

ifm electronic

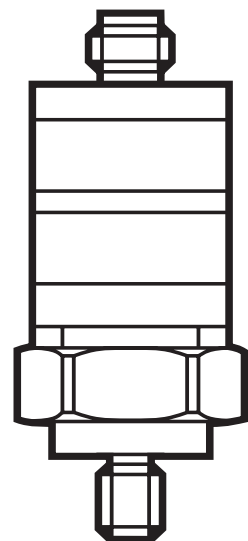


Operating instructions  
vibration sensor

**efector®**  
**VKV021**

**UK**

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# Preliminary note

- An instruction is indicated by "▶":  
Example: ▶ Check whether the unit operates correctly.



Important note

Non-compliance can result in malfunctions or interference.



Information

Supplementary note.

## 1 Safety instructions

- Please read the product description prior to set-up of the unit. Ensure that the product is suitable for your application without any restrictions.
- The unit conforms to the relevant regulations and EC directives.
- Improper or non-intended use may lead to malfunctions of the unit or to unwanted effects in your application.
- That is why installation, electrical connection, set-up, operation and maintenance of the unit must only be carried out by qualified personnel authorised by the machine operator.

## 2 Functions and features

The vibration sensor detects the vibration in the system (measured / evaluated physical unit = vibration velocity). This is converted into an analogue signal at the current output. The switching output behaviour is determined using the two setting rings.

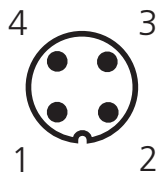
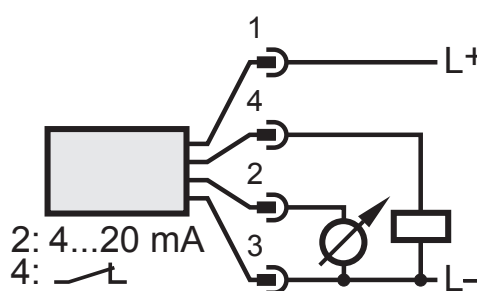
## 3 Installation

- ▶ Mount only in a thick housing wall (e.g. transport thread).
- ▶ Ensure that the signal direction is correct.
- ▶ Ensure a safe vibration transmission and allow no elastic intermediate layers.
- ▶ Tighten the sensor with a tightening torque of 15 Nm.

## 4 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 1: L+
			Pin 2: 4...20 mA
			Pin 3: GND
			Pin 4: digital output (normally closed)

## 5 Settings

### RMS Set

Effective value of the switching threshold, defining the limit value of the vibration velocity.

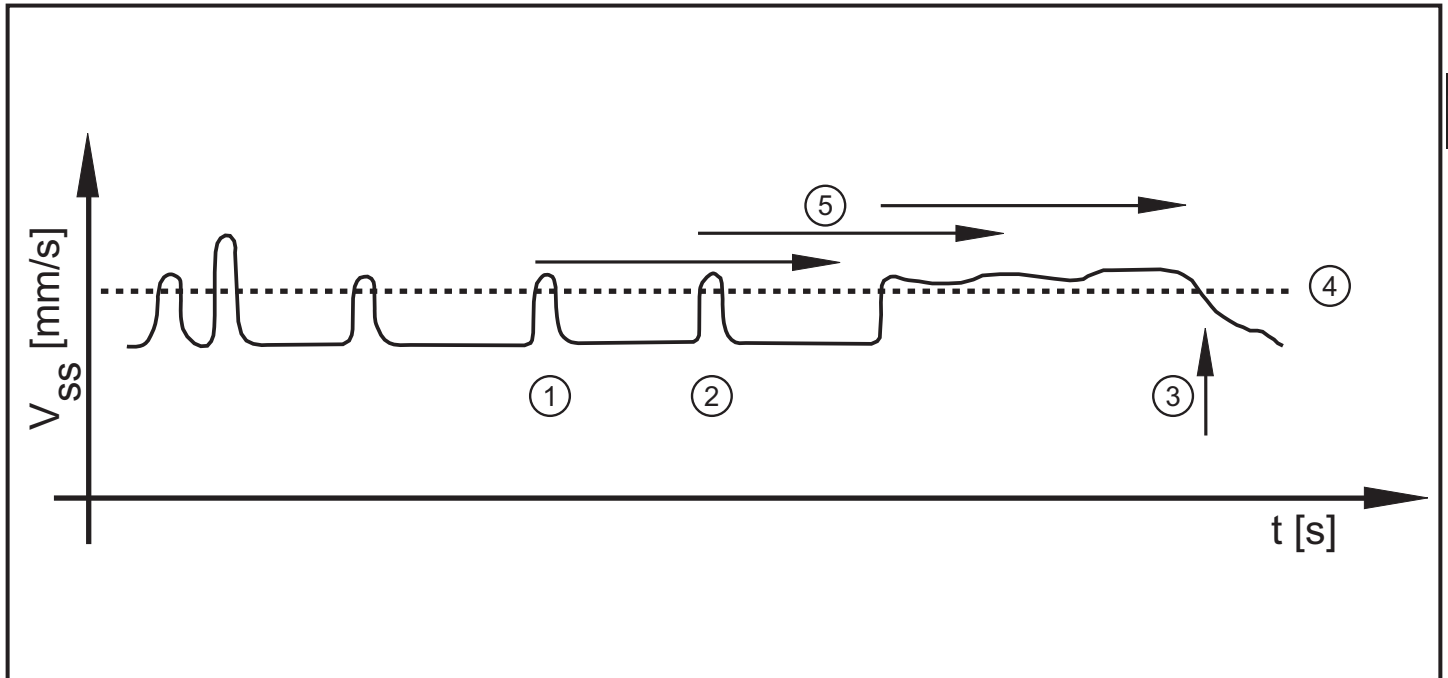
### Delay Set

Time in seconds during which the limit value must be effectively above the switching threshold (RMS Set) to activate the switching output (normally closed pin 4).

## 5.1 Measuring range

$V_{\text{eff}}$	mm/s	0...25
$I_{\text{out}}$	mA	4...20
Response delay	s	1...60

## 5.2 Switching output behaviour

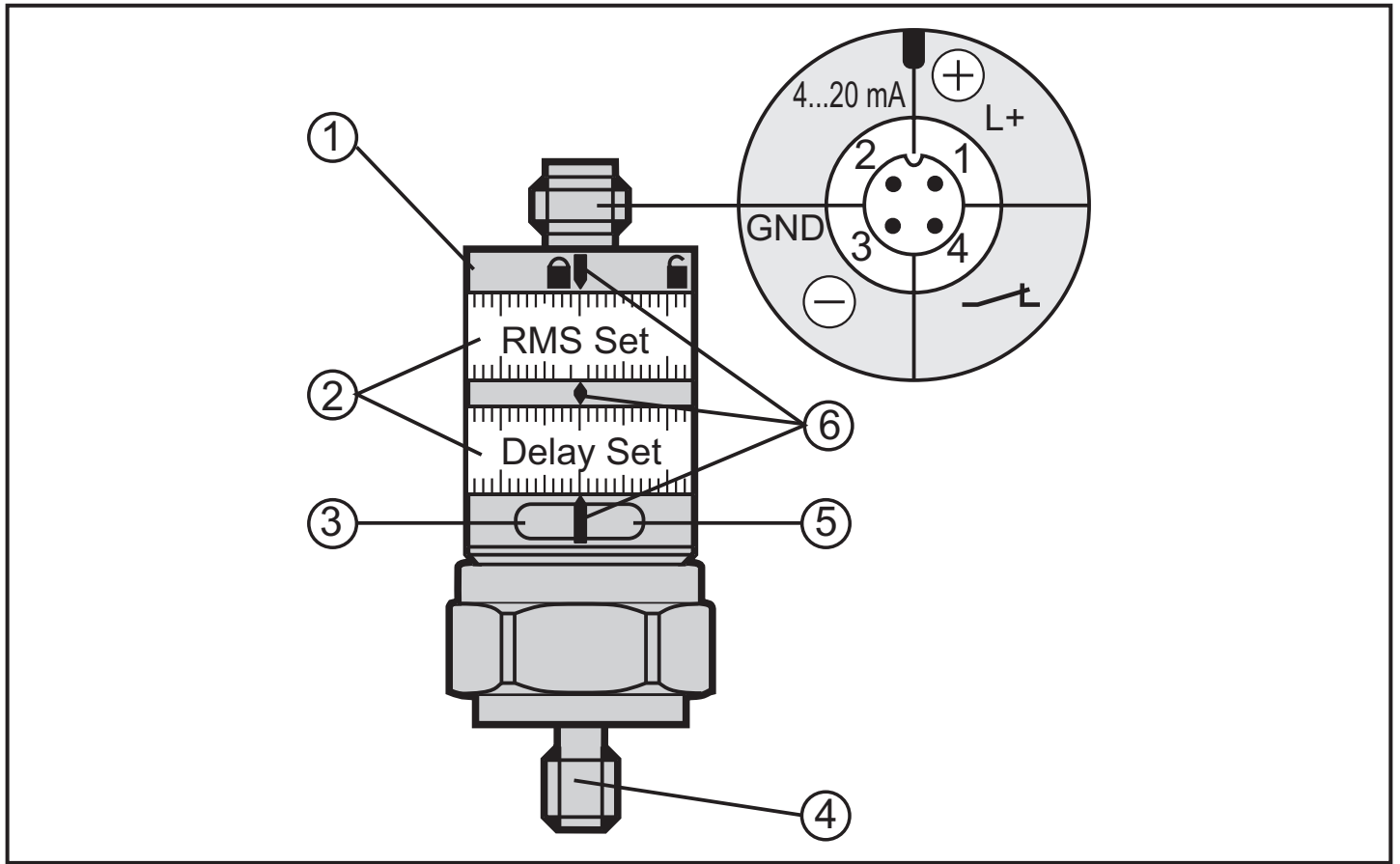


- 1: Time delay after the switching threshold has been exceeded
  - 2: Time delay after the switching threshold has been exceeded
  - 3: Switch-off
  - 4: Switching threshold
  - 5: Delay
- $V_{\text{ss}}$  = vibration velocity  
 $t$  = time

### Implementation of the time delays

The time delay starts when the defined switching threshold is exceeded (1) / (2). The time delay is cancelled when the value falls below the switching threshold (without switch-off). The switch-off is triggered when the switching threshold is exceeded during a full time delay (3).

## 6 Operating and display elements



1: locking ring

2: setting rings (manually adjustable after unlocking)

3: LED green: voltage supply

4: M8 process connection

5: LED yellow: lights when switching threshold and time delay are exceeded

6: setting marks



To achieve the setting accuracy: first position the rings to the lower end stop value, then set the requested value.

## 7 Approvals

### 7.1 Limited voltage / Current

The device shall be supplied from an isolating transformer having a secondary Listed fuse rated either

a) max 5 amps for voltages 0~20 Vrms (0~28.3 Vp) or

b) 100/Vp for voltages of 20~30 Vrms (28.3~42.4 Vp)

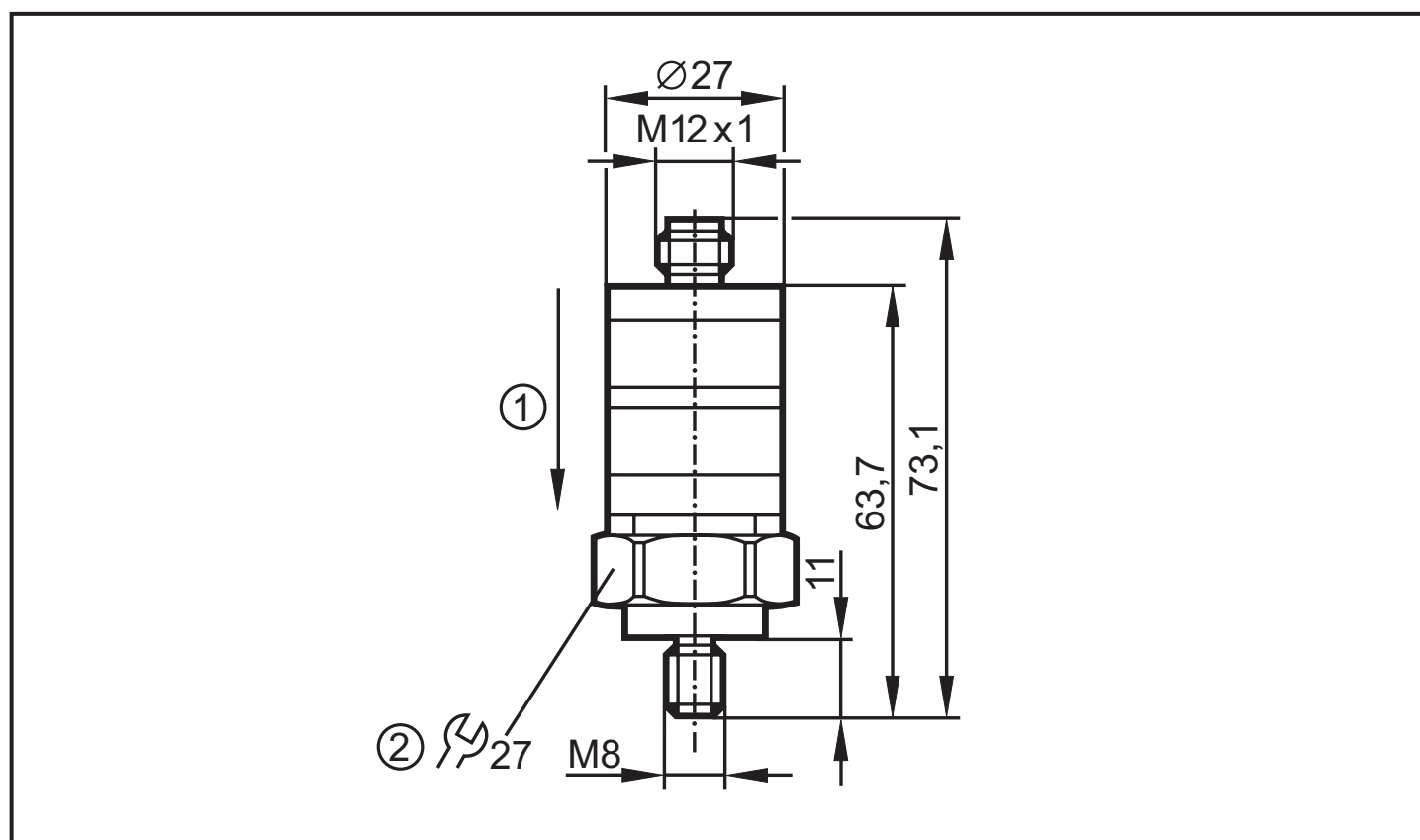
For the scope of validity cULus:

Compact diagnosis system shall be connected only by R/C (CYJV2) cord type ADOxH04xxxxxxxxx04 or VDOxH04xxxxxxxxx04STxx040xxx, manufactured by ifm electronic, rated min. 32 V, 80°C, available upon request from ifm electronic or use any alternate R/C (CYJV2) cord, having the same or better ratings, suitable for field wiring.

The ifm cord types with plug M12 and UL approval are available for ambient temperatures up to 50°C. For ambient temperatures up to 80°C, a R/C (CYJV2) cord with suitable ratings shall be used.

UK

## 8 Scale drawing



1: measurement axis

2: tightening torque 15 Nm

## 9 Maintenance, repair, disposal

The operation of the unit is maintenance-free. It is not possible to repair the unit. After use dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations.

## 10 Technical data

Technical data and further information at  
[www.ifm.com](http://www.ifm.com) --> Select your country --> Data sheet direct: