

# PRODUCT DATA

## Piezoelectric Accelerometer Charge Accelerometer — Type 4393, 4393 S and 4393 V

### FEATURES

- High frequency
- Low weight
- Vibration testing and analysis

### Description

Type 4393 is a piezoelectric, DeltaShear<sup>®</sup>, Unigain<sup>®</sup> accelerometer with side connector. Type 4393 features M3 receptacle for output connection and has an M3 hole for mounting.

### Characteristics

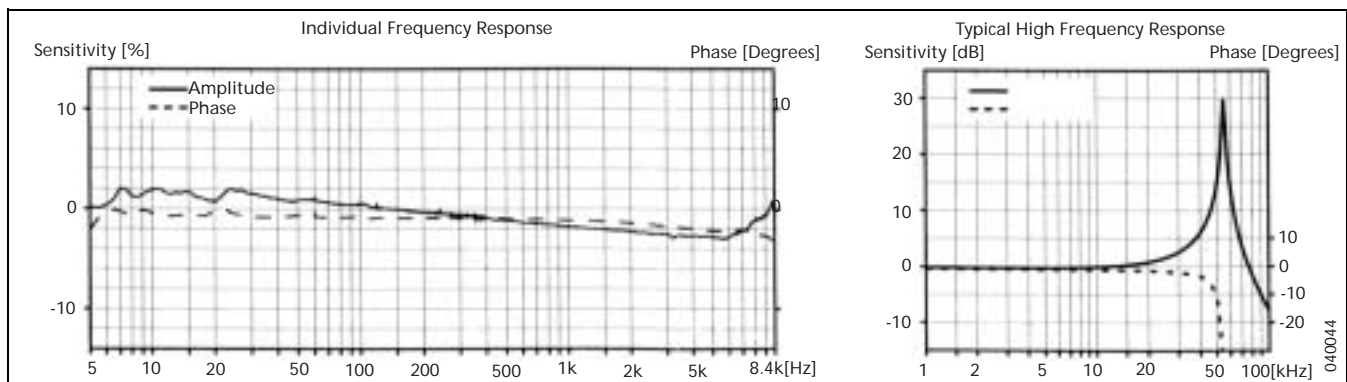
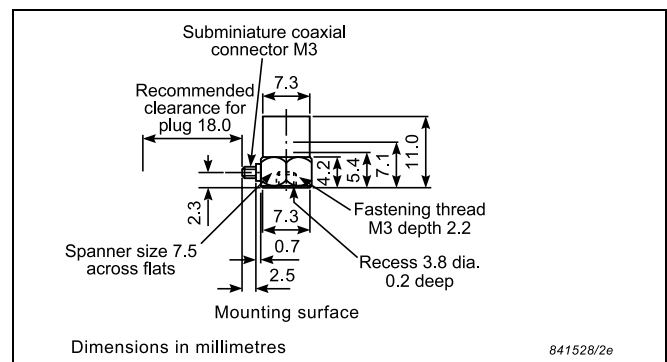
This piezoelectric accelerometer may be treated as a charge source. Its sensitivity is expressed in terms of charge per unit acceleration (pC/g).

The DeltaShear design involves three piezoelectric elements and three masses arranged in a triangular configuration around a triangular centre post. The ring prestresses the piezoelectric elements to give a high degree of linearity. The charge is collected between the housing and the clamping ring. The piezoelectric element used is a PZ 23 lead zirconate titanate element. The housing material is titanium.



### Calibration

The sensitivity given in the calibration chart has been measured at 159.2 Hz and an acceleration of 10 g. For 99.9% confidence level, the accuracy of the factory calibration is  $\pm 2\%$ .



## Specifications – Charge Accelerometer Type 4393, 4393 S and 4393 V

	Units	4393/4393 S	4393 V
<b>Dynamic Characteristics</b>			
Charge Sensitivity (@ 159.2 Hz)	pC/g	3.1 ± 2%	3.1 ± 15%
Frequency Response		See typical Amplitude Response	
Mounted Resonance Frequency	kHz	85	
Amplitude Response ±10% [1]	Hz	0.1 to 16500	
Transverse Sensitivity	%	<4	
Transverse Resonance Frequency	kHz	18	
<b>Electrical Characteristics</b>			
Min. Leakage Resistance @ 20°C	GΩ	≥20	
Capacitance	pF	650	
Grounding		Signal ground connected to case	
<b>Environmental Characteristics</b>			
Temperature Range	°C (°F)	-74 to 250 (-101 to 482)	
Humidity		Welded, sealed	
Max. Operational Sinusoidal Vibration (peak)	g pk	5000	
Max. Operational Shock (± peak)	g pk	25000	
Base Strain Sensitivity	Equiv. g/μ strain	0.0005	
Thermal Transient Sensitivity	Equiv. g/°C (g/°F)	0.5 (0.28)	
Magnetic Sensitivity (50 Hz–0.03 Tesla)	g/T	3	
<b>Physical Characteristics</b>			
Dimensions		See outline drawing	
Weight	gram (oz.)	2.4 (0.08)	
Case Material		Titanium	
Connector		M3	
Mounting		M3 × 2.2 mm threaded hole	

[1] Low-end response of the transducer is a function of its associated electronics

## Ordering Information

**Type 4393** includes the following accessories:

- Carrying box
- Calibration chart
- AO 0283: Low noise cable fitted with M3 threaded steel stud. Length 5 mm

**Type 4393 S** includes the following accessories:

- Carrying box
- Calibration chart
- AO 0283: Low noise cable fitted with M3 threaded steel stud. Length 5 mm
- UA 0629: Accessory box including:
  - 10–32 UNF microdot extension connector
  - JP 0162: Input adaptor, TNC to 10–32 UNF microdot
  - M3 threaded steel stud 5mm

- M3 threaded steel stud. Length 8 mm
- Cementing stud M3 (Ø8 mm)
- Mounting magnet and two insulating discs
- YJ 0216: Case of beeswax
- Cyanoacrylate adhesive
- Tap for M3 thread
- Hexagonal key for M3 studs
- M3 nut

**Type 4393 V** includes the following accessories:

- Carrying box
- Calibration chart
- M3 threaded steel stud 5 mm

### OPTIONAL ACCESSORIES

- AO 0283: 260°C Teflon® low-noise cable, 10–32 UNF/M3, length 1.2 m

- AO 0339: Flexible low-noise cable, 10–32 UNF/M3, 1.2 m (4 ft)
- AO 1381: Teflon insulated double screened cable, 10–32 UNF/M3, 1.2 m (4 ft)
- DB 0757: Cement stud, M3, Ø8.0 mm
- JJ 0032: Extension connector 10–32 UNF
- JP 0162: 10–32 UNF to TNC connector adaptor
- QA 0041: Tap for M3 thread
- QA 0042: Hexagonal key for M3 studs
- QS 0007: Tube of cyanoacrylate adhesive
- UA 1075: Mounting magnet and two insulating discs, M3, 10.2 mm (set of 5)
- UA 1216: Insulated stud, M3/M3, 2.4 mm
- YJ 0216: Beeswax for mounting
- YQ 2003: M3 threaded steel stud. Length 5 mm
- YQ 2007: M3 threaded steel stud. Length 8 mm

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

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