



## CV213 and CV214

### Velocity transducers

#### FEATURES

- » From the Vibro-Meter® product line
- » Frequency response down to 10 Hz
- » Voltage output signal
- » No need for additional signal conditioner
- » No power supply required
- » Wide transducer mounting orientation
- » Side-mounted military-standard connector
- » Dust and moisture resistant: IP64 protection rating
- » Certified for use in potentially explosive atmospheres
- » Temperature range:  
CV213: -29 to 204°C (-20 to 400°F)  
CV214: -29 to 121°C (-20 to 250°F)



CV213

CV214

#### APPLICATIONS

- » Designed for vibration monitoring on low-speed machines
- » Suitable for hydropower and steam turbine applications



#### DESCRIPTION

The CV213 and CV214 velocity transducers are designed to measure absolute vibration at low frequencies. When used with a cable assembly, the transducer can be connected directly to the monitoring electronics without the need for an additional signal conditioner and power supply.

The two devices are similar in construction and

performance, the only difference being that the CV213 is intended for high-temperature applications.

Good sensitivity and rugged design make these devices suitable for all types of low-speed industrial machinery. Their anodised aluminium case and watertight sealed connector allow them to withstand damp and corrosive environments.



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**DESCRIPTION** *(continued)*

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The transducer's sensing element consists of a coil moving around a permanent magnet. This assembly produces a voltage directly proportional to the vibration velocity. The signal is generated without the need for an external power source, a feature that makes these devices suitable for portable measurement applications.

Dedicated cable assemblies are available for each velocity transducer. The ED120 assembly is intended for the CV213 and the ED121 for the CV214. In very harsh

industrial environments, the transducer should be installed with its cable assembly covered by a flexible protection tube (sheath) made of metal, for mechanical protection.

For specific applications, contact your nearest Meggitt Sensing Systems representative.

**SPECIFICATIONS**

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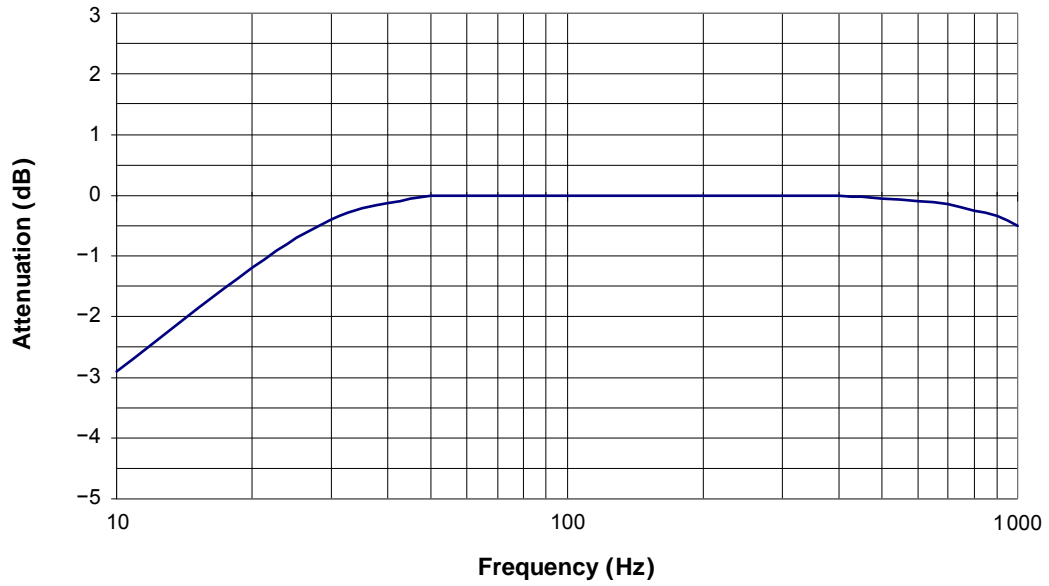
**General**

Operating principle	: Moving coil and magnet
Power supply	: No external power supply required
Signal transmission	: 2-wire system insulated from casing, voltage-based output
Sensitivity	
• <i>Directionality</i>	: Calibrated along the long axis of the transducer
• <i>Nominal sensitivity</i> at 22 °C (71.6 °F) ±5 °C	: 20 mV/mm/s (508 mV/in/s) ±5% with signal of 100 Hz
Frequency range	: 10 Hz to 1 kHz
Typical frequency response	
• 10 Hz	: -3 dB
• 30 to 400 Hz	: ±0.5 dB
• 400 Hz to 1 kHz	: ±1 dB. See also <b>Typical frequency response curves on page 3.</b>
Resonant frequency	: 10 Hz ±1 Hz (nominal)
Transverse sensitivity	: Max. ±10%
Output impedance	: <700 Ω
Internal insulation resistance at 22 °C (71.6 °F) ±5 °C	
• <i>Case to (+) pole</i>	: >10 <sup>7</sup> Ω
• <i>Case to (-) pole</i>	: >10 <sup>7</sup> Ω
• <i>Machine to case</i>	: >10 <sup>7</sup> Ω

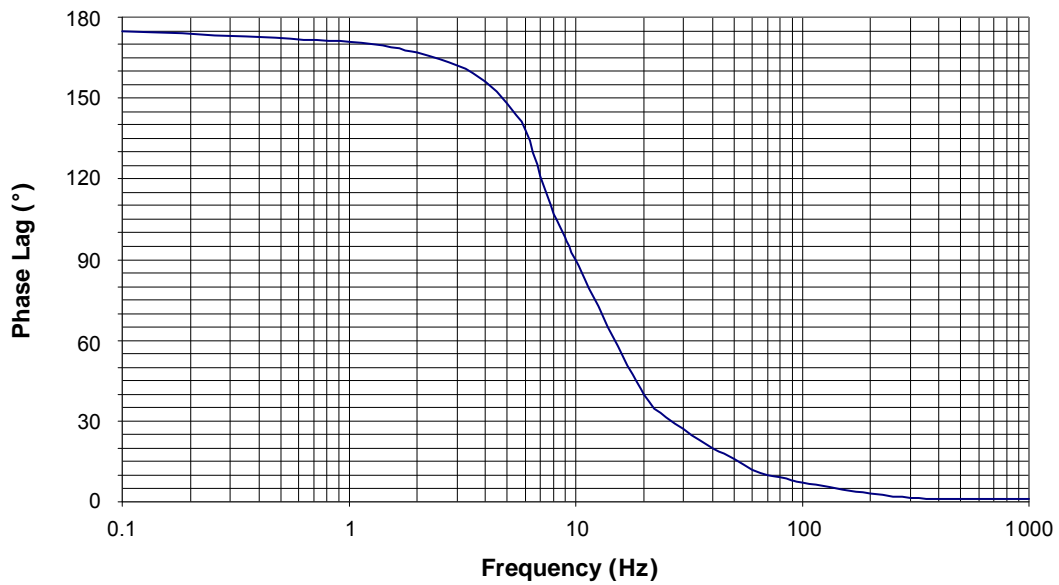
SPECIFICATIONS *(continued)*

Typical frequency response curves (CV213 and CV214)

Amplitude



Phase



**SPECIFICATIONS** (continued)

**Environmental**

Operating temperature

- CV213 : -29 to 204 °C (-20 to 400 °F)
- CV214 : -29 to 121 °C (-20 to 250 °F)

Storage temperature : -40 to 100 °C (-40 to 212 °F)

Protection rating : IP64

(according to IEC 60529)

Shock acceleration : 50 g peak (half-sine wave, 1 ms duration)

(according to IEC 60068-2-27)


**Potentially explosive atmospheres**

Available in Ex approved versions for use in hazardous areas

Type of protection Ex i: intrinsic safety		
Europe	EC type examination certificate	KEMA 04 ATEX 1178 X II 1 G (Zones 0, 1, 2) Ex ia IIC T6...T2 Ga (for the CV213) Ex ia IIC T6...T4 Ga (for the CV214)
North America	cCSAus certificate	cCSAus 1560547 Class I, Division 1, Groups A, B, C, D Ex ia T6 to T2 (for the CV213) Ex ia T6 to T4 (for the CV214)
Korea	KGS certificate of conformity*	KGS 18-GA4BO-0389X Ex ia IIC T6 to T2 (for the CV213) Ex ia IIC T6 to T4 (for the CV214)
Russian Federation	TR CU certificate of conformity*	TC RU C-CH.MШ06.B.00134 0Ex ia IIC T6...T2 Ga (for the CV213) 0Ex ia IIC T6...T4 Ga (for the CV214)

\*Not engraved on the product marking.

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

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

**Approvals**

- Conformity : CE marking, European Union (EU) declaration of conformity.  
EAC marking, Eurasian Customs Union (EACU) certificate/declaration of conformity.
- Electromagnetic compatibility : EN 61000-6-2:2005.  
EN 61000-6-4:2007 + A1:2011.  
TR CU 020/2011.
- Electrical safety : EC 61010-1:2010.  
TR CU 004/2011.
- Environmental management : RoHS compliant (2011/65/EU)
- Hazardous areas : Ex (see **Potentially explosive atmospheres on page 4**)
- Russian federal agency for technical regulation and metrology (Rosstandart) : Pattern approval certificate CH.C.28.004.A N° 59021, dated 19.06.2015

## SPECIFICATIONS (continued)

**Mechanical characteristics**

## Materials

- *Body* : Anodised Anticorodal® 100
- *Mounting foot* : Ryton® (high-performance thermoplastic)
- *Mounting screw* : Stainless steel 1.4301 (AISI 304)

## Mounting

- *Mounting base* : 1/2-20UNF-3A tapped hole
- *Mounting position* : See **Mounting restraints on page 5**

## Connector

: MIL-C-5015 10 SL-4 (on side of transducer)

## Dimensions

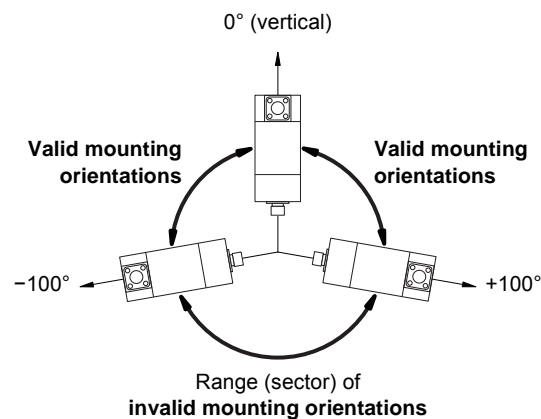
: See **Mechanical drawings and ordering information on page 6**

## Weight

: 0.4 kg approx.

**Mounting restraints**

## Allowed mounting orientation

: Within  $\pm 100^\circ$  of vertical position, as shown in drawing below**Cable assemblies (ED120 and ED121)**

Cable length : 15 m (nominal)

## Cable type

- *ED120* : K225 (2 x 0.25 mm<sup>2</sup> twisted cores, PTFE outer sheath)
- *ED121* : K220 (2 x 0.5 mm<sup>2</sup> twisted cores, PTFE outer sheath)

## Temperature range

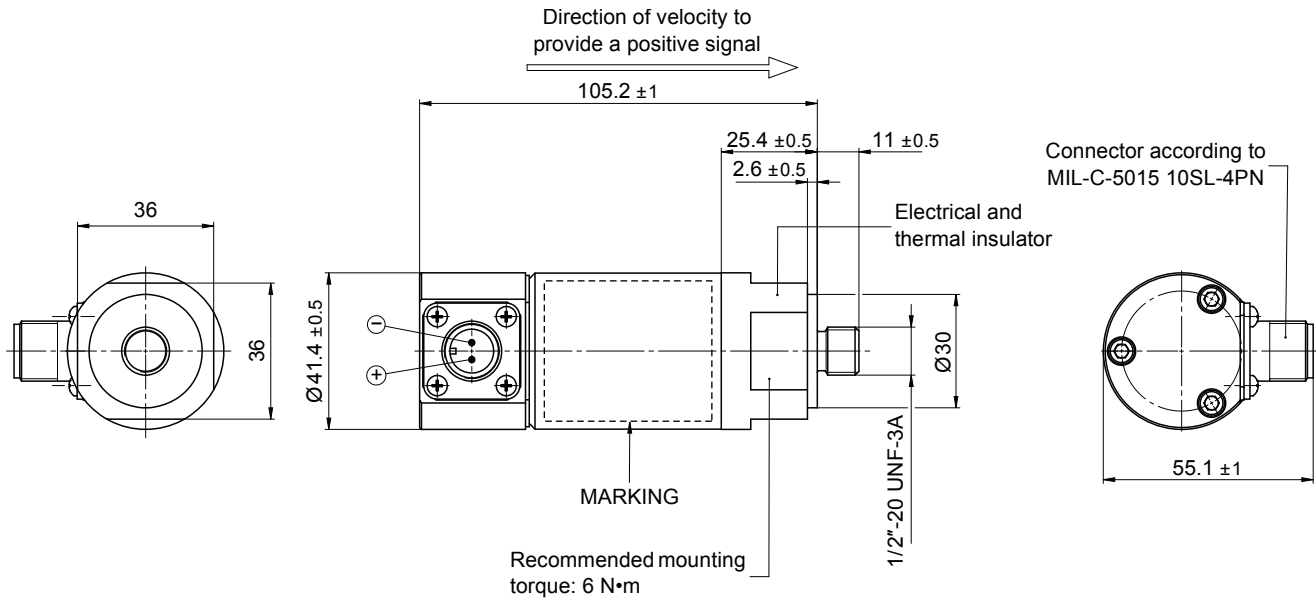
- *ED120* : -65 to 204 °C (-85 to 400 °F)
- *ED121* : -65 to 121 °C (-85 to 250 °F)

## Connector

: MIL-C-5015 10SL-4SN (mating connector for the CV213 and CV214)

MECHANICAL DRAWINGS AND ORDERING INFORMATION

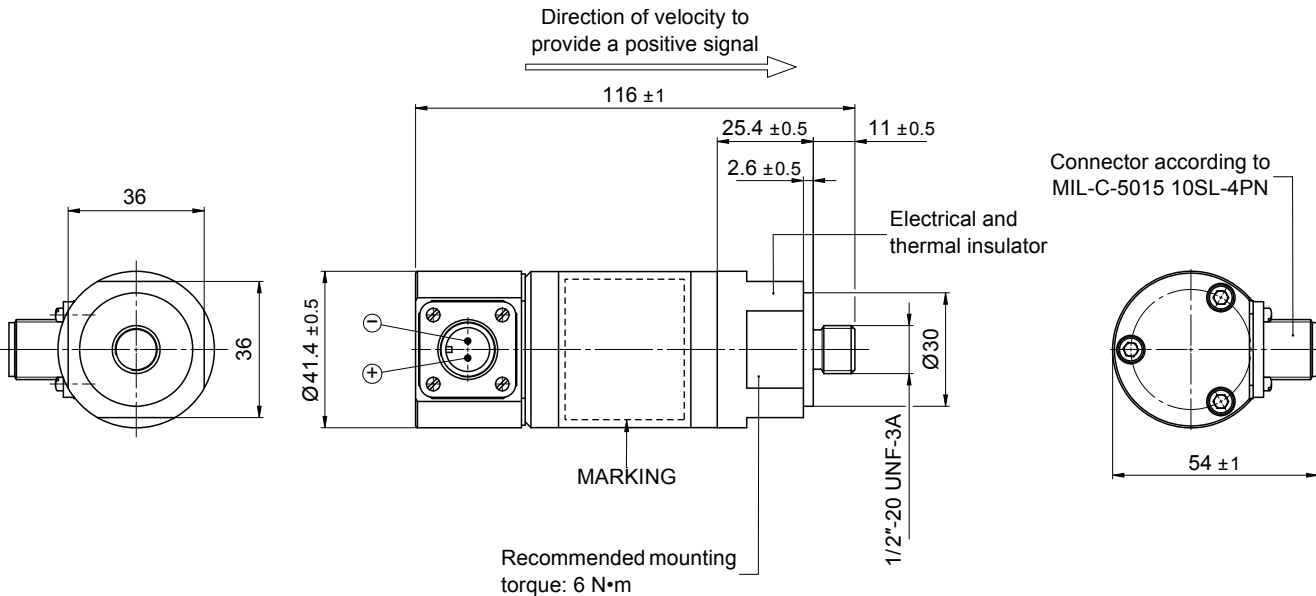
CV213



Type	: CV213
Designation	: Velocity transducer
Ordering number	: 110-213-000-012
Matching cable assembly	: ED120

Note: All dimensions are in mm unless otherwise stated.

CV214



Type	: CV214
Designation	: Velocity transducer
Ordering number	: 110-214-000-012
Matching cable assembly	: ED121

Note: All dimensions are in mm unless otherwise stated.

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.

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The Meggitt Sensing Systems facility in Fribourg, Switzerland operates as the legal entity Meggitt SA (formerly Vibro-Meter SA). This site produces a wide range of vibration, dynamic pressure, proximity, air-gap and other sensors capable of operation in extreme environments, electronic monitoring and protection systems, and innovative software for aerospace and land-based turbomachinery.



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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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### Sales offices

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### Your local agent

### Head office

Meggitt SA  
Route de Moncor 4  
PO Box 1616  
1701 Fribourg  
Switzerland

Tel: +41 26 407 11 11  
Fax: +41 26 407 13 01

