Vibro Meter CA134 144-134-000-612

High-Temperature Piezoelectric Accelerometer



Vibro Meter CA134 144-134-000-612 is a charge-output accelerometer for vibration measurement at high machine-surface temperatures. Its compression-mode sensing element is internally insulated from a hermetically welded high-temperature nickel-alloy case. The 612 version uses an integral mineral-insulated cable, providing a sensor-and-cable assembly for demanding machinery measurement locations. A separate IPC70x charge conditioner converts the sensor output for the monitoring system. The complete 612 part number remains important because the manufacturer has announced its transition to the 613 replacement.

Technical Specifications

Product Identity	
Complete part number	CA134 144-134-000-612
Functional Configuration	
Sensor type	High-temperature piezoelectric accelerometer
Measuring element	Compression mode; internally case-insulated
Nominal sensitivity	10 pC/g ±5% at 120 Hz, 5 g and reference temperature
Dynamic range	0.001–500 g peak
Output	Two-pin charge output, insulated from case
Cable arrangement	Integral mineral-insulated cable, double-braid protection
Replacement identified	144-134-000-613; verify complete application before substitution
Performance & Power	
Frequency response	0.5–3,500 Hz ±5%; 3,500–6,000 Hz within 10%
Input power	None; passive charge sensor
Environment	
Normal continuous temperature	–54 to +500 °C; no cryogenic claim

Selected original manufacturer material follows on pages 3–7.

Compatibility & Selection Guide

System compatibility. Use the CA134 with an appropriately configured IPC70x charge conditioner and a complete monitoring chain suitable for its sensitivity and operating environment. The manufacturer transition notice identifies PNR 144-134-000-613 as the replacement for 144-134-000-612, with delivery transition planned from October 2025. Confirm the offered part, cable arrangement and applicable approval conditions before accepting the newer version.

Wiring & Installation Reference

Mounting and cable support

1. Prepare the face Use the three-hole CA134 mounting pattern.
2. Secure the sensor Use three M4 × 16 screws and washers; specified tightening torque is 4 N·m.
3. Support the MI cable Respect the 50 mm minimum bend radius and avoid force at the sensor cable exit.

Installation precautions

Use the applicable hazardous-area certificate and complete chain conditions; do not infer every approval from a family heading.

The normal temperature range does not establish suitability for a special cryogenic application.

View sensor and cable diagram (PDF) — page 7 · View mounting diagram — page 7

SPECIFICATIONS

General

Input power requirements	: None
Signal transmission	: 2-pin system, insulated from case, charge output
Signal processing	: Charge converter (IPC70x signal conditioner)

Operating

(At 23°C ±5°C, 73°F ±9°F)

Sensitivity (at 120 Hz with 5 g, see Calibration on page 4)	: 10 pC/g ±5%
Dynamic measurement range	: 0.001 to 500 g peak
Overload capacity (spikes)	: Up to 1000 g peak
Linearity	: ±1% over dynamic measurement range
Transverse sensitivity	: <5%
Resonant frequency	: >14 kHz nominal
Frequency response	
• 0.5 to 3500 Hz	: ±5% (lower cutoff frequency is determined by the signal conditioner)
• 3500 to 6000 Hz	: <10%
Internal insulation resistance	: 10^8 Ω minimum at 23°C (73°F). 10^5 Ω minimum at 500°C (932°F).
Capacitance	
• Sensor head	: 20 pF nominal between pin (+ or −) and case (ground). 450 pF nominal between pins (+ and −).
• MI cable (integral cable version only)	: 350 pF/m nominal between pin (+ or −) and case (ground). 220 pF/m nominal between pins (+ and −).

Environmental

Temperature range	
• Continuous operation	: −54 to 500°C (−65 to 932°F). Note: Cryogenic version has a minimum operating temperature of −253°C (20 K).
• Short-term survival	: −70 to 520°C (−94 to 968°F). Note: Cryogenic version has a minimum survival temperature of −253°C (20 K).
Maximum temperature error (with respect to 23°C, 73°F)	
• −253°C (20 K)	: −5%
• 500°C	: +10%
Corrosion, humidity	: Special high-temperature nickel alloy, stainless steel, hermetically welded
Shock acceleration	: <2000 g peak (half sine, 1 ms duration) along sensitive axis
Base strain sensitivity	: $\leqslant 5 \times 10^{-3}$ g/με

SPECIFICATIONS *(continued)*

Potentially explosive atmospheres

Ex approved for use in hazardous areas

Type of protection Ex i: intrinsic safety		
Europe	EC type examination certificate	Ⓔx II 1 G (Zones 0, 1, 2) Ex ia IIC T6…510°C Ga LCIE 02 ATEX 6110 X
International	IECEx certificate of conformity	Ex ia IIC T6…510°C Ga IECEx LCI 06.0008X *Note: Not engraved/marked on the product.*
North America	cCSAus certificate of compliance	Class I, Division 1, Groups A, B, C, D Ex ia (T6…T1) cCSAus 1636188
Korea	KGS certificate of conformity	Ex ia IIC T6 to T510°C KGS 14-GA4BO-0130X *Note: Not engraved/marked on the product, except for PNR 144-134-000-612.*
Japan	TIIS certificate of conformity	ib IIC T1 TIIS TC 20432 *Note: PNR 144-134-000-611 only.* *Not engraved/marked on the product.*
		ib IIC T1 TIIS TC 20544 *Note: PNR 144-134-000-612 only.* *Not engraved/marked on the product.*
Brazil	INMETRO certificate of conformity	Ex ia IIC T6…510°C Ga BVC20.3862-X *Note: Not engraved/marked on the product, except for PNR 144-134-000-612/613.*
China	CNEx Certificate	Ex ia IIC T6~T510°C Ga CNEx 22.2014X *Note: Not engraved/marked on the product.*
Russian Federation	ЕАЭС RU certificate of conformity	0Ex ia IIC T6…510°C Ga X ЕАЭС RU C-CH.АД07.В.03042/21 *Note: Not engraved/marked on the product, except for PNR 144-134-000-203.*

SPECIFICATIONS *(continued)*

Type of protection Ex nA: non-sparking		
Europe	Voluntary type examination certificate	Ⓔx II 3G (Zone 2) Ex nA IIC T6…510°C Gc LCIE 09 ATEX 1043 X
International	IECEx certificate of conformity	Ex nA IIC T6…510°C Gc IECEx LCI 10.0017X *Note: Not engraved/marked on the product.*
Brazil	INMETRO certificate of conformity	Ex nA IIC T6…510°C Gc BVC20.3863-X *Note: Not engraved/marked on the product, except for PNR 144-134-000-612/613.*
Russian Federation	ЕАЭС RU certificate of conformity	2Ex nA IIC T6…510°C Gc ЕАЭС RU C-CH.АД07.В.03042/21 *Note: Not engraved/marked on the product, except for PNR 144-134-000-203.*

⚠ **For specific parameters of the mode of protection concerned and special conditions for safe use, refer to the Ex certificates that are available from Parker Meggitt.**

⚠ **For the most recent information on the Ex certifications that are applicable to this product, refer to the *Ex product register (PL-1511) document* that is available from Parker Meggitt.**

Approvals

Conformity	:	European Union (EU) declaration of conformity (CE marking). EAC marking, Eurasian Customs Union (EACU) certificate/declaration of conformity.
Electromagnetic compatibility (EMC)	:	EMC compliant (2014/30/EU): EN 61000-6-2:2005. EN 61000-6-4:2007 + A1:2011.
Electrical safety	:	EN 61010-1:2010
Environmental management	:	RoHS compliant (2011/65/EU)
Hazardous areas	:	Ex approved (see Potentially explosive atmospheres on page 3)

Calibration

Dynamic calibration at factory at 5 g peak and 120 Hz (23°C, 73°F). No subsequent calibration necessary.

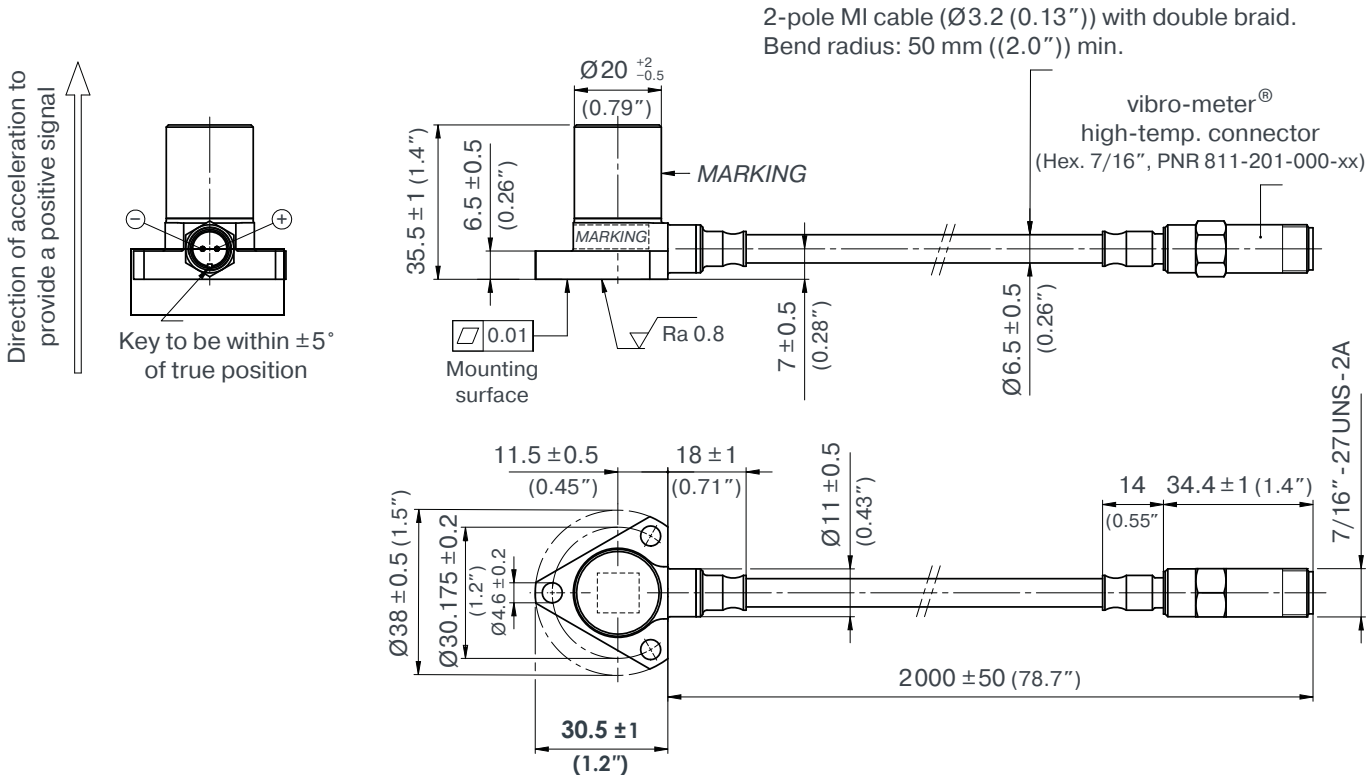
SPECIFICATIONS *(continued)*

Physical

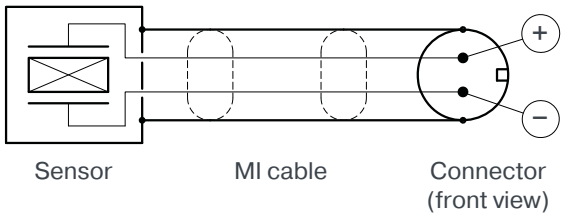
Case (housing) material	: Special high-temperature nickel alloy and stainless steel
Dimensions	: See Mechanical drawings starting on page 6
Weight	
• Sensor head	: 120 g (0.26 lb) approx.
• MI cable (integral cable version only)	: 140 g/m (0.094 lb/ft) approx.
Mounting	: Three M4 × 16 Allen screws and three M4 spring-lock washers with a nominal tightening torque of 4 N • m (3 lb-ft). Note: Electrical insulation of the mounting surface is not required. See Mounting adaptors in Accessories on page 8. Refer also to the *Vibration measurement chains using CAxxx piezoelectric accelerometers installation manual*.
Connector	
• Sensor only version	: High-temperature, rugged circular, threaded coupling, 2-pin connector with keyway (vibro-meter® 7/16″-27UNS-2A / CG505). Mates with connectors used by the recommended cable assemblies (vibro-meter® 7/16″-27UNS-2B or CG505).
• Integral cable version	: vibro-meter® high-temperature connector (Hex. 7/16″). Mates with connectors used by the recommended extension cable assemblies (vibro-meter® 7/16″-27UNS-2B or CG505).
Recommended cable assemblies (sensor only version)	: EC069, EC112, EC119, EC222 or EC390. See Cable assemblies in Accessories on page 8.
Recommended extension cable assemblies	: EC119, EC222 or EC390. See Cable assemblies in Accessories on page 8.

MECHANICAL DRAWINGS *(continued)*

Integral cable version



Wiring diagram



Note: All dimensions are in mm (in) unless otherwise stated.