

# K-Shear® Accelerometer

Type 8795A50M8

## Hermetic, Cube Shape Triaxial Accelerometer

The triaxial accelerometer Type 8795A50M8 measures shock and vibration in three mutually perpendicular axis. The Type 8795A50M8 has an extended low temperature operating range.

- Low impedance, voltage mode
- Light 32 gram weight titanium case
- Ideal for vehicle testing
- Patented K-Shear design
- Low temperature range (-195 °C)
- Hermetically sealed
- Conforming to CE

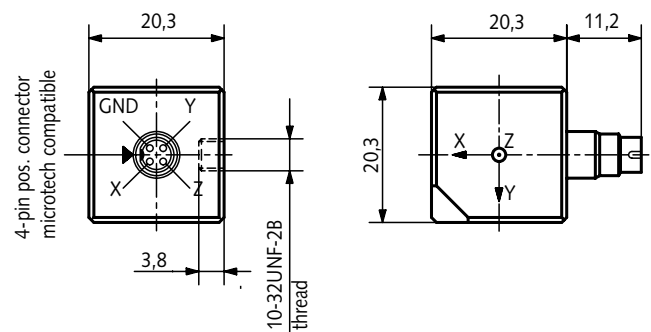
### Description

The triaxial accelerometer Type 8795A50M8 measures shock and vibration over a operating temperature range that extends down to the cryogenic region. For installation ease, the accelerometer is housed in a convenient cube-shaped package. The notched corner allows for convenient identification of the accelerometer's orientation when working in blind spots. The quartz K-Shear element design is insensitive to thermal transients and base strain and will provide years of accurate and repeatable measurements.

Each of the accelerometer's three sensing elements is internally connected to a Piezotron® microelectronic circuit that converts the charge signal from the quartz piezoelectric elements into a useable high level voltage signal at a low impedance output. The low impedance output is also desirable for operation in a humid environment. Constructed in a heavy duty, hermetically sealed Titanium case, the accelerometer can withstand low temperature environmental conditions.

### Application

The accelerometer measure simultaneously the three components of the acting acceleration (i.e., shock or vibration) permitting the resulting vector to be determined, its magnitude and direction. The notch corner of the accelerometer facilitates placement in blind locations where axis orientation is critical. Suitable for low temperature general vibration measurements, the Type 8795A... is ideal for NVH studies in automobiles and other vehicle types.



### Mounting

Reliable and accurate measurements require that the mounting surface be clean and flat. The sensor can be attached to the test structure with adhesive or by a 10-32 stud. The operating instruction manual for the Type 8795A... provides detailed information regarding mounting surface preparation.

**Technical Data**

Specification	Unit	Type 8795A50M8
Acceleration range	g	±50
Acceleration limit	gpk	±100
Threshold (noise 100 µVrms), nom.	grms	0,001
Sensitivity, ±10 %	mV/g	100
Resonant frequency mounted, nom.	kHz	20
Frequency response, ±5 %	Hz	1 ... 4 000
Amplitude non-linearity	%FSO	±1
Time constant, nom.	s	0,5
Transverse sensitivity, nom. (max. 3)	%	1,5

**Environmental**

Base strain sensitivity @ 250 µε	g/µε	0,01
Random vibration, max.	grms	2 000
Shock limit (1 ms pulse)	gpk	5 000
Temperature coefficient of sensitivity	%/°C	-0,03
Operating temperature range	°C	-195 ... 120
Storage temperature range	°C	-195 ... 150

**Output**

Bias, nom.	VDC	11
Impedance	Ω	<100
Voltage full scale	V	±5
Current	mA	2

**Source**

Voltage	VDC	20 ... 30
Constant current	mA	2 ... 18
Impedance, min.	kΩ	100

**Construction**

Sensing element	Type	quartz-shear
Case/base	material	Titanium
Degree of protection case/connector (EN 60529)		IP68
Connector	Type	4-pin pos.
Ground isolated		with pad
Mass	grams	32
Mounting (10-32 thd.x3,8 dp)	Type	stud

1 g = 9,80665 m/s<sup>2</sup>, 1 Inch = 25,4 mm, 1 gram = 0,03527 oz, 1 lbf-in = 0,113 N-m

**Included Accessories**

- 10-32 mounting stud Type 8402
- 10-32 to M6 mounting stud; shipped only outside N.A. 8411

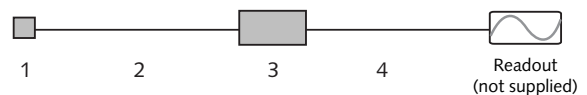
**Ordering Code**

Range	Type 8795A
±50 g, low temperature	50M8

We can also recommend our product series Type 8766A... with extended operating temperature range or TEDS option (see Data sheet 8766A\_000-607).

**Measuring Chain**

- |                                           |                |
|-------------------------------------------|----------------|
| 1 Low impedance sensor                    | Type 8795A50M8 |
| 2 Sensor cable, 4-pin neg. to 3x BNC pos. | 1756B...       |
| 3 Power supply/signal conditioner         | 51...          |
| 4 Output cable, BNC pos. to BNC pos.      | 1511           |



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