

# PRODUCT DATA

## Piezoelectric Accelerometer DeltaTron<sup>®</sup> Accelerometer — Type 5958-A

*This rugged accelerometer is suitable for most practical vibration measurements in wet or seawater conditions, such as seabed installations, submersible craft, offshore oil installations, sea-going vessels, etc. In addition to use in conditions of extreme humidity, it is also ideal for monitoring machines that are immersed in various types of fluids such as those found inside gearboxes, pumps, pipelines, etc.*

### Uses

- Underwater measurements to 450 metres depth
- Measurement in harsh environments – wet, submerged, or oily environments

### Features

- Low impedance DeltaTron preamplifier
- Electrically insulated and internally shielded
- DeltaShear<sup>®</sup> design for low-sensitivity to environmental factors



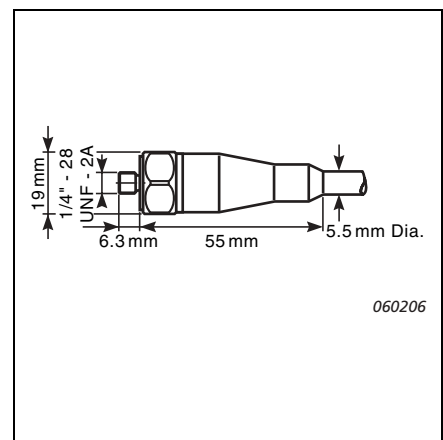
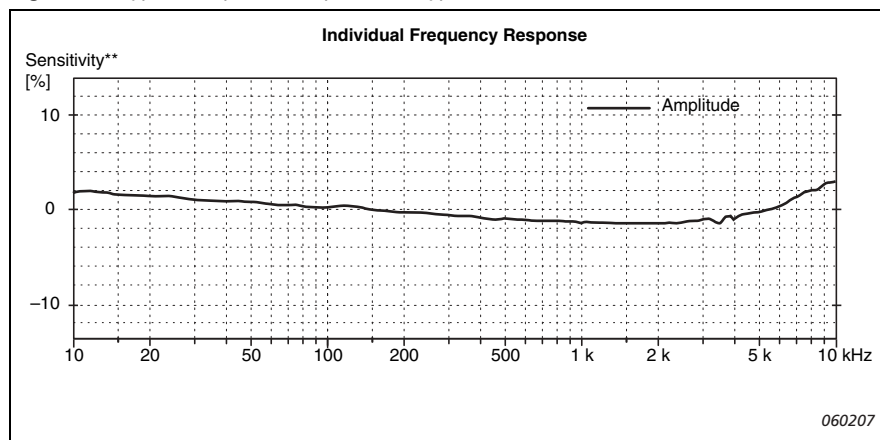
- Corrosion resistant
- Highly resistant to oil, solvents and other fluids

### Characteristics

The unit features an integral cable terminating in a BNC connector. The accelerometer and cable jacket material is highly resistant to oils, solvent, fats, greases and gasoline. Standard cable length is 10, 30, 50 and 100 metres. For individual cable lengths up to 200 metres, please consult your local representative.

The construction of Type 5958-A is a DeltaShear<sup>®</sup> design incorporating three piezoelectric elements and three masses arranged in a triangular configuration around a centre post. This design gives a high sensitivity-to-mass ratio, a relatively high resonance frequency and high isolation from base strain and temperature transients.

Fig. 1 Left: Typical amplitude response of Type 5958-A



## Calibration

The transducers are individually calibrated using state-of-the-art random FFT technology, providing a 1600-point high-resolution calibration (magnitude and phase) ultimately giving a unique characterisation and securing the integrity of the vibration measurement.

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## Specifications – DeltaTron Accelerometer Type 5958-A

	Units	5958-A-010	5958-A-030	5958-A-050	5958-A-100
<b>Dynamic Characteristics</b>					
Voltage Sensitivity (@ 159.2 Hz)	mV/ms <sup>-2</sup> (g)	1 (10) ±5%			
Measuring Range	ms <sup>-2</sup> (g)	±5000 (500)			
Frequency Response		See typical amplitude response			
Mounted Resonance Frequency	kHz	45			
Amplitude Response ±10%	Hz	0.3 to 11000			
Residual Noise (1 Hz to 22 kHz)	ms <sup>-2</sup> RMS	<0.015			
Transverse Sensitivity	%	<5			
Transverse Resonance Frequency	kHz	14			
<b>Electrical Characteristics</b>					
Output Impedance	Ω	<100			
Bias Voltage @ Room Temperature	V DC	+12 ±1			
Bias Voltage in Temperature Range	V DC	+10 to +15			
Power Supply	mA	+2 to +20			
Unloaded Supply Voltage	V	+24 to +30			
Insulation Resistance (Case to Shield)	MΩ	>10			
<b>Environmental Characteristics</b>					
Temperature Range	°C (°F)	-50 to +100 (-58 to +212)			
Enclosure Rating		IP68			
Maximum Pressure	Pa	4.5 × 10 <sup>6</sup>			
Max. Operational Sinusoidal Vibration	ms <sup>-2</sup> (g) pk	±5000 (500)			
Max. Operational Shock	ms <sup>-2</sup> (g) pk	±20000 (2000)			
Base Strain Sensitivity @ 250 με	ms <sup>-2</sup> /μ strain	0.01			
Thermal Transient Sensitivity	ms <sup>-2</sup> /°C	1			
Magnetic Sensitivity (50 Hz, 0.038 Tesla)	ms <sup>-2</sup> (g)/T	7			
<b>Physical Characteristics</b>					
Dimensions		See outline drawing			
Weight in Air including 0.15 metre cable	gram	44			
Case Material		Stainless Steel AISI 904L			
Jacket Material	Cable	Polyurethane			
	Housing	NBR			
Length of Integral Cable	m	10	30	50	100
Connector		BNC			
Mounting Stud		1/4-inch–28 UNF-2A			

All values are typical at 25°C (77°F) unless measurement uncertainty is specified

## Ordering Information



Type 5958 includes the following accessories:

- Carrying box
- Calibration Chart

### CALIBRATION SERVICES

- 5958 CAF: Accredited Calibration
- 5958 CFF: Factory Standard Calibration

## Compliance with Standards

-  Compliance with EMC Directive and Low Voltage Directive of the EU
-  Compliance with the EMC requirements of Australia and New Zealand

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

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