

Vibration sensor

VIM32PL-E1AC8-0RE-IO-1V1401



- Vibration velocity in mm/s (rms) acc. to DIN ISO 10816/20816
- Vibration acceleration in g (rms) acc. to DIN ISO 10816/20816
- IO-Link Interface for process data, parameterization and diagnosis
- Switching output and current output parameterizable
- Additional temperature value output
- Rugged stainless steel housing

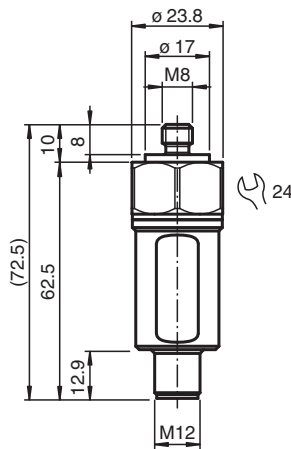
Vibration sensor with IO-Link and programmable switching output or analog current output



Function

The vibration sensor determines the vibration quantity using rms (root mean square) averaging. This form of quadratic averaging or pre-filtering enables precise trend statements about the condition of the application. The integrated IO-Link interface provides an optimal adaptation to different applications through parameterization and process data transmission for condition monitoring. The simple mounting allows for commissioning in any application.

Dimensions



Technical Data

General specifications		
Type	Vibration sensor	
Measuring technology	MEMS capacitive	
Series	Performance Line	
Measured variable	Vibration velocity Vibration acceleration Temperature	
Measuring range		
Vibration velocity	v-rms	0 ... 128 mm/s
Vibration acceleration	a-rms	0 ... 10 g rms
Temperature	-40 ... 85 °C (-40 ... 185 °F)	

Release date: 2024-10-16 Date of issue: 2024-10-16 Filename: 70140695-100001_eng.pdf

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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Technical Data

Measurement accuracy	Vibration velocity: ± 0.1 mm/s (calibration point: 90% of the measuring range; 159.2 Hz) Complies with the tolerance requirements of DIN ISO 2954 for measuring range greater than 8 mm/s Vibration acceleration: ± 0.01 g (calibration point: 90% of the measuring range; 159.2 Hz) Complies with the tolerance requirements of DIN ISO 2954	
Cross-sensitivity	< 5 % of the partial lateral acceleration, which acts exactly 90° to the measuring axis	
Resolution	Vibration velocity: 0.01 mm/s Vibration acceleration: 0.01 g	
Frequency range	10 ... 1000 Hz	
Averaging time	for v-rms: 2 s for a-rms: 2 s	
Sampling rate	8 kHz	
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. 700 mA	
Power consumption	P ₀	max. 21 W
Time delay before availability	t _v	≤ 1 s
Surge protection	up to 2 kV	
Interface		
Interface type	IO-Link (via C/Q = Pin 4)	
IO-Link revision	1.1	
Device profile	Identification and Diagnosis - I&D	
Process data	Input 16 Byte measurement channels: - rms value velocity - peak value acceleration - rms value acceleration - temperature per measurement channel: - measurement value 2 Byte - scaling 8 Bit - switching signals 2 Bit status data	
Vendor ID	1 (0x0001)	
Device ID	5308417 (0x510001)	
Transfer rate	COM2 (38.4 kBit/s)	
Min. cycle time	5 ms	
SIO mode support	yes	
Compatible master port type	Class A Class B (use 3-pole adapter or 3-wire cable)	
Output 1		
Output type	C/Q - Pin 4 in SIO mode (switching signal of the measured variable is programmable)	
Switching function	Normally open/closed (NO/NC)	
Operating current	≤ 100 mA	
Short-circuit protection	yes	
Output 2		
Output type	I/Q - pin 2 (parameterizable as analog current output or switching signal) - I: analog output for the measured variable, current 4 ... 20 mA - Q: switching signal of the measured variable is parameterizable, PNP normally open	
Switching function	Normally open/closed (NO/NC)	
Operating current	≤ 120 mA for switching signal	
Voltage drop	< 2 V	
Output current	4 ... 20 mA at analog output	
Load resistor	≤ 500 Ω at analog output	
Short-circuit protection	yes	

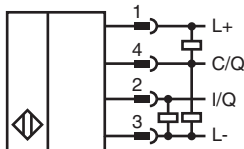
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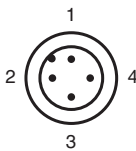
Technical Data

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. 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

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.