



# Piezoelectric Acceleration Sensor with side exit

## PAS-103

### FEATURES

- Dual case isolation with Faraday shield
- Bias voltage stability at elevated temperatures
- M12 offers compatibility with sensors used in automation
- Stainless steel body protected against water and shock
- Low cost IP67 overmolded M12 cable assembly

### Monitoring solution



Shaft & bearing vibration -  
absolute

### Typical applications



Hydrogenerators



Pumps, fan, cooling towers...



Gas & steam turbines



### DESCRIPTION

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The hermetic sealed industrial piezoelectric accelerometer PAS-103 is designed to monitor the vibration in harsh industrial environment. It uses the industry standard @ICP 2-wire voltage transmission technic with a 4 mA minimum constant current supply. Signal ground is isolated from the mounting surface and outer case to prevent ground loops. Faraday shielding will limit sensitivity to ESD to a minimum.

Annular shear mode design prevents from thermal transient and from spurious signal from high transverse vibrations. Low noise electronic and temperature compensated design ensure accurate results over the complete temperature range.

The sensor provides a voltage output proportional to the vibration acceleration across the two transmission wires. The DC standing voltage is used for OK detection and the dynamic voltage for vibration monitoring.

**GLOBAL SPECIFICATIONS**


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**OPERATION**

	<b>PAS-103 M1</b>	<b>PAS-103 M5</b>
Model version		
Measuring principle	Piezoelectric annular shear mode with built-in electronic	
Measuring parameter	Vibration acceleration	
Electrical grounding	Isolated from machine ground	
Shielding	Internal Faraday shielding	
Isolation case to shield	100MΩ	
Sensitivity	100mV/g ±5%	500mV/g ±5%
Output impedance	200Ω nominal	
Output bias voltage	+10V <sub>DC</sub>	
Residual noise (24°C)		
1Hz to 25kHz	300µg rms	25µg rms
1Hz	30µg	2.4µg
Frequency response		
±10%	1 to 6'000Hz	0.4 to 1'600Hz
±3dB	0.5 to 10'000Hz	0.2 to 3'700Hz
Mounted resonant frequency	22kHz nominal	16kHz nominal
Dynamic range	80g pk	10g pk
Transverse sensitivity	< 5% max of nominal sensitivity at 20Hz, 5g	
Linearity	±1% max	
Warm up time	< 1s	< 10s
Power supply		
Constant current source	+2 to +10mA <sub>DC</sub>	
Voltage	+22 to +28V <sub>DC</sub>	
Protection	Built-in overvoltage and reverse polarity protection	

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**ENVIRONMENTAL**

Temperature range (continuous operation)	-55°C to +120°C	-55°C to +90°C
Humidity / Enclosure	Hermetically sealed	
Acceleration limit		
Shock	5'000g pk	
Continuous vibration	500g pk	
Base strain sensitivity	0.0002g pk/µ strain	
ESD protection	> 40V	
EMC emission	EN50081-1, EN50081-2	
EMC immunity	EN50082-1, EN50082-2	

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**PHYSICAL**

Body material	Stainless steel DIN 1.4401	
Weight (sensor only)	155g	165g
Connector	M12 glass seal, IEC 60947-5-2	
Mounting screw	M6	
Mounting torque	2.4Nm	

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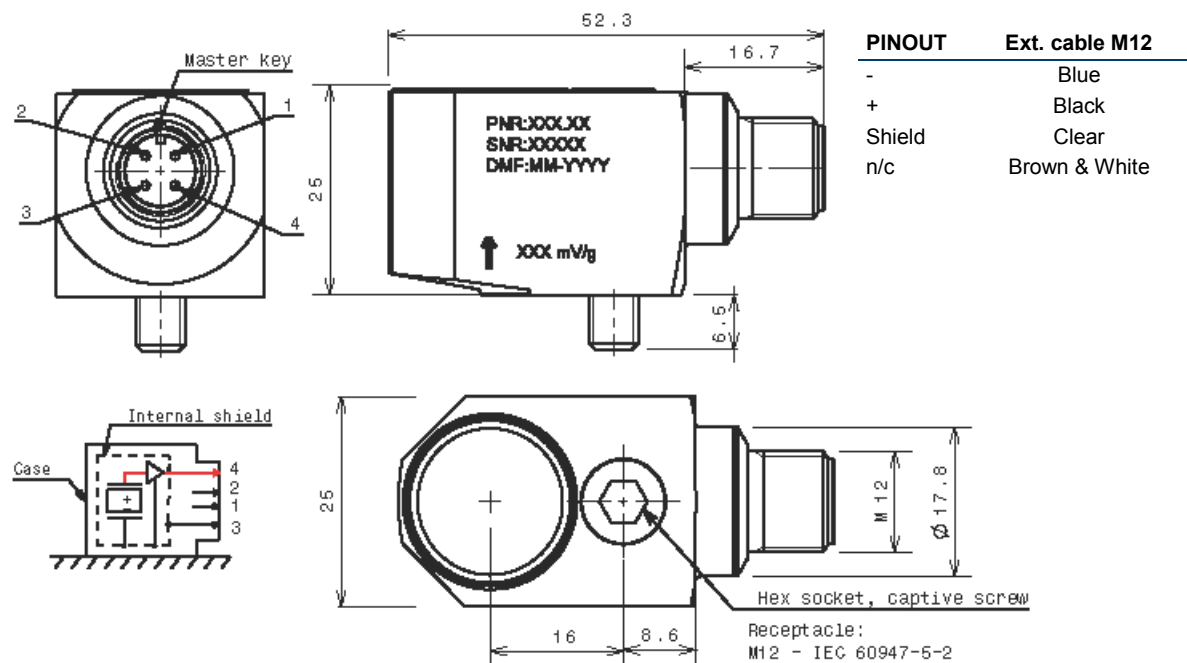
## ORDERING INFORMATION

Part type	Piezoelectric acceleration sensor with M12 connector side exit	
Ordering code	01.103.000 M1	01.103.000 M5
Description	PAS-103 M1 Sensitivity = 100mV/g	PAS-103 M5 Sensitivity = 500mV/g

## AVAILABLE ACCESSORIES

Part type	Extension cable with M12 connector	
Ordering code	01.100.010	
Cable length	10m (other length upon request)	

## MECHANICAL DRAWING



*Due to the continual development of our products we reserve the right to modify the specifications without notification*

MC-monitoring Quality certifications



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