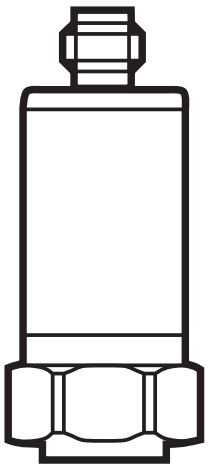
Installation instructions
Vibration sensor
with IO-Link interface
VV

UK



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1 Preliminary note

Device manual, technical data, approvals, accessories and further information at www.ifm.com.

2 Safety instructions

- The device described is a subcomponent for integration into a system.
  - The manufacturer of the system is responsible for the safety of the system.
  - The system manufacturer undertakes to perform a risk assessment and to create a documentation in accordance with legal and normative requirements to be provided to the operator and user of the system. This documentation must contain all necessary information and safety instructions for the operator, the user and, if applicable, for any service personnel authorised by the manufacturer of the system.
- Read this document before setting up the product and keep it during the entire service life.
- The product must be suitable for the corresponding applications and environmental conditions without any restrictions.
- Only use the product for its intended purpose (→ 3 Functions and features)..
- If the operating instructions or the technical data are not adhered to, personal injury and/or damage to property may occur.
- The manufacturer assumes no liability or warranty for any consequences caused by tampering with the product or incorrect use by the operator.
- Installation, electrical connection, set-up, operation and maintenance of the unit must be carried out by qualified personnel authorised by the machine operator.
- Protect units and cables against damage.

3 Functions and features

- Condition monitoring on machines and installations (vibration and temperature)
- Parameter setting and process value transmission via the IO-Link interface
- Asynchronous reading of raw data (BLOB - Binary Large Object)

4 Product overview

Order no.	Description
VVB001	Industrial machines
VVB010	Large-sized machines, performance: > 300 kW, speed: > 600 rpm
VVB011	Large-sized machines Performance: > 300 kW, speed: 120 rpm to < 600 rpm
VVB020	Small-sized machines, performance: < 300 kW, speed: > 600 rpm
VVB021	Small-sized machines Performance: < 300 kW, speed: 120 rpm to < 600 rpm

5 Function

5.1 IO-Link

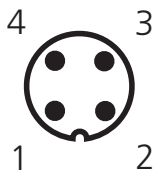
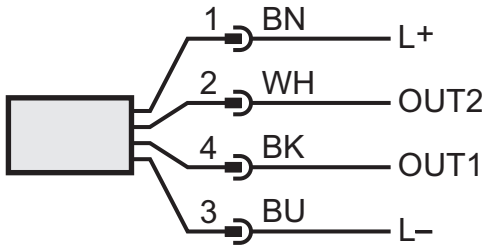
This unit has an IO-Link communication interface which enables direct access to process and diagnostic data. In addition it is possible to set the parameters of the unit while it is in operation. Operation of the unit via the IO-Link interface requires an IO-Link master.

With a PC, suitable IO-Link software and an IO-Link adapter cable, communication is possible while the system is not in operation.

The IODDs necessary for the configuration of the unit, detailed information about process data structure, diagnostic information, parameter addresses and the necessary information about the required IO-Link hardware and software can be found at www.ifm.com.

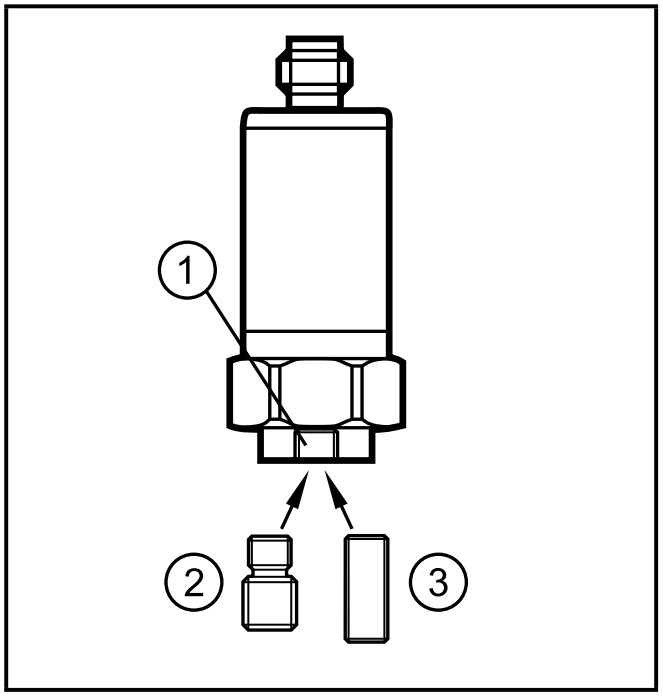
6 Electrical connection

The unit must be connected by a qualified electrician. The national and international regulations for the installation of electrical equipment must be adhered to.

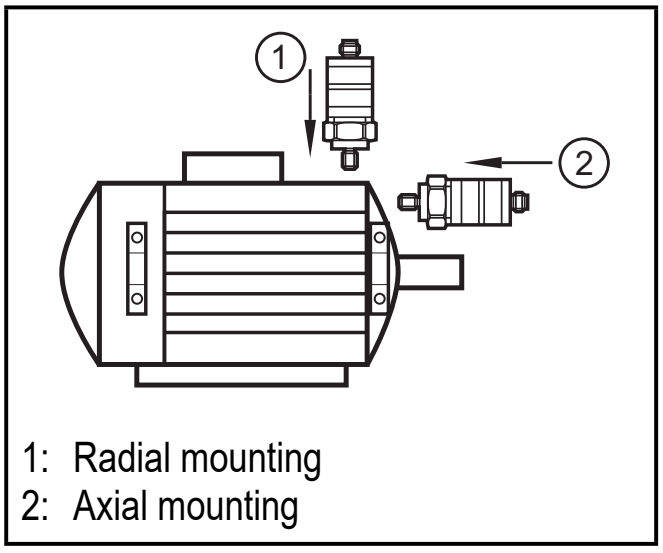
M12			Pin 4: OUT1 / IO-Link

7 Mounting

- ▶ Select either the ¼“-28 UNF / M8 (2) or the ¼“-28 UNF (3) threaded adapter and insert into the unit (1). Both adapters are supplied.
- ▶ Tighten using a 3 mm Allen key. Tightening torque 8 Nm.
- ▶ Drill and tap a hole at the mounting location:
  - M8 hole / depth min. 10 mm
  - or ¼“ UNF hole / depth min. 13 mm.



The measuring direction should be in the direction of the main vibration. The main vibration is usually in radial direction to the shaft.
In case of fixed bearings with high axial force absorption or axial bearings, the recommended measuring direction is axial to the shaft.



1: Radial mounting
2: Axial mounting

- ▶ Mount only in a thick housing wall and vertically to the machine surface close to the bearing or at the end shield.
- ▶ Take note of the measuring direction of the sensor.
- ▶ Ensure a safe vibration transmission and allow no elastic intermediate layers.
- ▶ Tighten the sensor with a tightening torque of 8 Nm.

Different adapter types have an impact on the vibration measurement. The mass, shape and stiffness of the adapter have an influence on the frequency response of the entire system. Both resonances and damping effects may occur in different frequency ranges.

- ▶ For all installation types, tighten the sensor with the corresponding tightening torque indicated in the data sheet.

A tightening torque that is too low may lead to insufficient coupling between the sensor and the machine while a tightening torque that his too high may damage the sensor and the screw.

7.1 Preparation of the contact surface

- ▶ Prepare a clean and smooth contact surface that is free from any coating to fix the sensor.

The prepared contact surface must be a little larger than the sensor or the mounting adapter.

8 Maintenance, repair, disposal

The unit is maintenance-free. It is not possible to repair the unit. Dispose of the device in accordance with the national environmental regulations.