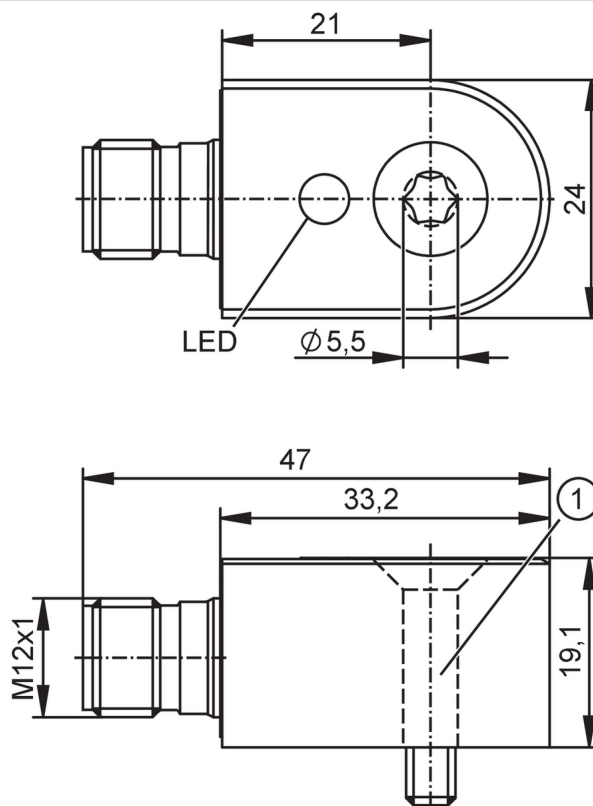


Condition monitoring sensor with CANopen

VIBRATION SENSOR



1 Mounting screw M5



Product characteristics

Frequency range	[Hz]	1...7500
Measuring principle		capacitive
v-RMS (x-y-z)		
Measuring range of vibration	[mm/s]	0...320
Unbalance analysis		
Measuring range of vibration	[mm/s]	0...320
a-Peak/a-RMS (x-y-z)		
Measuring range of vibration	[g]	0...60
Rolling bearing analysis (BearingScout™)		
Measuring range of vibration	[g]	0...60

Application

Application	machines and equipment in mobile applications
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Electrical data

Operating voltage	[V]	8...32 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)



Condition monitoring sensor with CANopen

VIBRATION SENSOR

Measuring/setting range		
Frequency range	[Hz]	1...7500
Measuring principle		capacitive
Number of measurement axes		3
d-Peak2Peak		
Measuring range of vibration	[mm]	0...320
Resolution	[mm]	0.1
v-RMS (x-y-z)		
Measuring range of vibration	[mm/s]	0...320
Resolution	[mm/s]	0.1
Unbalance analysis		
Measuring range of vibration	[mm/s]	0...320
Resolution	[mm/s]	0.1
a-Peak/a-RMS (x-y-z)		
Measuring range of vibration	[g]	0...60
Resolution	[g]	0.00102
Crest (x-y-z)		
Measuring range of vibration		0...50
Resolution		0.1
Rolling bearing analysis (BearingScout™)		
Measuring range of vibration	[g]	0...60
Resolution	[g]	0.00102
Temperature measurement		
Measuring range	[°C]	-30...80
Resolution	[°C]	0.1
Accuracy / deviations		
Accuracy	[K]	± 5
Linearity deviation		2; (% of the final value)
X axis		
Accuracy		1-6000Hz +/- 10%, 6000...7500Hz -3dB
Y axis		
Accuracy		1-6000Hz +/- 10%, 6000...7500Hz -3dB
z-axis		
Accuracy		1-6000Hz +/- 10%, 6000...7500Hz -3dB
Software / programming		
Parameter setting options		CANopen
Interfaces		
Communication interface		CAN
Transmission standard		CAN interface 2.0 A/B (ISO 11898)
Protocol		CANopen
Profile		CiA 301; CiA 302; CiA 303; CiA 306; CiA 404



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VIBRATION SENSOR

Terminating resistor	yes; (120 Ω configurable; Factory setting: OFF)	
Konfigurierbare Baudrate		
Transmission rate	20; 50; 125; 250; 500; 800; 1000 [kBit/s]; factory setting 250 [kBit/s]	
Node-ID		
Note on interfaces	1...127	
	Factory setting 42	
Operating conditions		
Ambient temperature	[°C]	-40...80
Storage temperature	[°C]	-40...80
Protection	IP 6K7; IP 6K8; IP 6K9K; (to ISO 20653)	
Tests / approvals		
EMC	2014 / 30 / EU	
	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]	403
UL approval	Ta	80 °C
	Enclosure type	1
	voltage supply	Limited Voltage/Current
	UL approval number	L007
	File number UL	E251902
Standard	mechanical vibration; ISO 10816-3; ISO 2954; ISO 20816-3	
Mechanical data		
Weight	[g]	97
Type of mounting	screw mounting	
Material	housing: stainless steel (1.4404 / 316L)	
Tightening torque	[Nm]	4.6
Displays / operating elements		
Display	Preoperational Mode	1 LED, green
	Operational Mode	1 LED, green flashing
	fault	1 LED, red
Accessories		
Items supplied	mounting screw: 1 x (M5 x 25 mm)	
Remarks		
Pack quantity	1 pcs.	

VMB301

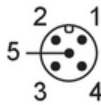


Condition monitoring sensor with CANopen

VIBRATION SENSOR

Electrical connection

Connector: 1 x M12; coding: A; Contacts: 5



1	screen
2	L+
3	L-
4	DATA CAN_H
5	DATA CAN_L

Other data

Parameter setting options

signal filter	v-RMS, a-RMS, a-Peak, Crest
Diagnostic functions	MEMS-self-test; Heartbeat-Function; Status LED
selection of possible units	v-RMS, unbalance analysis [mm/s, in/s, m/s]
	a-Peak, a-RMS, BearingScout™ [g, m/s²]
	temperature [°C, °F]
	d-Peak2Peak [m, mm, in]
additional functions	access to raw acceleration data, machine utilization / load spectrum counter
Note	for further information please refer to the EDS description available under "Downloads"

VMB301



Condition monitoring sensor with CANopen

VIBRATION SENSOR

Diagrams and graphs

