SENSOR

AV SENSOR 1003LF

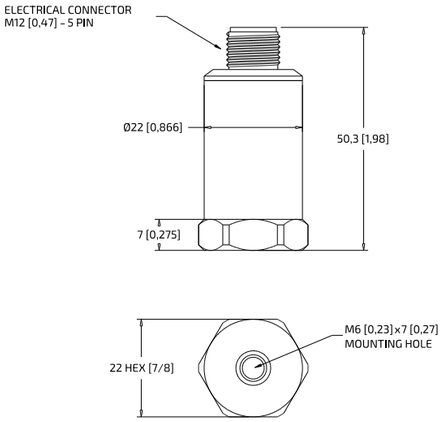
triaxial, digital, general purpose accelerometer

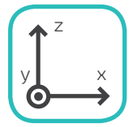
introduction

AVS 1003LF is a **triaxial, digital, low frequency** accelerometer. In addition to vibrations, it also measures **temperature**. The sensor measures and processes the vibration acceleration signal. Data is available via a digital connector in the industrial standard RS-485 and the MODBUS protocol. The sensor can provide two types of data: a **stream of raw vibration** data or determined **parameters** of the vibration signal.

APPLICATIONS

- protection,
- machine monitoring,
- condition assessment,
- dynamic state measurements.





3 Axes

±40 g

1 kHz
Bandwidth

4 kHz Sampling
Frequency

24 V/ 13 mA

80 µg / √Hz

M6 Mount

M12 Connector

specification and technical data

DETERMINED PARAMETERS OF THE VIBRATION SIGNAL

The sensor continuously measures the vibration acceleration signal. The most important diagnostic parameters are calculated from the signal:

PARAMETER	DESIGNATION	DESCRIPTION
peak acceleration value	X accPeak, Y accPeak, Z accPeak	early detection of failures
RMS acceleration value	X accRMS, Y accRMS, Z accRMS	general level of technical condition
RMS velocity value	X velRMS, Y velRMS, Z velRMS	general level of technical condition
temperature	Temp	complement information about the dynamic state

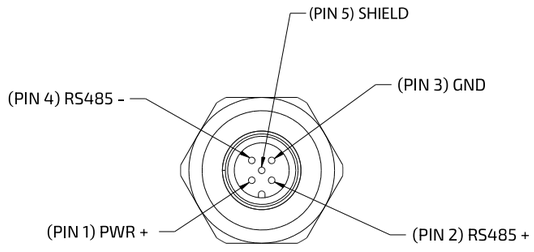
The parameters can be read via the RS-485 connector in the popular industrial MODBUS protocol (slave RTU, 115 kbps).

The AVM 1001HF sensor can also read the **original raw vibration signal**. A dedicated communication protocol is used for this purpose. Raw data is read at a speed of 1.5 Mbps, which allows data acquisition in real time.

ELECTRICAL CONNECTIONS

The colors of the dedicated cable wires are presented in the table below:

COLOR	FUNKCTION
yellow	PWR+
green	GND
brown	RS485+
white	RS485-



MEASUREMENT RANGE	
Number of measurement axes	3: Z,Y,X
Measurement range [g]	± 40, peak
Frequency range [Hz]	0 ... 1000
ELECTRICAL DATA	
Operating voltage [V]	24 V DC
Current consumption [mA]	13
Reverse polarity protection	Yes
Type of sensor	Microelectromechanical system (MEMS)
OUTPUTS	
Interface	RS485 115 kbps (calculated parameters) RS485 1.5 Mbps (raw signal)
Calculated parameters	X accPeak, Y accPeak. Z accPeak, X accRMS, Y accRMS, Z accRMS, X vel RMS (ISO), Y vel RMS (ISO), Z vel RMS (ISO), Temp
Maximum number of connected sensors	100*
ACCURACY	
Linearity deviation	± 0,1% FSR
Temperature dependence	± 0,015% (-40 °C ... +85 °C)
Transverse sensitivity	1,5%
Noise density	80 µg / √Hz
OPERATING CONDITIONS	
Ambient temperature [°C]	-40 °C ... +85 °C
Protection	IP67
TESTS / APPROVALS	
EMC	EN61326-1:2013
Shock resistance	DIN EN 60068-2-27 1000 g
Vibration resistance	DIN EN 60068-2-6 20 g / 10 ... 3000 Hz
Maximum shock resistance [g]	5 000, peak
Electrical isolation (case)	1 MΩ
RoHS	Yes
CE	Yes
MECHANICAL DATA	
Dimensions [mm]	Φ 22 x 50,3
Weight [g]	72
Type of mounting	M6 x 7 threaded hole in sensor
Material	Housing: stainless steel
Tightening torque [Nm]	7
ACCESSORIES	
Components	Set screw: M6 to M6 Available separately: - M6 x 12 mm grub screw - magnet M6 female, 19 mm, 7 kgs
ELECTRICAL CONNECTION - PLUG	
AVS 1003LF - Top exit connector: M12 5-pin; maximum cable length: 300 m AVS 1003LFC - DATAPUR-C 2x2x0,14 QMM; default cable length: 5 m	
PACKAGING	
Bubble bag	

contact us

WOULD YOU LIKE TO SEE HOW IT WORKS?

We offer a **free demonstration of the product!** Schedule it now and don't forget to ask about our **free of charge technical support service!**

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