

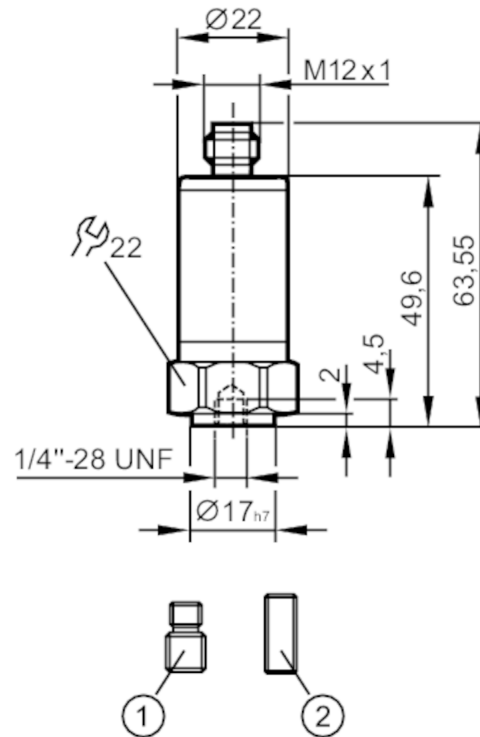
# VVB020



## 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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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	$\leq 4 \text{ kHz} \pm 10 \%$ ; $\geq 4...10 \text{ kHz}: < 3 \text{ dB}$	
Accuracy [K]	$\pm 2,5 \text{ K} + (0,2 \times (\text{Umgebungstemperatur} - \text{Oberflächentemperatur}))$	
Linearity deviation	2 %	

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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.	

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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