

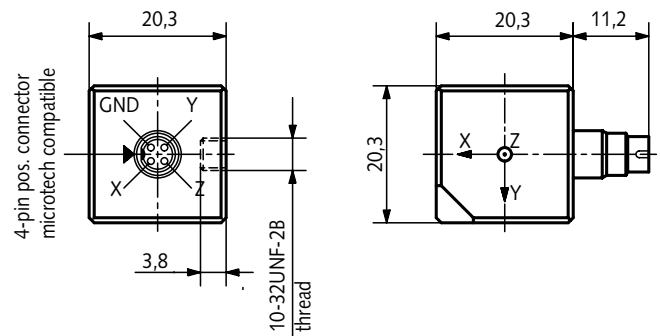
K-Shear® Accelerometer

Type 8795A...

Hermetic, Cube Shape Triaxial Accelerometer

The 8795A... triaxial accelerometer family of models measure shock and vibration in three mutually perpendicular axes. The standard 8795A... accelerometer is available in two additional versions; an 8795A...M5 which extends the operating temperature range up to 165 °C and a 8795A...M8 that extends the operating temperature range down to -195 °C.

- Low impedance voltage mode
- Light 32gram weight titanium case
- Ideal for vehicle testing
- Patented K-Shear® design
- Low (-195 °C) and high (165 °C) versions available
- Hermetically sealed
- Conforming to CE



Description

The 8795A... triaxial accelerometer family measure shock and vibration over an operating temperature range that extends from the cryogenic region up to a high end of 165 °C. For installation ease, the accelerometers are housed in a convenient cube-shaped package. The notched corner allows for convenient identification of the accelerometer's orientation when working in blind spots, such as under dashboards, etc. 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, all accelerometer models can withstand varied environmental conditions.

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 8795A... provides detailed information regarding mounting surface preparation.

Application

The accelerometers 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 general vibration measurements, the 8795A... is ideal for NVH studies in automobiles and other vehicle types.

Accessing TEDS Data

Accelerometers with a "T" suffix are variants of the standard version incorporating the "Smart Sensor" design. Viewing an accelerometer's data sheet requires an Interface/Coupler such as Kistler's Type 5134B... or 5000M04 with TEDS Editor software. The Interface provides 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.

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Technical Data

| Type | Unit | 8795A50 |
|---------------------------------------|----------|-----------------------|
| Acceleration Range | g | ±50 |
| Acceleration Limit | gpk | ±100 |
| Threshold nom. (noise 100 µVrms) | grms | 0,001 |
| Sensitivity, ±10% | mV/g | 100 |
| Resonant Frequency mounted, nom. | kHz | 20 |
| Frequency Response, ±5% | Hz | 1 ... 4000 |
| Amplitude Non-linearity | %FSO | ±1 |
| Time Constant nom. | sec | 0,5 |
| Transverse Sensitivity nom., (3 max.) | % | 1,5 |
| Long Term Stability | % | ±1 |
| Environmental: | | |
| Base Strain Sensitivity @ 250µε | g/µε | 0,01 |
| Random Vibration max. | grms | 2000 |
| Shock Limit (1 ms pulse) | gpk | 5000 |
| Temperature Coeff. of Sensitivity | %/°C | -0,03 |
| Temperature Range Operating | °C | -54 ... 120 |
| T | °C | -40 ... 120 |
| M5 | °C | -54 ... 165 |
| M8 | °C | -195 ... 120 |
| Temperature Range Storage | °C | -74 ... 150 |
| T | °C | -54... 125 |
| M5 | °C | -60 ... 165 |
| M8 | °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 |
| Housing/Base | material | Titanium |
| Sealing-housing/connector | type | Hermetic |
| Connector | type | 4-pin pos. |
| Weight | grams | 32 |
| Mounting (thread) | type | 10-32 thd x 0,15 deep |

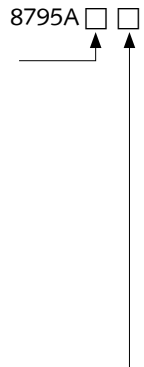
1 g = 9,80665 m/s², 1 Inch = 25.4 mm, 1 gram = 0,03527 oz, 1 lbf-in = 0,113 Nm

Accessories Included

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

Ordering Key

| | | | |
|-------|-------|--------------------------|--------------------------|
| Range | 8795A | <input type="checkbox"/> | <input type="checkbox"/> |
| ±50 | | | 50 |

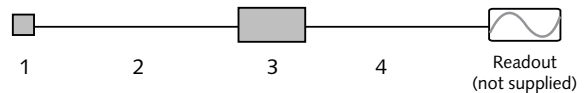


Variants / TEDS Templates

| Standard | |
|-------------------------------------------------------------|-----|
| High Temperature | M5 |
| Low Temperature | M8 |
| Default, IEEE 1451.4 V0.9 Template 0 (UTID 1) | T |
| 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 |

Measuring Chain

- | | Type |
|-------------------------------------------|-------------|
| 1 Low impedance sensor | 8795A... |
| 2 Sensor cable, 4-pin neg. to 3x BNC pos. | 1756B... |
| 3 Power supply/Signal conditioner | 5134B... |
| 4 Outout cable, BNC pos. to BNC pos. | 1511 |



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