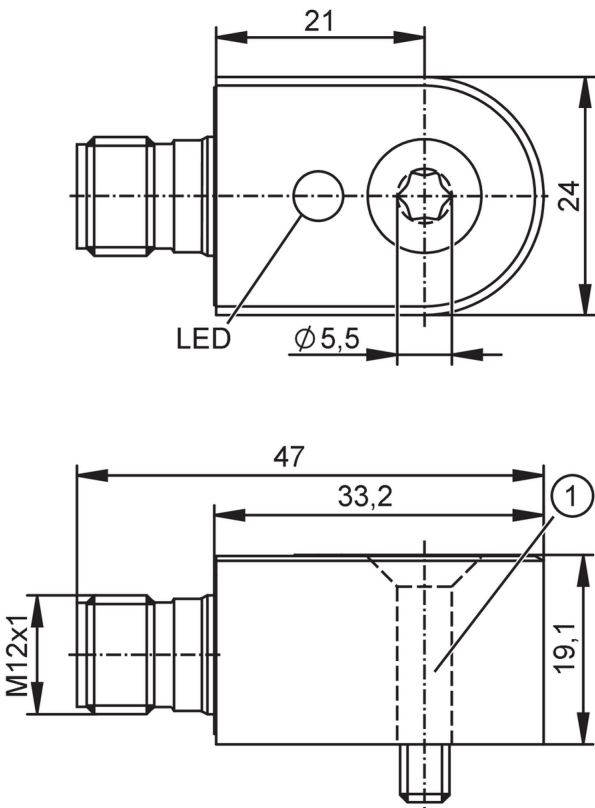


VVB302



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
Sensor type		microelectromechanical system (MEMS)
Inputs / outputs		
Number of inputs and outputs		Number of digital outputs: 2
Outputs		
Output signal		switching signal; IO-Link
Electrical design		PNP/NPN; (configurable)
Number of digital outputs		2
Output function		normally open / normally 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		pulsed
Overload protection		yes
Measuring/setting range		
Note on setpoint SP		parameterisable
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/s²]	0...156.91
Resolution	[m/s²]	0.01
Set point SP	[m/s²]	2...156.91
Reset point rP	[m/s²]	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
y-axis		
Accuracy		2-5000Hz +/- 10%, 5000...5600Hz -3dB
z-axis		
Accuracy		2-5000Hz +/- 10%, 5000...5600Hz -3dB
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 type	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 under "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	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 no.	L006	
	File number UL	E251902	

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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
Materials	housing: stainless steel (316L/1.4404)
Tightening torque [Nm]	4.6

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

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

Remarks	
Pack quantity	1 pcs.

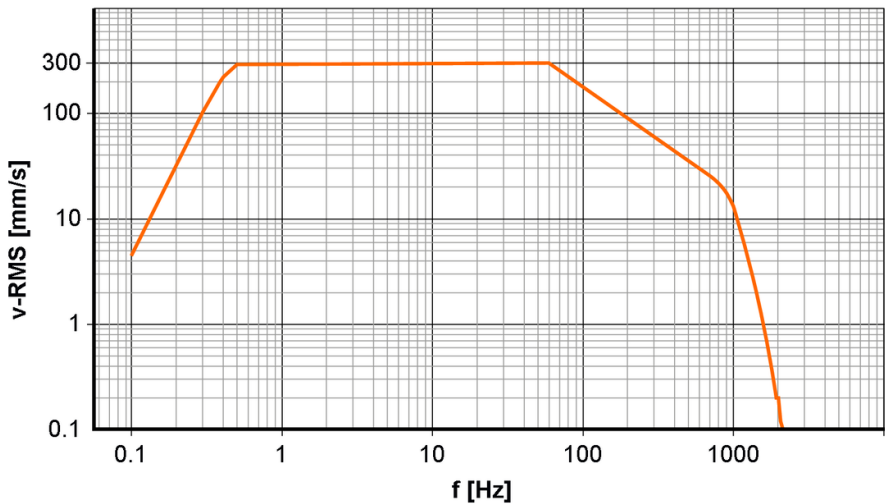
Electrical connection

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