


# Vibration sensor

## VIM32PL-E1V25-0RE-I421V14

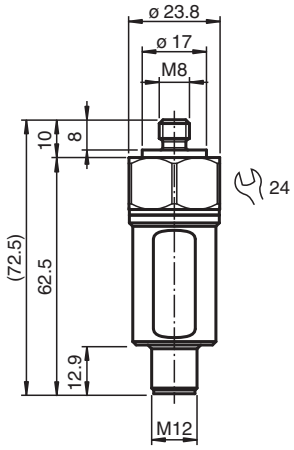
- Analog current output
- Screw-in thread for simple installation
- Simple electrical commissioning
- Rugged stainless steel housing
- Vibration velocity in mm/s (rms) acc. to DIN ISO 10816/20816
- Switching output

Vibration sensor with switching output and analog current output

## Function

The vibration sensor determines the vibration quantity using rms (root meas square) averaging. This form of quadratic averaging or pre-filtering enables precise trend statements about the condition of the application.
In addition, a switching output with preset switching characteristics is included. This means a permanent monitoring of the vibration measured value is not required, because a necessary maintenance of the plant is signalized directly. The switching characteristics are provided with a preset response time. Thus, the output is only set if the vibration event lasts longer than this time. Short-time vibration events are hence filtered out.
The simple mounting allows for commissioning in any application.

## Dimensions




## Technical Data

| General specifications | | |
|---|---|---|
| Type | | Vibration sensor |
| Measuring technology | | MEMS |
| Series | | Performance Line |
| Measured variable | | Vibration velocity |
| Measurement range | | |
| Vibration velocity | v-rms | 0 ... 25 mm/s |
| Measurement accuracy | | ± 0.1 mm/s (calibration point: 90% of the measuring range; 159.2 Hz)<br>Complies with the tolerance requirements of DIN ISO 2954 for measurement range greater than 8 mm/s |
| Cross-sensitivity | | < 5 % of the partial lateral acceleration, which acts exactly 90° to the measuring axis |

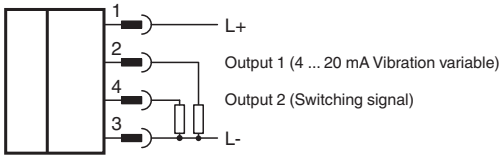
Release date: 2024-07-25 Date of issue: 2024-07-25 Filename: 70146714-100004_eng.pdf

## Technical Data

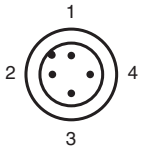
| | | |
|---|---|---|
| Frequency range | | 10 ... 1000 Hz |
| Averaging time | | for v-rms: 2 s |
| **Functional safety related parameters** | | |
| $MTTF_d$ | | 329 a |
| Mission Time ($T_M$) | | 20 a |
| Diagnostic Coverage (DC) | | 0 % |
| **Electrical specifications** | | |
| Fusing | | external fuse is required: 1 A , fast acting , 30 V DC |
| Operating voltage | $U_B$ | 18 ... 30 V DC |
| Current consumption | | max. 220 mA |
| Power consumption | $P_0$ | max. 6.6 W |
| Time delay before availability | $t_v$ | 2 s (rms filter is calculated intially with measurement data before they are available at the output) |
| Surge protection | | up to 2 kV |
| **Output 1** | | |
| Output type | | analog output, current<br>output of the vibration variable |
| Output current | | 4 ... 20 mA |
| Load resistor | | ≤ 500 Ω |
| **Output 2** | | |
| Output type | | PNP |
| Switching function | | Normally closed (NC) |
| Operating current | | ≤ 100 mA |
| Voltage drop | | < 2 V |
| Switching threshold | | 2.5 mm/s ( 10 % of the measuring range ) |
| Preset response time | | 2 s (minimum time for a vibration event above the switching threshold so that the output switches) |
| Short-circuit protection | | yes |
| **Standard conformity** | | |
| Degree of protection | | DIN EN 60529, IP66, IP67 |
| Shock resistance | | DIN EN 60068-2-27, 60 *g*, 6 ms |
| Vibration resistance | | DIN EN 60068-2-6, 16.5 g, 10 ... 1000 Hz |
| Vibration evaluation | | DIN ISO 10816/20816 |
| **Approvals and certificates** | | |
| UL approval | | |
| Ordinary Location | | E468231 cULus Listed, Class III Power Source and limited energy , if UL marking is marked on the product. For use in NFPA 70 Applications only.<br>adapters providing field wiring on request |
| Maximum permissible ambient temperature | | max. 80 °C (max. 176 °F) |
| **Ambient conditions** | | |
| Ambient temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| **Mechanical specifications** | | |
| Connection type | | plug |
| Housing material | | Stainless steel 1.4305 / AISI 303 |
| Degree of protection | | IP66 / IP67 only in connected state |
| Connector | | |
| Threading | | M12 |
| Number of pins | | 4 |
| Mass | | approx. 100 g |
| Dimensions | | |
| Length | | 72.5 mm |
| Diameter | | 23.8 mm |

Release date: 2024-07-25 Date of issue: 2024-07-25 Filename: 70146714-100004_eng.pdf

## Connection




## Connection Assignment




## Accessories

Accessories for this product can be found on the internet at www.pepperl-fuchs.com.

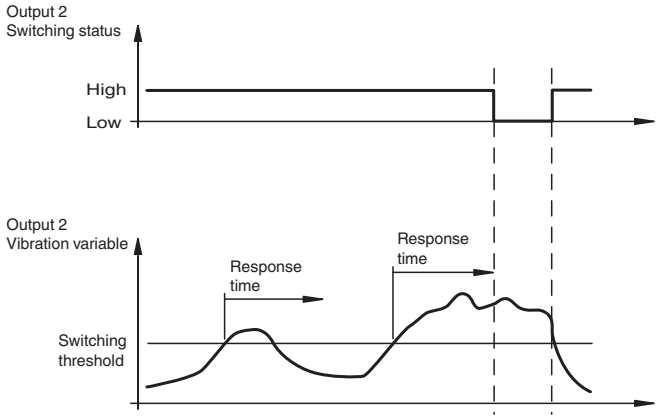
## Installation

**Further Documentation**
The sensor manual is also available as detailed overall documentation. Among other things, installation, grounding concepts and mounting are described there in detail.
You can access the manual via the product detail page at www.pepperl-fuchs.com.

**Note**
The correct electrical connection and the selection of the appropriate grounding concept are crucial for malfunction-free operation of the sensor.
For detailed information you may refer to the manual of the sensor.

## Operation

### Switching Characteristics




Release date: 2024-07-25 Date of issue: 2024-07-25 Filename: 70146714-100004_eng.pdf