SA6200A API 670 GENERAL PURPOSE ACCELEROMETER

Datasheet

OVERVIEW

The SA6200A API 670 Accelerometer is capable of sensing a wide range of vibration frequencies, which makes it ideal for use on a variety of machines. It consists of a temperature stabilized piezo-electric sensor and an amplifier packaged together in a 316 stainless steel case, from which the sensing circuit is electrically isolated. A built-in amplifier provides a high level, low impedance output, which is the industry standard. Refer to the accessories table of this manual for a choice of mounting alternatives.

FEATURES AND BENEFITS

- High accuracy and repeatability
- Eliminate wiring polarity errors with Metrix' patented Independent Polarity Terminals (IPT®)*
- Eliminate false indications caused by high frequency noise rectified as low frequency using patented anti-ski slope technology

APPLICATIONS

- Motors
- Gear Boxes
- Paper Machines
- Process Pumps
- Fans
- Cooling Tower Fans
- Engines
- Rotor Blade Pass Sensing
- Turbocharger Engine Vibration
- Rotor Blade Pass Sensing
- Turbocharger Engine Vibration

API 670 COMPARISON TABLE

	SA6200A	API 670
Case Material	316 SS	316 SS
Frequency Response (± 3dB)	0.5 Hz- 10 kHz	10 Hz- 10 kHz
Noise Floor	0.003 g rms	0.004 g rms
Mounted Resonance	13kHz	N/A
Hazardous Area Certifications	CSA, ATEX, IECEx, EAC, KOSHA, SIL	N/A

SAFETY INTEGRITY LEVEL

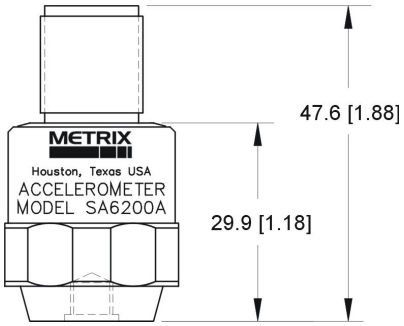
SIL is a method or measurement unit to determine the reliability of electrical, electronic and programmable systems. The purpose of the SIL certification is to measure safety system performance and the likelihood of failure. Achiev- ing SIL certification, based on the IEC61508 Functional Safety Standard, signifies that the product has been thoroughly assessed and is a reliable electronic device ready to use across a wide range of industries.

Metrix products have been thoroughly evaluated by an independent third party agency on the basis of IEC61508 Funds to obtain SIL certification.

SPECIFICATIONS

Dynamics	
Accuracy	2% (repeatability)
Sensitivity (±5%)	100 mV/g (10.2 mV/m/s^2)
Frequency Response	• 2 to 5 kHz (± 5%) • 1.5 Hz to 7.5 kHz (±10%) • 0.5 Hz to 10 kHz (±3dB)
Resonant Frequency	13 kHz
Cross Axis Sensitivity	<5%
Measurement Range	50 g's pk / 35 g's RMS
Resolution	0.003 g's RMS
Mechanical	
Case Material	316 Stainless Steel
Connector Type	2-pin hermetic plug See How to Order "C"
Hermetic Seal	Welded
Mounting Stud	1/4-28 UNF, 1/4-20 UNC, or M6 x 1.0 (P/N 3719-007) See How to Order "B"
Sensing Element	Quartz
Weight	91 gm (3.1 oz)
Electrical	
Case Isolation	10^8 W
Excitation Current	2 to 20 mA
Excitation Voltage	18 to 28 VDC, Polarity Indifferent
Full Scale Output Voltage	±5 volts
Output Bias	8 to 12 volts
Settling Time	5 seconds max.
Transient Protection	RFI & ESD
Environmental	
Shock Limit	5,000 g
Temperature Range	-54°C to +121°C (-65.2F° to +249.8°F)
Electromagnetic Compatibility	CE Certified
Hazardous Area Cert.	CSA, ATEX, IECEx, EAC, KOSHA, SIL See How to Order "A"
Enclosure Rating	IP66

WEIGHT & DIMENSIONS



Aprox. Weight: 91 gm (3.1 oz)
Units in mm [inches]

Electrical Connector 5/8-24 UNEF-2A 2 PIN (MIL-C-5015) shown. Note that the connections are non polarity sensitive (IPT®).

HOW TO ORDER

SA6200A - A B C

A	Hazardous Area Certification*
0	Non-Agency Approved
1	CSA US/CA, Class 1, Div 1, Groups A, B, C, & D, T3 Intrinsically Safe[2] when connected per dwg 9352
2	ATEX, Ex ia IIC T3 Ga Intrinsically Safe[2] when connected per dwg 9352
3	CSA US/CA Class 1, Div 2, Groups A, B, C, & D, T3 Non-incendive when connected per dwg 9031
4	ATEX, Ex nA IIC T3 Gc Non-incendive when connected per dwg 9031
5	CSA US/CA, Class 1, Div 2, Groups A-D, T3 (non incendive) CSA US/CA, Class 1, Div 1, Groups A-D, T3 (I.S. w/barrier) ATEX/IECEx/KOSHA, Ex nA IIC T3 Gc (non incendive) ATEX/IECEx/KOSHA, Ex ia IIC T3 Ga (I.S. w/barrier)
6	IECEx, Ex ia IIC T3 Ga Intrinsically Safe[2] when connected per dwg 9352
7	IECEx, Ex nA IIC T3 Gc Non-incendive when connected per dwg 9031
8	EAC Ex nA IIC T3 Gc (non incendive) EAC Ex ia IIC T3 Ga (I.S. w/barrier)

B	Mounting Stud
0	1/4-28 UNF
1	M6 x 1.0
2	1/4-20 UNC
3	NONE
5	1/4-28 UNF & M6 x 1.0

C	Connector Type
1	2-pin Hermetic Plug

Ordering Option Example: SA6200A-201: Hazardous area cert ATEX, EEx ia IIC T3 Ga intrinsically safe, 1/4-28 UNF mounting stud and 2 pin hermetic plug.
*For SIL approval, add an "S" prefix to the desired Hazardous Area Certification (Option A).

ACCESSORIES

8978-111-XXXX, Splash proof Cable Assembly
Two (2) pin socket connector with integral, molded splash proof boot with 6.4 mm (0.25") diameter polyurethane jacketed cable with twisted shielded pair wires. XXX.X = Cable length in meters.

9334-111-XXXX-YYYY, Splash proof Cable Assembly with SS armor
Two (2) pin socket connector with integral, molded splash proof boot with 7.1 mm (0.28") diameter, SST armored jacket with cable, twisted shielded pair wires. XXX.X = Armor length in meters. YYY.Y = Cable length in meters. Specifiy lengths in increments of 0.5 m.

8978-211-XXXX, Cable Assembly
Two (2) pin socket connector with cable strain relief with 6.4 mm (0.25") diameter polyurethane jacketed cable with twisted shielded pair wires. Note: All 8978 connector/cable assemblies rated to 121°C (250°F) max. XXX.X = Cable length in meters.

9334-211-XXXX-YYYY, Cable Assembly with SS Armor
Two (2) pin socket connector with 7.1 mm (0.28") diameter, SST armored jacket with cable, twisted shielded pair wires. XXX.X = Armor length in meters. YYY.Y = Cable length in meters. Specifiy lengths in increments of 0.5 m.

8978-200-0000, Connector Assembly
Two (2) pin socket connector with cable strain relief, no cable.

3719-002, Mounting Stud
1/4-28 UNF to 1/4-28 UNF

3719-007, Mounting Stud
1/4-28 UNF to M6 x 1.0

7295-002 Accelerometer EP Housing
Physical protection and access to 1/4-28 UNF mount accelerometers. Rain tight & ex-proof for CSA Class 1, Grps A-D, Div.1. 1/4" NPT stud for mounting to machine case. 1" NPT top conduit union. Zinc Plated Steel housing.

7084-002 Flange Mount Adaptor
For surface mounting of 7295 housing. 1/4" NPT center hole. 3 equally spaced 6.6 (.26) dia. mount holes on 38 (1.50) dia. circle. Stainless Steel housing.

9061-XXXX Bulk Cable
.250" dia. bulk cable with twisted, shielded pair wires. For customer attachment to mating connector P/N 8978-200-0000. Specify XXX.X in 0.1 m increments (e.g. 9061-0250=25.0 m). Polyurethane Jacketed.

99506-020 Magnetic Mount Adaptor
1" OD, 35 lb. pull strength adaptor for sensors with 1/4-28 UNF stud. Stainless Steel housing.

99506-021 Magnetic Mount Adaptor
Same as 99506-020 except metric version. Housing has M6 x 1.0 center hole and comes with matching sensor mounting stud. Stainless Steel housing.

9338-101 Spot Facing Kit
Consists of a 1" HS air-craft counter bore with 3/16" guide pin, two each, along with 3/16"drill bits, two each, #3 drill bits, two each, 1/4-28 tapered taps and 1/4-28 bottom taps, two each.

NOTES:
1. IPT (Independent Polarity Terminal) is a registered trademark of Metrix Instrument Co.
2. When wired using approved barrier (not included).