

# PRODUCT DATA

## Piezoelectric Accelerometer Charge Accelerometer — Type 8318 C

### FEATURES

- Measurement on large structures
- Very low-level vibration measurement

### Description

Type 8318 C is a piezoelectric DeltaShear accelerometer with side connector. The transducer features TNC receptacle for output connection and can be mounted on the object by means of the supplied 16 mm M8 threaded steel stud or self-adhesive mounting discs.

### 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 in Type 8318 C is the PZ 23 lead zirconate titanate element. The housing material is stainless steel.

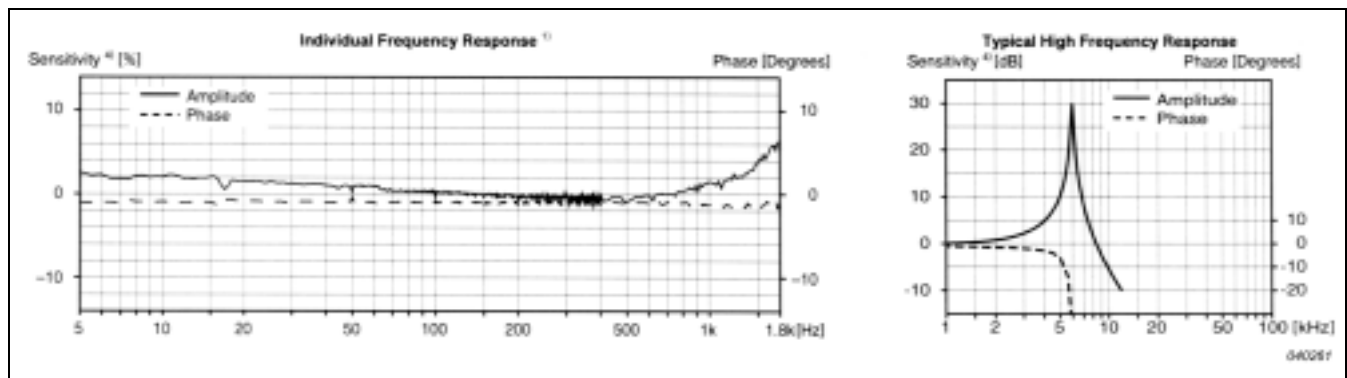
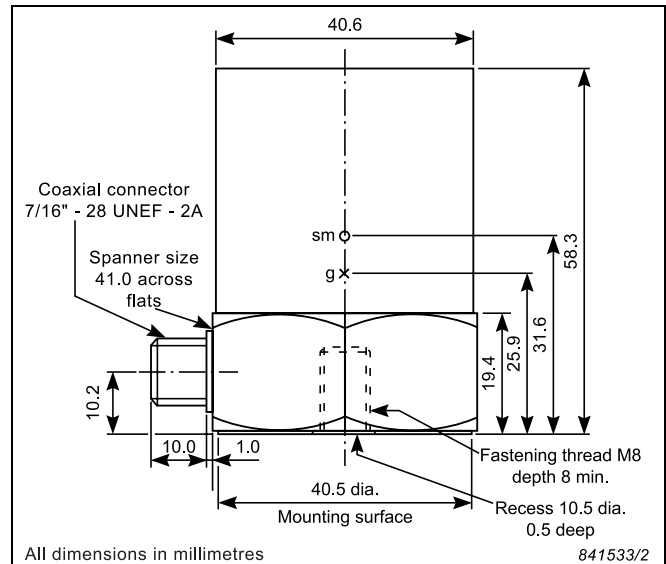
### Calibration

The sensitivity given in the calibration chart has been measured at 160 Hz with an acceleration of  $100 \text{ ms}^{-2}$ .



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For a 99.9% confidence level, the accuracy of the factory calibration is  $\pm 2\%$ .



## Specifications – Charge Accelerometer Type 8318 C

	Units	8318 C
<b>Dynamic Characteristics</b>		
Charge Sensitivity (@ 160 Hz)	pC/g	735 ± 15%
Frequency Response		See typical amplitude curve
Mounted Resonance Frequency	kHz	6
Frequency Range ±10% [1]	Hz	0.1 to 1800
Transverse Sensitivity	%	<5
Transverse Resonance Frequency	kHz	1.6
<b>Electrical Characteristics</b>		
Grounding		Signal ground connected to base
<b>Environmental Characteristics</b>		
Temperature Range	°C (°F)	-50 to 150 (-58 to 302)
Humidity		Welded, sealed
Max. Operational Sinusoidal Vibration (peak)	g pk	250
Max. Operational Shock (± peak)	g pk	250
Base Strain Sensitivity	Equiv. g/μ strain	0.00003
Thermal Transient Sensitivity	Equiv. g/°C (g/°F)	0.00001 (0.0000058)
Magnetic Sensitivity (50 Hz–0.03 Tesla)	g/T	0.1
<b>Physical Characteristics</b>		
Dimensions		See outline drawing
Weight	gram (oz.)	470 (16.58)
Case Material		Stainless steel
Connector		TNC
Mounting		M8 threaded hole

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

## Ordering Information

Type 8318 C includes the following accessories:

- Carrying box
- Calibration chart
- Self-adhesive mounting discs
- Allen key
- M8 × 16 mm steel stud
- Case of Beeswax
- Screw
- Tap for M8 thread

### OPTIONAL ACCESSORIES

- AO 0193: PTFE/PFA low-noise cable TNC, length: 1.2 m (4 ft.) (Ø2.7 mm), 180°C (356°F)
- AO 0231: Teflon low-noise cable, 10–32 UNF/TNC, length 3 m (10 ft.), 260°C (500°F)
- AO 0268: 85°C spiralised cable, low-noise, polyurethane jacket, TNC, length: 1.1 – 4 m (Ø12.5 mm), 85°C (185°F)

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

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