
VIB 9.831	Operating manual for accelerometers	---	✗	✓	✗	✓

Scope of delivery- VIBREX bearing monitor and combined bearing / vibration monitor

CONTENTS			VARIANT		
Item No.	Description	Details	VIB 5.763 B	VIB 5.764 B	VIB 5.765 VB
			VIB 5.752	Basic unit incl. mounting kit (p. 94)	p. 92
VIB 5.755 I	Evaluation module for vibration monitoring according to ISO 10816-3, 10 Hz – 1 kHz	p. 93	✗	✗	✓
VIB 5.756 I	Evaluation module for bearing monitoring	p. 93	✓	✓, 2x	✓
VIB 5.754	Empty module	---	✓	✗	✗
VIB 9.610	VIBREX operating manual	---	✓	✓	✓

Note: The items in the box for the variants are fixed. A customized configuration is possible. Customized configurations may be created using items from the aforementioned variants and those from the alternative components list below.

Alternative components for customized configurations

Item No.	Description	Note	Details
Evaluation modules			
VIB 5.755 L	Vibration module for low-speed machines, 1 Hz – 1 kHz	Evaluating vibration velocity in mm/s	p. 93
VIB 5.755 ML	Vibration module for low-speed machines, 2 Hz – 1 kHz	Evaluating vibration velocity in mm/s	p. 93
VIB 5.755 IUS	Vibration module for standard machines according to ISO 10816-3, 10 Hz – 1 kHz (U.S. version)	Evaluating vibration velocity in inch/s	---
VIB 5.757 G	Acceleration module for high-speed machines, 2 Hz – 20 kHz	Evaluating vibration acceleration in m/s ⁻²	p. 93
Sensors			
VIB 6.122 R	Industrial accelerometer, permanent installation, standard		p. 98
VIB 6.125 R	Industrial accelerometer, permanent installation, standard, high temperature		p. 98
VIB 6.122 DEX	Industrial accelerometer, permanent installation, intrinsically safe	Limiting device is necessary	p. 98
VIB 6.125 IDEX	Industrial accelerometer, permanent installation, high temperature, intrinsically safe	For IP 68 option; Limiting device necessary	p. 104
VIB 6.127	Industrial accelerometer for low-speed machines, permanent installation	Bearing condition evaluation and pump cavitation are not possible	p. 98
VIB 6.127 DEX	Industrial accelerometer for low-speed machines, permanent installation, intrinsically safe	Bearing condition evaluation and pump cavitation are not possible; limiting device is necessary	p. 98
VIB 6.129 IP	Industrial accelerometer for low-speed machines, permanent installation	For IP 68 option; Bearing condition evaluation and pump cavitation are not possible	p. 104
VIB 6.129 IDEX	Industrial accelerometer for low-speed machines, permanent installation, intrinsically safe	For IP 68 option; Bearing condition evaluation and pump cavitation are not possible; Limiting device is necessary	p. 104
Cable and installation accessories			
Miscellaneous	Customized VIBREX connection cable	Cable pre-assembly according to cable configurator	
VIB 6.760 / 2	IP 68 option for industrial sensors	Cable pre-assembly according to cable configurator	p. 156
VIB 3.550	Limiting device for CLD-type accelerometers with intrinsic safety	1 per measurement channel	p. 230
VIB 6.770/13	Junction box for the extension of coaxial and triaxial cables; TNC to M20 threaded joints		p. 232
VIB 3.431	Adhesive adapter, M8 on the adhesive mount		p. 158

TECHNICAL INFORMATION

Technical data, VIBREX basic unit

Parameter	VIBREX basic unit
INTERFACES	
Slots	1 or 2 modules
Inputs	2 x CLD accelerometer Mains supply 115 / 230 VAC DC source 24VDC
Outputs / module	1 alarm relay 1 OK relay for self monitoring / warnung 1 analog level output (4 – 20 mA) 1 voltage output (mV) for signal analysis
Switching power	Maximum 3 A @ 250 V AC
Operating modes	Combined bearing condition / vibration monitoring (1 or 2 channels); Bearing condition only or vibration monitoring only (1 or 2 channels)
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)	Direct sensor signal (buffered, 100 Ohm)
Transmission	1.0 mV _{eff.} /ms ⁻² (=10 mV/g) for sensors with a sensitivity of 1 μA/ms ⁻² 5.35 mV _{eff.} /ms ⁻² (=52 mV/g) for sensors with a sensitivity of 5.35 μA/ms ⁻²
Frequency response	= Frequency response sensor
ENVIRONMENT	
Operating temperature	-10 °C to 60 °C (14 °F to 140 °F)
Environmental protection	IP 65
Vibration limit	< 50 m/s ² (center frequency: 60 Hz, bandwidth: 100 Hz)
Housing material	Plastic (polycarbonate, Makrolon) with transparent lid, protection class II
Dimensions	200 mm x 120 mm x 77 mm (7 7/8" x 4 23/32" x 3 1/32") — L x B x W

Information on intrinsic safety

When monitoring machines in explosive atmospheres, intrinsically safe sensors must be used and a limiting device is necessary for every measurement channel. VIBREX basic unit must be installed outside the hazardous area.

Technical data, VIBREX evaluation modules

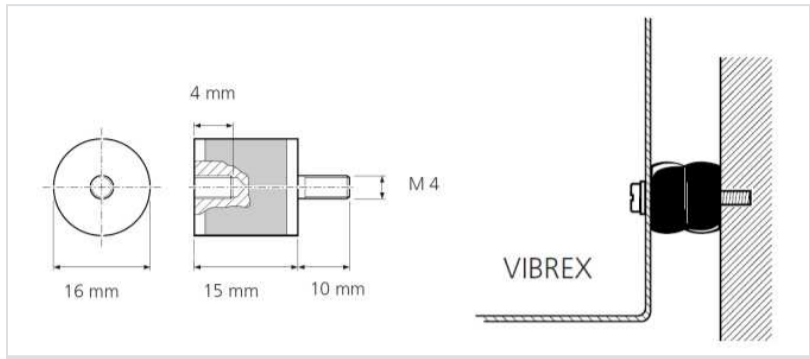
Parameter	VIBREX evaluation module				
	VIB 5.755 I	VIB 5.755 L	VIB 5.755 ML	VIB 5.756 I	VIB 5.757 G
MEASUREMENT					
Measurement quantity	RMS vibration velocity			Shock pulse (Maximum value in dBsv)	RMS vibration acceleration
Frequency range	10 Hz – 1 kHz	1 Hz – 1 kHz	2 Hz – 1 kHz	---	2 Hz – 20 kHz
Measurement range	0 to 10 / 20 / 50 / 100 mm/s			20 - 79 dBsv	0 to 60 / 120 / 300 / 600 m/s ⁻²
ELECTRICAL					
Operating voltage	18 – 30 V DC				
Maximum current	approx. 35 mA				
Output	4-20 mA, analog — with basic unit				
SETTINGS					
Status and alarm indicators	5 LEDs for alarm, warning, short circuit, open circuit, and power supply				
Alarm and warning thresholds	10% to 100% of measurement range end value			Alarm: 20 – 79 dBsv. Warning: ‚Alarm‘ – 15 dBsv	10% to 100% of measurement range end value
Alarm and warning delay	5 – 50 s				
Type of industrial sensor	Standard *	Low-speed**	Standard	Standard	Standard

* Sensitivity: 1,0 µA/ms⁻²

** Sensitivity: 5,35 µA/ms⁻²

Mounting kit for VIBREX basic unit

The mounting kit comprises four vibration dampers to facilitate a vibration-free mounting of VIBREX basic unit.



Vibration dampers for a vibration-free mounting of the basic unit

Scope of supply

- Vibration dampers, 4 pieces
- Hex socket head cap screws M4x8, 4 pieces
- Hex nuts DIN 934, 4 pieces
- Spring washers DIN 127 B, 4 pieces
- Flat washers DIN 125 A, 4 pieces

Sensors

Overview: Sensors for portable instruments

Which sensors can be operated with which instrument? You can find the answer in the following overviews:

Vibration measurement

Item No.	Sensor	Portable Instrument				Connection to meas. location
		VSC 2	VXP II	VXP EX	VSC EX	
VIB 6.142 R	Industrial, Standard	✓	✓	✗	✗	e.g. Magnetic adapter VIB 3.420
VIB 6.142 DEX	Industrial, Standard, EX	✗	✗	✓	✓	e.g. Magnetic adapter VIB 3.420
VIB 6.147	Industrial, low-speed	✓	✓	✗	✗	e.g. Magnetic adapter VIB 3.420
VIB 6.147 DEX	Industrial, low-speed, EX	✗	✗	✓	✓	e.g. Magnetic adapter VIB 3.420
VIB 8.660	VIBCODE	✓	✓	✗	✗	VIBCODE stud (bayoneted fitting)
VIB 8.660 HEX	VIBCODE EX	✗	✗	✓	✓	VIBCODE stud (bayoneted fitting)
VIB 6.655	Triaxial, IEPE	✓	✓	✗	✗	Magnetic adapter VIB 6.657
VIB 6.172	Monoaxial, IEPE	✓	✓	✗	✗	Magnetic adapter VIB 3.423
VIB 8.666	Quick fit accelerometer	✓	✓	✗	✗	Measurement stud (bayoneted fitting)
VIB 5.731 / 5	VIBROTECTOR	✗	✓	✗	✗	Threaded mount

VSC = VIBSCANNER / VXP = VIBXPERT

Process parameter

Item No.	Sensor	Portable Instrument			Connection to meas. location
		VXP II	VXP EX	VSC EX	
VIB 6.631	Laser trigger / RPM sensor	✓	✗	✗	Optical, reflected laser beam
VIB 6.631 EX	Laser trigger / RPM sensor, EX	✗	✓	✓	Optical, reflected laser beam
VIB 6.672	LED stroboscope (RPM, Phase)	✓	✗	✗	Optical, reflected flash light
VIB 8.607-1,5	Temperature probe	✓	✓	✓	Built-in magnetic holder
VIB 8.608	Temperature handheld probe	✓	✓	✓	Manual contact
VIB 6.640	Inductive proximity sensor	✓	✗	✗	Inductive
VIB 6.673	Current clamp	✓	✗	✗	Clamping around the electrical conductor

VSC = VIBSCANNER / VXP = VIBXPERT

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Vibration sensors

Industrial CLD accelerometers for permanent installation	98
Mobile industrial CLD accelerometer	101
Industrial CLD accelerometers for use in liquid media	104
Industrial CLD accelerometer with built-in temperature sensor	107
Mini CLD accelerometer	110
"Wind" CLD accelerometer	113
Accelerometer (IEPE)	116
Hybrid triaxial accelerometers, permanent mounting	119
Hybrid triaxial accelerometer, mobile version	122
VIBCODE vibration transducer	124
Accelerometer with quick fitting coupling	126
Triaxial accelerometer	128
Mono headphones	131
VIBROTECTOR vibration transmitters	132

Industrial CLD accelerometers for permanent installation

These robust type of sensors are suited for vibration measurements on industrial machinery. The sensors are permanently installed on the machine measuring point where the signal is acquired using a stationary condition monitoring system.



Features

- 3-in-1 sensor: housing vibration, shock pulse (condition of roller bearings), cavitation
- $f_{\min.}$: 0.3 Hz – ideal for machines running at low speeds
- Intrinsic safety, Zone 1
- $T_{\max.}$: 135°C (275°F)
- Rigid mounting using threaded screws
- Current Line Drive (CLD) output for long cable use
- Immune to interference (Tandem-Piezo)

Industrial accelerometers for permanent installation

Ordering information

Item No.	Industrial accelerometers for permanent installation
VIB 6.122 R	Standard
VIB 6.122 DEX	Standard, intrinsically safe
VIB 6.125 R	Standard, high temperature
VIB 6.127*	Low speed
VIB 6.127 DEX*	Low speed, intrinsically safe

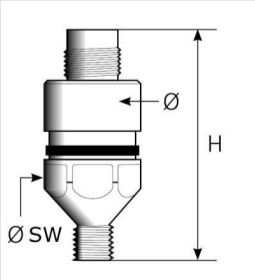
* Not suitable for shock pulse measurement and pump cavitation.

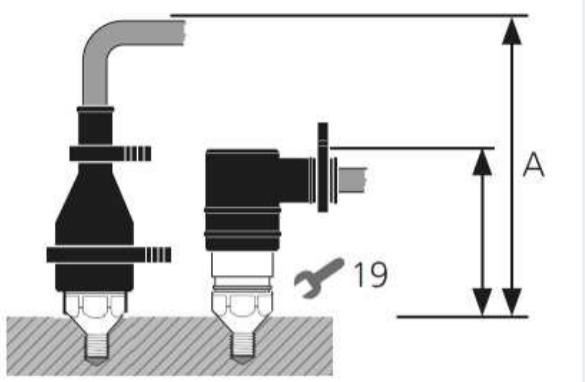
Accessories

Item No.	Description / Group
Miscellaneous	"Mounting adapters for vibration sensors", p. 158
Miscellaneous	"Dust caps for industrial CLD accelerometers", p. 164
Miscellaneous	"Tools for installation of accelerometers", p. 176
VIB 3.550	"Intrinsic safety barriers", p. 230

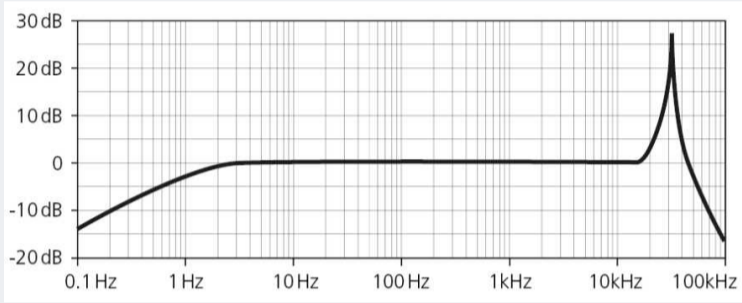
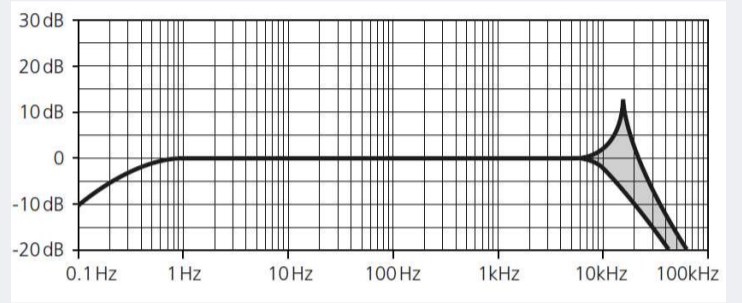
TECHNICAL INFORMATION

Technical data - VIB 6.12...


Parameter	VIB 6.122 R	VIB 6.125 R	VIB 6.127
MEASUREMENT			
Signaling system	Current Line Drive, 3.5 mA static current with superimposed AC signal		
Transmission factor	1.0 $\mu\text{A}/\text{ms}^{-2} \pm 3\%$ (Ref.: 159 Hz; 25 °C / 77 °F)		5.35 $\mu\text{A}/\text{ms}^{-2} \pm 4\%$ (Ref.: 159 Hz; 25 °C / 77 °F)
Frequency range $\pm 5\%$	2.5 Hz to 13 kHz		1 Hz to 3 kHz
Frequency range $\pm 10\%$	1.6 Hz to 17 kHz		0.7 Hz to 8 kHz
Frequency range $\pm 3\text{dB}$	1 Hz to 20 kHz		0.3 Hz to 10 kHz
Resonance frequency	36 kHz		17 kHz; > 20 dB damped
Linearity range, $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$		$\pm 450 \text{ ms}^{-2}$
Temperature range; Cable VIB 90093	-40 °C to 100 °C (-40 °F to 212 °F)	-40 °C to 125 °C (-40 °F to 257 °F) / (135 °C (275 °F) w/ cable VIB 90007)	-40 °C to 100 °C (-40 °F to 212 °F)
ELECTRICAL			
Power supply	> 10 mA / 7-18 VDC		
Transverse sensitivity	< 5%		
Temperature sensitivity	0.17 %/K		0.13 %/K
Magnetic field 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 1.4305		
Environmental protection	IP 65 with cable connector locked		
Cable connection	TNC socket		
Mounting	M8 thread		
Shock limit	< 250 kms^{-2}		< 50 kms^{-2}
Weight	40 g (1.4 oz)		43 g (1.5 oz)
Dimensions	H: 46 mm (1 13/16") Ø: 19 mm (3/4") ØSW: 21 mm (13/16")		H: 49 mm (1 15/16") Ø: 19 mm (3/4") ØSW: 21 mm (13/16")
			

Parameter	VIB 6.122 R	VIB 6.125 R	VIB 6.127
Mounting height A, straight / angled TNC plug 	A > 115 mm / 55 mm (4.53" / 2.2")		A > 120 mm / 60 mm (4.72" / 2.36")

Frequency response

1 Hz - 20 kHz	0.3 Hz - 10 kHz
	
Type: <ul style="list-style-type: none"> • VIB 6.122 R, VIB 6.122 DEX, • VIB 6.125 	Type: <ul style="list-style-type: none"> • VIB 6.127, VIB 6.127 DEX,

Intrinsic safety details

Type VIB 6.12..DEX	
Marking 	Gas: II 2G Ex ib IIC T4 / Dust: II 2D Ex ib IIIB T ₅ 187°C
Temperature range	-30 °C to +80 °C (-22 °F to 176 °F)

Mobile industrial CLD accelerometer

This sensor is intended for vibration measurement on machinery within industrial environments using a portable data collector. Optional magnetic adapters for mounting at the measurement points are available.



Features

- 3-in-1 sensor: housing vibration, shock pulse (condition of roller bearings), cavitation
- Intrinsic safety, Zone 1
- f_{\min} : 0.3 Hz – ideal for machines running at low speeds
- Rigid mounting using threaded screws
- Current Line Drive (CLD) output for long cable use
- Immune to interference (Tandem-Piezo)

Industrial accelerometer for mobile data collection

Ordering information

Item No.	Industrial accelerometer for mobile data collection
VIB 6.142 R	Standard, mobile
VIB 6.142 DEX	Standard, mobile, intrinsically safe
VIB 6.147	Low speed, mobile
VIB 6.147 DEX	Low speed, mobile, intrinsically safe

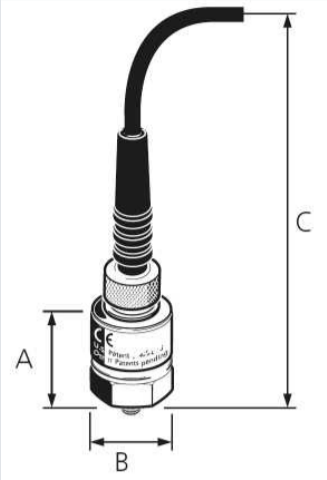
Accessories

Item No.	Description / Group
Miscellaneous	"Mounting adapters for vibration sensors", p. 158
VIB 3.550	"Intrinsic safety barriers", p. 230

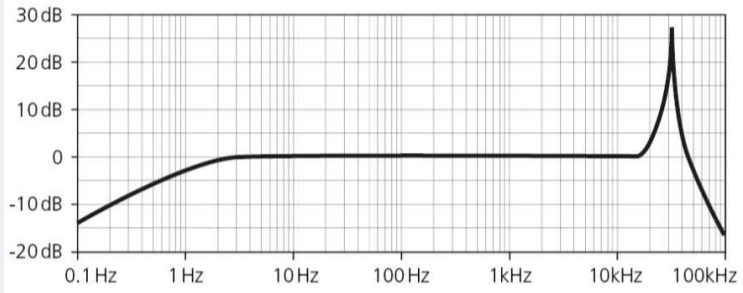
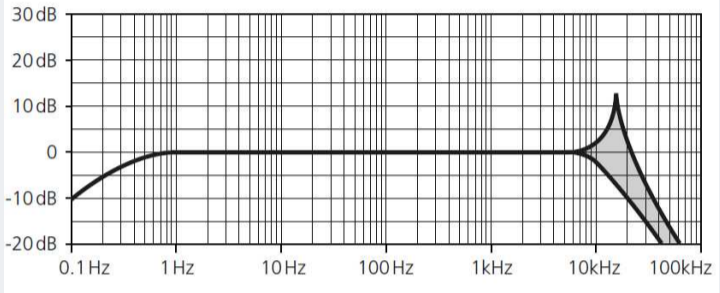
TECHNICAL INFORMATION

Technical data - VIB 6.14x (mobile)


Parameter	VIB 6.142	VIB 6.147
MEASUREMENT		
Signaling system	Current Line Drive, 3.5 mA static current with superimposed AC signal	
Transmission factor	1,0 $\mu\text{A}/\text{ms}^{-2} \pm 3\%$ (Ref.: 159 Hz; 25 °C)	5,35 $\mu\text{A}/\text{ms}^{-2} \pm 4\%$ (Ref.: 159 Hz; 25 °C)
Frequency range, $\pm 5\%$	2.5 Hz to 13 kHz	1 Hz to 3 kHz
Frequency range, $\pm 10\%$	1.6 Hz to 17 kHz	0.7 Hz to 8 kHz
Frequency range, $\pm 3\text{dB}$	1 Hz to 20 kHz	0.3 Hz to 10 kHz
Resonance frequency	36 kHz	17 kHz; > 20dB damped
Linearity range, $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$	$\pm 450 \text{ ms}^{-2}$
Temperature range	-40 °C to 100 °C (-40 °F to 212 °F)	
ELECTRICAL		
Power supply	> 10 mA / 7-18 VDC	
Transverse sensitivity	< 5% at 10 kHz	
Temperature transient sensitivity	< 0.05 ms^{-2}/K	< 0.01 ms^{-2}/K
Magnetic field 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 1.4305	
Environmental protection	IP 65 with cable connector locked	
Cable connection	TNC socket	
Mounting	Magnetic holder / M5 thread	
Shock limit	< 250 kms^{-2}	< 50 kms^{-2}
Weight	39 g	38 g

Parameter	VIB 6.142	VIB 6.147
Dimensions 	A = 40 mm / B = 21 mm / C = 120 mm (A = 1.6" / B = 0.8" / C = 4.7")	A = 45 mm / B = 21 mm / C = 125 mm (A = 1.8" / B = 0.8" / C = 4.9")

Frequency response

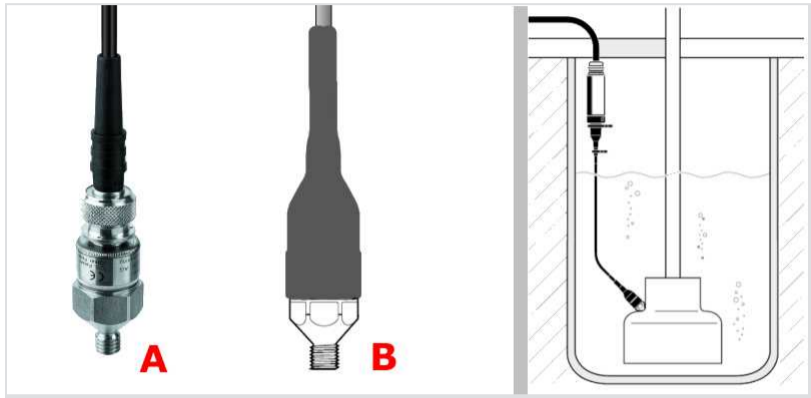
1 Hz - 20 kHz	0.3 Hz - 10 kHz
	
Type: <ul style="list-style-type: none"> VIB 6.142 R, VIB 6.142 DEX (screwed or adhesive mounting)* * Linear frequency range limitation: <ul style="list-style-type: none"> Magnetic adapter: < 5 to 20 kHz Probe tip: < 1 kHz 	Type: <ul style="list-style-type: none"> VIB 6.147, VIB 6.147 DEX (screwed or adhesive mounting)* * Linear frequency range limitation: <ul style="list-style-type: none"> Magnetic adapter: < 5 kHz Probe tip: < 1 kHz

Intrinsic safety details

Type VIB 6.142 DEX / VIB 6.147 DEX	
Marking 	Gas: II 2G Ex ib IIC T4 / Dust: II 2D Ex ib IIIB T ₅ 187°C
Temperature range	-30 °C to 80 °C (-22 °F to 176 °F)

Industrial CLD accelerometers for use in liquid media

These accelerometers are intended for use in liquid media. The connection cable to the sensor is hermetically sealed (IP 68).



Industrial accelerometers for use in liquid media; A – not sealed, B – hermetically sealed (IP 68)

Features

- Ideal for use in liquid media
- Rating IP 68 optional
- 3-in-1 sensor: housing vibration, shock pulse (condition of roller bearings), cavitation
- Intrinsic safety, Zone 1
- $f_{\min.}$: 0.3 Hz – ideal for machines running at low speeds
- $T_{\max.}$: 135°C (275°F)
- Rigid mounting using threaded screws
- Current Line Drive (CLD) output for long cable use
- Immune to interference (Tandem-Piezo)

Ordering information

Item No.	Industrial accelerometer for use in liquid media
VIB 6.125 RIP	Standard machinery, high temperature, IP 68 option
VIB 6.125 IDEX	Standard machinery, high temperature, IP 68 option, intrinsic safety
VIB 6.129 IP*	Low speed machinery, high temperature, IP 68 option
VIB 6.129 IDEX*	Low speed machinery, high temperature, IP 68 option, intrinsic safety

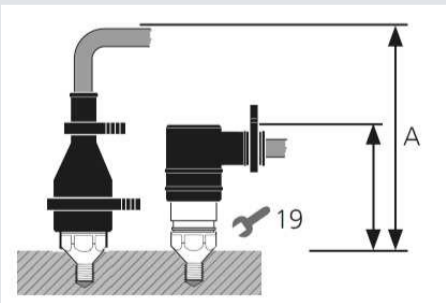
* Not suited for shock pulse measurements and cavitation measurements.

Accessories

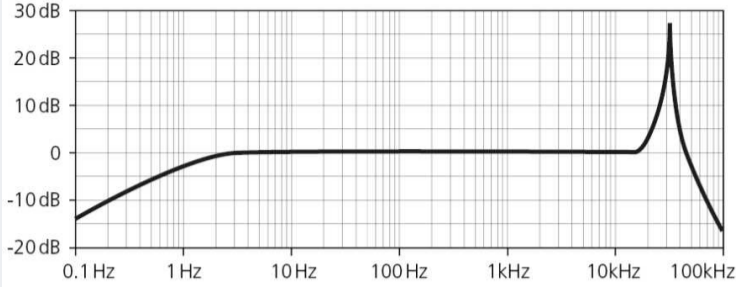
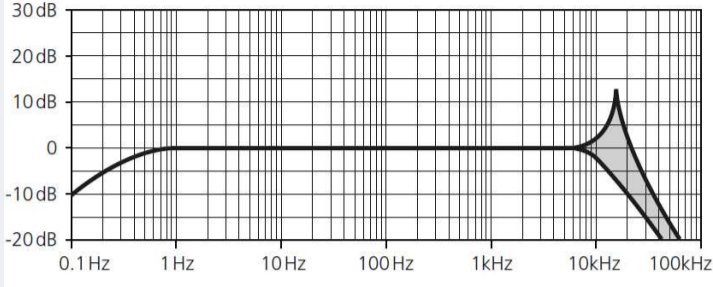
Item No.	Description / Group
Miscellaneous	"Mounting adapters for vibration sensors", p. 158
Miscellaneous	"Dust caps for industrial CLD accelerometers", p. 164
Miscellaneous	"Tools for installation of accelerometers", p. 176
VIB 6.760	"IP68 option for industrial accelerometers", p. 156
VIB 3.550	"Intrinsic safety barriers", p. 230

TECHNICAL INFORMATION


Technical data - VIB 6.12...

Parameter	VIB 6.125 RIP	VIB 6.129 IP
MEASUREMENT		
Signaling system	Current Line Drive, 3.5 mA static current with superimposed AC signal	
Transmission factor	1,0 $\mu\text{A}/\text{ms}^{-2} \pm 3\%$ (Ref.: 159 Hz; 25 °C)	5,35 $\mu\text{A}/\text{ms}^{-2} \pm 4\%$ (Ref.: 159 Hz; 25 °C)
Frequency range, $\pm 5\%$	2.5 Hz to 13 kHz	1 Hz to 3 kHz
Frequency range, $\pm 10\%$	1.6 Hz to 17 kHz	0.7 Hz to 8 kHz
Frequency range, $\pm 3\text{dB}$	1 Hz to 20 kHz	0.3 Hz to 10 kHz
Resonance frequency	36 kHz	17 kHz; > 20 dB damped
Linearity range, $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$	$\pm 450 \text{ ms}^{-2}$
Temperature range	-40 °C to 125 °C, with cable type VIB 90093 (-40 °F to +257 °F) -40 °C to 135 °C, with cable type VIB 90007 (-40°F to +275 °F)	
ELECTRICAL		
Power supply	> 10 mA / 7-18 VDC	
Transverse sensitivity	< 5%	
Temperature sensitivity	0,17 %/K	0,13 %/K
Magnetic field 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} at 2 Hz	< 0.002 ms^{-2} at 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 with cable connector locked; IP 68 with VIB 6.760 / VIB 6.761	
Cable connection	TNC socket	
Mounting	M8 thread	
Shock limit	< 250 kms^{-2}	< 50 kms^{-2}
Weight	40 g	43 g
Mounting height A, straight / angled TNC plug	A > 115 mm / 55 mm	A > 120 mm / 60 mm
		
Mounting height w/ IP68 option	A > 140 mm (VIB 6.760) A > 120 mm (VIB 6.761)	A > 140 mm (VIB 6.760) A > 120 mm (VIB 6.761)

Frequency response

1 Hz - 20 kHz	0,3 Hz - 10 kHz
	
<p>Type:</p> <ul style="list-style-type: none"> VIB 6.125 RIP, VIB 6.125 IDEX 	<p>Type:</p> <ul style="list-style-type: none"> VIB 6.129 IP, VIB 6.129 IDEX

Intrinsic safety details

Type VIB 6.125 IDEX / VIB 6.129 IDEX	
Marking 	Gas: II 2G Ex ib IIC T4 / Dust: II 2D Ex ib IIIB T ₅ 187°C
Temperature range	-30 °C to 80 °C (-22 °F to 176 °F)

Industrial CLD accelerometer with built-in temperature sensor

This sensor is suited for both vibration and temperature measurements on industrial machinery. The sensor is installed permanently at the measuring point at the readings acquired using a stationary condition monitoring system.



Features

- 4-in-1 sensor: housing vibration, shock pulse (condition of roller bearings), cavitation, temperature
- Rigid mounting using threaded screws
- Current Line Drive (CLD) output for long cable use
- Immune to interference (Tandem-Piezo)
- Sensor cable available as an accessory

Industrial sensor for measuring both vibration and temperature

Ordering information

Item No.	Industrial accelerometer
VIB 6.163	Industrial accelerometer with built-in temperature sensor

TECHNICAL INFORMATION

Accessories

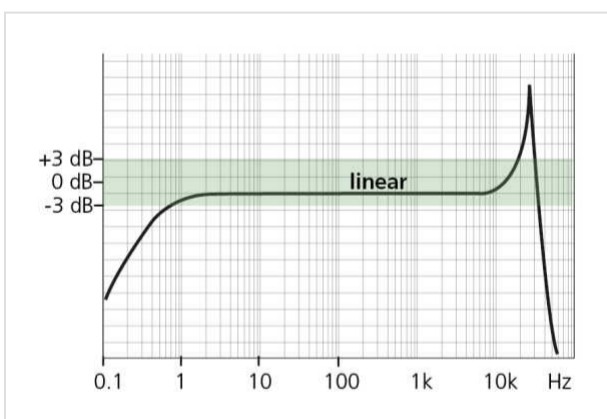
Item No.	Description / Group
VIB 6.164-10	"Partly pre-assembled sensor cable with 4-pole M12 plug-in connector, straight", p. 217
Miscellaneous	"Mounting adapters for vibration sensors", p. 158
Miscellaneous	"Dust caps for industrial CLD accelerometers", p. 164
Miscellaneous	"Tools for installation of accelerometers", p. 176

Technical data

Parameter	VIB 6.163
MEASUREMENT	
Signaling system	Current Line Drive, 3.5 mA static current with superimposed AC signal
Transmission factor	1.0 $\mu\text{A}/\text{ms}^{-2} \pm 2\%$ (Ref.: 159 Hz; 25 °C)
Frequency range, $\pm 5\%$	2.5 Hz to 13 kHz
Frequency range, $\pm 10\%$	1.6 Hz to 17 kHz
Frequency range, $\pm 3\text{dB}$	1 Hz to 20 kHz
Resonance frequency	36 kHz

Parameter	VIB 6.163
Linearity range, $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$
Temperature sensitivity	0.17 %/K
Temperature, measurement range	-20 °C to 100 °C (-4 °F to 212 °F)
Temperature, transmission factor, $\pm 3\%$	10 mV/K
Temperature, offset	750 mV at 25 °C
ELECTRICAL	
Operating voltage	8-12 VDC (from current loop)
Carrier current	3.5 mA \pm 0.2 mA DC
Electrical noise	< 0.0004 $\text{ms}^{-2} / \text{Hz}^{1/2}$ from 50 Hz to 20 kHz < 0.004 ms^{-2} at 1 Hz
Output impedance	> 1.6 MOhm
MECHANICAL	
Case material	Stainless steel VA 1.4305
Environmental protection	IP 67 with cable connector locked
Cable connection	M12 connector , 4-pin
Mounting	M8 thread
Shock limit	< 250 kms^{-2}
Dimensions	Height: 58 mm (2 5/16") Diameter: 21 mm (13/16") Width across flat AF: 24
Weight	62 g
Mounting height	> 110 mm

Frequency response



Sensor pin allocation



Pin 1 : GND (shield)

Pin 2 : GND

Pin 3 : Vibration

Pin 4 : Temperature

Mini CLD accelerometer

This compact sensor is suitable for vibration measurements on industrial machinery. Its shape allows for its installation in limited space.



Mini accelerometer can be installed on limited space

Features

- 3-in-1 sensor: housing vibration, shock pulse (condition of roller bearings), cavitation
- Intrinsic safety, Zone 1
- $T_{max.} : 120^{\circ}\text{C}$
- Compact shape: 22 x 21 mm
- Sensor cable permanently attached
- Permanent installation on the machine
- Current Line Drive (CLD) output for long cable use
- Immune to interference (Tandem-Piezo)
- Conformity: CE, ATEX, IECEx

Ordering information


Item No.	Mini accelerometer
VIB 6.202-6	Standard, coaxial cable (RG 174/U), 6 m (19.7 ft)
VIB 6.202-6XD	Standard, coaxial cable (RG 174/U), 6 m (19.7 ft), intrinsically safe
VIB 6.202-10XD	Standard, coaxial cable (RG 174/U), 10 m (32.8 ft), intrinsically safe
VIB 6.203-6	High temperature, coaxial cable (Raychem Spec 44), 6 m (19.7 ft)
VIB 6.203-6XD	High temperature, coaxial cable (Raychem Spec 44), 6 m (19.7 ft), intrinsically safe

Note: Intrinsically safe sensors are delivered with the protection cap VIB 6.205. The cap protects the sensor from external impact during installation.

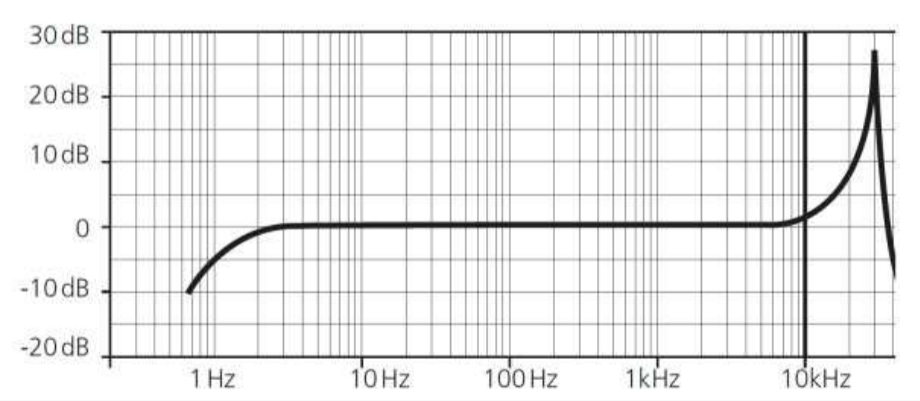
TECHNICAL INFORMATION

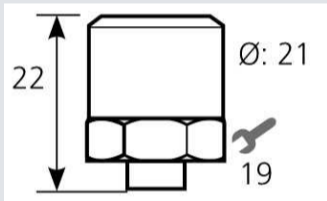
Accessories

The mini sensor is delivered with an M8 hexagon socket set screw. The set screw may be replaced using the available optional mounting adapters.


Item No.	Description / Group
Miscellaneous	"Mounting adapters for vibration sensors", p. 158
VIB 3.550	"Intrinsic safety barriers", p. 230
Installation material for signal cable	
VIB 93025	TNC plug for coaxial cable (RG 174)
VIB 81015	Protective sleeve for coaxial cable (RG 174)
	 <p>Cable with TNC plug and protective sleeve</p>

Technical data - VIB 6.20..

Parameter	VIB 6.202-...	VIB 6.203-...
MEASUREMENT		
Signaling system	Current Line Drive, 3.5 mA static current with superimposed AC signal	
Transmission factor	$1.0 \mu\text{A}/\text{ms}^{-2} \pm 10\%$ (Ref.: 159 Hz; 25 °C)	
Frequency range, $\pm 5\%$	6 Hz to 6 kHz	
Frequency range, $\pm 10\%$	4 Hz to 8 kHz	
Frequency range, $\pm 3\text{dB}$	2 Hz to 10 kHz	
Resonance frequency	30 kHz	
Frequency response		
Linearity range, $\pm 10\%$	$\pm 961 \text{ ms}^{-2}$	
Temperature range	-30 °C to 80 °C (-22 °F to 176 °F)	-30 °C to 120 °C (-22 °F to 248 °F)
ELECTRICAL		
Power supply	> 10 mA / 7-18 VDC	

Parameter	VIB 6.202-...	VIB 6.203-...
Temperature sensitivity	0.08 %/K	
Electrical noise, rms	< 0.1 ms ⁻² from 2 Hz	
Output impedance	> 250 kOhm	
MECHANICAL		
Case material	Base: Stainless steel VA 1.4305 / Cap: Grivory HTV (resistant to diesel, crude oil, hydraulic and engine oil, lubricants, tar, and turpentine among others)	
Environmental protection	IP 65	
Mounting	M8 hexagon socket set screw or mounting adapter	
Connection cable	Structure: coaxial, RG 174/U Diameter: 2.8 mm Outer sheath: PVC - Polyvinyl chloride	Structure: coaxial, Raychem Spec 44 Diameter: 2.4 mm Outer sheath: PVDF - Polyvinylidenfluoride
Protective sleeve	Material: EVA (non-halogen); Temperature range: -40 °C to 70 °C (-40 °F to 158 °F)	---
Shock limit	< 250 kms ⁻²	
Weight	22 g	
Dimensions, mm		

Intrinsic safety details

Type VIB 6.202..XD / VIB 6.203..XD	
Marking 	Gas: II 2G Ex ib IIC T4 Gb/ Dust: II 2D Ex ib IIIC T135°C Db
Temperature range	-30 °C to 80 °C (-22 °F to 176 °F)

"Wind" CLD accelerometer

This sensor is used for vibration measurement on industrial machinery. Due to the very low lower cut-off frequency, it is suited for very low-speed rotating machine components such as the main bearing in a wind turbine.



"Wind" accelerometer for monitoring vibration on low-speed rotating machine components

Features

- Current Line Drive output
- $f_{\min.} : 0.1 \text{ Hz}$
- IP 67 when cable connector is locked
- Permanent installation on the machine
- Possible connection to VIBEXPERT II through an adapter

Ordering information

Item No.	Description
VIB 6.195	"Wind" CLD accelerometer with MIL cable connection

TECHNICAL INFORMATION

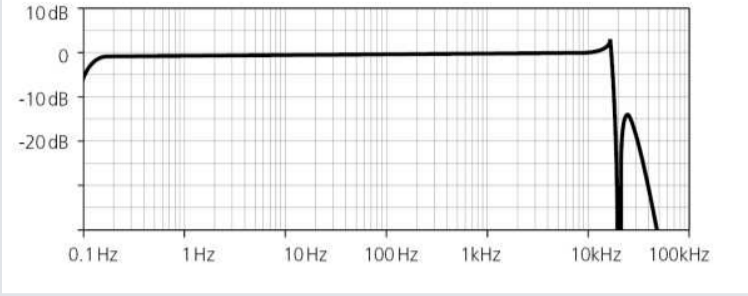
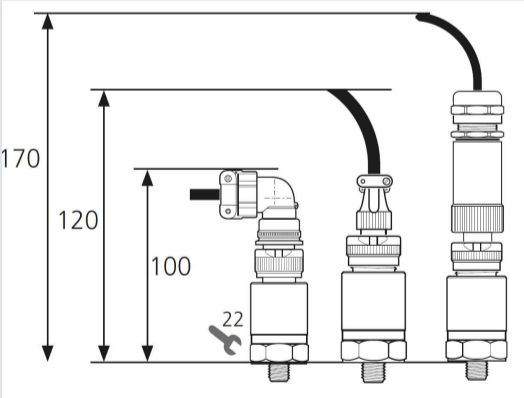
Accessories

The sensor is delivered with an M8 hexagon socket set screw. The set screw may be replaced using the available optional mounting adapters.

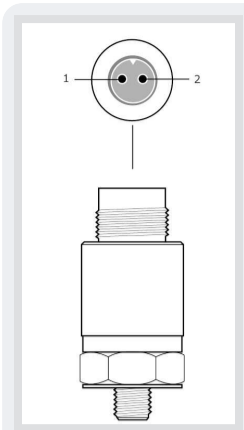
Item No.	Description / Group
Miscellaneous	"Mounting adapters for vibration sensors", p. 158
Miscellaneous	"Sensor cable with 2-pin MIL connector", p. 214
VIB 5.449-CLD	"Extension cable for analog measuring channel, portable devices", p. 202

Technical data

Parameter	VIB 6.195
MEASUREMENT	
Signaling system	Current Line Drive, 3.5 mA static current with superimposed AC signal
Transmission factor, ±4%	5.35 $\mu\text{A}/\text{ms}^{-2}$ (Ref.: 159 Hz; 25 °C)
Frequency range, ± 5%	1 Hz to 6 kHz
Frequency range, ± 10%	0.5 Hz to 8 kHz

Parameter	VIB 6.195
Frequency range, ± 3dB	0.1 Hz to 10 kHz
Resonance frequency	17 kHz; > 20 dB damped
Frequency response	
Linearity range, ± 10%	$\pm 450 \text{ ms}^{-2}$
Temperature range	-30 °C to 80 °C (-22 °F to 176 °F)
ELECTRICAL	
Power supply	> 10 mA / 7-18 VDC
Transverse sensitivity	< 5%
Temperature sensitivity	< 0.07%/K
Magnetic field sensitivity	< $1 \text{ ms}^{-2}/\text{T}$ (at 50 Hz)
Base strain sensitivity	< $0.1 \text{ ms}^{-2}/\mu\text{m}/\text{m}$
Electrical noise, (0,1 Hz - 20 kHz)	< $0.002 \text{ m}^{\text{s}^{-2}}$ as from 2 Hz
Output impedance	> 300 kOhm
MECHANICAL	
Case material	Stainless steel VA 1.4305 /
Environmental protection	IP 67 when cable connector is locked
Mounting	M8 thread or mounting adapter
Connection	2-pin MIL-C5015
Shock limit	< 5000 g
Weight	85 g
Mounting height, mm	

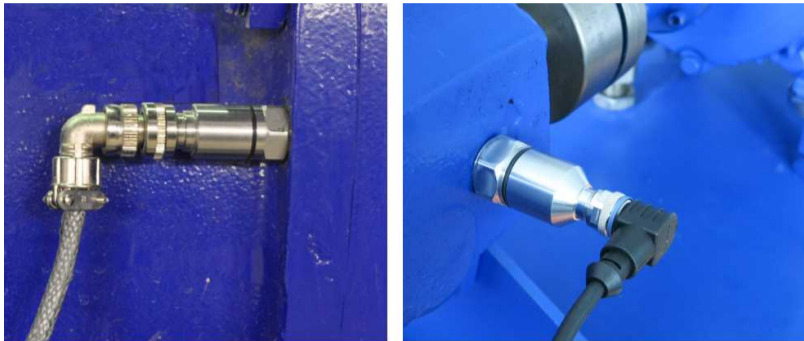
Pin allocation



- 1: GND (-)
- 2: Signal (+)

Accelerometer (IEPE)

This sensor is suited for measurement of absolute machine vibrations in industrial environments. Due to the very low cutoff frequency, it is particularly suitable for very slowly rotating machinery components such as the main bearings of a wind turbine.



Sensor with MIL connector (left) and M12 connector (right).

Features

- Voltage output according to IEPE standard
- $f_{\min.} : 0.1 \text{ Hz}$
- Two connector types: M12 or MIL
- IP 67 when cable connector is locked
- Permanent installation on the machine
- High temperature version, $T_{\max.} : 120^\circ\text{C}$

Ordering information

Item No.	Description
VIB 6.172	Accelerometer (IEPE) with MIL connector
VIB 6.210	Accelerometer (IEPE) with M12 connector

TECHNICAL INFORMATION

Accessory

VIB 6.172 is delivered together with an M8 hexagon socket set screw. The set screw may be replaced using the available optional mounting adapters. In VIB 6.210, the mounting threads are fixed to the sensor casing.

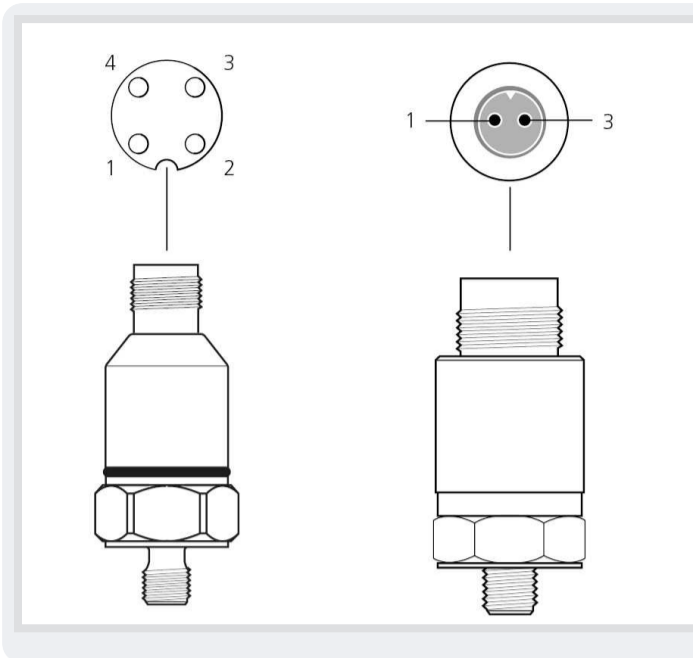
Item No.	Description / Group
Miscellaneous	"Mounting adapters for vibration sensors", p. 158
Miscellaneous	"Sensor cable with 2-pin MIL connector", p. 214 , for VIB 6.172
VIB 3.575-L	"Partly pre-assembled sensor cable with 4-pole M12 plug-in connector, angled", p. 216, for VIB 6.210
VIB 5.449-ICP	"Cable adapter for VIBXPERT II", p. 189

Technical data

Parameter	VIB 6.172	VIB 6.210
MEASUREMENT		
Signalling system	IEPE	
Transmission factor, $\pm 4\%$	10.2 mV/ ms^{-2} (100mV/g); Ref.: 159 Hz; 25 °C / 77 °F	
Frequency range $\pm 5\%$	1 Hz to 6 kHz	
Frequency range $\pm 10\%$	0.5 Hz to 8 kHz	
Frequency range $\pm 3\text{dB}$	0.1 Hz to 10 kHz	
Resonance frequency	17 kHz; > 10 dB damped	15 kHz; > 10 dB damped

Parameter	VIB 6.172	VIB 6.210
Frequency response		
Linearity range, ± 10%	< 686 ms ⁻² (<70 g)	
Temperature range	-40 °C to 120 °C (-40 °F to 248 °F)	-40 °C to 85 °C (-40 °F to 185 °F)
ELECTRICAL		
Power supply	2 - 10 mA / 24 V DC (±10%)	2 - 10 mA / 18 - 30 V DC
Bias, DC output	12 V DC ± 0,5 V	
Grounding	insulated from machine ground, internal shielding	
Transverse sensitivity	< 5%	
Temperature transient sensitivity	< 0.07%/K	
Magnetic field sensitivity	< 1 ms ⁻² /T (at 50 Hz)	
Base strain sensitivity	< 0.1 m/s ² /μm/m	
Electrical noise, rms	1 mm/s ² (0.1 Hz - 10 kHz)	1.5 mm/s ² (0.1 Hz - 10 kHz)
Output impedance	< 10 Ohm	< 100 Ohm
MECHANICAL		
Case material	Stainless steel VA 1.4305	
Environmental protection	IP 67 with cable connector locked	
Mounting	M8 threaded screw or mounting adapter	
Cable connector	2-pin MIL-C5015	M12, 4-pin, A-coded
Shock limit	< 50 km/s ²	
Weight	85 g (3 oz)	72 g (2.5 oz)
Mounting height, mm		

Pin allocation



1: Signal (+)

3: GND (-)

2,4: nc

Hybrid triaxial accelerometers, permanent mounting

These voltage output sensors detect low frequency mechanical vibration in three axes simultaneously. Vibrations in the X and Y directions are detected by a **MEMS¹** sensor. Vibration in the Z direction is measured using a PRUFTECHNIK piezoelectric accelerometer.



Hybrid triaxial accelerometer

Features

- Simultaneous vibration measurement in the X, Y and Z axes
- Gravitational and vibration acceleration
- MEMS and tandem-piezo sensor element
- Permanent adhesive mounting on machine
- IEPE output voltage
- Only for VIBGUARD CMS

Ordering information

Item No.	Description
VIB 6.215	Hybrid triaxial accelerometer for standard machines, permanent mounting
VIB 6.216	Hybrid triaxial accelerometer for low-speed machine, permanent mounting

TECHNICAL INFORMATION

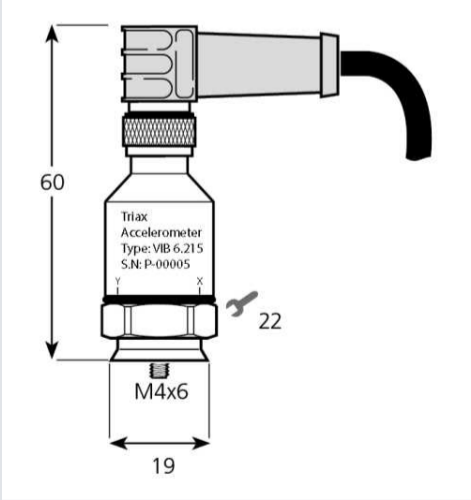
Accessories

Item No.	Description
VIB 3.575-L	"Partly pre-assembled sensor cable with 4-pole M12 plug-in connector, angled", p. 216

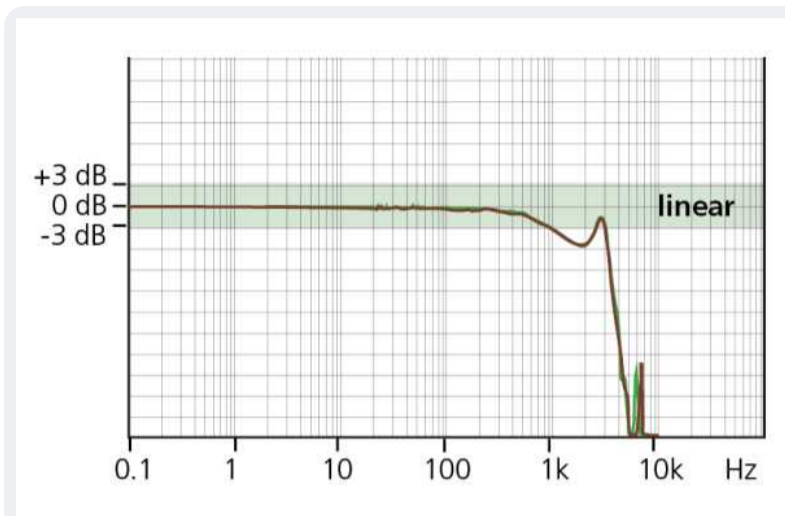
Technical data

Parameter	VIB 6.215 - X/Y	VIB 6.216 - X/Y	VIB 6.215 - Z	VIB 6.216 - Z
MEASUREMENT				
Signaling system	Voltage		IEPE	
Measuring range (0-p)	19.6 m/s ² (64.3 ft/s ²)		400 m/s ² (1312 ft/s ²)	
Transmission factor	67 mV/ms ⁻² , ± 6% @ 159 Hz		20 mV/ms ⁻² , ± 3% @ 159 Hz	
Frequency range, ± 5%	0 Hz ...400 Hz		4 Hz ...6 kHz	0.6 Hz ...6 kHz
Frequency range, ± 10%	0 Hz ...550 Hz		2 Hz ...8 kHz	0.3 Hz ...8 kHz
Frequency range, ± 3dB	0 Hz ...1 kHz		1 Hz ...10 kHz	0.1 Hz ...10 kHz
Resonance frequency	2,5 kHz		28 kHz	
Gravitational acceleration voltage	± 660 mV, ±6%		---	---

¹MEMS: Microelectromechanical System

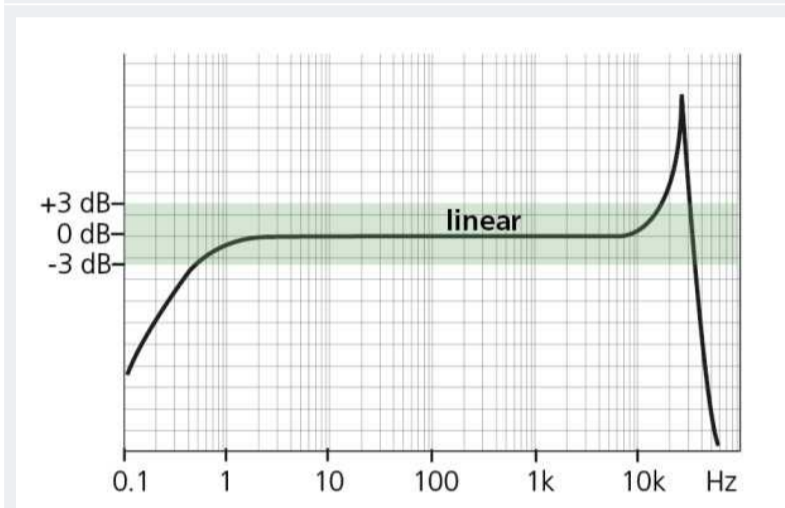
Parameter	VIB 6.215 - X/Y	VIB 6.216 - X/Y	VIB 6.215 - Z	VIB 6.216 - Z
Maximum deviation from linear average after a 360° rotation	±2% of measured value		---	---
Inaccuracy of axis labeling	< ± 5°			
Temperature sensitivity	X: AC / DC: -0.03% of measured value/K Y: AC: -0.03% of measured value/K; DC: +0.03% of measured value/K		0.1% of measured value/K	
Temperature leap sensitivity	0.015 ms ⁻² /K		3.1 ms ⁻² /K	
Transverse sensitivity	< 5%			
Sound sensitivity	< 1.5 ms ⁻² /mPa		< 0.15 ms ⁻² /mPa	
ELECTRICAL				
Power supply	MEMS electronics via Z channel		24 VDC / 3-10 mA ±10%	
Noise	0.0005 ms ⁻² /(Hz) ^{1/2} for 1 Hz to 1 kHz	0.0005 ms ⁻² /(Hz) ^{1/2} for 0.1 Hz to 1 kHz	0.0005 ms ⁻² /(Hz) ^{1/2} for 10 Hz to 10 kHz	
Output impedance	100 Ohm			
Output bias	1.65 VDC		10.5-13.5 VDC	
ENVIRONMENT				
Temperature range	-40°C to 85 °C (-40°F to 185°F)			
Relative humidity	95%, non-condensing			
Chemical resistance, cable	Oil, alcohol			
Environmental protection with cable	IP 65			
Shock limit	< 10000 g			
MECHANICAL				
Case material	Stainless steel VA 1.4305			
Mounting	Adhesive mount			
Cable connector	M12, 4-pin, A-coded			
Weight	62 g (2.2 oz)			
Mounting height, mm				

Frequency response



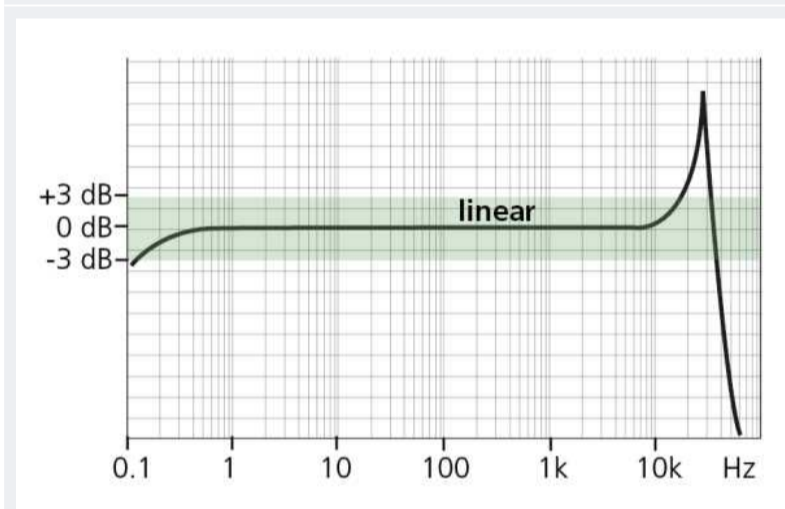
Type: VIB 6.215/ VIB 6.216

- X-axis: green
- Y-axis: brown



Type: VIB 6.215

- Z-axis



Type: VIB 6.216

- Z-axis

Pin allocation

View	Pin allocation	Color code, connection cable
	<p>1: X-axis 2: Y-axis 3: Z-axis 4: GND</p>	<p>1: brown - BN 2: blue - BU 3: black - BK 4: GND</p>

Hybrid triaxial accelerometer, mobile version

This sensor detects low frequency mechanical vibration in three axes simultaneously. Vibrations in the X and Y directions are detected by a **MEMS¹** sensor. Vibration in the Z direction is measured using a PRUFTECHNIK piezoelectric accelerometer.



Features

- Fast data acquisition by means of simultaneous vibrations measurements in X, Y and Z direction.
- Stable mounting on even and curved surfaces through strong magnetic holder
- For VIBSCANNER 2 data collector only

Hybrid triaxial accelerometer for VIBSCANNER 2

Ordering information

Item No.	Description
VIB 6.221	Hybrid Triaxial Accelerometer with fixed cable and built-in magnetic holder for mobile applications

TECHNICAL INFORMATION

Technical data, Accelerometer+ Magnetic holder

Parameter	X/Y channel	Z channel
MEASUREMENT		
Signaling system	Voltage, only with Z channel	Current Linedrive - CLD
Measuring range (peak)	$\pm 196.2 \text{ ms}^{-2}$ (20g)	$\pm 961 \text{ ms}^{-2}$ (98g)
Transmission factor	$4.1 \text{ mV/ms}^{-2} \pm 0.3 \text{ mV/ms}^{-2}$ (40 mV/g $\pm 3.2 \text{ mV}$)	$1.0 \mu\text{A/ms}^{-2} \pm 5\%$ @159 Hz
Frequency range², $\pm 5\%$	0 Hz ... 500 Hz	0.5 Hz ... 5 kHz
Frequency range², $\pm 10\%$	0 Hz ... 1.0 kHz	0.4 Hz ... 7 kHz
Frequency range², $\pm 3\text{dB}$	0 Hz ... 1.0 kHz	0.3 Hz ... 10 kHz
Resonance frequency	approx. 1.8 kHz	approx. 25 kHz
Gravitational acceleration voltage	$932 \text{ mV} \pm 23.2 \text{ mV}$	---
Inaccuracy of axis labeling	$< \pm 5^\circ$	

¹MEMS: Microelectromechanical System

²Accelerometer w/o Magnetic holder

²Accelerometer w/o Magnetic holder

²Accelerometer w/o Magnetic holder

Parameter	X/Y channel	Z channel
Temperature sensitivity	± 0.01%/K	AC: ±0.12%/K; DC: ±0.16%/K
Temperature leap sensitivity	no effect	± 1.96 ms ⁻² /K
Transverse sensitivity	< 5%	
Sound sensitivity	< 0.1 ms ⁻² /Pa	< 0.1 ms ⁻² /Pa
Noise	0.0005 ms ⁻² /(Hz) ^{1/2} for 0 Hz ... 0.9 kHz	0.0005 ms ⁻² /(Hz) ^{1/2} for 10 Hz ... 10 kHz
ENVIRONMENT		
Temperature range	Operation: -25°C ... +70 °C (-4°F ... +158 °F) Meas. object: -25°C ... +95 °C (-4°F ... +203 °F) Storage: -40°C ... +70 °C (-40°F ... +158 °F)	
Chemical resistance	Oil, alcohol	
Environmental protection	IP 67	
Shock limit	< 50 kms ⁻² (5098g)	
MECHANICAL		
Case material	Sensor: Stainless steel VA 1.4305 Magnets: NeoDelta magnets (NdFeB) Magnets housing, outer poles: Steel 1.0037 (S235JR) Outer case: NBR, black, 95 Shore	
Mounting	magnetic	
Cable	Spiral cable fix installed with 8p plug, 2 m	
Weight	103 g [3.6 oz]	
Dimensions	Ø 34 mm x 39 mm [Ø 1 5/16" x 1 9/16"]	

VIBCODE vibration transducer

VIBCODE is an intelligent sensor system that identifies measurement points by use of coded measurement studs. The patented VIBCODE transducer is attached to the coded measurement stud locked using a bayonet catch. The rigid connection at the measurement point ensures a loss-free transmission of vibration signals, and bearing signals (shock pulse). The electronics within the handle amplifies the signal and transmits the measurement point data to the measurement device.



VIBCODE transducer with protective cap

Features

- Reliable identification of measurement point
- Foolproof assignment of measurement tasks
- Rigid Mounting
- Repeatable measurement results
- 3-in-1 sensor: housing vibration, shock pulse (condition of roller bearings), cavitation
- Intrinsic safety, Zone 1
- VIBCODE measurement points with a various mounting options

Ordering information

Item No.	Description
VIB 8.660	VIBCODE transducer
VIB 8.660 HEX	VIBCODE transducer (intrinsically safe)

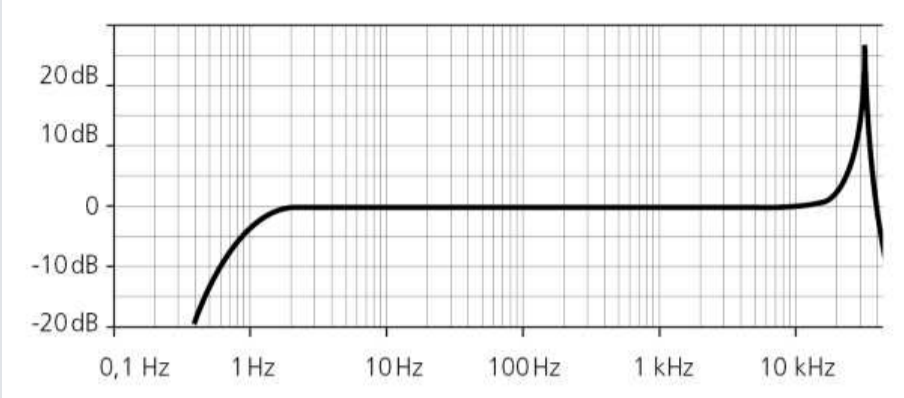
TECHNICAL INFORMATION

Accessories


Item No.	Description
Miscellaneous	"VIBCODE measurement studs", p. 169
Miscellaneous	"Pre-assembled sensor cables and adapters for CLD accelerometers (portable devices)", p. 188

Technical data

Parameter	VIB 8.660
MEASUREMENT	
Signaling system	Current Line Drive, 3.5 mA static current with superimposed AC signal
Transmission factor, ±4%	1.0 $\mu\text{A}/\text{ms}^{-2} \pm 3\%$ (Ref.: 159 Hz; 25 °C)
Frequency range, ± 5%	4 Hz to 6 kHz
Frequency range, ± 10%	2 Hz to 10 kHz

Parameter	VIB 8.660
Frequency range, $\pm 3\text{dB}$	1.5 Hz to 20 kHz
Resonance frequency	36 kHz
Frequency response	
Linearity range, $\pm 10\%$	$\pm 50 \text{ ms}^{-2}$ ($\pm 5 \text{ g}$)
Temperature range	$-10 \text{ }^\circ\text{C}$ to $70 \text{ }^\circ\text{C}$ ($14 \text{ }^\circ\text{F}$ to $158 \text{ }^\circ\text{F}$)
ELECTRICAL	
Power supply	$> 10 \text{ mA}$ / 7-18 VDC
Temperature transient sensitivity	$< 0.3 \text{ ms}^{-2}/\text{K}$
Transverse sensitivity	$< 10\%$ of axial value
Magnetic field sensitivity	$< 14 \text{ ms}^{-2}/\text{T}$ (at 50 Hz)
Electrical noise	$< 1 \text{ mms}^{-2} / \text{Hz}^{1/2}$ at 10 Hz
Output impedance	$> 500 \text{ k}\Omega$
MECHANICAL	
Environmental protection	IP 65 with cable connector locked
Mounting	VIBCODE measurement stud
Cable connection	coaxial, TNC
Weight	390 g
Dimensions	136 x 39 mm (hxd)

Intrinsic safety details

Type VIB 8.660 HEX	
Marking 	II 2G Ex ib IIC T4
Temperature range	$-20 \text{ }^\circ\text{C}$ to $80 \text{ }^\circ\text{C}$ ($-4 \text{ }^\circ\text{F}$ to $176 \text{ }^\circ\text{F}$)

Accelerometer with quick fitting coupling

This sensor is used for vibration measurements with a portable data collector. The sensor can be easily connected to a location equipped with a suitable measurement stud by means of the quick fitting coupling.



Features

- 3-in-1 sensor: housing vibration, shock pulse (condition of roller bearings), cavitation
- Robust coupling
- Compact design
- Measurement studs in different versions
- For VIBSCANNER 2 and VIBXPRT II

Accelerometer features a quick fitting coupling for measurement studs.

Ordering information

Item No.	Description
VIB 8.666 R	Quick fit accelerometer for measurement studs

TECHNICAL INFORMATION

Accessories

Item No.	Description
VIB 5.436	CLD accelerometer cable, spiral, 1.8 m, TNC connector to MiniSnap
VIB 5.236	"Sensor cables and adapters for VIBSCANNER 2", p. 203
Miscellaneous	"Measurement studs", p. 174

Technical data

Parameter	VIB 8.666 R
MEASUREMENT	
Signaling system	Current Line Drive, 3.5 mA static current with superimposed AC signal
Transmission factor	1,0 $\mu\text{A}/\text{ms}^{-2} \pm 2\%$ (Ref.: 159 Hz; 25 °C)

Parameter	VIB 8.666 R
Frequency range, ± 3dB¹	1 Hz to 10 kHz (short stud)
Resonance frequency	36 kHz (short stud)
Linearity range, ± 10%	± 50 ms ⁻²
Temperature range	-30 °C to 100 °C (-22 °F to 212 °F)
ELECTRICAL	
Power supply	> 10 mA / 7-18 VDC
Transverse sensitivity	< 5% at 10 kHz
Temperature sensitivity	< 0.05 ms ⁻² /K
Magnetic field 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 with cable connector locked
Cable connection	TNC socket
Mounting	Quick fitting coupling to measurement stud
Shock limit	< 250 kms ⁻²
Weight	28 g [1 oz]
Dimensions, D x H	19 x 33 mm [3/8" x 1 5/16"]

¹Due to the coupling method only the tolerances for ±3dB are given.

Triaxial accelerometer

This triaxial accelerometer is used for the measurement of machine and component vibrations 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.



Features

- Simultaneous measurement in the X, Y, and Z axes
- Larger temperature range
- f_{\max} : 10 kHz
- For VIBXPART II and VIBSCANNER 2

Triaxial sensor for VIBXPART II

Ordering information

Item No.	Description
VIB 6.655	Triaxial accelerometer for mobile applications

TECHNICAL INFORMATION

Accessories

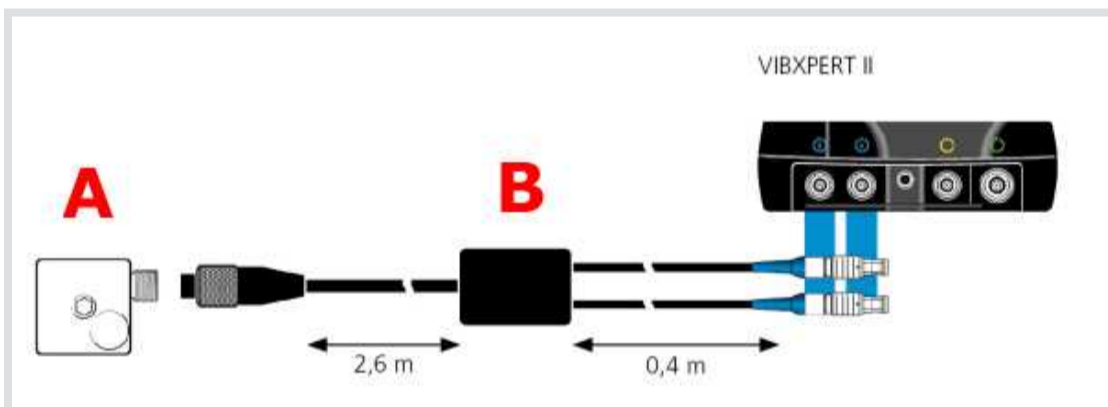
Item No.	Description
VIB 5.336	Sensor cable for triaxial accelerometer VIB 6.655; refer to: "Cable adapter for VIBXPART II", p. 189
VIB 5.237	Sensor cable for triaxial accelerometer, 4P Mini-MIL connector, spiralized, p. 203
VIB 6.656	Magnetic holder - M6 mounting hole, p. 161
VIB 6.657	Magnetic holder - 1/4-28 mounting hole, p. 160

Technical data

Parameter	VIB 6.655
MEASUREMENT	
Signaling system	IEPE
Measurement range (peak)	± 50 g
Transmission factor, $\pm 5\%$	100 mV/g

Parameter	VIB 6.655
Frequency range, $\pm 5\%$	8 Hz to 5.5 kHz
Frequency range, $\pm 10\%$	1 Hz to 6.5 kHz
Frequency range, $\pm 3\text{dB}$	0.6 Hz to 10 kHz
Temperature range	-54 °C to 121 °C (-65 °F to 250 °F)
ELECTRICAL	
Rise time	< 2.5 s
Power supply	2-10 mA / 18-30 VDC
Electrical noise, @ 10 / 100 / 1000 Hz	27 / 6.5 / 2.5 $\mu\text{g} / (\text{Hz})^{1/2}$
Output impedance	< 100 Ohm
Case insulation	> 10^8 Ohm
Output bias	11-13 VDC
MECHANICAL	
Case material	Stainless steel 316L
Mounting	Magnetic holder with M6 or 1/4-28 thread
Mounting torque	1.4 to 2.7 Nm
Connection	4-pin cable connector (Mini-MIL)
Weight	200 g
Dimensions	35 x 35 x 24 mm / 1.4" x 1.4" x 0.9" (lxbxh)

Connection schematic



Triaxial sensor (A) connected to VIBXPART II via the sensor cable (B)

Mounting example



Mono headphones

The mono headphones can be used to listen to the machines and, in particular, roller bearings for the characteristic noises that indicate damage. The buffered sensor signal is picked at the data collectors analog output. The appropriate adapter cable is available as an accessory.



Mono headphones for VIBXPERT II and VIBSCANNER.

Features

- Frequency range: 125 Hz to 8000 Hz
- Suitable for VIBXPERT II, VIBSCANNER

Ordering information

Item No.	Description
VIB 6.671	Mono headphones

TECHNICAL INFORMATION

Accessory

Item No.	Description / Group
VIB 6.675	"Cables for signal output – handheld devices", p. 194

Technical data

Parameter	VIB 6.671
ELECTRICAL	
Impedance	230 Ohm
Frequency range	125 - 8000 Hz
Sound pressure level at 198 mV	82 dB (A)
Resonance frequency	17 kHz; > 20 dB damped
GENERAL	
Connection	Adapter cable VIB 6.675 for VIBSCANNER / VIBXPERT II (MiniSnap)
Weight	381 g

VIBROTECTOR vibration transmitters

This sensor is employed to monitor vibration in industrial machinery. The vibration signal is relayed as a current intensity level (4-20 mA) to the machine controls for analysis.



Monitoring vibrations with VIBROTECTOR

Features

- Current level: 4-20mA
- f_{\min} : 2 Hz or 10 Hz
- Intrinsic safety, Zone 1
- Mounting adapter
- Customized sensor cable
- Installation in liquid media (IP 68)
- Conformity: CE, ATEX, IECEx

Ordering information

Item No.	VIBROTECTOR vibrations monitor
VIB 5.731	VIBROTECTOR, frequency range: 10 Hz to 1 kHz
VIB 5.731 EX	VIBROTECTOR, intrinsically safe, frequency range: 10 Hz to 1 kHz
VIB 5.736	VIBROTECTOR, frequency range: 2 Hz to 1 kHz
VIB 5.736 EX	VIBROTECTOR, intrinsically safe, frequency range: 2 Hz to 1 kHz

TECHNICAL INFORMATION

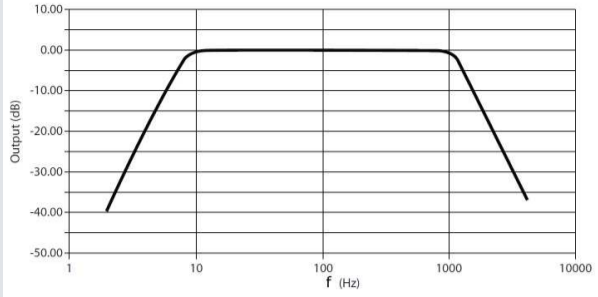
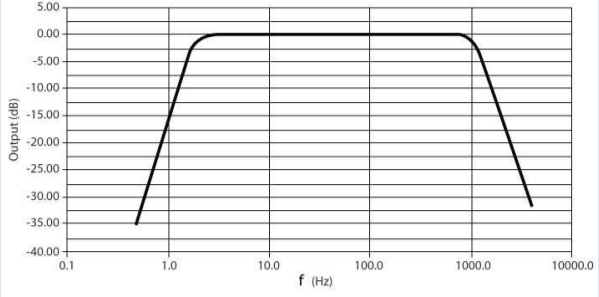
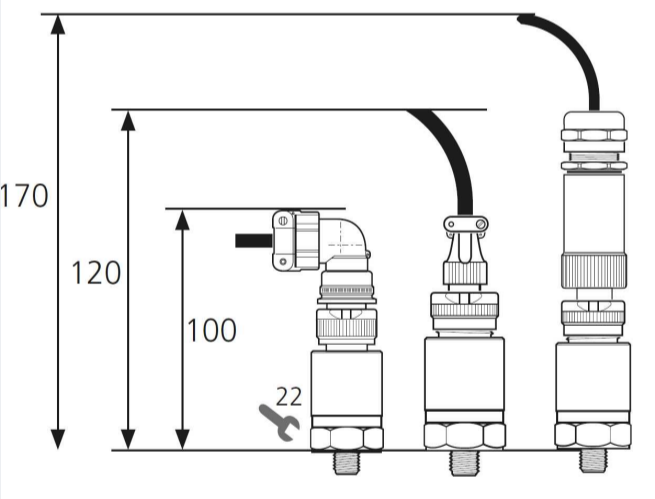
Accessories

VIBROTECTOR is delivered with M8 hexagon socket set screw. The set screw may be replaced using the available optional mounting adapters. Customized connection cables of different lengths are available.


Item No.	Description / Group
Miscellaneous	"Mounting adapters for vibration sensors", p. 158
Miscellaneous	"Sensor cable with 2-pin MIL connector", p. 214
0 2088 0010	"Intrinsic safety barriers", p. 230

Technical data

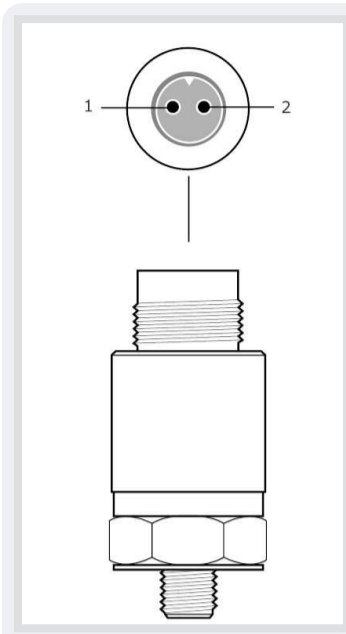
Parameter	VIB 5.731	VIB 5.736
MEASUREMENT		
Output signal	Current intensity level (4-20 mA)	
Measurement range (RMS)	≤ 20 mm/s	
Accuracy	± 0.2 mm/s plus $\pm \%2$ of measured value (Reference: 159 Hz)	
Frequency range, $\pm 10\%$	10 Hz to 1 kHz	2 Hz to 1 kHz

Parameter	VIB 5.731	VIB 5.736
Frequency response		
Temperature range, T _A	-40 °C to 80 °C (-40 °F to 176 °F)	
Temperature offsetdrift (@ 4mA)	- 0.015%/K	
Temperature sensitivity	- 0.08%/K	
ELECTRICAL		
Power supply	24 V DC (±5%), loop power	
Loop resistance	90 to 360 Ohm	
Insulation	complete	
MECHANICAL		
Case material	Stainless steel VA 1.4305	
Environmental protection	IP 67; IP 68 with pre-assembled cable VIB 3.570-L; Immersion depth: 10 m (33 ft)	
Mounting	M8 hexagon socket set screw or mounting adapter	
Connection	2-pin cable connector (Cannon, MIL-C5015)	
Shock limit	< 50 kms ⁻²	
Weight	80 g	
Mounting height, mm		

Intrinsic safety details

Type VIB 5.731 EX / VIB 5.736 EX	
Marking 	Gas: II 2G Ex ib IIC T4 Gb/ Dust: II 2D Ex ib IIIC T135°C Db
Temperature range	-40 °C ...+80 °C

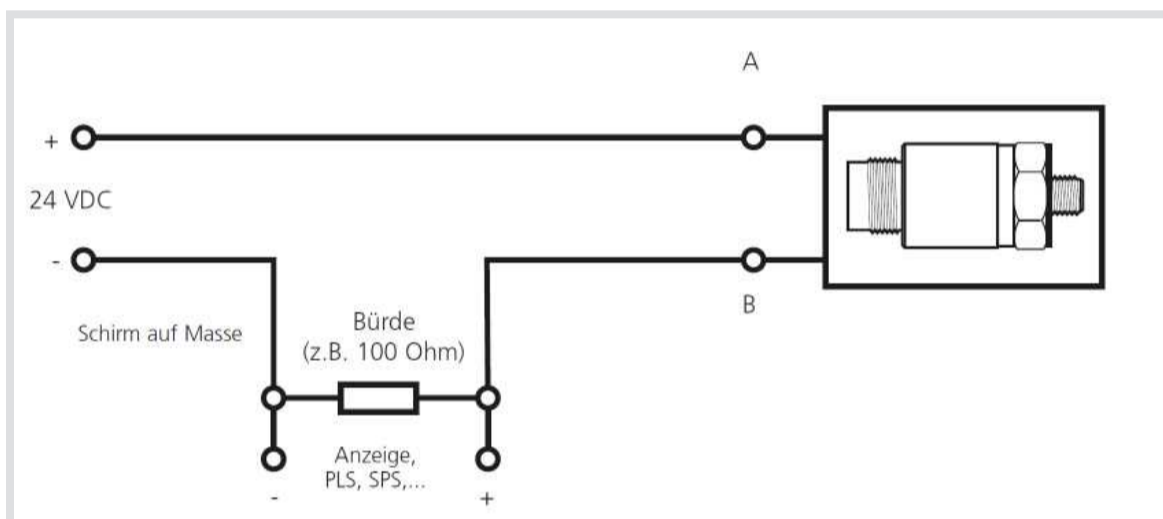
Pin allocation



1: Signal (+)

2: Shield (-)

Connection schematic



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Sensors for process parameters

RPM sensors for VIBRONET Signalmaster	136
Laser trigger / RPM sensor	139
LED stroboscope	141
Displacement sensor for VIBXPART II	143
Displacement sensor (for VIBGUARD)	145
Default RPM sensor for stationary measurement systems	147
Current clamp (400 A AC / 600 A DC)	149
Temperature probes	151
WEARSCANNER particle distribution counter	152

RPM sensors for VIBRONET Signalmaster

These sensors are used in combination with the stationary measurement system VIBRONET Signalmaster to measure RPM contactless. For higher measurement accuracy, a version with a higher with a higher cut-off frequency (f_{\max} : 1500 Hz) is available.



RPM sensors: VIB 6.620 (left) and VIB 6.622 (right)

Features

- Inductive measurement
- Maximum switching frequency: 300 Hz / 1500 Hz
- Rated operating distance: 8 mm
- Easy to mount and position
- Intrinsic safety, Zone 1

Ordering information

Item No.	Description
VIB 6.620	Inductive RPM sensor for VIBRONET Signalmaster, $f < 300$ Hz
VIB 6.622	Inductive RPM sensor for VIBRONET Signalmaster, $f < 1500$ Hz

Note: An appropriate connector is available as an optional accessory.
The cable required for connection to VIBRONET field multiplexer is not included in the items in the box.

Accessories

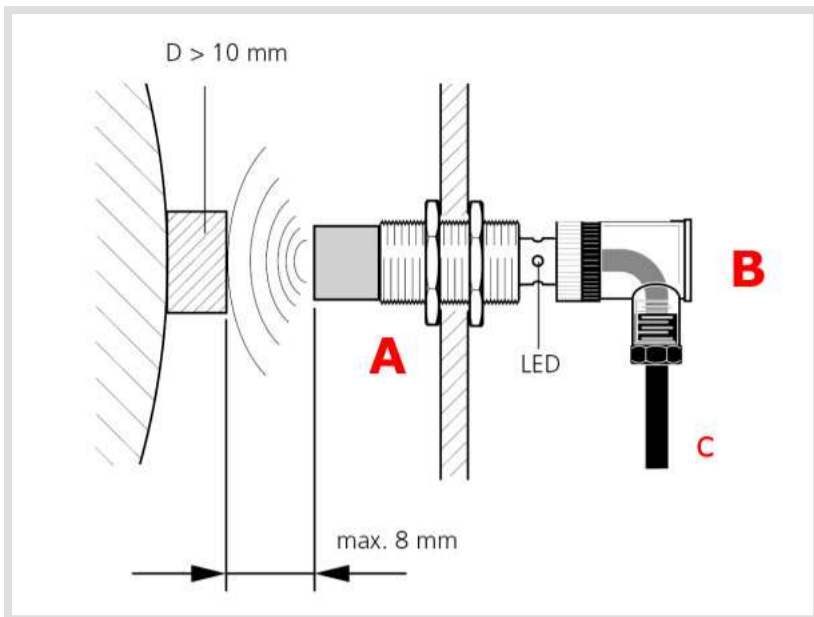
Item No.	Description	View
VIB 6.621	M12 device connector, 4-pin	

TECHNICAL INFORMATION

Technical data

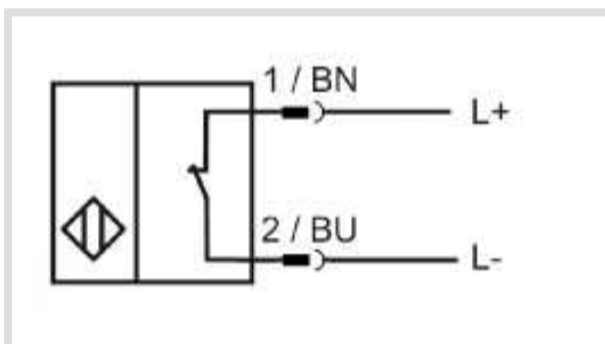
Parameter	VIB 6.620	VIB 6.622
MEASUREMENT		
Measurement principle	Inductive	
Rated operating distance Sn	8 mm	
Assured operating distance Sa	0 – 6.48 mm	
Type of sensor	NAMUR / opener	
Reduction factor r(V2A) / r(Al) / r(Cu)	0.72 / 0.42 / 0.4	0.71 / 0.39 / 0.36
Switching frequency	0 – 300 Hz	0 – 1500 Hz
Hysteresis H	1 – 15 typical 15%	
Operation display	Yes, LED, yellow	
Temperature range	-25 °C to 100 °C (-13 °F to 212 °F)	
ELECTRICAL		
Supply voltage	8 V DC (from RPM module)	
Current drain, measuring plate detected	< 1 mA	
Current drain, measuring plate not detected	> 3 mA	> 2.2 mA
Short circuit protection	Yes	
Reverse-polarity protection	Yes	
MECHANICAL		
Mounting	Non-flush	Flush
Connection	M12 device connector, 4-pin	
Case material	Stainless steel	
Sensing surface material	PBT	
Environmental protection	IP 67	
Marking for intrinsic safety	II 1 G Ex ia IIC T6 Ga	

Installation example

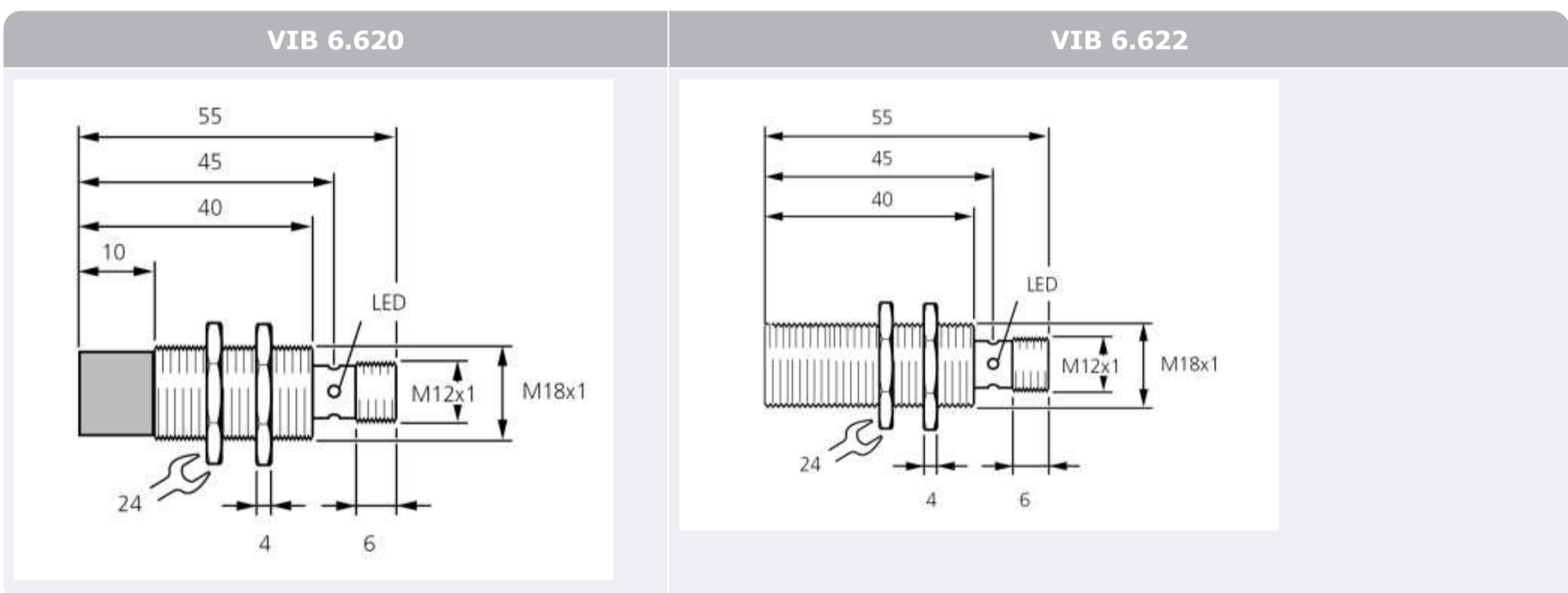


RPM sensor (A), device connector (B, accessories) and sensor cable (not included with items in the box)

Connection diagram



Dimensions



Laser trigger / RPM sensor

This laser optical sensor is used in combination with a handheld device to act as a trigger for vibration measurements and to measure RPM.



Features

- Optical measurement method
- Contactless measurement
- Wider measurement range
- Measurement distance up to 1 m (39 1/3")
- High accuracy
- Intrinsic safety, Zone 1

Ordering information

Item No.	Description
VIB 6.631	Laser trigger / RPM sensor
VIB 6.631 EX	Intrinsically safe laser trigger / RPM sensor

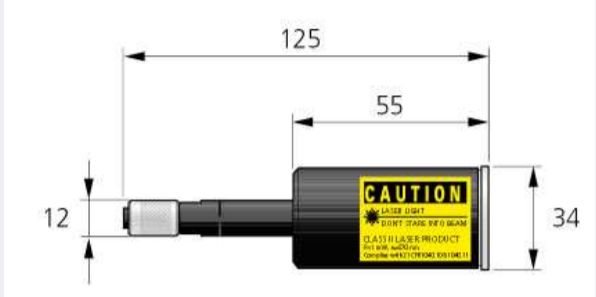
TECHNICAL INFORMATION

Accessories


Item No.	Description
Miscellaneous	"Pre-assembled sensor cable and adapter for trigger / RPM sensor (portable devices)", p. 195
Miscellaneous	"Stand and accessories for laser trigger / RPM sensor", p. 167

Technical data

Parameter	VIB 6.631 / VIB 6.631 EX
MEASUREMENT	
Measurement principle	Optical
Measurement range	3 to 120'000 1/min.
Measurement distance with reflective mark	5 – 100 cm [2" - 39 1/3"]
Measurement distance with contrast mark	5 – 20 cm [2" - 7 7/8"]
Temperature range	-20 °C to 50 °C (-4 °F to 122 °F)
ELECTRICAL	
Power supply	< 5.8 V (from device)
Output	5 V (TTL)
Laser wavelength	630-680 nm (red)
Laser class	2 (DIN EN 60825-1, May 2008)

Parameter	VIB 6.631 / VIB 6.631 EX
MECHANICAL	
Environmental protection	IP 65 with cable connector locked
Mounting	With stand and magnetic holder
Cable connection	Binder socket
Weight	72 g
Dimensions	

Intrinsic safety details

Type VIB 6.631 EX	
Marking 	II 2G Ex ib op is IIC T4
Temperature range	-20 °C to 50 °C (-4 °F to 122 °F)

LED stroboscope

This stroboscope is used in combination with VIBXPERT II to analyze rotary motion as well as measuring phase shift, RPM and velocity. The stroboscope uses high-intensity LEDs. The flash rate may be either controlled internally, or set via an external trigger signal.



LED stroboscope for analysis of rotary motion

Scope of supply

- LED stroboscope
- Trigger cable 1.5 m, including BNC connector
- Hard shell box
- Set of batteries (2x AA / LR6)
- Operating manual

Ordering information

Item No.	Description
VIB 6.672	LED stroboscope

TECHNICAL INFORMATION

Accessories

Item No.	Description
VIB 5.333	Cable adapter for LED stroboscope (VIBXPERT II), see: "Pre-assembled sensor cable and adapter for trigger / RPM sensor (portable devices)", p. 195

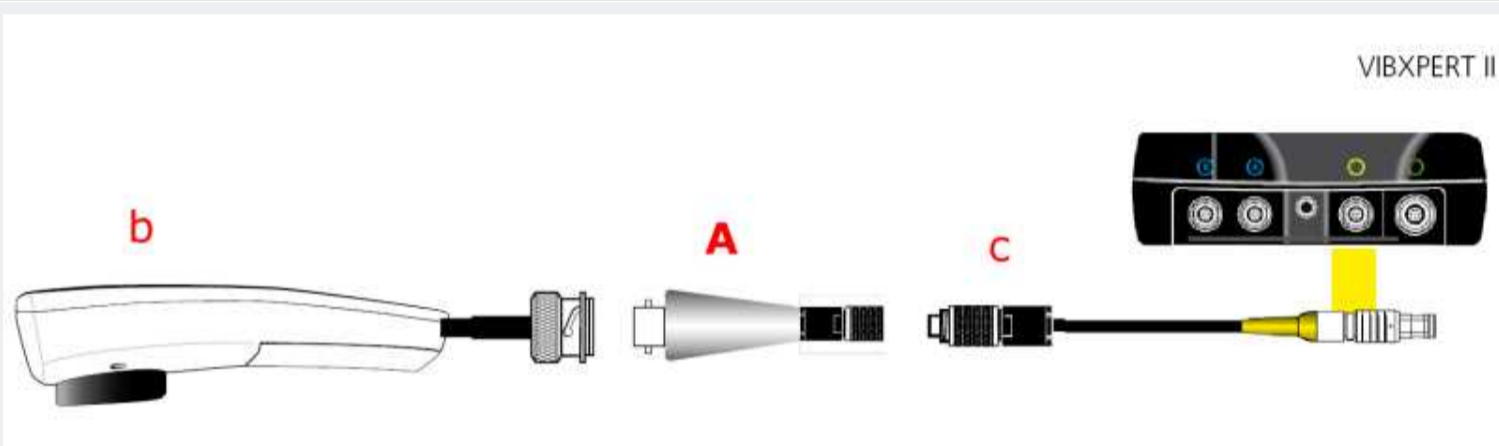
Technical data

Parameter	VIB 6.672
MEASUREMENT	
Light source	3 CREE LEDs
Light intensity	3800 Lux max. (@ 50 Hz / 20 cm)
Frequency range	1 - 2000 Hz / 60 - 99999 min ⁻¹
Control of the flash rate	Internal: Membrane keyboard; External: external trigger signal
Phase shift	0° to 360°
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)

Parameter	VIB 6.672
Operating time	< 15 h
GENERAL	
Dimensions	140 x 63 x 38 mm (5 11/16" x 2 1/2" x 1 1/2")
Weight	175 g (6.2 oz)
Storage temperature	-20 °C to 70 °C (-20 °F to 70 °F)
Relative humidity	< 80% at 30 °C (86 °F)
Environmental protection	IP 40

Application

VIBXPRT II: Measuring RPM using the LED stroboscope VIB 6.672



A: Cable adapter for LED stroboscope, VIB 5.333

b: LED stroboscope, VIB 6.672

c: Sensor cable, VIB 5.432-2,9

Displacement sensor for VIBXPART II

This displacement sensor is used with VIBXPART II to determine the position of metallic objects within close proximity to each other, contactless. A typical application is the detection of the radial and axial motions of a rotating shaft.



Displacement sensor connected to VIBXPART II

Features

- Inductive measurement
- Working range: 3 - 15 mm
- Easy to mount and position
- Connection cable with device connector
- Linearization of the characteristic curve is automatically done within device

Ordering information

Item No.	Description
VIB 6.640	Inductive proximity sensor for VIBXPART II

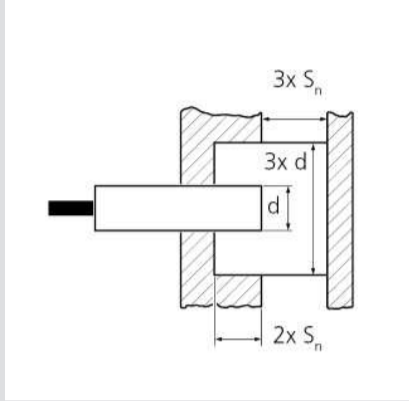
TECHNICAL INFORMATION

Technical data

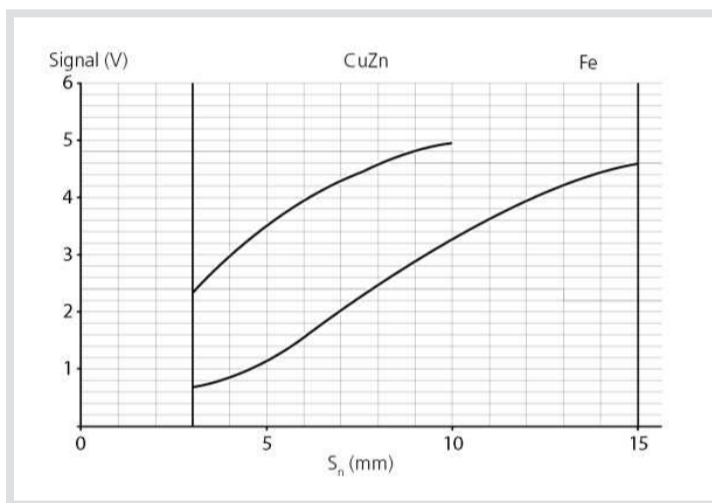
Parameter	VIB 6.640
MEASUREMENT	
Measurement principle	Inductive
Measurement variable	Relative distance / displacement
Working range S_n	3 – 15 mm
Linearity	$\leq 5\%$
Repeatability	$\leq 1\%$
Average rise	0.333 V/mm $\pm 5\%$
Cut-off frequency	300 Hz
Influence on the operating voltage dU_a/dU_b	approx. 6.7% / 0.1 V
Temperature range	-25 °C to 70 °C (-13 °F to 158 °F)
Temperature drift	$\pm 5\%$
ELECTRICAL	
Operating voltage U_b	5 VDC, stabilized
Operating current	$\leq 15\text{mA}$
Output signal U_a	approx. 0.5 to 4.5 VDC (refer to characteristic)
Load resistance	$\geq 20\text{k}\Omega$
MECHANICAL	
Case material	Nickel-plated brass

Parameter	VIB 6.640
Material of active surface	PCP
Environmental protection	IP 67
Mounting	Non-flush
Connection cable	cable with MiniSnap device connector, 2.9 m

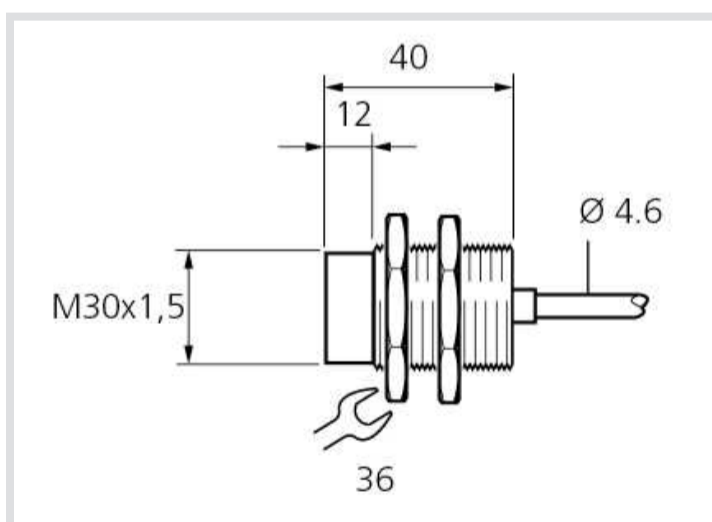
Hint for mounting: When carrying out non-flush mounting on metal surfaces, observe the following hint according to EN 60947-5-2.



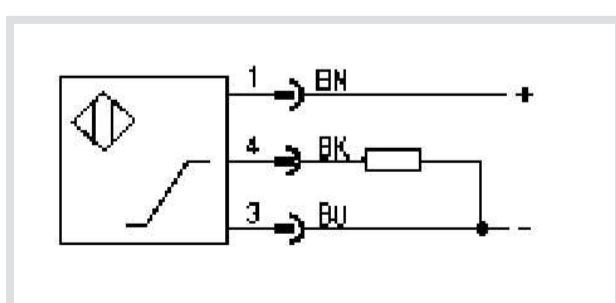
Characteristic



Dimensions



Connection diagram



Displacement sensor (for VIBGUARD)

This displacement sensor is used in combination with a stationary measurement system (e.g. VIBGUARD) to determine the position of metallic objects within close proximity to each other, contactless. A typical application is the detection of the radial and axial motions of a rotating shaft.



Displacement sensor for use with a stationary measurement system (left); Detection of radial movement in a shaft (right)

Features

- Inductive measurement
- Linear characteristic
- Working range: 2 - 10 mm (79 - 394 mils)
- Rated operating distance 6 mm (236 mils)
- Easy to mount and position
- Connection cable (10 m / 32.8 ft) available as optional accessory

Ordering information

Item No.	Description
VIB 6.645	Inductive displacement sensor for VIBGUARD
VIB 6.646	Connection cable with sensor connector, 10 m (32.8 ft)

TECHNICAL INFORMATION

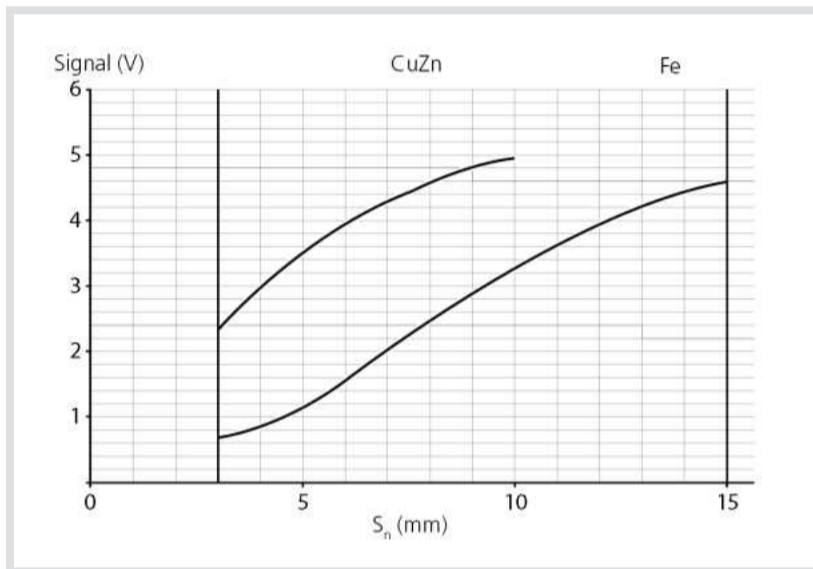
Technical data

Parameter	VIB 6.645
MEASUREMENT	
Measurement principle	Inductive
Measurement variable	Relative distance / displacement
Linearity range S_i	2 - 10 mm
Rated operating distance S_e	6 mm
Max. non-linearity at S_e	$\pm 3\%$ of U_a max.
Repeating accuracy	$\pm 10\mu\text{m}$
Cut-off frequency	500 Hz
Adjusting indication	Yes, LED
Temperature range	-10 °C to 70 °C (14 °F to 158 °F)
Temperature drift	< 5% of U_a max
ELECTRICAL	
Operating voltage U_b	24 VDC
No-load supply current	< 10 mA
Output signal U_a	0 - 10 VDC
Load resistance	> 2 kOhm

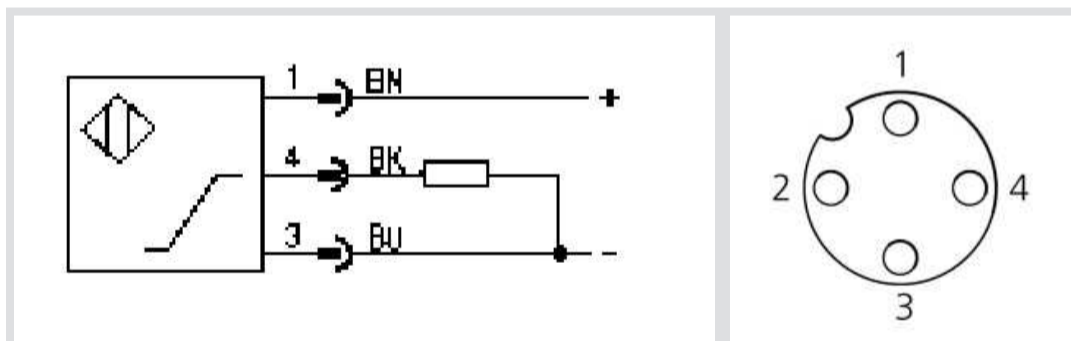
Parameter	VIB 6.645
MECHANICAL	
Case material	Nickel-plated brass
Material of active surface	PBT
Environmental protection	IP 67
Mounting on steel	Flush
Connection cable	PUR cable (10 m) + plug

Hint for mounting: The minimum distance to any metal surface that is not part of the measurement surface must be 3 times S_e .

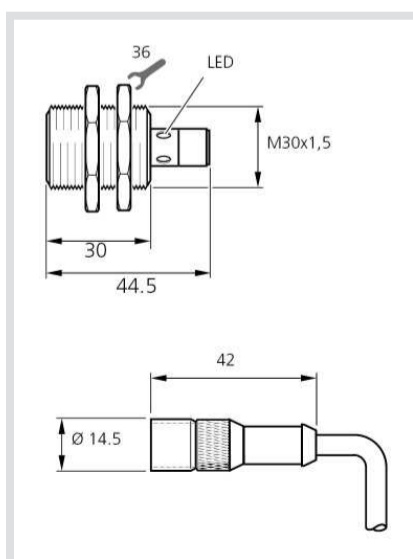
Characteristic



Connection diagram and plug pin allocation



Dimensions



Default RPM sensor for stationary measurement systems

This is used in combination with a stationary measurement system (e.g. VIBGUARD) to measure the RPM contactless.



Default RPM sensor for stationary measurement systems.

Features

- Inductive measurement
- Maximum switching frequency: 1000 Hz
- Effective switching distance: 8 mm
- Operating voltage 24 V DC
- Easy to mount and position
- Sensor cable included (15 m / 49 ft)

Ordering information

Item No.	Description
VIB 5.992-STD	Default RPM sensor for stationary measurement systems

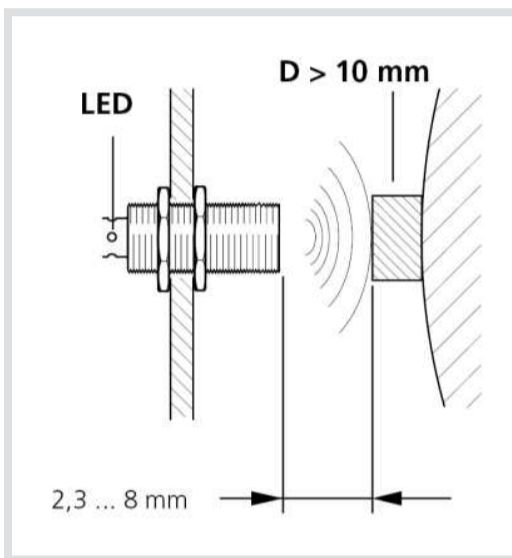
TECHNICAL INFORMATION

Technical data

Parameter	VIB 5.992-STD
MEASUREMENT	
Measurement principle	Inductive
Effective switching distance S_r	8 mm
Assured operating distance S_a	0 – 6.4 mm
Repeating accuracy (% of S_r)	5 %
Switching frequency	0 - 1000 Hz
Switching function	Closer (NO)
Operation display	Yes
Short circuit protection	Yes
Reverse-polarity protection	Yes
Temperature range	-25 °C to 70 °C (-13 °F to 158 °F)
ELECTRICAL	
Operating voltage	10 – 30 V DC
Rated operating voltage U_e	24 V DC
Effective operating current I_e	200 mA
Potential difference	< 2.5 V

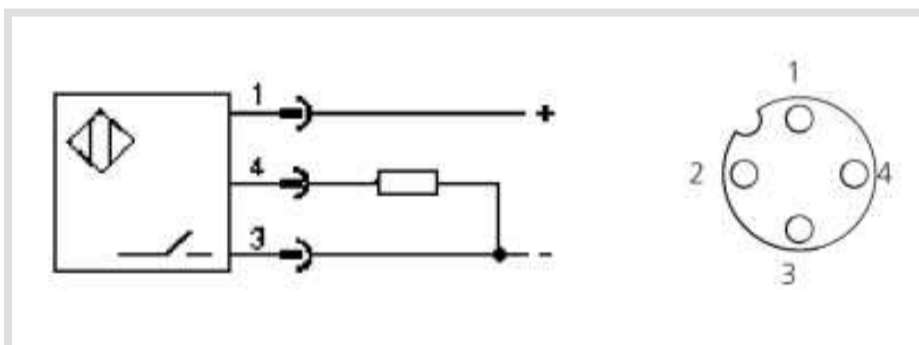
Parameter	VIB 5.992-STD
Cut-off current	< 0.01 mA
MECHANICAL	
Mounting	Flush
Connection	M12 device connector, 4-pin
Case material	CuZn, nickel-free coating
Sensing surface material	PBT
Environmental protection	IP 67

Installation example

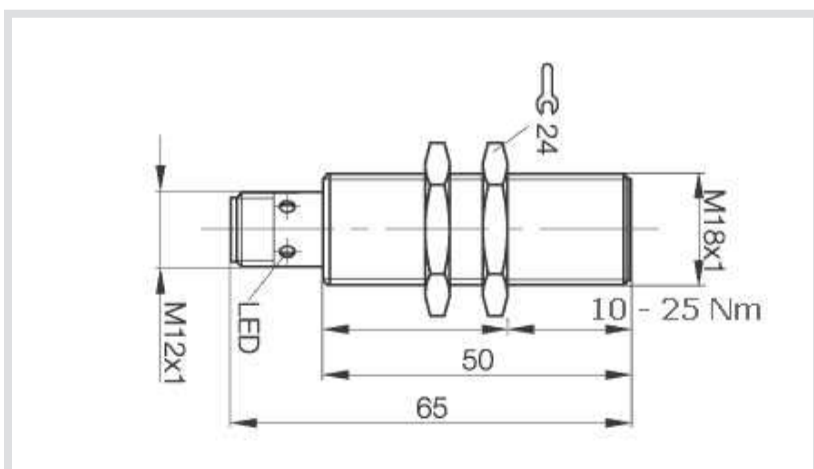


RPM sensor (A), Device connector (B, Optional accessory) and sensor cable (not part of items in the box).

Connection diagram



Dimensions



Current clamp (400 A AC / 600 A DC)

The current clamp is used in combination with VIBXPERT II to measure both AC and DC current. The current clamp can also measure power and true-rms (for nonsinusoidal waveforms). The current clamp works on the principle of the Hall effect. A push button operates the automatic DC zeroing. The cable adapter for signal low voltage is required to connect the current clamp to VIBXPERT II.



Scope of supply

- Current clamp
- 9 V battery
- Operating manual

Ordering information

Item No.	Description
VIB 6.673	Current clamp 600 A DC

TECHNICAL INFORMATION

Accessories

Item No.	Description
VIB 5.433	"Pre-assembled sensor cables for measuring low signal voltage/low signal current, portable measuring devices", p. 191

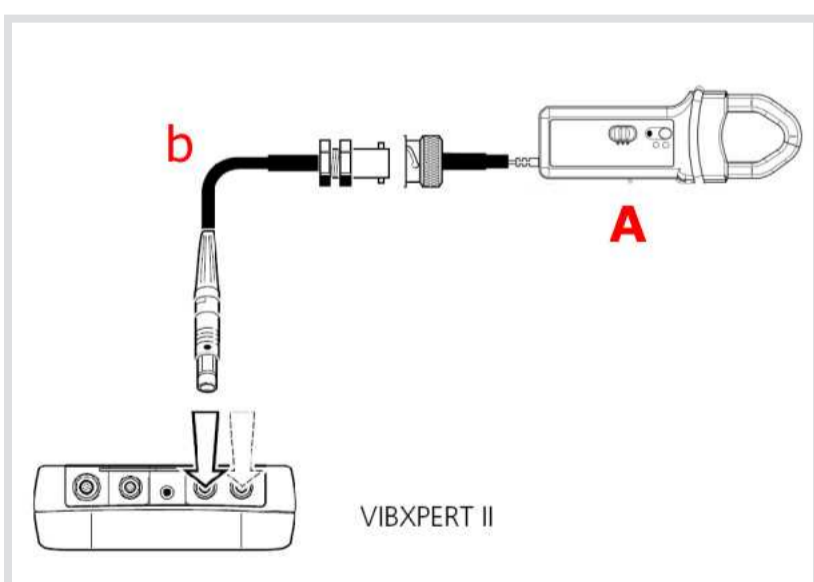
Technical data

Parameter	VIB 6.673	
ELECTRICAL		
Calibre	60 A	600 A
Current range	0.2 A to 40 A AC 0.4 A to 60 A DC	0.5 A to 400 A AC 0.5 A to 600 A DC
Output signal	10 mV/A	1 mV/A
Accuracy*	0.5 A to 40 A: 1.5% ±5mV 40 A to 60 A DC: 1.5%	0.5 A to 100 A: 1.5% ±1mV 100 A to 400 A DC: 2% 400 A to 600 A DC: 2.5%
Phase shift (45 - 65 Hz)*	10 A to 20 A : < 3° 20 A to 40 A : < 2°	10 A to 100 A : < 2° 100 A to 400 A : < 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 0.1 Hz...5 kHz : < 0.5mV

Parameter	VIB 6.673	
Rise/Fall time	< 100 µs from 10 to 90% of the voltage value	< 70 µs from 10 to 90% of the voltage value
Overload	2000 A DC / 1000 A AC bei 1kHz max.	
Bandwidth	DC ... 10 kHz at -3dB	
Load impedance	> 1 MOhm and < 100 pF	
Operating voltage	600 V RMS	
Power supply	9 V alkaline battery (IEC 6LR61)	
Low battery signal	Green LED when battery voltage > 6.5 V	
Battery life	Approximately 50 hours	
Overload indicator	Red LED	
Automatic turn off	After 10 minutes of inactivity	
MECHANICAL		
Operating temperature	-10 °C to 55 °C (14 °F to 131 °F)	
DC zero adjustment	Automatically operated by a push button (± 10 A)	
Maximum jaw insertion capacity	1 cable Ø 30 mm (1 3/16") or 2 cables Ø 24 mm (15/16")	
Environmental protection	IP 30	
Dimensions	224 x 97 x 44 mm (8 13/16" x 3 13/16" x 1 47/64")	
Weight	440 g (16 oz)	
Connection	Coaxial cable, 2 m; with BNC connector	

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

Connection diagram



Current clamp (A) connected to VIBXPART II using the cable adapter for signal low voltage (b)

Temperature probes

These sensors are used in conjunction with handheld devices to measure temperature also in hazardous areas.



Temperature probe with magnetic holder

Features

- NiCrNi thermocouple
- Compact shape
- High temperature version, $T_{max.} : 500^{\circ}\text{C}$ (932 °F)
- Used together with intrinsically safe measurement devices

Ordering information

Item No.	Illustration	Description
VIB 8.605		Spare temperature probe for VIBSCANNER
VIB 8.607-1,5		Temperature probe with magnetic holder, 1.5 m
VIB 8.608		Temperature handheld probe

TECHNICAL INFORMATION

Technical data

Parameter	VIB 8.605	VIB 8.607-1,5	VIB 8.608
MEASUREMENT			
Type of sensor	NiCrNi thermocouple		
Measurement range	-30 °C to 270°C (-22 °F to 518 °F)	-50 °C to 240 °C (-58 °F to 464 °F)	-50 °C to 500 °C (-58 °F to 932 °F)
Sensitivity	---	0.040 mV/°C	
Accuracy	< 3%		
MECHANICAL			
Dimensions (L x Ø)	25 x 11 mm (63/64" x 7/16")	14 mm (35/64") - (Ø)	250 x 3 mm (9 27/32" x 1/8")
Length of cable	---	1.5 m (4' 11")	---
Weight	6 g (0.2 oz)	28 g (1 oz)	83 g (2.9 oz)
Connector	QLA		

Note: When transporting or storing the temperature probe with magnetic holder a steel washer is mounted on the pole pieces to act as a short circuit rail. The relevant safety data sheet is available on www.pruftechnik.com

WEARSCANNER particle distribution counter

WEARSCANNER is used to detect, count and evaluate electrically conductive particles in lubricating oil circuits. The sensor applies eddy current to detect electrically conductive particles within the medium flowing through.



WEARSCANNER particle distribution counter

Main features

- Size-based counting and classification of particles
- Size classes are adjustable as specified in ISO 16232
- Modbus TCP communication

Further key features

- Continuous monitoring with integrated signal processing
- Suitable for lubricating oils
- Records oil temperature
- Large permissible flow rate range
- Internal ring memory for measurement data recording
- Network capability through its own IP address
- Schaltausgang zur Signalisierung von Partikel-Mengenüberschreitungen
- Alive-Schaltausgang zur Signalisierung von Systemstörungen
- Self-monitoring
- Overload protection
- Maintenance-free

Ordering information

Item No.	Description
VIB 6.411	WEARSCANNER particle counter with switching output

TECHNICAL INFORMATION

Accessories

Item No.	Description
Miscellaneous	"Partly pre-assembled connection cable for WEARSCANNER", p. 212
VIB 6.430	WEARSCANNER utility — free software tool for commissioning and maintenance of WEARSCANNER; may be downloaded from the PRÜFTECHNIK website
VIB 8.170...73	Online VIEW 4.0 — software for visualization of measurement data

Technical data

Parameter	VIB 6.411
MEASUREMENT	
Measurement principle	Eddy current, differential coil principle
Particles	Ferritic or non-ferritic
Particle size	Three size classes are default; up to 4 size classes may be set
Signal processing	Particle distribution counter with integral average determination and classification
Mean flow velocity	0.01 m/s to 5 m/s
Mean flow rate	0.08 l/min to 39 l/min
Types of oil	Mineral, synthetic, biodegradable
Oil pressure	16 bar operating pressure / 30 bar burst pressure (maximum)
Temperature range	Ambient: -20 °C to 80 °C (-4 °F to 176 °F); -20 °C to 60 °C (-4 °F to 140 °F)(no flow) Medium (oil): -20 °C to 80 °C (-4 °F to 176 °F)
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, digital switching output	24 VDC (maximum 30 V) / 0.2 A (maximum, permanent load)
Switching capacity, alive output	24 VDC (maximum 30 V) / 0.2 A (maximum, permanent load)
Overload protection	Integrated
Connector, Power supply / LAN	8-pin M12 male connector
Connector, Switching output / alive output	5-pin M12 male connector
Permitted common-mode voltage	50 V (housing / ground) maximum
DATA	
Interface	Ethernet, 100 Mbit/s
Protocols	TCP/IP, Modbus-TCP
Internal memory	64 MB, sufficient for data storage for a period of about 150 days to 10 years, depending on the data logger time interval
Display	System LED 1: green = ready; red = system fault Operation LED 2: orange = particles passing through; red = overload (particles too big/-many, offset voltage too high)
Self-monitoring	Integrated
MECHANICAL	
Case material	Stainless steel 1.4308 (salt water resistant)
Dimensions of fittings	2 x G 1/2" (Whitworth pipe thread DIN ISO 228)
Sensor tube diameter	approx. 13 mm (33/64")

Parameter	VIB 6.411
IP rating	IP 65
Weight	approx. 3.5 kg (7.7 lb)
Maintenance	No moving parts, maintenance-free
Dimensions, WEARSCANNER	approx. 170 x 86 x 102 mm (6 11/16" x 3 25/64" x 4 1/64") [L x B x H]
Dimensions, mounting base (delivered mounted)	approx. 137 x 110 x 3 mm (5 25/64" x 4 21/64" x 1/8") [L x B x H]

Particle size classes, ISO 16232

Class	B	C	D	E	F	G	H*	I*	J*	K*
Particle size in μm	5 - 15	15 - 25	25 - 50	50 - 100	100 - 150	150 - 200	200 - 400	400 - 600	600 - 1000	> 1000

*Classes H, I, J and K are covered by WEARSCANNER.

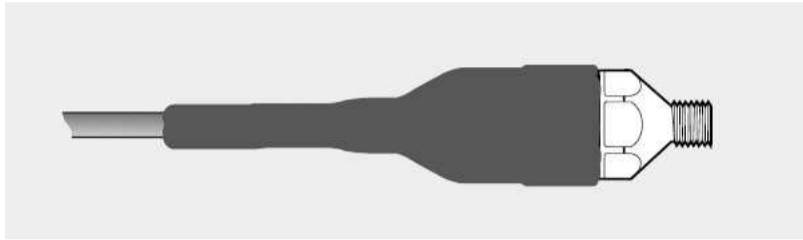
Sensor accessories

IP68 option for industrial accelerometers	156
Mounting adapters for vibration sensors	158
Dust caps for industrial CLD accelerometers	164
Stand and accessories for laser trigger / RPM sensor	167
VIBCODE measurement studs	169
Accessories for VIBCODE measurement studs	172
Measurement studs	174
Tools for installation of accelerometers	176

IP68 option for industrial accelerometers

In this cable option, the connection between the sensor and the cable is hermetically sealed and strain-relieved. The shrink-fit part, the cable and the TNC plug are pre-assembled ex-works together with one of the following sensor types:

- VIB 6.125 RIP, VIB 6.129 IP, VIB 6.125 IDEX, VIB 6.129 IDEX



IP68 option for industrial accelerometers

Features

- Environmental protection: IP68
- Also used in explosive atmospheres (Zone 1)
- Resistant to chemicals and sea water
- Shorter version for reduced mounting depths

Ordering information

Item No.	Description
VIB 6.760	IP68 option for industrial accelerometers
VIB 6.761	IP68 option for industrial accelerometers, short version
Ordering example	VIB 6.125 RIP / VIB 6.760 / VIB 90093-10 = Sensor + IP68 + coaxial cable, 10 m (32' 9.7")

Note: The test certificate for the sensor VIB 6.125-RIP may be ordered separately (VIB 2.550).

TECHNICAL INFORMATION

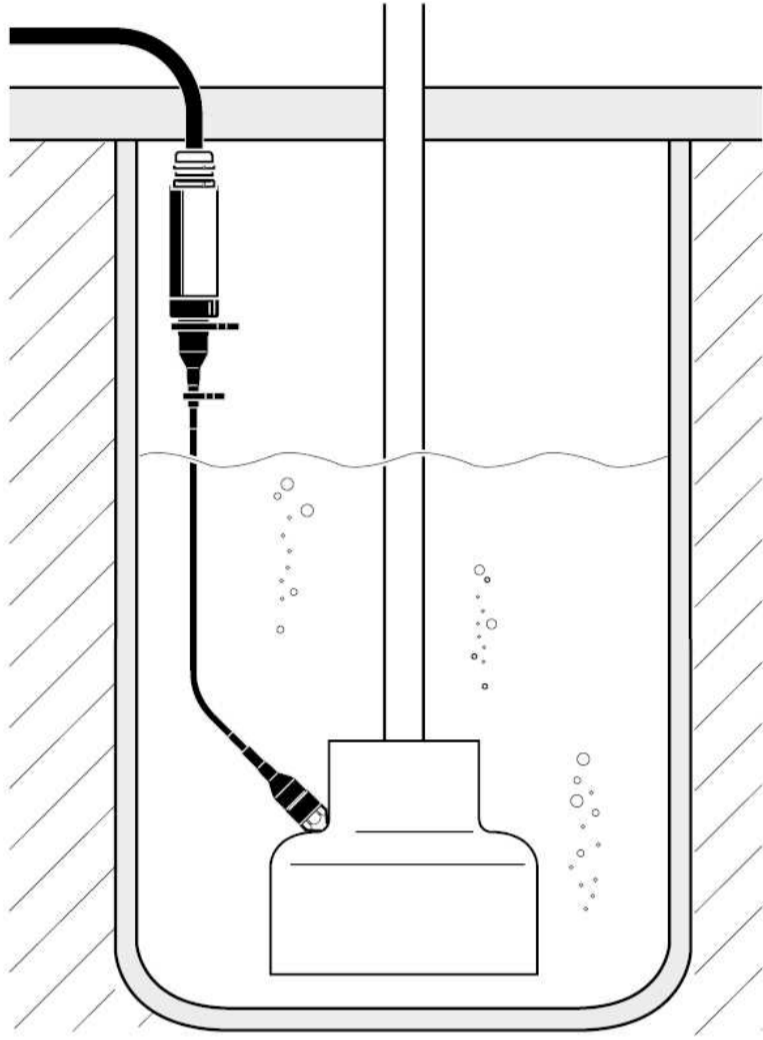
Technical data

Parameter	VIB 6.760	VIB 6.761
Environmental protection	IP68 (dust tight and waterproof)	
Temperature range	Sensor dependent	
Maximum depth / Pressure	< 8 m (26' 3") 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 (5 33/64")	> 120 mm (4 23/32")

Application example

Vibration measurement on a submersible pump

Extending the sensor cable using the junction box VIB 6.770/13 and the triaxial cable VIB 90080 which both remain above the fluid medium.



Mounting adapters for vibration sensors

Vibration sensors are mounted using adapters that conform to the structural shape of the sensor. In addition to these, different types of adapters are available. Depending on the application and the on-site requirements, sensors may be fixed to the measurement points by being screwed down or held secure using adhesives or strong magnets.



Mounting options for an "industrial" accelerometer


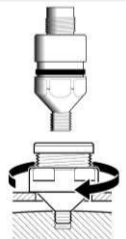
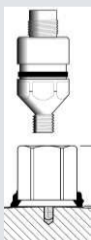

Fixation options

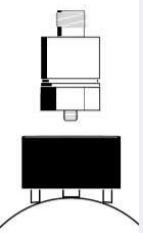
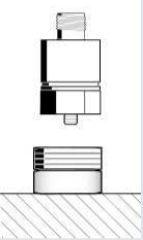
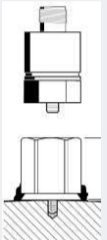
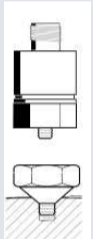

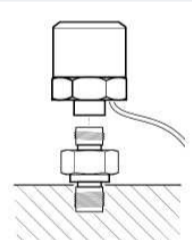
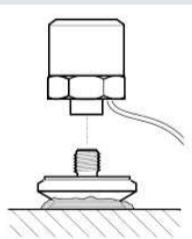
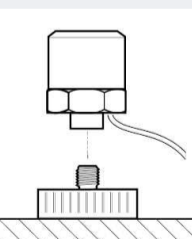
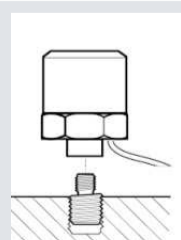
- Screwed mounting
- Glued mounting
- Magnetic connection
- Manual connection using a probe tip



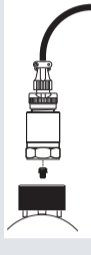
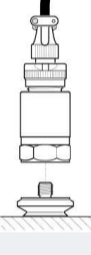
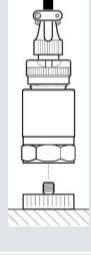
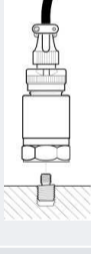

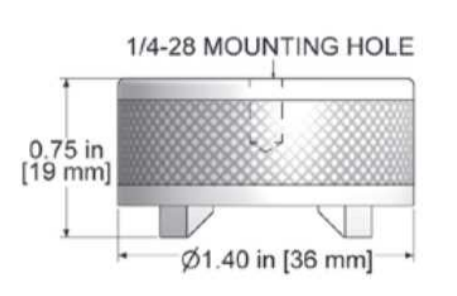
Suitable for following types of sensors:


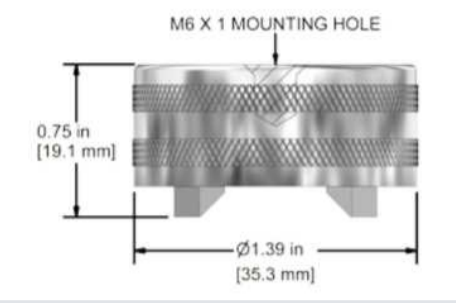
- "Industrial" CLD accelerometer
- "Mini" CLD accelerometer
- IEPE accelerometer "100 mV/g",
- "Wind" CLD accelerometer
- VIBROTECTOR vibrations monitor

Ordering information

Item No.	Illustration	Description	Application / Hint
Mounting adapters for industrial accelerometers VIB 6.12x			
VIB 8.772		Screwed adapter to M10	For installation into an existing M10 hole, e.g. jack ring thread on a motor
VIB 3.411 VIB 3.412 VIB 3.413		Screwed adapter with locking nut to M8 / M10 / M12	For measurement points located directly under a thin cover (e.g. guard plate, housing). The adapter may be used to replace existing casing screws.
VIB 3.431		Adhesive adapter, M8 to adhesive mount	For measurement points where mounting holes cannot be drilled. Fix using a two-component adhesive (e.g. WEICON HB 300). The adhesive adapter is also suitable for the "100mV/g (IEPE)" accelerometer type VIB 6,210.
VIB 8.586 / VIB 8.587 / VIB 8.588 / VIB 8.589		Extension post, Length: 55 / 95 / 170* / 35 mm (2 11/64" / 3 47/64" / 6 11/16"* / 1 3/8" * 170 mm (6 11/16") for shock pulse measurements only	For measurement points that are difficult to access or located inside a guard plate. Diameter: 12 mm (15/32")

Item No.	Illustration	Description	Application / Hint
Mounting adapters for mobile industrial sensors, VIB 6.14x			
VIB 3.420		Magnetic adapter for curved surfaces	For measurement locations made of ferromagnetic material. Shock pulse measurements (roller bearing condition) are not possible with these adapters.
VIB 3.422		Magnetic adapter for flat surfaces	
VIB 3.430		Adhesive adapter	For measurement points where mounting holes cannot be drilled. Fix using a two-component adhesive (e.g. WEICON HB 300).
VIB 3.435 / VIB 3.436 / VIB 3.440		Screw adapter on Screw adapter on	
VIB 3.450		Probe tip	Manual coupling to the measurement location. Material: Aluminium; Dimensions: 19 x 73 mm [3/4" x 2 7/8"] (D x H)
Mounting adapter for mini-sensor, VIB 6.20x			
VIB 3.417-M5 / VIB 3.417-M6		Screw adapter on M5 / M6	
VIB 3.418		Adhesive adapter	For measurement points where mounting holes cannot be drilled. Fix using a two-component adhesive (e.g. WEICON HB 300).
VIB 3.423		Magnetic adapter	
VIB 3.480		M8 threaded pin	Installed in the sensor as standard. Can be replaced if necessary.

Item No.	Illustration	Description	Application / Hint
Mounting adapter for VIBROTECTOR, and sensor "Wind" (VIB 6.195) or "100mV/g" (VIB 6.172)			
VIB 3.437		Screw adapter on M8-90°	
VIB 3.438		Screw adapter on M8 flat	
VIB 3.439		Screw adapter on M5 flat	This adapter is used to mount the sensor on the magnetic adapter VIB 3.420.
VIB 3.433		Adhesive adapter	For measurement points where mounting holes cannot be drilled. Fix using a two-component adhesive (e.g. WEICON HB 300).
VIB 3.423		Magnetic adapter	
VIB 3.480		M8 threaded pin	Installed in the sensor as standard. Can be replaced if necessary.
Mounting adapter for Triaxial sensor, VIB 6.655			
VIB 6.657		Magnetic holder, 1/4-28 mounting hole	Magnetic coupling to the measurement location. Material: Stainless steel/Neodymium; Max. temperature: + 80°C Dimensions: 

Item No.	Illustration	Description	Application / Hint
VIB 6.656		Magnetic holder, M6 mounting hole	<p>Magnetic coupling to the measurement location. Material: Stainless steel/Neodymium; Max. temperature: + 80°C Dimensions:</p> 

TECHNICAL INFORMATION

Accessories

Item No.	Item name / item group
Miscellaneous	"Tools for installation of accelerometers", p. 176

Technical data, Magnetic adapter

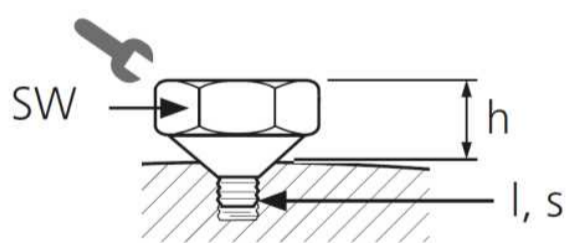
Parameter	VIB 3.420	VIB 3.422	VIB 3.423
Housing, material	Plastic PA6, pole shoe made of steel	Steel	
Block magnet	NdFeB (neodymium iron boron)		
Temperature range (for PA6)	-40°C ... +120°C	---	---
Connection thread	M5	¼-28 UNF	
Weight, total	70 g	27 g	41 g
Weight, magnet	28 g	5 g	7 g
Diameter	34 mm	20 mm	25 mm
Height	23 mm	11 mm	10 mm

Note: During transport/storage, a steel washer needs to be attached to the pole shoes as a short-circuit rail. The safety data sheet is available on the PRUFTECHNIK website.

Material and dimensions

All of the adapters listed below are made from stainless steel (VA1.4305).

The dimensions are stated in millimeters.

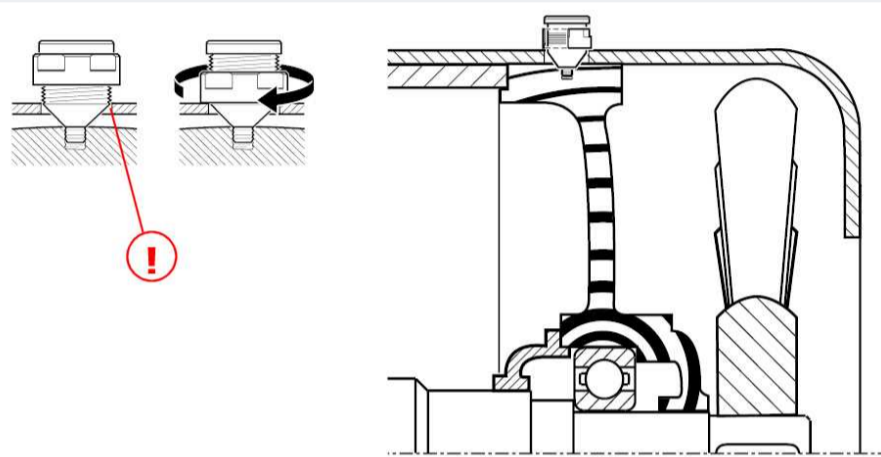


Item No.	Mounting height h	Thread size s	Thread length l	Torque in Nm	Wrench size SW
VIB 3.411	18	M8	6	11	20
VIB 3.412	17	M10	6	22	20
VIB 3.413	16	M12	6	39	20
VIB 3.417-M5	11	M5	5	2.7	13
VIB 3.417-M6	11	M6	6	4.6	13
VIB 3.418	6	---	---	---	---
VIB 3.430	16	---	---	---	---
VIB 3.431 / 3.432	21	---	---	---	---
VIB 3.433	8	---	---	---	---

Item No.	Mounting height h	Thread size s	Thread length l	Torque in Nm	Wrench size SW
VIB 3.435	8	M5-120°	3.5	2.7	19
VIB 3.436	8	M6-90°	6	4.6	19
VIB 3.437	4	M8-90°	5	11	---
VIB 3.438	8	M8	4	11	22
VIB 3.439	1	M5	4	2.7	---
VIB 3.440	9	M8-90°	5	11	19
VIB 3.480	0	M8	11	11	---
VIB 8.772	12	M10-120°	7	22	19

Mounting examples

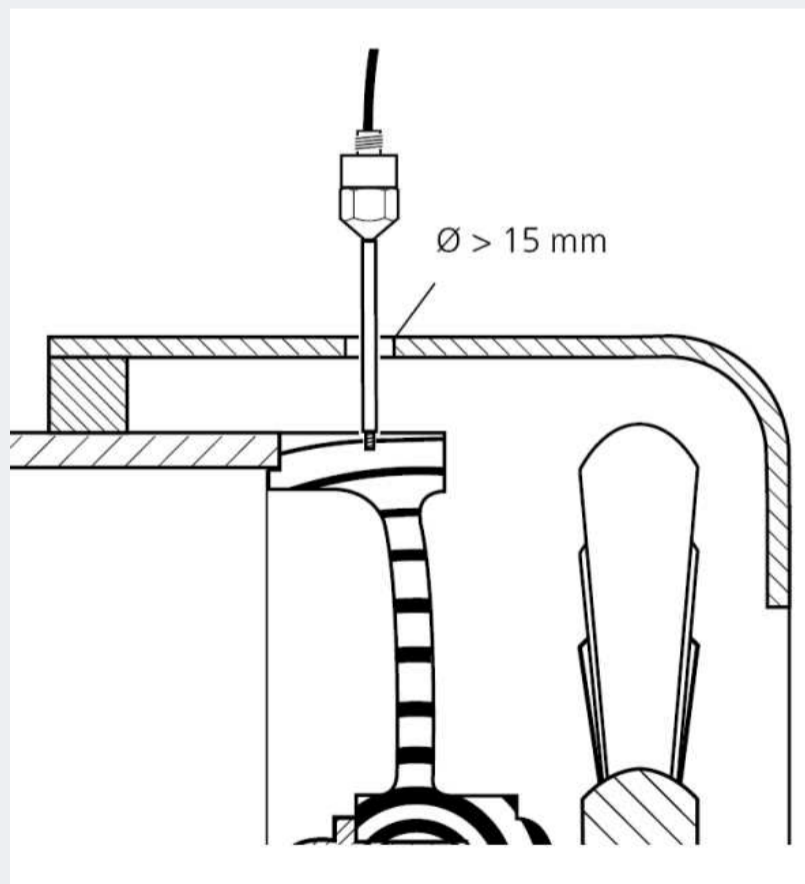
Screw adapter with lock nut



! : No contact between the adapter and cover.

The lock nut fixes the cover in place while the screw adapter is bolted to the measurement location. For optimum transmission of the signal, the cone must only come in contact with the measurement location and must not come in contact with the cover.

Extension rod



! : No contact between the extension rod and cover.

Dust caps for industrial CLD accelerometers

These dust caps and the corresponding clamps are used to seal and relieve the strain at the connection between the sensor and the cable.



Features

- Design: Straight or angled
- Material: Silicone or Vitone
- Protection: IP 67 or IP 65

Ordering information

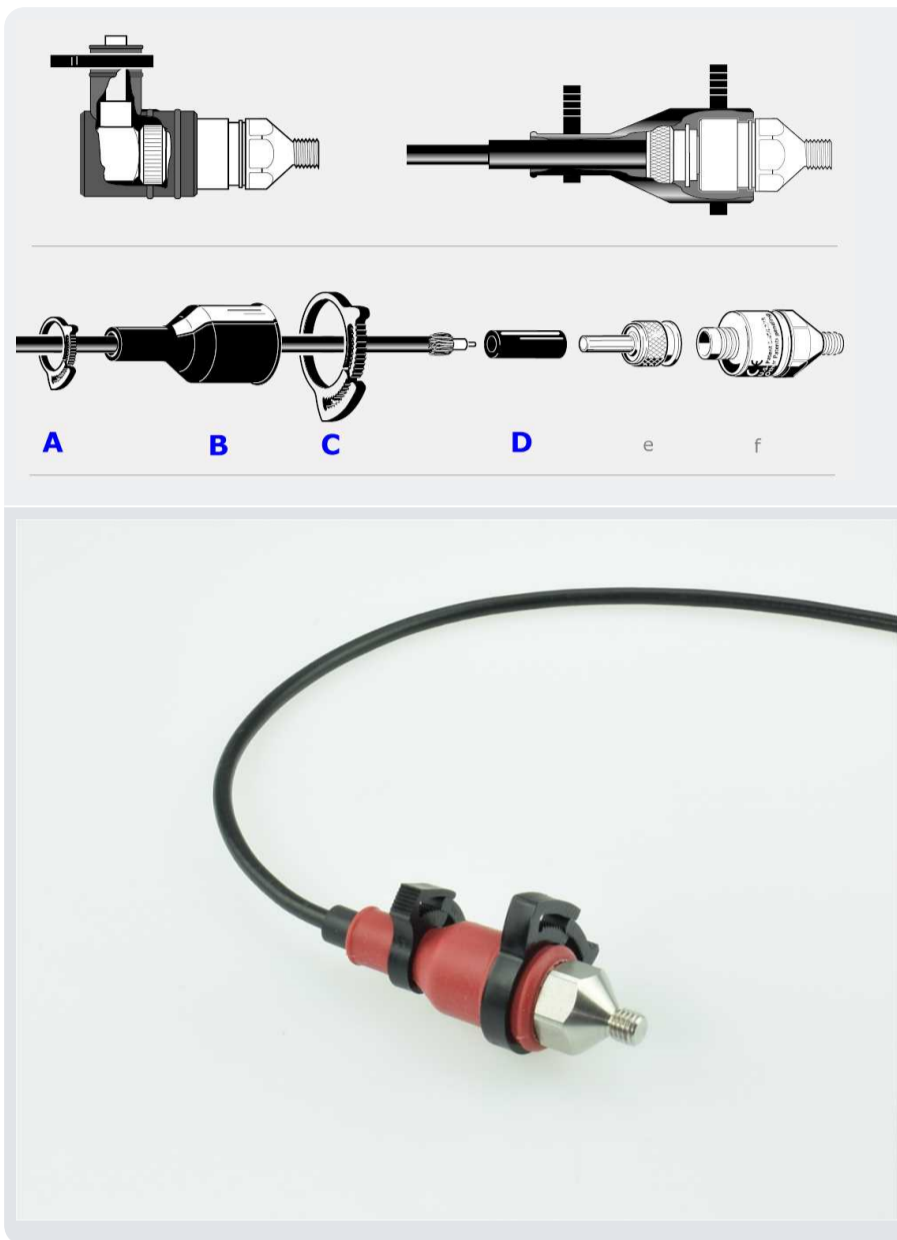
Item No.	Description	Legend
VIB 6.711	Dust caps, angled, oil-resistant, 10 pieces	1
VIB 6.710	Dust caps, angled, 10 pieces	2
VIB 6.700	Dust caps, straight, 10 pieces	3
VIB 6.701	Dust caps, straight, oil-resistant, 10 pieces	4
VIB 6.721	Clamps for dust caps, sensor end, 10 pieces	5
VIB 6.722	Dust cap sleeves, 10 pieces	6
VIB 6.720	Clamps for dust caps, cable end, 10 pieces	7

Note: Rating IP 67 is attained with only straight dust caps used together with dust cap sleeves, protective sheath or triaxial cable. Angled dust caps may be sealed using clamps at only the cable end (IP 65). Only sensors with straight sockets and dust caps may be used in explosive environments.

Only silicone-free dust caps may be used in paint shops.

TECHNICAL INFORMATION

Overview



Legend

- **A:** Clamp for dust cap, cable end VIB 6.720
- **B:** Dust cap, straight VIB 6.700
- **C:** Clamp for dust cap, sensor end VIB 6.721
- **D:** Dust cap sleeve VIB 6.722
 - e: TNC plug VIB 93022
 - f: Sensor VIB 6.122 R



Technical data

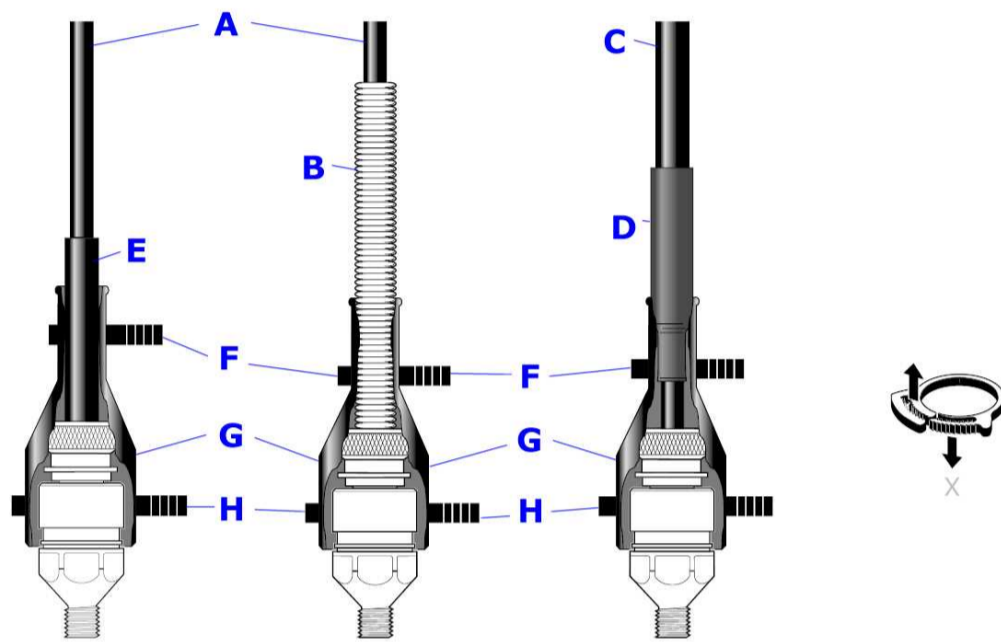
Dust cap	VIB 6.700	VIB 6.710	VIB 6.701	VIB 6.711
Material	Silicone (siloprene HV)		Viton (FKM polymer, P-60 120 black)	
Resistance	Ozone, weathering, aging, UV radiation, hot water, steam (up to 130°C), aliphatic hydrocarbons (mineral oils)		Ozone, weathering, aging, aliphatic, aromatic, chlorinated hydrocarbons (e.g. mineral oils, fats, fuels, mixtures), inorganic acids, chemicals, silicone oils or fats	
Temperature range	-55 °C ... + 180 °C [-67 °F ... +356°F]		-30 °C ... + 200 °C [-22 °F ... +392°F]	
Environmental protection	IP 67	IP 65	IP 67	IP 65

Clamps, Sleeve	VIB 6.720	VIB 6.721	VIB 6.722
Material	Nylon 66, thermally stabilized		Nitrile rubber (NBR)
Resistance	Industrial solvents, fuels, oils, fats, weathering		Silicone-free, oil-resistant

Clamps, Sleeve	VIB 6.720	VIB 6.721	VIB 6.722
Temperature range	-40°C ... +120°C [-40 °F ... +248°F]		-30°C ... +100°C [-22 °F ... +212°F]
Clamping range	12.2...14.8 mm	20.5...23 mm	---

Installation example

- Standard installation using coaxial cable and dust cap sleeve
- Installation using coaxial cable and protective sheath
- Installation using triaxial cable and heat shrink sleeve



- A: Coaxial cable VIB 90008-x
 B: Protective sheath VIB 6.730
 C: Coaxial cable VIB 90080-x
 D: Heat shrink sleeve
 E: Dust cap sleeve VIB 6.722
 F: Clamp, cable end VIB 6.720
 G: Dust cap VIB 6.700
 H: Clamp, sensor end VIB 6.721
 X: Open clamp

Stand and accessories for laser trigger / RPM sensor

This stand is used to mount securely the laser trigger sensor on machines. The sensor may be adjusted to virtually any position using the ball joint on the stand. The magnetic holder on the stand ensures that the setup of the measuring components remains fixed on any magnetic surface. The reflective tape serves as a measurement mark on the rotating shaft.



Stand and reflective tape

Features

- Secure and stable mounting of sensor
- Mounts readily even on curved surfaces
- 360° sensor adjustment
- Compact structural shape

Ordering information

Item No.	Description
VIB 6.632	Stand for laser trigger / RPM sensor
VIB 3.306	Reflective tape, 10 mm wide in a roll (4.5 m)

TECHNICAL INFORMATION

Technical data

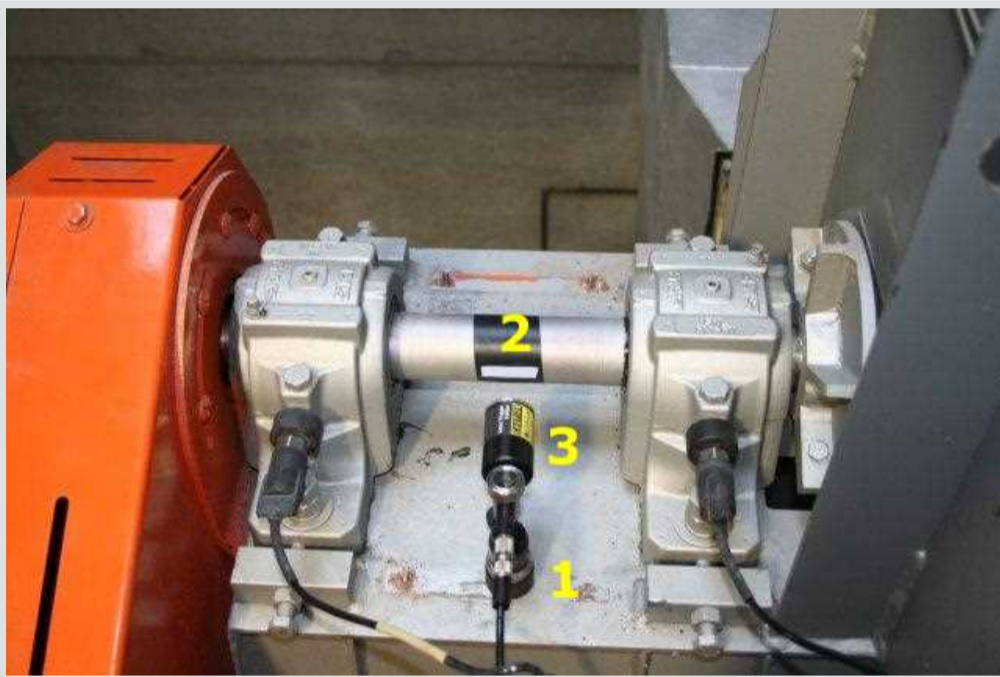
Parameter	VIB 6.632
Weight	approx. 230 g
Mounting height	Max. 116 mm
Fixation	Magnetic; Block magnet: NdFeB

Note: During transportation or storage, a washer-shaped steel plate is placed on the pole pieces to act as a short-circuit rail. The relevant safety data sheet is available for download and reference from the PRÜFTECHNIK website.

Installation example



RPM sensor mounted on the stand



Measuring RPM: Stand (1), the reflective tape is on the shaft (2) and RPM sensor (3).

VIBCODE measurement studs

VIBCODE measurement studs are the standard measurement locations used with VIBCODE transducer. They provide a rigid connection to the object being measured, and each has a unique code. They are optimized for a loss-free signal transmission to the transducer. The measurement studs are available in different shapes.



VIBCODE measurement stud comprises stud, code ring and protective cap

Features:


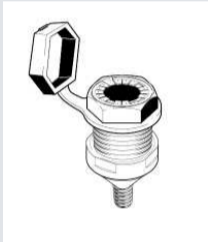
- Guarantees a rigid connection to the transducer
- Facilitates repeatability in measurement results
- Foolproof identification of measurement points
- Coding of measurement points patented

Mounting options

- Screw mounting
- Glue mounting

Ordering information

Item No.	Illustration	Description	Application / Hint
VIBCODE measurement studs with threaded bolts			
VIB 8.679 SET		M8, VA 1.4571, 1 x	Standard stud, mounted using M8 threads in aggressive chemical industrial environment
VIB 8.680 SET VIB 8.680 A25		M8, VA 1.4305, 1 x/ M8, VA 1.4305, 25 x	Standard stud, mounted using M8 threads in normal industrial environment
VIB 8.690 SET VIB 8.690 A25		UNC 5/16, VA 1.4305, 1 x/ UNC 5/16, VA 1.4305, 25 x	Standard stud, mounted using UNC 5/16 in normal industrial environment
VIBCODE measurement studs for adhesive mounting			
VIB 8.685 SET VIB 8.685 A25		1 x/ 25 x	For measurement points where mounting holes cannot be drilled. Fix using a two-component adhesive (e.g. WEICON HB 300). Mounting hint: A removable centering pin with self-tapping threads holds the stud in place until the adhesive hardens. Material: Stainless steel, VA1.4305

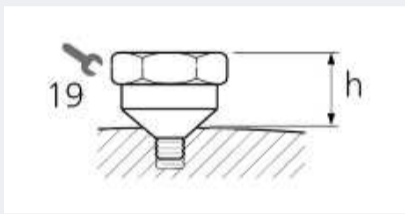
Item No.	Illustration	Description	Application / Hint
VIBCODE measurement studs with extension post			
VIB 8.576 VIB 8.577 VIB 8.578		M8 x 55 mm (2 3/16")/ M8 x 95 mm (3 3/4")/ M8 x 170 mm (6 11/16")	Measurement stud for measurement points that are difficult to access or where standard studs cannot be directly mounted. The longest version (170 mm / 6 11/16") is suited for shock pulse measurements. Vibration measurements cannot be made using this type of stud as the length of the extension post increases the vibration amplitude. Material: Stainless steel, VA 1.4305
VIBCODE measurement studs with locking nut			
VIB 8.571 VIB 8.572 VIB 8.573		locking nut, M8 / locking nut, M10 / locking nut, M12 /	Measurement stud for measurement points protected with a thin guard or housing; the locking nut is tightened against the housing (or guard) and the measurement stud is screwed to the measurement position. To ensure optimum signal transmission, the cone of the stud may touch only the measurement point (e.g. the bearing housing), but not the metal casing. The VIBCODE measurement studs may be used to replace the used housing screws. Material: Stainless steel, VA 1.4305

TECHNICAL INFORMATION

Accessories

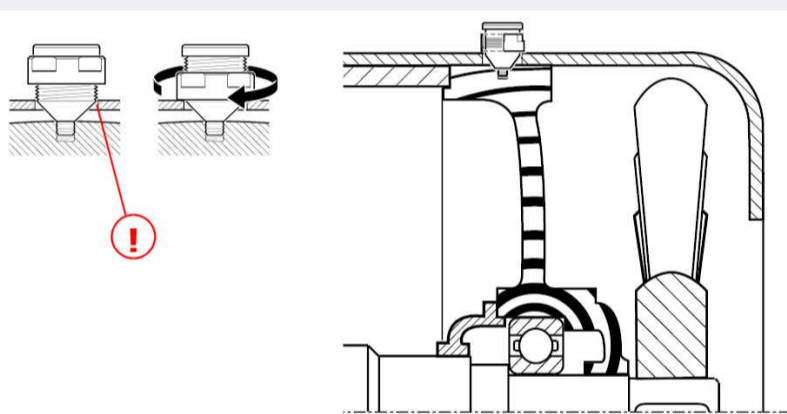
Item No.	Description / Group
Miscellaneous	"Accessories for VIBCODE measurement studs", p. 172
Miscellaneous	"Tools for installation of accelerometers", p. 176

Mounting height

Item No.	Mounting height h in mm	Illustration
VIB 8.679../680../690..	15	
VIB 8.571 /..72 /..73	28 / 27 / 26	
VIB 8.685..	21	

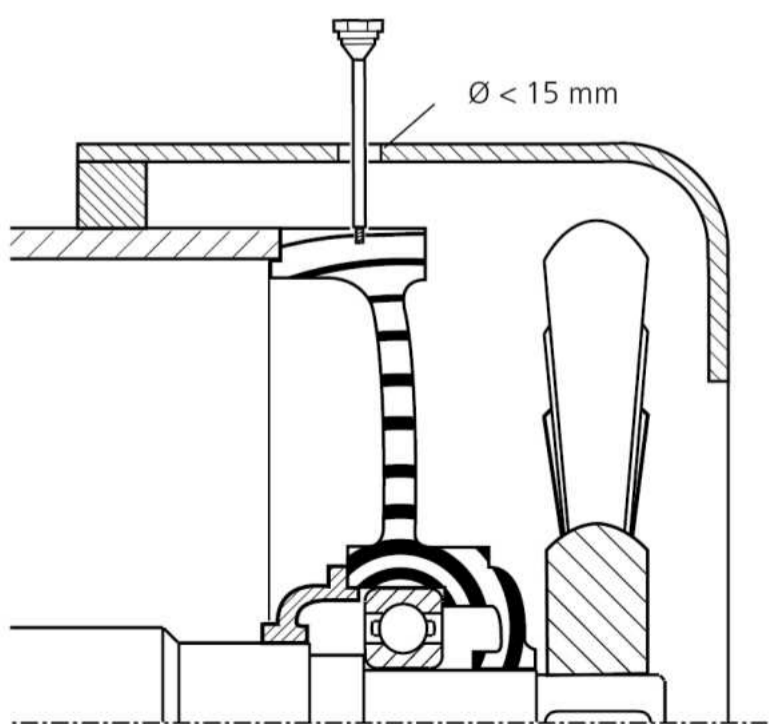
Mounting example

VIBCODE measurement stud with locking nut



!: No contact between measurement point and protective cover
 The locking nut is tightened against the housing (or guard) and the measurement stud is screwed to the measurement position. To ensure optimum signal transmission, the cone of the stud may touch only the measurement point, but not the metal casing.

Extension post



!: No contact between the extension post and the protective cover

Accessories for VIBCODE measurement studs

These items are used as consumables and to code VIBCODE measurement studs.



Protective cap, code ring, and encoding tool

Features

- Patented, measurement point coded mechanically
- Over 8000 different coded patterns possible
- Measurement point protected from contamination
- Easy encoding using a cutting tool

Ordering information

Item No.	Description
VIB 8.563 A25	VIBCODE code ring, 25 pieces
VIB 8.566	Protective cap for VIBCODE stud
VIB 8.692	VIBCODE encoding tool

TECHNICAL INFORMATION

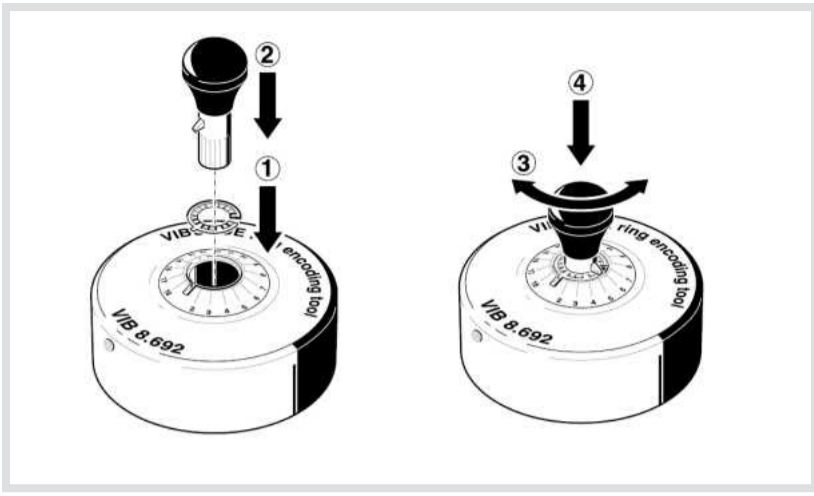
Technical data

Parameter	Protective cap - VIB 8.566	Code ring - VIB 8.563
Material	Desmopan®	Hostaform®
Temperature range	-30 °C ... + 100 °C [-22 °F ... + 212 °F]	-40 °C ... + 130 °C [-40 °F ... + 266 °F]
Resistance	Oil, Coolant	

Application example, encoding tool

How to use the encoding tool:

- Insert code ring
- Insert the cutting tool
- Set code number (issued from OMNITREND software)
- Slowly press down the cutting tool



Measurement studs

The accelerometer with quick fitting coupling (VIB 8.666 R) is connected to these measurement studs. The stud is connected to the measuring object in a stable manner and optimized for loss-free signal transmission to the sensor. Measurement studs are available in various designs and materials.



Measurement stud with bonding base.


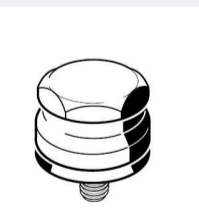
Features:

- Defined measurement location
- Stable coupling
- Reproducible measurements

Mounting options

- Threaded mounting
- Adhesive mounting

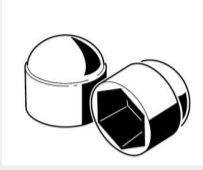
Ordering information

Item No.	Description, Mounting x Installation height X [mm], Material	
VIB 32000	Measurement stud for accelerometer type VIB 8.666 R, M8 x 24, free-cutting steel¹ , nickel-plated	
VIB 32010	-, M8 x 24, stainless steel (VA 1.4305)	
VIB 32200	-, M8 x 113, free-cutting steel, nickel-plated	
VIB 32210	-, M8 x 113, stainless steel	
VIB 32310	-, M8 x 202, stainless steel	
VIB 32410	-, M8 x 291, stainless steel	
VIB 33000	-, bonding base x 14, stainless steel For measurement points where mounting holes cannot be drilled. Fix using a two-component adhesive (e.g. WEICON HB 300).	

¹Material number: 1.0715.07

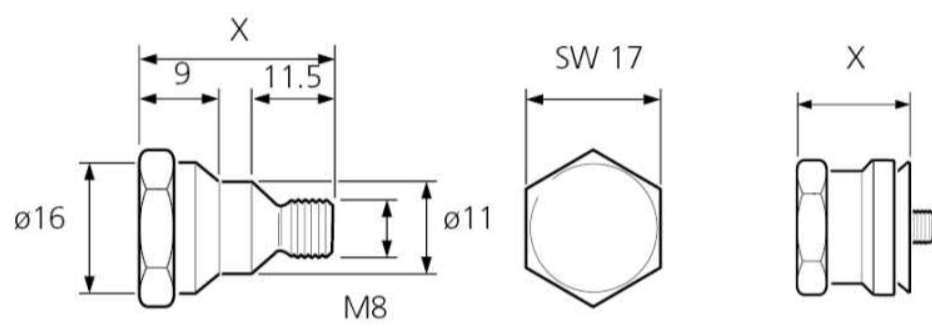
TECHNICAL INFORMATION

Accessories

Item No.	Description	
VIB 81025	Protective cap for measurement stud (black, LDPE, Ta < 70°C)	
Miscellaneous	"Tools for installation of accelerometers", p. 176	

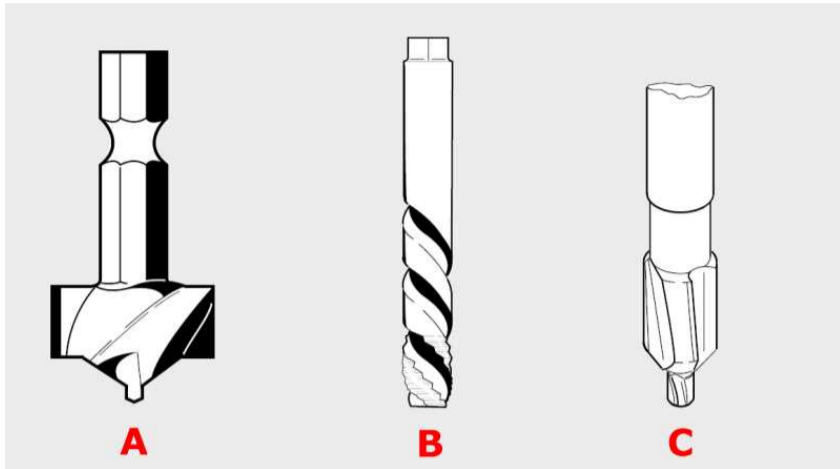
Dimensions

Values in mm



Tools for installation of accelerometers

This drilling tool is used when mounting sensors with screw threads. The special countersink is intended to prepare a measurement location for the vibration sensor installed in the VIBSCANNER.



Overview

- Thread cutter M8 and UNC 5/16
- 90° countersink for sensors with a cone base
- Special countersink for VIBSCANNER sensor

VIBSCANNER special countersink (A), thread cutter (B), 90° countersink (C).

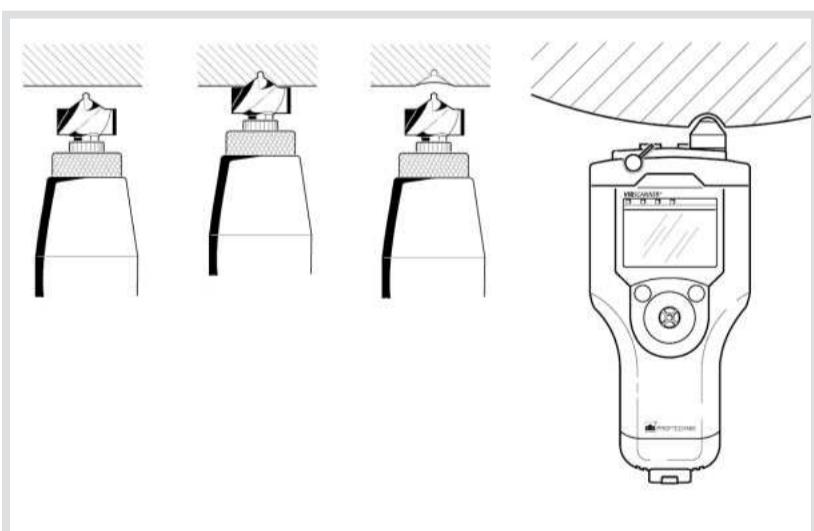
Ordering information

Item No.	Name
VIB 8.610	Special countersink, VIBSCANNER
VIB 8.693	Thread cutter M8
VIB 8.694	90° countersink
VIB 8.696	Thread cutter UNC 5/16

TECHNICAL INFORMATION

Application example

Preparation of a measurement location for the VIBSCANNER vibration sensor with the special countersink.



Cables and installation material

Device cables

Ethernet cable for VIBXPERT II	178
VIBSCANNER channel switches	179
Communication adapter and USB cable for VIBXPERT EX	181
Serial PC cables - RS232	183
USB cables for VIBXPERT II	185

Ethernet cable for VIBXPART II

This cable is used for data transmission within a network.




Ethernet cable connected to VIBXPART II

Features

- The patch cable is used to connect measurement devices to network sockets
- FTP CAT.5 patch
- ISO / IEC 11801 & EN 50173
- Gigabit Ethernet type CM (UL), C (UL)

Ordering information

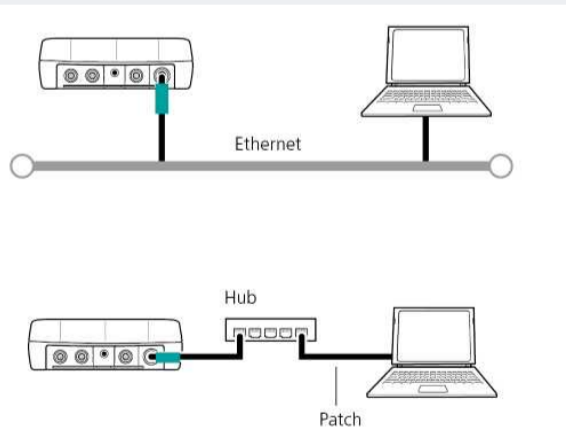
Item No.		Description
VIB 5.331		Ethernet cable for VIBXPART II, 2 m (6' 6.7"), RJ45 to MiniSnap

Note: This cable must not be used with the intrinsically safe VIBXPART EX.

TECHNICAL INFORMATION

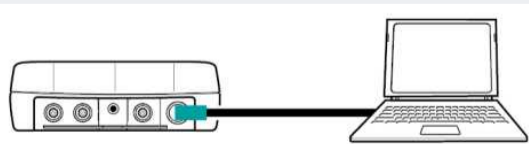
Examples

VIBXPART II communicating with PC via a network



Connect the Ethernet cable to the communication socket (green). A commercially available patch cable is connected to a network interface card. Both cables are then connected to either a network socket or to a hub.

VIBXPART II communicating with a PC directly via a patch cable



Connect the Ethernet cable to the communication socket (green) and to the network interface card.

VIBSCANNER channel switches

The channel switch is used for 2-plane balancing with VIBSCANNER. It simplifies the measurement through sequential control of the two measurement channels.



Automatic channel switch (left) and manual channel switch (right)

Features

- No need to unplug the sensor cable
- Automatic or manual switching of the measurement channels
- Manual channel switching also suitable for the intrinsically safe VIBSCANNER EX

Ordering information

Item No.	Description
VIB 5.445	Manual channel switch for VIBSCANNER
VIB 5.446	Automatic channel switch for VIBSCANNER

TECHNICAL INFORMATION

Accessories

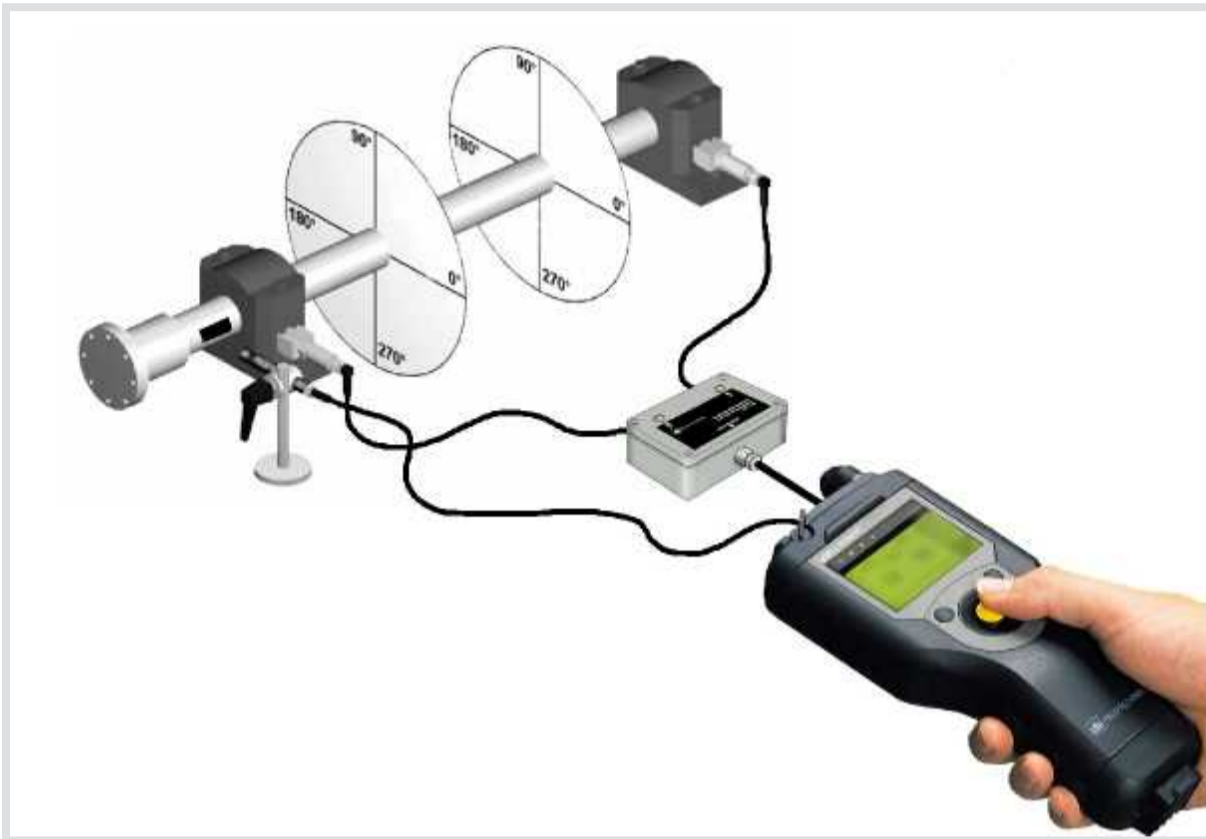
Item No.	Description
VIB 5.436	"Pre-assembled sensor cables and adapters for CLD accelerometers (portable devices)", p. 188
Miscellaneous	Coaxial cable with two TNC sockets – available in varying lengths

Technical data

Parameter	VIB 5.445	VIB 5.446
Case material	Aluminium	
Connections	VIBSCANNER: 1x TNC socket Sensors: 2x TNC sockets	VIBSCANNER: Cable with MiniSnap plug – securely connected Sensors: 2x MiniSnap sockets
Display, active channel	Position of the toggle switch	LED display
Dimensions	97 x 63 x 35 mm (3 13/16" x 2 31/64" x 1 3/8")	
Weight	approx. 230 g (11 oz)	

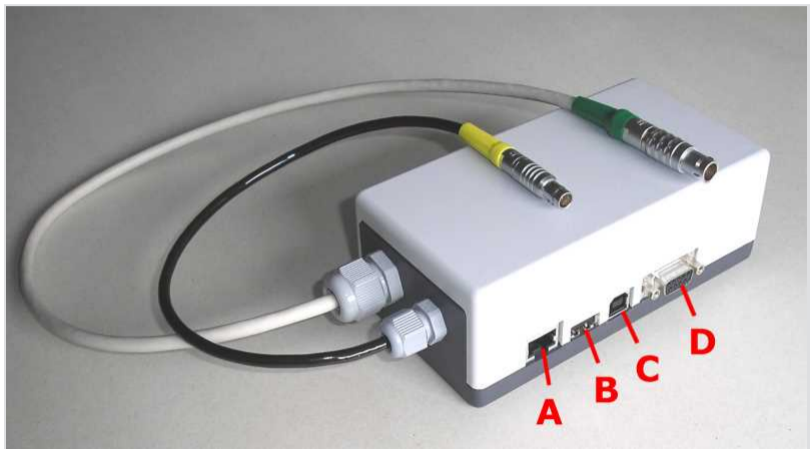
Application example

Balancing with VIBSCANNER and automatic channel switch in two planes
Vibration sensors connected to the channel switch using the sensor cable VIB 5.436.



Communication adapter and USB cable for VIBXPERT EX

The adapter is intended for use as a communication interface for the intrinsically safe VIBXPERT EX. The adapter protects the instrument against damage due to over voltages that may arise from connecting non-certified peripheral equipment.

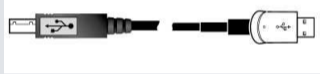


Communication adapter with interfaces for Ethernet (A), USB master (B), USB slave (C) and RS232 (D)

Features

- USB slave und USB master
- Ethernet, RJ 45
- Serial, RS232

Ordering information

Item No.		Description
VIB 5.330 UNV		Universal communication adapter for intrinsically safe VIBXPERT EX
VIB 5.338		USB cable for intrinsically safe VIBXPERT, 2 m (6' 7")

Note: The communication adapter must not be used in hazardous areas.

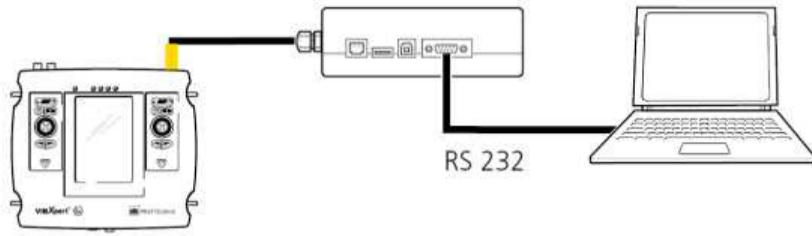
TECHNICAL INFORMATION

Technical data, VIB 5.330 UNV

Parameter	VIB 5.330 UNV
Interfaces	Intrinsically safe VIBXPERT EX: Two permanent connection cables for digital and communication ports PC: RS232 and USB (slave) Printer: USB (master) Network: RJ 45
Case material	Plastic – Polystyrol
Dimensions, L x B x H	170 x 80 x 55 mm (6 11/16" x 3 5/32" x 2 11/64")
Weight	approx. 350 g (12.3 oz)

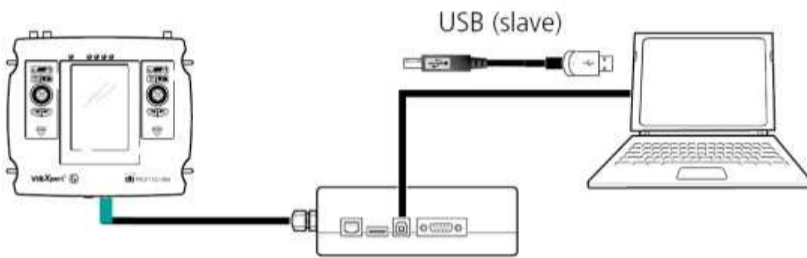
Examples

Intrinsically safe VIBXPERT EX communicating with a PC via the serial port



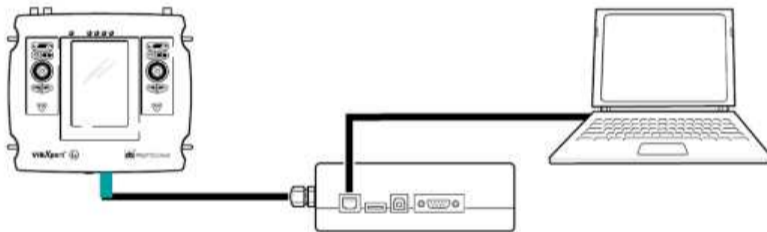
Connect the adapter cable with the yellow sleeve to the measuring instrument.
Connect the PC to the communication adapter using a suitable serial (RS232) cable.

Intrinsically safe VIBXPERT EX communicating with a PC via the USB interface



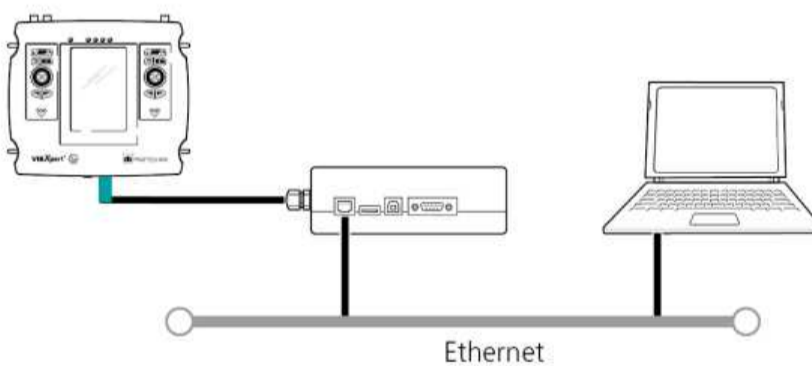
Connect the adapter cable with the green sleeve to the measuring instrument.
Connect the PC to the communication adapter using the USB cable for VIBXPERT EX (VIB 5.338).

Intrinsically safe VIBXPERT EX communicating with a PC via a patch



Connect the adapter cable with the green sleeve to the measuring instrument.
Connect the PC to the communication adapter using a straight patch cable (RJ 45).

Intrinsically safe VIBXPERT EX communicating with a PC via the network



Connect the adapter cable with the green sleeve to the measuring instrument.
Use patch cables and connect both the PC and the communication adapter to a network socket.

Serial PC cables - RS232

The cables are used for data transmission via the serial interface (RS232) of the measuring instrument. The adapter cable "USB-Serial" is intended for VIBSCANNER but is necessary if the PC possesses only USB ports.



Serial PC cable connected to VIBXPERT II

Suited for following handheld devices:

- VIBSCANNER
- VIBXPERT II

Ordering information

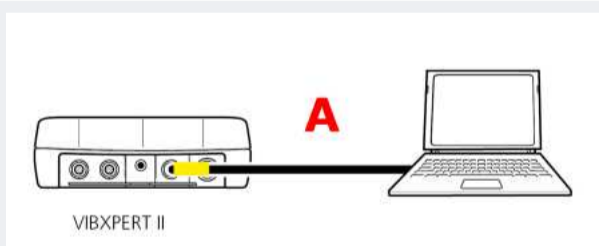
Item No.		Description
VIB 5.430-2		Serial PC cable, 2 m, D-Sub9 (f) to MiniSnap
VIB 5.448		VIBSCANNER adapter cable, "USB - Serial", 0.2 m, D-Sub9 (f) to USB
VIB 5.430-USB		VIBSCANNER EX adapter cable "USB - Serial", MiniSnap to USB

Note: The serial PC cable must not be used with the intrinsically safe VIBXPERT EX.

TECHNICAL INFORMATION

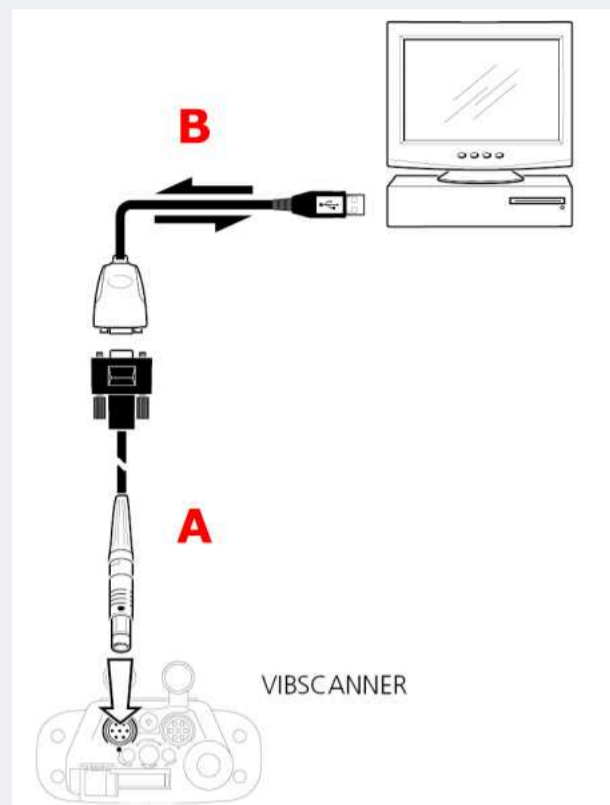
Examples

VIBXPERT II communicating with a PC via the serial port



Connect the device digital socket (yellow) to the PC serial port using the cable (A).

**VIBSCANNER communicating with a PC via the serial interface
and the "USB - Serial" adapter cable**



Connect the PC cable (A) to the digital socket (yellow). Connect the cable adapter "USB - Serial" (B) to the USB port on the PC. Connect cables A and B together.

USB cables for VIBXPERT II

This cable is designed for data transfer between VIBXPERT II and a PC. A USB pen drive and a matching connection cable are available for storing measured data on an external data storage medium.






USB cable for data transfer connected to VIBXPERT II.

Features

- USB 2.0
- Storage medium with 4 GB

Ordering information

Item No.		Description
VIB 5.330 SUSB		USB cable for VIBXPERT II, 2.9 meters, USB to MiniSnap
VIB 5.330AMEM		Connection cable for USB pen drive
VIB 5.350-USB		USB pen drive, 4 GB

Note: These cables and adapters must not be operated with VIBXPERT EX.

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Sensor cables, pre-assembled

Pre-assembled sensor cables and adapters for CLD accelerometers (portable devices)	188
Cable adapter for VIBXPART II	189
Pre-assembled sensor cables for measuring low signal voltage/low signal current, portable measuring devices	191
Cables for signal output – handheld devices	194
Pre-assembled sensor cable and adapter for trigger / RPM sensor (portable devices)	195
Pre-assembled sensor cables and adapters for voltage-supplied sensors (handheld devices) ..	199
Connection cable for field multiplexer on VIBXPART II	201
Extension cable for analog measuring channel, portable devices	202
Sensor cables and adapters for VIBSCANNER 2	203
Overview: Sensor cables for portable instruments	205

Pre-assembled sensor cables and adapters for CLD accelerometers (portable devices)

These cables and adapters are used to connect CLD accelerometers to portable devices.



Sensor VIB 6.142 connected to VIBXPERT II using the spiral connection cable VIB 5.436



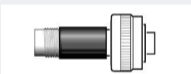
Suited for following portable devices:

- VIBXPERT II, VIBXPERT EX
- VIBSCANNER, VIBSCANNER EX
- VIBGUARD portable

Suited for following types of sensors:

- CLD accelerometers with TNC cable connection
- "Wind" CLD accelerometer VIB 6.195

Ordering information

Item No.		Description
VIB 5.436		CLD accelerometer cable, spiral, 1.8 m, TNC connector to MiniSnap
VIB 5.437-2,9 VIB 5.437-5		CLD accelerometer cable, straight, 2.9 m or 5 m, TNC connector to MiniSnap
VIB 5.449-CLD		Adapter used to connect VIB 6.195 to portable measuring devices, 2-pin MIL-C5015 plug to TNC socket

Note: For cable lengths greater than 2.9 m, the EMC immunity of the signal path can be adversely affected.

TECHNICAL INFORMATION

Accessories

Item No.	Description
Miscellaneous	"Extension cable for analog measuring channel, portable devices", p. 202

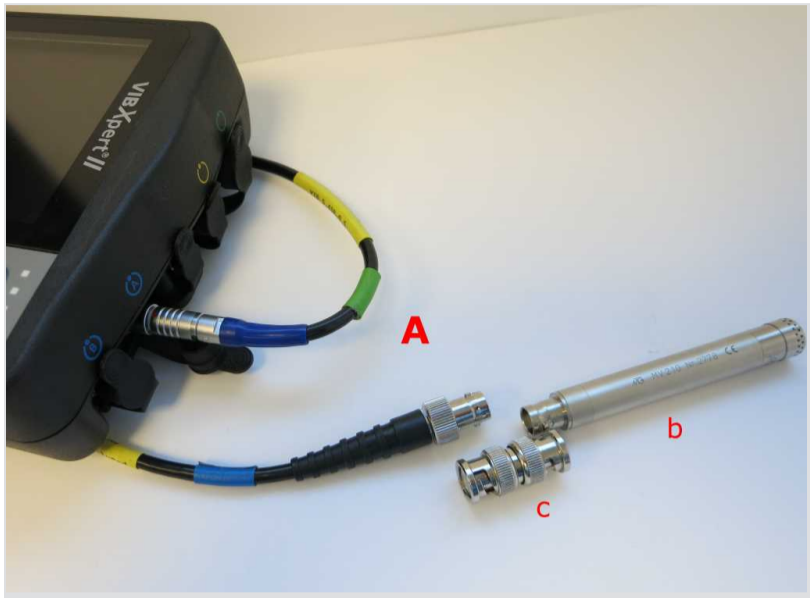
Compatibility overview: Sensor cable – Measurement device

The following overview shows the type of sensor cable that may be connected to the corresponding device. For cables marked with (*), additional cables and/or adapters are required in the measurement chain.

Cable / Adapter	VIBXPERT II	VIBXPERT EX	VIBSCANNER	VIBSCANNER EX	VIBGUARD portable
VIB 5.436	✓	✓	✓	✓	✗
VIB 5.437-2,9 / -5	✓	✓	✓	✓	✗
VIB 5.449-CLD*	✓	✗	✓	✗	✓

Cable adapter for VIBXPART II

The sensor cable and adapter are used to connect vibration sensors with a voltage output (IEPE) to handheld measurement devices.



Microphone(b) connected to VIBXPART II using a BNC coupler (c) and sensor cable VIB 5.438-0,5 (A)

Suited for following portable devices:

- VIBXPART II
- VIBSCANNER
- VIBGUARD portable

Suited for following types of sensors:

- Accelerometers (IEPE) with BNC cable connection
- Accelerometer 100 mV/g" (IEPE) VIB 6.172
- Triaxial accelerometer VIB 6.655

Ordering information

Item No.		Description
VIB 5.438-0,5		Sensor cable for accelerometer (IEPE), straight, 0.5 m, BNC connector to MiniSnap
VIB 5.422		Sensor cable for accelerometer (IEPE), spiral, 1.8 m, MIL connector to MiniSnap
VIB 5.345-6		Extension for sensor cable with MIL connector, 6 m, MIL plug to MIL socket
VIB 5.449-ICP		Adapter for connecting VIB 6.172 to portable measuring devices
VIB 5.336		Sensor cable for triaxial accelerometer VIB 6.655

TECHNICAL INFORMATION

Accessories

Item No.	Description
Miscellaneous	"Extension cable for analog measuring channel, portable devices", p. 202

Technical data - VIB 5.336

Parameter	VIB 5.336
DESIGN	
Conduct layout	4-pin, AWG25, spiral CTC cable from adapter to sensor
Cable sheath	PU

Parameter	VIB 5.336
Diameter	5.3 mm
Cable length	approx. 0.4 m (15 3/4") device side / approx. 2.6 m (8' 6 23/64") sensor side
ENVIRONMENT	
Temperature range	Operation: -10 °C to 60 °C (14 °F to 140 °F) Storage: -20 °C to 80 °C (-4 °F to 176 °F)
Relative humidity	< 95 %
Environmental protection	IP65
Weight	approx. 310 g

Compatibility overview: Sensor cable – Measurement device

The following overview shows the type of sensor cable that may be connected to the corresponding device. For cables marked with (*), additional cables and/or adapters are required in the measurement chain.

Sensor cable / Adapter	VIBXPERT II	VIBSCANNER	VIBGUARD portable
VIB 5.438-0,5*	✓	✓	✗
VIB 5.422	✓	✓	✗
VIB 5.345-6	✓	✓	✗
VIB 5.449-ICP*	✓	✓	✓
VIB 5.336	✓	✗	✗

Pre-assembled sensor cables for measuring low signal voltage/low signal current, portable measuring devices

These sensor cables are used for measuring small signal voltages or level signals provided by other measuring instruments.



Compatible with the following measuring devices:

- VIBXPERT II / VIBSCANNER
- VIBXPERT EX / VIBSCANNER EX

Signal types:

- Voltage, AC: 0-30 V
- Voltage, DC: 0-30 V
- Current, DC: 0-30 mA

Sensor cables for measuring small signal voltage (A) and small signal current (B) connected to VIBXPERT II.

Ordering information

Item No.		Description
VIB 5.433		Sensor cable for measuring small signal voltage with VIBSCANNER / VIBXPERT II, spiraled, 1.8 meters, BNC socket to MiniSnap
VIB 5.433 X		Sensor cable for measuring small signal voltage with VIBSCANNER EX / VIBXPERT EX, spiraled, 1.8 meters, BNC socket to MiniSnap
VIB 5.434		Sensor cable for measuring small signal current with VIBSCANNER / VIBXPERT II, spiraled, 1.8 meters, BNC socket to MiniSnap

Notes: An additional cable with at least one BNC plug is required to connect the sensor cable to the measuring instrument. These sensor cables may only be operated **outside** of the EX zone!

All circuits in the VIBXPERT II are DC coupled. When more than one circuit is connected, faults may occur in the case of potential differences.

TECHNICAL INFORMATION

Accessories

Item No.	Description
Misc.	"Extension cable for analog measuring channel, portable devices", p. 202

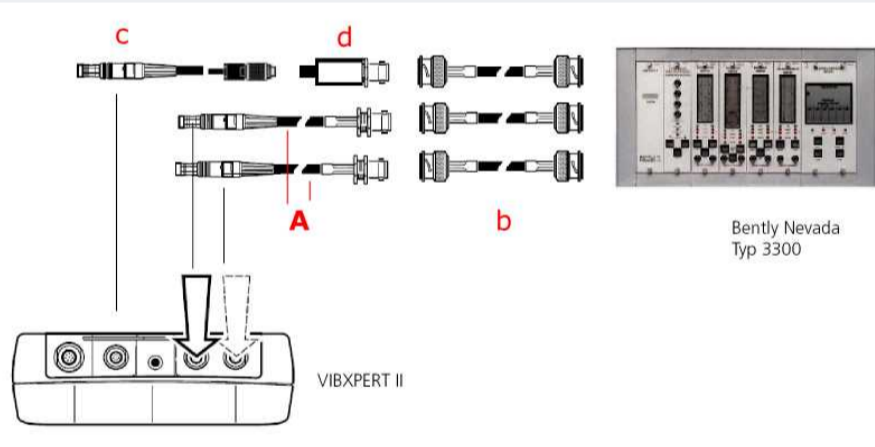
Technical data, VIB 5.433 X

Parameter	VIB 5.433 X
Temperature range	0°C ... + 40 °C (32...104 °F)
Maximum measurement error	-2.0% / +2.7%
f _{max} AC measurement	5 kHz

Note: VIBXPERT EX resp. VIBSCANNER EX may only be operated with this cable for voltage measurements. The cable protects the analog interfaces on the measuring device from overvoltages. The cable may only be connected outside of the EX zone, to a circuit, whose maximum voltage does not exceed 265 V_{eff}, even in the case of an error.

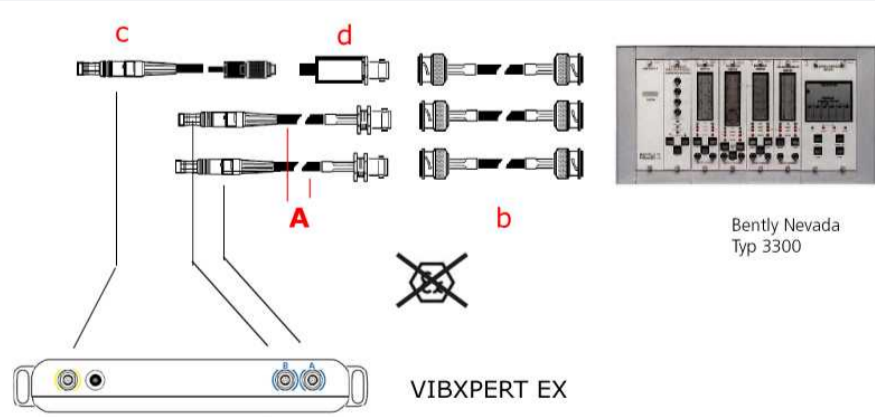
Application examples

VIBXPERT II: Shaft vibration measured as a voltage signal on a machine protection system (e.g. Bently Nevada 3300)



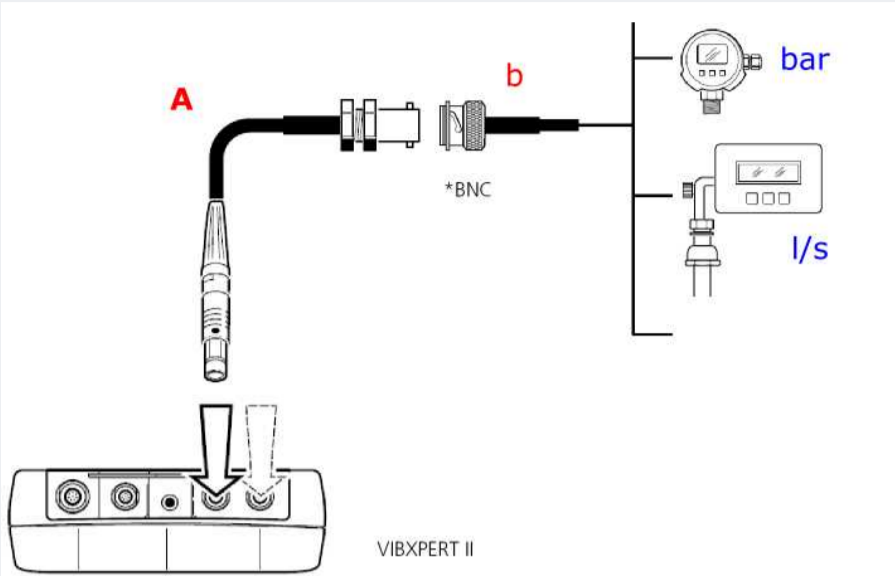
- A: Sensor cable for measurement of signal-low voltage VIB 5.433 (2 pieces)
- b: Coaxial cable with BNC connector, 3 pieces
- c: Sensor cable for trigger / RPM sensor VIB 5.432-2,9
- d: Keyphasor adapter VIB 5.332 X

VIBXPERT EX: Shaft vibration measured as a voltage signal on a machine protection system (e.g. Bently Nevada 3300)



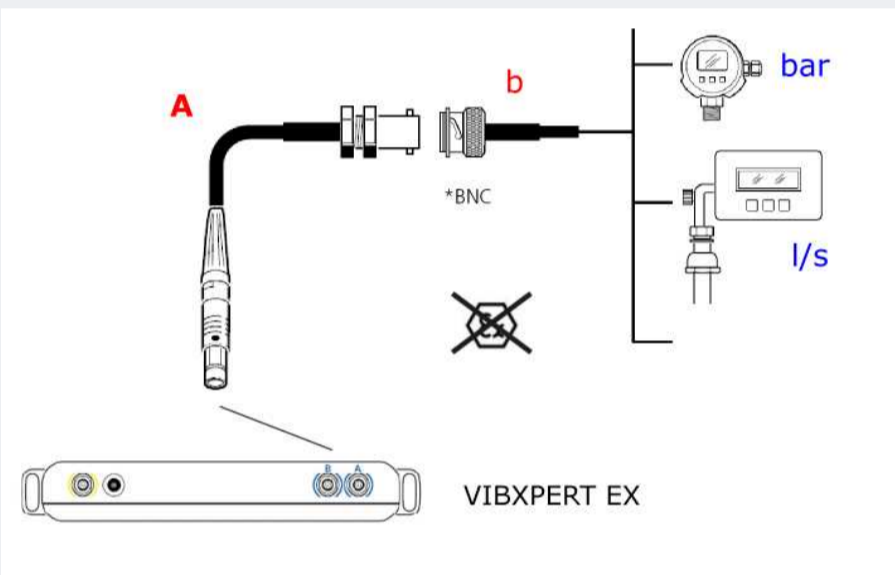
- A: Sensor cable for measurement of signal-low voltage VIB 5.433-X (2 pieces)
- b: Coaxial cable with BNC connector, 3 pieces
- c: Sensor cable for trigger / RPM sensor VIB 5.432-2,9
- d: Keyphasor adapter VIB 5.332 X

VIBXPERT II: Pressure as current level (4-20 mA), resp. flow rate as current or voltage level (4-20 mA / 0-10 V)



A: Sensor cable for measuring small signal voltage, VIB 5.433, or small signal current, VIB 5.434
For VIBXPERT EX: Use sensor cable VIB 5.433 X.
b: Coax cable with BNC plug, signal cable from sensor

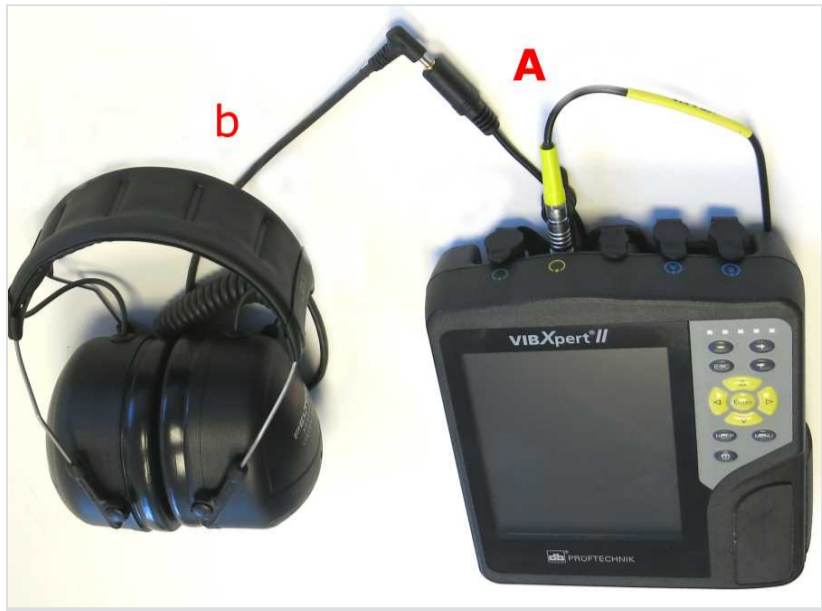
VIBXPERT EX: Pressure or flow rate as voltage level (0-10 V)



A: Sensor cable for measuring small signal voltage, VIB 5.433 X.
b: Coax cable with BNC plug, signal cable from sensor

Cables for signal output – handheld devices

These cables are used to connect headphones or external analytical instrument to a handheld data collector.



Mono headphones (b) attached to VIBXPERT II via the sensor cable VIB 6.675 (A)



Compatible with the following handheld devices:

- VIBXPERT II, VIBXPERT EX
- VIBSCANNER, VIBSCANNER EX

Suitable for following instruments and devices:

- Signal analyzers such as oscilloscopes
- Mono headphones VIB 6.671

Ordering information

Item No.		Description
VIB 5.431		Connection cable to an external analytical instruments — spiral, 1.8 m (5' 10 9/10"), BNC socket to MiniSnap
VIB 6.675		Connection cable für mono headphones VIB 6.671 — straight, 1 m (3' 3 4/10"), mono jack to MiniSnap

TECHNICAL INFORMATION

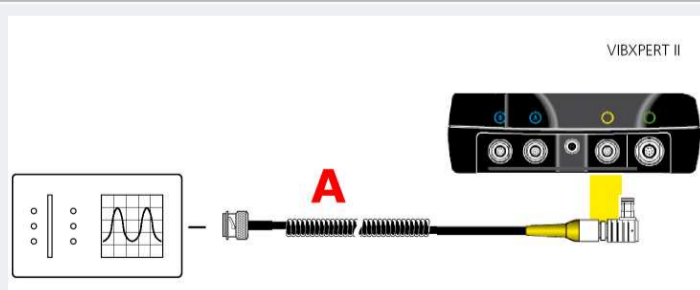
Compatibility overview: Connection cable – Handheld device

The following overview shows which is compatible to which handheld device.

Connection cable	VIBXPERT II	VIBXPERT EX	VIBSCANNER	VIBSCANNER EX
VIB 5.431	✓	✓	✓	✓
VIB 6.675	✓	✗	✓	✗

Application

VIBXPERT II: Signal analysis using an oscilloscope



A: Connection cable VIB 5.431

Pre-assembled sensor cable and adapter for trigger / RPM sensor (portable devices)

The sensor cable and adapter are intended for transmitting digital signals from e.g. a trigger or an RPM sensor.









Suited for following portable devices:

- VIBXPERT II / VIBSCANNER
- VIBXPERT EX / VIBSCANNER EX
- VIBGUARD portable

Sensor cable for laser trigger / RPM sensor VIB 6.631 connected to VIBXPERT II

Ordering information

Item No.		Description
VIB 5.432-2,9		Sensor cable for laser trigger / RPM sensor VIB 6.631, straight, 2.9 m, Binder socket to MiniSnap
VIB 4.750-5		Extension for sensor cable VIB 5.432-2,9, straight, 5 m, Binder socket to Binder plug
VIB 5.443		Sensor cable for TTL trigger (other manufacturer), spiral, 1.6 m, BNC socket to MiniSnap
VIB 5.332 X		Keyphasor adapter for machine protection systems (VIBXPERT II, VIBXPERT EX, VIBSCANNER, VIBSCANNER EX), Binder socket to BNC socket
VIB 5.333		Connection adapter for LED stroboscope VIB 6.672 (VIBXPERT II), Binder socket to BNC socket
VIB 7.832-5		Sensor cable for laser trigger / RPM sensor VIB 6.631, straight, 5 m, Binder socket to M12 Binder plug (VIBGUARD portable)

TECHNICAL INFORMATION

Technical data

Parameter	VIB 5.332 X
ELECTRICAL	
Operating voltage	5.4 V ± 10%
Current consumption	0.5 mA
Input signal, Pulse width	> 100 µs
Input signal, Pulse level	> 500 mV _{pp}
Input signal, DC portion	+8 V to -30 V
Output signal	5 V, rectangular signal
Input resistance	200 kOhm
Output resistance	1 kOhm
MECHANICAL	
Case material	Stainless steel, VA 1.4301
Length including connectors	130 mm
Diameter	15 mm
Weight	30 g
Environmental protection	IP 65
Temperature range	0 °C to 40 °C (32 °F to 104 °F)
CONNECTIONS	
Input signal	Binder connector, 8-pin, 712 series
Input signal, Pin allocation	2: 5 V / 4: Rectangular signal / 7: GND
Output signal	BNC socket
Output signal, Pin allocation	Internal contact: Signal / External contact: GND

Note: This adapter converts a pulse signal (including the DC level) to a 5V rectangular signal. This allows keyphasors that are connected to a machine protection system be connected and operated by PRÜFTECHNIK instruments.

When feeding digital signals to either the intrinsically safe VIBXPERT EX or the intrinsically safe VIBSCANNER EX, the adapter **VIB 5.332 X** must be used. The adapter protects the digital port on the measuring instrument against overvoltages. The adapter must only be connected outside an explosive atmosphere to an electrical circuit, whose maximum voltage does not exceed 265 V_{eff.} even when a malfunction occurs. The permissible ambient temperature is 0 °C to 40 °C (32 °C to 104 °C).

Technical data, VIB 5.333

Parameter	VIB 5.333
Case material	Aluminium
Length including connectors	62 mm
Diameter	15 mm
Weight	20 g

Compatibility overview: Sensor cable – Measurement device

The following overview shows the type of sensor cable or adapter that may be connected to the corresponding device. For adapters marked with (*), additional cables are required in the measurement chain.

Sensor cable / Adapter	VIBXPert II	VIBXPert EX	VIBSCANNER	VIBSCANNER EX	VIBGUARD portable
VIB 5.432-2,9	✓	✓	✓	✓	✗
VIB 5.443	✓	✓	✓	✓	✗
VIB 5.332 X*	✗	✓	✗	✓	✗
VIB 5.333	✓	✗	✗	✗	✗
VIB 7.832-5	✗	✗	✗	✗	✓

Application example

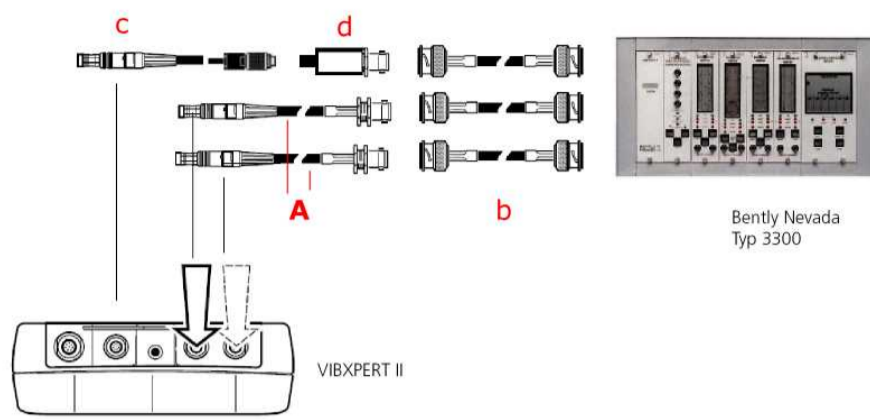
VIBXPert II: RPM measurement using Laser trigger / RPM sensor VIB 6.631



A: Sensor cable VIB 5.432-2,9

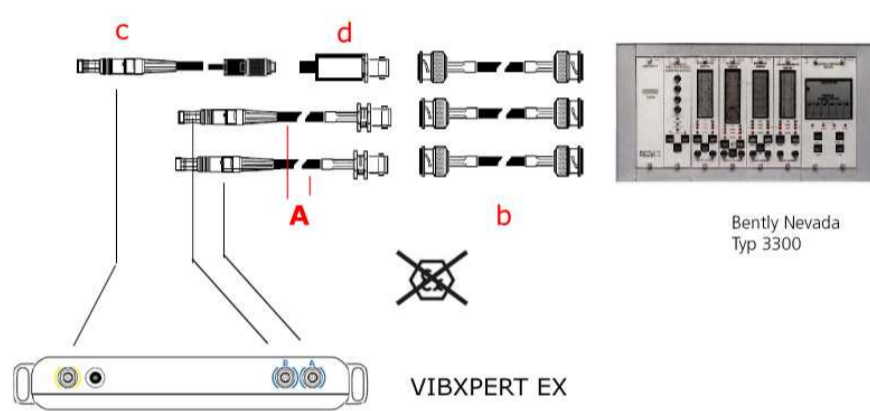
b: Laser trigger / RPM sensor VIB 6.631

**VIBXPERT II: Shaft vibration measured as a voltage signal on a machine protection system
(e.g. Bently Nevada 3300)**



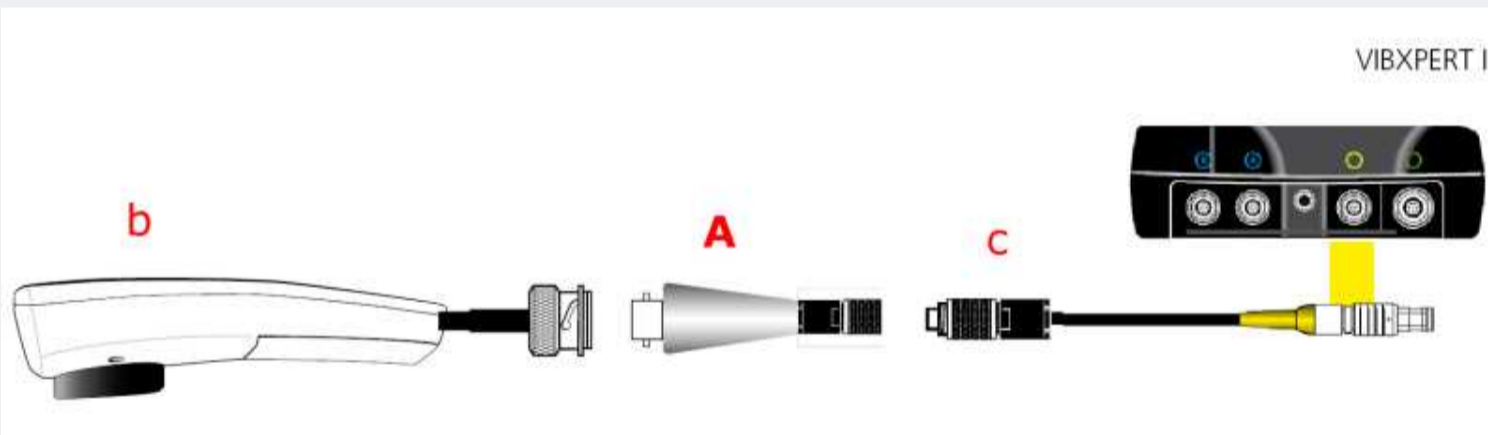
- A: Sensor cable for measurement of signal-low voltage VIB 5.433
(2 pieces)
- b: Coaxial cable with BNC connector, 3 pieces
- c: Sensor cable for trigger / RPM sensor VIB 5.432-2,9
- d: Keyphasor adapter VIB 5.332 X

**VIBXPERT EX: Shaft vibration measured as a voltage signal on a machine protection system
(e.g. Bently Nevada 3300)**



- A: Sensor cable for measurement of signal-low voltage VIB 5.433-X
(2 pieces)
- b: Coaxial cable with BNC connector, 3 pieces
- c: Sensor cable for trigger / RPM sensor VIB 5.432-2,9
- d: Keyphasor adapter VIB 5.332 X

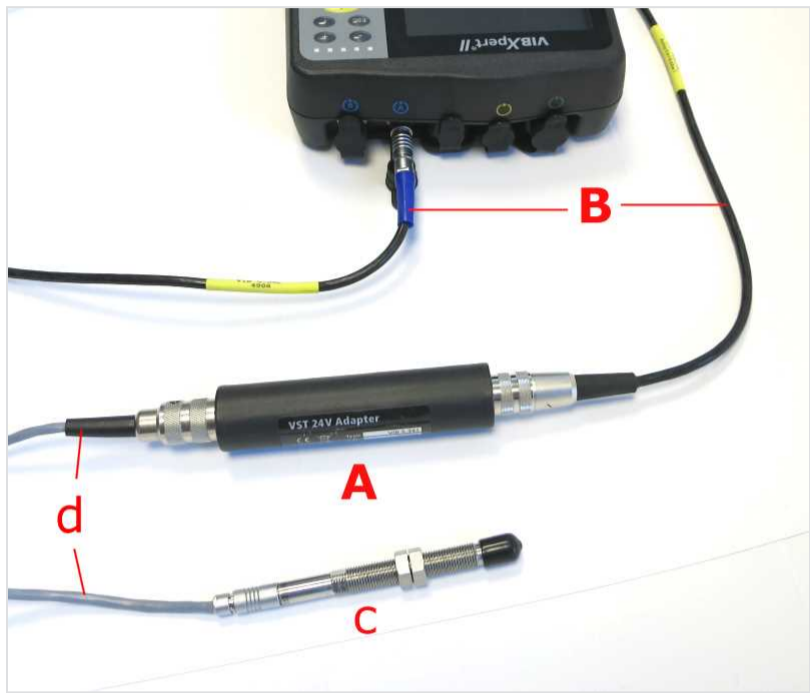
VIBXPERT II: Measuring RPM using the LED stroboscope VIB 6.672



- A: Cable adapter for LED stroboscope, VIB 5.333
- b: LED stroboscope, VIB 6.672
- c: Sensor cable, VIB 5.432-2,9

Pre-assembled sensor cables and adapters for voltage-supplied sensors (handheld devices)

These cables and adapters are intended for the connection of voltage-supplied sensors to VIBXPERT II.



Suited for following types of sensors:

- AS-022 – Accelerometer from B & K Vibro
- IN 085 – Non-contact displacement sensor from B & K Vibro
- VIBROTECTOR – Vibration transmitter from PRÜFTECHNIK

Connect Sensor IN 085 (c) to VIBXPERT II via sensor cable (d), VST 24V adapter (A) and cable VIB 5.342 (B).

Ordering information

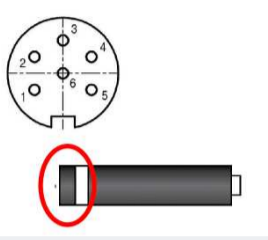
Item No.		Description
VIB 5.341		VST 24 V adapter for VIBXPERT II, binder (m) to binder (f) 680
VIB 5.342		Analog cable for VST 24 V adapter, straight, 2.9 m, binder (f) to MiniSnap
VIB 5.343		Digital cable for VST 24 V adapter, straight, 2.9 m, binder (f) to MiniSnap
VIB 5.344		VIBROTECTOR cable for VST 24 V adapter, straight, 2.9 m, binder (m) to MiniSnap

TECHNICAL INFORMATION

Technical data, VST 24 V adapter

Parameter	VST 24 V adapter
ELECTRICAL	
Output voltage U_{out}	-24 V, unregulated (dependent on VIBXPERT II)
Frequency range, Signal IN - Analog Out Signal IN - Trigger Out	0.1 Hz – 100 kHz
MECHANICAL	
Case material	Stainless steel and heat shrink tubing
Plug	BINDER 680, 6-pin, m / f (DIN 41524)

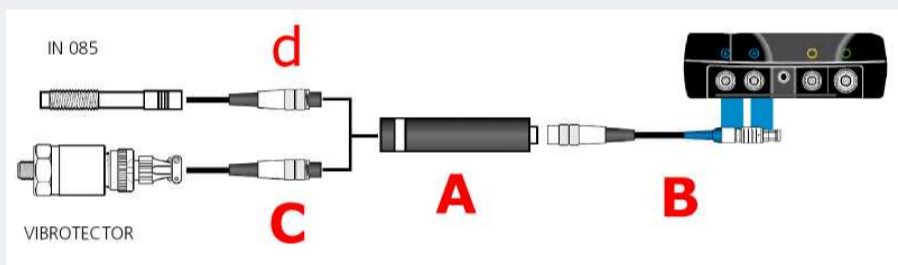
Parameter	VST 24 V adapter
Dimensions L x D	120 x 27 mm (4 23/32" x 1 1/16")
Weight	105 g (3.7 oz)
Environmental protection	IP 40
Temperature range	-10 °C to 60 °C (14 °F to 140 °F)
Pin allocation, sensor side	1: -24 VDC 2: Analog signal (sensor) 3: Trigger signal (5V TTL) 4: GND 5: Shield 6: 5 VDC (Voltage from VIBXPERT II).



Note: VIBXPERT II must never be powered using the charger when connected to the VST 24 V adapter.

Application example

VIBXPERT II: Displacement measurement with IN 085 / Vibration measurement with VIBROTECTOR



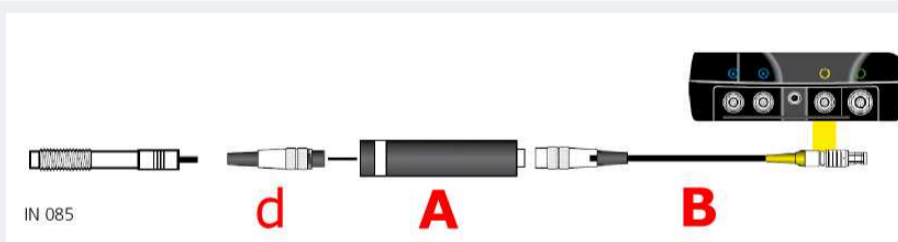
A: VST 24 V adapter VIB 5.341

B: Analog cable, VIB 5.342:
Connection cable between adapter and VIBXPERT II for measurement of vibration acceleration, velocity and displacement

C: VIBROTECTOR cable VIB 5.344:
Connection cable between adapter and VIBROTECTOR

d: Sensor cable, delivered with IN 085 sensor

VIBXPERT II: RPM measurement with IN 085



A: VST 24 V adapter VIB 5.341

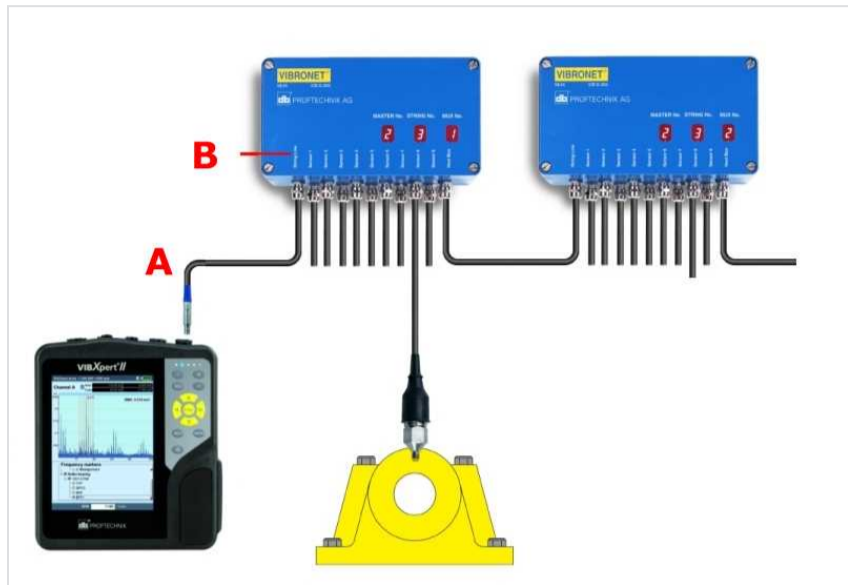
B: Digital cable VIB 5.343:
Connection cable between adapter and VIBXPERT II during RPM measurement

d: Sensor cable, delivered with IN 085 sensor

Note: Voltage-supplied sensors (-24 V) or RPM reference sensors using external power supplies may be connected to measure RPM. The minimum required trigger level is 2 V.

Connection cable for field multiplexer on VIBXPert II

Using these cable components, VIBXPert II can be connected to and operated on a string line of up to 6 VIBRONET field multiplexers for automated data acquisition.





Features

- Up to 54 measuring locations possible
- Safe and fast data acquisition on site
- No power supply required
- For vibration sensors with current output (CLD)

Connect VIBXPert II with field multiplexer via connection cable (A) and cable adapter (B).

Ordering information

Item No.		Description
VIB 5.346		Connection cable, VIBXPert II to VIBRONET field multiplexer, 1.5 meters, BNC to MiniSnap
VIB 5.346-MUX		Cable adapter for connection cable VIB 5.346 (installed in field multiplexer), 25 cm

Note: These cables must not be operated with VIBXPert EX.

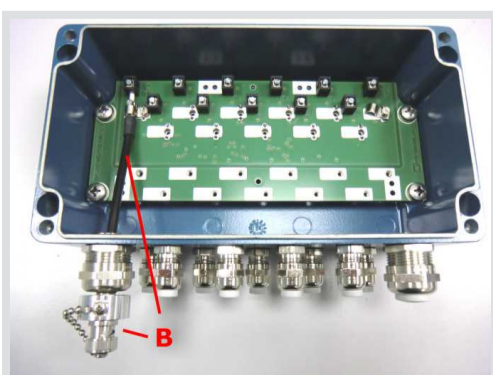
Accessories

Item No.	Description
VIB 5.444-5	"Extension cable for analog measuring channel, portable devices", p. 202

TECHNICAL INFORMATION

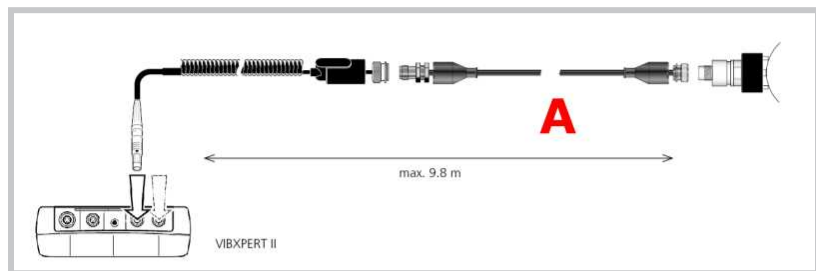
Installation example

Cable adapter (B) installed on main board in field multiplexer.



Extension cable for analog measuring channel, portable devices

These sensor cables and adapters are used for connecting vibration sensors with current output (CLD) to portable measuring devices.





Sensor VIB 6.142 with extension VIB 5.339 (A) and spiral cable VIB 5.436 connected to VIBXPERT II.

Compatible with the following measuring devices:

- VIBXPERT II, VIBXPERT EX
- VIBSCANNER, VIBSCANNER EX

Ordering information

Item No.		Description
VIB 5.444-5		Extension cable for analog measuring channel, 5 meters, MiniSnap socket to MiniSnap plug
VIB 5.339		Extension cable for analog measuring channel, 8 meters, TNC plug to TNC socket

Note: For cable lengths greater than 2.9 meters, EMC interference resistance of the measuring section may be impaired.

TECHNICAL INFORMATION

Compatibility overview: Sensor cable – extension

The following overview shows, which sensor cable/ adapter can be used with which extension cable.

Sensor cable/adapter	Extension VIB 5.339	Extension VIB 5.444-5
VIB 5.436	✓	✓
VIB 5.437-2.9	✓	✓
VIB 5.437-5	✓	✓
VIB 5.438-0.5	✗	✓
VIB 5.422	✗	✓
VIB 5.433	✗	✓
VIB 5.433 X	✗	✓
VIB 5.434	✗	✓
VIB 5.342	✗	✓
VIB 5.346	✗	✓

Sensor cables and adapters for VIBSCANNER 2

These cables and adapters are used to connect accelerometers to VIBSCANNER 2.



Accelerometer VIB 6.142R connected to VIBSCANNER 2 with sensor cable VIB 5.236 and safety release cable VIB 5.239.





Suited for following types of sensors:



- CLD-type accelerometers, TNC
- IEPE-type accelerometers, TNC
- Triaxial accelerometer, 4P Mini MIL
- Low-voltage outputs

Spiral cable length:

- 0.8 - 2.9 meters [2.6 - 9.5 feet]

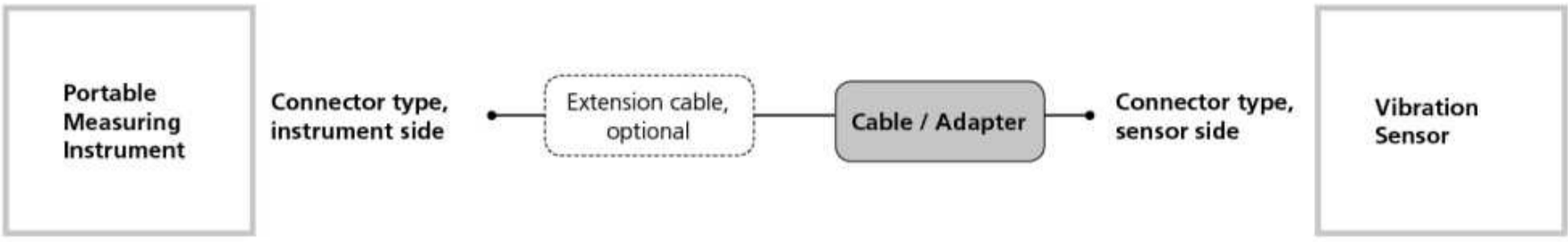
Ordering information

Item No.	Image	Description
VIB 5.236		Sensor cable for CLD-type accelerometer, TNC connector, spiralized
VIB 5.237		Sensor cable for triaxial accelerometer, 4P Mini-MIL connector, spiralized
VIB 5.238		Sensor cable for IEPE-type accelerometer, BNC connector, spiralized
VIB 5.239		VIBSCANNER 2 safety release cable

Item No.	Image	Description
VIB 5.234		Sensor cable for measuring low voltage signals with VIBSCANNER 2, spiralized
VIB 5.222		Sensor cable for IEPE-type accelerometer, MIL connector, spiralized

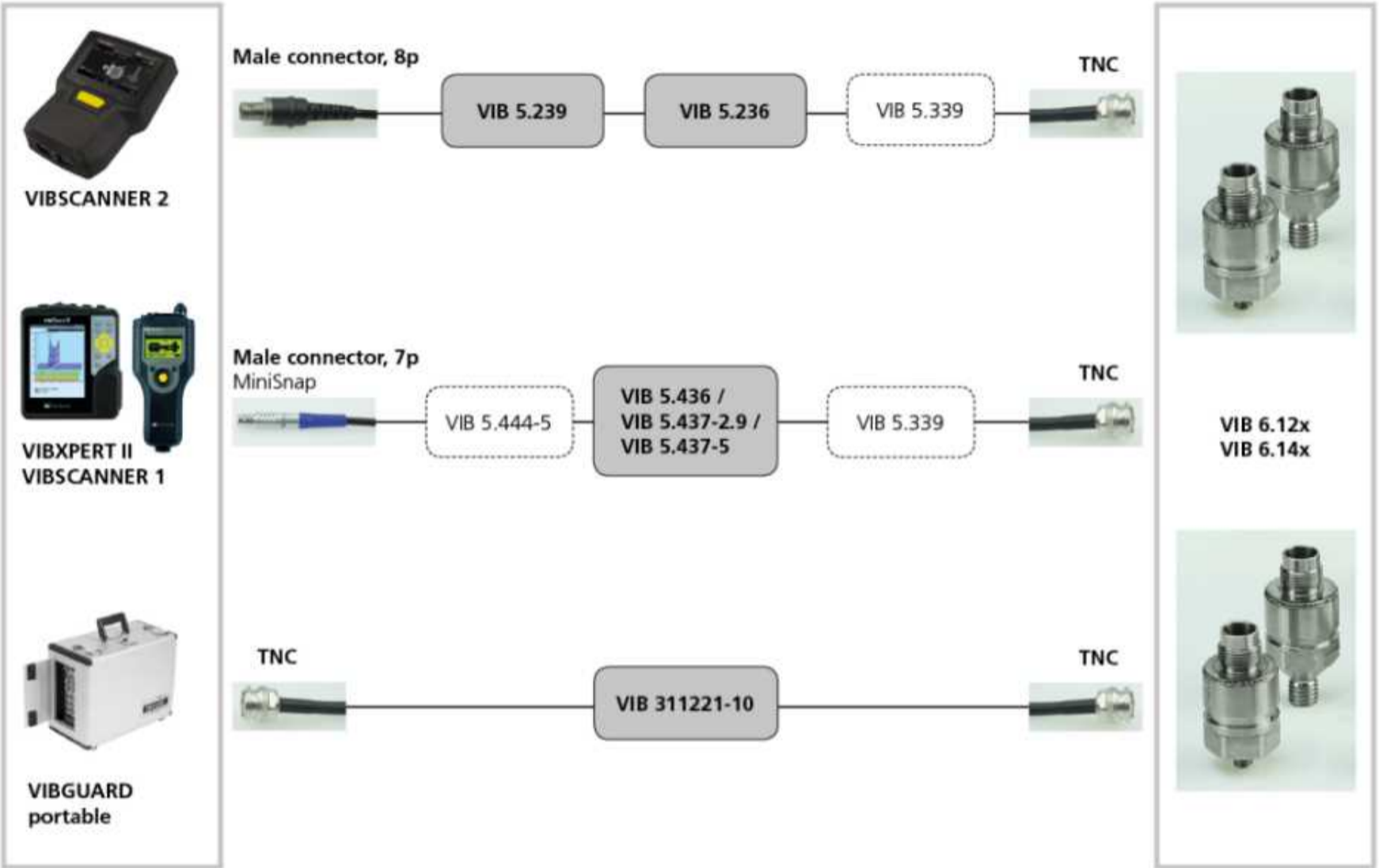
Overview: Sensor cables for portable instruments

In this section you will learn which cable and, if necessary, which adapter is necessary to connect a portable measuring instrument to a specific vibration sensor. The illustrations are structured according to the following scheme:

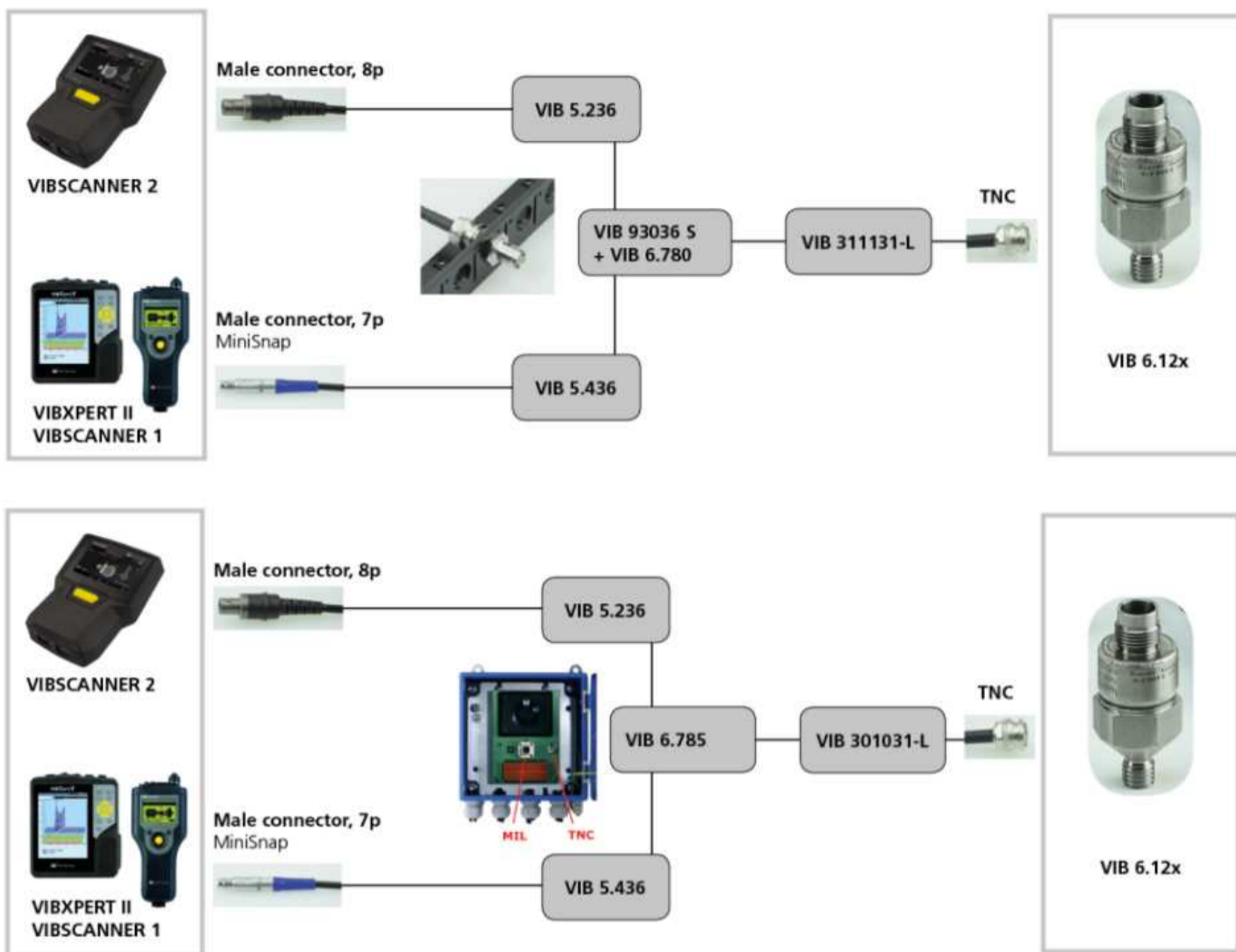


Note: For cable lengths longer than 2.9 meters, the EMC immunity of the signal path can be adversely affected.

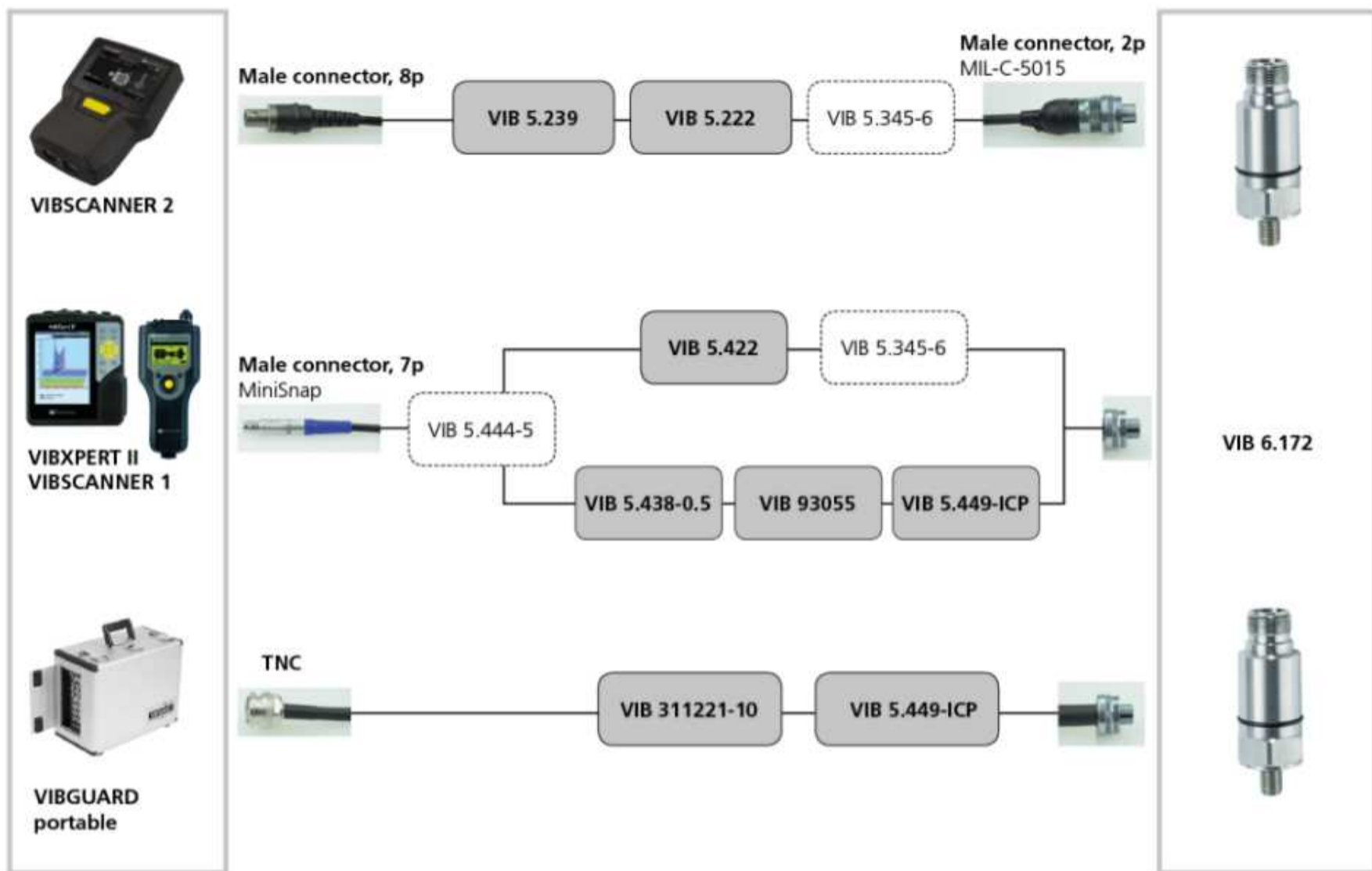
Accelerometer - type: Current Linedrive (CLD)



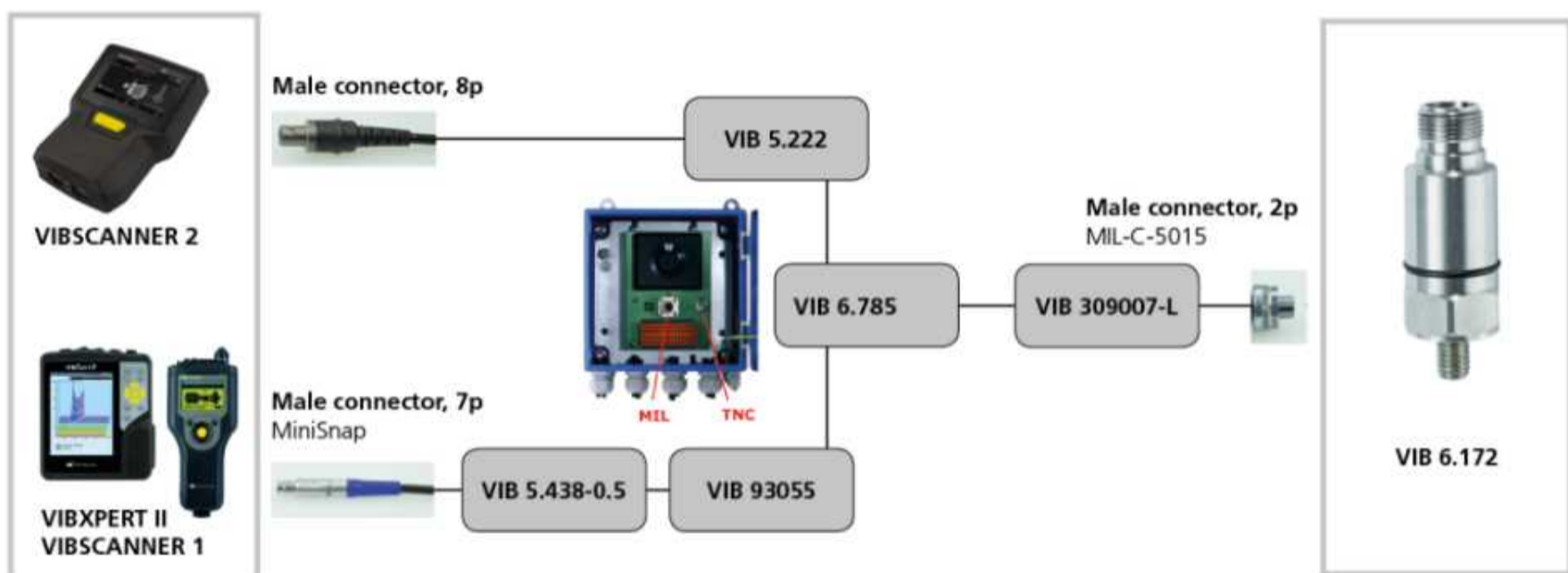
Remote measuring location with accelerometer - type: CLD



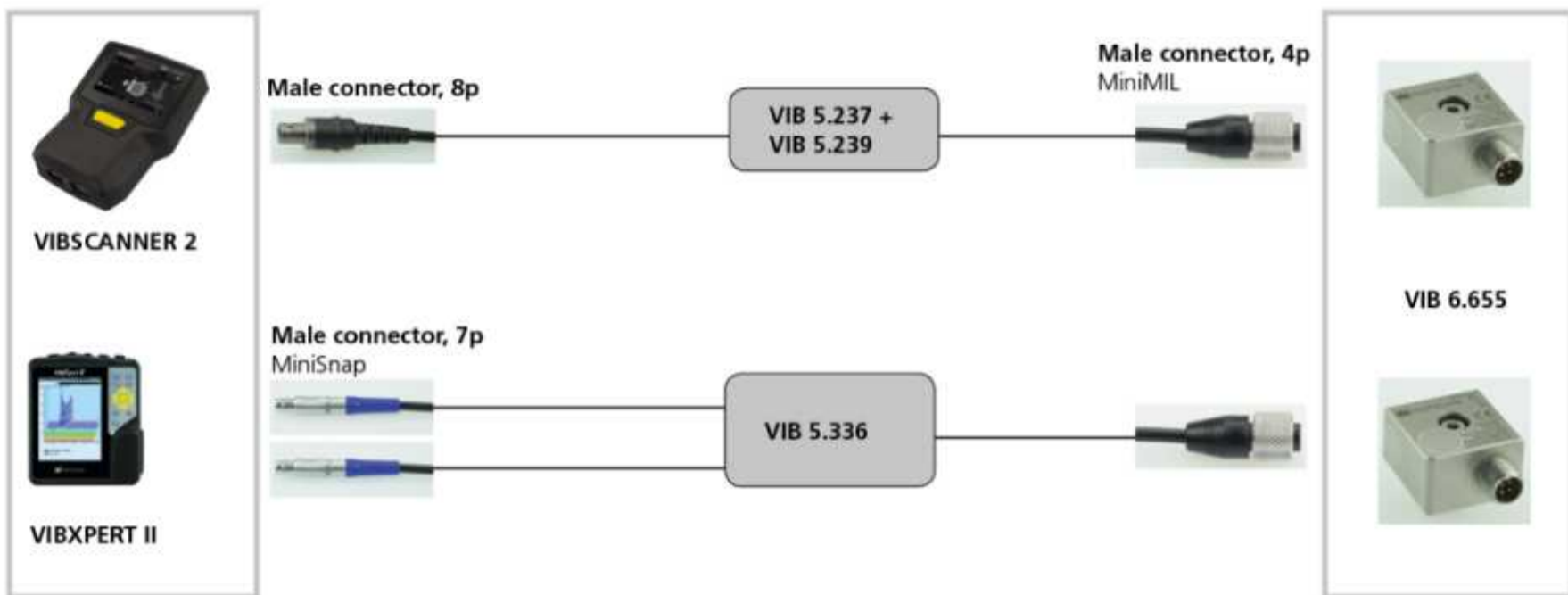
Accelerometer - type: IEPE monoaxial



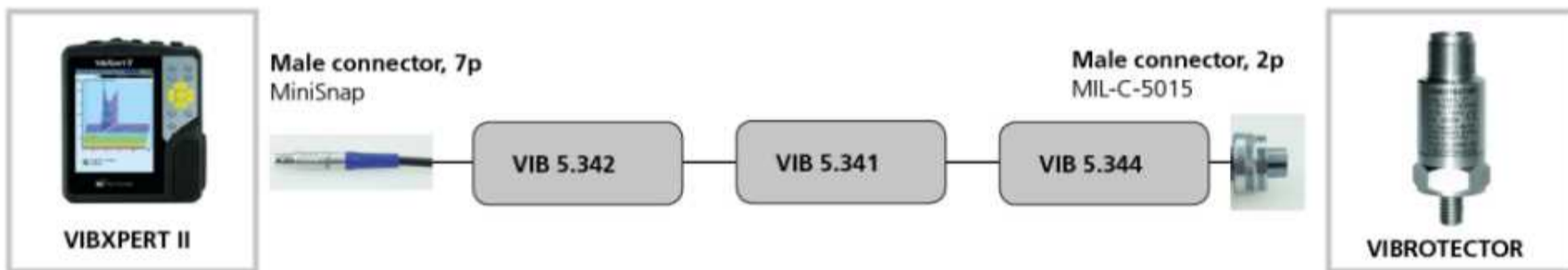
Remote measuring location with accelerometer - type: IEPE monoaxial



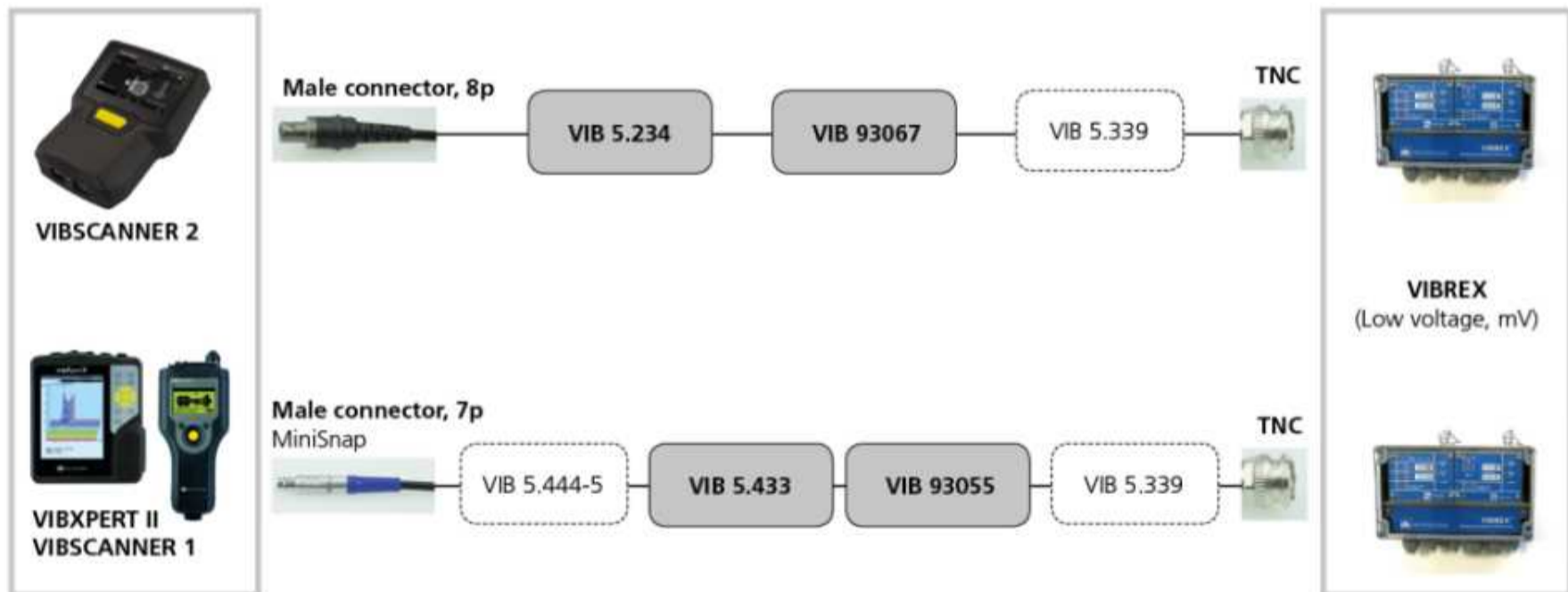
Accelerometer - type: IEPE triaxial



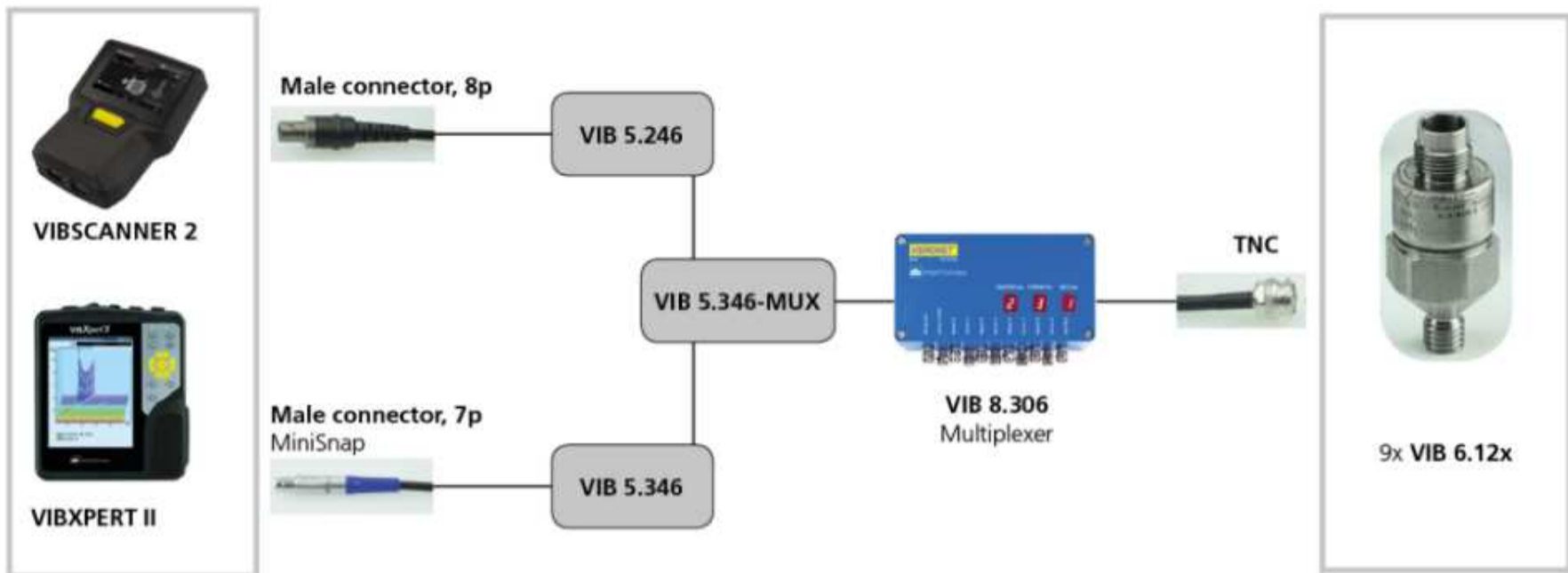
VIBROTECTOR: 4-20 mA



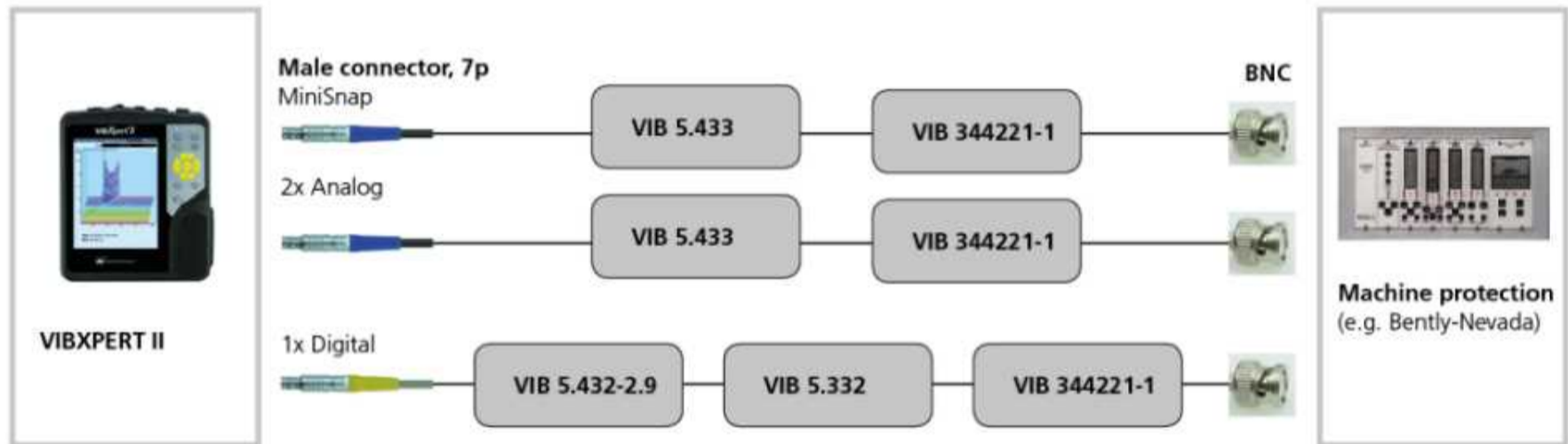
VIBREX: Low voltage, mV



VIBRONET Multiplexer



Machine protection system (e.g. Bently Nevada)



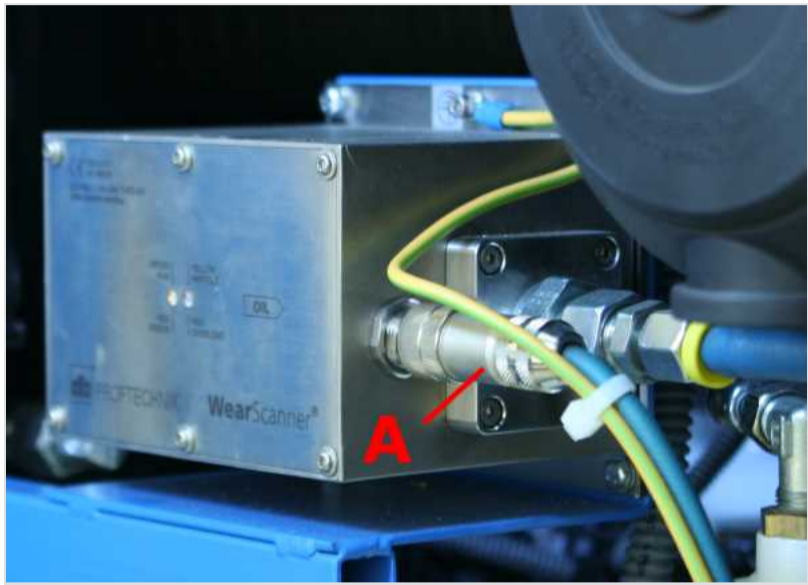
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Sensor cables, partly pre-assembled

Partly pre-assembled connection cable for WEARSCANNER	212
Partly pre-assembled sensor cable for VIBREX	213
Sensor cable with 2-pin MIL connector	214
Partly pre-assembled sensor cable with 4-pole M12 plug-in connector, angled	216
Partly pre-assembled sensor cable with 4-pole M12 plug-in connector, straight	217

Partly pre-assembled connection cable for WEARSCANNER

These connection cables are available as accessories for the WEARSCANNER particle counter. They are used to connect the power supply and the data communication as well as to connect the switching signal output to a process control system.



Features

- Cable type: Industrial Ethernet CAT5
- Cable lengths: maximum 20 meters

WEARSCANNER cable (A) for the power supply and data communication.

Ordering information

Item No.	Name
VIB 6.420-L	Data and supply line for WEARSCANNER with 8-pole M12x1 plug-in connector, partly pre-assembled, PUR sheath, max. 20 m
VIB 6.426-L	Connector cable for WEARSCANNER signal output with 5-pole M12x1 plug-in connector, partly pre-assembled, PUR sheath, max. 20 m

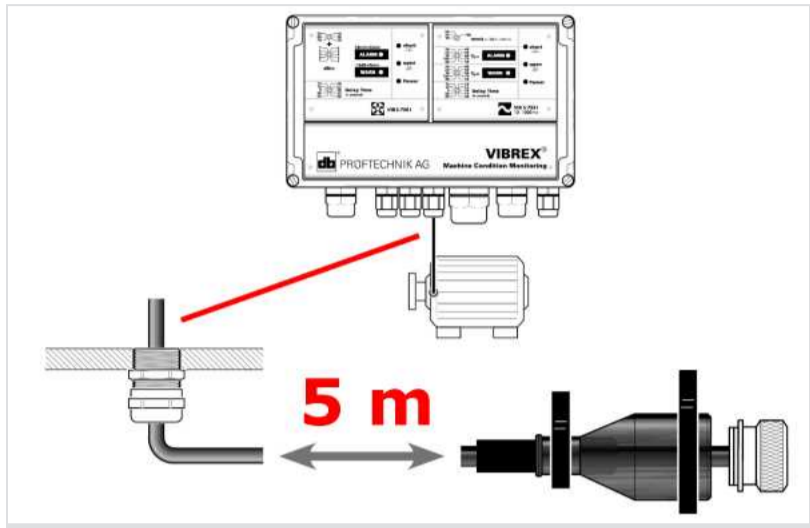
TECHNICAL INFORMATION

Accessories

Item No.	Item name / item group
VIB 6.421	M12 cable plug, 8-pole, for data and supply line on the WEARSCANNER
VIB 6.425	M12 cable plug, 5-pole, for data and supply line on the WEARSCANNER

Partly pre-assembled sensor cable for VIBREX

This cable is supplied as a standard sensor cable with a VIBREX monitoring system.



VIBREX sensor cable, 5-meter long.

Features

- Cable type: coaxial, VIB 90093
- Cable length: 5 meters [16' 5"]
- Assembly on the sensor side: TNC connector, protective cap, clamp rings 2x

Ordering information

Item No.	Name
VIB 5.775-5	VIBREX sensor cable, partly pre-assembled, 5 m [16 ft 5 inch] long

Accessories

Item No.	Item name / item group
VIB 6.77x	"Junction boxes for the extension of cables", p. 232

Sensor cable with 2-pin MIL connector

These sensor cables are used to connect vibration sensors with a 2-pole signal output to stationary measuring systems. Ex-works, they are fitted with a straight or angled plug-in connector and pre-assembled with wire end ferrules at the open end.



VIBROTECTOR with sensor cable VIB 309007.



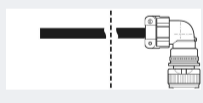
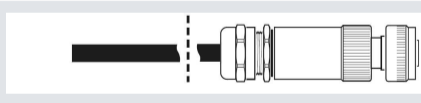
Features

- Connection to stationary measuring systems
- Robust 2-pole plug-in connector (MIL), also in stainless steel
- Different cable lines can be selected
- IP 68 version for installation in liquid media (< 0.8 bar).

Suitable for the following sensor types:

- VIBROTECTOR vibration monitor, VIB 5.73x
- Accelerometer "100 mV/g", IEPE, VIB 6.172
- Accelerometer "Wind", CLD, VIB 6.195

Ordering information

Item No.		Sensor cable with 2-pole plug-in connector (MIL)
VIB 3.570-L		Sensor cable, partly pre-assembled, PUR sheath, MIL plug-in connector (2p straight aluminum alloy), IP68, L: Length in meters (standard length: 6, 12 m)
VIB 309007-L		Sensor cable, partly pre-assembled, PUR sheath, MIL plug-in connector (2p straight aluminum alloy), L: Length in meters (standard length: 6, 10, 15, 20 m)
VIB 5.745-L		Sensor cable, partly pre-assembled, PUR sheath, MIL plug-in connector (2p angled aluminum alloy), L: Length in meters (standard length: 5, 10 m)
VIB 5.746-L		Sensor cable, partly pre-assembled, PUR sheath, MIL plug-in connector (2p straight stainless steel), L: Length in meters (standard length: 10, 15, 20 m)

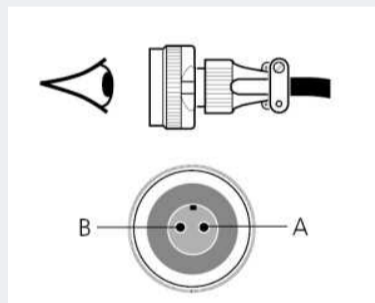
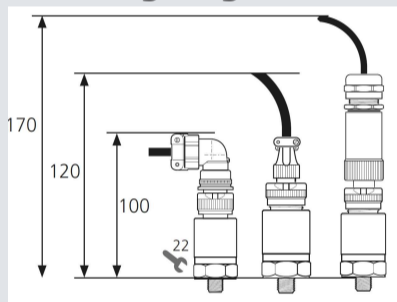
TECHNICAL INFORMATION

Accessories

Item No.	Name
Miscellaneous	"Junction boxes for the extension of cables", p. 232

Technical data

Parameter	VIB 3.570-L	VIB 309007-L	VIB 5.745-L	VIB 5.746-L
Cable type	VIB 90061, PUR, silicone-free			
Temperaturbereich	-40°C ... + 85°C [-40°F ... +185°F]			
Plug-in connector	VIB 94010 Material: Al alloy Surface: Zink-nickel (A 240)		VIB 94011 Material: Al alloy Surface: Zink-nickel (A 240)	VIB 94013 Material / Surface: Stainless steel VA 1.4305
Assembly	The cable screen is electrically insulated to the connector.			
Default length L	6 / 12 m	6 / 10 / 15 / 20 m	5 / 10 m	10 / 15 / 20 m
Mounting height	> 120 mm	> 120 mm	> 100 mm	> 170 mm
Pin: wire color code	A: WT- white B: BN - brown			

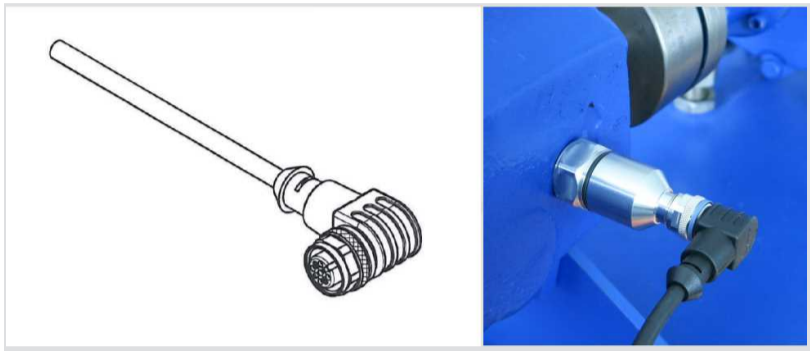


Polarity, Sensor

Sensor	View	Pin A	Pin B
VIBROTECTOR		Signal (+)	Screen (-)
Accelerometer "100 mV/g", IEPE		Signal	GND
Accelerometer "Wind", CLD		GND	Signal

Partly pre-assembled sensor cable with 4-pole M12 plug-in connector, angled

This sensor cable is used to connect vibration sensors with a 4-pole signal output to a stationary measuring system. Ex-works, the cable is fitted with an angled M12 plug-in connector and cleanly cut at the open end.



Sensor cable with 4-pole M12 plug-in connector

Features

- Connection to stationary measuring systems
- Cable lengths: 10-meter or 20-meter
- Shielded line in the connector laid

Suitable for the following sensor types:

- Hybrid triaxial sensor, VIB 6.215 / VIB 6.216
- Accelerometer "100 mV/g", IEPE, VIB 6.210

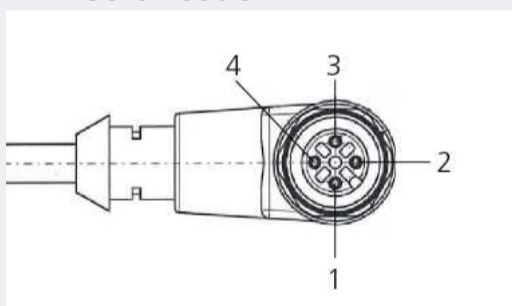
Ordering information

Item No.	Name
VIB 3.575-10	Sensor cable with 4-pole M12x1 plug-in connector, angled, partly pre-assembled, PUR sheath, 10-meter long
VIB 3.575-20	Sensor cable with 4-pole M12x1 plug-in connector, angled, partly pre-assembled, PUR sheath, 20-meter long

TECHNICAL INFORMATION

Technical data

Parameter	VIB 3.575-10 / VIB 3.575-20
Sheath	PUR UL, black
Connector plug	M12x1
Pin: Color code	1: BN - brown 2: BU - blue 3: BK - black 4: Drain wire (shield); drain wire (shield cable) is laid in the connector on pin 4 and is electrically insulated against the machine.



Partly pre-assembled sensor cable with 4-pole M12 plug-in connector, straight

This sensor cable is used to connect vibration sensors with a 4-pole signal output to a stationary measuring system. Ex-works, the cable is fitted with a straight M12 plug-in connector and cleanly cut at the open end.



Sensor cable with 4-pole straight M12 plug-in connector for combi-sensor VIB 6.163.

Features

- Connection to stationary measuring systems
- Cable length: 10 meters
- Shielded line in the connector not laid

Suitable for the following sensor type:

- "Industrial" sensor with an integrated temperature sensor, VIB 6.163

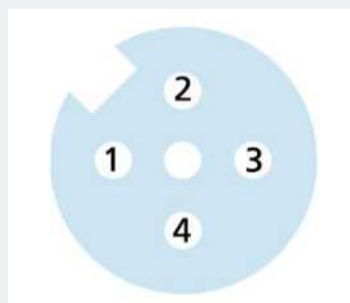
Ordering information

Item No.	Name
VIB 6.164-10	Sensor cable with 4-pole M12x1 plug-in connector, straight, partly pre-assembled, PUR sheath, 10 m

TECHNICAL INFORMATION

Technical data

Parameter	VIB 6.164-10
Sheath	PUR, black
Diameter D	5.1 mm
Bending radius	5 x D (fixed); 12 x D (movable)
Connector plug	M12x1
Wire color code	1: BN - brown 2: WH - white 3: BU - blue 4: BK - black Shield: NC
Special characteristics	Flame-resistant, seawater-resistant, acid-resistant, alkali-resistant, ozone-resistant, UV-resistant, can be used in drag chain, halogen-free, silicone-free, oil-resistant



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Cable Lines

Industrial Ethernet cable CAT5	220
Coaxial cable	221
Multi-core sensor cable (Multi-TP)	223
Triaxial cable	225
Two-core sensor cables	226

Industrial Ethernet cable CAT5

This cable is used by default as data and supply cable for the WEARSCANNER particle counter.



Industrial Ethernet cable.

Features

- Category 5e (CAT5)
- Wires stranded in pairs and shielded
- Suitable for drag chains
- Flame retardant (IEC 60332-1)
- Halogen-free

Ordering information

Item No.	Description
VIB 90030	Industrial Ethernet cable

Notes: Add the desired cable length to the part number when placing an order.
Example: Industrial Ethernet cable, 15 meters / Order number: VIB 90030-15

TECHNICAL INFORMATION

Technical data

Parameter	VIB 90030
ELECTRICAL	
Charact. impedance	approx. 100 Ohm \pm 15 Ohm (at 1 to 100 MHz)
Op. capacitance (nom.)	approx. 48 nF/km
Attenuation	33 dB/100m (100 MHz)
Test voltage	0.7 kV
STRUCTURE	
Conductor	4 x 2 x 0.15 mm ² , bare copper strand
Wire insulation	PP
Stranding	Wired stranded in pairs
Shielding	Polyester film over stranded assembly Polyester film AI-laminated, outside: Cu braiding, galvanized
Cable sheath	PUR, green, suitable for drag chains
MECHANICAL	
Temperature range	-40°C ... + 80°C (-40 ... +176 °F)
Bending radius	> 102 mm (4")
Diameter	approx. 6.8 mm \pm 0.3 mm
Weight	5.6 kg / 100 m (197,5 oz / 328 ft)
Specific features	Flame retardant (IEC 60332-1), halogen-free (IEC 60754-2), category 5e (CAT 5), corrosiveness (EN50267-2-3), UL style 20963 (80 °C/30 V)

Coaxial cable

These cables are single-shielded and are used by default for the transfer of high-frequency signals in the industrial area. Different designs are available for different ambient conditions and applications.



Features

- Type: RG 58 resp. RG 142 B/U
- For low ambient temperatures
- For high ambient temperatures
- Flame resistant
- Halogen-free
- Oil-resistant

Coaxial cable in different designs:

Top: High temperature, 2x shielded, low attenuation - VIB 90007

Center: High temperature, 1x shielded VIB 90093

Bottom: Standard, to -40 °C, VIB 90008

Ordering information

Item No.	Description
VIB 90007	Coax cable, high ambient temperature (< 165 °C), low attenuation
VIB 90008	(Standard) coax cable, low ambient temperature (> -40 °C),
VIB 90009	Coax cable, halogen-free, flame resistant
VIB 90093	Coax cable, high ambient temperature (< 125 °C)

Notes: Add the desired cable length to the part number when placing an order.

Example: Standard coax cable, 250 meters / Order number: VIB 90008-250

Package: Ring of 100 meters, reel of 500 meters

TECHNICAL INFORMATION

Accessories

Item No.	Description
VIB 6.726-100	"Shield connector for sensor cables ", p. 237
VIB 6.730	"Conduit for coaxial cable", p. 239
VIB 81026, VIB 81052	"Tools for cable installation", p. 245

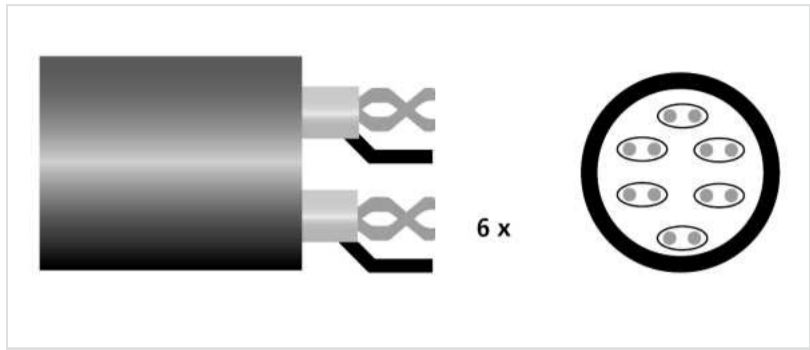
Technical data

Parameter	VIB 90007	VIB 90008	VIB 90009	VIB 90093
ELECTRICAL				
Char. impedance	50 Ohm			
Line resistance	---	38 Ohm/km (20 °C)	---	38 Ohm/km (20 °C)
Capacitance	95 nF/km	101 nF/km	101 nF/km	105 nF/km
Attenuation ¹	28 dB/100m	32 dB/100m	38 dB/100m	46 dB/100m
STRUCTURE				
Type	RG 142 B/U			
Inner conductor	Steel, Cu + Ag			
Dielectric	PTFE	MDPE white	PEX (PE cross-linked)	Rayolin™
Shield	2x Cu braiding, Ag			
Cable sheath	FEP, brown	MDPE black	RADOX GWK S, black	Thermorad® S, black
MECHANICAL				
Temperature range	-65°C ... + 165°C	-40°C ... + 80°C	-25°C ... + 105°C	-50°C ... + 125°C
Bending radius	50 mm			
Diameter	5 mm			
Weight	6.4 kg / 100 m	4 kg / 100 m	4 kg / 100 m	3.5 kg / 100 m
Specific features	oil-resistant, 2x shielded	silicone-free, halogen-free IEC 60708	halogen-free, flame resistant	oil-resistant

¹at 400 MHz / 25°C / sea level

Multi-core sensor cable (Multi-TP)

This cable features 12 cores stranded in pairs and is used as line section for up to six sensor cables in Online CMS.



Features

- 6 x 2 cores
- Halogen-free
- UV-resistant
- Interference-resistant

Multi-TP cable with 6 shield cores stranded in pairs and external shielding (schematic illustration).

Ordering information

Item No.	Description
VIB 90070	Multi-core sensor cable (Multi-TP)

Notes: Add the desired cable length to the part number when placing an order.
 Example: Multi-TP cable, 50 meters / Order number: VIB 90.070-50
 Package: 500 meters on cable drum

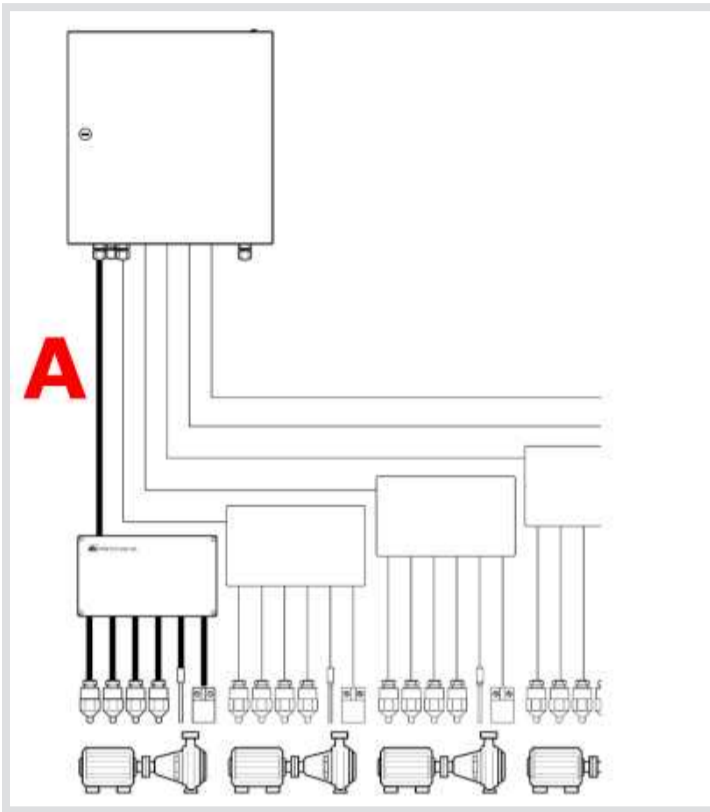
TECHNICAL INFORMATION

Technical data

Parameter	VIB 90070
ELECTRICAL	
Characteristic impedance	approx. 65 Ohm
Operating capacitance (A/A)	approx. 140 nF/km
Inductance	approx. 0.65 mH/km
STRUCTURE	
Conductor	6 x 2 x 0.25 mm ² , copper strand, finely stranded
Shielding	Pair: Cu spinning Outside: Cu braiding, galvanized
Sheath	Polyurethane PUR, black, halogen-free, UV-stabilized
MECHANICAL	
Temperature range	-30°C ... + 80 °C, permanently routed
Bending radius	> 108 mm, permanently routed
Diameter	approx. 17.5 mm ± 0.5 mm
Color code, cores	one core each white (WH), the second wire per DIN 47100 ff.

Installation example

Multi-TP cable (A) routes 6 sensor cables as line section to the base unit.



Triaxial cable

These cables are double-shielded and are used by default for the transfer of high-frequency signals in the industrial area with high EMC load.



Triaxial cable with double shielding.

Features

- Type: RG 58
- Silicone-free
- Flame retardant (IEC 60332-1-2)
- UV-resistant

Ordering information

Item No.	Description
VIB 90080	Triaxial cable

Notes: Add the desired cable length to the part number when placing an order.
 Example: Standard triaxial cable, 250 meters / Order number: VIB 90.080-250
 Package: Ring of 100 meters, reel of 500 meters

TECHNICAL INFORMATION

Technical data

Parameter	VIB 90080
Characteristic impedance	50 Ohm
Capacitance	105 nF/km (1kHz)
Attenuation ¹	34 dB/100m
Type	RG 58
Inner conductor	Cu strand, galvanized
Dielectric 1/2	PE
Shielding 1/2	Cu braiding, galvanized
Cable sheath	Polyurethane PUR, black
Temperature range	-40°C ... + 80°C
Bending radius	50 mm
Diameter	10 mm
Weight	12.6 kg / 100 m
Specific features	silicone-free, UV-resistant, flame retardant (IEC 60332-1-2), RoHS-conform (2002/95/EC)

¹at 300 MHz / 20°C

Two-core sensor cables

These shielded cables are used by default for wiring of sensors with 2-conductor output. Different designs are available for different ambient conditions and applications.



Sensor cable with PUR sheath (top), sensor cable with silicone sheath and reinforcement (bottom)

Suitable for the following sensor types:

- Accelerometer "Wind" (CLD), VIB 6.195
- Accelerometer "100 mV/g" (IEPE), VIB 6.172
- VIBROTECTOR vibration transmitter, VIB 5.73x

Ordering information

Item No.	Description
VIB 90061	Sensor cable with PUR sheath, two-core, shielded
VIB 90065	Sensor cable with silicone sheath and reinforcement, two-core, shielded

Notes: Add the desired cable length to the part number when placing an order.

Example: Sensor cable with PUR sheath, 30 meters / Order number: VIB 90061-30

TECHNICAL INFORMATION

Accessories

Item No.	Description
VIB 6.726-100	"Shield connector for sensor cables ", p. 237
VIB 81026, VIB 81052	"Tools for cable installation", p. 245

Technical data

Parameter	VIB 90061	VIB 90065
ELECTRICAL		
Characteristic impedance	72 Ohm	87 Ohm
Operating capacitance (A/A)	approx. 86 nF/km \pm 10%	approx. 73 nF/km
Inductance	approx. 0.75 mH/km	approx. 0.55 mH/km
Rated voltage U_0/U	300 / 500 V	
STRUCTURE		
Conductor	2 x 0.50 mm ²	2 x 0.75 mm ² , finely stranded
Wire insulation	Co-polymer	Silicone base
Shield	Cu braiding, galvanized,	Outer steel wire braiding
Cable sheath	PUR polyurethane, black	Silicone base, glass fiber braid, steel wire braiding, galvanized

Parameter	VIB 90061	VIB 90065
MECHANICAL		
Temperature range	-40°C ... + 85°C, permanently routed	-50°C ... + 180°C
Bending radius, flexibly routed	> 84 mm	> 160 mm
Bending radius, permanently routed	> 34 mm	> 30 mm
Diameter	approx. 5.6 mm	approx. 8 mm
Weight	---	90.5 kg/km
Color code	BN (brown), WH (white)	BN (brown), BU (blue)
Specific features	Resistant to mineral oils and hydraulic fluid; Notch- and wear-resistant; Resistant to electrical radiated interference; Free from paint-wetting substances; Halogen-free and flame retardant (IEC60332-1-2)	Halogen-free and flame retardant (IEC60332-1-2); Mechanically protected and shielded by galvanized steel wire braiding; The cable is suited for routing in dry conditions only.

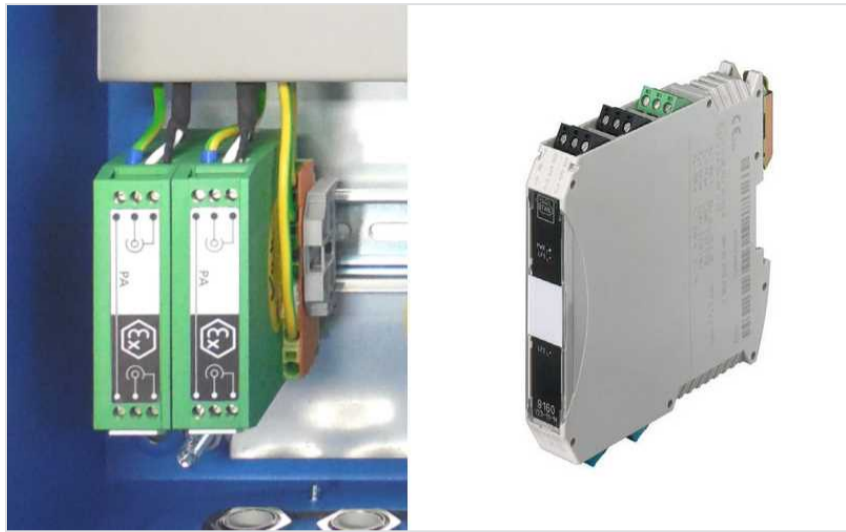
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Cable accessories and installation material

Intrinsic safety barriers	230
Junction boxes for the extension of cables	232
Protective sleeve und heat shrink sleeve	236
Shield connector for sensor cables	237
Conduit for coaxial cable	239
Plugs, sockets, terminal holders for bulkhead connectors	240
Switchbox channel switch for 12 channels	243
Tools for cable installation	245

Intrinsic safety barriers

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



Limiting devices for CLD accelerometers (installed, left) and for VIBROTECTOR (right)

Features

- Input intrinsically safe
- Switching cabinet installation
- Power supply for VIBROTECTOR


Ordering information

Item No.	Description
VIB 3.550	Limiting device for intrinsically safe CLD accelerometers — VIB 6.1xx DEX / VIB 6.202 XD / VIB 6.203 XD
0 2088 0009	Safety barrier for intrinsically safe IEPE accelerometers
0 2088 0010	Transmitter power supply unit for intrinsically safe VIBROTECTOR

TECHNICAL INFORMATION

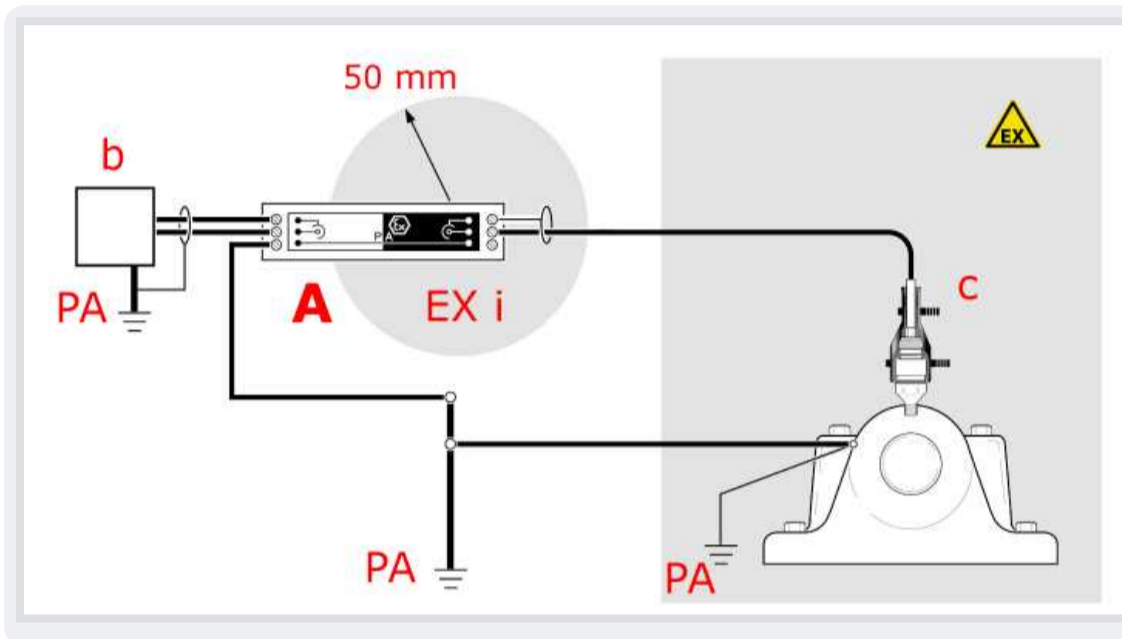
Technical data

Parameter	VIB 3.550														
ELECTRICAL															
Transmission accuracy	Sensor accuracy														
Non-intrinsically safe circuit	Um = 250 V AC														
Intrinsically safe circuit	In type of protection intrinsic safety Ex ib IIC Maximum values: U ₀ = 13 V I ₀ = 18 mA P ₀ = 240 mW														
	<table border="1"> <tbody> <tr> <td>L₀ [mH]</td> <td>1,00</td> <td>0,50</td> <td>0,20</td> <td>0,10</td> <td>0,05</td> <td>0,02</td> </tr> <tr> <td>C₀ [μF]</td> <td>0,50</td> <td>0,59</td> <td>0,75</td> <td>0,92</td> <td>1,00</td> <td>1,00</td> </tr> </tbody> </table>	L ₀ [mH]	1,00	0,50	0,20	0,10	0,05	0,02	C ₀ [μF]	0,50	0,59	0,75	0,92	1,00	1,00
L ₀ [mH]	1,00	0,50	0,20	0,10	0,05	0,02									
C ₀ [μF]	0,50	0,59	0,75	0,92	1,00	1,00									
GENERAL															
Temperature range T_A	-10 °C to 50 °C (14 °C to 122 °C)														
Case material	PA6.6, green														

Parameter	VIB 3.550
Environmental protection	IP 20
Dimensions	85 x 79 x 22.5 mm (3 11/32" x 3 7/64" x 57/64") — L x B x W
Conformity	CE, ATEX, IECEx
Marking 	II (2)G [Ex ib] IIC

Note: Technical data for the safety barriers 0 2088 0009 and 0 2088 0010 is available on request.

Connection example



A: Limiting device VIB 3.550
b: Signal evaluation; CLD compatible
c: CLD accelerometer VIB 6.122 DEX
PA: Potential equalization line

Junction boxes for the extension of cables

These junction boxes are used to extend cables. Junction boxes with a TNC connection may be used as an interface for data collection when using a handheld device.



Features:

- Protects cable connection from dust and humidity
- Straightforward to mount
- Coaxial and 2-pin cables
- Extension from coaxial to triaxial possible
- Cable diameter: 3 mm to 12 mm (1/8" to 15/32")

Junction boxes used for the extension of two cables (top) and for one cable (middle and bottom)

Ordering information

Item No.		Description
VIB 6.775/9		Junction box for extension of two cables — coaxial to triaxial; TNC to M16 connection fitting
VIB 6.775/13		Junction box for extension of two cables — coaxial to triaxial; TNC to M20 connection fitting
VIB 6.776		Junction box for extension of one cable — 2-pin to 2-pin; M12 to M12 connection fitting
VIB 6.770/9		Junction box for extension of one cable — coaxial to coaxial; TNC to M16 connection fitting
VIB 6.770/13		Junction box for extension of one cable — coaxial to triaxial; TNC to M20 connection fitting

Note: Junction boxes with M20 connection fitting are also suitable for coaxial cables with protective sheath.

TECHNICAL INFORMATION

Accessories

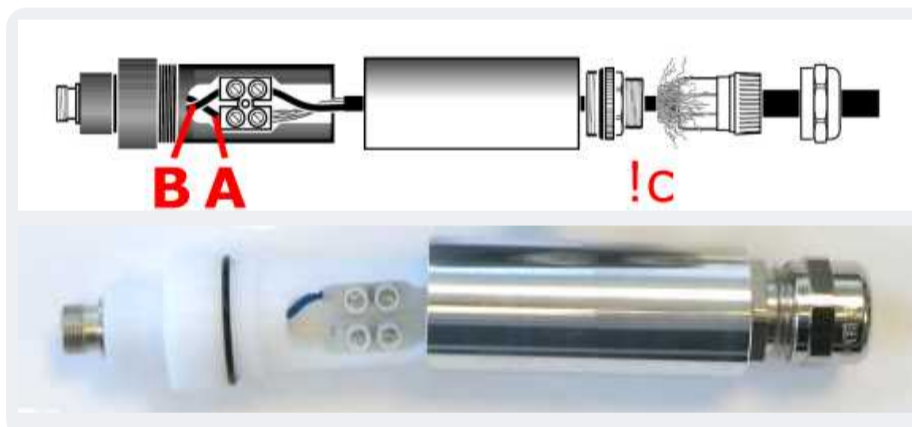
Item No.	Description
Miscellaneous	"Dust caps for industrial CLD accelerometers", p. 164

Technical data

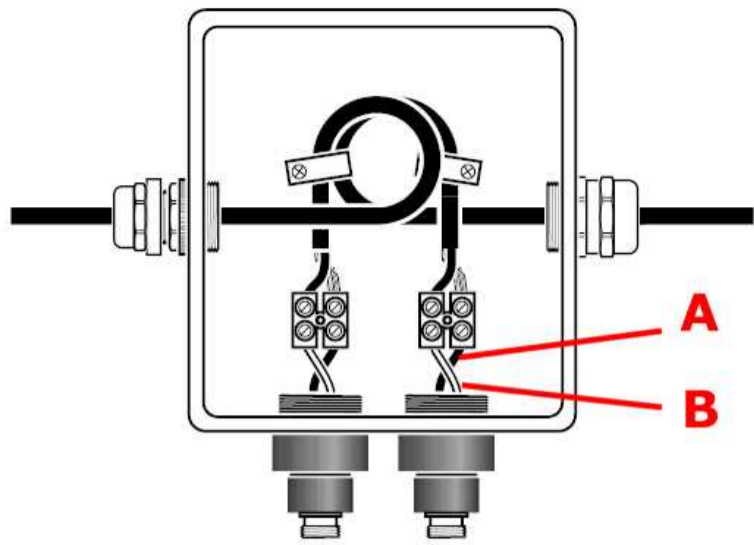
Parameter	VIB 6.770/9	VIB 6.770/13	VIB 6.776	VIB 6.775/9	VIB 6.775/13
Case material	Aluminium		ABS plastic	Aluminium (die cast)	
In	TNC connector		M12 Cable connection fitting	2 x TNC connector	
Out Cable connection fitting	M16	M20	M12	M16	M20
Environmental protection	IP 65				
Dimensions	128 x 29 mm — L x B		90 x 50 x 35 mm (LxBxW)	104 x 120 x 57 mm (LxBxW)	
Separation between drilled holes	---		A: 40 mm B: 40 mm	A: 52 mm B: 63 mm	



Connection diagram



VIB 6.770/13
 A: Shield (blue)
 B: Signal (white)
 !c: Wrap outer triax shield around the connection fitting



VIB 6.775/9, VIB 6.775/13

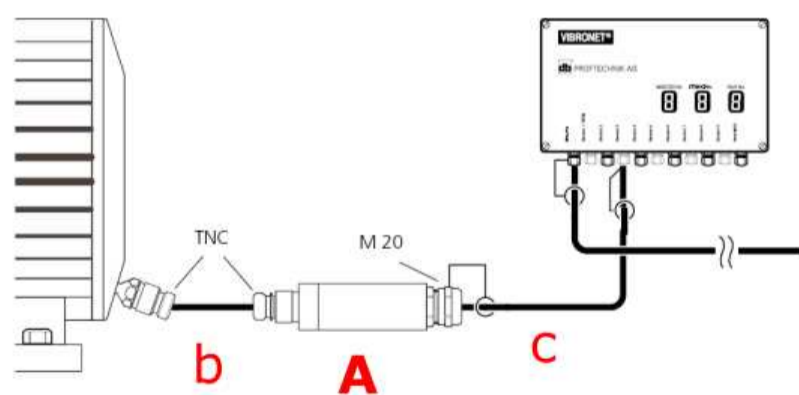
A: Shield (blue)

B: Signal (white)



Application example

Extending a sensor cable using a triaxial cable (EMC protection)



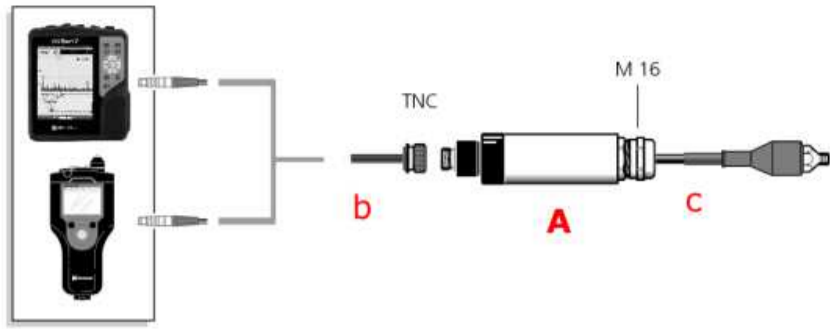
A: Junction box for one sensor cable VIB 6.770/13 (mounted electrically insulated)

b: Coaxial sensor cable;

2 x TNC

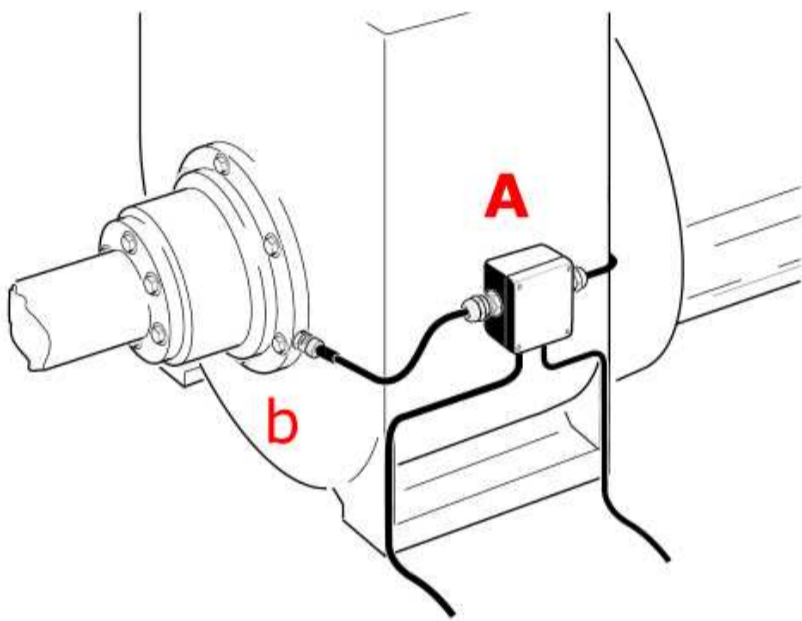
c: Triaxial cable to field multiplexer

Data collection at a junction box using a handheld device



- A: Junction box for one sensor cable VIB 6.770/9
- b: Sensor cable TNC to MiniSnap VIB 5.436
- c: Coaxial sensor cable with open end wrapped around the junction box

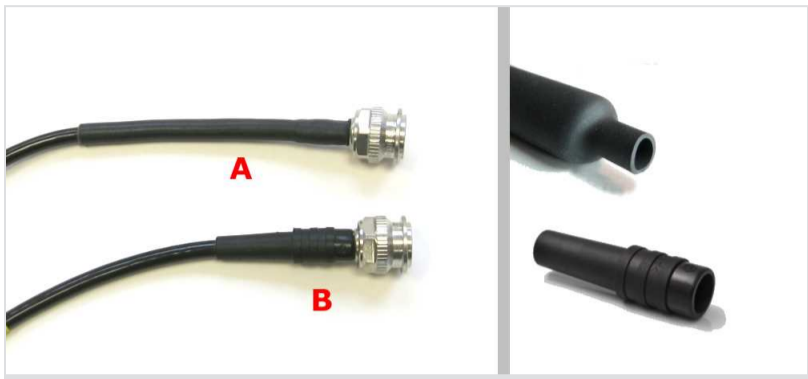
Extending two sensor cables and the measurement location



- A: Junction box for two sensor cables VIB 6.775/9
- b: Coaxial sensor cable with open end wrapped around the junction box

Protective sleeve und heat shrink sleeve

These components are used during the pre-assembly of customized cables. They provide mechanical protection, strain relief and electrical insulation for the cable connections.



Features

- Heat shrink sleeve: Flexible and flame retardant
- Protective sleeve: For connectors using crimp cable entry

Coaxial cable pre-assembled with a TNC connector and a heat shrink sleeve (A) or protective sleeve (B)

Ordering information

Item No.	Description
VIB 81018	Protective sleeve, halogen-free
0 0338 0082	Heat shrink sleeve

TECHNICAL INFORMATION

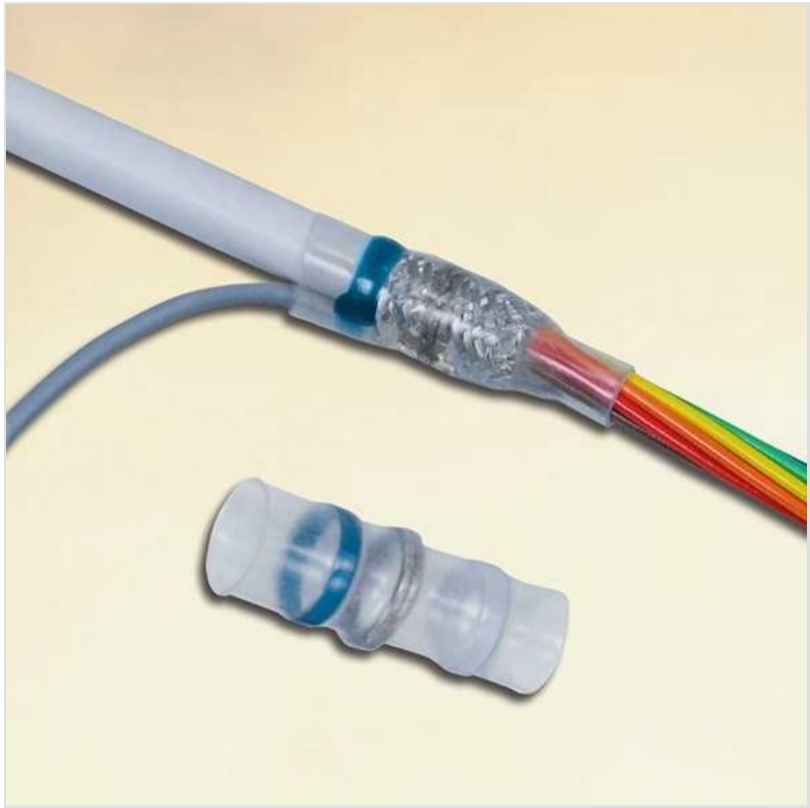
Technical data

Parameter	Protective sleeve	Heat shrink sleeve
Material	Ethylene-vinyl acetate (EVA)	Polyolefin (PO)
Temperature range	-40 °C to 70 °C (-40 °F to 158 °F)	-55 °C to 135 °C (-67 °F to 275 °F)
Length	38 mm (1 1/2")	---
Specific features	Halogen-free	Resistant to water, lubricating oil, hydraulic fluids and aviation fuel

Shield connector for sensor cables

This solder sleeve provides electrical termination in a wide variety of interconnect applications. Its capabilities include terminating wires to component terminals, ground wires to cable shields, terminating coaxial cable, and wire-to-wire splicing.

A precisely engineered, fluxed solder preform within the heat-shrinkable thermoplastic sleeve provides a completely soldered, strain-relieved, encapsulated termination. The one-piece design simplifies installation, while the transparent insulation sleeves make inspection easy.



Features

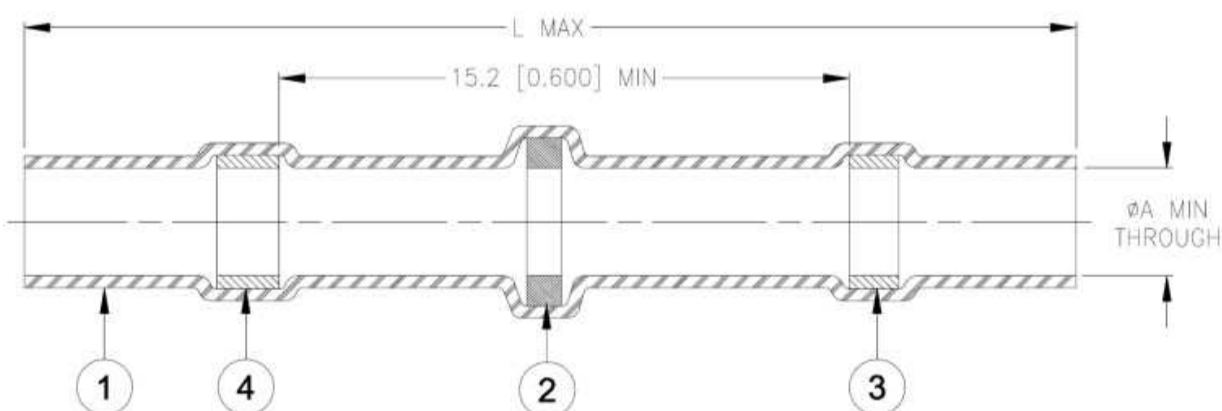
- Maximum cable diameter: 6 mm
- Straightforward installation
- Temperature range: -55°C ... + 125°C [-67 °F ... + 257°F]
- RoHS compliant (lead-free)

Ordering information

Item No.	Description
VIB 6.726-100	Shield connector for coaxial and twisted-pair sensor cables; consists 100 solder sleeves

TECHNICAL INFORMATION

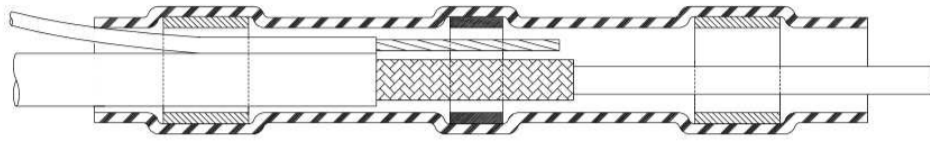
Specification and dimensions



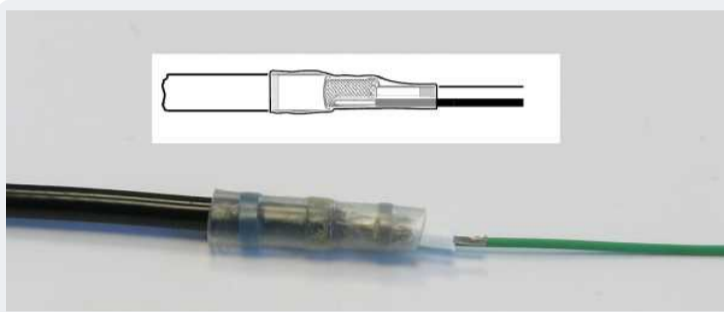
Material	Dimensions
1: Solder sleeve - Radiation cross-linked modified polyolefin, transparent, heat-shrinkable 2: Solder preform with flux - Solder: Sn42Bi58 ANSI/J-STD-006 / Flux: ROM1 per ANSI/J-STD-004 3 / 4: Meltable ring - Thermally stabilized thermoplastic, color: clear / blue	L: 42.0 [1.655] Ø A min: 6.0 [0.235] in mm [inch]

Installation example

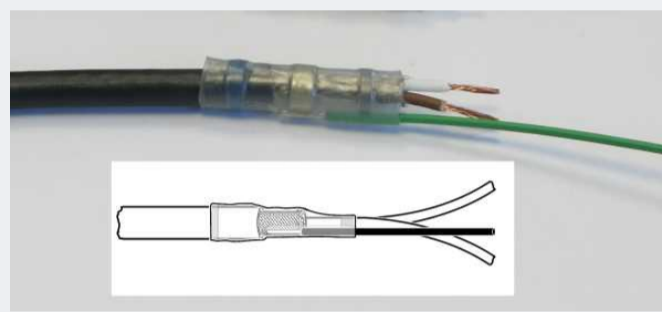
The solder sleeve is pulled onto the exposed cable ends of the sensor and **shield cable¹** and heat-shrunk with a hot-air gun. The solder preform thereby solders the braided shield to the shield cable in the solder sleeve. At the same time, both ends of the solder sleeve are sealed cleanly and tightly. The shield cable can be led out of the solder sleeve in the direction of the sensor cable as well as in the opposite direction.



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.



Coaxial cable with solder sleeve



Twisted-pair sensor cable with solder sleeve

¹not included in the scope of delivery

Conduit for coaxial cable

The conduit is made resistant plastic and protects coaxial cables against mechanical damage. Suitable conduit clamps used for strain relief are available.




Coaxial cable in a conduit

Features

- Material: Polyamide
- Flame-retardant
- Self-extinguishing in accordance with UL94 V0
- Free of silicone, cadmium and halogen

Ordering information

Item No.		Description
VIB 6.730		Conduit for coaxial cable
VIB 8.718		Conduit clamp, 1 piece

Note: When ordering, add the required conduit length to the part number.
 Example: 250 m conduit length
 Order number: VIB 6.730-250

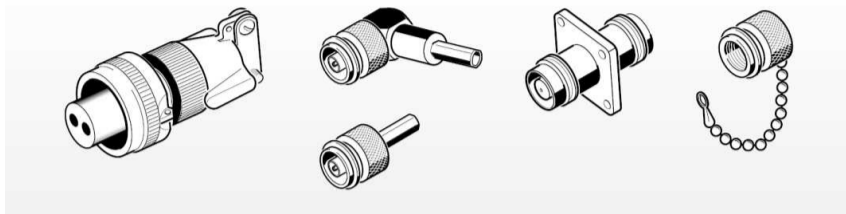
TECHNICAL INFORMATION

Technical data

Parameter	VIB 6.730
CONSTRUCTION	
Material	Polyamide 6; Color: Black
Nominal diameter	6.5 mm
External diameter	10 mm
Bend radius	13 mm
MECHANICAL	
Temperature range	-40 °C to 115 °C (-40 °F to 239 °F)
Resistance	Oil, petrol
Environment	UV and weather resistant
Specific features	Flame-retardant, self-extinguishing in accordance with UL94 V0, free of silicone, cadmium and halogen

Plugs, sockets, terminal holders for bulkhead connectors

These components are used in the pre-assembly of cables that are connected to measurement systems or sensors. They may also be used to create defined interfaces for connection to other components.



Application



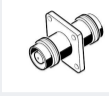




- Pre-assembly of coaxial or twisted-pair cables
- Feeding coaxial cables through through covers and housing

Ordering information

Item No.	Illustration	Description – plug and socket
VIB 91002		TNC plug to TNC socket – angled
VIB 91009		BNC plug to crimp contact – angled
VIB 93022		TNC plug to crimp contact – straight
VIB 93033		TNC socket to TNC socket – straight
VIB 93047		TNC socket to crimp contact – straight
VIB 93055		TNC plug to BNC plug – straight
VIB 93060		BNC plug to crimp contact – straight
VIB 93062		TNC socket to BNC plug – straight
VIB 93067		TNC plug to BNC socket – straight
VIB 93077		TNC plug to crimp contact – angled
VIB 94010		2-pin plug-in connector – straight
VIB 94011		2-pin plug-in connector – angled

Note: The 2-pin plug-in connectors are used in the pre-assembly of cables suitable for following sensors:

- CLD accelerometer VIB 6.195
- 100mV/g IEPE accelerometer VIB 6.172
- VIBROTECTOR vibration transmitter VIB 5.73x

Item No.	Illustration	Description – bulkhead connectors
VIB 91000		Chassis connector, TNC socket to crimp contact
VIB 93035		Dust cap for TNC socket
VIB 93036 F		Bulkhead connector with 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 with fastening flange – BNC socket to TNC socket
VIB 93061		Dust cap for BNC socket
VIB 93090		Chassis connector, BNC socket to crimp contact
VIB 6.780	See 'Installation example'	Terminal holder for 12 bulkhead connectors
VIB 10473		Dust cap for TNC connector at the bulkhead

Note: The bulkhead connectors must be electrically insulated at installation. Suitable insulating washers are required for this purpose. During installation care must be taken to ensure that the dust caps do not come into contact with electrically conductive components.

TECHNICAL INFORMATION

Accessories

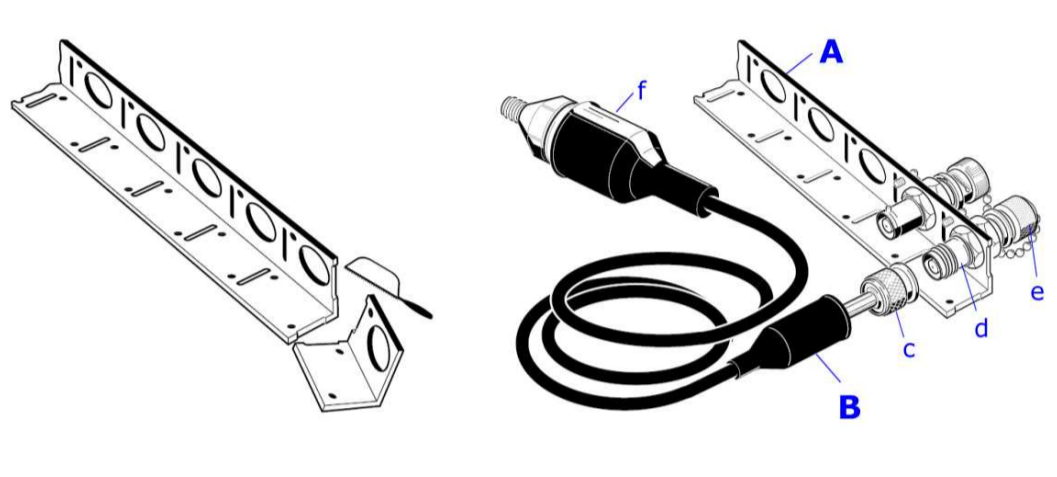
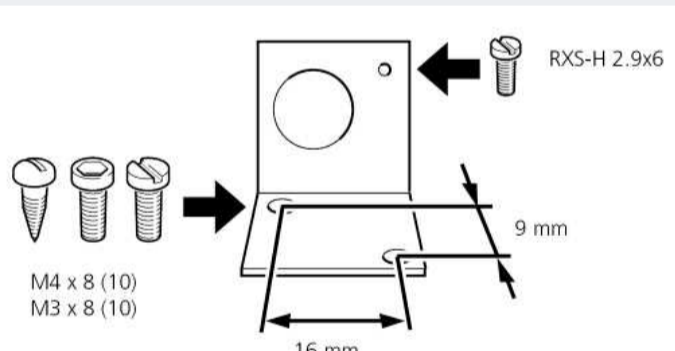
Item No.	Description – tools
VIB 81026	Crimping tool for coaxial cables
VIB 81052	Cutting tool for coaxial cables

Technical data

Parameter	VIB 94010 / VIB 94011
Material	Aluminium alloy
Surface	Zinc Nickel (A 240); RoHS compliant; Protection against salt spray (500h) and shielding according to VG95234
Clamping range	< 7 mm
Specification	MIL-C-5015

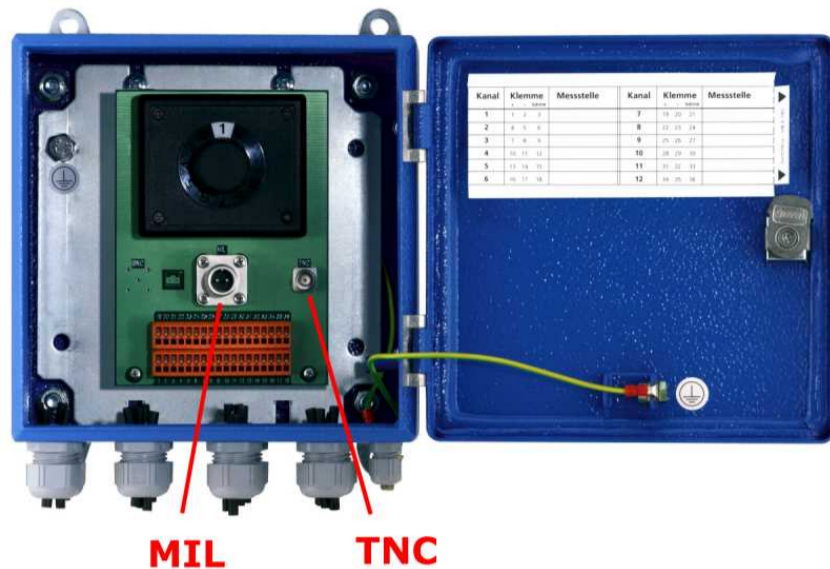
Parameter	VIB 6.780	VIB 10473
Material	Plastic PA	Silicone (HTV R 701)
Resistance	---	aliphatic hydrocarbons (mineral oils)
Temperature range	0 °C to 85 °C (32 °F to 185 °F)	< 200 °C (392 °F)
Environmental protection	---	IP 65
Clamping range	12.2 – 14.8 mm	

Installation example: Terminal holder for bulkhead connectors

Terminal holder for bulkhead connectors – VIB 6.780	
	A: Terminal holder VIB 6.780
	B: Dust cap for TNC connector VIB 10473
	c: TNC plug to crimp contact – straight VIB 93022
	d: Bulkhead connector single hole screw version, TNC socket to TNC socket VIB 93036 S
	e: Dust cap for TNC socket VIB 93035
	f: Dust cap for industrial sensor (e.g. VIB 6.700)
<p>The terminal holder may be sawed to the desired length if necessary. The TNC dust cap (B) hermetically seals the connection between the sensor cable and the bulkhead connector. To seal the connection between the sensor and the sensor cable, a dust cap with a larger diameter is required (f).</p>	
<p>Engineering drawing for terminal holder</p> 	

Switchbox channel switch for 12 channels

The switchbox channel switch joins up to 12 sensor lines at one output. The sensor signals can be recorded reliably and easily using a portable measuring device at the point of installation of the switchbox. The channels are selected by means of a rotary switch.



The sensor signal can be picked up at a TNC or MIL output.

Features

- 12 measuring channels at one connection (TNC or MIL connector)
- Quick and secure data acquisition at one location
- No power consumption required
- For vibration sensors with a power or voltage output (CLD, IEPE)
- Operation in the Ex-zone possible

Compatible with the following measuring devices:

- VIBXPERT II / VIBSCANNER 2 / VIBSCANNER
- VIBXPERT EX / VIBSCANNER EX

Ordering information

Item No.	Name
VIB 6.785	Switchbox - channel switch for CLD and IEPE accelerometers, 12 channels

TECHNICAL INFORMATION

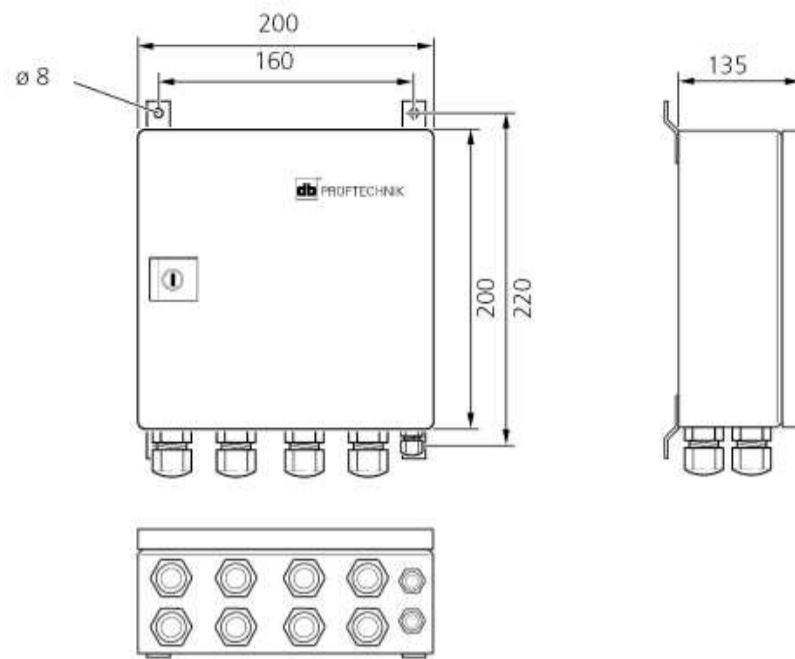
Accessories

Item No.	Name
VIB 5.436	"Pre-assembled sensor cables and adapters for CLD accelerometers (portable devices)", p. 188
VIB 5.422	"Cable adapter for VIBXPERT II", p. 189

Technical data

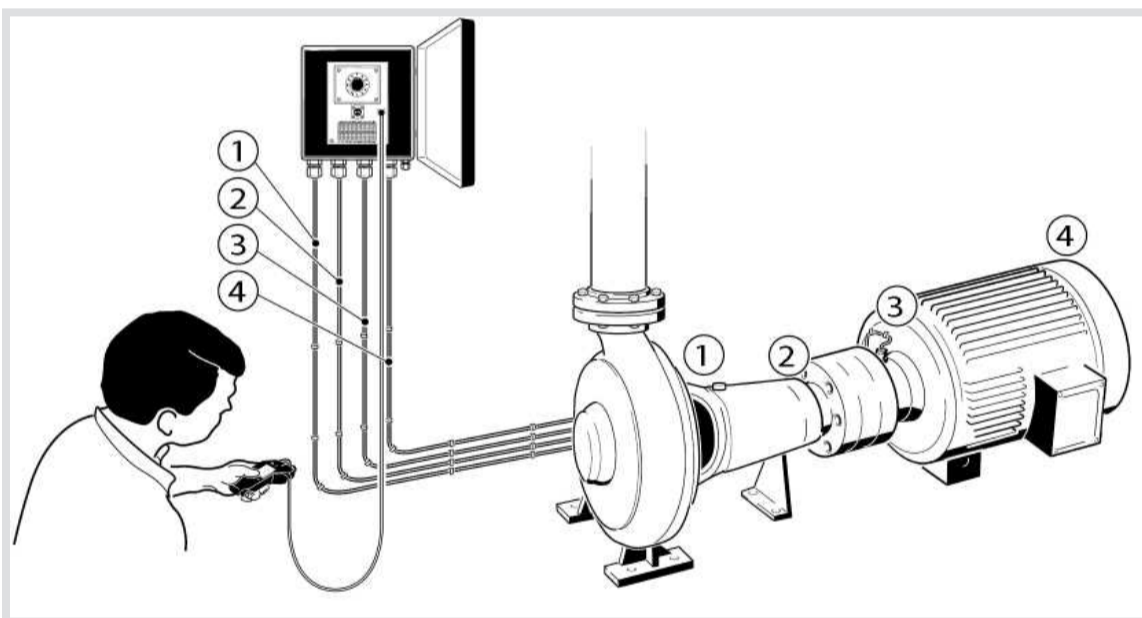
Parameter	VIB 6.785
Input	12 accelerometers (CLD / IEPE)
Output	one, via TNC socket or MIL socket
Temperature range	-20°C... +60°C
Protection class	IP 65

Dimensions



Application example

Data acquisition with VIBSCANNER and switchbox on 4 channels.



Tools for cable installation

These tools are used to assemble coax cables at the point of installation.



Crimp tool and cutting tool for coax cable.

Features

- Crimp tool:
 - for coax cable RG 58/59/6/174
 - Crimping dies can be replaced
- Cutting tool, composed of
 - Stripping tool
 - Blade cassette

Ordering information

Item No.	Name
VIB 81026	Crimping tool for coax cable
VIB 81052	Cutting tool for coax cable

Note: The replaceable blade cassette has a specified stripping length. In combination with the stripping tool, it is suitable for coax cables and round (shielded) data lines of between 2.5 and 8 mm in diameter. The blade cassette enables 1, 2 and 3-stage stripping. Stripping length: 7.5/3.5 mm.

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Software for Condition Monitoring

OMNITREND Center	248
OMNITREND PC Software	249
VIBXPERT utility	251

OMNITREND Center

OMNITREND Center is the newly developed software platform for the following PRÜFTECHNIK measuring systems: VIBGUARD, VIBGUARD compact, VIBGUARD portable, VIBRONET Signalmaster, VIBROWEB XP, VIBXPERT II, VIBXPERT EX, VIBSCANNER 2.



OMNITREND Center is multi-screen-capable.

Features

- Modern system architecture – ideal for distributed networks and cloud-based solutions
- Central data management
- Single-user and client-server version
- Advanced Modbus support
- Interactive report function
- User-friendly operation
- Multi-screen-capable
- Available in 13 languages
- Attractive license conditions
- Free software updates

Ordering information

Item No.	Description
VIB 8.200	OMNITREND Center, client-server version
VIB 8.210	OMNITREND Center, single user version
Licenses for user, database, server	
VIB 8.201/ 8.202	Floating user licenses: 1 / 5
VIB 8.203 / 8.204	Fixed user licenses: 1 / 5
VIB 8.205	10 additional database licenses
Licenses for functions	
VIB 8.207	Email Center

Notes: The scope of delivery comprises one USB pen drive each with software and license files, including installation and startup instructions in PDF format.

OMNITREND PC Software

OMNITREND is the universal software platform for all data-acquiring PRÜFTECHNIK measuring systems (stationary and portable).



OMNITREND PC software on CD-ROM.

Features

- Trend acquisition and forecast
- Comprehensive signal analyses
- Configurable reports
- Data exchange with CMMS systems
- User-friendly operation
- Available in 13 languages
- Attractive license conditions
- Free software updates

Ordering information

Item No.	Description
OMNITREND for VIBXPART II / VIBXPART EX	
VIB 8.981	OMNITREND for VIBXPART II, software package (incl. OMNITREND web single user)
VIB 8.982	OMNITREND View for VIBXPART II, software package
VIB 8.981-OMT	VIBXPART device driver for OMNITREND
VIB 5.312-P	PC license for VIBXPART II
VIB 8.981-P	PC license for VIBXPART EX
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 license for VIBSCANNER
VIB 8.961	OMNITREND module "Gearbox Editor"
VIB 8.962	OMNITREND module "Signal Analysis"
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 license for VIBROWEB XP

Notes: Every software package and device driver contain a printed pocket guide and PC license in addition to a CD ROM.

A **device driver** is a file that enables the operation of an already present software with the respective device type.

A **PC license** is a password that enables communication between OMNITREND and the respective measuring device.

After initial installation, OMNITREND runs in demo mode. To enable the full version, a **registration password** is required, which must be requested by the user during startup.

TECHNICAL INFORMATION

OMNITREND for VIBSCANNER, "Signal Analysis" module

The OMNITREND "Signal Analysis" software module is available as extension of an already registered OMNITREND installation and enables display and analysis of the following VIBSCANNER measurements:

Software package	VIBSCANNER measurements
OMNITREND for VIBSCANNER	Time signal (multimode & route), Orbit (multimode)
OMNITREND View for VIBSCANNER	Recording data

By registering the "Signal Analysis" module, the "Gearbox Editor" module is enabled as well.

VIBXPERT utility

This practical utility for the family of VIBXPERT devices supports the user during data transfer, data management and reporting. The software is available for downloading free of charge on the PRÜFTECHNIK website. Paid functions can be activated via password.



Export measurement data as MS Excel file with VIBXPERT utility.

Features

- Download of screenshots, PDF files
- Backup & restore
- Transfer company logo to measuring device
- Formatting of CF memory card
- Firmware update
- Data export into CSV format
- Data export into Excel format (optional)
- Data export into UFF / IEEE (optional)

Ordering information

Item No.	Description
VIB 8.984	VIBXPERT utility - Advanced File Export (UFF, IEEE)
VIB 8.986	VIBXPERT utility - Excel Report Module

Notes: The **Advanced File Export** function comprises the conversion of spectra, time signals, as well as measurement results of impact tests and phase measurements into the UFF resp. IEEE file format for analysis in other analysis programs.

Using the **Excel Report Module**, you can export the following measurement data into a formatted MS Excel file:

Characteristic overall value, FFT spectrum, balancing result, time signal, coast-down measurement (amplitude-phase and characteristic overall value), 2-channel measurements.

The Excel files are based on templates that can be adjusted by the expert user as needed.

Version: Excel 2003, Excel 2007

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Shaft alignment systems

ROTALIGN touch– Intelligent Shaft Alignment	254
OPTALIGN touch– Shaft alignment	257
OPTALIGN smart RS5 BT– Exact shaft alignment	260
ROTALIGN touch EX– Shaft alignment in Zone 1	265
ROTALIGN smart RS5 EX– Shaft alignment in explosive atmospheres	270
SHAFTALIGN OS3– fast and cost-effective shaft alignment	275
tab@lign– Shaft alignment on mobile devices	280
Live Trend Add-on	283
Multi-Coupling add-on (sensALIGN 7)	284
Multi-Coupling add-on (sensALIGN 5)	287
PULLALIGN – Precise belt pulley alignment	289

ROTALIGN touch– Intelligent Shaft Alignment

ROTALIGN touch is the first cloud-enabled shaft alignment system featuring touchscreen display, intelligent sensor technology and built-in mobile connectivity.



Application

- Alignment of horizontal, vertical and flange-mounted rotating machines
- Coupled, uncoupled and non-rotatable shafts
- Cardan shafts

Features

- sensALIGN 7 sensor with IntelliSWEEP technology
- Intelligent measurement modes such as the uncoupled mode methods IntelliPASS and IntelliPOINT
- Multi-Coupling simultaneous Live Move with acoustic assistance
- Capacitive touchscreen
- Measurement table showing the different alignment jobs
- Customized tolerances (including asymmetric)
- Interactive real 3-D format for machines
- Multi-Coupling Live Trend
- Communication using WiFi, Bluetooth and RFID
- Built-in camera

Ordering information

ROTALIGN touch is available in four variants.

Item No.	Variant
ALI 50.000 FULL	ROTALIGN touch, full version
ALI 50.000 MOB	ROTALIGN touch, mobile connectivity version
ALI 50.000 CAM	ROTALIGN touch, built-in camera version
ALI 50.000 STD	ROTALIGN touch, standard version

The items delivered within the box are shown in the following overview.

Scope of supply

Content			Variant			
Item No.	Description	Details	Full	Connectivity	Camera	Standard
ALI 50.200-FULL	touch device FULL	p. 294	✓	✗	✗	✗
ALI 50.200-MOB	touch device MOB	p. 294	✗	✓	✗	✗
ALI 50.200-CAM	touch device CAM	p. 294	✗	✗	✓	✗
ALI 50.200-STD	touch device STD	p. 294	✗	✗	✗	✓
ALI 50.651	Power supply / Charger for touch device	p. 299	✓	✓	✓	✓
ALI 4.900I	sensALIGN 7 sensor	p. 297	✓	✓	✓	✓
ALI 4.910	sensALIGN 7 laser	p. 298	✓	✓	✓	✓
ALI 4.960	sensALIGN 7 rechargeable battery	---	✓, 2x	✓, 2x	✓, 2x	✓, 2x
ALI 4.651	sensALIGN 7 AC power supply charger	p. 299	✓	✓	✓	✓
ALI 4.922-2	sensALIGN 7 sensor cable, 2 m (78 3/4")	---	✓	✓	✓	✓
ALI 4.905	sensALIGN 7 vibration check probe	p. 300	✓	✓	✓	✓
ALI 9.500	sensALIGN 7 sensor inspection certificate		✓	✓	✓	✓
ALI 9.501	sensALIGN 7 laser inspection certificate		✓	✓	✓	✓
ALI 50.801	Ruggedized trolley case, ROTALIGN touch		✓	✓	✓	✓
ALI 50.628-25	RFID tags, 25 pieces		✓	✓	✗	✗
ALI 3.589	Tape measure, mm/inch	---	✓	✓	✓	✓
ALI 2.911	Cleaning cloth	---	✓	✓	✓	✓
ALI 12.502-2	PC/USB cable, 2 m (78 3/4")	---	✓	✓	✓	✓
ALI 17.451	USB memory stick with ARC 4.0 software and product literature		✓	✓	✓	✓
ALI 2.118	Compact chain-type bracket	p. 327	✓, 2x	✓, 2x	✓, 2x	✓, 2x
0 0593 0105	Storage pouch for compact chain type bracket set		✓	✓	✓	✓
ALI 2.170	115 mm (4 1/2") support post, white	p. 379	✓, 4x	✓, 4x	✓, 4x	✓, 4x
ALI 2.171	150 mm (5 15/16") support post, black	p. 379	✓, 4x	✓, 4x	✓, 4x	✓, 4x
ALI 2.173	250 mm (9 7/8") support post, green	p. 379	✓, 4x	✓, 4x	✓, 4x	✓, 4x
ALI 2.174	300 mm (11 13/16") support post, yellow	p. 379	✓, 4x	✓, 4x	✓, 4x	✓, 4x
ALI 2.114	300 mm tension chain	p. 328	✓, 2x	✓, 2x	✓, 2x	✓, 2x
0 0739 1055	Hexagon wrench (2.5 mm)		✓	✓	✓	✓
DOC 50.101	Pocket guide		✓	✓	✓	✓

Content			Variant			
Item No.	Description	Details	Full	Connectivity	Camera	Standard
DOC 50.601	Safety and general information		✓	✓	✓	✓
ALI 17.000-50	ARC 4.0 device activation for ROTALIGN touch	p. 388	✓	✓	✗	✗

Note: The items in the box for the four variants are fixed.

Optional items may be ordered for any of the four variants.

Optional accessories

Item No.	Description – optional accessory	Note	Details
PC software			
ALI 17.000-50	ARC 4.0 device activation for touch device	optional for Camera and Standard versions	p. 388
Application related add-ons			
ALI 4.005/2-10	Live Trend Add-on, Magnet	w/ Magnetic Bracket for Horizontal and Vertical Surfaces	p. 283
ALI 4.005/2-20	Live Trend Add-on, PERMAFIX	w/ PERMAFIX bracket	p. 283
ALI 50.900	Multi Coupling Add-on for sensALIGN 7	for the alignment of multiple couplings	p. 284
ALI 50.901	Multi Coupling Add-on for sensALIGN 5	for the alignment of multiple couplings	p. 287
Brackets			
ALI 2.112 SET-S	Compact magnetic bracket set, standard		p. 333
ALI 2.230-1	Magnetic sliding bracket for flange		p. 351
ALI 2.109 SET	Extra-thin bracket set		p. 337
ALI 2.109 LSET	Small extra-thin bracket set		p. 337
ALI 2.761 SET iS	Universal magnetic bracket set for flanges and bores		p. 347
ALI 2.220 SET	Universal magnetic sliding bracket for flanges and bores, set		p. 353
ALI 2.450	Cardan shaft chain-type bracket with rotating arm, set		p. 330
ALI 2.460	Chain-type bracket for large diameter, set		p. 330
ALI 2.893 SET iS	Cardan shaft bracket set (for offsets up to 1000 mm)		p. 330
ALI 2.874 SET iS	Cardan shaft bracket Lite set (for offsets up to 400 mm)		p. 330
Miscellany			
ALI 4.921-5	sensALIGN 7 cable, 5 m (196 7/8")		
ALI 50.250	Carrying strap		
ALI 2.116	1500 mm tension chain		
ALI 2.191	Anti torsion bridge for 2 support posts		p. 371

OPTALIGN touch– Shaft alignment

OPTALIGN touch is a cloud-enabled shaft alignment system featuring touchscreen operation and built-in mobile connectivity.



Application

- Alignment of horizontal, vertical and flange-mounted rotating machines
- Coupled, uncoupled and non-rotatable shafts
- Cardan shafts

Features

- sensALIGN 5 sensor featuring Single-Laser technology and 2 position detectors
- Simultaneous Live Move with acoustic assistance
- Capacitive touchscreen
- Measurement table showing the different alignment jobs
- Customized tolerances (including asymmetric)
- Interactive real 3-D format for machines
- Communication using WiFi, Bluetooth and RFID
- Built-in camera

Ordering information

OPTALIGN touch is available in four variants.

Item No.	Variant
ALI 51.000 FULL	OPTALIGN touch, full version
ALI 51.000 MOB	OPTALIGN touch, mobile connectivity version
ALI 51.000 CAM	OPTALIGN touch, built-in camera version
ALI 51.000 STD	OPTALIGN touch, standard version

The items delivered within the box are shown in the following overview.

Scope of supply

Content			Variant			
Item No.	Description	Details	Full	Connectivity	Camera	Standard
ALI 50.200-FULL	touch device FULL	p. 294	✓	✗	✗	✗
ALI 50.200-MOB	touch device MOB	p. 294	✗	✓	✗	✗
ALI 50.200-CAM	touch device CAM	p. 294	✗	✗	✓	✗
ALI 50.200-STD	touch device STD	p. 294	✗	✗	✗	✓
ALI 50.651	Power supply / Charger for touch device	p. 299	✓	✓	✓	✓
ALI 3.901	sensALIGN 5 sensor	p. 295	✓	✓	✓	✓
ALI 3.910	sensALIGN 5 laser including batteries	p. 296	✓	✓	✓	✓
ALI 3.953	sensALIGN 5 sensor charger (universal)	p. 295	✓	✓	✓	✓
ALI 3.952	Micro USB cable (for charging the sensor)	p. 299	✓	✓	✓	✓
ALI 9.516.DG	sensALIGN 5 sensor inspection certificate		✓	✓	✓	✓
ALI 9.514.DG	sensALIGN 5 laser inspection certificate		✓	✓	✓	✓
ALI 51.800	Ruggedized trolley case, OPTALIGN touch		✓	✓	✓	✓
ALI 50.628-25	RFID tags, 25 pieces		✓	✓	✗	✗
ALI 3.589	Tape measure, mm/inch	---	✓	✓	✓	✓
ALI 2.911	Cleaning cloth	---	✓	✓	✓	✓
ALI 12.502-2	PC/USB cable, 2 m (78 3/4")	---	✓	✓	✓	✓
ALI 17.451	USB memory stick with ARC 4.0 software and product literature		✓	✓	✓	✓
ALI 2.118	Compact chain-type bracket	p. 327	✓, 2x	✓, 2x	✓, 2x	✓, 2x
DOC 51.101	Pocket guide		✓	✓	✓	✓
DOC 50.601	Safety and general information		✓	✓	✓	✓

Note: The items in the box for the four variants are fixed.

Optional items may be ordered for any of the four variants.

Optional accessories

Item No.	Description – optional accessory	Note	Details
PC software			
ALI 17.000-50	ARC 4.0 device activation for touch device	optional for Camera and Standard versions	p. 388
Application related add-ons			
ALI 50.900	Multi Coupling Add-on for sensALIGN 7 sensor	for the alignment of multiple couplings	p. 284
Brackets			
ALI 2.112 SET-S	Compact magnetic bracket set, standard		p. 333
ALI 2.230-1	Magnetic sliding bracket for flange		p. 351
ALI 2.109 SET	Extra-thin bracket set		p. 337
ALI 2.109 LSET	Small extra-thin bracket set		p. 337
ALI 2.761 SET iS	Universal magnetic bracket set for flanges and bores		p. 347
ALI 2.220 SET	Universal magnetic sliding bracket for flanges and bores, set		p. 353
ALI 2.460	Chain-type bracket for large diameter, set		p. 330
ALI 2.893 SET iS	Cardan shaft bracket set (for offsets up to 1000 mm)		p. 330
ALI 2.874 SET iS	Cardan shaft bracket Lite set (for offsets up to 400 mm)		p. 330
Posts, chains and miscellany			
ALI 2.170	115 mm (4 1/2") support post, white	2 pieces required for each bracket	p. 379
ALI 2.171	150 mm (5 15/16") support post, black	2 pieces required for each bracket	p. 379
ALI 2.173	250 mm (9 7/8") support post, green	2 pieces required for each bracket	p. 379
ALI 2.174	300 mm (11 13/16") support post, yellow	2 pieces required for each bracket	p. 379
ALI 2.114	300 mm tension chain		
ALI 2.116	1500 mm tension chain		
ALI 50.250	Carrying strap		
ALI 2.191	Anti torsion bridge for 2 support posts		p. 371

OPTALIGN smart RS5 BT– Exact shaft alignment

OPTALIGN smart is the standard system for the precise alignment of machines. Patented measurement functions coupled with an intuitive operation, and clear depiction of measurement results and corrections, help reduce the job time to a minimum.



Application

- Alignment of horizontal, vertical and flange-mounted rotating machines
- Coupled, uncoupled and non-rotatable shafts
- Straightness measurement

Features

- sensALIGN 5 sensor incorporating XL HD detectors and MEMS inclinometer
- Continuous measurement during shaft rotation
- Automatic evaluation of alignment condition using smileys
- Simultaneous monitoring of both horizontal and vertical Live Move corrections
- Flip machine functionality
- Measurement report saved as a PDF file directly to a USB memory stick
- Bluetooth communication integrated in both computer and sensALIGN 5 sensor

Ordering information

OPTALIGN smart RS5 BT is available in two variants.

Item No.	Variant
ALI 12.015-RS5R	OPTALIGN smart RS5 BT with rechargeable battery computer
ALI 12.015-RS5	OPTALIGN smart RS5 BT with battery housing

Scope of supply

Content – OPTALIGN smart RS5 BT with rechargeable battery computer		
Item No.	Description	Details
ALI 12.200	OPTALIGN smart computer	p. 263
ALI 12.201	OPTALIGN smart computer stand	
ALI 12.601	OPTALIGN smart rechargeable battery	
ALI 12.701	"Shaft" firmware certificate	
ALI 12.651-I	OPTALIGN smart charger (international)	p. 299
ALI 3.901	sensALIGN 5 sensor	p. 263
ALI 3.910	sensALIGN 5 laser including batteries	p. 264
ALI 3.953	sensALIGN 5 sensor charger (universal)	p. 264
ALI 3.952	Micro USB cable (for charging sensor)	

Content – OPTALIGN smart RS5 BT with rechargeable battery computer

Item No.	Description	Details
ALI 12.502-2	PC cable for OPTALIGN smart computer	
ALI 12.503	USB cable for peripherals	
ALI 2.118	Compact chain-type bracket	p. 327
ALI 2.911	Cleaning cloth	
ALI 3.589	Tape measure mm/inch	
ALI 17.451	USB memory stick with ARC 4.0 software and product literature	
ALI 12.810	Ruggedized trolley case	
DOC 12.601	Safety and general information	
DOC 12.106	Pocket guide	
ALI 9.516	sensALIGN 5 sensor inspection certificate	

Content – OPTALIGN smart RS5 BT with battery housing

Item No.	Description	Details
ALI 12.200	OPTALIGN smart computer	p. 263
ALI 12.201	OPTALIGN smart computer stand	
ALI 12.600	OPTALIGN smart battery housing including batteries	
ALI 12.701	"Shaft" firmware certificate	
ALI 3.901	sensALIGN 5 sensor	p. 263
ALI 3.910	sensALIGN 5 laser including batteries	p. 264
ALI 3.953	sensALIGN 5 sensor charger (universal)	p. 264
ALI 3.952	Micro USB cable (for charging sensor)	
ALI 12.502-2	PC cable for OPTALIGN smart computer	
ALI 12.503	USB cable for peripherals	
ALI 2.118	Compact chain-type bracket	p. 327
ALI 2.911	Cleaning cloth	
ALI 3.589	Tape measure mm/inch	
ALI 17.451	USB memory stick with ARC 4.0 software and product literature	
ALI 12.810	Ruggedized trolley case	
DOC 12.601	Safety and general information	
DOC 12.106	Pocket guide	
ALI 9.516	sensALIGN 5 sensor inspection certificate	

Note: The items in the box for both variants are fixed.

Optional items may be ordered for either variant.

Optional accessories

Item No.	Description - optional accessories	Note	Details
Functional upgrades			
ALI 12.713	Targets, Thermal growth, Dial gauge target input		
ALI 12.715	Multipoint measurement mode		
ALI 12.718	Alignment of cardan and spacer shafts		
ALI 12.723	3-machine train alignment		
ALI 12.725	High-end additional features	Comprises Pass mode, machine graphics, tolerances, "all-in-one" results, machine trains with up to 6 machines	
PC software			
ALI 17.000-4	ARC 4.0 device activation, OPTALIGN smart		p. 388
Shaft brackets			
ALI 2.112 SET-S	Compact magnetic bracket set, standard		p. 333
ALI 2.230-1	Magnetic sliding bracket for flange		p. 351
ALI 2.109 SET	Extra-thin bracket set		p. 337
ALI 2.109 LSET	Small extra-thin bracket set		p. 337
ALI 2.761 SET iS	Universal magnetic bracket set for flanges and bores		p. 347
ALI 2.893 SET iS	Cardan shaft bracket set (for offsets up to 1000 mm)		p. 330
ALI 2.874 SET iS	Cardan shaft bracket Lite set	for offsets up to 400 mm	p. 330
Support posts, tension chains and miscellany			
ALI 2.170	115 mm (4 1/2") support post, white	2 pieces required for each bracket	p. 379
ALI 2.171	150 mm (5 15/16") support post, black	2 pieces required for each bracket	p. 379
ALI 2.173	250 mm (9 7/8") support post, green	2 pieces required for each bracket	p. 379
ALI 2.174	300 mm (11 13/16") support post, yellow	2 pieces required for each bracket	p. 379
ALI 2.114	300 mm tension chain		
ALI 2.116	1500 mm tension chain		
ALI 5.020	External inclinometer		
ALI 2.191	Anti-torsion bridge		p. 371
Straightness measurement			
ALI 12.731	Straightness function	incl. licence paper	
ALI 12.551	Magnetic base with fixtures	2 pieces	
ALI 12.807	Compact case		
DOC 12.115	OPTALIGN smart RS5 Straightness pocket guide		
DOC 12.101	OPTALIGN smart Straightness pocket guide		
0 0739 1055	Hexagon wrench (2.5 mm)		
0 0739 1059	Hexagon wrench (6 mm)		

TECHNICAL INFORMATION

Technical data

Parameter	OPTALIGN smart RS5 BT technical data
COMPUTER	
CPU	Marvell XScale PXA270 running at 520 MHz
Memory	64 MB RAM, 64 MB Flash
Display	3.5" TFT, transmissive (sunlight-readable), 65 535 colours, backlit LED Resolution: 320 x 240 Pixel
Keyboard elements	Up, Clear, Menu Navigation cursor cross Alphanumeric keyboard Three additional keys (Dimensions, Measure, Results)
LED indicators	4 LEDs for laser status and alignment condition 2 LEDs for wireless communication and battery status
Power supply	Disposable batteries: 6 x 1.5 V IEC LR6 ("AA") Lithium-Ion rechargeable battery: 7.4 V / 2.5 Ah / 18.5 Wh (optional) Operating time: 18 hours typical use (based upon an operating cycle of 25% measurement, 25% computation and 50% 'sleep' mode)
External interface	USB host USB slave RS232 (serial) for sensor Integrated wireless communication, class 1, transmitting power 100 mW AC adapter/charger socket
Environmental protection	IP 65 (dustproof and water jets resistant) Shockproof Relative humidity: 10% to 90%
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F) Charging: 0 °C to 40 °C (32 °F to 104 °F)
Dimensions	Approx. 214 x 116 x 64 mm (8 7/16" x 4 7/16" x 2 1/2")
Weight	865 g (1.9 lb)
sensALIGN 5 sensor	
Type	5-axis sensor: 2 planes (4 displacement axes and angle) Measurement area: unlimited, dynamically extendible (U.S. Patent 6,040,903) Resolution: 1 µm (0.04 mil) and angular 10 µRad Accuracy (avg): > 98% Measurement rate: approx. 20 Hz
LED indicators	1 LED for laser adjustment and battery status 1 LED for Bluetooth communication
Power supply	Lithium-Ion rechargeable battery: 3.7 V / 5 Wh Operating time: 10 hours (continuous use) Charging time: Using charger – 2.5 h for up to 90%; 3.5 h for up to 100% Using USB port – 3 h for up to 90%; 4 h for up to 100%

Parameter	OPTALIGN smart RS5 BT technical data
External interface	Integrated Bluetooth 4.1 Smart Ready wireless communication USB 2.0 Full Speed
Transmission distance	Up to 30 m [98 ft] direct line of sight
Environmental protection	IP 65 (dustproof and water jets resistant) Shockproof Relative humidity: 10% to 90%
Ambient light protection	Yes
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F) Charging: 0 °C to 40 °C (32 °F to 104 °F)
Dimensions	Approx. 105 x 74 x 58 mm (4 9/64" x 2 29/32" x 2 1/4")
Weight	Approx. 235 g (8 1/3 oz.)
Universal charger for sensALIGN 5 sensor	
Input	100 - 240 VAC / 50 - 60 Hz / 0.2 A
Output	5 VDC / 1 A / 5 W
Protection class	II / IP 52
Connector	Four plug adapters for North America, Japan, Australia, UK, EU
Device connection	USB cable
Temperature range	Operation: 0 ... +40°C (32 °F to 104 °F); Storage: -10 ..+80°C (14 °F to 176 °F)
Dimensions	approx. 71 x 41 x 31 mm [2 13/16" x 1 5/8" x 1 1/4"]
sensALIGN 5 laser	
Type	Semiconductor laser diode
Beam divergence	0.3 mrad
Beam power	< 1 mW
Wavelength	630 – 680 nm (red, visible)
Laser class	Class 2 according to IEC 60825-1:2007 The laser complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. Safety precaution: Do not look into laser beam
Power supply	Batteries: 2 x 1.5 V IEC LR6 ("AA") Operating time: 180 hours
Protection	IP 65 (dustproof and water jets resistant) Shockproof Relative humidity: 10% to 90%
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 105 x 74 x 47 mm (4 9/64" x 2 29/32" x 1 27/32")
Weight	Approx. 225 g (7 15/16 oz.)

ROTALIGN touch EX– Shaft alignment in Zone 1

ROTALIGN touch EX is the premium alignment system for hazardous environments. The ruggedized EX tablet intuitive user-interface combined with comprehensive shaft alignment features breaks new ground for maintenance personnel.



Application

- Horizontal, vertical and flange-mounted rotating machines
- Coupled, uncoupled and non-rotatable shafts
- Cardan shafts

Features

- ATEX certified for Zone 1
- sensALIGN 5 featuring single-beam laser technology
- SWEEP and PASS measurement mode
- Wireless data transmission
- Automatic evaluation of alignment condition using smileys
- Simultaneous monitoring of both horizontal and vertical Live Move corrections
- Consideration of alignment targets and thermal growth
- Soft foot Diagnosis
- Mobile connectivity integrated: WLAN, Bluetooth, RFID, Camera
- ARC 4.0 PC software for data transfer via cloud

Ordering information

ROTALIGN touch EX is available in two variants.

Item No.	Variant
ALI 52.000-Z1	ROTALIGN touch EX package, Zone 1
ALI 52.000-Z1.NA	ROTALIGN touch EX package, Zone 1, North America

The items delivered within the box are shown in the following overview.

Scope of supply

Content		
Item No.	Description	Details
ALI 52.200-Z1 or ALI 52.200-Z1.NA	ROTALIGN touch EX, ruggedized and intrinsically safe tablet for Zone 1 (NA: North America) incl. charger, plug adapters (4x), cable and operating instructions	p. 267
ALI 3.900 EX	Intrinsically safe sensALIGN 5 sensor	p. 267
ALI 3.910 EX	Intrinsically safe sensALIGN 5 laser, incl. batteries	p. 268
ALI 4.621 EX	Intrinsically safe RF module	p. 268

Content		
Item No.	Description	Details
ALI 3.905-0.28	Cable for intrinsically safe RF module	
ALI 52.800 EX	Case for ROTALIGN touch EX system	---
ALI 2.118	Compact chain-type bracket, 2x	p. 327
ALI 2.114	300 mm tension chain	
ALI 2.170	115 mm (4 1/2") support post, white, 4x	p. 379
ALI 2.171	150 mm (5 15/16") support post, black, 4x	p. 379
ALI 2.173	250 mm (9 7/8") support post, green, 4x	p. 379
ALI 2.174	300 mm (11 13/16") support post, yellow, 4x	p. 379
0 0739 1055	Hexagon wrench (2.5 mm)	---
ALI 2.911	Cleaning cloth	---
ALI 3.588 EX	Intrinsically safe tape measure mm/inch	---
ALI 17.453	USB memory stick with ARC 4.0 software and product literature (EX)	---
ALI 9.517.DG	Inspection certificate for intrinsically safe sensALIGN 5 sensor	---
ALI 9.521.DG	Inspection certificate for intrinsically safe sensALIGN 5 laser	---
DOC 52.101.EN	ROTALIGN touch EX pocket guide	---
DOC 52.200	Control drawing, intrinsic safety and operating instructions for the ruggedized tablet, multiple languages	---
DOC 52.201	ROTALIGN touch EX safety information, multiple languages	---
DOC 04.202	RF module EX operating instructions	

Optional accessories

Item No.	Description - optional accessories	Details
Brackets		
ALI 2.112 SET-S	Compact magnetic bracket set, standard	p. 333
ALI 2.230-1	Magnetic sliding bracket for flange	p. 351
ALI 2.109 SET	Extra-thin bracket set	p. 337
ALI 2.109 LSET	Small extra-thin bracket set	p. 337
ALI 2.761 SET iS	Universal magnetic bracket set for flanges and bores	p. 347
ALI 2.893 SET iS	Cardan shaft bracket set (for offsets up to 1000 mm)	p. 330
ALI 2.874 SET iS	Cardan shaft bracket Lite set (for offsets up to 400 mm)	p. 330
ALI 2.450	Cardan shaft chain-type bracket with rotating arm, set	
ALI 2.460	Chain-type bracket for large diameter, set	
Tension chains		
ALI 2.116	1500 mm tension chain	---
Miscellany		
ALI 5.020	External inclinometer	---
ALI 2.191	Anti-torsion bridge	p. 371

TECHNICAL INFORMATION

Technical data

Parameter	ROTALIGN touch EX technical data
	TABLET
CPU	Exynos 7 Octa, 1.6 GHz Octa-Core (Cortex (R)-A53)
Memory	3 GB RAM, 16 GB Flash
Display	8" TFT, 1280 x 800 Pixel
Connectivity	Wi-Fi 802.11 a/b/g/n/ac (2.4 GHz + 5 GHz)
Cameras	8 MP AF + 5 MP
Power supply	Li-Ion rechargeable battery 3.8 V / 4450 mAh / 16.91 Wh
Operating time	approx. 11 h
Environmental protection	IP 68
Temperature range	Operation: -20 °C to 50 °C (-4 °F to 122 °F)
Dimensions	approx. 162 x 256 x 33 mm (6 1/3" x 10" x 1 1/3")
Weight	approx. 1250 g (2.75 lb)
	INTRINSICALLY SAFE sensALIGN 5 sensor
Type	5-axis receiver: 2 planes (4 displacement axes and angle) Measurement area: unlimited, dynamically extendible (U.S. Patent 6,040,903) Resolution: 1 µm (0.04 mil) and angular 10 µRad Accuracy (avg): > 98% Measurement rate: approx. 20 Hz
Environmental protection	IP65 (dustproof and water jets resistant) Relative humidity 10% to 90%
Ambient light protection	Yes
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) / Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 105 x 67 x 47 mm (4 5/32" x 2 5/8" x 1 55/64")
Weight	Approx. 190 g (6 7/10 oz.)

Parameter	ROTALIGN touch EX technical data
	INTRINSICALLY SAFE sensALIGN 5 laser
Type	Semiconductor laser diode
Beam divergence	0.3 mrad
Beam power	< 1 mW
Wavelength	630 – 680 nm (red, visible)
Safety class	Class 2 according to IEC 60825-1:2014 The laser complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. Safety precautions: Do not look into laser beam
Power supply	Batteries: 2 x 1.5 V IEC LR6 ("AA"), only use Duracell Industrial ID 1500 or Energizer E91 Operating time: 120 hours
Environmental protection	IP65 (dustproof and water jets resistant) Shockproof Relative humidity 10% to 90%
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) / Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 105 x 74 x 47 mm (4 5/32" x 2 15/16" x 1 55/64")
Weight	Approx. 225 g (8 oz.)
	INTRINSICALLY SAFE RF MODULE
Details	2.4 GHz Class 1 connectivity Transmitting power: 100 mW Transmission distance: Up to 10 m (33 ft.) direct line of sight FCC-ID POOWML-C40
LED indicators	1 LED for wireless communication 3 LEDs for battery status
Power supply	2 x 1.5 V IEC LR6 ("AA") batteries, only use Duracell Industrial ID 1500 or Energizer E91 Operating time: 14 hours typical use (based upon an operating cycle of 50% measurement, 50% standby)
Temperature range	Operation: -10 °C to 40 °C (14 °F to 104 °F)
Environmental protection	IP 65 (dustproof and water jets resistant) Shockproof Relative humidity 10% to 90%
Dimensions	Approx. 81 x 41 x 34 mm (3 1/8" x 1 11/16" x 1 5/16")
Weight	Approx. 133 g (4.7 oz.) including batteries and cable

Intrinsic safety details

ROTALIGN touch EX	Marking (ATEX)	Ambient temperature (Ta)
Tablet PC	II 2G Ex db ia op is IIC T5 Gb	-20 °C ...+50 °C (-4 °F to 122 °F)
Sensor	II 2G Ex ib IIC T4 Gb	-10 °C ...+50 °C (14 °F to 122 °F)
Laser	II 2G Ex ib op is IIC T4 Gb	-10 °C ...+50 °C (14 °F to 122 °F)
RF module	II 2 G Ex ib IIC T4 Gb	-10 °C ...+40 °C (14 °F to 104 °F)

ROTALIGN smart RS5 EX– Shaft alignment in explosive atmospheres

ROTALIGN smart RS5 EX is the customary system used in explosive environments for the alignment of coupled machines. Patented measurement functions coupled with an intuitive operation, and clear depiction of measurement results and corrections, help reduce the job time to a minimum.



Application

- Horizontal, vertical and flange-mounted rotating machines
- Coupled, uncoupled and non-rotatable shafts
- Straightness measurement

Features

- ATEX / IECEx certified for zone 1
- sensALIGN 5 sensor incorporating XL HD detectors and MEMS inclinometer
- Wireless data transmission using Bluetooth (optional)
- Continuous measurement during shaft rotation
- Pass measurement mode for uncoupled shafts (optional)
- Automatic evaluation of alignment condition using smileys
- Simultaneous monitoring of both horizontal and vertical Live Move corrections
- Flip machine functionality
- Measurement report saved as a PDF file directly to a USB memory stick

Ordering information

ROTALIGN smart RS5 EX is available in two variants.

Item No.	Variant
ALI 12.010 EX	ROTALIGN smart RS5 EX, Standard
ALI 12.011 EX	ROTALIGN smart RS5 EX, Full version

The items delivered within the box are shown in the following overview.

Scope of supply

Item No.	Description	Details	Variants	
			Standard	Full v.
ALI 12.200 EX	OPTALIGN smart intrinsically safe version computer including the "ROTALIGN smart EX" label	p. 273	✓	✓
ALI 12.201	Computer stand	---	✓	✓
ALI 12.701	"Shaft" firmware certificate	---	✓	✗

Item No.	Content		Variants	
	Description	Details	Standard	Full v.
ALI 12.703	"Full version" firmware certificate (including "Shaft" and all upgrade licences)	---	✗	✓
ALI 12.651-I	AC power supply/charger for adapter box (universal)	p. 299	✓	✓
ALI 3.900 EX	Intrinsically safe sensALIGN 5 sensor	p. 273	✓	✓
ALI 3.910 EX	Intrinsically safe sensALIGN 5 laser, including batteries	p. 274	✓	✓
ALI 3.982-2	Sensor cable connected to intrinsically safe OPTALIGN smart computer, 2 m	---	✓	✓
ALI 12.500	Adapter box for intrinsically safe OPTALIGN smart computer	---	✓	✓
ALI 12.504-2	USB A/B cable for connecting to printer or PC	---	✓	✓
ALI 2.118	Compact chain-type bracket	p. 327	✓, 2x	✓, 2x
ALI 2.170	115 mm (4 1/2") support post, white	p. 379	✗	✓, 4x
ALI 2.171	150 mm (5 15/16") support post, black	p. 379	✗	✓, 4x
ALI 2.173	250 mm (9 7/8") support post, green	p. 379	✗	✓, 4x
ALI 2.174	300 mm (11 13/16") support post, yellow	p. 379	✗	✓, 4x
ALI 2.114	300 mm tension chain	---	✗	✓, 2x
0 0739 1055	Hexagon wrench (2.5 mm)	---	✓	✓
ALI 2.911	Cleaning cloth	---	✓	✓
ALI 3.588 EX	Intrinsically safe tape measure mm/inch	---	✓	✓
ALI 4.452	USB memory stick	---	✓	✓
ALI 12.809 EX	Case for ROTALIGN smart RS5 EX system	---	✓	✓
DOC 12.111	Pocket guide	---	✓	✓
DOC 12.211	Operating handbook	---	✓	✓
ALI 9.517	Sensor inspection certificate for intrinsically safe sensALIGN 5 sensor	---	✓	✓

Note: The items in the box for both variants are fixed.

Optional items may be ordered for either variant.

Optional accessories

Item No.	Description - optional accessories	Note	Details
Firmware upgrade			
ALI 12.713	Targets, Thermal growth and Dial gauge target input	Included in "Full version"	---
ALI 12.715	Multipoint measurement mode	Included in "Full version"	---

Item No.	Description - optional accessories	Note	Details
ALI 12.718	Alignment of cardan and spacer shafts	Included in "Full version"	---
ALI 12.723	3-machine train alignment	Included in "Full version"	---
ALI 12.725	High-end additional features	Included in "Full version" – and comprises Pass measurement mode, machine graphics, tolerance envelopes, "all-in-one" results, machine trains with up to 6 machines.	---
PC software			
ALI 17.000-4	ARC 4.0 device activation for OPTALIGN smart		p. 388
RF module			
ALI 4.621 EX	Intrinsically safe RF module		p. 274
ALI 3.905-0.28	Cable for intrinsically safe RF module	28 cm long	
Brackets			
ALI 2.112 SET-S	Compact magnetic bracket set, standard		p. 333
ALI 2.230-1	Magnetic sliding bracket for flange		p. 351
ALI 2.109 SET	Extra-thin bracket set		p. 337
ALI 2.109 LSET	Small extra-thin bracket set		p. 337
ALI 2.761 SET iS	Universal magnetic bracket set for flanges and bores		p. 347
ALI 2.893 SET iS	Cardan shaft bracket set (for offsets up to 1000 mm)		p. 330
ALI 2.874 SET iS	Cardan shaft bracket Lite set (for offsets up to 400 mm)		p. 330
Support posts, tension chains			
ALI 2.170	115 mm (4 1/2") support post, white	2 pieces required for each bracket	p. 379
ALI 2.171	150 mm (5 15/16") support post, black	2 pieces required for each bracket	p. 379
ALI 2.173	250 mm (9 7/8") support post, green	2 pieces required for each bracket	p. 379
ALI 2.174	300 mm (11 13/16") support post, yellow	2 pieces required for each bracket	p. 379
ALI 2.114	300 mm tension chain		---
ALI 2.116	1500 mm tension chain		---
Miscellany			
ALI 3.982-5	Sensor cable connected to intrinsically safe OPTALIGN smart computer, 5 m		---
ALI 5.020	External inclinometer		---
ALI 2.191	Anti-torsion bridge		p. 371
Straightness measurement			
ALI 12.731	Straightness function	incl. licence paper	
ALI 12.551	Magnetic base with fixtures		
ALI 12.807	Compact case		
DOC 12.115	OPTALIGN smart RS5 Straightness pocket guide		
DOC 12.101	OPTALIGN smart Straightness pocket guide		
0 0739 1059	Hexagon wrench (6 mm)		


TECHNICAL INFORMATION

Technical data

Parameter	ROTALIGN smart RS5 EX technical data
COMPUTER	
CPU	Marvell PXA270 running at 312 MHz
Memory	64 MB RAM, 64 MB Flash
Display	3.5" TFT, transfective (sunlight-readable) 65 535 colours, backlit LED Resolution: 320 x 240 Pixel
Keyboard elements	Up, Clear, Menu Navigation cursor cross Alphanumeric keyboard Three additional keys (Dimensions, Measure, Results)
LED indicators	4 LEDs for laser status and alignment condition 2 LEDs for wireless communication and battery status
Power supply	Batteries: 6 x 1.5 V IEC LR6 ("AA"), only use Duracell Industrial ID 1500 or Energizer E91 Operating time: 18 hours typical use (based upon an operating cycle of 25% measurement, 25% computation and 50% 'sleep' mode)
External interface	RS232 (serial) for sensor or adpter box Adapter box external interface: USB host (printer), USB client (PC), AC adapter/charger socket, USB host for USB memory stick Integrated wireless communication, class 1, transmitting power 100 mW
Environmental protection	IP65 (dustproof and water jets resistant) Shockproof Relative humidity 10% to 90%
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 214 x 116 x 64 mm (8 7/16" x 4 1/2" x 2 1/2")
Weight	865 g (1.9 lb)
INTRINSICALLY SAFE sensALIGN 5 sensor	
Type	5-axis receiver: 2 planes (4 displacement axes and angle) Measurement area: unlimited, dynamically extendible (U.S. Patent 6,040,903) Resolution: 1 µm (0.04 mil) and angular 10 µRad Accuracy (avg): > 98% Measurement rate: approx. 20 Hz
Environmental protection	IP65 (dustproof and water jets resistant) Relative humidity 10% to 90%
Ambient light protection	Yes
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 105 x 67 x 47 mm (4 5/32" x 2 5/8" x 1 55/64")
Weight	Approx. 190 g (6 7/10 oz.)

Parameter	ROTALIGN smart RS5 EX technical data
INTRINSICALLY SAFE sensALIGN 5 laser	
Type	Semiconductor laser diode
Beam divergence	0.3 mrad
Beam power	< 1 mW
Wavelength	630 – 680 nm (red, visible)
Safety class	Class 2 according to IEC 60825-1:2014 The laser complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. Safety precautions: Do not look into laser beam
Power supply	Batteries: 2 x 1.5 V IEC LR6 ("AA"), only use Duracell Industrial ID 1500 or Energizer E91 Operating time: 120 hours
Environmental protection	IP65 (dustproof and water jets resistant) Shockproof Relative humidity 10% to 90%
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 105 x 74 x 47 mm (4 5/32" x 2 15/16" x 1 55/64")
Weight	Approx. 225 g (8 oz.)
INTRINSICALLY SAFE RF MODULE	
Details	Class 1 connectivity Transmitting power: 100 mW Transmission distance: Up to 10 m (33 ft.) direct line of sight FCC-ID POOWML-C40
LED indicators	1 LED for wireless communication 3 LEDs for battery status
Power supply	2 x 1.5 V IEC LR6 ("AA") batteries, only use Duracell Industrial ID 1500 or Energizer E91 Operating time: 14 hours typical use (based upon an operating cycle of 50% measurement, 50% standby)
Temperature range	Operation: -10 °C to 40 °C (14 °F to 104 °F)
Environmental protection	IP 65 (dustproof and water jets resistant) Sockproof Relative humidity 10% to 90%
Dimensions	Approx. 81 x 41 x 34 mm (3 1/8" x 1 11/16" x 1 5/16")
Weight	Approx. 133 g (4.7 oz.) including batteries and cable

Intrinsic safety details

ROTALIGN smart RS5 EX	
Marking  , Computer	II 2G Ex ib [ib] IIC T4
Sensor	II 2G Ex ib IIC T4 Gb
Laser	II 2G Ex ib op is IIC T4 Gb
RF module	II 2 G Ex ib IIC T4 Gb
Temperature range	-10 °C to 50 °C (14 °F to 122 °F) -10 °C to 40 °C (14 °F to 104 °F) (RF module)

SHAFTALIGN OS3– fast and cost-effective shaft alignment

SHAFTALIGN OS3 provides a cost-effective solution to precise alignment of machinery. Patented measurement functions coupled with an intuitive operation, and clear depiction of measurement results and corrections, help reduce the job time to a minimum.



Application

- Alignment of horizontal, vertical and flange-mounted rotating machines
- Coupled, uncoupled and non-rotatable shafts

Features

- 3-axis HD PSD sensor using MEMS inclinometer
- Wireless data transmission using Bluetooth
- Automatic measurement during shaft rotation (SWEEP, Active Clock)
- Automatic evaluation of alignment condition using smileys
- Monitoring of both horizontal and vertical Live Move corrections
- Flip machine functionality
- Measurement report saved as a PDF file directly to a USB memory stick

Ordering information

SHAFTALIGN OS3 is available in two variants.

Item No.	Variant
ALI 21.003	SHAFTALIGN OS3 using "AA" size batteries
ALI 21.003-BR	SHAFTALIGN OS3 using rechargeable battery pack and Bluetooth communication

The items delivered within the box are shown in the following overview.

Scope of supply

Item No.	Content		Variant	
	Description	Details	"AA" size batteries	Rechargeable battery
ALI 21.200	SHAFTALIGN computer, incl. 'AA' size batteries, computer stand	p. 278	✓	✗
ALI 21.210	SHAFTALIGN computer, incl. rechargeable battery pack, computer stand	p. 278	✗	✓
ALI 21.701	SHAFTALIGN shaft firmware certificate		✓	✓
ALI 24.651	Power supply / battery charger for computer	p. 299	✗	✓
ALI 21.900	sensALIGN 3 laser/sensor including dust cap	p. 278	✓	✓
ALI 24.501-2	Sensor cable, 2 m		✓	✓
ALI 24.502-2	PC cable, USB, 2 m	---	✓	✓
ALI 24.503	USB pendrive cable	---	✓	✓
ALI 4.621i	BT module	p. 279	✗	✓
ALI 3.905-0.28	BT module cable		✗	✓
ALI 5.110	Reflector including dust cap	---	✓	✓
ALI 2.118	Compact chain-type bracket	p. 327	✓, 2x	✓, 2x
ALI 2.911	Cleaning cloth	---	✓	✓
ALI 3.589	Tape measure mm/inch	---	✓	✓
ALI 17.451	USB memory stick with ARC 4.0 software and product literature		✓	✓
ALI 21.803	SHAFTALIGN case		✓	✓
DOC 21.103	Pocket guide		✓	✓
ALI 9.511	sensALIGN 3 sensor inspection certificate		✓	✓

Note: The items in the box for both variants are fixed.

Optional items may be ordered for either variant.

Optional accessories

Item No.	Description - optional accessories	Note	Details
Firmware upgrade			
ALI 21.713	Enter targets and thermal growth values	Available in full version	
ALI 21.715	Multipoint measurement mode	Available in full version	
ALI 21.718	Alignment of cardan and spacer shafts	Available in full version	
ALI 21.719	Save up to 200 measurement files	Available in full version	
ALI 21.720	Customized tolerances	Available in full version	
ALI 21.721	Continuous SWEEP measurement mode	Available in full version	
ALI 21.722	Results table	Available in full version	

Item No.	Description - optional accessories	Note	Details
ALI 21.726	Pipe strain	Available in full version	
PC software			
ALI 17.000-21	ARC 4.0 device activation for SHAFTALIGN		p. 388
BT module			
ALI 4.621i	BT module	For "AA" batteries variant only	p. 279
ALI 3.905-0.28	BT module cable	For "AA" batteries variant only; 28 cm	
Brackets			
ALI 2.112 SET-S	Compact magnetic bracket set, standard		p. 333
ALI 2.230-1	Magnetic sliding bracket for stationary shafts		p. 351
ALI 2.109 SET	Extra-thin bracket set		p. 337
ALI 2.109 LSET	Small extra-thin bracket set		p. 337
ALI 2.761 SET iS	Magnetic bolt hole bracket set for shaft and bore alignment		p. 347
ALI 2.893 SET iS	Cardan shaft bracket set (for offsets up to 1000 mm)		p. 330
ALI 2.874 SET iS	Cardan shaft bracket Lite set (for offsets up to 400 mm)		p. 330
Support posts, tension chains and miscellany			
ALI 2.170	115 mm (4 1/2") support post, white	2 pieces required for each bracket	p. 379
ALI 2.171	150 mm (5 15/16") support, black	2 pieces required for each bracket	p. 379
ALI 2.173	250 mm (9 7/8") support post, green	2 pieces required for each bracket	p. 379
ALI 2.174	300 mm (11 13/16") support post, yellow	2 pieces required for each bracket	p. 379
ALI 2.114	300 mm tension chain		
ALI 2.116	1500 mm tension chain		
Miscellany			
ALI 11.501-5	sensALIGN 3 sensor cable, 5 m		
ALI 5.020	External inclinometer		
ALI 5.106	Beam deflector		
ALI 2.191	Anti torsion bridge for 2 support posts		p. 371

TECHNICAL INFORMATION

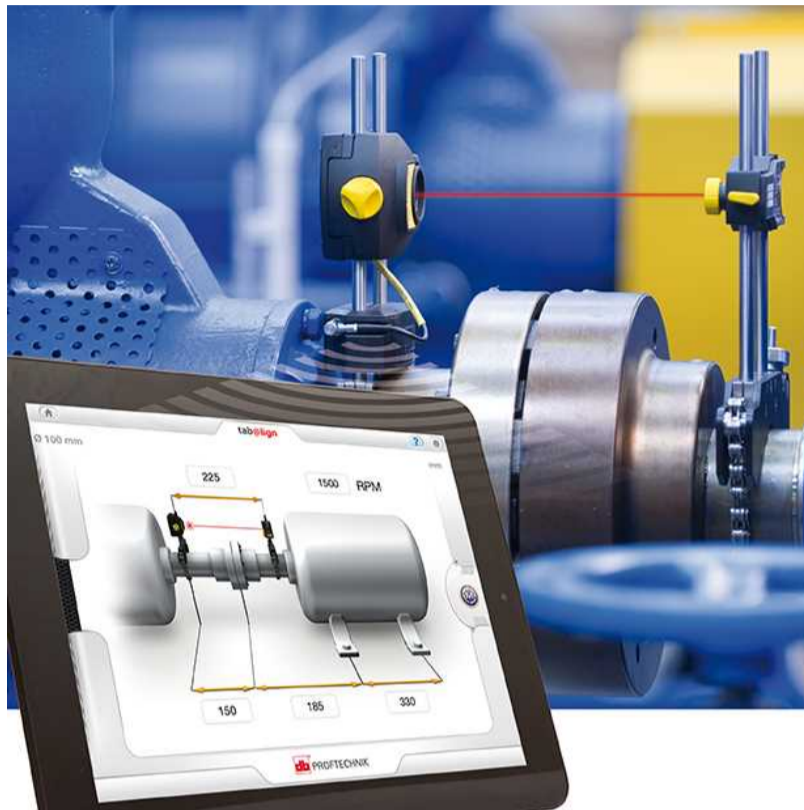
Technical data

Parameter	SHAFTALIGN OS3 technical data
COMPUTER	
CPU	Intel XScale PXA270 running at 520 MHz
Memory	64 MB RAM, 64 MB Flash
Display	3.5" TFT, transmissive (sunlight-readable) 65 535 colours, backlit LED Resolution: 320 x 240 Pixel
Keyboard elements	Up, Clear and Menu Alphanumeric keyboard Five extra hard keys (Dimensions, Measure, Results, Soft foot, Live Move)
LED indicators	Multicolour LED for laser status and alignment condition Multicolour LED for battery status
Power supply	Disposable batteries: 5 x 1.5 V IEC LR6 ("AA"); Operating time: 9 hours* (typical use) Lithium-ion rechargeable battery: 7.4 V / 2.6 Ah; Operating time: 17 hours* (typical use) *Based upon an operating cycle of 33% measurement, 33% computation and 33% 'sleep' mode.
External interface	RS232 (serial) sensALIGN 3 sensor USB host, USB slave, AC adapter/charger socket Integrated wireless communication, class 1 connectivity, transmitting power 100 mW
Environmental protection	IP 65 (dustproof and water spray resistant) Shockproof Relative humidity 10% to 90%
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 220 x 165 x 45 mm (8.7" x 6.5" x 1.8")
Weight	742 g (1.64 lb)
sensALIGN 3 LASER / SENSOR	
Measurement principle	Coaxial, reflected laser beam
Detector	Measurement area: unlimited, dynamically extendible Resolution: 1 µm Accuracy (avg): > 98%
Laser	Type: Semiconductor laser diode Wavelength (typical) 670 nm (red, visible) Safety class: Class 2 according to IEC 60825-1:2007 Beam power: < 1 mW Beam divergence: < 0.3 mrad Safety precautions: Avoid looking directly into laser beam
Inclinometer	Measurement range: 0° to 360° Resolution: 0.1° Error at 22 °C (Ta): ± 0.30% read out
Environmental protection	IP 67 (submersible, dustproof) Relative humidity: 10% to 90%

Parameter	SHAFTALIGN OS3 technical data
Ambient light protection	Yes
Temperature range	Operating temperature: -10 °C to 55 °C (14 °F to 131 °F) Storage temperature: -20 °C to 80 °C (-4 °F to 176 °F)
Dimensions	Approx. 107 x 70 x 49 mm (4 1/4" x 2 3/4" x 2")
Weight	Approx. 177 g (6 1/2 oz.)
REFLECTOR	
Type	90° roof prism
Accuracy (avg)	> 99 %
Dimensions	Approx. 100 x 41 x 35 mm (4" x 1 5/8" x 1 3/8")
Weight	Approx. 65 g (2 1/2 oz.)
BT MODULE	
Details	Class 1, wireless data transmission Transmitting power: 100 mW Transmission distance: up to 10 m (33 ft.) Complies with FCC rules part 15.247
LED indicators	1 LED for Bluetooth communication 3 LEDs for battery status
Power supply	Batteries 2x 1.5 V IEC LR6 ("AA") Operating time: 14 hours typical use (based upon an operating cycle of 50% measurement, 50% standby)
Temperature range	Operating temperature: -10 °C to 50 °C (14 °F to 122 °F)
Environmental protection	IP 65 (dustproof and water spray resistant) Relative humidity: 10% to 90%
Dimensions	Approx. 81 x 41 x 34 mm (3 1/8" x 1 11/16" x 1 5/16")
Weight	Approx. 133 g (4.7 oz.) including batteries and cable

tab@lign– Shaft alignment on mobile devices

tab@lign is the appropriate platform for the precise alignment of coupled machines using smart mobile devices. With the free tab@lign app alignment may be carried out by investing on the measurement equipment only.

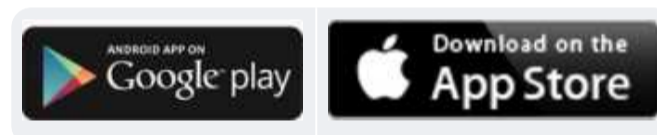


Application

- Horizontal machines
- Coupled shafts

Features

- 3-axis HD PSD sensor using MEMS inclinometer
- Wireless data transmission using Bluetooth
- Automatic measurement during shaft rotation (Active Clock)
- Automatic evaluation of alignment condition using smileys
- Monitoring of both horizontal and vertical Live Move corrections
- Graphical reports via email
- Free app for Android and Apple devices



Ordering information

Item No.	Variant
ALI 25.003	tab@lign, standard

The items delivered within the box are shown in the following overview.

Scope of supply

Content		
Item No.	Description	Details
ALI 21.900	sensALIGN 3 laser/sensor including dust cap	p. 281
ALI 4.621i	BT module	p. 282
ALI 3.905-0.28	BT module cable	
ALI 5.110	Reflector including dust cap	---
ALI 2.118	Compact chain-type bracket, 2x	p. 327
ALI 2.911	Cleaning cloth	---
ALI 3.589	Tape measure mm/inch	---
ALI 25.804	tabALIGN case	
DOC 25.100	Getting started	
ALI 9.511	sensALIGN 3 sensor inspection certificate	

Optional items may be ordered for this variant.

Optional accessories

Item No.	Description - optional accessories	Note	Details
Brackets			
ALI 2.112 SET-S	Compact magnetic bracket set, standard		p. 333
ALI 2.109 SET	Extra-thin bracket set		p. 337
ALI 2.109 LSET	Small extra-thin bracket set		p. 337
ALI 2.761 SET iS	Magnetic bolt hole bracket set for shaft and bore alignment		p. 347
Support posts, tension chains			
ALI 2.170	115 mm (4 1/2"½") support post, white	2 pieces required for each bracket	p. 379
ALI 2.171	150 mm (5 15/16") support, black	2 pieces required for each bracket	p. 379
ALI 2.173	250 mm (9 7/8") support post, green	2 pieces required for each bracket	p. 379
ALI 2.174	300 mm (11 13/16") support post, yellow	2 pieces required for each bracket	p. 379
ALI 2.114	300 mm tension chain		
ALI 2.116	1500 mm tension chain		
Miscellany			
ALI 5.020	External inclinometer		
ALI 5.106	Beam deflector		
ALI 2.191	Anti torsion bridge for 2 support posts		p. 371

TECHNICAL INFORMATION

Technical data

Parameter	tab@lign technical data
sensALIGN 3 LASER / SENSOR	
Measurement principle	Coaxial, reflected laser beam
Detector	Measurement area: unlimited, dynamically extendible Resolution: 1 µm Accuracy (avg): > 98%
Laser	Type: Semiconductor laser diode Wavelength (typical) 670 nm (red, visible) Safety class: Class 2 according to IEC 60825-1:2007 Beam power: < 1 mW Beam divergence: < 0.3 mrad Safety precautions: Avoid looking directly into laser beam!
Inclinometer	Measurement range: 0° to 360° Resolution: 0.1° Error at 22 °C (Ta): ± 0.30% read out
Environmental protection	IP 67 (submersible, dustproof) Relative humidity: 10% to 90%

Parameter	tab@lign technical data
Ambient light protection	Yes
Temperature range	Operating temperature: -10 °C to 55 °C (14 °F to 131 °F) Storage temperature: -20 °C to 80 °C (-4 °F to 176 °F)
Dimensions	Approx. 107 x 70 x 49 mm (4 1/4" x 2 3/4" x 2")
Weight	Approx. 177 g (6 1/2 oz.)
REFLECTOR	
Type	90° roof prism
Accuracy (avg)	> 99 %
Dimensions	Approx. 100 x 41 x 35 mm (4" x 1 5/8" x 1 3/8")
Weight	Approx. 65 g (2 1/2 oz.)
BT MODULE	
Details	Class 1, wireless data transmission Transmitting power: 100 mW Transmission distance: up to 10 m (33 ft.) Complies with FCC rules part 15.247
LED indicators	1 LED for Bluetooth communication 3 LEDs for battery status
Power supply	Batteries 2x 1.5 V IEC LR6 ("AA") Operating time: 14 hours typical use (based upon an operating cycle of 50% measurement, 50% standby)
Temperature range	Operating temperature: -10 °C to 50 °C (14 °F to 122 °F)
Environmental protection	IP65 (dustproof and water jets resistant) Relative humidity: 10% to 90%
Dimensions	Approx. 81 x 41 x 34 mm (3 1/8" x 1 11/16" x 1 5/16")
Weight	Approx. 133 g (4.7 oz.) including batteries and cable

Live Trend Add-on

With this add-on packages you can use an existing PRÜFTECHNIK system for **short-term monitoring of positional changes** during operation.

The Live Trend add-on packages are intended for the following alignment systems:

- ROTALIGN touch,
- ROTALIGN Ultra iS, with firmware 3.x



Features

- Continuous acquisition of positional changes during operation
- Precise measurement of thermal target values
- Live view of horizontal and vertical correction values at the coupling and at the machine feet
- Trend of horizontal and vertical correction values at the coupling and at the machine feet
- Flexible definition of markers for result viewing during the measurement
- Bluetooth module for wireless data communication between sensor and computer.

Ordering information

The following Live Trend add-on variants are available:

Item No.	Variant
ALI 4.005/2-10	Live Trend add-on, Magnet
ALI 4.005/2-20	Live Trend add-on, PERMAFIX

The scope of delivery results from the following overview:

Scope of delivery

Item No.	Description	Details	Variant	
			Magnet	PERMAFIX
ALI 14.310	Magnetic Bracket for Horizontal and Vertical Surfaces	p. 350	✓, 2x	✗
0 0739 1055	Hexagon wrench, DIN 911, size 2.5	---	✓	✗
ALI 2.193	Live Trend case for magnetic bracket	---	✓	✗
ALI 2.197	Live Trend ruggedized trolley case	---	✗	✓
ALI 2.190	PERMAFIX bracket	p. 359	✗	✓, 2x
ALI 2.194	Striking cone	p. 359	✗	✓
ALI 4.740 ¹	ROTAGIGN Ultra Shaft Expert registration certificate	---	✓	✓
DOC 04.100	Pocket guide, ROTALIGN Ultra Live Trend	---	✓	✓

¹For ROTALIGN Ultra iS with firmware "Lite" or "Standard" the firmware 'Advanced' is additionally required. The corresponding firmware certificate can be requested with part no. **ALI 4.741**.

Multi-Coupling add-on (sensALIGN 7)

With this add-on package you can use an existing PRÜFTECHNIK system for shaft alignment on a machine train with more than one coupling.

The Multi-Coupling add-on package is intended for the following alignment systems:

- ROTALIGN touch,
- OPTALIGN touch
- ROTALIGN Ultra iS, with firmware 3.x



sensALIGN 7 benefits

- Real-time measuring quality with intelliSWEEP™
- 7-axis measuring system with HD PSD, XXL detector
- Integrated vibration measurement
- Considered vibration influenced from the surroundings
- Integrated precision inclinometers with MEMS
- Laser-sensor communication via laser beam
- Wireless communication via Bluetooth
- Rechargeable Li-polymer battery of the latest generation

Ordering information

Item No.	Variant
ALI 50.900	Multi-Coupling add-on for shaft alignment with sensALIGN 7 (ROTAGLIGN touch, OPTALIGN touch)
ALI 40.900	Multi-Coupling add-on for shaft alignment with sensALIGN 7 (ROTAGLIGN Ultra iS)

The scope of delivery results from the following overview:

Scope of delivery

Item No.	CONTENT		Add-on	
	Description	Details	ALI 50.900	ALI 40.900
ALI 4.900I	sensALIGN 7 sensor	p. 297	✓	✓
ALI 4.910	sensALIGN 7 laser	p. 298	✓	✓
ALI 4.960	sensALIGN 7 rechargeable battery	---	✓	✓
ALI 4.651	sensALIGN 7 charger for rechargeable batteries, international	p. 299	✓	✓
ALI 4.922-2	sensALIGN 7 cable (ROTAGLIGN touch) , 2 m (78 3/4")	---	✓	✗
ALI 4.921-2	sensALIGN 7 cable, 2 m (78 3/4")	---	✗	✓
ALI 3.589	Tape measure, mm/inch	---	✓	✗
ALI 2.911	Cleaning cloth	---	✓	✗
ALI 2.113 SET	Compact chain-type bracket, set	p. 327	✗	✓

CONTENT			Add-on	
Item No.	Description	Details	ALI 50.900	ALI 40.900
ALI 2.118	Compact chain-type bracket	p. 327	✓, 2x	✗
ALI 2.170	115 mm (4 1/2") support post, white	p. 379	✓, 4x	✗
ALI 2.171	150 mm (5 15/16") support post, black	p. 379	✓, 4x	✗
ALI 2.173	250 mm (9 7/8") support post, green	p. 379	✓, 4x	✗
ALI 2.174	300 mm (11 13/16") support post, yellow	p. 379	✓, 4x	✗
0 0557 0391	Support post clip	---	✓, 8x	✗
ALI 2.114	300 mm tension chain	p. 328	✓, 2x	✗
ALI 4.905	sensALIGN 7 vibration measuring probe	p. 300	✓	✓
ALI 4.741-L	ROTALIGN Ultra Shaft Lite registration certificate	---	✗	✓
ALI 4.741	ROTALIGN Ultra Shaft Advanced registration certificate	---	✗	✓
ALI 4.740	ROTALIGN Ultra Shaft Expert registration certificate	---	✗	✓
ALI 9.500	sensALIGN 7 sensor inspection certificate	---	✓	✓
ALI 9.501	sensALIGN 7 laser inspection certificate	---	✓	✓
0 0739 1055	Hexagon wrench, DIN 911, size 2.5	---	✓	✓
ALI 4.826	Case for ROTALIGN Ultra iS Shaft Alignment	---	✗	✓
ALI 4.817	Case for Multi-Coupling add-on	---	✓	✗
DOC 40.100	Pocket guide, ROTALIGN Ultra Ultra iS Shaft	---	✗	✓
DOC 50.101	Pocket guide, ROTALIGN touch	---	✓	✗
DOC 51.101	Pocket guide, OPTALIGN touch	---	✓	✗
DOC 50.601	Safety and general information, touch device	---	✓	✗
ALI 17.451	USB pen drive with ARC 4.0 software and device documentation	---	✓	✓

In addition, optional accessories are available:

Optional accessories

Item No.	Description - optional accessories	Details
Brackets		
ALI 2.109 SET	Extra thin bracket set	p. 337
ALI 2.112 SET-S	Compact magnetic bracket, 2 pcs,, packaged	p. 333
ALI 2.220 SET	Universal magnetic sliding bracket, set	p. 353
ALI 2.230-1	Magnetic Sliding Bracket for Flanges	p. 351
ALI 2.450	Cardan shaft chain-type bracket with rotating arm, set	p. 330
ALI 2.460	Chain-type bracket for large diameter, set	p. 330
ALI 2.761 SETIS	Universal magnetic bracket for flanges and bores, set	p. 347
Miscellaneous		
ALI 4.921-5	sensALIGN 7 cable, 5 meters	---
ALI 4.410	Dust protection cap for ROTALIGN Ultra sensor socket	---
ALI 4.605	ROTALIGN Ultra battery housing	---
ALI 2.116	Tension chain, 1500 mm	---
ALI 2.191	Anti torsion bridge for 2 support posts	p. 371

Multi-Coupling add-on (sensALIGN 5)

With this add-on package you can use an existing ROTALIGN touch system for shaft alignment on a machine train with more than one coupling.



sensALIGN 5 benefits

- Concurrent monitoring of horizontal and vertical correction moves through single-laser technology and 2 position detectors
- Bluetooth integrated
- Precision built-in inclinometer
- Ambient light compensation
- Faster data transmission

Ordering information

Item No.	Variant
ALI 50.901	Multi-Coupling add-on for shaft alignment with sensALIGN 5

The scope of delivery results from the following overview:

Scope of delivery

Item No.	Description	Details	Quantity
ALI 3.901	sensALIGN 5 sensor	p. 295	1
ALI 3.910	sensALIGN 5 laser including batteries	p. 296	1
ALI 3.953	sensALIGN 5 sensor charger (universal)	p. 295	1
ALI 3.952	Micro USB cable (for charging the sensor)	p. 299	1
ALI 3.589	Tape measure, mm/inch	---	1
ALI 2.911	Cleaning cloth	---	1
ALI 2.118	Compact chain-type bracket	p. 327	2
ALI 2.170	115 mm (4 1/2") support post, white	p. 379	4
ALI 2.171	150 mm (5 15/16") support post, black	p. 379	4
ALI 2.173	250 mm (9 7/8") support post, green	p. 379	4
ALI 2.174	300 mm (11 13/16") support post, yellow	p. 379	4
0 0557 0391	Support post clip	---	8
ALI 2.114	300 mm tension chain	p. 328	2
ALI 9.516.DG	sensALIGN 5 sensor inspection certificate	---	1
ALI 9.514.DG	sensALIGN 5 laser inspection certificate	---	1
0 0739 1055	Hexagon wrench, DIN 911, size 2.5	---	1
ALI 4.817	Case for Multi-Coupling add-on	---	1

Item No.	Description	Details	Quantity
DOC 50.101	Pocket guide, ROTALIGN touch	---	1
DOC 51.101	Pocket guide, OPTALIGN touch	---	1
DOC 50.601	Safety and general information, touch device	---	1
ALI 17.451	USB pen drive with ARC 4.0 software and device documentation	---	1

In addition, optional accessories are available:

Optional accessories

Item No.	Description - optional accessories	Details
Brackets		
ALI 2.109 SET	Extra thin bracket set	p. 337
ALI 2.112 SET-S	Compact magnetic bracket, 2 pcs,, packaged	p. 333
ALI 2.220 SET	Universal magnetic sliding bracket, set	p. 353
ALI 2.230-1	Magnetic Sliding Bracket for Flanges	p. 351
ALI 2.460	Chain-type bracket for large diameter, set	p. 330
ALI 2.761 SETIS	Universal magnetic bracket for flanges and bores, set	p. 347
Miscellaneous		
ALI 2.116	Tension chain, 1500 mm	---
ALI 2.191	Anti torsion bridge for 2 support posts	p. 371

PULLALIGN – Precise belt pulley alignment

PULLALIGN is the standard tool for precise alignment of machines with belt drive. Ease of use and clear visualization of angle and offset errors reduce the work effort to a minimum.



Features

- Efficient and easy: One-person operation
- Time-saving: Displays parallel offset, vertical and horizontal angle corrections all at once with only one system set-up.
- No cross-check: Measure once and correct.
- Reduces vibration and belt noise
- Reduces downtime and energy costs
- Prolongs belt, pulley and bearing life.
- Higher precision due to laser beam reflection
- Affordable entry solution with targets

Ordering information




PULLALIGN is available in the following variants:

Item No.	Variant
ALI 2.002SET	PULLALIGN
ALI 2.003SET	PULLALIGN Lite
ALI 2.004 SET	PULLALIGN Lite 2

The scope of delivery results from the following overview:

Scope of delivery

Item No.	CONTENT		VARIANT		
	Description	Details	PULLALIGN	Lite	Lite 2
ALI 2.100	PULLALIGN Laser (red)	p. 291	✓	✓	✗
ALI 2.131	PULLALIGN Lite 2 Laser (green)	p. 291	✗	✗	✓
ALI 2.300	PULLALIGN Reflector	p. 291	✓	✗	✗
ALI 2.302	PULLALIGN Target		✗	✓ 3x	✗
ALI 2.303	PULLALIGN Adjustable Target		✗	✗	✓ 3x
ALI 2.801	AAA battery 1.5 V alkaline mangan		✓ 4x	✓ 4x	✓ 4x
ALI 2.805	PULLALIGN Pouch		✓	✓	✓
DOC 02.201	PULLALIGN Safety information		✓	✓	✓

Variant	Overview
PULLALIGN ALI 2.002SET	
PULLALIGN Lite ALI 2.003SET	
PULLALIGN Lite 2 ALI 2.004 SET	

Note: The scope of delivery of the variants is preset and cannot be changed.

Optional accessories

Item No.	Description - optional accessories	Notes	Details
ALI 2.803	PULLALIGN Case	For PULLALIGN, ALI 2.002SET variant only	

TECHNICAL INFORMATION

Technical data

Parameter	PULLALIGN technical data
LASER	
Wavelength	ALI 2.100: 630 - 680 nm (red) ALI 2.131: 505 - 535 nm (green)
Laser type	Semiconductor laser diode
Beam power	< 1.0 mW (acc. to IEC 60825-1:2014 condition 3)
Maximum beam power	< 3.0 mW
Beam divergence	< 1.0 mrad
Beam opening angle	70 °
Measuring distance	max. 10 m (32.8 ft)
Classification	Class 2 per IEC 60825-1:2014. The laser complies with the 21 CFR 1040.10 and 1040.11 standards, deviations excluded, per "Laser Notice No. 50" dated June 24, 2007.
Supply	4x AAA 1.5V battery
Operating time	ALI 2.100: 25 h ALI 2.131: 17 h
Operating temperature	-5 °C ... + 40 °C (23 .. 104 °F)
Fastening	Magnetic
Weight	ALI 2.100: approx. 300 g with batteries ALI 2.131: approx. 320 g with batteries
Reflector	
Accuracy	0.2 °
Dimensions, mirror	21 x 32 mm [13/16" x 1 1/4"]
Weight	approx 270 g [9.5 oz]
Fastening	Magnetic

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Shaft alignment systems, spare parts

touch device	294
sensALIGN 5	295
sensALIGN 7	297
AC power supply / Battery charger	299
Vibration measuring probe	300
ROTALIGN Ultra Computer	301

touch device



Features

- Capacitive touchscreen
- Interactive real 3-D format for machines
- Communication using WiFi, Bluetooth and RFID
- Built-in camera
- Robust, nonslip housing
- Industrial-proofed interfaces
- Long operating time with lithium-ion battery

TECHNICAL DATA

Parameter	touch device
CPU	1.0 GHz quad core ARM Cortex-A9
Memory	Memory: 2 GB RAM, 1 GB Internal Flash, 32 GB SD-Card Memory
Display	Projective capacitive multi-touchscreen Transmissive (sunlight-readable) backlit TFT color graphic display; optically bonded, protective industrial display, integrated light sensor for automated adjustment of the brightness to the display Resolution: 800 x 480 Pixel Dimensions: 178 mm (7") diagonal
LED indicators	3 LEDs for battery status 1 LED for WiFi communication
Power supply	Lithium-ion rechargeable battery 3.6 V / 80 Wh 12 hours typical use* AC adapter/charger: 12 V / 36 W; standard barrel connector *(based upon an operating cycle of 25% measurement, 25% computation, 50% 'sleep' mode)
External interface	USB host for memory stick USB slave for PC communication, charging (5 V DC / 1.5 A) RS-232 (serial) for sensor, RS-485 (serial) for sensor, I-Data for sensor, Bluetooth, WiFi, RFID integrated Integrated Wireless LAN IEEE 802.11 b/g/n up to 72.2 Mbps
Camera	5 MP
Environmental protection	IP 65 (dustproof and water jets resistant) Shockproof Relative humidity: 10% to 90%
Drop test	1 m (3 1/4 ft)
Temperature range	Operation / Charging: 0 °C to 40 °C (32 °F to 104 °F) Storage: -10 °C to 50 °C (14 °F to 122 °F)
Dimensions	Approx. 273 x 181 x 56 mm (10 3/4" x 7 1/8" x 2 3/16")
Weight	Approx. 1.88 kg (4.1 lbs)

sensALIGN 5



Features

- Simultaneous monitoring of horizontal and vertical correction moves through single-laser technology and 2 position detectors
- Bluetooth integrated
- Precision built-in inclinometer
- Ambient light compensation
- Faster data transmission
- Laser and sensor battery status warning
- Longer laser and sensor runtime

TECHNICAL DATA

Parameter	sensALIGN 5 sensor
Type	5-axis sensor: 2 planes (4 displacement axes and angle) Measurement area: unlimited, dynamically extendible (U.S. Patent 6,040,903) Resolution: 1 μm (0.04 mil) and angular 10 μRad Accuracy (avg): > 98% Measurement rate: approx. 20 Hz
LED indicators	1 LED for laser adjustment and battery status 1 LED for Bluetooth communication
Power supply	Lithium-Ion rechargeable battery: 3.7 V / 5 Wh Operating time: 10 hours (continuous use) Charging time: Using charger – 2.5 h for up to 90%; 3.5 h for up to 100% Using USB port – 3 h for up to 90%; 4 h for up to 100%
External interface	Integrated Bluetooth 4.1 Smart Ready wireless communication USB 2.0 Full Speed
Transmission distance	Up to 30 m [98 ft] direct line of sight
Environmental protection	IP 65 (dustproof and water jets resistant) Shockproof Relative humidity: 10% to 90%
Ambient light protection	Yes
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F) Charging: 0 °C to 40 °C (32 °F to 104 °F)
Dimensions	Approx. 105 x 74 x 58 mm (4 9/64" x 2 29/32" x 2 1/4")
Weight	Approx. 235 g (8 1/3 oz.)
Universal charger for sensALIGN 5 sensor	
Input	100 - 240 VAC / 50 - 60 Hz / 0.2 A
Output	5 VDC / 1 A / 5 W
Protection class	II / IP 52

Parameter	sensALIGN 5 sensor
Connector	Four plug adapters for North America, Japan, Australia, UK, EU
Device connection	USB cable
Temperature range	Operation: 0 ... +40°C (32 °F to 104 °F); Storage: -10 ..+80°C (14 °F to 176 °F)
Dimensions	approx. 71 x 41 x 31 mm [2 13/16" x 1 5/8" x 1 1/4"]

Parameter	sensALIGN 5 laser
Type	Semiconductor laser diode
Beam divergence	0.3 mrad
Beam power	< 1 mW
Wavelength	630 – 680 nm (red, visible)
Laser class	Class 2 according to IEC 60825-1:2007 The laser complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. Safety precaution: Do not look into laser beam
Power supply	Batteries: 2 x 1.5 V IEC LR6 ("AA") Operating time: 180 hours
Protection	IP 65 (dustproof and water jets resistant) Shockproof Relative humidity: 10% to 90%
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 105 x 74 x 47 mm (4 9/64" x 2 29/32" x 1 27/32")
Weight	Approx. 225 g (7 15/16 oz.)

sensALIGN 7



Features

- Real-time measuring quality with intelliSWEEP™
- 7-axis measuring system with HD PSD, XXL detector
- Integrated vibration measurement
- Considered vibration influenced from the surroundings
- Integrated precision inclinometers with MEMS
- Laser-sensor communication via laser beam
- Wireless communication via Bluetooth
- Rechargeable Li-polymer battery of the latest generation

TECHNICAL DATA

Parameter	sensALIGN 7 sensor
Measurement range	Unlimited, dynamically extendible (US. Patent 6,040,903)
Measurement resolution	1 µm
CPU	ARM Cortex™ M3 2 GB Flash Memory
LED indicators	4 LEDs for laser adjustment 1 LED for Bluetooth® communication 1 LED for battery status
Power supply	Operating time: 12 hours continuous use Battery: Lithium Polymer rechargeable battery 3.7 V / 1.6 Ah 6 Wh
External interface	Integrated Bluetooth® Class 1 wireless communication, RS232, RS485, IData
Vibration measurement	mm/s, RMS, 10Hz to 1kHz, 0 mm/s – 5000/f • mm/s² (f in Hertz [1/s])
Inclinometer	Resolution: 0.1° Error: ± 0,25 % full scale
Environmental protection	IP 65 (dustproof and water jets resistant) Shockproof Relative humidity: 10% to 90%
Ambient light protection	Yes
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Charging: 0 °C to 40 °C (32 °F to 104 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 103 x 84 x 60 mm (4 1/16" x 3 5/16" x 2 3/8")
Weight	Approx. 310 g (10.9 oz)

Parameter	sensALIGN 7 laser
Type	Semiconductor laser
Beam power	< 1 mW
Beam divergence	0.3 mrad
Inclinometer	Resolution: 0.1° Error: ± 0.25 % full scale
LED indicators	1 LED for laser transmission 1 LED for battery status
Power supply	Lithium Polymer rechargeable battery 3.7 V / 1.6 Ah 6 Wh AC adapter/charger: 5 V / 3 A Operating time: 70 hours continuous use
Environmental protection	IP 65 (dustproof and water jets resistant) Shockproof Relative humidity: 10% to 90%
Temperature range	Operation: -10 °C to 50 °C (14 °F to 122 °F) Charging: 0 °C to 40 °C (32 °F to 104 °F) Storage: -20 °C to 60 °C (-4 °F to 140 °F)
Dimensions	Approx. 103 x 84 x 60 mm (4 1/16" x 3 5/16" x 2 3/8")
Weight	Approx. 330 g [11.6 oz]

AC power supply / Battery charger

With this power device you can supply the computer with mains power (e.g. in the office) or charge the built-in rechargeable battery.



Features

- Protection class II
- Five replaceable plug adapters for various world regions:
 - North America, Japan
 - Australia
 - UK
 - EU
 - China

Power supply / Battery charger incl. five plug adapters.

Order information

Item No.*	Name	Included in the scope of delivery of ...
ALI 12.651-I	AC power supply / battery charger, International, 12V	OPTALIGN smart RS5 BT ROTALIGN smart RS5 EX CENTRALIGN Ultra
ALI 50.651	AC power supply / battery charger, International, 12V	ROTALIGN touch, OPTALIGN touch, VIBSCANNER 2
ALI 24.651	AC power supply / battery charger, International, 12V	SHAFTALIGN
ALI 4.651	Battery charger, International, 5V	ROTALIGN touch Multi-Coupling add-on for shaft alignment with sensALIGN 7

* The different item numbers are due to different device connectors

TECHNICAL INFORMATION

Technical Data

Parameter	12 V power supply / battery charger	5 V battery charger
Input	100 - 240 VAC / 50 - 60 Hz / 1.0 A	100 - 240 VAC / 50 - 60 Hz / 0.6 A
Output	12 VDC / 3.0 A / 36 W	5 VDC / 3.0 A / 15 W
Env. protection	II / IP 52	
Temperature range	0 ... +40°C (Operation); -40 ..+80°C (Storage)	
Dimensions	approx. 43 x 74 x 35 mm	

Vibration measuring probe

This measuring probe is used together with the sensALIGN 7 sensor for vibration measurement.



Features

- Stainless steel tube with plastic probe
- Direct coupling to the sensor housing for optimal signal transmission
- Stable fixation by clamping lever
- Measured variable: Vibration velocity
- Length: 100 mm

Order information

Item No.	Name
ALI 4.905	Vibration measuring probe

Note: The hole for the measuring tip on the sensALIGN 7 sensor is marked with a vibration symbol.

ROTALIGN Ultra Computer



Features

- High-end system for shaft alignment and geometric measurements
- Robust, nonslip housing
- Industrial-proofed interfaces
- Data exchange with sensor via Bluetooth connection
- Long operating time with lithium-ion battery

TECHNICAL DATA

Parameter	ROTALIGN Ultra computer technical data
CPU	Marvell XScale PXA270, 520 MHz
Memory	64 MB RAM, 64 MB internal Flash, 1024 MB Compact Flash memory
Display	5.7" TFT, transmissive (readable in sunlight), LED backlight Resolution: 640 x 480 pixels, VGA
Keyboard elements	Navigation cross with Back, Delete, and Menu buttons; Alphanumerical keyboard with function keys for dimensions, measuring, results
LED displays	4 LEDs for laser adjustment and alignment condition 2 LEDs for wireless communication and battery/rechargeable battery status
Power supply	Batteries: 6 x 1.5 V IEC LR14 („C“), optional Lithium-ion battery: 7.2 V / 6.0 Ah / 43.2 Wh Operating time: typically 25 hours (rechargeable battery) / 12 hours (battery) (assuming an operating cycle of 25 % measurement, 25 % data processing, and 50 % standby)
Interfaces	2x USB host 1x USB slave RS232 (serial) for sensor I-data connection for sensor Integrated radio communication, class 1, power 100 mW AC adapter/charge connection
Protection class	IP65 (dust- and splash-proof) Shock-resistant Relative air humidity: 10% ... 90%
Temperature range	Operation: 0°C ... +45°C [32°F ... 113 °F] Storage: -20°C ... +60°C [-4°F ... +140 °F]
Dimensions	approx. 243 x 172 x 61 mm
Weight	approx. 1 kg [35,3 oz] (without batteries)

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Systems for Machine Geometry Measurements

INCLINEO – High-precision Inclination Measurements	304
INCLINEO & ROTALIGN Ultra Hydropower	307
ROTALIGN Ultra iS - Flatness (LEVALIGN Add-on)	309
ROTALIGN Ultra iS – Add-on for Straightness Measurement	313
LEVALIGN expert – Geometrical 2D Measurements	314
CENTRALIGN Ultra – Bore Alignment	317
Long Range Laser	322

INCLINEO – High-precision Inclination Measurements

INCLINEO is a high-precision electronic inclinometer for absolute and relative measurements of surface profiles. In combination with easy-to-mount mounting bases, INCLINEO measures the inclination along edges, rails and even on vertical shafts. Its rotatable housing makes it possible to take measurements at any position, even upside down measurements are possible.



Applications

- Measurement of surface with any inclination
- Levelness, flatness, and parallelism of surfaces
- Inclination along edges and rails
- Plumbness of vertical shafts (e.g., hydroturbines)
- Parallelism of inclined surfaces
- Perpendicularity of surfaces

Order information

The following variants are available for INCLINEO:

Item No.	Variant
ALI 18.000	INCLINEO, including all mounting bases
ALI 18.003	INCLINEO with 3-point mounting base

The scope of delivery results from the following overview:

Scope of delivery

Item No.	Name	Details	VARIANT	
			All	3-Point
ALI 18.201	INCLINEO precision inclinometer without mounting base	p. 306	✓	✓
ALI 18.501-150	INCLINEO grooved mounting base for flat surfaces	p. 306	✓	✗
ALI 18.502-150	INCLINEO prism-shaped mounting base for curved surfaces	p. 306	✓	✗
ALI 18.500	INCLINEO 3-point mounting base	p. 306	✓	✓

CONTENT			VARIANT	
Item No.	Name	Details	All	3-Point
ALI 18.800	INCLINEO standard case		✓	✓
ALI 18.290	INCLINEO calibration certificate		✓	✓
90022	AA battery 1.5V		✓	✓
0 0621 0038	Screwdriver, PH1x35		✓	✓
0 0739 1056	Hexagon wrench, DIN 911, size 3		✓	✓
0 0739 1058	Hexagon wrench, DIN 911, size 5		✓	✓
ALI 9.182	INCLINEO pocket guide		✓	✓
ALI 13.620	ALIGNMENT Center USB dongle for Bluetooth PC data communication		✓	✓
ALI 17.452	USB pen drive with AC PC software GEO and device documentation		✓	✓

Note: The scope of delivery of the variants is preset and cannot be changed.


In addition, optional accessories can be ordered for every variant:

Optional accessories

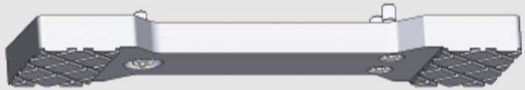


Item No.	Description - optional accessories	Details
ALI 18.500-L	INCLINEO extend range mounting base	
ALI 3.581-5	Sensor cable, 5m	
ALI 13.000-9	ALIGNMENT Center, INCLINEO device activation	p. 389
ALI 13.510	ALIGNMENT Center, Professional Geo	p. 389

TECHNICAL INFORMATION

Technical data

Parameter	INCLINEO technical data	
Measuring range	+/- 10°	
Resolution	0.0003° [1"]	
Error limits @ 22°C [Ta]	0.005 % full scale 0.03 % read-out	
Digital filter/average	3rd order with 0.3 / 1 / 3 Hz options	
Temperature range	Storage: -40 °C ...+85 °C [40 °F ...+185 °F] Operation: -10 °C ...+60 °C [14 °F ...+140 °F]	
Display	LCD display, 132 x 32 pixel with LED backlight	
Control elements	3 keys	
Communication	Wireless via integrated BT module	
External interface	RS-232 (serial) for computer and sensor; connector for dial gauge	
Power supply	AA battery, 2 pcs	
Battery status indicator	3 LEDs	
Data storage	Max. 999 measurements	

Overview, mounting bases for INCLINEO inclinometer

<p>ALI 18.501-150</p>  <p>ALI 18.502-150</p>  <p>ALI 18.500</p> 	<p>ALI 18.501-150: Grooved mounting base for flat surfaces.</p> <p>ALI 18.502-150: Prism-shaped mounting base for curved surfaces</p> <p>ALI 18.500: The 3-point mounting base can be used universally and is already pre-assembled on the INCLINEO inclinometer.</p>
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INCLINEO & ROTALIGN Ultra Hydropower

The combination of precision inclinometer and universal measuring system allows quick and efficient measurement and alignment of hydroturbines. The Hydropower application for ROTALIGN Ultra is tailored to the specific requirements of this sophisticated measurement and alignment application.



Features

- Overview for turbine alignment: static plumbness, radial run-out and leveling of axial bearing
- Precise, repeatable and documented measurements
- Less measurement errors
- Wireless communication
- Integrated creation of PDF reports
- High measuring quality though interpolation of readings

Order information

The following variants are available for INCLINEO & ROTALIGN Ultra Hydropower:

Item No.	Variant
ALI 4.050/2	INCLINEO with complete Hydropower configuration for ROTALIGN Ultra
ALI 4.056	INCLINEO with Hydropower add-on for ROTALIGN Ultra

The scope of delivery results from the following overview:

Scope of delivery

Item No.	CONTENT		VARIANT	
	Name	Details	Complete	Add-on
ALI 18.201	INCLINEO precision inclinometer without mounting base	p. 308	✓	✓
ALI 18.500	INCLINEO 3-point mounting base	p. 306	✓	✓
ALI 18.500-M	INCLINEO magnetic foot		✓	✓
ALI 18.290	INCLINEO calibration certificate		✓	✓
ALI 4.202	ROTALIGN Ultra computer	p. 301	✓	✗
ALI 4.768	ROTALIGN Ultra Hydropower firmware registration certificate		✓	✓
ALI 4.603	ROTALIGN Ultra battery		✓	✗
ALI 4.201	Foot for ROTALIGN Ultra computer		✓	✗
ALI 12.651-I	Power supply/battery charger, international	p. 299	✓	✗
ALI 3.589	Tape measure, mm/inch		✓	✗
ALI 12.502-2	PC cable, USB		✓	✗
ALI 12.503	Peripheral cable, USB		✓	✗

CONTENT			VARIANT	
Item No.	Name	Details	Complete	Add-on
ALI 3.581-2	Sensor cable, 2m		✓	✗
ALI 4.818	Case for ROTALIGN Ultra Hydropower	---	✓	✓
90022	AA battery 1.5V		✓	✓
0 0621 0038	Screwdriver, PH1x35		✓	✓
0 0739 1056	Hexagon wrench, DIN 911, size 3		✓	✓
0 0739 1058	Hexagon wrench, DIN 911, size 5		✓	✓
ALI 9.182	INCLINEO pocket guide	---	✓	✓
ALI 17.452	USB pen drive with AC PC software GEO and device documentation		✓	✓


Note: The scope of delivery of the variants is preset and cannot be changed.

In addition, optional accessories can be ordered for every variant:

Optional accessories

Item No.	Description - optional accessories	Details
ALI 18.500-L	INCLINEO mounting base for large ranges	
ALI 3.581-5	Sensor cable, 5m	
ALI 13.620	USB dongle for Bluetooth PC data communication	
ALI 13.000-9	ALIGNMENT Center, INCLINEO device activation	p. 389
ALI 13.510	ALIGNMENT Center, Professional Geo	p. 389

TECHNICAL INFORMATION

Parameter	INCLINEO technical data	
Measuring range	+/- 10°	
Resolution	0.0003° [1"]	
Error limits @ 22°C [Ta]	0.005 % full scale 0.03 % read-out	
Digital filter/average	3rd order with 0.3 / 1 / 3 Hz options	
Temperature range	Storage: -40 °C ...+85 °C [40 °F ...+185 °F] Operation: -10 °C ...+60 °C [14 °F ...+140 °F]	
Display	LCD display, 132 x 32 pixel with LED backlight	
Control elements	3 keys	
Communication	Wireless via integrated BT module	
External interface	RS-232 (serial) for computer and sensor; connector for dial gauge	
Power supply	AA battery, 2 pcs	
Battery status indicator	3 LEDs	
Data storage	Max. 999 measurements	

ROTALIGN Ultra iS - Flatness (LEVALIGN Add-on)

ROTALIGN Ultra iS is a versatile alignment and measurement system with intelligent solutions for standard and special applications. The **LEVALIGN - Flatness** add-on contains all required components and program functions to upgrade an already existing ROTALIGN Ultra system for geometrical measurements. Measuring components of the **LEVALIGN expert** and the **LEVALIGN Ultra iS** series can be selected.



LEVALIGN expert features

- Spinning laser with motorized drive and self-leveling
- Ideal for large measuring segments
- Large detector area (70 mm)
- Sensor with reading display and zero position.
- Compatible with sensALIGN 7 sensor

LEVALIGN Ultra iS features

- Cost-effective solution for flatness application
- Robust laser with manual leveling and rotatable beam exit
- Ideal for short measuring segments
- Compatible with sensALIGN 7 sensor

Order information

The following LEVALIGN add-on variants are available for ROTALIGN Ultra iS:

Item No.	Variant
ALI 40.006	LEVALIGN Ultra iS add-on, flatness
ALI 4.046	LEVALIGN expert add-on, flatness

The scope of delivery results from the following overview:

Scope of delivery

Item No.	CONTENT		Variant	
	Name	Details	LEVALIGN Ultra iS	LEVALIGN expert
ALI 4.749	LEVALIGN expert flatness certificate		✓	✓
ALI 6.910-IS	LEVALIGN laser, 635 nm	p. 312	✓	✗
90109	Block battery, 9V		✓	✗
ALI 9.482	Inspection certificate for LEVALIGN Ultra laser		✓	✗
0 0739 1054	Hexagon wrench, DIN 911, size 2	---	✓	✗
0 0739 1056	Hexagon wrench, DIN 911, size 3	---	✓	✗
ALI 6.773	Plunger for Flatness Measurement	p. 376	✓	✗
ALI 4.501-IS	Magnetic foot holder for laser and sensor	p. 344	✓	✗
ALI 4.821	Case for LEVALIGN Ultra iS		✓	✗
ALI 6.960-LI	Battery charger for LEVALIGN expert laser, International	p. 311	✗	✓
ALI 6.930-LIB	LEVALIGN expert laser with wireless data transmission (Bluetooth)	p. 311	✗	✓
ALI 6.940	LEVALIGN expert sensor	p. 311	✗	✓
ALI 9.613	Inspection certificate for LEVALIGN expert laser	---	✗	✓
ALI 9.614	Inspection certificate for LEVALIGN expert sensor	---	✗	✓
ALI 6.961	Magnetic base	p. 377	✗	✓
ALI 6.962	Base plate	p. 377	✗	✓
ALI 6.963-1	Sensor holder, long	p. 377	✗	✓
ALI 6.964-1	Sensor holder, short	p. 377	✗	✓
ALI 6.985	Case for LEVALIGN expert (wireless / BT)	---	✗	✓
ALI 17.452	USB pen drive with AC PC software GEO and device documentation	p. 389	✓	✓

In addition, optional accessories are available:


Optional accessories


Item No.	Description - optional accessories	Notes	Details
Laser accessories			
ALI 6.956	Tripod stand for LEVALIGN laser		p. 366


Item No.	Description - optional accessories	Notes	Details
ALI 6.958	LEVALIGN Expert Laser tripod adapter	for LEVALIGN expert add-on only. Adapter for ground-level installation	p. 366
ALI 6.954	Rotatable magnetic bracket for flatness measurements	for LEVALIGN Ultra iS add-on only	p. 370
ALI 6.959	LEVALIGN Ultra laser mounting plate for tripod	for LEVALIGN Ultra iS add-on only	p. 366
PENTALIGN for measurements of perpendicularity, parallelism			
ALI 6.982	PENTALIGN case		
ALI 6.911	Adjustable rotatable pentaprism	including base part and prism head	
ALI 6.920-IS	PENTALIGN adjustment sensor, 635 nm		
ALI 6.921	Adjustable sliding bracket for pentaprism		
ALI 6.924	Pentaprism adapter plate for tripod mounting with screws		
ALI 6.929	Pentaprism "L" mounting plate		
ALI 6.926	LEVALIGN Ultra setup target	for LEVALIGN Ultra iS add-on only	

TECHNICAL INFORMATION

Technical data

Parameter	LEVALIGN expert technical data	
LASER		
Wavelength	635 nm (red)	
Laser class	II (<1mW)	
Range	100 meters (Ø 200 meters) [328 ft, Ø 656 ft]	
Leveling	Vertical or horizontal (can be switched off)	
Self-leveling range	±5 %	
Direction adjustment	±5 %	
Rotating speed	max. 800 RPM	
Total error	< ±25 µm + ±24 µm/m incl. conical + step + leveling error)	
Power supply	Internal rechargeable battery or external power supply	
Operating time	16 hours	
Dimensions	Ø 130 mm x 270 mm	
Weight	3.4 kg [7 1/2 lb]	
Charger	Input: 100 - 240 VAC / 50 - 60 Hz / 340 mA Output: 12 VDC / 1200 mA / 14.4 W	

Parameter	LEVALIGN expert technical data	
SENSOR		
Resolution	0.01 mm	
Accuracy	±0.02 mm	
Measuring range	70 mm [2 3/4"]	
Zero-point adjustment	70 mm	
Internal memory	2600 points	
Communication	Bluetooth	
Power supply	2 x AA batteries	
Dimensions	214 x 70 x 40 mm [[8 7/16" x 2 3/4" x 1 9/16"]	
Weight	0.62 kg [21.9 oz]	

Parameter	LEVALIGN Ultra iS technical data	
LASER		
Wavelength	635 nm (red)	
Laser protection class	Class 2, FDA 21 CFR 1000 and 1040	
Beam diameter	approx. 5 mm	
Beam divergence	< 0.2 mrad	
Beam power	< 1mW	
Adjustment accuracy	± 0.02 mm/m	
Measuring range	20 m radius; range is unlimited if the InfiniSplice™ function of the ALIGNMENT CENTER flatness application is used	
Power supply	9V battery IEC 6LR61 (alkaline or lithium)	
Operating time	50 hours continuously depending on battery type	
Temperature range	-5°C to + 50°C [23 °F to +122°F]	
Weight	approx 2.8 kg [98.8 oz]	

ROTALIGN Ultra iS – Add-on for Straightness Measurement

ROTALIGN Ultra iS is a versatile measurement system with intelligent solutions for machine geometry measurements. The **Straightness Measurement** add-on contains all required measuring fixtures and program functions to upgrade an already existing ROTALIGN Ultra iS system for such applications.



Typical applications

- Straightness of machine beds
- Positioning of bearing pedestals and shaft support
- Alignment of rail and track segments
- Curvature measurement of rams, control levers, and extrusion presses
- Alignment of rolled sections

The scope of delivery of the "Straightness Measurement for ROTALIGN Ultra iS" add-on package (ALI 40.007) results from the following overview:

Scope of delivery

CONTENT - ALI 40.007		
Item No.	Name	Details
ALI 4.745	Registration certificate for straightness measurement firmware	
0 0739 1056	Hexagon wrench, DIN 911, size 3	
ALI 6.773	Plunger for Flatness Measurement	p. 376
ALI 4.501-IS	Magnetic foot holder for laser and sensor, 2x	p. 344
ALI 4.819	Case for ROTALIGN Ultra iS Straightness	
DOC 40.202	Manual, ROTALIGN Ultra iS Straightness Measurement	
ALI 17.452	USB pen drive with AC PC software GEO and device documentation	p. 389

LEVALIGN expert – Geometrical 2D Measurements

LEVALIGN expert is a universal and high-precision laser measuring system for different geometrical measurement tasks in the industry sector.



Typical applications (examples)

- Flatness and parallelism of wind tower segment flanges on wind turbines
- Levelness of machine foundations
- Flatness and straightness measurement in ship building
- Flatness, straightness, parallelism, perpendicularity and levelness of machine components.

Features

- Easy operation using automated an self-leveling spinning laser
- PC software for data analysis and reporting
- Powerful software functions to compare two surfaces, e.g., in a press, and to extend the measuring range to large surfaces
- Wireless communication.

The scope of delivery results from the following overview:

Scope of delivery

CONTENT - ALI 4.040/2		
Item No.	Name	Details
ALI 4.202	ROTALIGN Ultra computer	p. 301
ALI 4.603	ROTALIGN Ultra battery	---
ALI 4.201	Stand for ROTALIGN Ultra computer	---
ALI 4.749	LEVALIGN expert flatness certificate	---
ALI 12.651-I	Power supply/battery charger for computer, international	p. 299
ALI 6.960-LI	Battery charger for LEVALIGN expert Laser, International	
ALI 6.930-LIB	LEVALIGN expert laser with wireless data transmission (Bluetooth)	p. 316
ALI 6.940	LEVALIGN expert sensor	p. 316
ALI 9.613	Inspection certificate for LEVALIGN expert laser	---
ALI 9.614	Inspection certificate for LEVALIGN expert sensor	---
ALI 12.502-2	PC cable, USB, 2 m	---
ALI 12.503	Peripheral cable, USB	---
ALI 6.961	Magnetic base	p. 377

CONTENT - ALI 4.040/2

Item No.	Name	Details
ALI 6.962	Base plate	p. 377
ALI 6.963-1	Sensor holder, long	p. 377
ALI 6.964-1	Sensor holder, short	p. 377
ALI 6.985	Case for LEVALIGN expert (wireless / BT)	---
DOC 69.100	Quick reference guide, Menu settings for LEVALIGN expert laser	---
DOC 6.800	Operating instructions, Getting started with LEVALIGN expert	---
ALI 2.911	Cleaning cloth	---
ALI 3.589	Tape measure, mm/inch	---
ALI 17.452	USB pen drive with AC PC software GEO and device documentation	p. 389

In addition, optional accessories are available:

Optional accessories

Item No.	Description - optional accessories	Notes	Details
Laser accessories			
ALI 6.956	Tripod stand for LEVALIGN laser		p. 366
ALI 6.958	LEVALIGN Expert Laser tripod adapter	Adapter for ground-level installation	p. 366
PENTALIGN for measurements of perpendicularity, parallelism			
ALI 6.982	PENTALIGN case		
ALI 6.911	Adjustable rotatable pentaprism	including base part and prism head	
ALI 6.920-IS	PENTALIGN adjustment sensor, 635 nm		
ALI 6.921	Adjustable sliding bracket for pentaprism		
ALI 6.924	Pentaprism adapter plate for tripod mounting with screws		
ALI 6.929	Pentaprism "L" mounting plate		
Accessories for Scribed Line measurements			
ALI 6.967	LEVALIGN Expert floor stand with rotatable sensor holder		p. 365
ALI 6.966	LEVALIGN expert sensor holder for posts 8mm		p. 373

TECHNICAL INFORMATION

Technical data

Parameter	LEVALIGN expert technical data	
LASER		
Wavelength	635 nm (red)	
Laser class	II (<1mW)	
Range	100 meters (Ø 200 meters) [328 ft, Ø 656 ft]	
Leveling	Vertical or horizontal (can be switched off)	
Self-leveling range	±5 %	
Direction adjustment	±5 %	
Rotating speed	max. 800 RPM	
Total error	< ±25 µm + ±24 µm/m incl. conical + step + leveling error)	
Power supply	Internal rechargeable battery or external power supply	
Operating time	16 hours	
Dimensions	Ø 130 mm x 270 mm	
Weight	3.4 kg [7 1/2 lb]	
Charger	Input: 100 - 240 VAC / 50 - 60 Hz / 340 mA Output: 12 VDC / 1200 mA / 14.4 W	
SENSOR		
Resolution	0.01 mm	
Accuracy	±0.02 mm	
Measuring range	70 mm [2 3/4"]	
Zero-point adjustment	70 mm	
Internal memory	2600 points	
Communication	Bluetooth	
Power supply	2 x AA batteries	
Dimensions	214 x 70 x 40 mm [[8 7/16" x 2 3/4" x 1 9/16"]	
Weight	0.62 kg [21.9 oz]	

CENTRALIGN Ultra – Bore Alignment

CENTRALIGN Ultra is an universal and high-precision laser measuring system for different geometrical measurement tasks in the industry sector.



Typical applications (examples)

- Bores in internal combustion engines, compressors, pumps, gearboxes and stern tubes
- Gas and steam turbines

Features

- Measurement of the bore center: Determination of the eccentricity error
- Ease of use, light-weight components, and measuring procedures for special applications
- Display of necessary minimum corrections
- Practical wireless data communication.

more...

- Measurement of magnetic and non-magnetic bores with diameters from 120 mm to above 4000 mm [4 3/4" to 13 ft 1 7/16"].
- Patented universal measuring fixtures with rotating sensor holder improve measuring accuracy and handling.
- Powerful incorporated splice function for highest flexibility and extended measuring range
- Consideration of the positions of reference line, rotor sag and thermal expansion
- Live Move function for real-time monitoring of alignment corrections.
- Special, large bore bracket for measurements with and without housing
- Simple and fast measuring process up to 40 meters (130 feet)

Order information

The following variants are available for CENTRALIGN Ultra:

Item No.	Variant
ALI 4.060	CENTRALIGN Ultra RS5, Standard
ALI 4.061	CENTRALIGN Ultra RS5, Add-on for ROTALIGN Ultra iS

The scope of delivery results from the following overview:

Scope of delivery

CONTENT			Variant	
Item No.	Name	Details	ALI 4.060	ALI 4.061
ALI 4.202	ROTALIGN Ultra computer	p. 320	✓	✗
ALI 4.603	ROTALIGN Ultra battery	---	✓	✗
ALI 4.201	Foot for ROTALIGN Ultra computer	---	✓	✗
ALI 12.651-I	Power supply/battery charger for computer, international	p. 299	✓	✗
ALI 12.502-2	PC cable, USB, 2m	---	✓	✗
ALI 12.503	Peripheral cable, USB	---	✓	✗
ALI 4.748	CENTRALIGN Ultra Expert certificate	---	✓	✓
ALI 3.900	sensALIGN 5 sensor	p. 320	✓	✓
ALI 9.513	Inspection certificate for sensALIGN 5 sensor	---	✓	✓
ALI 4.621I	BT module	p. 320	✓	✓
ALI 3.910	sensALIGN 5 laser	p. 320	✓	✓
0 0739 1055	Hexagon wrench, DIN 911, size 2.5	---	✓	✓
ALI 3.981-2	Sensor cable, 2m	---	✓	✓
ALI 3.905-0.5	Cable for BT module, 0.5 m	---	✓	✓
ALI 4.501-IS	Magnetic Foot Holder for Laser and Sensor	p. 344	✓	✓
ALI 2.719	Universal pointer bracket for sensALIGN 5 sensor	p. 361	✓	✓
ALI 2.773-110	Plunger, 110 mm		✓	✓
ALI 2.177	Post 70 mm	p. 379	✓	✓
ALI 2.170	Post 115 mm, white	p. 379	✓	✓
ALI 2.171	Post 150 mm, black		✓	✓
ALI 2.172	Post 200 mm, gray	p. 379	✓	✓
ALI 2.778	UPB anti-torsion bridge (recommended for posts with $L \geq 200$ mm)	p. 371	✓	✓
0 0739 1056	Hexagon wrench, size 3		✓	✓
0 0739 1057	Hexagon wrench, size 4		✓	✓
ALI 4.837	CENTRALIGN Ultra standard case	---	✓	✓
DOC 04.203	CENTRALIGN Ultra RS5 operating instructions	---	✓	✓
ALI 2.911	Cleaning cloth	---	✓	✗
ALI 3.589	Tape measure, mm/inch	---	✓	✗
ALI 17.452	USB pen drive with AC GEO software and device documentation	p. 389	✓	✓

In addition, optional accessories are available:

Optional accessories

Item No.	Description - optional accessories	Notes	Details
Add-ons for universal pointer bracket (UPB)			
ALI 2.760 SET	Add-on set for bores up to 810 mm diameter, magnetic and non-magnetic		p. 361
Accessories for universal pointer bracket (UPB)			
ALI 2.2117	Post 100 mm		p. 379
ALI 2.715	Universal mounting bridge		p. 357
Laser for long measuring segments (< 50 meters)			
ALI 4.120	Long range laser 675nm, set		p. 322
Misc.	CENTRALIGN mounting bridge	for laser and control sensor. Ranges: 210 ... 1740 mm; 1 or 2 mounting bridges in case	p. 355
LBB - Large Bore Bracket (Measuring fixture for measurement of large diameters)			
ALI 3.400	LBB rotation frame, set	Contains the main components of the LBB measuring fixture and is the basis for all versions.	p. 341
Misc.	Telescopic arms and extension posts, sets	Allows setup of the measuring fixture across a large range (0.5 ... 4.2 m)	p. 341
ALI 3.115-C	Mounting components for Tops-on configuration	Enables mounting with closed measurement object (Tops-on)	p. 341
ALI 3.115-O	Mounting components for Tops-off configuration	If the top part of the machine can be removed for the alignment measurement (Tops-off), this mounting option offers high flexibility in axial direction.	p. 341

TECHNICAL INFORMATION

ROTALIGN Ultra computer technical data

Parameter	ROTALIGN Ultra computer technical data
CPU	Marvell XScale PXA270, 520 MHz
Memory	64 MB RAM, 64 MB internal Flash, 1024 MB Compact Flash memory
Display	5.7" TFT, transmissive (readable in sunlight), LED backlight Resolution: 640 x 480 pixels, VGA
Keyboard elements	Navigation cross with Back, Delete, and Menu buttons; Alphanumerical keyboard with function keys for dimensions, measuring, results
LED displays	4 LEDs for laser adjustment and alignment condition 2 LEDs for wireless communication and battery/rechargeable battery status
Power supply	Batteries: 6 x 1.5 V IEC LR14 („C“), optional Lithium-ion battery: 7.2 V / 6.0 Ah / 43.2 Wh Operating time: typically 25 hours (rechargeable battery) / 12 hours (battery) (assuming an operating cycle of 25 % measurement, 25 % data processing, and 50 % standby)
Interfaces	2x USB host 1x USB slave RS232 (serial) for sensor I-data connection for sensor Integrated radio communication, class 1, power 100 mW AC adapter/charge connection
Protection class	IP65 (dust- and splash-proof) Shock-resistant Relative air humidity: 10% ... 90%
Temperature range	Operation: 0°C ... +45°C [32°F ... 113 °F] Storage: -20°C ... +60°C [-4°F ... +140 °F]
Dimensions	approx. 243 x 172 x 61 mm
Weight	approx. 1 kg [35,3 oz] (without batteries)

sensALIGN 5 sensor system technical data

Parameter	sensALIGN 5 sensor system technical data
sensALIGN 5 sensor	
Type	5-axis sensor: 2 planes (4 axes and angle) Measurement range: user-defined, dynamically extensible (U.S. Patent 6,040,903) Resolution: 1 µm (position) and 10 µRad (angle) Accuracy (average): > 98% Measurement rate: approx. 20 Hz
Power supply	Via BT module
Protection class	IP65 (dustproof and water jets resistant)
Protection from ambient light	Yes
Temperature range	Operation: -10°C ... +60°C [14°F ... +140 °F] Storage: -20°C ... +60°C [-4°F ... +140 °F]

Parameter	sensALIGN 5 sensor system technical data
Dimensions	approx. 105 x 74 x 53 mm
Weight	approx 220 g [7.8 oz]
BT MODULE	
Type	External module for sensor supply and wireless communication via Bluetooth, class 1 Complies with FCC Directive Part 15.247
Transmission power	100 mW
Transmission range	up to 100 m with direct line of sight
LED displays	1 LED for wireless communication, 3 LEDs for battery status
Power supply	Batteries: 2 x 1.5 V IEC LR6 ("AA")
Operating time	Typically 14 hours (assuming an operating cycle of 50 % measurement and 50 % standby)
Temperature range	Operation: -10°C ... +50°C [14°F ...+122 °F]
Protection class	IP65 (dustproof and water jets resistant)
Dimensions	approx. 81 x 41 x 34 mm
Weight	approx. 133 g [4,7 oz] including batteries and cables
sensALIGN 5 laser	
Type	Semiconductor laser diode
Beam divergence	0.3 mrad
Beam power	< 1 mW
Wavelength	630 – 680 nm (red, visible)
Laser class	Class 2 according to IEC 60825-1:2007 The laser complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007. Safety precaution: Do not look into laser beam
Power supply	Batteries: 2 x 1.5 V IEC LR6 ("AA")
Protection	IP65 (dustproof and water jets resistant) Shockproof Relative humidity: 10% to 90%
Temperature range	Operation: +10°C ... +50°C [50°F ...+122°F] Storage: -20°C ... +60°C [-4°F ...+140 °F]
Dimensions	Approx. 105 x 74 x 47 mm (4 9/64" x 2 29/32" x 1 27/32")
Weight	Approx. 225 g (7 15/16 oz.)

Long Range Laser

The Long Range Laser is used for measuring turbines over a measuring distance of up to 50 meters. With the aid of an universal mounting base plate, the Long Range Laser can be safely and securely installed on a tripod, on the magnetic feet supplied or on the mounting bridges available as accessories.



Features

- Laser for long measuring distances (< 50 m / 164 ft)
- Universal mounting base plate
- Angle and offset adjustment via micrometer screws
- Mounting in horizontal or vertical position
- Power supply via battery or Li-ion rechargeable battery (option)
- Robust transport case

The Long Range Laser is available in two versions with different wavelengths:


- **ALI 4.120:** Long Range Laser (675 nm) for ROTALIGN sensors
- **ALI 4.120-IS:** Long Range Laser (635 nm) for sensorALIGN sensors

The scope of delivery for the two sets ALI 4.120 and ALI 4.120-IS is shown in the following overview:

Scope of delivery

CONTENT- ALI 4.120 / ALI 4.120-IS		
Item no.	Name	Details
ALI 4.100 or ALI 4.100-IS	Long Range Laser (675 nm) or Long Range Laser (635 nm)	p. 323
ALI 4.112	Mounting base plate for Long Range laser	
ALI 4.500	Magnetic foot, 2 x	p. 374
ALI 16.600	Battery box for Long Range Laser, Alkaline Mangan battery incl	
ALI 4.507-2	Power cable for Long Range Laser, 2m	
ALI 4.836	Long Range Laser case	
ALI 9.494	Inspection certificate for Long Range laser 670/635 nm,	
DOC 04.101	Long Range Laser pocket guide	
0 0739 1058	5 mm Allen key	
0 0739 1059	6 mm Allen key	
0 0741 6069	Bolt, DIN 912 M06X16 VA, 2x	
0 0741 6071	Bolt, DIN 912 M06X25 VA, 4x	
0 0741 6089	Bolt, DIN 912 M08X12 VA, 2x	
Overview: Case with scope of supply (Mounting base plate is not shown)		

CONTENT- ALI 4.120 / ALI 4.120-IS

Item no.	Name	Details
		

Optional accessories

Item no.	Name
ALI 16.610	Long Range laser Power Box, Lithium Ion Battery <100Wh

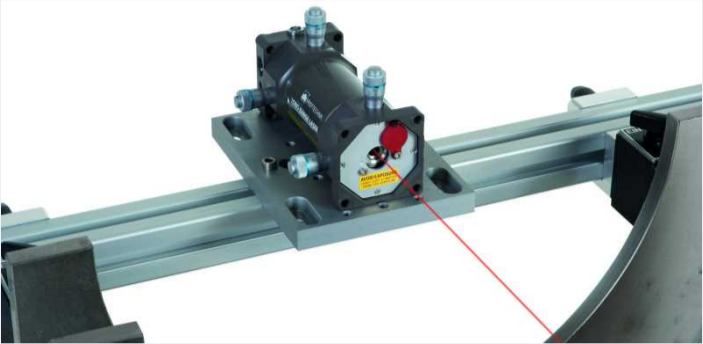
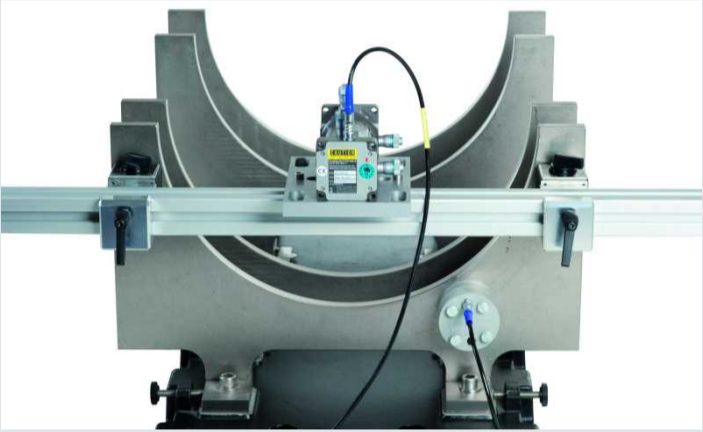
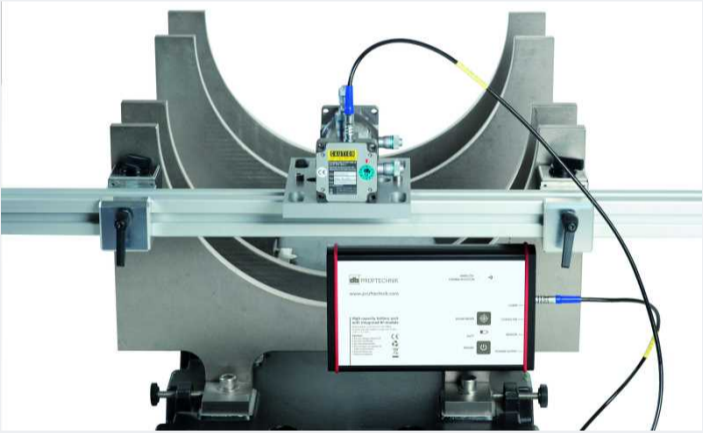
TECHNICAL INFORMATION

Technical data

Parameter	Long Range Laser
Type	GaAlAs semiconductor laser
Beam divergence	0.2 mrad
Wavelength, typical	675 nm for ALI 4.100 or 635 nm for ALI 4.100-IS (red, visible)
Beam diameter	8 mm
Beam power	< 1 mW
Safety class	Class 2, FDA 21 CFR 1000 and 1040
Laser range	up to 50 m [164 ft] depending on sensor
Adjustment range	Offset + 3 mm in X und Y Angular + 3° mm in X und Y
Adjustment accuracy	0.002 mm
Power supply	9 V block battery or LiIon rechargeable battery (optional)
Temperature range	-10°C to +50°C / [14°F to 122 °F] (Operation) -20°C to +80°C / [-4°F to 176 °F] (Storage)
Environmental protection	Electrical components IP 65 Mechanical components IP 20
Dimensions	approx. 90 x 90 x 150 mm [3 9/16" x 3 9/16" x 5 7/8"]

Parameter	Long Range Laser
Weight	approx. 820 g [28.9 oz]

Mounting example and power options

	Mounting	
Mounting bridge with magnetic feet		<p>Long Range Laser horizontally screwed onto mounting base plate; Mounting base plate screwed onto universal mounting bridge (ALI 2.715); Mounting bridge fixed to the machine component with magnetic feet.</p>
Battery box		<p>Long Range laser connected to battery box ALI 16.600 via power cable ALI 4.507-2.</p>
Power box (Li-Ion)		<p>Long Range laser connected to power box ALI 16.610 via power cable.</p>

Brackets

Brackets selection guide	326
Chain-type Brackets	327
Measuring Fixtures for Cardan Shafts	330
Compact Magnetic Bracket	333
Sensor Bracket for Small Bore Measurements	335
Extra-thin Brackets	337
Universal Holder	339
Large Bore Bracket - LBB	341
Magnetic Foot Holder for Laser and Sensor	344
Universal Magnetic Bracket	347
Magnetic Bracket for Horizontal and Vertical Surfaces	350
Magnetic Sliding Bracket for Shafts and Flanges	351
Universal Magnetic Sliding Bracket	353
CENTRALIGN Mounting Bridge	355
Universal Mounting Bridge	357
PERMAFIX Bracket	359
Universal Pointer Bracket - UPB	361
Floor stand with rotatable sensor holder	365
Tripod stand for LEVALIGN Laser	366
Rotatable Magnetic Bracket	370
Anti-torsion Bridges	371
Mounting Adapters	373
Plunger for Flatness Measurement	376
Sensor holder for flatness measurements (LEVALIGN expert)	377
Posts	379

Brackets selection guide

Shaft Alignment and Bore Measurement

Application	Shaft Alignment					Bore Measurement			
Measuring task	Coupling		Cardan	Live Trend		Center		Center + Concentricity	
Mounting	magnetic	nonmagn.	---	magn.	nmagn.	magn.	nmagn.	magn.	nmagn.
Item no. / Page									
ALI 2.118 / p. 327		++							
ALI 2.461 / p. 330		++	++						
ALI 2.451 / p. 330		+	++						
ALI 2.112 / p. 333	++			++					
ALI 2.109 / p. 337		++							
ALI 2.109L / p. 337		++							
ALI 2.894 / p. 330			++						
ALI 2.875 / p. 330			++						
ALI 14.310 / p. 350				++					
ALI 2.230-1 / p. 351	++								
ALI 2.220 / p. 353	++			+		++		++	
ALI 2.761 IS / p. 347	++			++		+		++	
ALI 2.190 / p. 359				+	++				
ALI BV26 / p. 339	+	++		++	++	++			
ALI 2.719 / p. 361						+	+	++	++
ALI BV25 / p. 335						+	++		
ALI 3.400 / p. 341						+	+	++	++
ALI 3.241-xx / p. 355						+	+	++	++
ALI 2.715 / p. 357						++		++	

++ : intended use + : optional use

Levelness and Straightness

Application	Levelness	Straightness
Item no. / Page		
ALI 6.956 / p. 366	++	++
ALI 6.967 / p. 365		++
ALI 4.501-IS / p. 344	++	++
ALI 6.773 / p. 376	++	++
ALI 6.954 / p. 370	++	++
ALI 6.963-1 / p. 377	++	++
ALI 6.963-1 / p. 377	++	++

Chain-type Brackets

Chain-type brackets are the standard brackets for shaft alignment. They can be used universally and ensure secure and stable mounting of the measuring components on the shaft or coupling flange.



Features

- Quick and easy mounting
- Robust and high-quality design
- Exact bores
- Torsion-resistant body

Order information


The following chain-type brackets are available:

Item No.	Name	Scope of delivery
ALI 2.118	Compact chain-type bracket	Body Tension chain 600 mm Post 200 mm, 2x Hexagon wrench, size 4
ALI 2.113 SET	Compact chain-type bracket, set with 2 pcs	Body, 2x Tension chains 300 mm / 600 mm, 2 each Posts 115, 150, 200, 250, 300 mm, 4 each Hexagon wrench, size 4, 2x Roll-up case
ALI 2.461	Chain-type bracket for large shaft diameter	Body, large Tension chain 1500 mm Post 300 mm, 3x Anti-torsion bridge, 2x
ALI 2.451	Cardan shaft chain-type bracket with rotating arm	Body, large Tension chain 1500 mm Post 300 mm, 3x Anti-torsion bridge, 2x

Instructions: An anti-torsion bridge is required for posts longer than 200 mm.
The maximum post length for the compact chain-type bracket amounts to 300 mm.

In addition, optional accessories and/or individual components are available as spare part:

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	available in 10 different lengths	p. 379
Tension chains			
ALI 2.114	Tension chain 300 mm [11 13/16"]		
ALI 2.115	Tension chain 600 mm [23 5/8"]		
ALI 2.116	Tension chain 1500 mm [59 1/16"]		
Body			
ALI 2.117	Body for compact chain-type bracket	incl. hexagon wrench	
ALI 2.452	Body, rotating arm		
ALI 2.462	Body, large		
Miscellaneous			
ALI 2.191	Anti-torsion bridge for 2 posts		p. 371
ALI 2.463	Anti-torsion bridge for 3 posts		p. 371
ALI 5.020	External inclinometer		
ALI 2.244-IS	Offset adapter for brackets, short posts	axial offset: 18 mm	p. 373
			

TECHNICAL INFORMATION

To ensure stable mounting of the chain-type bracket, it must be possible to securely brace the chain around the circumference of the shaft/coupling. Here, the length of the chain and - for large diameters - the body are essential.

Shaft/coupling flange diameter	Tension chain		
	300 mm	600 mm	1500 mm
D_{max}	100 mm [3 15/16"]	200 mm [7 7/8"]	500 mm (400 mm*) [19 11/16" (15 3/4"*)]
D_{min}	20 mm [13/16"]		50 mm (20 mm*) [1 15/16" (13/16")]*

* with compact chain-type bracket

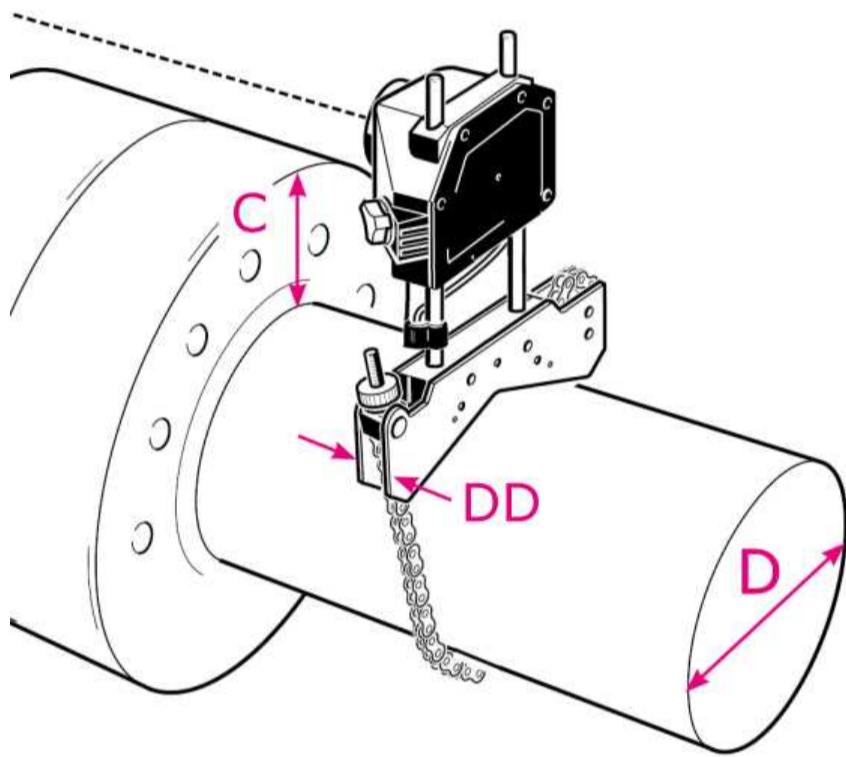
The space on the shaft/flange must be sufficient to mount the chain-type bracket. **Design depth DD** of the body is essential here.

Design depth	Body		
	Compact	Large	Rotating arm
DD_{min}	20 mm [13/16"]	35 mm [1 3/8"]	60 mm [2 3/8"]

Clearance C is the distance of the shaft surface to the coupling rim and defines the height, from which the laser beam hits above the coupling. Length L of the post is essential here:

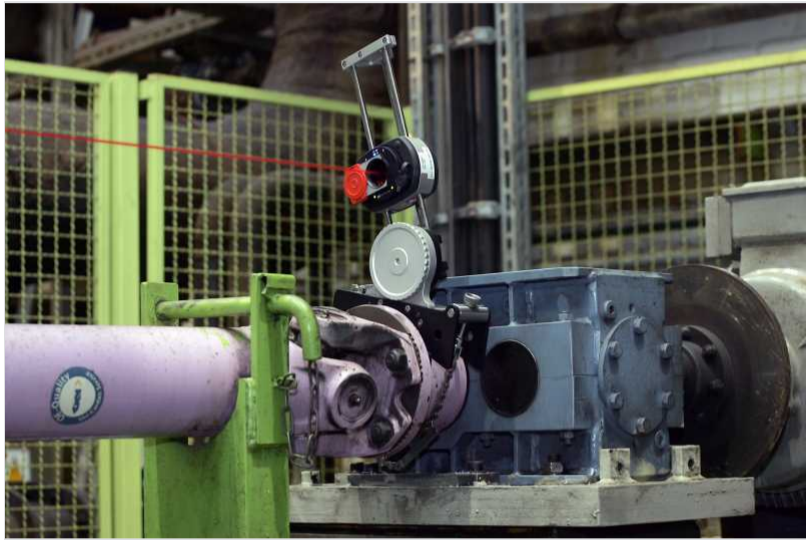
	Clearance
C_{max}	L ... L - 30 mm*

* for minimum shaft diameter



Measuring Fixtures for Cardan Shafts

Four measuring fixtures are available for cardan shaft alignment. The selection criteria are based on the circumstances on site and the used measuring equipment consisting of sensor system and computer firmware.



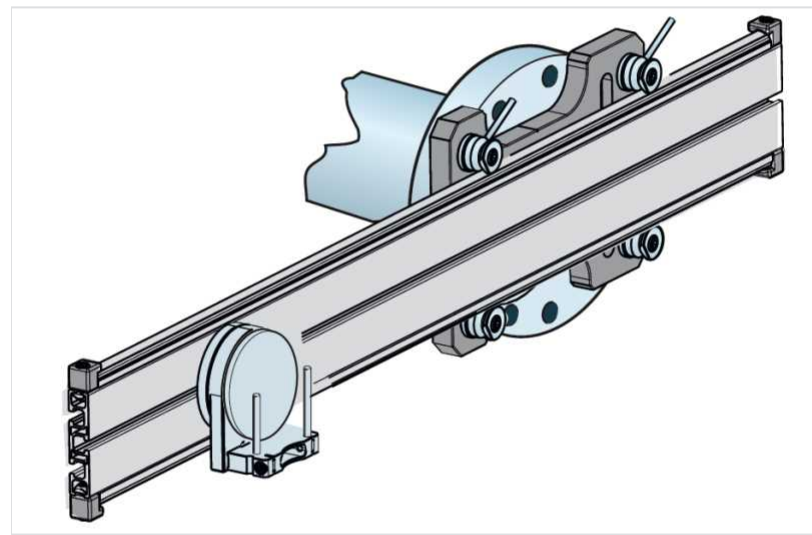
Cardan shaft chain-type bracket with rotating arm, ALI 2.450

Features

- Measurement with installed and removed cardan shaft
- Shaft offset up to 900 mm [35 7/16"] possible
- Ideal for limited rotation angle in installed condition
- Compatible with all PRÜFTECHNIK sensors



Chain-type bracket for large diameter, ALI 2.460



Cardan shaft bracket, ALI 2.893 SETIS

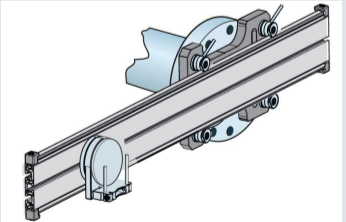
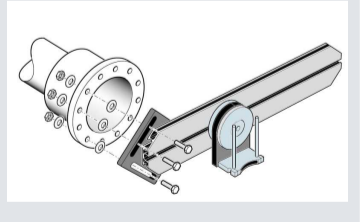
Order information

Item No.	Measuring fixture
ALI 2.450	Cardan shaft chain-type bracket with rotating arm, set
ALI 2.460	Chain-type bracket for large diameter, set
ALI 2.893 SETIS	Cardan shaft bracket, set
ALI 2.874 SETIS	Cardan shaft bracket Lite, set

The scope of delivery results from the following overview:

Scope of delivery

CONTENT			Measuring fixture	
Item No.	Name		ALI 2.450	ALI 2.460
ALI 2.451	Cardan shaft chain-type bracket with rotating arm	p. 327	✓	✗
ALI 2.461	Chain-type bracket for large diameter	p. 327	✓	✓, 2x
ALI 2.178	Post 400 mm	p. 327	✓, 6x	✓, 6x
ALI 2.179	Post 495 mm	p. 327	✓, 6x	✓ 6x
ALI 5.020	External inclinometer , 2 pcs	p. 327	✓ 2x	✓ 2x
0 0739 1056	Hexagon wrench, DIN 911, size 3		✓ 2x	✗
0 0739 1055	Hexagon wrench, DIN 911, size 2.5		✗	✓ 2x
ALI 2.480	Case		✓	✓
DOC 99.201	Operating instructions, Getting started		✓	✓
				

CONTENT			Measuring fixture	
Item No.	Name		ALI 2.893 SETIS	ALI 2.874 SETIS
ALI 2.894	Extension arm for cardan shaft bracket		✓	✗
ALI 2.896	Case for cardan shaft bracket		✓	✗
ALI 2.875	Extension arm for cardan shaft bracket lite		✗	✓
ALI 2.876	Case for cardan shaft bracket lite		✗	✓
DOC 99.201	Operating instructions, getting started		✓	✓
				

TECHNICAL INFORMATION

The following overview shows, which measuring fixture is compatible with which measuring equipment and on-site circumstances.

Property	Measuring fixture	
	ALI 2.450	ALI 2.460
sensALIGN 7 sensor system	✓	✓
sensALIGN 5 sensor system	✗	✗
OPTALIGN sensor system	✗	✗
ROTALIGN touch	✓	✓
ROTALIGN Ultra Shaft v 3.03	✓	✓
ROTALIGN Ultra iS Shaft Advanced / Expert	✓	✓
ROTALIGN Ultra iS Shaft Standard	✓	✓
Cardan shaft installed	✓	✓
Maximum shaft offset in mm	400	300

Property	Measuring fixture	
	ALI 2.893 SETIS	ALI 2.874 SETIS
sensALIGN 7 sensor system	✓	✓
sensALIGN 5 sensor system	✓, with Multipoint	✓, with Multipoint
OPTALIGN sensor system	✓, with Multipoint	✓, with Multipoint
ROTALIGN touch	✓, with intelliPOINT	✓, with intelliPOINT
ROTALIGN Ultra Shaft v 3.03	✓	✓
ROTALIGN Ultra iS Shaft Advanced / Expert	✓, with intelliPOINT	✓, with intelliPOINT
ROTALIGN Ultra iS Shaft Standard	✓, with Multipoint	✓, with Multipoint
Cardan shaft installed	✗	✗
Maximum shaft offset in mm	900	350

Compact Magnetic Bracket

This bracket allows quick and stable mounting of the sensor system onto any ferromagnetic machine components. During shaft alignment, it is mounted on the face on the coupling flange. During bore measurement, it is used as laser holder.



Features

- Quick and easy mounting
- Stable magnetic coupling
- Low design depth
- Including posts (115 mm)
- Compatible with current sensor system


Order information

Item No.	Name	Scope of delivery
ALI 2.112	Compact Magnetic Bracket	Body, magnetic bracket Post 115 mm, 2x Hexagon wrench, size 3
ALI 2.112 SET-S	Compact magnetic bracket, 2 pcs,	Body, magnetic bracket, 2x Post 115 mm, 4x Hexagon wrench, size 3 In cardboard box with foam insert

In addition, optional accessories and/or individual components are available as spare part:

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	available in 10 different lengths	p. 379

Item No.	Name	Notes	Details
ALI 2.244-IS	Offset adapter for brackets, short posts 	axial offset: 18 mm	p. 373

TECHNICAL INFORMATION

Application	Magnetic bracket	
Shaft alignment		Magnetic bracket mounted on coupling flange
Dimensions	45 x 85 x 10 mm [1 3/4" x 3 3/8" x 3/8"] (L x W x H), body	

Sensor Bracket for Small Bore Measurements

This sensor bracket is used for measuring small bores. The bracket is bolted to a suitable rotating arbor and pushed into the bore. To measure, the entire setup with installed sensor is rotated in the bore.



Features

- Compact, lightweight design
- Standard sensor bracket for cylindrical bores
- Bore diameter: 70 to 130 mm [2 3/4" to 5 1/8"]
- Mounting in bore using rotatable mandrel
- Beam opening and two axial post positions allow sensor installation in forward and backward direction
- Including posts (100 mm)
- Compatible with current sensor system

Order information

Item No.	Name	Scope of delivery
ALI BV25	Sensor bracket with beam opening	Bracket pre-assembled with 100 mm post

A respectively adjusted rotatable mandrel is required to mount the sensor bracket in the bore. The mandrel is produced to customer specifications.





Sensor bracket and rotatable mandrel with plastic sliding elements.

Order information for custom arbor

Item No.	Name	Diameter	Usable length	Sliding elements
omitted	Rotatable mandrel for sensor bracket with beam opening	Specify the bore diameter in millimeters. To ensure stable mounting, the bore diameter must be constant across the entire usable length.	Specify the length in millimeters, the mandrel can be pushed into the bore.	Specify the material of the sliding elements: Select stainless steel if the bore is scratch-resistant. Otherwise specify plastic material.

TECHNICAL INFORMATION

Mounting options and dimensions

Mounting option	 <p>Sensor points into beam opening</p>	 <p>Sensor is positioned opposite the beam opening</p>
Application	<p>The laser beam hits the sensor through the bore. Mandrel and sensor bracket are respectively fitted with a beam opening. The posts are mounted in the front position to accommodate the sensor.</p> <p>Measurement mode: Multi-point or static measurement</p>	<p>The laser beam hits the sensor in front of the bore. The posts are mounted in the rear position to accommodate the sensor.</p> <p>Measurement mode: Multi-point or static measurement</p>
Dimensions	<p>76 x 54 x 95 mm [3 " x 2 1/8" x 3 3/4"] (L x W x H), without posts</p>	

Extra-thin Brackets

These brackets have a low design depth (8 mm) and represent an ideal alternative to chain-type brackets for very limited spaces between coupling and housing.




Features

- Quick and easy mounting
- Low space requirement: 8 mm
- Mounting with threaded rods and quick-mounting slip nuts
- Permanently installed posts for laser and sensor

Order information

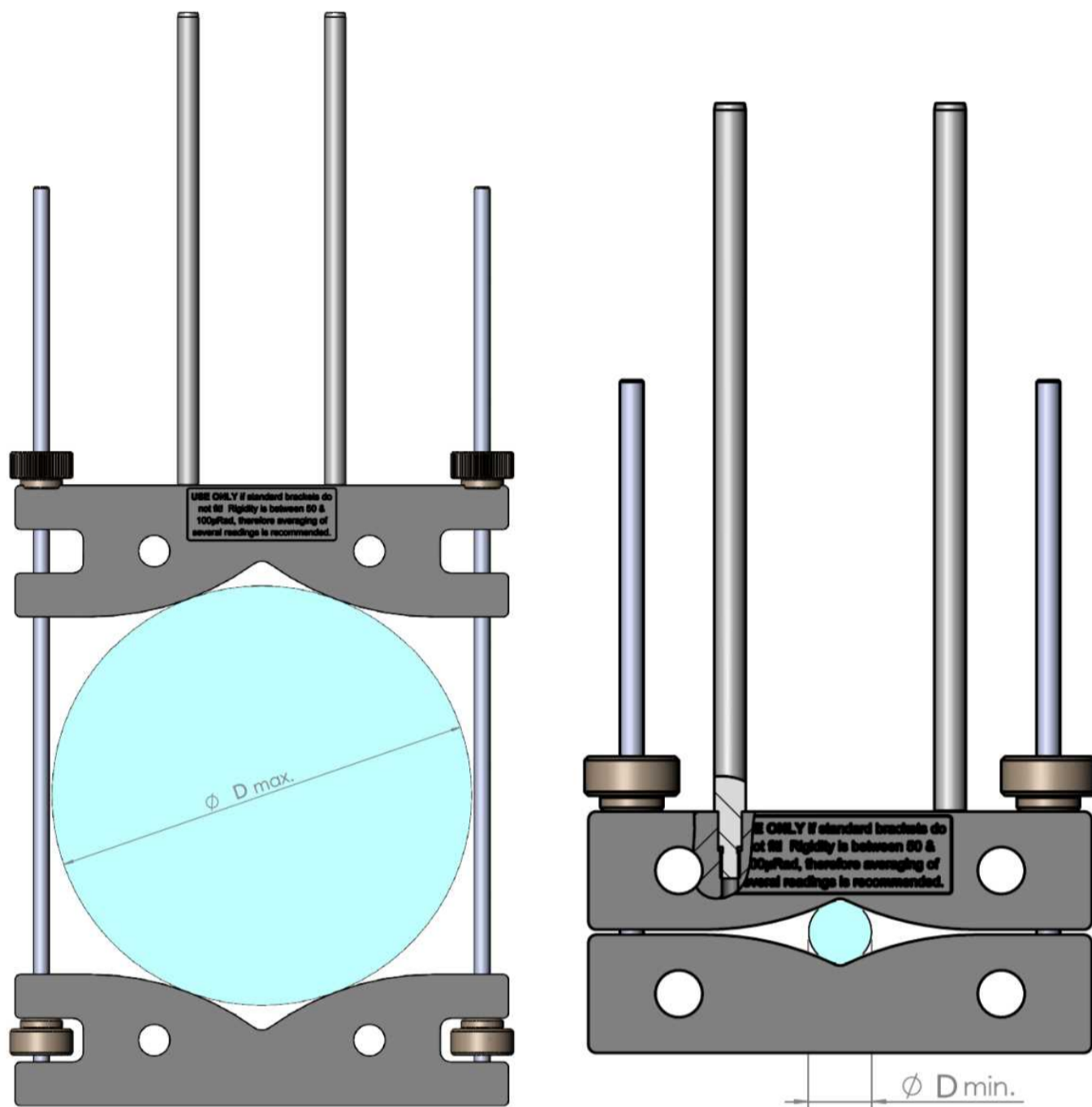
Extra-thin brackets are available in the following sets:

Item No.	Name	Scope of delivery	
ALI 2.109 SET	Extra-thin bracket, set	Extra-thin bracket, 2x Threaded rod, long, 4x Small, extra-thin bracket, 2x Case	
ALI 2.109LSET	Small, extra-thin bracket, set	Small, extra-thin bracket, 2x Case	

Instructions: Only use this brackets if there is not enough space for chain-type brackets.

TECHNICAL INFORMATION

To ensure stable mounting, it must be possible to securely bolt the bracket onto the shaft. Here, the length of the threaded rods and the size of the body are essential.



Shaft diameter	Bracket	
	Extra-thin	Small, extra-thin
D_{max}	160 mm [6 5/16"]	96 mm [3 3/4"]
D_{min}	40 mm [1 9/16"]	16 mm [5/8"]

Clearance C is the distance of the shaft surface to the coupling rim and defines the height, from which the laser beam hits above the coupling. The length of the post is essential here: $C_{max} = L = 150 \text{ mm [5 7/8"]}$

Universal Holder

This compact holder can be diversely used for shaft alignment, measurement of positional changes (Live Trend) and bore measurements. It offers numerous mounting options for couplings, machine housings, and bores. Design depth and length of the posts are adjusted to the dimensions of the current sensor system (laser and sensor).



Features

- Compact, lightweight design
- Ideal for Shaft Alignment and Live Trend
- Universal mounting options
- Quick, easy, and flexible application
- Including posts (100 mm)
- Compatible with current sensor system
- Dimensions: 80 x 80 x 40 mm [3 1/8" x 3 1/8" x 1 9/16"], without posts

Order information

Item No.	Name	Scope of delivery
ALI BV26	Universal holder without laser beam opening	Holder pre-assembled with 100 mm post Hexagon wrench, size 3





The following components are available as accessories:

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	available in 10 different lengths	p. 379
ALI BV26.MP	Three-point magnetic holder	For mounting on magnetic components with flat surfaces. Diameter magnetic holder: 58 mm [2 5/16"]	p. 340
ALI BV26.RE	Magnetic Z-adapter, 3 pcs	For mounting on magnetic components with flat surfaces. Maximum range of Z-adapter: 120 mm [4 3/4"]	p. 340
ALI BV26.xx	Spanner socket for hexagon screws	For mounting on existing screws with hexagonal profile. Available for across flats AF (xx): 17 / 19 / 24 / 30 / 36 / 41 / 46 / 55.	p. 340
ALI BV27.xx.yy	Rotatable mandrel	For mounting in smaller bores. Available for different bore diameters (xx) and lengths (yy).	p. 340

TECHNICAL INFORMATION

Mounting options

Option	Illustration	Application
<p>Three-point magnetic holder, ALI BV26.MP</p>		<p>Live Trend: Holder is secured magnetically on the machine housing.</p> <p>Shaft alignment: Holder is secured magnetically on the coupling flange.</p>
<p>Magnetic Z-adapter, ALI BV26.RE</p>		<p>Live Trend: Holder is secured magnetically on the machine housing.</p> <p>Shaft alignment: Holder is secured magnetically on the coupling flange.</p>
<p>Spanner socket, ALI BV26.xx</p>		<p>Live Trend: Holder is mounted to screw connection on the machine housing</p>
<p>Rotatable mandrel, ALI BV27.xx.yy</p>		<p>Bore measurement: Holder is precisely fitting into the bore and rotated for measurements.</p> <p>Measurement mode: Multi-point or static measurement</p>

Large Bore Bracket - LBB

The LBB measuring fixture is used to measure alignment and roundness of concentric components, such as guide vane carriers or diaphragms in a turbine. The LBB measuring fixture features a modular design and can be adjusted continuously across a wide range.



Features

- Measurement of open (tops-off) or closed (tops-on) machines
- Range from 545 mm to 4230 mm [1 ft 3/4 " to 13 ft 10 9/16"]
- Axial measuring segment of up to 40 meters [131 ft]
- Magnetic and non-magnetic mounting
- Quick and easy mounting

Order information

The LBB measuring fixture consists of three main components: measuring head, telescopic arms and mounting options.

	Mounting option: Tops-off	Mounting option: Tops-on
Main components 1 to 3		
Typical setup		
	in example without ground contact	in example with magnetic foot mounting

1: Measuring head

Item No.	Name
ALI 3.400	LBB rotation frame, set

2: Telescopic arms and extension posts

Item No.	Name
ALI 3.116-SS	LBB telescopic arms, short (3x), range: 545 mm to 900 mm
ALI 3.116-SM	LBB telescopic arms, short (3x) and medium (4x), range: 545 mm bis 1900 mm
ALI 3.116-SL	LBB telescopic arms, short (3x), medium (4x) and long (4x), range: 545 mm to 3230 mm
ALI 3.116-SX	LBB telescopic arms, short (3x), medium (4x), long (4x), and extension (4x), range: 545 mm to 4230 mm
ALI 3.116-MM	LBB telescopic arms, medium (4x), range: 850 mm to 1900 mm
ALI 3.116-ML	LBB telescopic arms, medium (4x) and long (4x), range: 850 mm to 3230 mm
ALI 3.116-MX	LBB telescopic arms, medium (4x), long (4x), and extension (4x), range: 850 mm to 4230 mm
ALI 3.116-LL	LBB telescopic arms, long (4x), range: 1300 mm to 3230 mm
ALI 3.116-LX	LBB telescopic arms, long (4x), and extension (4x), range: 1300 mm to 4230 mm

3: Mounting option

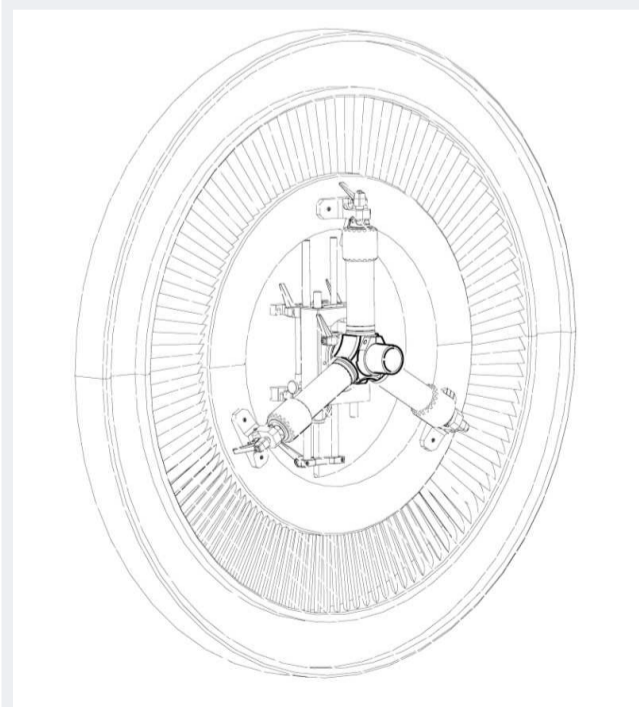
Item No.	Name
ALI 3.115-C	LBB mounting components for Tops-on configuration
ALI 3.115-O	LBB mounting components for Tops-off configuration

In addition, optional accessories are available:

Optional accessories

LBB 3-point carrier - ALI 3.298

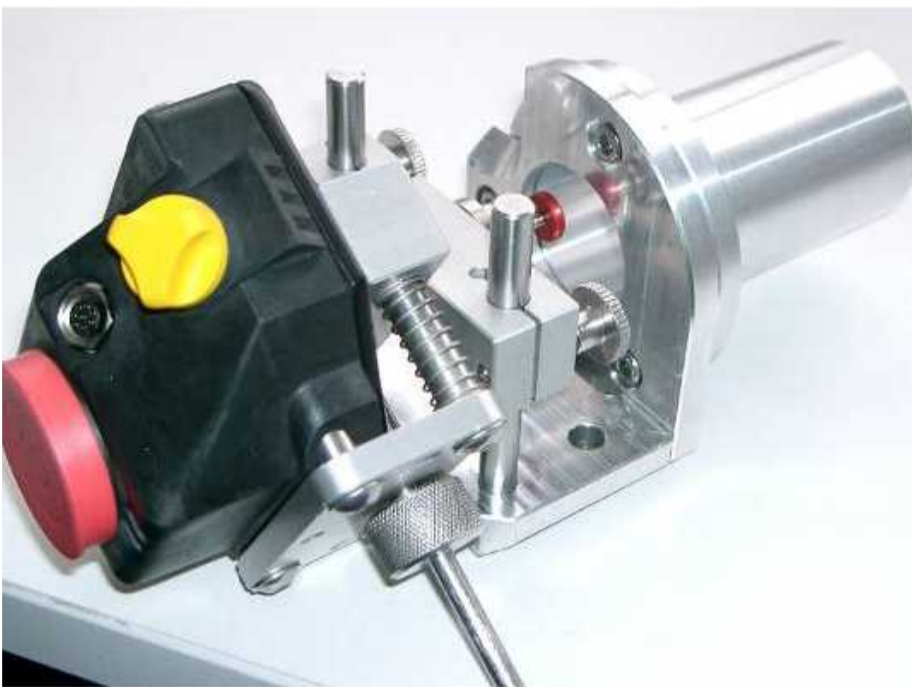
The LBB 3-point carrier replaces the standard rotation frame carrier (ALI 3.299) in the Tops-on configuration, when the third telescopic arm must be mounted to the upper bearing shell.



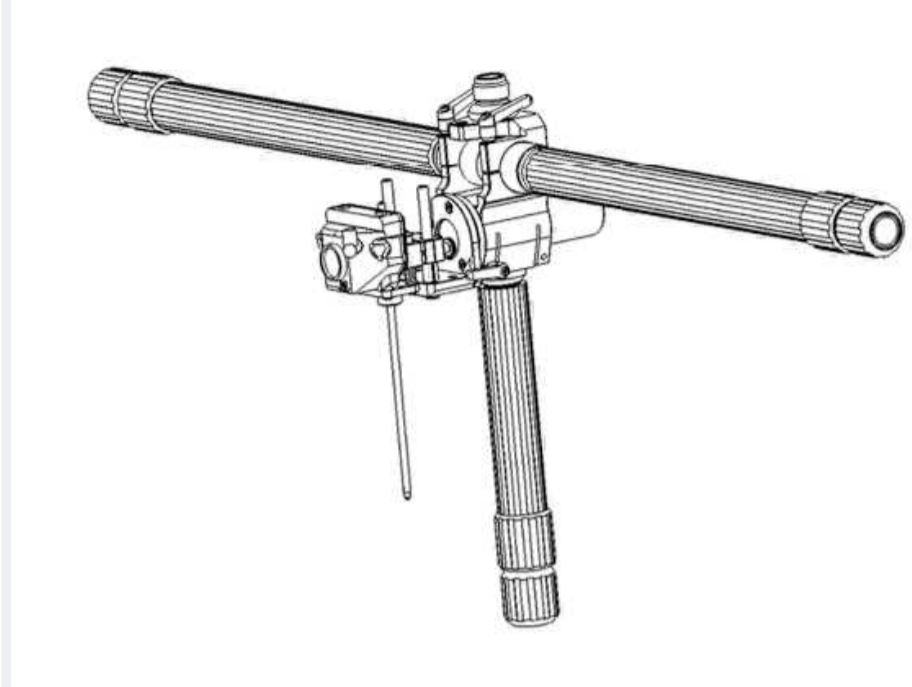
Tops-on configuration with LBB 3-point carrier

UPB to LBB adapter - ALI 3.274

This adapter replaces the standard rotation frame in the LBB when measuring smaller bores (> 120 mm).



LBB adapter with sensor



LBB adapter mounted on measuring head carrier

LBB Sensor rotation frame with 130 mm extension - ALI 3.389-130

This sensor rotation frame has a longer axis of rotation than the standard frame and thus offers a larger adjustment range in the axial direction.



LBB Sensor rotation frame



sensALIGN 5 sensor and RF module mounted on LBB Sensor rotation frame

Magnetic Foot Holder for Laser and Sensor

This versatile holder is used to measure straightness and flatness of objects in the industry sector. The magnetic foot can be securely mounted on flat and curved surfaces (e.g., shafts) using its prismatic contact surface.



Features

- Stable magnetic mounting on surfaces and shafts
- Magnetic force can be activated via rotary switch
- Universal mounting options
- Quick, easy and flexible application
- Including posts (100 mm)
- Compatible with current sensor and laser components

Order information

Item No.	Name	Scope of delivery
ALI 4.501-IS	Magnetic Foot Holder for Laser and Sensor	Magnetic foot with post (100 mm and 50 mm) Universal mounting adapter with two mounting positions for laser and sensor Post 100 mm, 2x Hexagon wrench, size 3

Optional accessories

Item No.	Name	Notes	Details
ALI 6.773	Flatness plunger	For point scanning of flat surfaces	p. 376
ALI 6.966	LEVALIGN Expert sensor holder for posts 8 mm	To mount the LEVALIGN Expert sensor on the magnetic foot bracket in horizontal or vertical position. The scope of delivery contains longer posts (150 mm)	p. 373
Various	Posts	available in 10 different lengths	p. 379
ALI 3.194-IS	Universal mounting adapter with two mounting positions for laser and sensor	Spare part	p. 374
ALI 4.500	Magnetic foot	without post; spare part	p. 374

TECHNICAL INFORMATION

Mounting options and dimensions

Mounting	Magnetic foot bracket	
Foot with post		Standard setup, if no structural restrictions are present
Ground sensor		Beam guidance close to the measuring surface; posts in the second, front mounting position
Foot without post		Low height, compact design

Mounting	Magnetic foot bracket	
LEVALIGN Expert sensor		longer posts (150 mm) required in vertical position
Notes	<p>With sensALIGN 7 and sensALIGN 5, sensor and laser each, all mounting options are possible</p> <p>The LEVALIGN Expert sensor requires adapter ALI 6.966 for mounting on the posts</p> <p>LEVALIGN laser and LEVALIGN Expert laser cannot be mounted with this holder. A sufficiently dimensioned tripod is available instead</p>	
Dimensions	65 x 50 x 55 mm (L x W x D), magnetic foot 100 mm, length of magnetic foot post	

Universal Magnetic Bracket

This bracket can be diversely used for shaft alignment, measurement of positional changes (Live Trend) and bore measurements.



Features

- Laser bracket and sensor measuring fixture
- Stable magnetic 4-point coupling
- Adjustable mounting bridges and magnets
- Including posts (150 mm)
- Bore diameter: 160 ... 500 mm [6 5/16" ... 19 11/16"]
- Two axial mounting positions for the posts
- Compatible with current sensor system

Order information

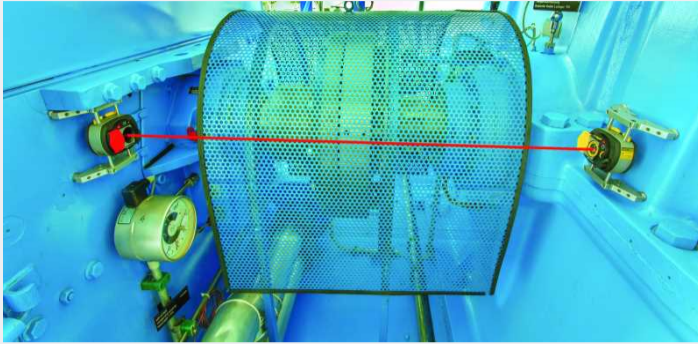
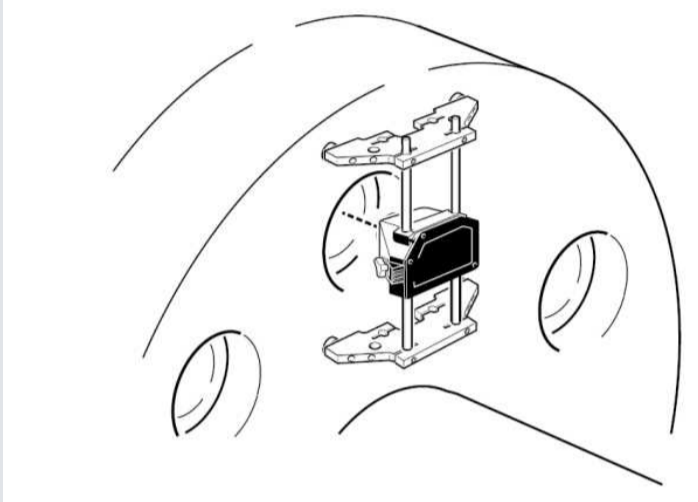

Item No.	Name	Scope of delivery
ALI 2.761 SETIS	Universal magnetic bracket for flanges and bores, set	2 magnetic brackets, pre-assembled with 150 mm posts Hexagon wrench, size 3 Case
ALI 2.761-IS	Universal magnetic bracket for flanges and bores	1 magnetic brackets, pre-assembled with 150 mm posts Hexagon wrench, size 3

In addition, optional accessories and/or individual components are available as spare part:

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	available in 10 different lengths	p. 379
ALI 2.789	sensALIGN 5 sensor holder for universal pointer bracket (UPB)	For measurement of concentric components	p. 374
ALI 2.773-xxx	Plungers in different lengths for UPB	Available lengths (xxx): 110, 270, 415, 500 mm For lengths > 110 mm, additional UPB components are required to stabilize the measuring fixture.	

TECHNICAL INFORMATION

Application	Universal Magnetic Bracket	
<p>Live Trend</p>		<p>Magnetic bracket mounted on machine housing. Standard bracket for the measurement of positional changes using the Live Trend function.</p>
<p>Shaft alignment</p>		<p>Magnetic bracket mounted on coupling flange. Laser beam is directed through a bore hole. In the case of couplings with respectively large bores, the magnetic bracket can replace the complete chain-type bracket. In this case, the laser beam is directed through a bolt hole. Thus, the sensor system does not protrude over the rim of the coupling.</p>
<p>Bore measurement</p>		<p>Laser mounted outside of the bore. Laser beam is directed into the bore, but can be rotated by 180°.</p>

Application**Universal Magnetic Bracket****Bore measurement**

sensALIGN 5 sensor* with sensor holder and plunger mounted on magnetic bracket. Adjustment to greater diameters via longer posts.

* without integrated BT module

An optionally available sensor holder and a matching plunger are required for use as measuring fixture. The magnetic bracket is mounted to the outside of the bore. If space is tight and if used as measuring fixture, the posts can be axially moved towards the front.

Dimensions

57 x 163 x 32* mm (L x W x H)

*Height with the mounting brackets pushed together; maximum height depending on length of posts

Magnetic Bracket for Horizontal and Vertical Surfaces

This magnetic bracket is used by default for **Live Trend** measurements. It secures laser and sensor to magnetic surfaces on the machine. For mounting on vertical surfaces, the posts can be mounted offset by 90°.



Features

- Flexible application
- Quick and easy mounting
- For flat and curved surfaces
- Stable magnetic coupling
- Including posts (115 mm)
- Compatible with current sensor system

Order information


Item No.	Name	Scope of delivery
ALI 14.310	Magnetic Bracket for Horizontal and Vertical Surfaces	Base body including magnet and 90° adapter Post 115 mm, 2 pcs

In addition, optional accessories and/or individual components are available as spare part:

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	available in 10 different lengths	p. 379
ALI 2.191	Anti-torsion bridge for 2 posts	for posts with $L \geq 200$ mm	p. 371

TECHNICAL INFORMATION

Application	Magnetic Bracket for Horizontal and Vertical Surfaces
Live Trend	 <p>Sensor bracket (left) on horizontal, laser bracket on vertical surface.</p>
Dimensions	108 x 50 x 33 mm (L x W x H), without post

Magnetic Sliding Bracket for Shafts and Flanges

This magnetic bracket is used by default for shaft alignment, if a shaft cannot be rotated. The bracket is mounted on the coupling face or shaft end and shifted along the outer edge for the measurement.



Features

- Quick and easy mounting
- For diameters > 80 mm [3 1/8"]
- Stable magnetic coupling
- Precise guiding along outer edge
- Including posts (150 mm)
- Compatible with current sensor system



Order information

Item No.	Name	Scope of delivery
ALI 2.230-1	Magnetic Sliding Bracket for Flanges, Set	Sliding bracket pre-assembled with 150 mm post Hexagon wrench, size 3 Case

In addition, optional accessories and/or individual components are available as spare part:

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	available in 10 different lengths	p. 379
ALI 2.464	Anti-torsion bridge for 3 and 4 posts	for posts with $L \geq 200$ mm	p. 372

Item No.	Name	Notes	Details
ALI 2.244-LIS	Offset adapter for magnetic sliding brackets, long posts 	axial offset: 18 mm 	p. 373

TECHNICAL INFORMATION

Application	Magnetic sliding bracket	
Shaft alignment		Sliding bracket mounted on coupling flange
Dimensions	70 x 160 x 55 mm (L x W x H), without post	

Note: High surface quality of the face end required for reproducible alignment results.

Universal Magnetic Sliding Bracket

This bracket can be diversely used for shaft alignment and bore measurements. As measuring fixture, it secures the sensor to the coupling face and can be precisely shifted across the outer edge using the sliding stud. As laser holder, it can be mounted to both sides on a coupling or bore.



Features

- Face-end mounting on surface area or outer edge
- Quick, easy, and flexible application
- For diameters > 60 mm [2 3/8"]
- Stable magnetic coupling
- Movable sliding studs
- Including posts (150 mm)
- Compatible with current sensor system

Order information



Item No.	Name	Scope of delivery
ALI 2.220 SET	Universal magnetic sliding bracket for flanges and bores, set	Sliding bracket pre-assembled with 150 mm post Hexagon wrench, size 3 Case
ALI 2.220	Universal magnetic sliding bracket for flanges and bores	Sliding bracket pre-assembled with 150 mm post

In addition, optional accessories and/or individual components are available as spare part:

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	available in 10 different lengths	p. 379
ALI 2.789	sensALIGN 5 sensor holder for universal pointer bracket (UPB)	Sensor holder for bore measurements with pointer method.	p. 374
ALI 2.773-xxx	Plungers in different lengths for UPB	Available lengths (xxx): 110, 270, 415, 500 mm For lengths > 110 mm, additional UPB components are required to stabilize the measuring fixture.	---
ALI 2.244-LIS	Offset adapter for magnetic sliding brackets, long posts	axial offset: 18 mm	p. 373

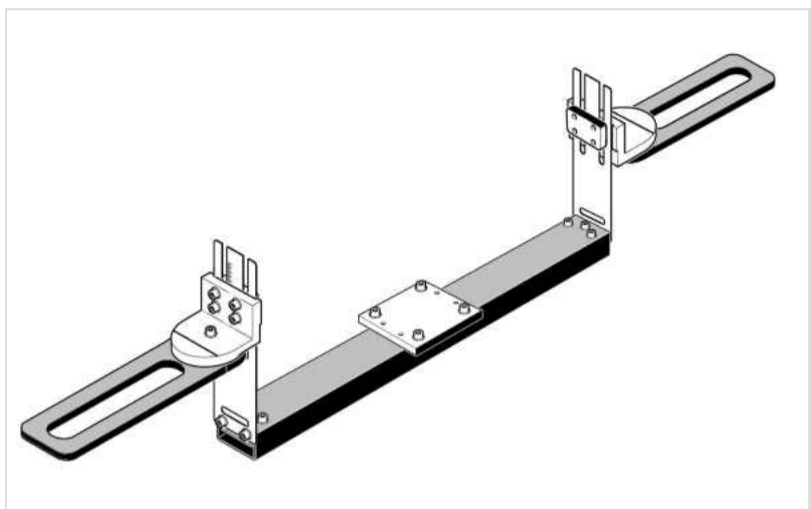
TECHNICAL INFORMATION

Application	Universal sliding bracket	
Shaft alignment		Sliding bracket mounted on coupling flange
Bore measurement with pointer method		<p>sensALIGN 5 sensor* with sensor holder and plunger mounted on magnetic bracket. Adjustment to greater diameters via longer posts.</p> <p>Using the pointer method, offset, eccentricity, and damage (Dents, notches, etc.) of the bore can be detected. The sliding method provides offset information only.</p> <p>* without integrated BT module</p>
Dimensions	60 x 160 x 55 mm (L x W x H), without posts	

Note: High surface quality of the face end required for reproducible alignment results.

CENTRALIGN Mounting Bridge

The CENTRALIGN mounting bridge is used as holder for the laser and control sensor during turbine measurements. It can be easily adjusted to the diameters and mounting bores on the turbine shell.



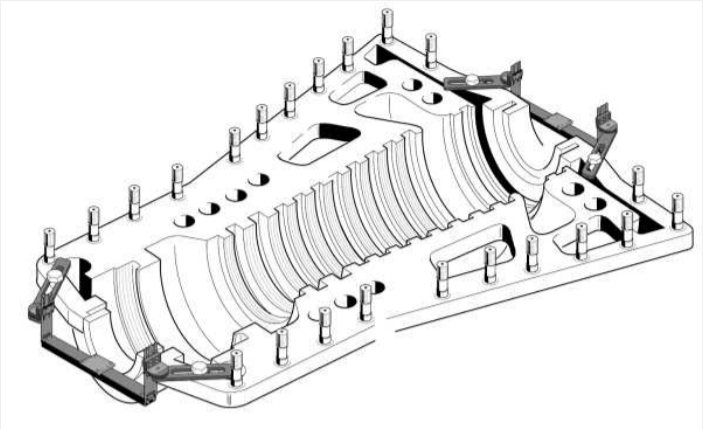

Features

- For open turbine configuration (tops-off)
- Stable holder for laser and control sensor
- Range adjustable
- Mounting in existing bores on the half-shell
- Delivery in practical transport case

Order information

Item No.	Name	Scope of delivery
ALI 3.241-075 SET	CENTRALIGN mounting bridge, nominal width 750 mm	One mounting bridge (ALI 3.231-075) in case
ALI 3.241-100 SET	CENTRALIGN mounting bridge, nominal width 1000 mm	One mounting bridge (ALI 3.231-100) in case
ALI 3.242-075 SET	CENTRALIGN mounting bridge, nominal width 750 mm	Two mounting bridges (ALI 3.231-075) in case
ALI 3.242-100 SET	CENTRALIGN mounting bridge, nominal width 1000 mm	Two mounting bridges (ALI 3.231-100) in case
ALI 3.231-200	CENTRALIGN mounting bridge, nominal width 2000 mm	One mounting bridge without case

TECHNICAL INFORMATION

Application	CENTRALIGN Mounting Bridge	
Measurement of turbines (tops-off)		<p>The two outer rails can be arbitrary rotated to adjust the mounting bridge to the diameters for the turbine half shell and the bore positions.</p>
Bracket for laser and control sensor		

Dimensions in mm / [inch"]

Mounting bridge	Nominal	Minimum	Maximum
ALI 3.231-075	750 [29 1/2"]	210 [8 1/4"]	1490 [58 11/16"]
ALI 3.231-100	1000 [39 3/8"]	460 [18 1/8"]	1740 [68 1/2"]
ALI 3.231-200	2000 [78 3/4"]	1460 [57 1/2"]	2740 [107 7/8"]

Universal Mounting Bridge

This mounting bridge can be diversely used for bore measurements. It is light-weight, consists of a few individual components only and can be quickly mounted using magnetic clamping feet. The universal mounting bridge can be used as laser/sensor holder or as measuring fixture for large half-shells.



Features

- Light-weight aluminum construction
- For bore diameters from 120 to 900 mm [4 3/4" to 35 7/16"]
- Adjustable magnetic clamping feet
- Adjustable support post holder
- Can be used as holder or measuring fixture

Order information

Item No.	Name	Scope of delivery
ALI 2.715	Universal Mounting Bridge	Aluminum rail 40x40x1000 mm Clamping bracket for magnetic foot, 2x Support post holder, ALI 2.718

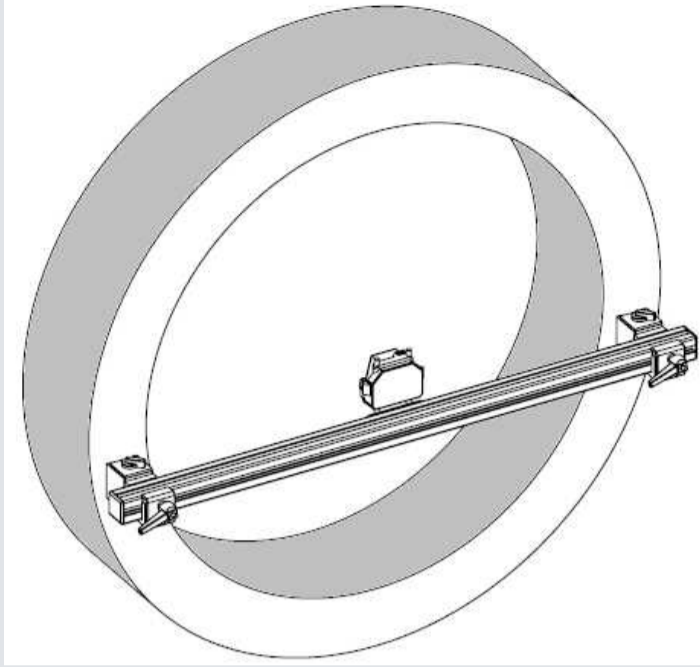
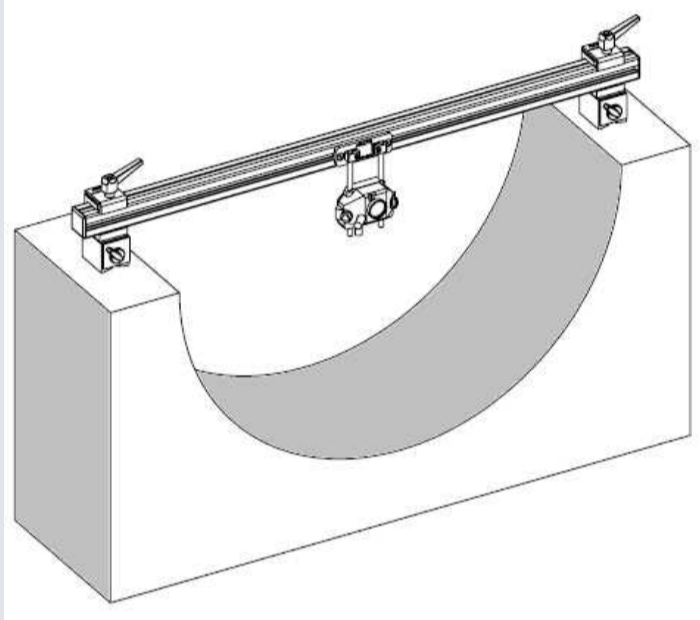
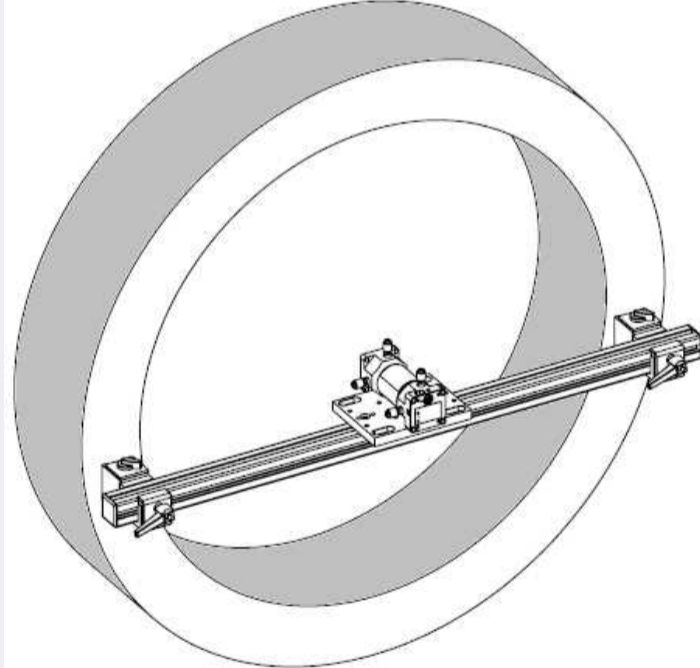
In addition, optional accessories and/or individual components are available as spare part:

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	Accessory item available in 10 different lengths	p. 379
ALI 2.717	Aluminum rail 40x40x1000 mm	Spare part	
ALI 2.716	Clamping bracket for magnetic foot	Spare part	
ALI 2.718	Support post holder	Spare part	

TECHNICAL INFORMATION

Application	Universal mounting bridge	
Bore measurement		<p>Bracket for universal pointer bracket (UPB) on open half-shells or smaller turbines (tops-off). This requires the following components:</p> <ul style="list-style-type: none"> ALI 2.171 - Posts 150 mm, 2x ALI 2.789 - sensALIGN 5 Sensor holder, UPB ALI 2.773-xxx - Plunger xxx mm long ALI 2.772 - Plunger guide plate ALI 2.766 - Extension post for plunger guide plate, 3x

Application	Universal mounting bridge	
<p>Bracket for laser / control sensor</p>	 	<p>Laser/control sensor can be mounted outside the bore or on the half shell.</p> <p>This requires the following components:</p> <p>ALI 2.171 - Posts 150 mm, 2x</p>
<p>Bracket for long range laser</p>		<p>The mounting components are included in the scope of delivery of the laser.</p>
<p>Dimensions</p>	<p>40 x 40 x 1000 mm [1 9/16" x 1 9/16" x 39 3/8"] (W x H x L)</p>	

PERMAFIX Bracket

This mechanical bracket is used for **Live Trend** measurements. It secures laser and sensor to the machine housing. Two ball joints enable alignment of the measuring components in nearly every direction. The posts can be mounted in the attachment unit offset by 90°.



Features

- Bolted mounting
- Two ball joints for flexible alignment
- For magnetic and non-magnetic surfaces
- Including posts (115 mm)
- Compatible with current sensor system

Order information

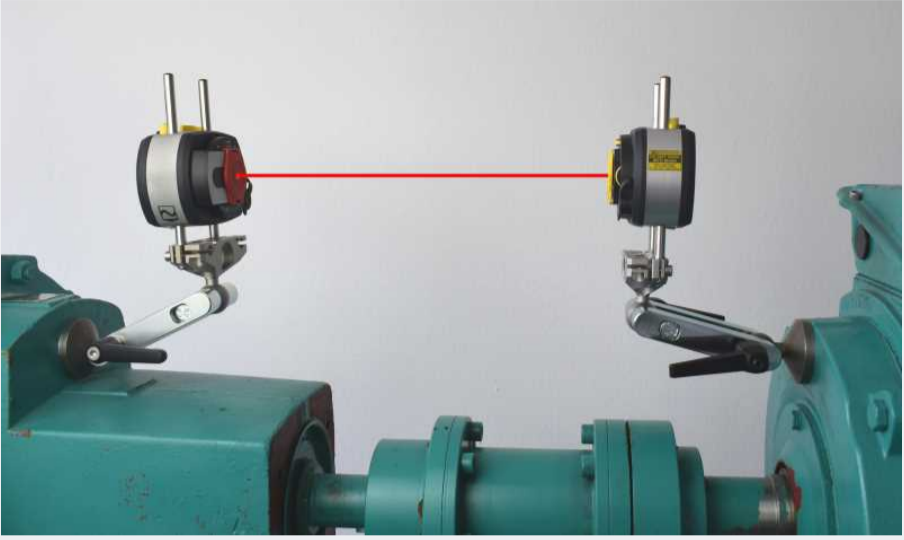
Item No.	Name	Scope of delivery
ALI 2.190	PERMAFIX Bracket	Bracket including attachment unit and mounting head Post 150 mm, 2 pcs

In addition, optional accessories and/or individual components are available as spare part:

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	available in 10 different lengths	p. 379
ALI 2.191	Anti-torsion bridge for 2 posts	for posts with $L \geq 200$ mm	p. 371
ALI 2.194	Striking cone with accessories	Tool for fastening the PERMAFIX bracket to the machine housing, includes: <ul style="list-style-type: none"> • Striking cone (see figure) • Twist drill 4,2 • Tap drill HSS M5 • Hexagon wrench, size 3 and 4 	

TECHNICAL INFORMATION

Application	PERMAFIX bracket	
Live Trend		Sensor and laser each mounted to machine housing with PERMAFIX.
Dimensions	180 x 150 x 50 mm (L x W x H), without post	

Universal Pointer Bracket - UPB

This bracket is used to measure alignment and roundness of concentric components, such as bearing channels or cylinder bores. It is suitable for bores made of magnetic as well as non-magnetic material.



Features

- High-quality mechanical components for high measuring accuracy
- Can be used in nor or on front face
- For magnetic and non-magnetic bores
- Standard equipment for diameters up to 400 mm [15 3/4"]
- Optionally extensible for diameters up to 810 mm [31 7/8"]
- Compatible with current sensALIGN sensor system

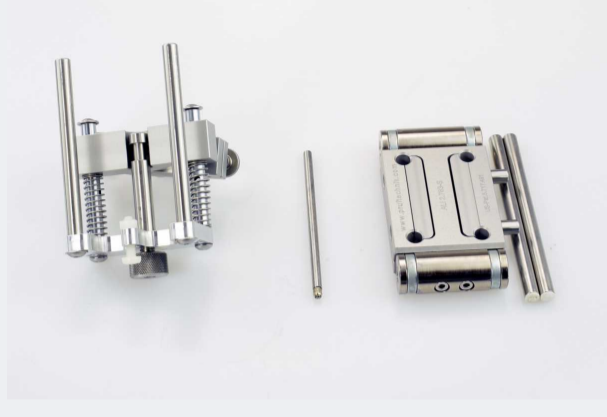
Order information

Item No.	Name
ALI 2.719	UPB - universal pointer bracket for sensALIGN 5 sensor
ALI 2.719-GEO	UPB - universal pointer bracket for sensALIGN 7 sensor
ALI 2.760 SET	UPB extension set for diameters up to 810 mm, magnetic and non-magnetic

Scope of delivery - UPB, ALI 2.719


Item No.	Name	Quantity
ALI 2.789	sensALIGN 5 sensor holder for universal pointer bracket (UPB)	1
ALI 2.773-270	Plunger, 270 mm	1
ALI 2.783-S	Universal mounting bridge with sliding studs, small	1
ALI 2.173	Post 250 mm, green end caps	2
Overview		

Scope of delivery - UPB, ALI 2.719-GEO

Item No.	Name	Quantity
ALI 2.789-GEO	sensALIGN 7 sensor holder for universal pointer bracket (UPB)	1
ALI 2.773-110	Plunger, 110 mm	1
ALI 2.783-S	Universal mounting bridge with sliding studs, small	1
ALI 2.170	Post 115 mm, white end caps	2
Overview		

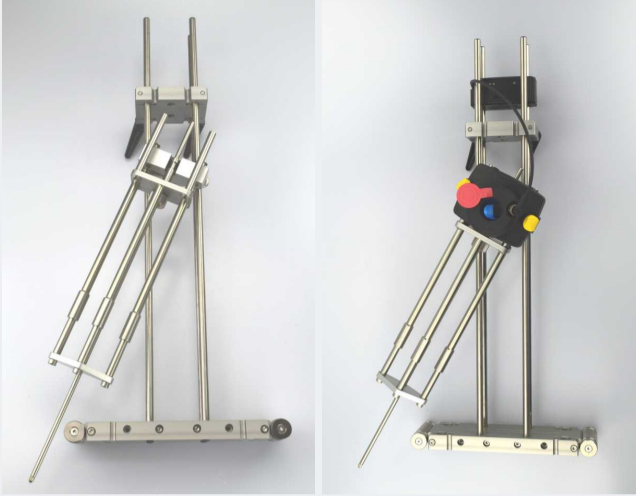
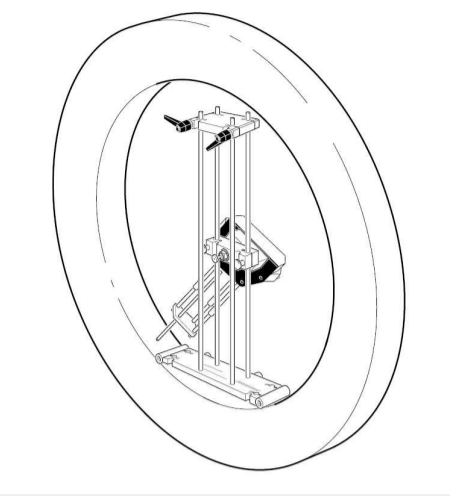

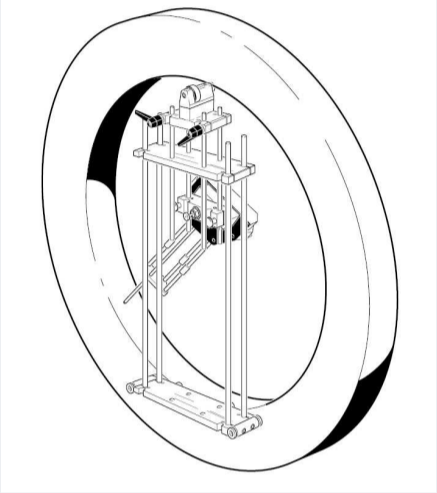
Scope of delivery - UPB extension set, ALI 2.760 SET

Item No.	Name	Quantity
ALI 2.171	Post 150 mm, black end caps	2
ALI 2.172	Post 200 mm, gray end caps	2
ALI 2.173	Post 250 mm, green end caps	4
ALI 2.174	Post 300 mm, yellow end caps	4
ALI 2.175	Post 350 mm	4
ALI 2.177	Post 70 mm	2
ALI 2.178	Post 400 mm	4
ALI 2.179	Post 495 mm	4
ALI 2.2117	Post 100 mm	4
ALI 2.766	Extension post plunger guide plate, UPB	3
ALI 2.772	Plunger guide plate, UPB	1
ALI 2.773-415	Plunger, 415 mm	1
ALI 2.777-255	Stabilizing post, 255 mm, UPB	4
ALI 2.777-500	Stabilizing post, 500 mm, UPB	4
ALI 2.782-1	Clamping bridge, UPB	1
ALI 2.782-2	Eccentric head, UPB	1
ALI 2.782-3	Adapter, UPB	1
ALI 2.783-M	Universal mounting bridge with sliding studs, medium, UPB	1
ALI 2.783-P	Bore surface protector for universal mounting bridge, UPB (set of 4x magnet protectors and 6x sleeves)	1
ALI 2.784-M	Intermediate mounting bridge, medium, UPB	1

Item No.	Name	Quantity
---	Hexagon wrench, size 3 and size 4	1 each
ALI 3.889	Case	1
Overview, without case		

TECHNICAL INFORMATION

Bore	UPB - universal pointer bracket	
Magnetic, D: 120...400 mm		
		
	<p>The UPB can be placed in the bore or on the front face. Strong magnets secure the UPB; two sliding studs provide additional support for the measuring fixture when mounted outside of the bore.</p>	<p>The measuring probe is lowered onto the surface and moves the sensor into measuring position.</p>

Bore	UPB - universal pointer bracket		
<p>Magnetic, D: ≤ 810 mm</p>			
	<p>Additional components extend the area of application of the UPB to bores with larger diameter.</p>		<p>The measuring probe and sensor bracket are stabilized using additional components.</p>
<p>Non-magnetic, D: ≤ 810 mm</p>			
	<p>In the case of non-magnetic surfaces, the UPB is mechanically secured in the bore using the universal mounting bridge and the mounting bridge with eccentric head.</p>		<p>The UPB is mechanically secured on the front face of the bore. The sliding studs on the eccentric head and the universal mounting bridge are used as pads.</p>

Floor stand with rotatable sensor holder

With this holder, reference markings on the floor can be precisely measured. The rotating holder is used for mounting and positioning the LEVALIGN Expert sensor on the object to be measured.



Features

- Robust design
- Stable 3-point support
- Sensor holder rotatable by 360 °
- Leveling on the object with thumbscrews and bubble levels
- Fast, easy and flexible use
- Including posts (150 mm)

Ordering information

Item No.	Name	Scope of delivery
ALI 6.967	LEVALIGN expert floor stand with rotatable sensor holder	Floor stand preassembled with sensor holder and posts 150 mm

The following accessories are required to mount the LEVALIGN expert sensor:

Optional accessories

Item No.	Name	Details
ALI 6.966	LEVALIGN expert sensor holder for posts 8 mm	p. 373

TECHNICAL INFORMATION

Mounting

Floor stand with rotatable sensor holder, ALI 6.967		
Mounting example		LEVALIGN expert sensor mounted on sensor holder.
Dimensions	140 x 150 x 170 mm [5 1/2" x 5 7/8" x 6 11/16"]	(L x W x H), without posts
Weight	approx. 2.2 kg [77,6 oz]	

Tripod stand for LEVALIGN Laser

With this industrial tripod stand, the LEVALIGN Expert Laser can be set up quickly and stably. The laser can be mounted in two planes perpendicular to each other.



Features

- Vertical and horizontal mounting of the laser
- High quality workmanship
- Large adjustment range
- Adapter for ground-level installation
- Manually adjustable center column with self-braking gear transmission
- Mounting adapter for LEVALIGN Ultra Laser (accessory)
- Robust transport case.



Ordering information

Item No.	Name	Scope of delivery
ALI 6.960	LEVALIGN tripod set	Tripod stand incl. case and tripod adapter
ALI 6.956	Tripod stand for LEVALIGN Laser	Tripod stand w/out case and tripod adapter

Optional accessories

Item No.	Name	Notes
ALI 6.957	LEVALIGN tripod case	Case for transport and storage
ALI 6.958	LEVALIGN Expert Laser tripod adapter	Adapter for ground-level installation



Item No.	Name	Notes
ALI 6.968	LEVALIGN Expert Laser offset adjustment slide 	Adjust the laser beam to an axis of rotation (e.g. shaft / bore alignment)
ALI 6.959	LEVALIGN Ultra laser mounting plate for tripod 	Adapter for LEVALIGN Ultra laser

TECHNICAL INFORMATION

Technical data



Parameter	Tripod stand for LEVALIGN Laser, ALI 6.956
Transport length	101 cm [39 3/4"]
Weight	12 kg [423.3 oz]

Mounting options

Laser mounted vertically on center column	... horizontally on center column
Illustration		
H: laser - ground	115 cm ... 214 cm [45 1/4" ... 84 1/4"]	99 cm ... 198 cm [39 " ...77 15/16"]

Laser mounted vertically on tripod adapter	... horizontally on tripod adapter
Illustration		
H: laser - ground	49 cm ... 95 cm [19 5/16" ... 37 3/8"]	31.5 cm ... 77.5 cm [12 3/8" ...30 1/2"]

Laser mounted on offset slide	Application
Illustration		
	Max. offset: 80 mm .[3 1/8"]	Alignment of rotational axes

Laser mounted horizontally	... vertically
Illustration		

Rotatable Magnetic Bracket

This bracket is used as holder for the **sensALIGN 7 sensor** for flatness measurements. The rotating function of the bracket facilitates the adjustment of the **LEVALIGN Ultra iS laser** to the detector areas in the sensor.



Features

- Simplified laser adjustment when the LEVALIGN Ultra iS laser is used.
- Stable mounting on the measuring surface using magnetic coupling or 3-point mounting base.
- Sensor attachment with posts (not included in scope of delivery)


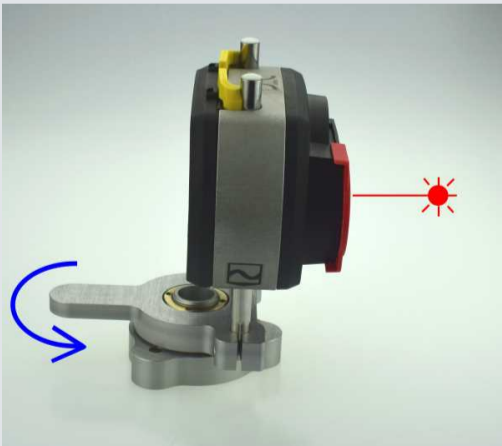
Order information

Item No.	Name
ALI 6.954	Rotatable magnetic bracket for flatness measurements

Optional accessories

Item No.	Name	Notes	Details
Various	Posts	available in 10 different lengths	p. 379



TECHNICAL INFORMATION



Typical laser adjustment sequence	
#1	 <p>Center laser beam on the rear side of the sensor</p>
#2	 <p>Turn bracket by 180° -> Laser beam hits both detector areas</p>

Anti-torsion Bridges

Anti-torsion bridges are used to stabilize the setup of retaining and measuring fixtures with long posts ($L > 200$ mm).

Order information


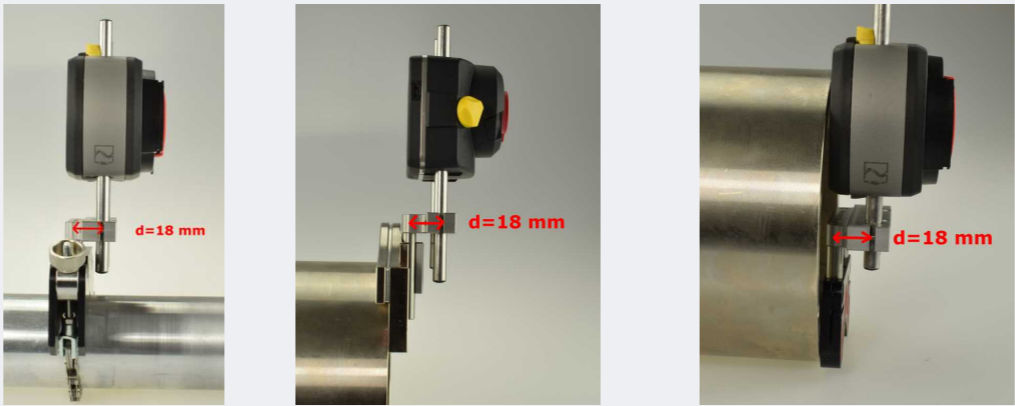

Item No.	Figure	Name	Application
ALI 2.191		Anti-torsion bridge for 2 posts	Shaft alignment and Live Trend measurements
ALI 2.778		Anti-torsion bridge for universal pointer bracket, UPB	Measurement of concentric components





Item No.	Figure	Name	Application
ALI 2.463		Anti-torsion bridge for 3 posts	Alignment of cardan shafts and shafts with large diameter
ALI 2.464		Anti-torsion bridge for 3 and 4 posts	Shaft alignment with magnetic sliding bracket




Mounting Adapters

Mounting adapters are used for fastening measuring components on different brackets.

Order information

Item No.	Figure	Name	Notes
ALI 2.244-IS		Offset adapter for brackets, short posts	<p>With this adapter the measuring components can be axially offset by approx. 18 mm. Ideal in narrow spaces. Also ensures free movement during measurement. The adapter with the short posts (ALI 2.244-IS) is suitable for mounting on all chain-type brackets as well as on the compact magnetic holder (ALI 2.112). The adapter with the long posts (ALI 2.244-LIS) is optimized for mounting on all magnetic sliding brackets (ALI 2.220, ALI 2.230-1).</p>
ALI 2.244-LIS		Offset adapter for magnetic sliding brackets, long posts	
			<p>Offset adapter with sensor heads mounted on compact chain-type bracket (ALI 2.118), magnetic sliding bracket (ALI 2.220) and compact magnetic holder (ALI 2.112).</p>
ALI 6.966		LEVALIGN Expert sensor holder for posts 8 mm	including posts, 250 mm;

Item No.	Figure	Name	Notes
			Sensor holder can be rotated by 90°, enables vertical and horizontal mounting
ALI 3.194-IS		Universal mounting adapter with two holding positions for laser and sensor	including M8 screw and 2 posts, 100 mm
ALI 4.500		Magnetic foot	<p>For magnetic surfaces with flat and curved profile (e.g., shaft)</p> <p>Magnetic force can be activated via rotary switch</p> <p>M8 thread for mounting of holding fixtures</p> <p>Weight: approx. 1 kg</p>
ALI 2.789		sensALIGN 5 sensor holder for Universal Pointer Bracket (UPB)	Application: Bracket for sensALIGN 5 sensor in connection with UPB (ALI 2.719) or universal magnetic sliding bracket (ALI 2.220).

Item No.	Figure	Name	Notes
			Sensor holder mounted on UPB with and without sensALIGN 5 sensor.
ALI 2.789-GEO		sensALIGN 7 sensor holder for Universal Pointer Bracket (UPB)	Application: Bracket for sensALIGN 7 sensor in connection with UPB (ALI 2.719-GEO) or universal magnetic sliding bracket (ALI 2.220).
			Sensor holder mounted on UPB with and without sensALIGN 7 sensor.

Plunger for Flatness Measurement

This measuring probe is used for surface scanning.



Features

- Point scanning of surface
- Stable mounting using magnetic foot ALI 4.500
- Compatible with Universal Mounting Adapter ALI 3.194-IS

Order information

Item No.	Name
ALI 6.773	Flatness Plunger

Optional accessories

Item No.	Name	Notes	Details
ALI 3.194-IS	Universal mounting adapter with two mounting positions for laser and sensor.	is used as a sensor holder in flatness measurement applications	p. 374
Various	Posts	available in 10 different lengths	p. 379
ALI 4.500	Magnetic foot	For stable mounting of the entire measuring fixture on the measuring surface	p. 374

TECHNICAL INFORMATION

Typical measuring fixture setup



Plunger mounted on magnetic foot



Universal mounting adapter mounted on plunger



sensALIGN 5 sensor mounted on universal mounting adapter

Sensor holder for flatness measurements (LEVALIGN expert)

This holder is suitable for measuring flat surfaces with the LEVALIGN expert sensor. The holder is available in a short and a long version to compensate large height differences between laser and sensor position.





Features

- Simple sensor mounting
- Large vertical adjustment range
- Maximum height difference: 24 cm (9.45 ")
- Robust and stable aluminium frame construction
- Mounting on magnetic surfaces with magnetic base ALI 6.961
- Mounting on non-magnetic surfaces with base plate ALI 6.962



Order information

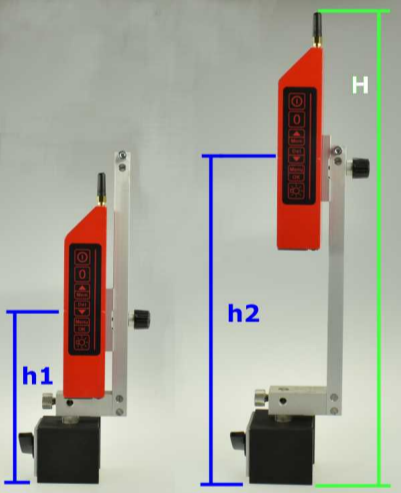
Item No.	Name
ALI 6.963-1	Sensor holder for LEVALIGN expert sensor, long version
ALI 6.964-1	Sensor holder for LEVALIGN expert sensor, short version

Optional accessories

Item No.	Name	Notes	Details
ALI 6.961	LEVALIGN expert magnetic base	for stable mounting on magnetic surfaces	
ALI 6.962	LEVALIGN expert base plate	for stable mounting on non-magnetic surfaces	

TECHNICAL INFORMATION

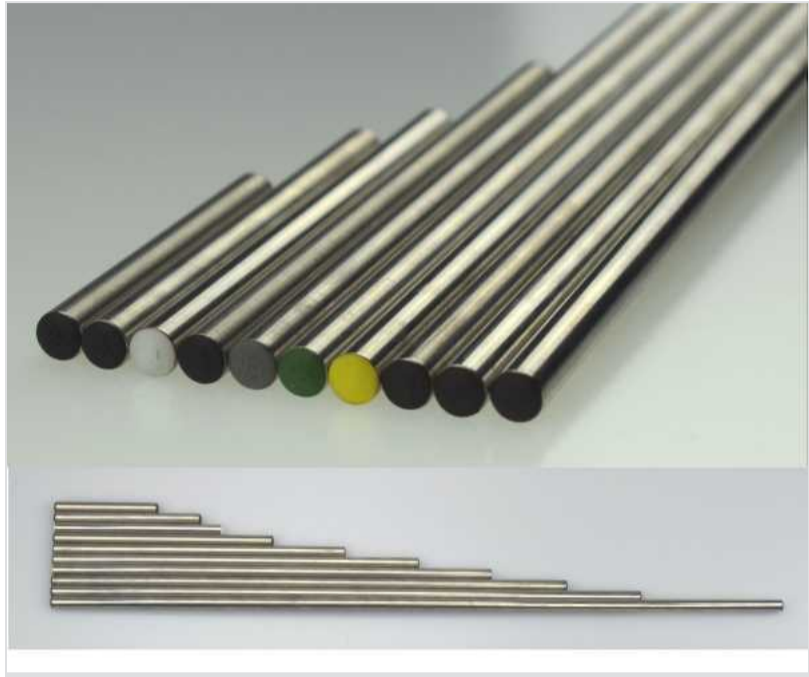
Typical mounting	Sensor holder, short (ALI 6.964-1)	
		
	Sensor holder mounted on magnetic base	Sensor holder mounted on base plate

Vertical adjustment range	Sensor holder, short (ALI 6.964-1)		Sensor holder, long (ALI 6.963-1)	
	Magnetic base	Base plate	Magnetic base	Base plate
h1	17 (6.70)	12 (4.72)	17 (6.70)	12 (4.72)
h2	31 (12.20)	26 (10.24)	41 (16.14)	36 (14.17)
h2 - h1	14 (5.51)		24 (9.45)	
	Dimensions in cm (inch); Reference points: Surface - Sensor center marking;			

Overall height H	Mounting setup
27 cm, minimum	Short sensor holder mounted on base plate
54.5 cm, maximum	Long sensor holder mounted on magnetic base. Sensor is positioned vertically. Distance: Surface - antenna tip (see illustration)

Posts

Posts are used for mounting measuring components on different brackets.



Features

- Stainless steel tubes in different lengths
- Stable and resistant to bending
- Colored end caps
- Wall thickness: 1 mm
- Diameter: 8 mm

Order information

The following posts are available as accessory item or spare part:

Item No.	Name	Notes
ALI 2.2117	Post 100 mm [3 15/16"]	black end caps
ALI 2.170	Post 115 mm [4 1/2"]	white end caps
ALI 2.171	Post 150 mm [5 7/8"]	black end caps
ALI 2.172	Post 200 mm [7 7/8"]	gray end caps
ALI 2.173	Post 250 mm [9 13/16"]	green end caps
ALI 2.174	Post 300 mm [11 13/16"]	yellow end caps
ALI 2.175	Post 350 mm [13 3/4"]	black end caps
ALI 2.177	Post 70 mm [2 3/4"]	black end caps
ALI 2.178	Post 400 mm [15 3/4"]	black end caps
ALI 2.179	Post 495 mm [19 1/2"]	black end caps

Note: An anti-torsion bridge is required for posts longer than 200 mm.

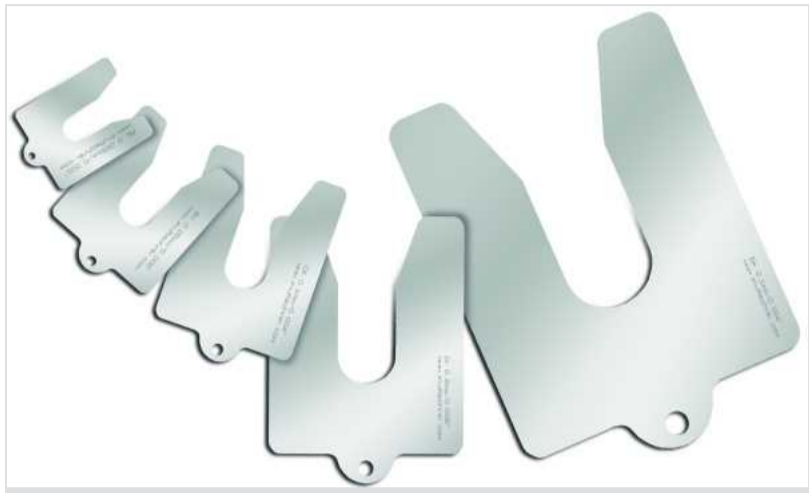
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Shims

PERMABLOC Precut Shims	382
LAMIBLOC Laminated Shims	386

PERMABLOC Precut Shims

Stainless steel precut shims in highest quality facilitate reliable and precise alignment of your machine.

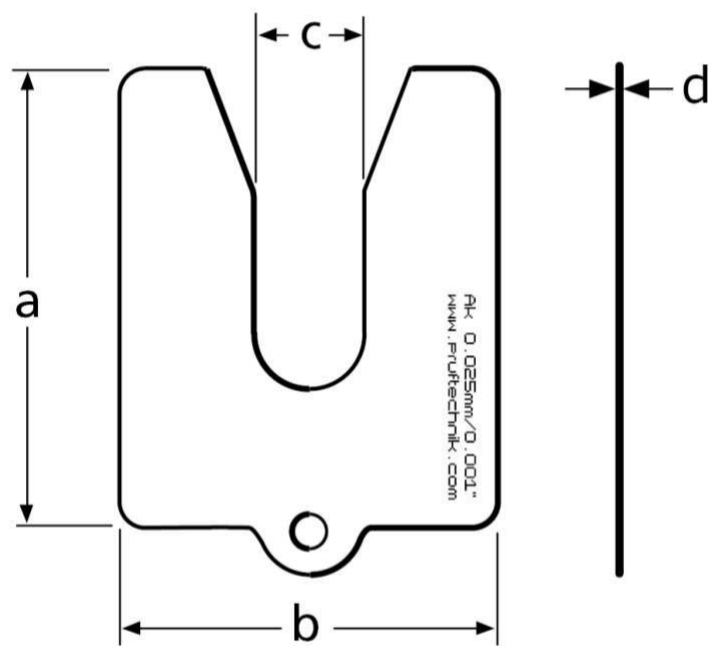


Features

- High-quality stainless steel shims
- Resistant to corrosion, acids, and lyes
- Deburred edges and rounded corners for safe handling
- 5 different sizes and 9 thicknesses
- Thickness marked and quickly detectable
- In different assortment cases

Order information

PERMABLOC shims are available in 5 sizes, each with different thicknesses. The minimum order quantity is 20 pieces.



Size A, for M12 foot bolts

Item No.	a x b x c		Packaging Unit [pieces]
	60 x 50 x 15 mm	2 3/8" x 1 15/16" x 9/16"	
	d [mm]	d [inch]	
ALI 2.500 Ak	0.025	0.001	20
ALI 2.500 An	0.05	0.002	20
ALI 2.500 Ap	0.1	0.004	20
ALI 2.500 Ar	0.2	0.008	20
ALI 2.500 At	0.4	0.016	20
ALI 2.500 Av	0.7	0.028	20
ALI 2.500 Aw	1.0	0.040	20
ALI 2.500 Ax	2.0	0.080	10
ALI 2.500 Ay	3.0	0.118	4

Size B, for M18 foot bolts

	a x b x c		Packaging Unit [pieces]
	80 x 70 x 22 mm	3 1/8" x 2 3/4" x 7/8"	
Item No.	d [mm]	d [inch]	
ALI 2.500 Bk	0.025	0.001	20
ALI 2.500 Bn	0.05	0.002	20
ALI 2.500 Bp	0.1	0.004	20
ALI 2.500 Br	0.2	0.008	20
ALI 2.500 Bt	0.4	0.016	20
ALI 2.500 Bv	0.7	0.028	20
ALI 2.500 Bw	1.0	0.040	20
ALI 2.500 Bx	2.0	0.080	10
ALI 2.500 By	3.0	0.118	4

Size C, for M27 foot bolts

	a x b x c		Packaging Unit [pieces]
	100 x 80 x 32 mm	3 15/16" x 3 1/8" x 1 1/4"	
Item No.	d [mm]	d [inch]	
ALI 2.500 Ck	0.025	0.001	20
ALI 2.500 Cn	0.05	0.002	20
ALI 2.500 Cp	0.1	0.004	20
ALI 2.500 Cr	0.2	0.008	20
ALI 2.500 Ct	0.4	0.016	20
ALI 2.500 Cv	0.7	0.028	20
ALI 2.500 Cw	1.0	0.040	20
ALI 2.500 Cx	2.0	0.080	10
ALI 2.500 Cy	3.0	0.118	4

Size D, for M36 foot bolts

	a x b x c		Packaging Unit [pieces]
	130 x 105 x 44 mm	5 1/8" x 4 1/8" x 1 3/4"	
Item No.	d [mm]	d [inch]	
ALI 2.500 Dk	0.025	0.001	20
ALI 2.500 Dn	0.05	0.002	20
ALI 2.500 Dp	0.1	0.004	20
ALI 2.500 Dr	0.2	0.008	20
ALI 2.500 Dt	0.4	0.016	20
ALI 2.500 Dv	0.7	0.028	20
ALI 2.500 Dw	1.0	0.040	20

	a x b x c		Packaging Unit [pieces]
	130 x 105 x 44 mm	5 1/8" x 4 1/8" x 1 3/4"	
Item No.	d [mm]	d [inch]	
ALI 2.500 Dx	2.0	0.080	10
ALI 2.500 Dy	3.0	0.118	4

Size E, for M52 foot bolts

	a x b x c		Packaging Unit [pieces]
	200 x 165 x 58 mm	7 7/8" x 6 1/2" x 2 5/16"	
Item No.	d [mm]	d [inch]	
ALI 2.500 En	0.05	0.002	20
ALI 2.500 Ep	0.1	0.004	20
ALI 2.500 Er	0.2	0.008	20
ALI 2.500 Et	0.4	0.016	20
ALI 2.500 Ev	0.7	0.028	20
ALI 2.500 Ew	1.0	0.040	20
ALI 2.500 Ex	2.0	0.080	10
ALI 2.500 Ey	3.0	0.118	4

PERMABLOC ASSORTMENT CASE

Fully equipped PERMABLOC assortment cases are practical to transport and offer safe storage and clear arrangement of all available shims.



Properties

- Lightweight, extremely robust case shells
- Industry-grade with protection class IP67
- Clear arrangement of the shims
- Different configurations per size

Order information

PERMABLOC assortment cases are available with different configurations. Every shim size is available in all thicknesses and the following quantities:

- **20 pieces** : all shims with thicknesses from 0.025 mm to 1.0 mm
- **10 pieces** : all shims with 2 mm thickness
- **8 pieces** : all shims with 3 mm thickness

Item No.	Configuration	Shims total number	Weight (fully equipped case)		Exterior case dimensions	
			kg	lb	cm	inch
ALI 2.861-KP	A, B	316	8	17	41.1 x 32.3 x 16.8	[16 3/16" x 12 11/16" x 6 5/8"]
ALI 2.862-KP	C	158	7	15.5	41.1 x 32.3 x 16.8	[16 3/16" x 12 11/16" x 6 5/8"]
ALI 2.863-KP	D	158	10	21	41.1 x 32.3 x 16.8	[16 3/16" x 12 11/16" x 6 5/8"]
ALI 2.864-KP	C, D	316	17	37.5	55.1 x 35.8 x 22.6	[21 11/16" x 14 1/8" x 8 7/8"]
ALI 2.866-KP	E	138	24	52.5	55.1 x 35.8 x 22.6	[21 11/16" x 14 1/8" x 8 7/8"]
ALI 2.860-KP	A, B, C, D	632	22	48.5	55.1 x 35.8 x 22.6	[21 11/16" x 14 1/8" x 8 7/8"]

LAMIBLOC Laminated Shims

LAMIBLOC laminated shims are used wherever precise and flexible corrections are required and conventional sizes are just not enough. 20 of these **0.05 millimeters** laminated shims are flat-rolled into a 1 mm package for easy handling. Using a peeling knife, the thickness required for corrections can be quickly and conveniently prepared.

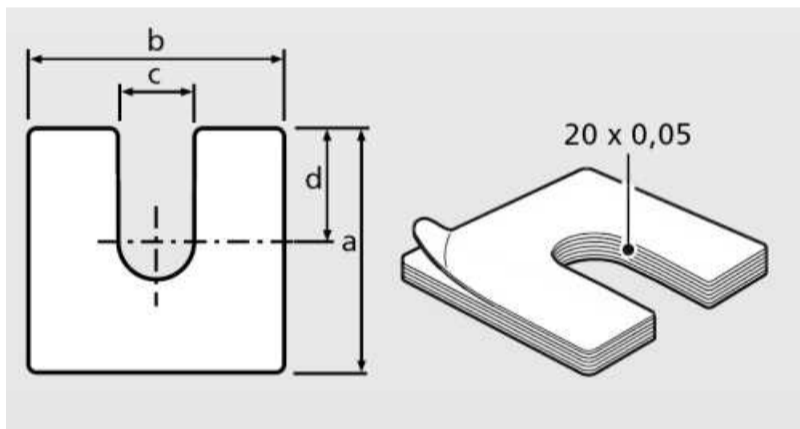


Features

- High-quality stainless steel
- Resistant to corrosion, acids, and lyes
- Deburred edges and rounded corners for safe handling
- 9 different sizes
- Space-saving cardboard packaging

Order information

LAMIBLOC laminated shims are available in the following dimensions:



Item No.	Dimensions in mm				PU*
	a	b	c	d	
ALI 2.521	43	43	22	12	10
ALI 2.522	53	53	27	14	10
ALI 2.523	68	68	34	16	10
ALI 2.524	98	98	49	20	10
ALI 2.525	118	118	59	30	10
ALI 2.526	200	200	100	36	10
ALI 2.527	300	200	240	36	10
ALI 2.528	400	200	330	36	10
ALI 2.529	1000	500	Rectangular sheet stock for custom shims		1

* PU: Packaging unit

Software for Alignment Systems

ARC 4.0 - ALIGNMENT RELIABILITY CENTER 4.0	388
ALIGNMENT CENTER	389
GEO CENTER	391
INCLINEO - Technical Data	399
LEVALIGN expert - Technical Data	400

ARC 4.0 - ALIGNMENT RELIABILITY CENTER 4.0

ALIGNMENT RELIABILITY CENTER 4.0 (ARC 4.0) is a newly developed software platform for PRÜFTECHNIK alignment systems.



Features

- Manage plants with an asset orientated machinery management
- Real-time communication via cloud to touch device
- Monitor the history and trend of the alignment status of assets
- Analyze measurement data in detail and report
- Consideration of bearing types and suggestion of adequate measurement modes
- Library with customizable templates for assets, couplings, industrial couplings tolerances, measurement modes and reports
- Coupling type optimized tolerances

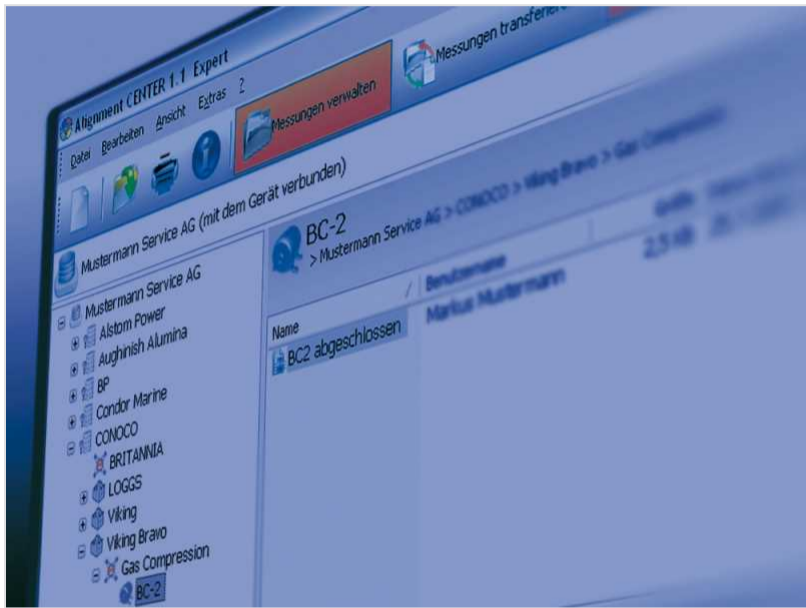
Order information

Item No.	Name
ALI 17.000-4	ARC 4.0, OPTALIGN smart device activation
ALI 17.000-7	ARC 4.0, ROTALIGN Ultra device activation
ALI 17.000-21	ARC 4.0, SHAFTALIGN device activation
ALI 17.000-50	ARC 4.0, touch device activation

Note: The scope of supply includes a USB pendrive with the software, a license document and the "Universal Pointer Bracket - UPB" instructions in PDF format.

ALIGNMENT CENTER

ALIGNMENT CENTER is a software platform for PRÜFTECHNIK measuring systems. The Windows-based application helps you with many of the tasks involved in shaft alignment and geometrical measurements on machines, such as management of asset data, analysis and archiving of measurement results as well as documentation of the work performed.



Features

- Prepares measurement tasks on the PC
- Considers targets, tolerances, thermal growth
- Organizes administrative information (plant, machine, user, ...)
- Analyzes measurement results
- Archives measurement files.
- Measurement reports includes company logo and information about the company

Order information

Item No.	Name
ALI 13.000-1	ALIGNMENT CENTER, ALIGNEO device activation
ALI 13.000-2	ALIGNMENT CENTER, OPTALIGN PLUS device activation
ALI 13.000-3	ALIGNMENT CENTER, smartALIGN device activation
ALI 13.000-4	ALIGNMENT CENTER, OPTALIGN smart device activation
ALI 13.000-5	ALIGNMENT CENTER, ROTALIGN device activation
ALI 13.000-6	ALIGNMENT CENTER, ROTALIGN PRO device activation
ALI 13.000-7	ALIGNMENT CENTER, ROTALIGN Ultra device activation
ALI 13.000-9	ALIGNMENT CENTER, INCLINEO device activation
ALI 13.000-11	ALIGNMENT CENTER, PERMALIGN device activation
ALI 13.000-21	ALIGNMENT CENTER, SHAFTALIGN device activation

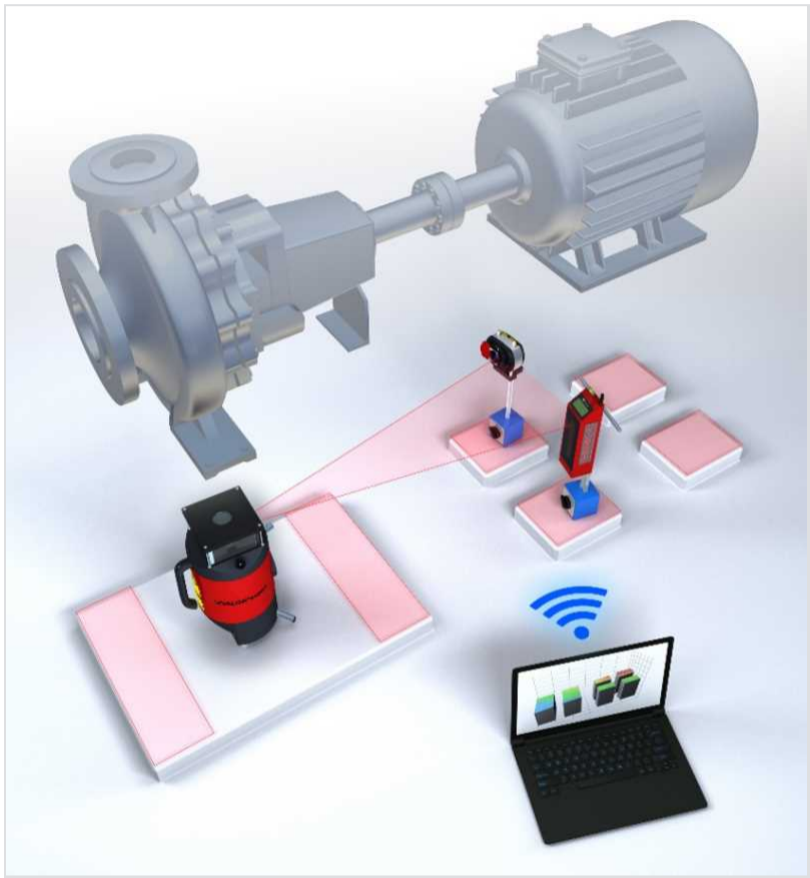
Notes: The scope of supply includes a USB pendrive with the software, a license document and the operating instructions in PDF format. The functionality of the software can be enhanced through the Professional function upgrades.

Function Upgrades

Item No.	Name	Features
ALI 13.500	ALIGNMENT CENTER, Professional Shaft	<ul style="list-style-type: none"> - Measurement post processing with ellipse representations - Analyse measurements taken with sensALIGN 7 sensor - Analyse measurements taken with sensALIGN 5 sensor - Vibration measurements accessible via UI and report
ALI 13.510	ALIGNMENT CENTER, Professional Geometric	Compare assistant: <ul style="list-style-type: none"> - Parallelism or surface comparison - Sensor direction - Flatness & Straightness
ALI 13.520	ALIGNMENT CENTER, Professional Reporting	<ul style="list-style-type: none"> - Customized machine image option for Shaft Alignment - Application background picture - Ellipse - Result as Dial gauge values - Used Shims - Signature - Header and Footer - Modification of pictures
ALI 13.530	ALIGNMENT CENTER, Professional Bore alignment	<ul style="list-style-type: none"> - Control sensor - Splice function - LIVE Move on two planes - Turbine specific corrections - Rotor Sag - Machine and subassembly presets - Rotor position before overhaul
ALI 13.540	ALIGNMENT CENTER, Professional Live Monitoring	<ul style="list-style-type: none"> - Live Monitoring for more than one coupling

GEO CENTER

GEO CENTER is a newly developed software platform for geometrical measurements of straightness, flatness, parallelism and inclination in the industrial sector. Using the software, the measurements are performed directly from the laptop PC. No additional operating element is required. The software offers connection flexibility and can be used with different PRÜFTECHNIK laser and sensor components depending on the measurement task.



GEO CENTER communicates directly with the measuring components via Bluetooth.

Features

- One software solution for measurements of straightness, flatness, inclination, and parallelism
- Direct measurement on laptop
- Flexible connection of measuring components
- Remote control enables "one-man operation"
- User-friendly operation
- Direct Bluetooth communication between sensor system and laptop
- Different measurement modes for straightness measurements: Line, bore, spindle, spindle & bore
- Free software updates
- Custom add-on packages with measuring components

Order information

Item No.	Name
ALI 13.200-USB	USB pen drive with GEO CENTER application, documentation, and activation code

Notes: After installation, GEO CENTER runs in demo mode with some functional limitations. For the full scope of functions, the software must be unlocked using an activation code. This license is already included in the scope of delivery of the USB pen drive.

GEO CENTER is also available on the PRÜFTECHNIK homepage. In this case, the license must be requested from PRÜFTECHNIK for a fee.

Laser and sensor system connection and possible measurement tasks

Laser system		Sensor system		
		sensALIGN 7 sensor	LEVALIGN expert sensor	INCLINEO
				
sensALIGN 7 laser			---	---
LEVALIGN expert laser				---
Long Range laser			---	---
---		---	---	

 : Straightness |
  : Flatness |
  : Inclination |
  : Parallelism

* Line parallelism | ** Surface parallelism, together with PENTALIGN pentaprism

Optional accessories

Measuring components and fixtures are available for GEO CENTER in the following optional packages:

Item No.	Name
ALI 13.211	GEO LEVALIGN expert - Standalone Target group: Users without a compatible PRÜFTECHNIK measuring system, who would like to perform straightness and flatness measurements.
ALI 13.212	GEO LEVALIGN expert - Add-on Target group: Users, who already have a PRÜFTECHNIK measuring system with sensALIGN 7 sensor system, who would like to perform straightness and flatness measurements.
ALI 13.221	GEO INCLINEO Target group: Users without a compatible PRÜFTECHNIK measuring system, who would like to perform inclination measurements.
ALI 13.241	sensALIGN 7 - Add-on Target group: Users without a compatible PRÜFTECHNIK measuring system, who would like to perform straightness measurements.
ALI 4.120-IS	Long Range Laser 635nm, Set Target group: Users, who already have a PRÜFTECHNIK measuring system with sensALIGN 7 sensor system, who would like to perform straightness measurements over long distances (< 50 m).

Scope of delivery - GEO LEVALIGN expert - Standalone - ALI 13.211

Item No.	Name	Details
ALI 6.930-LIB	LEVALIGN expert laser with wireless data transmission (Bluetooth)	p. 400
ALI 6.960-LI	Battery charger for LEVALIGN expert Laser, International	p. 400
ALI 6.940	LEVALIGN expert Sensor	p. 400
ALI 6.985	Case for LEVALIGN expert (wireless / BT)	---
ALI 4.501-IS	Magnetic Foot Holder for Laser and Sensor	
ALI 6.966	LEVALIGN Expert sensor holder for posts 8 mm	
ALI 2.778	Anti-torsion bridge for universal pointer bracket, UPB	
ALI 2.173	Post 250 mm, 2 pcs	
0 0739 1056	Hexagon wrench, DIN 911, size 3	---
ALI 2.911	Cleaning cloth	---
ALI 17.454	USB pen drive with GEO documentation	---
ALI 9.613.DG	Inspection certificate for LEVALIGN expert Laser	---
ALI 9.614.DG	Inspection certificate for LEVALIGN expert Sensor	---
ALI 3.589	Tape measure, mm/inch	---
DOC 69.100	Quick reference guide, Menu settings for LEVALIGN expert laser	
DOC 06.800	Operating instructions, Getting started with LEVALIGN expert	

Overview of the measuring fixture for LEVALIGN expert Sensor



Single parts (left); magnetic foot holder with LEVALIGN expert sensor mounted (center and right). Sensor holder ALI 6.966 is required for mounting the sensor to the posts.

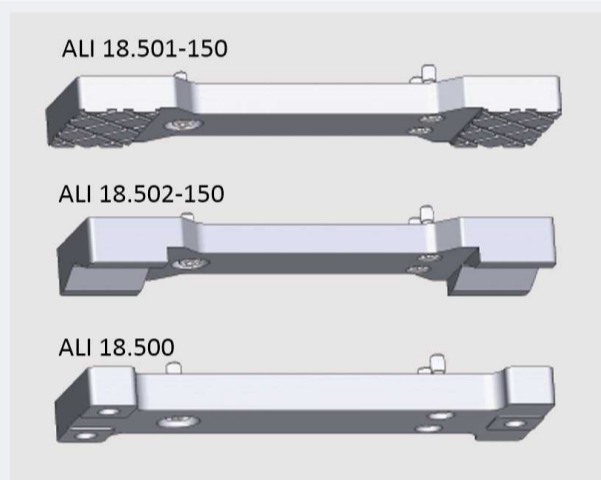
Scope of delivery - GEO LEVALIGN expert - Add-on - ALI 13.212

Item No.	Name	Details
ALI 6.930-LIB	LEVALIGN expert laser with wireless data transmission (Bluetooth)	p. 400
ALI 6.960-LI	Battery charger for LEVALIGN expert Laser, International	p. 400
ALI 6.985	Case for LEVALIGN expert (wireless / BT)	---
ALI 4.501-IS	Magnetic Foot Holder for Laser and Sensor	
ALI 6.773	Plunger for flatness measurement	
ALI 2.778	Anti-torsion bridge for universal pointer bracket, UPB	
ALI 2.173	Post 250 mm, 2 pcs	
0 0739 1056	Hexagon wrench, DIN 911, size 3	---
ALI 2.911	Cleaning cloth	---
ALI 17.454	USB pen drive with GEO documentation	---
ALI 9.613.DG	Inspection certificate for LEVALIGN expert Laser	
ALI 3.589	Tape measure, mm/inch	
DOC 69.100	Quick reference guide, Menu settings for LEVALIGN expert laser	
DOC 06.800	Operating instructions, Getting started with LEVALIGN expert	
Overview of the measuring fixture for sensALIGN 7 sensor		
	 <p>ALI 4.501-IS ALI 2.173</p> <p>ALI 6.773 ALI 2.778</p>	
	Single parts (left); magnetic foot holder for sensor assembled for surface measurement (center) and point scanning (right)	

Scope of delivery - GEO INCLINEO - ALI 13.221

Item No.	Name	Details
ALI 18.200	INCLINEO precision inclinometer with 3-point mounting base	p. 399
ALI 18.501-150	Grooved mounting base for flat surfaces	---
ALI 18.502-150	Prism-shaped mounting base for curved surfaces (e.g., shafts, rollers)	---
0 0621 0038	Screwdriver, PH1x35	---
0 0739 1056	Hexagon wrench, DIN 911, size 3	---
90022	AA battery 1.5V; 4 pcs	---
ALI 18.800	INCLINEO standard case	---
ALI 17.454	USB pen drive with GEO documentation	---
ALI 13.620	USB dongle for Bluetooth PC data communication	---
ALI 18.290	INCLINEO calibration certificate	---
ALI 9.182	INCLINEO pocket guide	---

Overview, mounting bases for INCLINEO inclinometer ---



Mounting bases for flat (left) and curved (center) surfaces. The 3-point mounting base (right) can be used universally and is already pre-assembled on the INCLINEO inclinometer.

Scope of delivery - sensALIGN 7 - Add-on - ALI 13.241

Item No.	Name	Details / No.
ALI 4.900I	sensALIGN 7 sensor, incl. rechargeable battery (ALI 4.960)	p. 297/ 1
ALI 4.910	sensALIGN 7 laser, incl. rechargeable battery (ALI 4.960)	p. 297/ 2
ALI 4.651	sensALIGN 7 AC power supply charger	--- / 3
ALI 30.800	GEO apps case	--- / 4
ALI 3.589	Tape measure mm/inch	--- / 5
ALI 2.911	Cleaning cloth	--- / 6
ALI 17.454	USB pen drive with GEO documentation	--- / 7
DOC 50.601	Safety and general information	--- / 8
ALI 9.500	sensALIGN 7 sensor inspection certificate	--- / 9
ALI 9.501	sensALIGN 7 laser inspection certificate	--- / 10

Overview



Note: The brackets for the sensALIGN 7 sensor and the laser are not included and must be ordered separately.


Scope of delivery - Long Range Laser 635 nm, Set - ALI 4.120-IS

Item No.	Name	Details
ALI 4.100-IS	Long range laser with fine offset and angle adjustment, 635 nm	p. 322
ALI 4.112	Mounting base plate for Long Range laser	
ALI 4.507-2	Long Range Laser Cable, 2m	
ALI 16.600	Long Range laser battery box	
ALI 4.500	Magnetic Foot , 2 pieces	
DOC 04.101	Long Range Laser, Pocket Guide	
ALI 9.494.DG	Inspection certificate for Long Range Laser 670/635 nm	
ALI 4.836	Case for Long Range Laser	
0 0739 1058	Hexagon wrench, DIN 911, size 5	
0 0739 1059	Hexagon wrench, DIN 911, size 6	
0 0741 6069	Cylinder head bolt, DIN 912 M06X16 VA, 2 pcs.	
0 0741 6089	Cylinder head bolt , DIN 912 M08X12 VA, 2 pcs.	
0 0741 6071	Cylinder head bolt, DIN 912 M06X25 VA, 4 pcs.	

Overview: Case with Scope of delivery (mounting base plate is not shown)



INCLINEO - Technical Data

Parameter	INCLINEO technical data	
Measuring range	+/- 10°	
Resolution	0.0003° [1'']	
Error limits @ 22°C [Ta]	0.005 % full scale 0.03 % read-out	
Digital filter/average	3rd order with 0.3 / 1 / 3 Hz options	
Temperature range	Storage: -40 °C ...+85 °C [40 °F ...+185 °F] Operation: -10 °C ...+60 °C [14 °F ...+140 °F]	
Display	LCD display, 132 x 32 pixel with LED backlight	
Control elements	3 keys	
Communication	Wireless via integrated BT module	
External interface	RS-232 (serial) for computer and sensor; connector for dial gauge	
Power supply	AA battery, 2 pcs	
Battery status indicator	3 LEDs	
Data storage	Max. 999 measurements	

LEVALIGN expert - Technical Data

Parameter	LEVALIGN expert technical data	
LASER		
Wavelength	635 nm (red)	
Laser class	II (<1mW)	
Range	100 meters (Ø 200 meters) [328 ft, Ø 656 ft]	
Leveling	Vertical or horizontal (can be switched off)	
Self-leveling range	±5 %	
Direction adjustment	±5 %	
Rotating speed	max. 800 RPM	
Total error	< ±25 µm + ±24 µm/m incl. conical + step + leveling error)	
Power supply	Internal rechargeable battery or external power supply	
Operating time	16 hours	
Dimensions	Ø 130 mm x 270 mm	
Weight	3.4 kg [7 1/2 lb]	
Charger	Input: 100 - 240 VAC / 50 - 60 Hz / 340 mA Output: 12 VDC / 1200 mA / 14.4 W	
SENSOR		
Resolution	0.01 mm	
Accuracy	±0.02 mm	
Measuring range	70 mm [2 3/4"]	
Zero-point adjustment	70 mm	
Internal memory	2600 points	
Communication	Bluetooth	
Power supply	2 x AA batteries	
Dimensions	214 x 70 x 40 mm [[8 7/16" x 2 3/4" x 1 9/16"]	
Weight	0.62 kg [21.9 oz]	

Equipment for induction heating of workpieces

EDDYTHERM Portable – Simple bearing assembly	402
EDDYTHERM 2x – Reliable bearing assembly	404
EDDYTHERM 4x – Professional assembly	407

EDDYTHERM Portable – Simple bearing assembly

EDDYTHERM Portable is a portable induction heater for small workpieces, such as roller bearings.



Features

- Portable equipment for mobile use on-site
- Roller bearing up to maximum 10 kg
- Diameter (inside/outside): >20 mm / <160 mm
- Magnetic temperature probe up to 180 °C
- Line voltage selectable from 100, 115, 230 V
- No support yoke required
- High-frequency technology for optimum efficiency factor
- Automatic temperature monitoring against over-heating

Ordering information

The following variants are available for EDDYTHERM Portable:

Item No.	Variant
ETH 15.100	EDDYTHERM Portable package 100V 50-60Hz
ETH 15.115	EDDYTHERM Portable package 115V 50-60Hz
ETH 15.230	EDDYTHERM Portable package 230V 50-60Hz

The scope of delivery results from the following overview:

Scope of delivery

Item No.	CONTENT Description	Details	ETH 15		
			.100	.115	.230
ETH 15.010	EDDYTHERM Portable, 100V, 50-60Hz	p. 403	✓	✗	✗
ETH 15.015	EDDYTHERM Portable 115V 50-60Hz	p. 403	✗	✓	✗
ETH 15.023	EDDYTHERM Portable 230V 50-60Hz	p. 403	✗	✗	✓
ETH 15.340	Magnetic temperature probe		✓	✓	✗
ETH 15.330	Protective gloves		✓	✓	✓
ETH 15.390	Carry case		✓	✓	✓
ETH 15.310-EU	Power cable, EU		✗	✗	✓
ETH 15.310-UK	Power cable, UK		✗	✗	✓
ETH 15.310-US	Power cable, US		✓	✓	✗
DOC 15.202	Operating instructions		✓	✓	✓

TECHNICAL INFORMATION

EDDYTHERM - TECHNICAL DATA

Parameter	EDDYTHERM portable	EDDYTHERM 2x	EDDYTHERM 4x
Voltage	100...230 V /50-60Hz	110...575 V /50-60Hz	200...600 V /50-60Hz
Power consumption	max. 1.5 kVA	max. 4.6 kVA	max. 14 kVA
Workpiece weight	< 10 kg [22 lb.]	< 80 kg [176.4 lb.]	<300 kg [661.4 lb.]
Workpiece width	> 20 mm (inner) < 160 mm (outer)	> 20 mm (inner) < 400 mm (outer)	> 79 mm (inner) < 640 mm (outer)
Thermal overload protection	yes	yes	yes
Temperature	< 180°C [356 °F]	< 250°C [482 °F]	< 240°C [464 °F]
Temperature accuracy	± 3°C /°F	± 3°C /°F	± 3°C /°F
Time setting	0 - 10 min.	0 - 60 min.	0 - 60 min.
Residual magnetism after heating	< 2 A/cm	< 2 A/cm	< 2 A/cm
Power reduction	yes	yes	yes
Error indication	yes	yes	yes
Dimensions	340 x 250 x 121 mm [13 3/8" x 9 13/16" x 4 3/4"]	420 x 280 x 420 mm [16 9/16" x 11" x 16 9/16"]	1120 x 550 x 960 mm [44 1/8" x 21 5/8" x 37 13/16"]
Distance between posts	-	120 mm [4 3/4"]	270 mm [10 5/8"]
Weight (Standard version)	3.5 kg [7.7 lb]	38 kg [83.8 lb]	150 - 174 kg [330.7 - 383.6 lb]

EDDYTHERM 2x – Reliable bearing assembly

EDDYTHERM 2x is a compact induction heater for small to medium-sized workpieces.



Features

- Compact table-top device
- Roller bearing up to maximum 80 kg
- Diameter (inside/outside): >20 mm / <400 mm
- Magnetic temperature probe up to 250 °C
- Mains voltage selectable from 110 to 575 V
- Swivel cross bar for ease of use
- Cross bars in 6 cross-sections
- Automatic demagnetization

Ordering information

The following variants are available for EDDYTHERM 2x:

Item No.	Variant
ETH 16.120	EDDYTHERM 2x package 110V / 120V 50Hz-60Hz
ETH 16.200	EDDYTHERM 2x package 200V, 50Hz-60Hz / 230V 50Hz
ETH 16.400	EDDYTHERM 2x package 400V 50Hz / 460V 60Hz
ETH 16.500	EDDYTHERM 2x package 500V 50Hz / 575V 60Hz

The scope of delivery results from the following overview:

Scope of delivery

CONTENT			ETH 16			
Item No.	Description	Details	.120	.200	.400	.500
ETH 16.012	EDDYTHERM 2x 110V / 120V, 50-60Hz	p. 406	✓	✗	✗	✗
ETH 16.020	EDDYTHERM 2x 200V, 50Hz-60Hz / 230V 50Hz	p. 406	✗	✓	✗	✗
ETH 16.040	EDDYTHERM 2x 400V / 460V, 50-60Hz	p. 406	✗	✗	✓	✗
ETH 16.050	EDDYTHERM 2x 500V / 575V, 50-60Hz	p. 406	✗	✗	✗	✓
ETH 16.303	Cross bar adapter, for mounting the small cross bars (14x14mm / 28x28mm)		✓	✓	✓	✓
ETH 16.314	Cross bar 14x14x275 mm	for $\varnothing^1 > 20$ mm	✓	✓	✓	✓
ETH 16.328	Cross bar 28x28x275 mm	for $\varnothing > 40$ mm	✓	✓	✓	✓
ETH 16.355	Cross bar 55x55x275 mm	for $\varnothing > 78$ mm	✓	✓	✓	✓
ETH 15.340	Magnetic temperature probe		✓	✓	✓	✓
ETH 15.330	Protective gloves		✓	✓	✓	✓
DOC 16.202	Operating Instructions		✓	✓	✓	✓

In addition, optional accessories are available:

Optional accessories

Item No.	Description	Notes
ETH 16.310	Cross bar 10x10x275 mm	for $\varnothing > 15$ mm
ETH 16.320	Cross bar 20x20x275 mm	for $\varnothing > 30$ mm
ETH 16.340	Cross bar 40x40x275 mm	for $\varnothing > 60$ mm
ETH 16.301	Cross bar 55x55x100 mm, set	Spare part
ETH 16.302	Swivel cross bar	Spare part

¹Bearing inner diameter

TECHNICAL INFORMATION

EDDYTHERM - TECHNICAL DATA

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Power consumption	max. 1.5 kVA	max. 4.6 kVA	max. 14 kVA
Workpiece weight	< 10 kg [22 lb.]	< 80 kg [176.4 lb.]	<300 kg [661.4 lb.]
Workpiece width	> 20 mm (inner) < 160 mm (outer)	> 20 mm (inner) < 400 mm (outer)	> 79 mm (inner) < 640 mm (outer)
Thermal overload protection	yes	yes	yes
Temperature	< 180°C [356 °F]	< 250°C [482 °F]	< 240°C [464 °F]
Temperature accuracy	± 3°C /°F	± 3°C /°F	± 3°C /°F
Time setting	0 - 10 min.	0 - 60 min.	0 - 60 min.
Residual magnetism after heating	< 2 A/cm	< 2 A/cm	< 2 A/cm
Power reduction	yes	yes	yes
Error indication	yes	yes	yes
Dimensions	340 x 250 x 121 mm [13 3/8" x 9 13/16" x 4 3/4"]	420 x 280 x 420 mm [16 9/16" x 11" x 16 9/16"]	1120 x 550 x 960 mm [44 1/8" x 21 5/8" x 37 13/16"]
Distance between posts	-	120 mm [4 3/4"]	270 mm [10 5/8"]
Weight (Standard version)	3.5 kg [7.7 lb]	38 kg [83.8 lb]	150 - 174 kg [330.7 - 383.6 lb]

EDDYTHERM 4x – Professional assembly

EDDYTHERM 4x is a powerful, induction heater for large workpieces, such as bearings, couplings, and wheels.



Features

- Mobile through movable stand
- Workpieces up to maximum 300 kg
- Diameter (inside/outside): >79 mm / <640 mm
- Magnetic temperature probe up to 240 °C
- Mains voltage selectable from 200 to 600 V
- Swivel cross bar for ease of use
- Cross bars in 4 cross-sections
- Automatic demagnetization

Ordering information

EDDYTHERM 4x is available in many variants differentiated by the following features:

- **Mains frequency:** 50 Hz or 60 Hz
- **Operating mode:** Continuous or intermittent operation
- **Mains voltage:** 200 / 230 / 400 / 440 / 480 / 600 volt

The following table shows the corresponding **item numbers**:

Mains voltage	50 Hz		60 Hz	
	Continuous op.	Intermittent op.	Continuous op.	Intermittent op.
200 V	ETH 17.441/1	ETH 17.440/1	ETH 17.441/1-60	ETH 17.440/1-60
230 V	ETH 17.441/5	ETH 17.440/5	ETH 17.441/5-60	ETH 17.440/5-60
400 V	ETH 17.441	ETH 17.440	---	---
440 V	ETH 17.441/2	ETH 17.440/2	ETH 17.441/2-60	ETH 17.440/2-60
480 V	ETH 17.441/3	ETH 17.440/3	ETH 17.441/3-60	ETH 17.440/3-60
600 V	ETH 17.441/4	ETH 17.440/4	ETH 17.441/4-60	ETH 17.440/4-60

The following components are supplied as standard with each unit:

- Magnetic temperature probe, ETH 7305
- Swivel cross bar 75x75x460 mm [3"x3"x18^{1/8"}], ETH 7640 (for bearing Ø >108 mm [4^{1/4"}]; Weight: 22.8 kg [50 lb])
- Manual, ALI 9.392

Optional accessories

Item No.	Description	Notes	Weight
ETH 7641	Swivel cross bar 55x55x460 mm [2 ^{3/16} x2 ^{3/16} x18 ^{1/8"}]	for bearing Ø > 79mm [3 ^{1/8"}]	13.5kg [30lb]
ETH 7647	Cross bar 40x40x460 mm [1 ^{5/8} x1 ^{5/8} x18 ^{1/8"}]	for bearing Ø > 58mm [2 ^{5/16"}]	5.5kg [12lb]
ETH 7648	Cross bar 30x30x460 mm [1 ^{1/4} x1 ^{1/4} x18 ^{1/8"}]	for bearing Ø > 43 mm [1 ^{3/4"}]	3.1 kg [7 lb]

TECHNICAL INFORMATION

EDDYTHERM - TECHNICAL DATA

Parameter	EDDYTHERM portable	EDDYTHERM 2x	EDDYTHERM 4x
Voltage	100...230 V /50-60Hz	110...575 V /50-60Hz	200...600 V /50-60Hz
Power consumption	max. 1.5 kVA	max. 4.6 kVA	max. 14 kVA
Workpiece weight	< 10 kg [22 lb.]	< 80 kg [176.4 lb.]	<300 kg [661.4 lb.]
Workpiece width	> 20 mm (inner) < 160 mm (outer)	> 20 mm (inner) < 400 mm (outer)	> 79 mm (inner) < 640 mm (outer)
Thermal overload protection	yes	yes	yes
Temperature	< 180°C [356 °F]	< 250°C [482 °F]	< 240°C [464 °F]
Temperature accuracy	± 3°C /°F	± 3°C /°F	± 3°C /°F
Time setting	0 - 10 min.	0 - 60 min.	0 - 60 min.
Residual magnetism after heating	< 2 A/cm	< 2 A/cm	< 2 A/cm
Power reduction	yes	yes	yes
Error indication	yes	yes	yes
Dimensions	340 x 250 x 121 mm [13 3/8" x 9 13/16" x 4 3/4"]	420 x 280 x 420 mm [16 9/16" x 11" x 16 9/16"]	1120 x 550 x 960 mm [44 1/8" x 21 5/8" x 37 13/16"]
Distance between posts	-	120 mm [4 3/4"]	270 mm [10 5/8"]
Weight (Standard version)	3.5 kg [7.7 lb]	38 kg [83.8 lb]	150 - 174 kg [330.7 - 383.6 lb]

Productive Maintenance Technology



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