

Vibration sensor

VIM32PL-E1V16-0RE-I420V14



- Analog current output
- Screw-in thread for simple installation
- Simple electrical commissioning
- Rugged stainless steel housing
- Vibration velocity in mm/s via root mean square formation (rms)

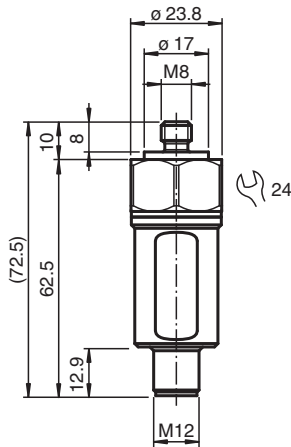
Vibration sensor with analog current output



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 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 ... 16 mm/s
Measurement accuracy	± 0.1 mm/s (calibration point: 90% of the measuring range; 159.2 Hz) 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	
Frequency range	10 ... 1000 Hz	
Averaging time	for v-rms: 2 s	

Release date: 2023-06-29 Date of issue: 2023-06-29 Filename: 70146714-100001_eng.pdf

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

PEPPERL+FUCHS

Technical Data

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. 120 mA
Power consumption	P_0	max. 3.6 W
Time delay before availability	t_v	2 s (rms filter is calculated initially with measurement data before they are available at the output)
Surge protection		up to 2 kV

Output 1

Output type		analog output, current output of the vibration variable
Output rated operating current		4 ... 20 mA
Load resistor		$\leq 500 \Omega$

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

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)

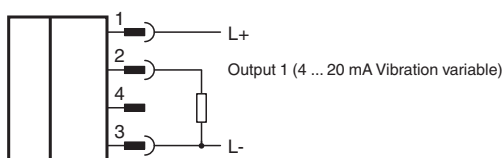
Ambient conditions

Ambient temperature		-40 ... 85 °C (-40 ... 185 °F)
Storage temperature		-40 ... 60 °C (-40 ... 140 °F)

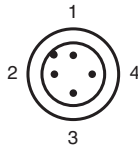
Mechanical specifications

Connection type		plug
Housing material		Stainless steel 1.4305 / AISI 303
Housing length		72.5 mm
Housing diameter		23.8 mm
Degree of protection		IP66 / IP67 only in connected state
Connector		
Threading		M12
Number of pins		4
Mass		approx. 100 g

Connection



Connection Assignment



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.

Type Code

Structure of the type code

V	I	M	3	(1)	(2)	(2)	-	E	(3)	(4)	(5)	(5)	-	0	R	E	-	I	4	2	(6)	V	1	4
---	---	---	---	-----	-----	-----	---	---	-----	-----	-----	-----	---	---	---	---	---	---	---	---	-----	---	---	---

VIM	Type of sensor
VIM	Vibration sensor

3	Size
3	Small size with screw thread

(1)	Housing material
2	Stainless steel 1.4305/ AISI 303 (V2A)
4	Stainless steel 1.4404/ AISI 316L (V4A)
d	Duplex stainless steel 1.4462 / AISI 318

(2) (2)	Series
PU	Pure Line
PL	Performance Line

E	Adaption
E	External thread

(3)	Frequency range
0	1 ... 1000 Hz
1	10 ... 1000 Hz

(4)	Measured variable
G	Vibration acceleration (rms)
V	Vibration velocity (rms)

(5) (5)	Measurement range
02	0 ... 2 g rms
04	0 ... 4 g rms
06	0 ... 6 g rms
08	0 ... 8 g rms
16	0 ... 16 mm/s
32	0 ... 32 mm/s
50	0 ... 50 mm/s
C8	0 ... 128 mm/s

0	Functional safety
0	No functional safety

R	Explosion protection + temperature range
R	No use in hazardous areas and permissible ambient temperature -40 ... 85 °C

E	Degree of protection
E	IP66/IP67















Type Code

I42	Interface type
I42	4 ... 20 mA

(6)	Switching output
0	No switching output
1	1 switching output, threshold limit 10 % of the measuring range, preset response time 2 s, normally open
2	1 switching output, threshold limit 20 % of the measuring range, preset response time 2 s, normally open
3	1 switching output, threshold limit 30 % of the measuring range, preset response time 2 s, normally open
4	1 switching output, threshold limit 35 % of the measuring range, preset response time 2 s, normally open
5	1 switching output, threshold limit 40 % of the measuring range, preset response time 2 s, normally open

V14	Connection
V14	Connector M12, 4-pin

Accessories

	MONAD-M08-1,25-M08-1,25K/368	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M8 x 1.25, screw-in depth 19.5
	MONAD-M08-1,25-M10-1,5/36	Mounting adapter for VIM3*/VIM6* vibration sensors, internal thread M8 x 1.25 x 10, external thread M10 x 1.5, screw-in depth 18
	MONAD-M08-1,25-M30-3,5/368	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M30 x 3.5, screw-in depth 45
	MONAD-M08-1,25-1,2Z-BSPT/36	Mounting adapter for VIM3*/VIM6* vibration sensors, internal thread M8 x 1.25 x 10, external thread NPT1/2", screw-in depth 24
	RSL3-CS-SC-M55P200	Protective rubber sleeve for VIM3* vibration sensors against ingress of moisture and mechanical effects
	EMCAD-M08-1,25-M08-1,25/36	EMC adapter for VIM3*/VIM6* vibration sensors, internal thread M8 x 1.25 x 10, external thread M8 x 1.25, screw-in depth 8
	V1-G-BK2M-PUR-U/ABG	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable black, shielded, UL approved, drag chain suitable
	V1-G-BK5M-PUR-U/ABG	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable black, shielded, UL approved, drag chain suitable
	V1-G-BK10M-PUR-U/ABG	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable black, shielded, UL approved, drag chain suitable
	MONAD-M08-1,25-M06-1,0/36	Mounting adapter for VIM3*/VIM6* vibration sensors, internal thread M8 x 1.25 x 10, external thread M6 x 1.0, screw-in depth 10
	MONAD-M08-1,25-M10-1,5/8	Mounting adapter for VIM3*/VIM6* vibration sensors, internal thread M8 x 1.25 x 10, external thread M10 x 1.5, screw-in depth 18
	MONAD-M08-1,25-M16-2,0/368	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M16 x 2.0, screw-in depth 27
	MONAD-M08-1,25-M20-2,5/368	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M20 x 2.5, screw-in depth 34
	MONAD-M08-1,25-M24-3,0/368	Mounting adapter for VIM3*/VIM6*/VIM8* vibration sensors, internal thread M8 x 1.25 x 10, external thread M24 x 3.0, screw-in depth 40