Vibro Meter CA202 144-202-000-205

Piezoelectric Accelerometer

Vibro Meter CA202 144-202-000-205 is a piezoelectric accelerometer in the CA202 industrial vibration-measurement family. It converts dynamic acceleration into a charge signal for a separate signal conditioner and machinery-monitoring system. The family uses a symmetrical shear-mode sensing element with internal case insulation, a stainless-steel housing and an integral protected cable. The actual photographs identify the legacy 205 assembly, helping maintenance buyers match an installed sensor without confusing it with a newer cable variant.



Technical Specifications

Product Identity	
Complete legacy part number	CA202 144-202-000-205
Product family	CA202 piezoelectric charge-output accelerometer
Functional Configuration	
Reference data scope	Newer CA202, DS 262-020 Version 10; legacy 205 applicability requires confirmation
Nominal sensitivity - newer reference	100 pC/g ±5% at stated reference conditions
Dynamic range - newer reference	0.01-400 g peak
Signal principle	Passive piezoelectric charge output; separate charge converter
Legacy cable length and approvals	Confirm the offered 205 assembly; not inferred from newer 206/216 variants
Performance & Power	
Frequency response - newer reference	0.5-6,000 Hz ±5%; lower cutoff depends on conditioner
Environment	
Sensor temperature - newer reference	-55 to +260 °C continuous
Cable temperature - newer reference	-55 to +200 °C continuous

Selected original manufacturer material follows on pages 3–5.

Compatibility & Selection Guide

System compatibility. The measurement chain uses a charge converter such as an appropriately configured IPC70x. Match the offered sensor calibration, cable arrangement, conditioner scaling and monitoring requirements. A newer CA202 part number is not an automatic substitute for this legacy assembly, and current Ex approvals must not be transferred to it without the applicable certificate and unit marking.

Wiring & Installation Reference

Installation precautions

Confirm the actual sensor and cable temperature limits separately.

Apply only hazardous-area certificates that explicitly cover the offered unit and measurement chain.

View connection reference (PDF) — page 5 · View mounting reference (PDF) — page 5

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**)	: 100 pC/g ±5%
Dynamic measurement range	: 0.01 to 400 g peak
Overload capacity (spikes)	: Up to 500 g peak
Linearity	
• 0.01 to 20 g (peak)	: ±1%
• 20 to 400 g (peak)	: ±2%
Transverse sensitivity	: ≤3%
Resonant frequency	: >22 kHz nominal
Frequency response	
• 0.5 to 6000 Hz	: ±5% (lower cutoff frequency is determined by the signal conditioner)
• Typical deviation at 8 kHz	: +10%
Internal insulation resistance	: 10^9 Ω minimum
Capacitance (nominal)	
• Sensor	: 5000 pF pin to pin. 10 pF pin to case (ground).
• Cable (per metre of cable)	: 105 pF/m pin to pin. 210 pF/m pin to case (ground).

Environmental

Temperature range

• Continuous operation	: −55 to +260°C (−67 to +500°F) for sensor. −55 to +200°C (−67 to +392°F) for integral cable.
• Short-term survival	: −70 to +280°C (−94 to +536°F) for sensor. −62 to +250°C (−80 to +482°F) for integral cable.

Temperature sensitivity error (with respect to 23°C, 73°F)

• −55 to +23°C (−67 to +73°F)	: 0.25%/°C
• +23 to 260°C (−73 to +500°F)	: 0.1%/°C

Corrosion, humidity

• Sensor	: Austenitic stainless-steel (1.4441), hermetically welded
• Protection hose	: Heat-resistant stainless-steel (1.4541), hermetically welded

Note: The sensor and the flexible protection hose are hermetically welded to one another to create a sealed leaktight assembly that is impervious to 100% relative humidity (RH), water, steam, oil, and sea-salt atmospheres, in addition to other potential contaminants such as dust, fungus and sand.

Base-strain sensitivity	: 0.15 x 10^{-3} g/με at 250 με peak-peak
Shock acceleration	: ≤1000 g peak (half sine, 1 ms duration)

SPECIFICATIONS *(continued)*

Approvals

Conformity	: European Union (EU) declaration of conformity (CE marking). EAC marking, Eurasian Customs Union (EACU) certificate/ declaration of conformity.
Electromagnetic compatibility	: 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 versions (see **Potentially explosive atmospheres on page 3**)

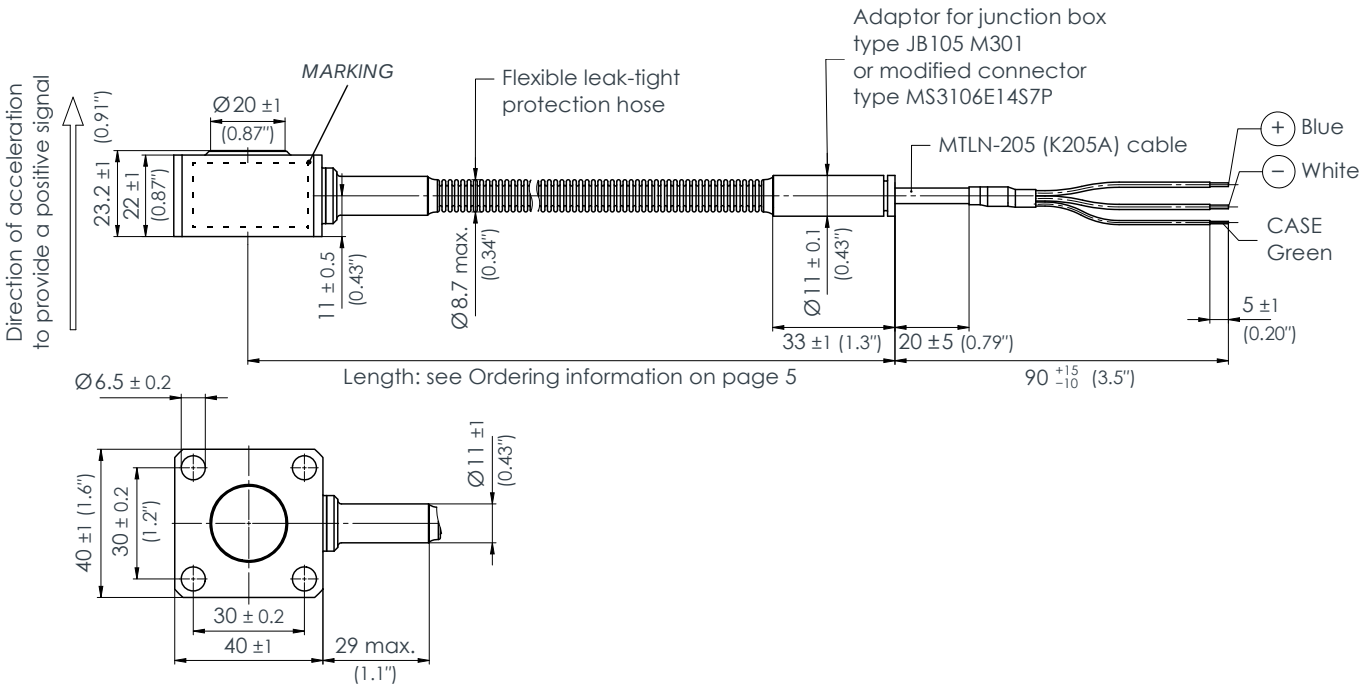
Calibration

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

Physical

Case (housing) material	: Austenitic stainless steel
Dimensions	: See **Mechanical drawings on page 5**
Weight	
• Sensor	: 250 g (0.55 lb) approx.
• Cable	: 135 g/m (0.30 lb/m) approx.
Mounting	: Four M6 × 35 Allen screws and four M4 spring-lock washers with a nominal tightening torque of 15 N•m (11.1 lb-ft). Note: Electrical insulation of the mounting surface is not required. See Mounting adaptors in **Accessories on page 6**. Refer also to the *Vibration measurement chains using CAxxx piezoelectric accelerometers installation manual*.
Connector	: Terminated with flying leads

MECHANICAL DRAWINGS



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

ORDERING INFORMATION

To order please specify

Type	Designation	Part number (PNR)
CA202	Different versions of the piezoelectric accelerometer:	
	Ex version with 3 m integral cable	144-202-000-106
	Ex version with 6 m integral cable	144-202-000-116
	Ex version with 11 m integral cable	144-202-000-126
	Ex version with 20 m integral cable	144-202-000-136
	Standard version with 3 m integral cable	144-202-000-206
	Standard version with 6 m integral cable	144-202-000-216
	Standard version with 11 m integral cable	144-202-000-226
	Standard version with 20 m integral cable	144-202-000-236