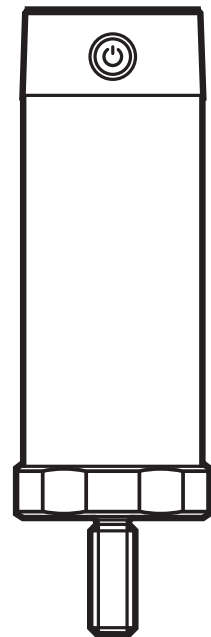


Operating instructions
Wireless vibration sensor
VW

UK

80291663/00 09/2020



1 Preliminary note

Technical data, approvals, accessories and further information at www.ifm.com.

2 Safety instructions

- 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 (→ 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 product must be carried out by qualified personnel authorised by the machine operator.
- The plant operator is responsible for the safety of the plant in which the device is installed.
- If the device is not used as intended by the manufacturer, the protection supported by the device may be impaired.
- Protect units and cables against damage.
- Operation can affect the function of electronic devices that are not correctly shielded. Disconnect the unit in the vicinity of medical equipment. Please contact the manufacturer of the device in case of problems.

2.1 Interference with medical devices

The device emits radio waves that may interfere with the operation of electronic devices in the vicinity, including pacemakers, hearing aids and defibrillators. If you have a pacemaker or other implanted medical device, do not use the sensor without first consulting your doctor or the manufacturer of your medical device. Keep a safe distance between the device and your medical devices and refrain from further use of the device if you observe permanent impairment of your medical device.

3 Symbols used

▶ Instruction

> Reaction, result

→ Cross-reference



Important note

Non-compliance may result in malfunction or interference.



Information

Supplementary note.

4 Functions and features

- Condition monitoring on machines and installations (vibration and temperature)
- The device transmits sensor data at pre-configured intervals by radio to a gateway and from the gateway into the backend system.
In the backend, the sensor data is visualised and can be used to carry out analyses, evaluations and create alarm rules.
- Recommended temperature range -20...55° C.



The device must not be operated within a radius of 20 km around Ny-Ålesund, Spitsbergen, Norway.



Operating temperatures outside this range will shorten battery life.

5 Product overview

Order number	Description
VWV001	Measurement axis in Z direction
VWV002	Measurement axis in X, Y and Z direction

6 Function

The device has a radio interface on the basis of a 2.4 GHz ISM band and enables access to process and diagnostic data (e.g. battery status) via the gateway.

The device offers the following functions if combined with suitable hardware and software (e.g. moneo):

- remote parameter setting of the device
- transmission of measured values without wiring or loss of measured values

- indication of error and event messages (e.g. exceeded limit values)
- visualisation of measured values with history

7 Electrical connection

The device is battery powered and can be switched on and off with a pushbutton.

8 Installation

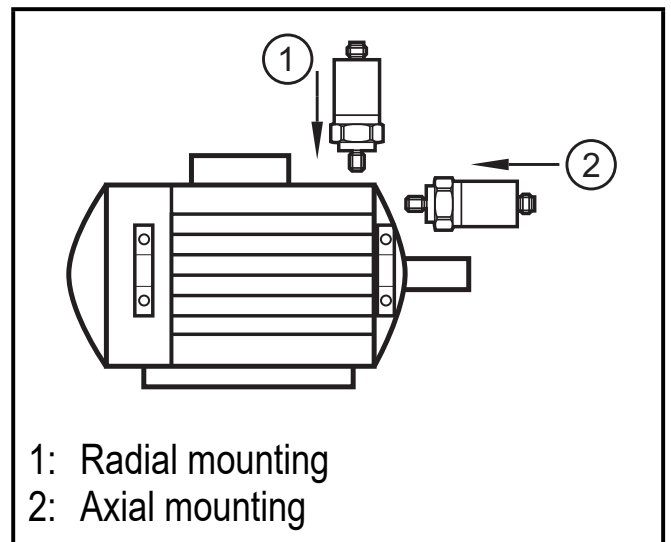
8.1 Installation instructions

- ▶ Mount only in a thick housing wall and vertically to the machine surface close to the bearing or at the end shield.

The measuring direction should be in the direction of the main vibration.

The main vibration is usually in radial direction to the shaft.

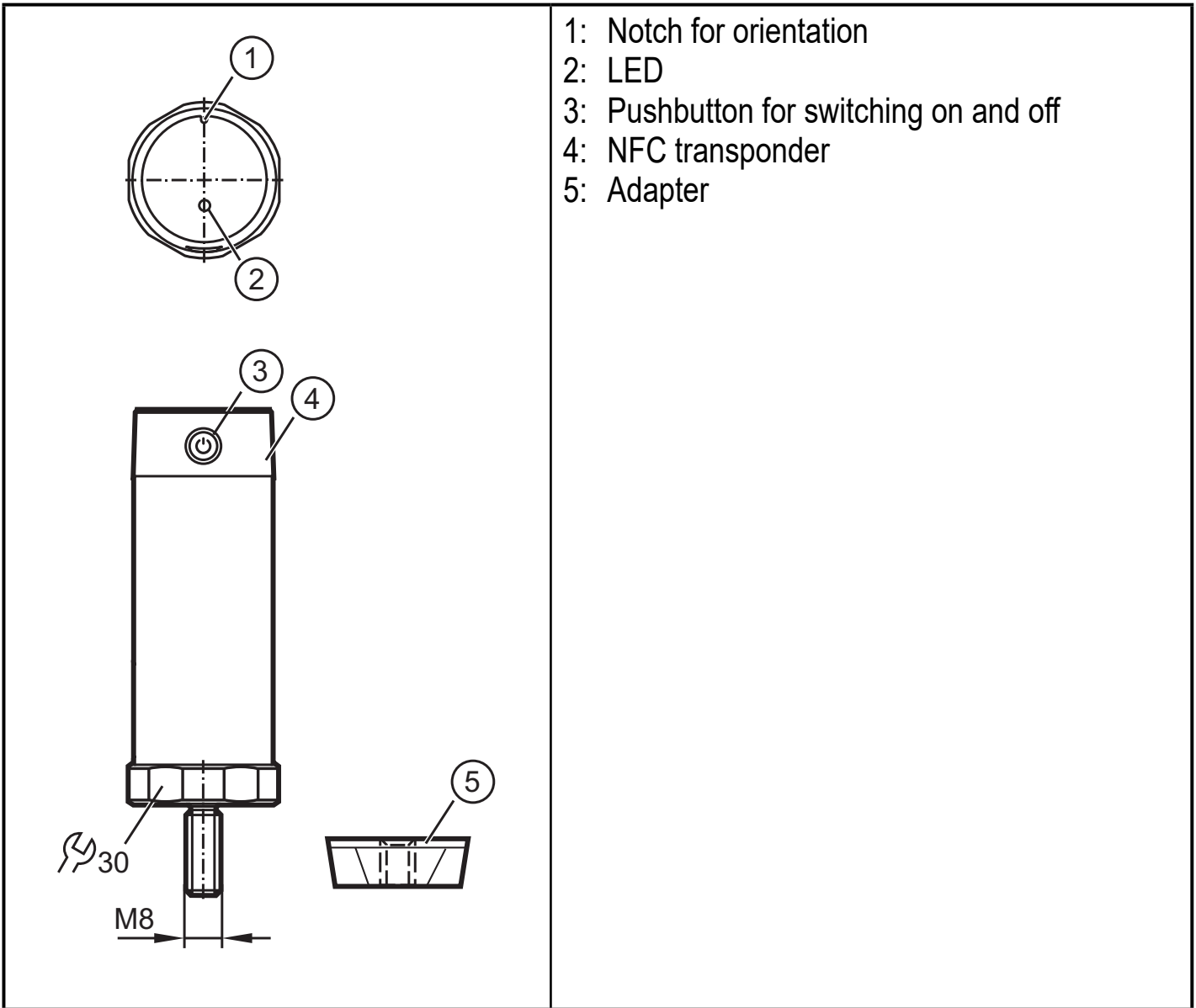
In case of fixed bearings with high axial force absorption or axial bearings, the recommended measuring direction is axial to the shaft.



- ▶ Ensure safe vibration transmission and allow no elastic intermediate layers. Adapters of any kind 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 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 whereas a tightening torque that is too high may damage the sensor and the screw.



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



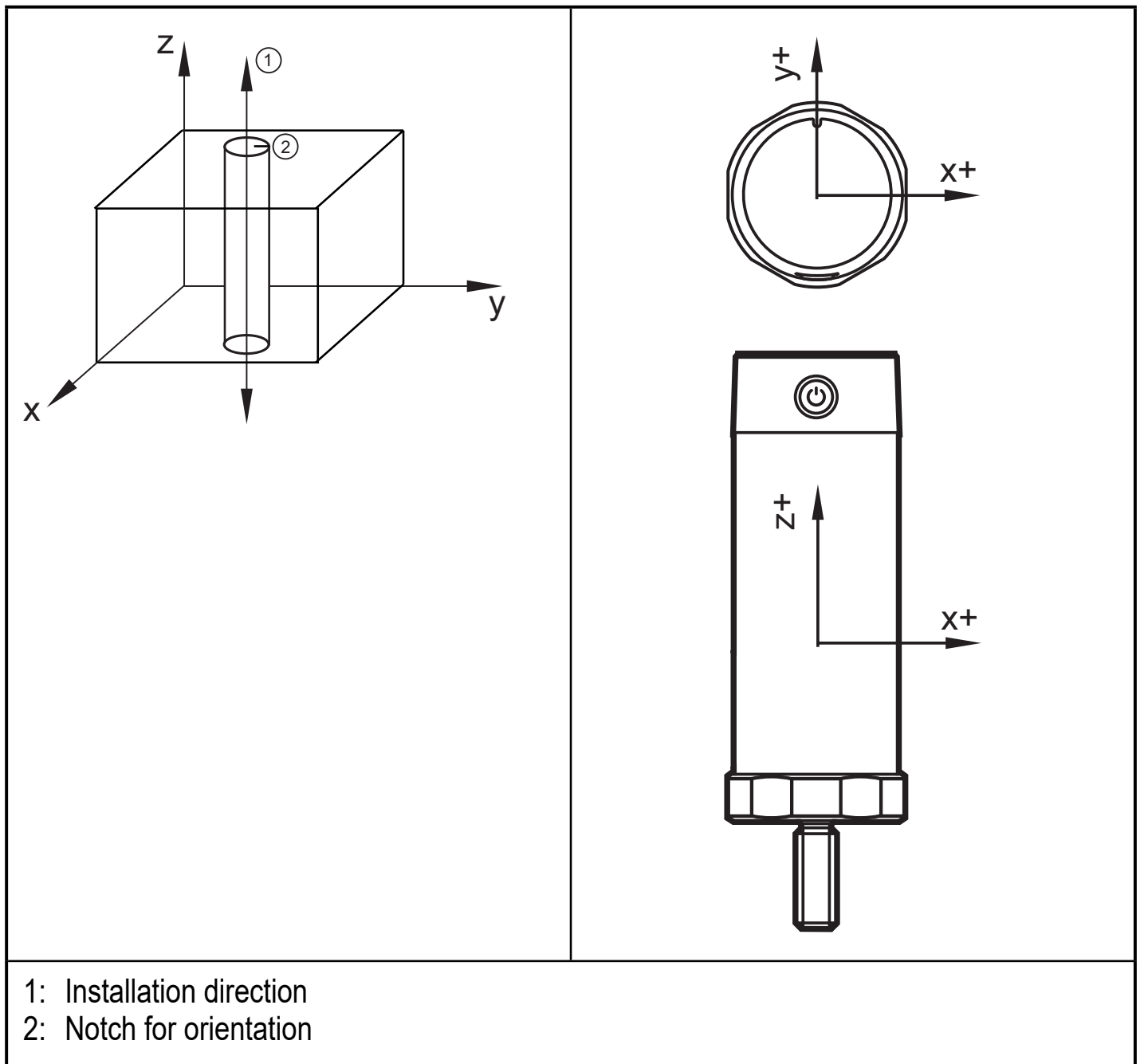
The M8 thread has integrated sensor technics and may not be shortened.

8.2 Axis orientation


For all one-axis sensors, the Z axis is the measuring direction. The Z axis always corresponds to the screwing direction.

In case of three-axis vibration sensors, the measuring axis must be aligned.

- For ideal alignment, the notch for orientation on the sensor top must be axial to the rotating shaft.



8.3 Screw mounting

 A direct connection between the unit and the machine surface ensures optimum measuring quality.

- Prepare a flat contact surface with a diameter of 32 mm.

- ▶ Drill and tap a hole at the mounting location:
 - Threaded hole M8x1.25 / depth min. 18.5 mm
- ▶ Tighten the unit (if necessary, including the supplied mounting adapter) with a tightening torque of 8 Nm.

8.4 Screw mounting with adapter

- ▶ Prepare a flat contact surface with a diameter of 25 mm.
- ▶ Screw the adapter to the sensor screw and tighten with a tightening torque of 8 Nm.
- ▶ Drill and tap a hole at the mounting location:
 - Threaded hole M8x1.25 / depth 9.5 mm
- ▶ Tighten the unit with a tightening torque of 8 Nm.

UK

9 Operation

9.1 Check connection

- ▶ Press the button briefly (switch on device).
 - > Green LED lights up briefly and goes out again.
 - > Green LED lights up briefly again: connection with the gateway ok
or
 - > Red LED lights up briefly again: no connection with the gateway.
- ▶ Check connection and position the unit closer to the gateway.

9.2 Reading the node ID

The identification number is printed on the device label and can also be read via the QR code or the NFC transponder with a suitable app.

10 Maintenance, repair, disposal

The operation of the unit is maintenance-free. It is not possible to repair the unit. The battery cannot be replaced. When the battery is empty, the unit must be replaced.

Dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations when it is no longer used.

11 Radio approvals

If approvals are granted, the approval texts of the respective countries shall apply.

11.1 Overview

The device has an operating frequency of 2400 - 2483.2 MHz and a maximum transmitter power of +4 dBm.

The overview of the approval status of a device is available on our website at www.ifm.com.

11.1.1 Europe / EU Declaration of Conformity

ifm electronic gmbh hereby declares that the device is in compliance with the directive 2014/53/EU.

The full text of the EU Declaration of Conformity is available at the following Internet address: www.ifm.com.

11.1.2 USA

FCC information:

Supplier's Declaration of Conformity

Models

VWV001 and VWV002

U.S. Responsible Party

ifm efector inc.

1100 Atwater Drive / Malvern, PA 19355

Phone: +1 800 441 8246

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device must not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications to this device that have not been expressly approved by ifm could void the user's authority to operate the equipment.

Note:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential

installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

11.1.3 Canada

IC note:

This device contains licence-exempt transmitters/receivers that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with ISED RSS-102 radiation exposure limits set forth for an uncontrolled environment.

11.1.4 Brasil - Agência Nacional de Telecomunicações (Anatel)

Anatel ID: 13389-20-12898

For further information, please consult the ANATEL website www.anatel.gov.br.

This device must accept any harmful interference and may not cause interference with duly authorised systems.

