SensorsX

SX-MAPTA Series

Three-Axis Piezoelectric Accelerometer



±50 g Measurement Range	**100 mV/g** Sensitivity	**1%** Nonlinearity
4 – Pin M12 × 1 Connector	**−40 to +120 °C** Operating Temperature	**SUS 316L** Housing Material

■ OVERVIEW

The SX-MAPTA Series is a three-axis piezoelectric accelerometer for vibration measurement along the X, Y, and Z axes. It provides a measurement range of ±50 g and a nominal sensitivity of 100 mV/g per axis, with a sensitivity tolerance of ±5%. The sensor features a laser-welded 316L stainless steel housing and a 4-pin M12 × 1 connector.



■ KEY FEATURES

◆ Three-Axis Measurement with a ±50 g Range and 100 mV/g Sensitivity (±5%)	◆ Frequency Response: 6–4,000 Hz (±5%); 1–8,000 Hz (±3 dB)
◆ 4-Pin M12 × 1 Electrical Connector	◆ Laser-Welded 316L Stainless Steel Housing

Specifications are subject to change without notice. Confirm the final configuration at time of order.

■ TYPICAL APPLICATIONS

- Three-Axis Vibration Measurement
- Rotating Machinery Condition Monitoring
- Motor, Pump and Fan Vibration Monitoring
- Structural Vibration Testing

SPECIFICATION LIST

Test Conditions: 25 °C, 4 mA, 160 Hz

■ VIBRATION PERFORMANCE

Parameter	Specification
Measurement Range	±50 g
Sensitivity, ±5%	100 mV/g
Frequency Response, ±5%	6–4,000 Hz
Frequency Response, ±10%	2.5–5,600 Hz
Frequency Response, ±3 dB	1–8,000 Hz
Mounted Resonant Frequency	15,000 Hz
Maximum Transverse Sensitivity	< 5 %
Temperature Response, −40 to +120 °C	±10 %
Nonlinearity	≤ 1 %
Noise (RMS)	≤ 100 μV
Shock Limit	3,000 g
Stabilization Time	< 4 s

■ ELECTRICAL CHARACTERISTICS

Parameter	Specification
Bias Voltage	12 ± 2 V DC
Output Impedance	< 100 Ω
Insulation Resistance at 100 V DC	> 100 MΩ
Excitation Voltage	18–28 V DC
Constant-Current Supply	2–10 mA
Operating Temperature	−40 to +120 °C

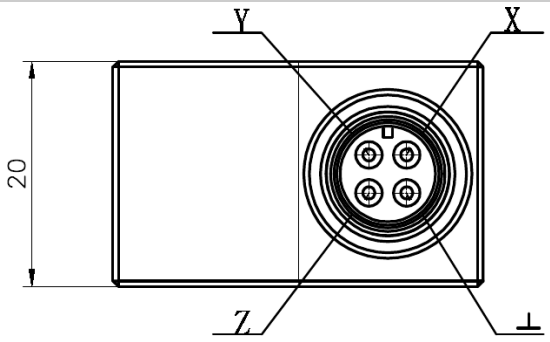
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PHYSICAL AND ORDERING INFORMATION

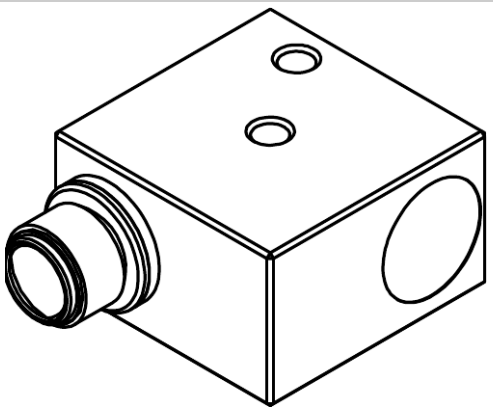
■ MATERIAL AND PHYSICAL PARAMETERS

Parameter	Specification
Sealing Method	Laser welding
Housing Material	316L stainless steel
Sensing Material	Piezoelectric ceramic
Electrical Connector	4-pin M12 × 1 receptacle
Shielding and Isolation	Internally shielded and isolated
Weight	≈ 140 g
Mounting Holes	2 × Ø4.5 mm

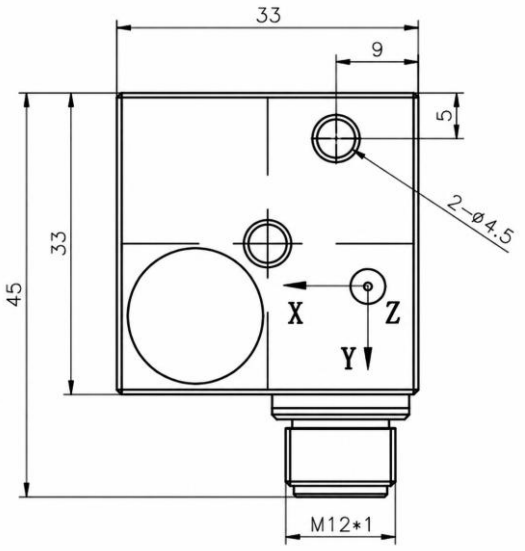
■ MECHANICAL DIMENSIONS



Connector View and Signal Assignment



Product View



Mechanical Dimensions (mm)

Specifications are subject to change without notice. Confirm the final configuration at time of order.

■ ORDERING INFORMATION

Model: SX-MAPTA

Complete model number example: SX-MAPTA-310122

Measurement Range	
3	±50 g
Nonlinearity Accuracy	
1	1%
Connection	
0	Standard
Sensitivity (Output)	
1	100 mV/g
Electrical Connection	
2	M12 × 1 male, 4-pin
Housing Material	
2	316L Stainless Steel
Customization Options	
D	Custom Configuration — Specify Requirements When Ordering

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