

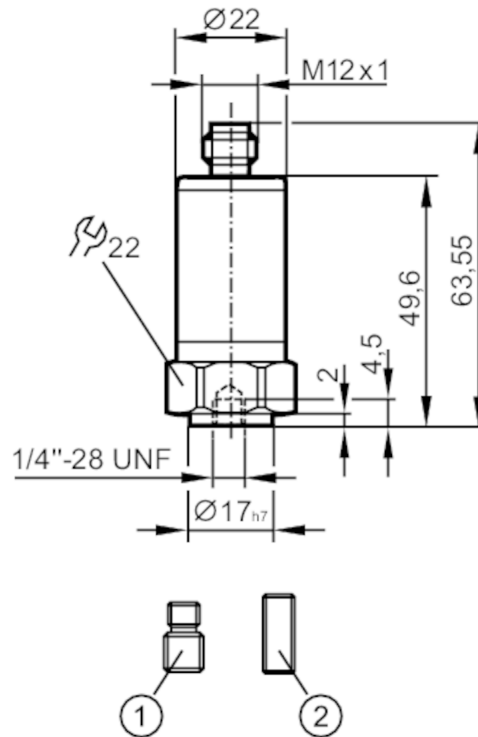
# VVB020



## Vibration sensor

VIBRATION IO-LINK SWITCH

the hardware version BC has a temporarily changed ambient temperature range



- 1 set screw 1/4"-28 UNF / M8  
2 set screw 1/4"-28 UNF



### Product characteristics

Frequency range [Hz]	2...10000	
Measuring principle	capacitive	
v-RMS		
Measuring range of vibration [mm/s]	0...45	
a-Peak / a-RMS		
Measuring range of vibration	0...50 g	0...490.3 m/s <sup>2</sup>

### Application

Application	medium-sized machines, power < 300 kW, rotational speed > 600 rpm
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### 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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# VVB020



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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
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...10000
Measuring principle		capacitive
Number of measurement axes		1
v-RMS		
Measuring range of vibration	[mm/s]	0...45
Set point SP	[mm/s]	0.2...45
Reset point rP	[mm/s]	0...44.8
In steps of	[mm/s]	0.2
a-Peak / a-RMS		
Measuring range of vibration	0...50 g	0...490.3 m/s <sup>2</sup>
Set point SP	0.2...50 g	2...490.3 m/s <sup>2</sup>
Reset point rP	0...49.8 g	0...488.3 m/s <sup>2</sup>
In steps of	0.2 g	2 m/s <sup>2</sup>
Crest		
Measuring range of vibration		1...50
Set point SP		2...50
Reset point rP		1...49
In steps of		1
Temperature measurement		
Measuring range	[°C]	-30...80
Resolution	[°C]	0.1
Set point SP	[°C]	-28...80
Reset point rP	[°C]	-30...78
In steps of	[°C]	2
Accuracy / deviations		
Accuracy		≤ 4 kHz +/-10 %; ≥ 4...10 kHz: < 3 dB
Accuracy	[K]	± 2,5 K + (0,2 x (Umgebungstemperatur - Oberflächentemperatur))
Linearity deviation		2 %

# VVB020



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Software / programming		
Parameter setting options		Software
Diagnostic functions		self-test
Interfaces		
Communication interface		IO-Link
Transmission type		COM2 (38,4 kBaud); COM3 (230,4 kBaud)
IO-Link revision		1.1
SDCI standard		IEC 61131-9: 2013-07
Profiles		Blob (0x0030); Measuring sensor (0x800A); Common Profile (0x4000)
SIO mode		yes
Required master port class		A
Process data analog		10
Process data binary		2
Min. process cycle time [ms]		3.6
IO-Link functions (acyclical)		filter for v-RMS, a-RMS, a-Peak; Hysteresis; window; Switch points; switching logic
Supported DeviceIDs	Type of operation	DeviceID
	Status A (COM2)	1257
	Status B (COM2 / COM3)	1369
Note		For further information please see the IODD PDF file at "Downloads"
Operating conditions		
Ambient temperature [°C]		-30...60
Storage temperature [°C]		-30...80
Protection		IP 67; IP 68; IP 69K
Tests / approvals		
EMC	2014/30/EU	
	DIN EN 61000-6-2	
	DIN EN 61000-6-3	
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]		299
UL approval	Ta	-30...60 °C
	UL approval number	L002
Mechanical data		
Weight [g]		116.5
Type of mounting		set screw
Material		housing: stainless steel (1.4404 / 316L)
Tightening torque [Nm]		8
Accessories		
Items supplied		set screw: 1 x 1/4" 28 UNF / M8
		set screw: 1 x 1/4"28 UNF x 5/8" DIN916
Remarks		
Notes		the hardware version BC has a temporarily changed ambient temperature range
Pack quantity		1 pcs.

# VVB020



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### Electrical connection

Connector: 1 x M12; coding: A; Maximum cable length: 20 m



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