Piezoelectric Acceleration Sensor
PAS-101

FEATURES

- International Protection Rating IP68
- Polyurethane twisted pair Integral cable 50m
- Annular shear mode for reduced transverse vibrations sensitivity
- Dual case isolation with Faraday shield
- Exceptional bias voltage stability at elevated temperatures
- Stainless steel body protected against water, shock

Monitoring solution

Shaft & bearing vibration - absolute

Typical applications

Hydrogenerators

Pumps, fan, cooling towers...

Gas & steam turbines

DESCRIPTION

The hermetic sealed industrial piezoelectric accelerometer PAS-101 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 will 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

OPERATION		
Model version	**PAS-101 M1**	**PAS-101 M5**
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	50Ω nominal	
Output bias voltage	+12V_{DC}	
Residual noise (24°C)		
1Hz to 25kHz	300µg rms	25µg rms
1Hz	30µg	2.4µg
Frequency response		
±10%	1 to 9'000Hz	0.6 to 1'600Hz
±3dB	0.5 to 14'000Hz	0.2 to 3'700Hz
Mounted resonant frequency	25kHz 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_{DC}	
Voltage	+22 to +28V_{DC}	
Protection	Built-in overvoltage and reverse polarity protection	
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	
PHYSICAL		
Body material	Stainless steel DIN 1.4401	
Weight (sensor only)	85g	95g
Mounting screw	M6	
Mounting torque	2.4Nm	

ORDERING INFORMATION

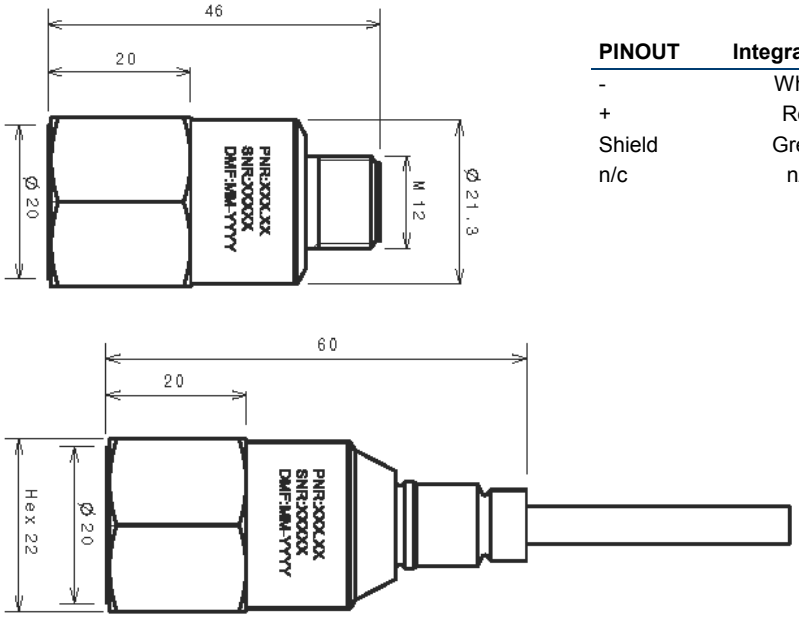
Part type	Piezoelectric acceleration sensor with M12 connector top exit	
Ordering code	01.101.000 M1	01.101.000 M5
Description	PAS-101 M1 Sensitivity = 100mV/g	PAS-101 M5 Sensitivity = 500mV/g

Part type	Piezoelectric acceleration sensor with integral cable 10m	
Ordering code	01.101.010 M1	01.101.010 M5
Description	PAS-101 M1 INTEGRAL Sensitivity = 100mV/g	PAS-101 M5 INTEGRAL Sensitivity = 500mV/g

AVAILABLE ACCESSORIES

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

MECHANICAL DRAWING



PINOUT	Integral cable	Ext. cable M12
-	White	Blue
+	Red	Black
Shield	Green	Clear
n/c	n/a	Brown & White

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

MC-monitoring Quality certifications

LOCAL REPRESENTATIVE

MC-monitoring SA
Route André Piller 19 | PO BOX 97
CH-1762 Givisiez | Switzerland
Phone : +41 58 411 54 00
Fax : +41 58 411 54 10
Mail : info@mc-monitoring.com
sales@mc-monitoring.com
Web : mc-monitoring.com