

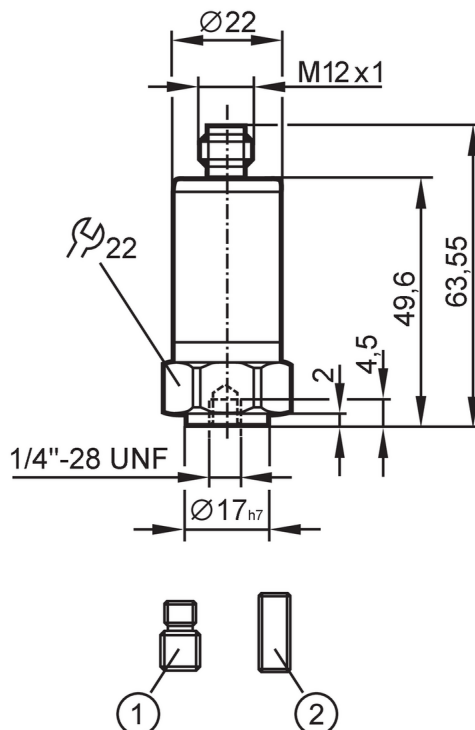
# VVB020



## 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	
<b>v-RMS</b>		
Measuring range of vibration [mm/s]	0...45	
<b>a-Peak / a-RMS</b>		
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	
Sensor type	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
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Electrical design	PNP/NPN; (configurable)
Number of digital outputs	2
Output function	normally open / normally 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	pulsed
Overload protection	yes

### Measuring/setting range

Note on setpoint SP	parameterisable
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 %

### Software / programming

Parameter setting options	Software
Diagnostic functions	self-test



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Interfaces		
Communication interface	IO-Link	
IO-Link revision	1.1	
SDCI standard	IEC 61131-9: 2013-07	
Profiles	BLOB	Binary Large Object transfer
	Common - I&D	Identification and Diagnosis
	Function	Measurement data, standard resolution
SIO mode	yes	
Required master port type	A	
Process data analogue	10	
Process data binary	2	
IO-Link functions (acyclical)	filter for v-RMS, a-RMS, a-Peak; Hysteresis; window; switch points; switching logic	
Supported DeviceIDs	<b>Type of operation</b>	<b>DeviceID</b>
	Status A (COM2)	1257
	Status B (COM2 / COM3)	1369
Note	For further information please see the IODD PDF file under "Downloads"	
Status A (COM2)		
Transmission type	COM2 (38,4 kBaud)	
Min. process cycle time [ms]	11.6	
Status B (COM2 / COM3)		
Transmission type	COM3 (230,4 kBaud)	
Min. process cycle time [ms]	3.6	
Operating conditions		
Ambient temperature [°C]	-30...80	
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 no.	L002
Mechanical data		
Weight [g]	116.5	
Housing	cylindrical	
Type of mounting	set screw	
Dimensions [mm]	Ø 22 / L = 63.55	
Materials	housing: stainless steel (316L/1.4404)	
Tightening torque [Nm]	8	

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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.
Electrical connection	
Connector: 1 x M12; coding: A; Maximum cable length: 20 m	
 A circular diagram of an M12 connector with four pins labeled 1, 2, 3, and 4. Pin 1 is at the top, pin 2 is at the top-left, pin 3 is at the bottom-left, and pin 4 is at the bottom-right.	
1	L+
2	OUT2
3	L-
4	OUT1 switching output or IO-Link