



CA 134

Piezoelectric accelerometer

FEATURES

- » From the Vibro-Meter® product line
- » Vibration monitoring over a wide temperature range, including cryogenic temperatures
- » Differential output
- » Hermetically welded
- » Certified for use in potentially explosive atmospheres
- » Frequency response:
0.5 to 6000 Hz
- » Sensitivity:
10 pC/g
- » Temperature range:
–253 (20K) to 500°C



CA 134



DESCRIPTION

The piezoelectric material used in the CA 134 compression-mode accelerometer produces an extremely stable and reliable device.

The transducer is designed for long-term monitoring and measurement of vibration over wide temperature ranges in severe environments, such as cryogenic applications and gas turbines.

The CA 134 is available as a transducer only which allows different twin-conductor cables – mineral insulated (MI) or softline – to be used depending on the temperature requirements of the application.



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SPECIFICATIONS

General

Input power requirements	: None
Signal transmission	: 2-pole system insulated from casing, charge output
Signal processing	: Charge amplifier

Operating

At +23°C ±5°C (+73.4°F ±9°F)	
Sensitivity (at 120 Hz)	: 10 pC/g ±5%
Dynamic measuring range	: 0.001 to 500 g peak
Overload capacity (spikes)	: Up to 1000 g peak
Linearity	: ±1% over dynamic measuring range
Transverse sensitivity	: <5%
Resonant frequency (mounted)	: >14 kHz nominal
Frequency response	
• 0.5 to 3500 Hz	: ±5% (lower cutoff frequency is determined by the electronics used)
• 3500 to 6000 Hz	: <10%
Insulation resistance	: Min. 10 ⁸ Ω at 23°C (73°F). Min. 10 ⁵ Ω at 500°C (932°F).
Capacitance (nominal)	: 450 pF pole to pole. 20 pF pole to ground.

Environmental

Temperature range	
• <i>Continuous operation</i>	: -253 (20K) to +500°C (-423 to +932°F)
• <i>Short term survival</i>	: -253 (20K) to +520°C (-423 to +968°F)
Maximum temperature error (with respect to +23°C)	
• -253°C (20K)	: -5%
• +500°C	: +10%
Shock acceleration	: <2000 g peak (half sine, 1 ms duration) along sensitive axis
Corrosion, humidity	: INCONEL® 600, stainless steel, hermetically welded
Base strain sensitivity	: <7 × 10 ⁻⁴ g/με

Environmental – explosive atmospheres

Available in Ex approved versions for use in hazardous locations

Type of protection Ex i: intrinsic safety		
Europe	EC type examination certificate	LCIE 02 ATEX 6110 X II 1 G (Zones 0, 1, 2) Ex ia IIC T6 ... 510°C Ga
North America	cCSAUS certificate of compliance	1636188 Class I, Division 1, Groups A, B, C, D Ex ia T6 / AEx ia T6
International	IECEX certificate of conformity*	IECEX LCI 06.0008X Ex ia IIC T6 ... 510°C Ga

*Not engraved on the product marking.

SPECIFICATIONS (continued)

China	NEPSI certificate of conformity*	GYJ12.1448X Ex ia IIC T6 to T510°C Ga
Japan	TIIS certificate of conformity*	TC 20544 ib IIC T1
Korea	KGS certificate of conformity*	14-GA4BO-0130X Ex ia IIC T6 to T510°C

*Not engraved on the product marking.

Type of protection Ex nA: non-sparking apparatus		
Europe	Voluntary type examination certificate	LCIE 09 ATEX 1043 X II 3G (Zone 2) Ex nA IIC T6 ... 510°C Gc
International	IECEx certificate of conformity*	IECEx LCI 10.0017X Ex nA IIC T6 ... 510°C Gc

*Not engraved on the product marking.



For specific parameters of the mode of protection concerned and special conditions for safe use, please refer to the certificates that are available from Meggitt SA on demand.

Physical

- Dimensions : See Mechanical drawings on page 4
- Weight : 120 g (0.265 lb) approx.
- Mounting : Three M4 x 16 Allen screws and three M4 spring lock washers with a fastening torque of 4.5 N•m.
Electrical insulation of the mounting surface is not required.

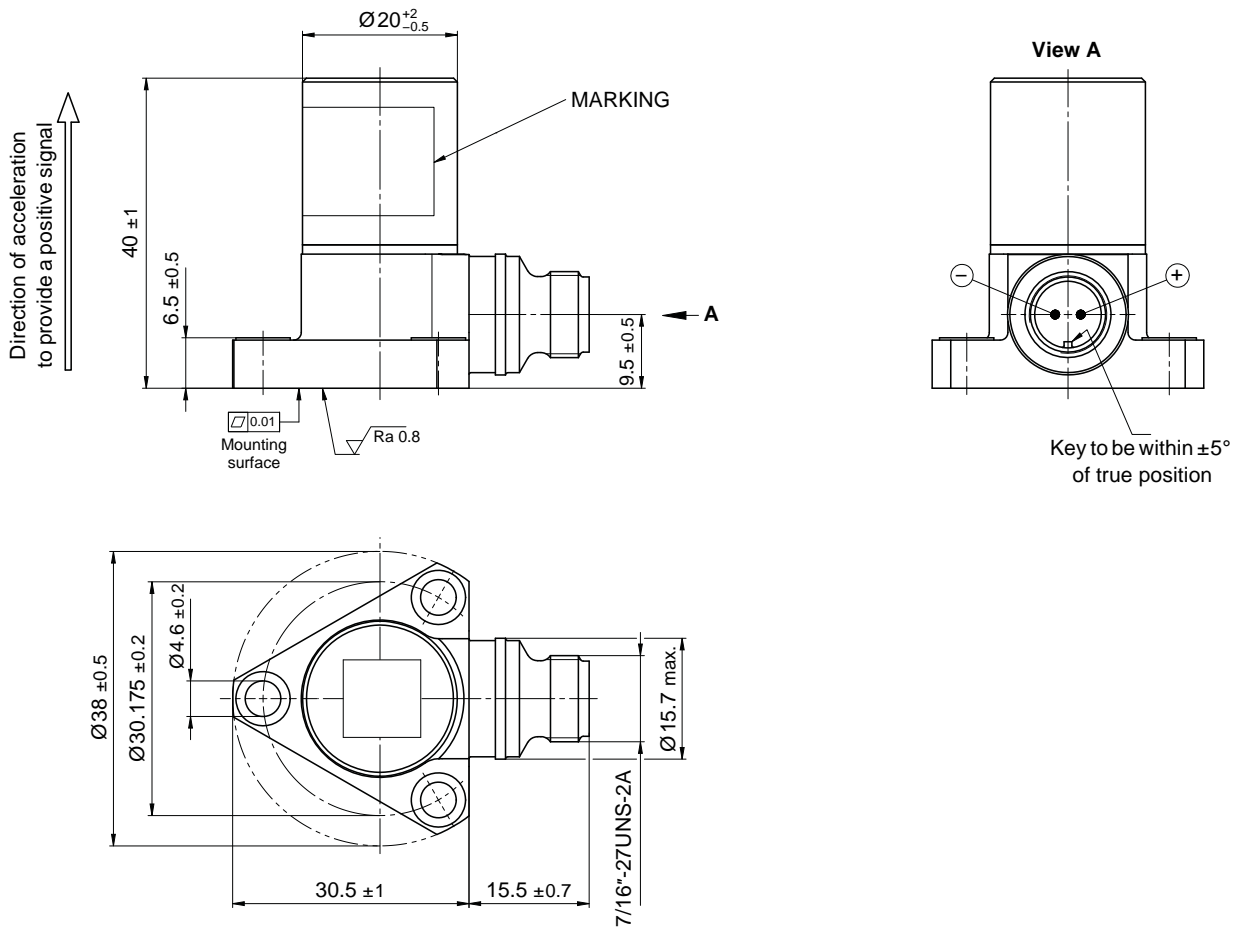
Connectors

- CA 134 : Terminated with a rugged circular, threaded ring, 2-pole connector.
Mates with a CG-505 connector (MIL-C-83723 military standard, series III K).

Calibration

Dynamic calibration at factory at 5 g peak and 120 Hz (+23°C). No subsequent calibration necessary.

MECHANICAL DRAWINGS



Note: All dimensions are in mm unless otherwise stated.

ORDERING INFORMATION

To order please specify

Type	Designation	Ordering number
CA 134	Piezoelectric accelerometer	144-134-000-203

MOUNTING ACCESSORIES

TA 104	Mounting adaptor	See drawing 144-136-301-101
TA 105	Mounting adaptor	See drawing 144-136-302-101

Headquartered in the UK, Meggitt PLC is a global engineering group specializing in extreme environment components and smart sub-systems for aerospace, defence and energy markets.

Meggitt Sensing Systems is the operating division of Meggitt specializing in sensing and monitoring systems, which has operated through its antecedents since 1927 under the names of ECET, Endevco, Ferroperm Piezoceramics, Lodge Ignition, Sensorex, Vibro-Meter and Wilcoxon Research. Today, these operations are integrated under one strategic business unit called Meggitt Sensing Systems, headquartered in Switzerland and providing complete systems, using these renowned brands, from a single supply base.

The Meggitt Sensing Systems facility in Fribourg, Switzerland was formerly known as Vibro-Meter SA, but is now Meggitt SA. This site produces a wide range of vibration and dynamic pressure sensors capable of operation in extreme environments, leading-edge microwave sensors, electronics monitoring systems and innovative software for aerospace and land-based turbo-machinery.



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In this publication, a dot (.) is used as the decimal separator and thousands are separated by thin spaces. Example: 12345.67890.

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