

IEPE Accelerometer

Orientable, Ceramic Shear, 50 g

The Type 8775A... is an orientable single axis accelerometer that can measure acceleration in the direction shown by the markings shown on the head of the sensor. This accelerometer has a ± 50 g measuring range.

- IEPE, ± 50 g range
- Can be oriented in any direction
- Hermetic, titanium construction
- Ceramic shear sensing element
- TEDS option
- Waterproof IP68 integral cable option (up to 16 bar)
- Conforming to CE

Description

Type 8775A... is an IEPE (Integrated Electronics Piezo-Electric), lightweight single axis accelerometer which allows for vibration measurements in one axis. The lightweight design of the 8775A... reduces the effect of mass loading on test structures.

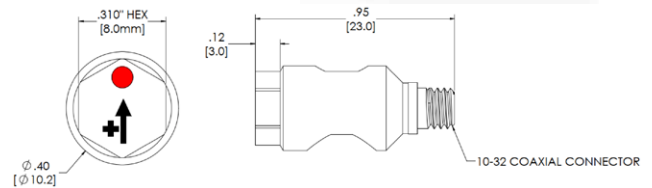
Type 8775A... uses Kistler shear element technology, assuring a high immunity to base strain. The welded titanium construction provides a lightweight hermetic housing. An integral silicone cable option is available for waterproof vibration testing up to 16 bars. Type 8775A... can be mounted adhesively or fastened into the Delrin mounting block 8475K01. Use of the Delrin mounting block to mount the Type 8775A... will reduce the upper frequency response of the sensor.

Unique to the Type 8775A... accelerometer is the sensor's capability to be oriented in any direction. When used in combination with the 8475K01 mounting block, the Type 8775A... can be freely oriented in any direction perpendicular to the 10-32 coaxial connector, with vibration measured in the direction of the arrow etched onto the surface of the sensor.

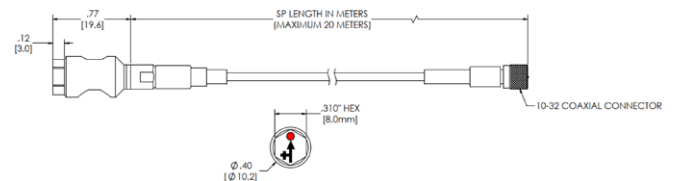
Application

The flexible orientation capability of Type 8775A... is ideally suited for modal analysis, wind turbine testing, and aviation structural testing.

Type 8775A...



Type 8775A...SP



Dimensions are shown in in. [mm], unless otherwise noted.

Accessing TEDS Data

Accelerometers with a "T" suffix are variant options which incorporate the TEDS 'Smart Sensor' design. Viewing an accelerometer's data sheet requires a TEDS compatible data acquisition system. The TEDS Interface provides a negative current excitation (reverse polarity) altering the operating mode of the PiezoSmart sensor, allowing the program editor software to read or add information contained in the memory chip.

Technical data

Type	Unit	8775A050	8775A050T	8775A050SP	8775A050TSP
Acceleration range	g	±50			
Threshold (1 ... 10 kHz)	g _{rms}	0.00022			
Sensitivity at 100 Hz, 10 g _{rms}	mV/g	100 ± 15%			
Resonant frequency, typ.	kHz	56			
Frequency response, +5%	Hz	0.5 ... 7 000			
Frequency response, +10%	Hz	0.5 ... 10 000			
Amplitude non-linearity	% FSO	±1			
Transverse sensitivity, typ. (max.)	%	2.5 (5.0)			

Environmental

Shock limit (150 µs pulse), max	g	5 000			
Operating temperature range	°C	-54 ... 100			
Time constant	s	0.8 ... 2.0			

Output

Bias nom.	VDC	13	13.5	13	13.5
Impedance	Ω	<200			
Voltage, F.S., nom.	V	±5			

Power supply

Voltage	VDC	22 ... 30			
Current, nom.	mA	2 ... 18			

Construction

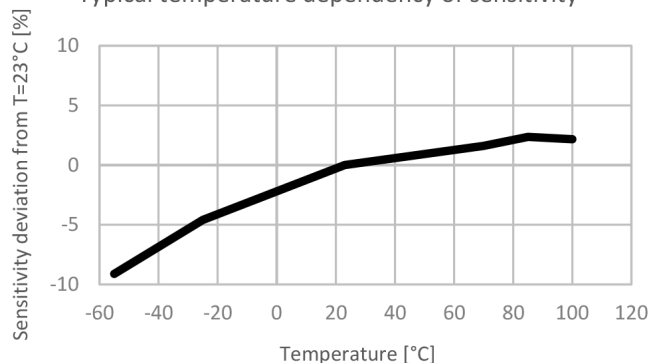
Weight	grams	5.2			
Case material		Titanium			
Sealing	type	Hermetic (8775A...SP option: IP68 (waterproof) tested at 16 bar for 48 hours)			
Connector	type	10-32 Coaxial			
Clamping torque	N·m	0.25 + 0.05			

* TEDS Txx will increase Bias by 0.5 VDC nominally

1 g = 9.80665 m/s², 1 in = 25.4 mm, 1 gram = 0.03527 oz, 1 lbf-in = 0.113 N·m

Temperature coefficient of sensitivity

Typical temperature dependency of sensitivity



Application

The special design of this single axis accelerometer allows for the sensor to be directly attached to the test surface with adhesive, or in the Delrin mounting block designed to accompany this sensor. The specified frequency response is unaffected when the Type 8775A... is attached directly to the test surface with adhesive. When mounted in the Type 8475AK01 Delrin mounting block utilizing Type 1063 grease or equivalent the upper frequency response changes as follows:

- with grease, 3 kHz for Frequency Response +5%
- with grease, 4 kHz for Frequency Response +10%

Reliable and accurate measurements require that the mounting surface be clean and flat. The instruction manual for Type 8775A... provides detailed information regarding mounting surface preparation.



Fig. 1: Mounting accessories

Included accessories

- ISO 17025 calibration certificate
- IP68 Waterproof Test Certificate of Conformity (only for Type 8775A...SP option)

Optional accessories

- Delrin mounting block
- Lubricating grease

Optional cables

- Fluoropolymer jacketed cable, 10-32 (pos.) to BNC (pos.)
- Fluoropolymer jacketed cable, 10-32 (pos.) to 10-32 (pos.)
- Flexible PVC jacketed cable, 10-32 pos to BNC (pos.)
- Flexible PVC jacketed cable, 10-32 (pos.) to 10-32 (pos.)

Type/Mat. No.

Type/Mat. No.

8475AK01
1063

Type/Mat. No.

1761B...
1762B...
1768A...K01
1768A...K02

Ordering key

Type 8775A... ☐ ☐ ☐

Measuring range

±50 g ☐ 050

TEDS Templates/Variants

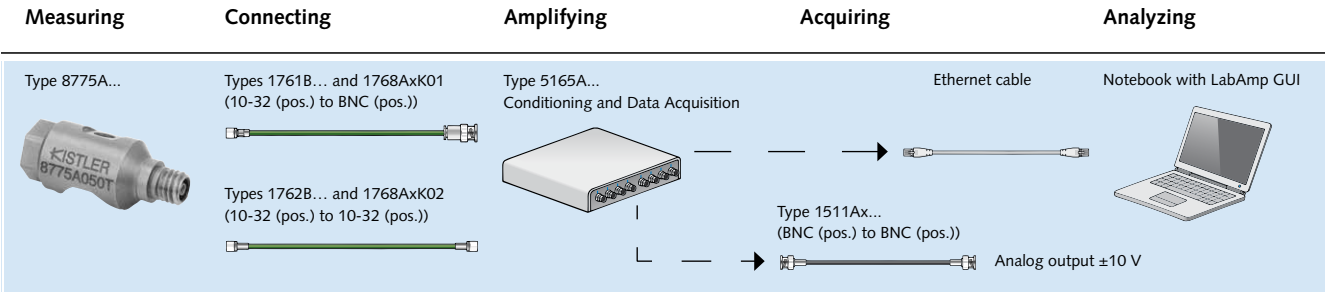
Standard	–
Default, IEEE 1451.4 V0.9 Template 0 (UTID 1)	T00
IEEE 1451.4 V0.9 Template 24 (UTID 116225)	T01
LMS Template 117, Free format Point ID	T02
LMS Template 118, Automotive Format (Field 14 Geometry = 0)	T03
LMS Template 118, Aerospace Format (Field 14 Geometry = 1)	T04
P1451.4 v1.0 template 25 – Transfer Function Disabled	T05
P1451.4 v1.0 template 25 – Transfer Function Enabled	T06

Cable length

Customer Specified (for waterproof IP68 integral cable – maximum 20 meter length)	SP
No integral cable	–

Measuring chains

IEPE sensor and customer IEPE compatible DAQ



IEPE sensor and customer IEPE compatible DAQ

