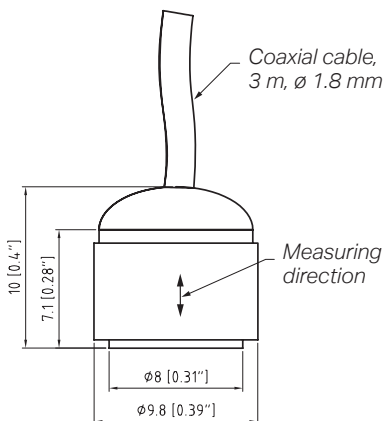


Acceleration sensors in IEPE technology

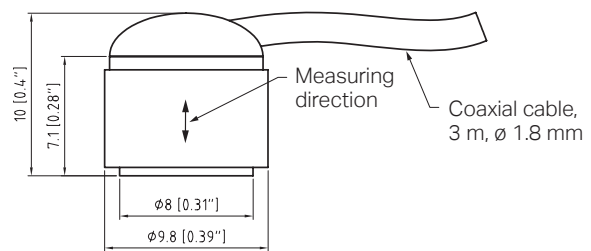
VBS 50 Micro A

Measuring direction axial
and cable axial to the sensor axis



VBS 50 Micro R

Measuring direction radial
and cable radial to the sensor axis



(All measurements in mm
[inch], if not stated otherwise.)

Technical data

Performance

Sensitivity ($\pm 20\%$)*	50 mV/g
Measurement range	± 100 g
Frequency range	0.1 bis 10,000 Hz
Internal filter	Low pass 10 kHz, 2nd order
Resonant frequency	> 20 kHz

Environment conditions

Overload limit (shock)	7.000 g Peak
Enclosure rating	IP 67
Temperature range	-50 °C to +70 °C (-60 to 160 °F)

Electrical characteristics

Excitation voltage	18 bis 28 VDC
Constant current excitation	2 bis 20 mA
Output bias voltage	8 bis 12 VDC
Case insulation	> $10^8 \Omega$

Physical connectors

Cable	Coaxial, shielded
Cable jacket	PUR, 1.8 mm
Bending radius	10 mm
Installation	2-Component epoxy resin adhesive

* The sensor is delivered with calibration data sheet.

Installation note

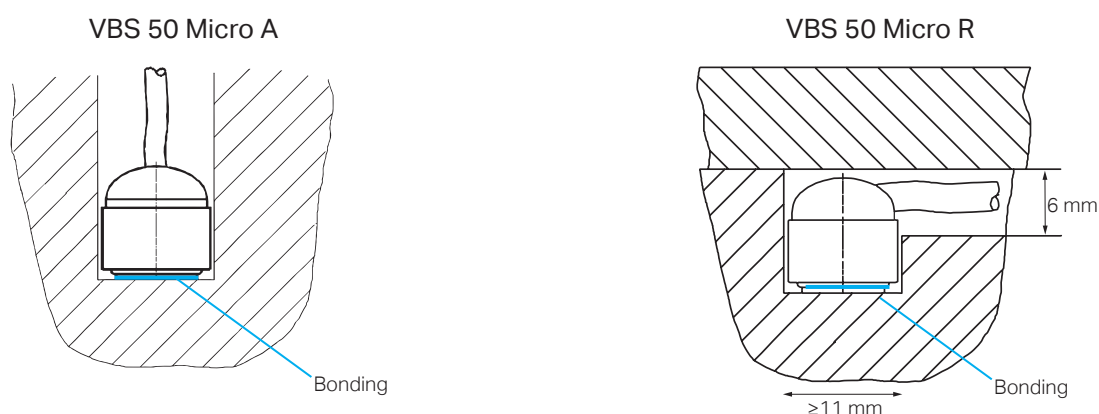
Important note for installation of sensors in machine tools upon usage of cooling lubricants:

Sensors and especially its cable must be installed in such a way, that cooling lubricant can drain of them. It is also important to fix the cable (especially in the area close to the sensor) with cable claps to the machine, in order to eliminate its vibration.

It must be absolutely avoided that the sensor or its cable is installed in a place from which the cooling lubricant cannot drain completely. Cooling lubricant in such places (grooves, seams, or mounting pockets) is unlikely to be replaced by fresh cooling lubricant; therefore it ages and develops aggressive bacteria which can even dissolve metals aggressively by acid burning. As protection, an appropriate cabling and fixing of the cable outside of such grooves can be used, as well as the insertion of a drainage bore hole into the sensor location.

Never use acetone-containing agents to clean the sensor, cable and protection hose, use alcohol-based cleaning fluids instead.

Installation variants



Deformation of the sensor housing may lead to wrong measured values. Thus the built-in sensor must therefore not be exposed to lateral mechanical strain.

Installation by bonding

Installation is achieved by bonding the sensor base plate with epoxy resin (permanent bonding) or cyan acrylate (fast, detachable bonding). It is essential to bond only the ceramic base plate of the sensor to the surface. Ideally, the sensor is positioned in such a way that its side walls do not touch the drill hole. If the drill hole is sealed or potted, a soft grouting agent must be used.

Cable connection

The coaxial cable may only be passed through metallic bodies such as spindle, slide housing, etc. Such grounded parts serve as shielding, which must be connected to the outer screen in the continuing triaxial cable. **Running the coaxial cable through a metallic unshielded environment is not permitted!**

The following options for connection of the coaxial cable to a triaxial cable at the end of metallic bodies are available:

Protection hose with M8 screw neck:

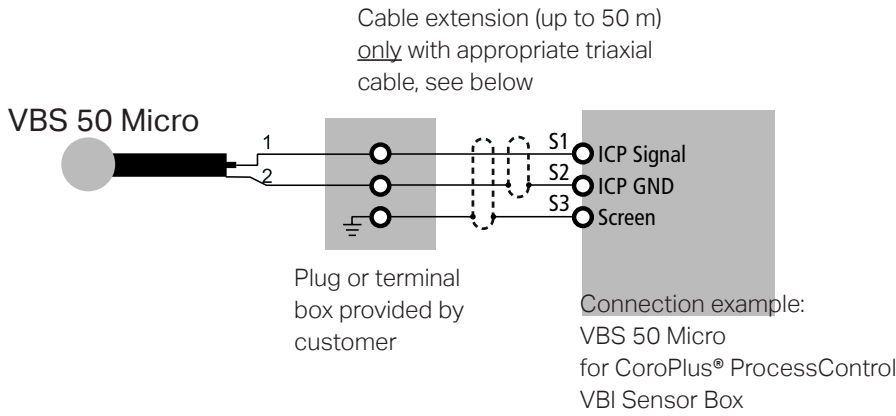
Part No.: 0.CL.VBS.M08HRC4-02

Protection hose with M10 screw neck:

Part No.: 0.CL.VBS.M10HRC4-02

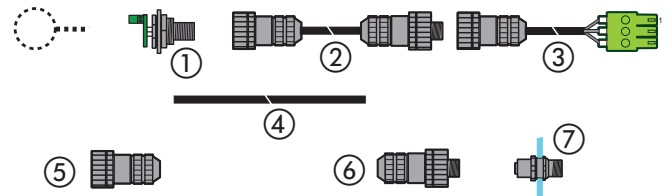
Further options see Optional connection system.

Connection example

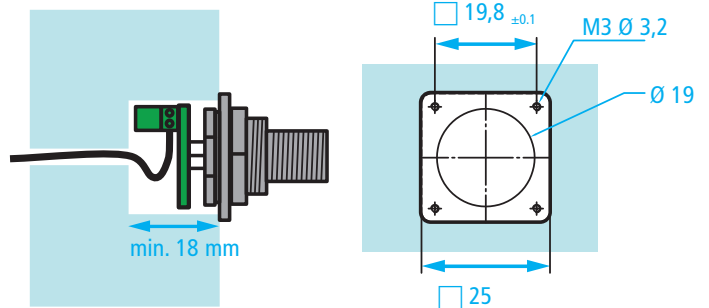


Optional connection system

- ① **0.CL.CAC.RC4-JSH2F**
 4 pole round connector (m) M12 for wall mounting with 2 pole screw block on the inside (see illustration, right side)
- ② **0.CPVBS.RP4-RC4-10**
 Optional extension cord for VBS sensors, 4 pole round plug(f) M12, standard length 10 m (other cord length on request)
- ③ **0.CPVBS.RP4-SB3-xx**
 Connection cord, 4 pole round plug (f) M12 to 3 pole screw block, standard length 10 m (other cord length on request)
- ④ **0.CA.SPC.TRIAXPUR**
 1 m triaxial cord (specify required cord length)
- ⑤ **0.CL.VBS.RP4**
 4 pole round plug (f) M12
- ⑥ **0.CL.VBS.RC4**
 4 pole round plug (f) M12
- ⑦ **0.CL.VBS.RC4RP4WFT**
 Wall feed-through for 4 pole round connectors M12, male to female, shielded, 5-pos. (max. wall thickness 4.5 mm, mounting-Ø 16.1 mm)



0.CL.CAC.RC4-JSH2F



(All measurements in mm, if not stated otherwise.)

Part numbers

VBS 50 Micro A (with 3 m cable): Part No.: **0.SH.VBS.050MICA**

VBS 50 Micro R (with 3 m cable): Part No.: **0.SH.VBS.050MICR**

