

PRODUCT DATA

Piezoelectric Accelerometer High-shock DeltaTron[®] Accelerometers — Types 8339, 8339-001 and 8339-002

FEATURES AND USES

- Low impedance
- Case isolated
- Rugged construction
- High level mechanical shock and pyroshock measurements (up to 80000 g)

Description

Types 8339, 8339-001 and 8339-002 are low impedance piezoelectric compression accelerometers intended for measurement of very high-level, continuous vibration, mechanical shock and pyroshock. The output and ground signal are isolated from the mounting surface to prevent ground loops.

For rigid mounting, the accelerometers' bases have an integral 10–32UNF threaded fixing stud, which is dimensioned to transmit the full motion of the test object to the piezoelectric element without distortion.

Characteristics

The design is of a particularly sturdy construction, comprising a hardened 17–4 PH stainless steel housing and a strain-isolated compression design. The piezoelectric element is quartz and is treated to withstand very high dynamic stress with negligible problems of “zero shift”.

The transducers feature a first-order, low-pass filter (6 dB/octave) to repress unwanted high-frequency content (5% suppression at 20 kHz) that may hide low-frequency and low-level information.

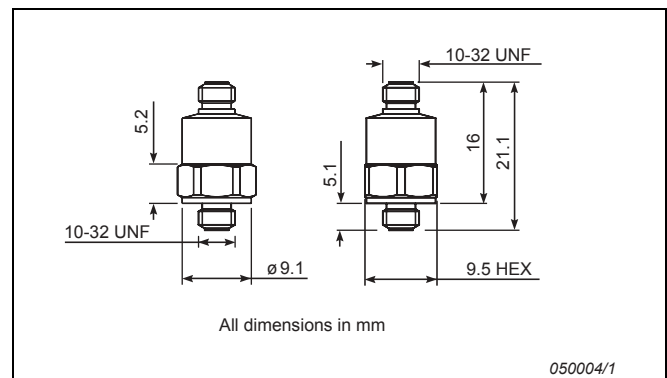
Calibration

The sensitivity given on the calibration chart has been measured at 159.2 Hz with a 95% confidence level, using a coverage factor $k = 2$.



Versions

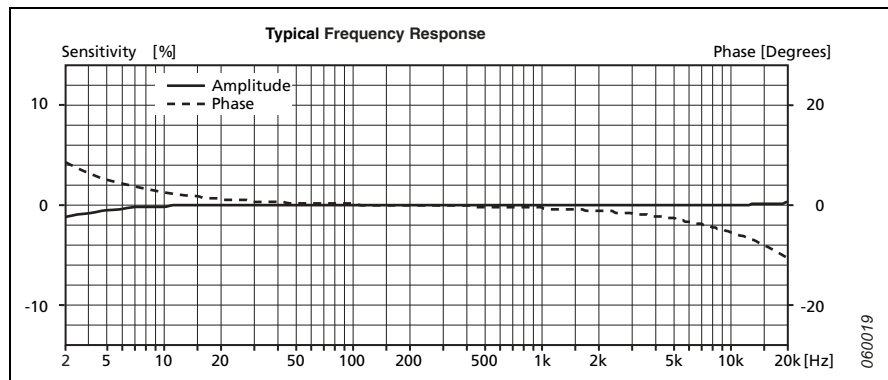
- Type 8339 has a sensitivity of 0.25 mV/g and a full range output of 20000 g
- Type 8339-001 has a sensitivity of 0.1 mV/g and a full range output of 50000 g
- Type 8339-002 has a sensitivity of 0.05 mV/g and a full range output of 80000 g





Specifications – High-shock DeltaTron Accelerometers Types 8339, 8339-001 and 8339-002

	Units	8339	8339-001	8339-002
Dynamic Characteristics				
Voltage Sensitivity (@ 160 Hz)	mV/ms ⁻² (mV/g)	0.025 +22/-18% (0.25 ±20%)	0.01 +22/-18% (0.1 ±20%)	0.005 +22/-18% (0.05 ±20%)
Measuring Range	g	±20000	±50000	±80000
Frequency Response		See typical amplitude response		
Mounted Resonance Frequency	kHz	> 130		
Amplitude Response ±10%	Hz	1 to 20000		
Residual Noise (1 to 10 kHz)	mg	<150	<350	<700
Transverse Sensitivity [1]	%	<10		<15
Linearity @ full scale	%	±1		
Electrical Characteristics				
Output Impedance	Ω	100		
DC Output	At room temperature	V		
Bias Voltage	In specified temp. range	V		
Power Supply	mA	2 to 20		
Grounding		Case Insulated		
Environmental Characteristics				
Temperature Range	°C (°F)	-51 to +121 (-60 to +250)		
Humidity		Hermetic		
Max. Shock Level (peak)	g pk	> ±80000		
Base Strain Sensitivity	Equiv. g/μ strain	0.13		
Thermal Transient Sensitivity	Equiv. g/°C (g/°F)	3 (1.7)		
Magnetic Sensitivity (50 Hz–0.03 tesla)	g/T	200		
Physical Characteristics				
Dimensions		See outline drawing		
Weight	gram (oz.)	5.8 (0.2)		
Case Material		17-4 PH stainless steel		
Connector		10-32 UNF		
Mounting		Integral 10-32 UNF stud		
Optimum Mounting Torque	Nm (lb. in.)	1.8 (15)		

[1] The transverse sensitivity measurement is associated with approximately 4% uncertainty from electrical noise of the test equipment
All values are typical at 25°C (77°F) unless measurement uncertainty is specified



COMPLIANCE WITH STANDARDS

-  Compliance with EMC Directive and Low Voltage Directive of the EU
-  Compliance with the EMC requirements of Australia and New Zealand

Ordering Information

Types 8339, 8339-001 and 8339-002 include the following accessories:

- Carrying box
- Calibration chart

OPTIONAL ACCESSORIES*

- AO-1419-D-050: Lightweight cable 10-32 UNF to 10-32 UNF, 5 m (16.4 ft)
- QA-0029: Tap for 10-32 UNF thread
- JP-0145: BNC to 10-32 UNF plug adaptor

* Additional accessories and cables are available (see www.bksv.com)

Brüel & Kjær reserves the right to change specifications and accessories without notice

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