

PRODUCT DATA

Piezoelectric Accelerometer

DeltaTron[®] Accelerometer — Types 8324-G and 8324-G-001

Uses

- Flight test applications
- Measurement in high-temperature environments
- Health usage monitoring systems
- Gas turbines

Features

- Hermetically sealed (IP 67) with insulated case
- High temperature (250°C, 482°F)
- Single-ended output
- Cable with integrated charge-to-DeltaTron converter and built-in high-pass filter (Type 8324-G-001 only)
- Built-in TEDS

Description

Type 8324-G/8324-G-001 industrial accelerometer is intended for vibration measurements in harsh industrial environments. The unit consists of a standard Charge Accelerometer Type 8324, combined with a charge-to-DeltaTron converter integrated in a 10 m cable with a BNC connector. The footprint for mounting is ARINC[™].

Type 8324-G-001 has been developed and approved for Brüel & Kjær's Vibration Check Systems for Aircraft Engines Types 3641-A/B, 3647, 3648, 3649 and their variants. It includes a 80 Hz high-pass filter in the DeltaTron converter to eliminate the influence of low frequency noise on the measured signal, for example due to the pyroelectric effect of the transducer in fluctuating temperature conditions.



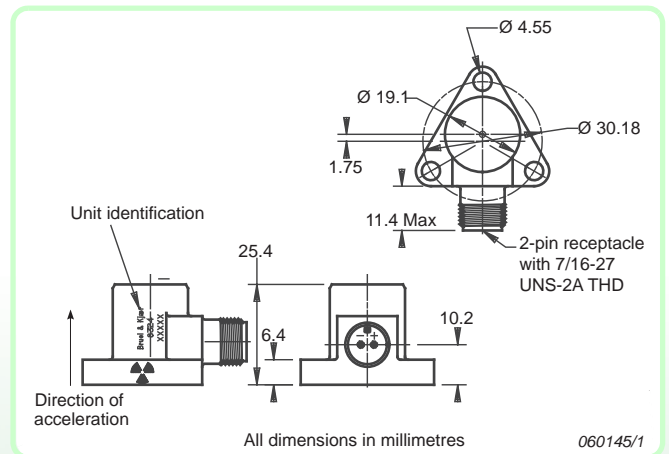
Characteristics

Type 8324-G is a compression design providing a wide operating bandwidth and excellent temperature stability. The housing material is Inconel[®].

Calibration

The transducers are individually calibrated using state-of-the-art random FFT technology, providing an 800-point high-resolution calibration (magnitude and phase) ultimately giving a unique characterisation and securing the integrity of the vibration measurement.

The sensitivity given in the calibration chart has been measured at 159.2 Hz with an acceleration of 100 ms^{-2} . For a 99.9% confidence level, the accuracy of the factory calibration is $\pm 2\%$.



Specifications – DeltaTron Accelerometer Types 8324-G and 8324-G-001

	Unit	8324-G, 8324-G-001*
Dynamic Characteristics		
Voltage Sensitivity (@ 160Hz)	mV/ms ⁻² (mV/g)	1 ± 10% (10)
Measuring Range	ms ⁻² (g)	±5000 (±500)
Frequency Response (see figures below also)		8324-G: ± 10% 1 Hz to 9 kHz 8324-G-001: ± 10% 100 Hz to 9 kHz
Mounted Resonance Frequency	kHz	30
Residual Noise	mms ⁻² (mg)	4 (0.4)
Transverse Sensitivity	%	<3
Electrical Characteristics		
Output Impedance	Ω	<100
DC Output Bias Voltage	V	+13 (±1)
Power Supply	mA	2 to 20
Start-up Time	s	<2
Grounding		Case Insulated
Insulation Resistance	MΩ	>100
Environmental Characteristics		
Temperature Range	°C (°F)	-196 to +250 (-321 to +482)
Humidity		Hermetic
Max. Operational Shock (peak)	ms ⁻² (g)	20000 (2000)
Base Strain Sensitivity	Equiv. ms ⁻² /μstrain	0.02
Thermal Transient Sensitivity	Equiv. ms ⁻² /°C	10
Magnetic Sensitivity (50 Hz – 0.03 Tesla)	ms ⁻² /T	20
Physical Characteristics		
Dimensions		See outline drawing
Weight (excluding cable)	gram (oz)	66 (2.33)
Case Material		Inconel
Cable Length	m (ft)	10 (32.8): 1 m (3.3) Converter, 9 m (29.5) Cable
Connector (Cable End)		BNC
Mounting		ARINC footprint (3 × M4)
Mounting Torque	Nm (lbf)	1.6 (1.18)

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

Ordering Information

Type 8324-G comprises:

- Charge Accelerometer Type 8324
- Integrated Charge to DeltaTron Converter Cable Type 2647-D-001

Type 8324-G-001 comprises:

- Charge Accelerometer Type 8324
- Integrated Charge to DeltaTron Converter Cable Type 2647-D-003


Types 8324-G and 8324-G-001 include the following accessories*:


- Carrying box
- Hex key
- Mounting template
- M4 Allen screws × 3

SERVICE

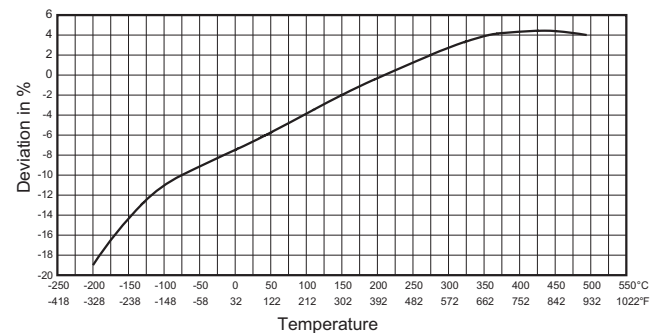
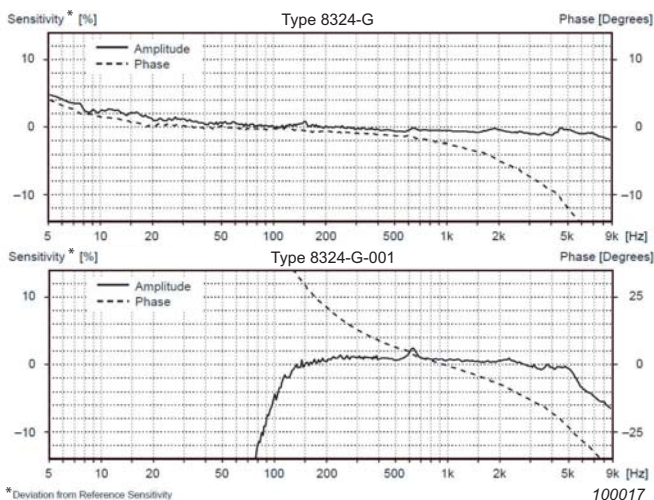
- 8324-G-CAF Accredited Calibration of Accelerometer, Integrated Cable and Charge Converter, and Programming of TEDS
- 8324-G-CAI Accredited Calibration of Accelerometer, Integrated Cable and Charge Converter, and Programming of TEDS performed as Initial
- 8324-G-EW1 Extended Warranty, one-year extension

COMPLIANCE WITH STANDARDS

 Compliance with EMC Directive and Low Voltage Directive of the EU

 Compliance with the EMC requirements of Australia and New Zealand

* Additional accessories and cables are available (see www.bksv.com)



TRADEMARKS

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HEADQUARTERS: Brüel & Kjær Sound & Vibration Measurement A/S · DK-2850 Nærum · Denmark
Telephone: +45 7741 2000 · Fax: +45 4580 1405 · www.bksv.com · info@bksv.com

Local representatives and service organisations worldwide

Brüel & Kjær 

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