



S E N S O R

AV SENSOR 1003LF

triaxial, digital,
general purpose
accelerometer





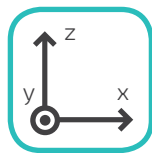
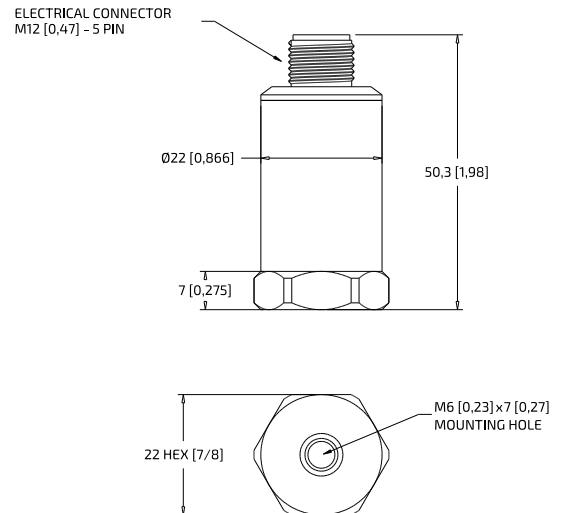
introduction

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

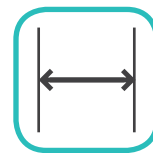
- protection,
- machine monitoring,
- condition assessment,
- dynamic state measurements.



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 |

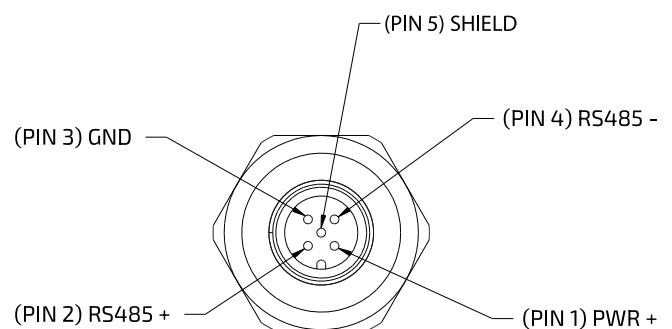
The parameters can be read via the RS-485 connector in the popular industrial MODBUS protocol (slave RTU, 115 kbps).

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 | FUNKTION |
|--------|----------|
| yellow | RS485+ |
| green | RS485- |
| brown | PWR+ |
| white | GND |



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!**

amc VIBRO Sp. z o.o.
Pilotow 2e
31-462 Krakow, Poland

Phone:
T: +48 (12) 362 97 60

Sales:
T: +48 (12) 362 97 66

info@amcvibro.com
www.amcvibro.com



MATEUSZ ZABARYŁŁO

 +48 662 022 128

 mzabaryllo@amcvibro.com

