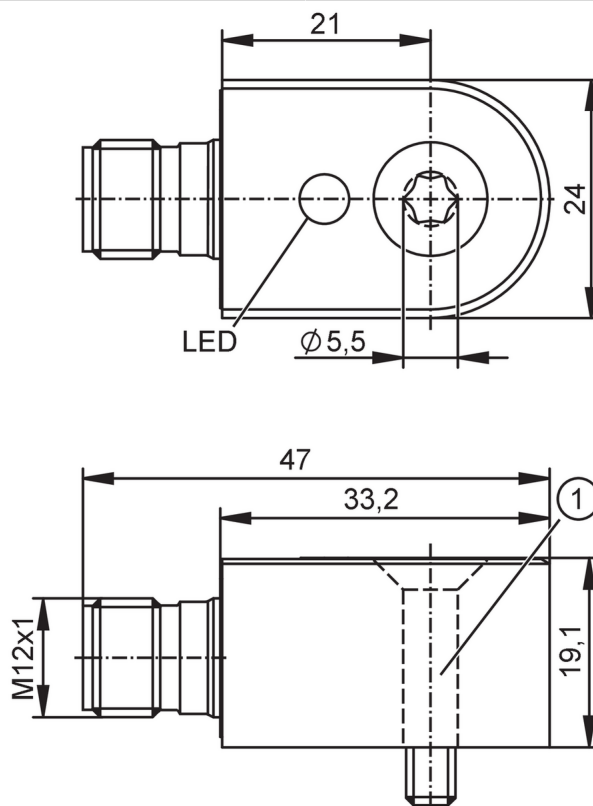


VVB302



Vibration sensor

VIBRATION IO-LINK SWITCH



1 Mounting screw M5



Product characteristics

Frequency range	[Hz]	2...5600
Measuring principle		capacitive

Application

Design	DataScience condition monitoring
Application	industrial machines

Electrical data

Operating voltage	[V]	18...30 DC
Current consumption	[mA]	< 50
Min. insulation resistance	[MΩ]	100; (500 V DC)
Protection class		III
Reverse polarity protection		yes
Type of sensor		Microelectromechanical system (MEMS)

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 2
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Outputs

Output signal	switching signal; IO-Link
Electrical design	PNP/NPN; (configurable)
Number of digital outputs	2
Output function	normally open / closed

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Max. voltage drop switching output DC [V]	2
Max. current load per output [mA]	100
Short-circuit protection	yes
Type of short-circuit protection	yes (non-latching)
Overload protection	yes

Measuring/setting range

Note on setpoint SP	configurable
Frequency range [Hz]	2...5600
Measuring principle	capacitive
Number of measurement axes	3

v-RMS (x-y-z)

Measuring range of vibration [m/s]	0...0.3
Resolution [m/s]	0.0001
Set point SP [m/s]	0.0002...0.3
Reset point rP [m/s]	0...0.2998

a-Peak / a-RMS (x-y-z)

Measuring range of vibration [m/s ²]	0...156.91
Resolution [m/s ²]	0.01
Set point SP [m/s ²]	2...156.91
Reset point rP [m/s ²]	0...154.91

Temperature measurement

Measuring range [°C]	-30...80
Resolution [°C]	0.1
Set point SP [°C]	-28...80
Reset point rP [°C]	-30...78

Accuracy / deviations

Accuracy [K]	± 5
Linearity deviation	2; (% of the final value)

X axis

Accuracy	2-4000Hz +/- 10%, 4000...5600Hz -3dB
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Y axis

Accuracy	2-5000Hz +/- 10%, 5000...5600Hz -3dB
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z-axis

Accuracy	2-5000Hz +/- 10%, 5000...5600Hz -3dB
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Software / programming

Parameter setting options	IO-Link
Diagnostic functions	self-test

Interfaces

Communication interface	IO-Link
Transmission type	COM3 (230,4 kBaud)
IO-Link revision	1.1



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SDCI standard	IEC 61131-9: 2013-07	
Profiles	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
	Function	Locator
	Function	ProductURI
SIO mode	yes	
Required master port class	A	
Min. process cycle time [ms]	4.1	
IO-Link process data (cyclical)	Function	bit length
	v-RMS (x)	16
	v-RMS (y)	16
	v-RMS (z)	16
	v-RMS (Magnitude)	16
	scaling / v-RMS	8
	a-Peak (x)	16
	a-Peak (y)	16
	a-Peak (z)	16
	a-Peak (Magnitude)	16
	a-RMS (x)	16
	a-RMS (y)	16
	a-RMS (z)	16
	a-RMS (Magnitude)	16
	scaling / a-Peak/a-RMS	8
	temperature	16
	scaling / temperature	8
	device status	4
	unbalance / bearing event	1
	virtual switching output (v-ou1)	1
	binary switching information	2
IO-Link functions (acyclical)	filter for v-RMS, a-RMS, a-Peak; Hysteresis; window; Switch points; switching logic; unbalance measurement; machine operating hours counter; bearing analysis (BearingScout)	
Supported DeviceIDs	Type of operation	DeviceID
	default	1778
Note	For further information please see the IODD PDF file at "Downloads"	
Operating conditions		
Ambient temperature [°C]	-30...80	
Storage temperature [°C]	-30...80	
Protection	IP 67; IP 68; IP 69	
Tests / approvals		
EMC	EN IEC 61000-6-2	noise immunity / industrial environments
	EN IEC 61000-6-4	noise emission
Shock resistance	DIN EN 60068-2-27	50 g 11 ms
		500 g 1 ms
Vibration resistance	DIN EN 60068-2-6	20 g / 10...3000 Hz
MTTF [years]	480	
UL approval	UL approval number	L006
	File number UL	E251902

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Vibration sensor

VIBRATION IO-LINK SWITCH

Standard	mechanical vibration; ISO 10816-3; ISO 2954; ISO 20816-3
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Mechanical data	
Weight [g]	98.4
Type of mounting	mounting screw
Material	housing: stainless steel (1.4404 / 316L)
Tightening torque [Nm]	4.6

Displays / operating elements		
Display	Power	1 LED, green
	fault	1 LED, red

Accessories	
Items supplied	mounting screw: 1 x (M5 x 25 mm)

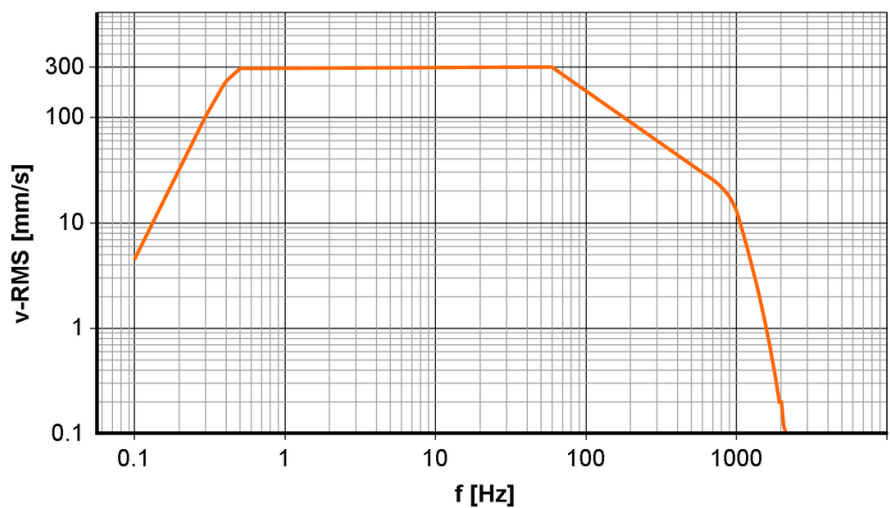
Remarks	
Pack quantity	1 pcs.

Electrical connection
Connector: 1 x M12; coding: A; Contacts: 4; Maximum cable length: 20 m



- 1 L+
- 2 OUT2 Switching output
- 3 L-
- 4 OUT1 switching output or IO-Link

Diagrams and graphs



v-
RMS
[mm/
s]
vibration velocity

f
[Hz]
Frequency