

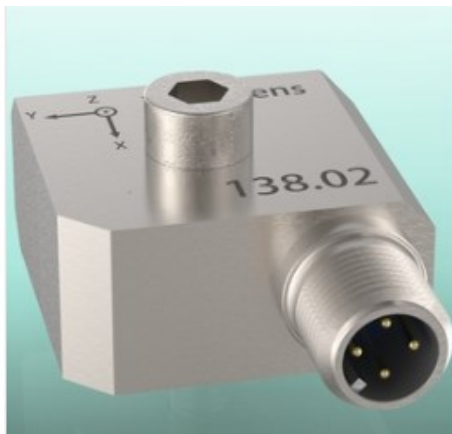


Piezoelectric triaxial accelerometer

PAS-138

FEATURES

- @ICP transmission mode
- Annular shear mode
- Dual case isolation with internal Faraday shield (suitable for permanent installation, no need for insulation pad, no ground loop)
- Medium and high frequency version
- Hermetically sealed (laser welded)



Monitoring solution



Shaft & bearing vibration - absolute

Typical applications



Hydrogenerators



Pumps, fan, cooling towers...



Gas & steam turbines

DESCRIPTION

The hermetic sealed triaxial industrial piezoelectric accelerometer model 138 is design to monitor the vibration in harsh industrial environment. It uses the industry standard @ICP 2-wire voltage transmission technique with a 2 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 will prevent from thermal transient and from spurious signal from high transverse vibrations. Low noise electronic and a temperature compensated design will give you accurate result over the complete temperature range. Large choice of frequency range will help to fit almost every customer requirements.

The sensor is designed for vibrations measurement in the rugged environments of industrial machinery monitoring. High frequency version will monitor the vibration on roller bearing, pumps cavitation, Medium frequency version will monitor overall vibration on pumps, motors, fans,

GLOBAL SPECIFICATIONS

OPERATION

Model version	PAS-138 M1
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	100M Ω
Sensitivity	100mV/g $\pm$ 5%, 100mV/g $\pm$ 10% or 10mV/g $\pm$ 5%
Output impedance	50 Ω nominal
Output bias voltage	+12V _{DC} $\pm$ 2V _{DC}
Residual noise (24°C)	
1Hz to 25kHz	300 μ g rms
1Hz	30 μ g
Frequency response $\pm$ 3dB	
Z Axis	0.5 to 13'000Hz
X, Y Axis	0.5 to 10'000Hz
Mounted resonant frequency	22kHz nominal
Dynamic range	80g pk for 100mV/g 800g pk for 10mV/g
Transverse sensitivity	< 5% max of nominal sensitivity at 20Hz, 5g
Linearity	$\pm$ 1% max
Warm up time	< 1s
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
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)	84g
Connector	M12 glass seal, IEC 60947-5-2
Mounting screw	M6
Mounting torque	2.4Nm

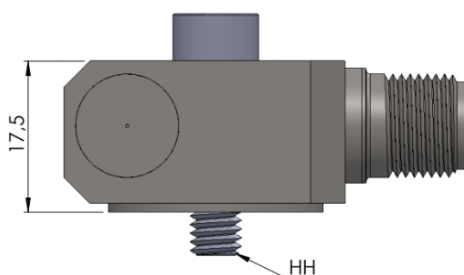
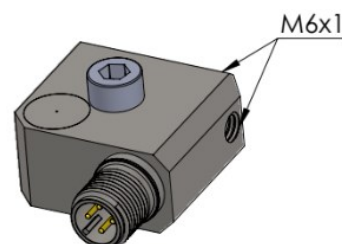
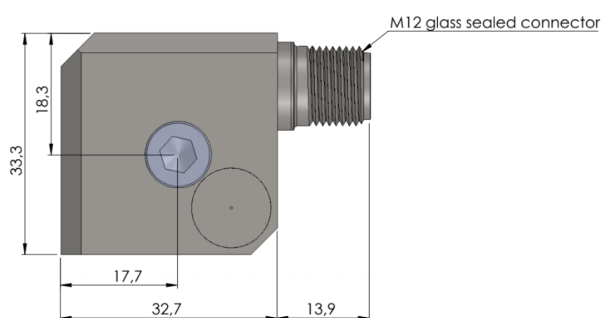
ORDERING INFORMATION

Part type	Piezoelectric acceleration sensor with M12 connector side exit		
Ordering code	01.138.000 M1	01.138.001 M1	01.138.002 M1
Description	PAS-138 M1 Sensitivity = 100mV/g $\pm$ 5%	PAS-138 M1 Sensitivity = 100mV/g $\pm$ 10%	PAS-138 M1 Sensitivity = 10mV/g $\pm$ 5%

AVAILABLE ACCESSORIES

Part type	Extension cable with M12 connector
Ordering code	801.0075
Cable length	length upon request

MECHANICAL DRAWING



PINOUT	Pin N°	Standard M12 Cable
GND	3	Blue
Z	4	Black
X	1	Brown
Y	2	White

MC-monitoring Quality certifications



LOCAL REPRESENTATIVE

MC-monitoring SA
Route André Piller 19
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