Vibro-Meter

CV 213 & CV 214

Velocity Transducers
Types CV 213 & CV 214

FEATURES

- Designed for vibration monitoring on low-speed machines
- Suitable for hydro-electric and steam turbine applications
- Frequency response down to 10 Hz
- Voltage-based output signal
- No need for additional signal conditioner
- No power supply required
- Side-mounted connector
- Dust and moisture resistant (IP 64)
- Certified for use in potentially explosive atmospheres
- Temperature range:
  CV 213 : -29°C to 204°C (-20°F to 400°F)
  CV 214 : -29°C to 121°C (-20°F to 250°F)

CV 214

CV 213

DESCRIPTION

The CV 213 and CV 214 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 CV 213 is intended for high-temperature applications.

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

A 15-meter connection cable assembly is available for each transducer type. The ED 120 assembly is intended for the CV 213 and the ED 121 for the CV 214. In very harsh industrial environments, the cable assembly should be protected by a flexible metal sheath.

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smart engineering for
extreme environments

SPECIFICATIONS

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	
• *Directionality*	: Calibrated along the long axis of the transducer
• *Nominal sensitivity*	: 20 mV/mm/s (508 mV/in/s) ± 5% with signal of 100 Hz at 22°C ± 5°C (72°F ± 9°F)
Frequency range	: 10 Hz to 1 kHz
Typical frequency response (see also curve)	
• *10 Hz to 30 Hz*	: -3 dB, 0
• *30 Hz to 1 kHz*	: ±0.5 dB
Resonant frequency	: 10 Hz ± 1 Hz (nominal)
Transverse sensitivity	: Max. ±10%
Internal insulation resistance (at 22°C ± 5°C)	
• *Case to (+) pole*	: $> 10^7\ \Omega$
• *Case to (-) pole*	: $> 10^7\ \Omega$
• *Machine to case*	: $> 10^7\ \Omega$

ENVIRONMENTAL

Operating temperature range	
• *CV 213*	: -29°C to 204°C (-20°F to 400°F)
• *CV 214*	: -29°C to 121°C (-20°F to 250°F)
Storage temperature	: -40°C to 100°C (-40°F to 212°F)
Shock acceleration	: 50 g peak, half-sine pulse 1 ms
Protection class	: IP 64

Use in explosive atmospheres
Equipment available in following versions :

• *EC type exami-nation certificate*	: KEMA 04 ATEX 1178 X II 1 G (Zones 0, 1, 2) EEx ia IIC T6 to T2 EEx ia IIC T6 to T4 (see copy)

⚠ **For specific parameters of the mode of protection concerned and special conditions for safe use, please refer to the “EC type examination certificate” that is available from Vibro-Meter SA on demand.**

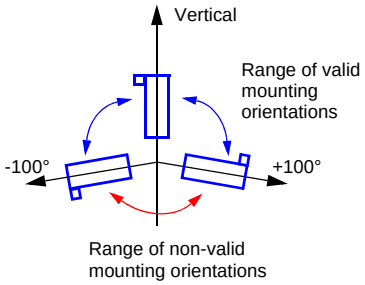
• *cCSAus standard*	: Certificate No. 1560547, Class I, Div. 1, Groups A, B, C, D Ex ia IIC T6 to T2 Ex ia IIC T6 to T4 (see copy)

MECHANICAL CHARACTERISTICS

Materials		
• *Body*	:	Anodized Anticorodal 100
• *Mounting foot*	:	PEEK
• *Mounting screw*	:	Stainless steel 1.4301 (AISI 304)
Mounting		
• *Mounting base*	:	1/2-20UNF-3A tapped hole
• *Mounting position*	:	See “Mounting Restraints”
Connector		MIL-C-5015 10 SL-4 (on side of transducer)
Dimensions	:	See pages 4 and 5
Weight	:	0.4 kg

MOUNTING RESTRAINTS

Allowed mounting orientation	:	Within ± 100° of vertical position (see sketch)

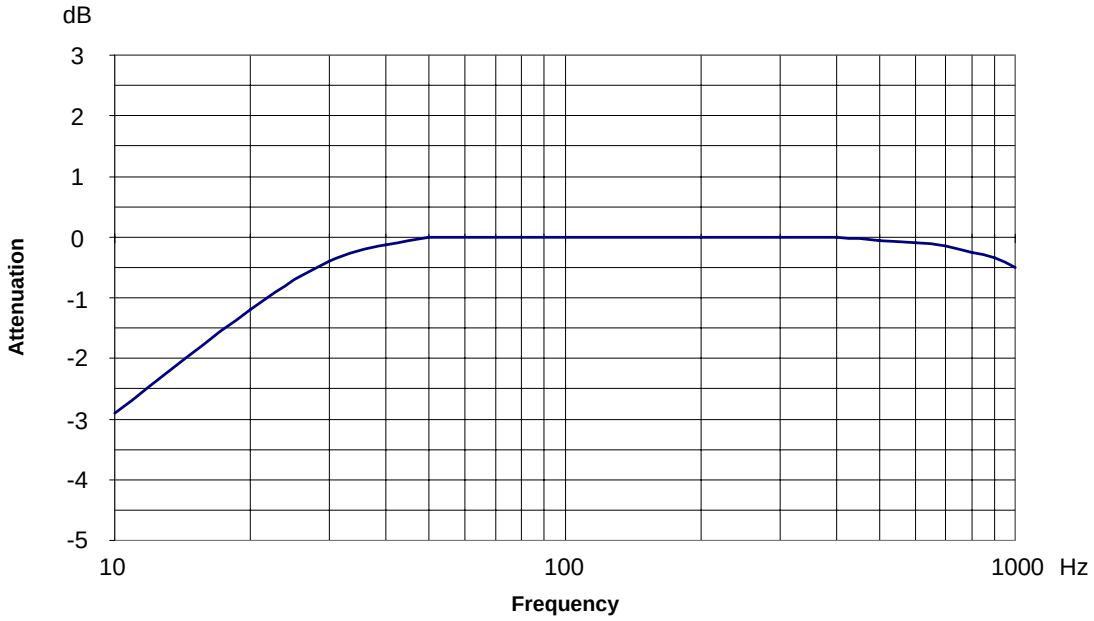


CABLE ASSEMBLIES (ED 120 & ED 121)

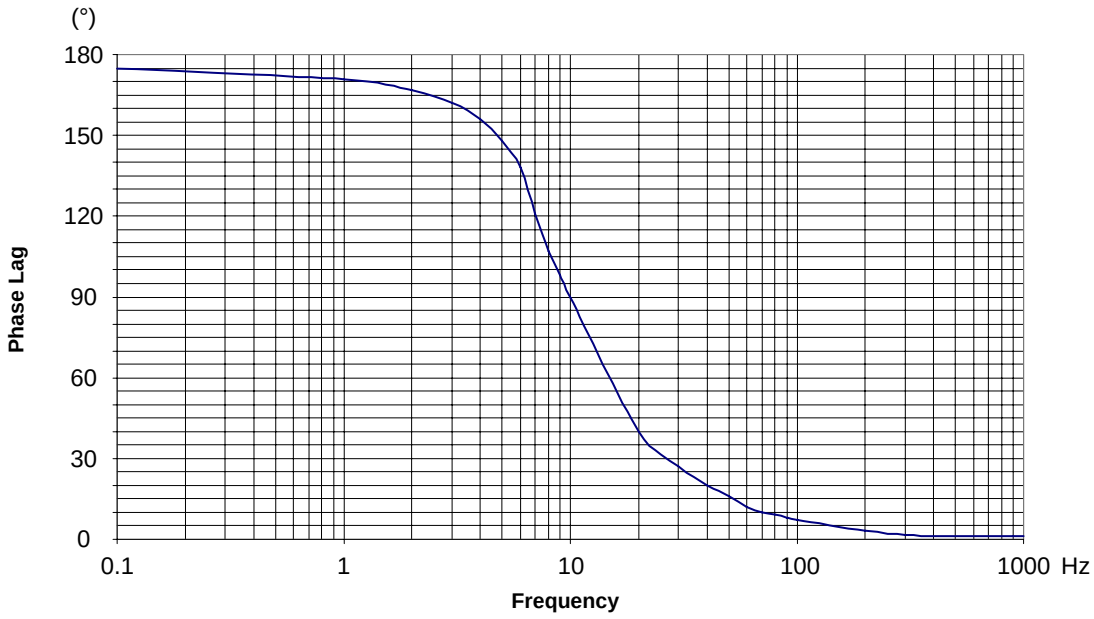
Cable length	15 m (nominal)
Cable type	K 220
Temperature range	
• *ED 120*	-65°C to 204°C (-85°F to 400°F)
• *ED 121*	-65°C to 121°C (-85°F to 250°F)
Connector	MIL-C-5015 10SL-4SN (mating connector for CV 213 or CV 214)

TYPICAL FREQUENCY RESPONSE CURVES (CV 213 & CV 214)

Amplitude

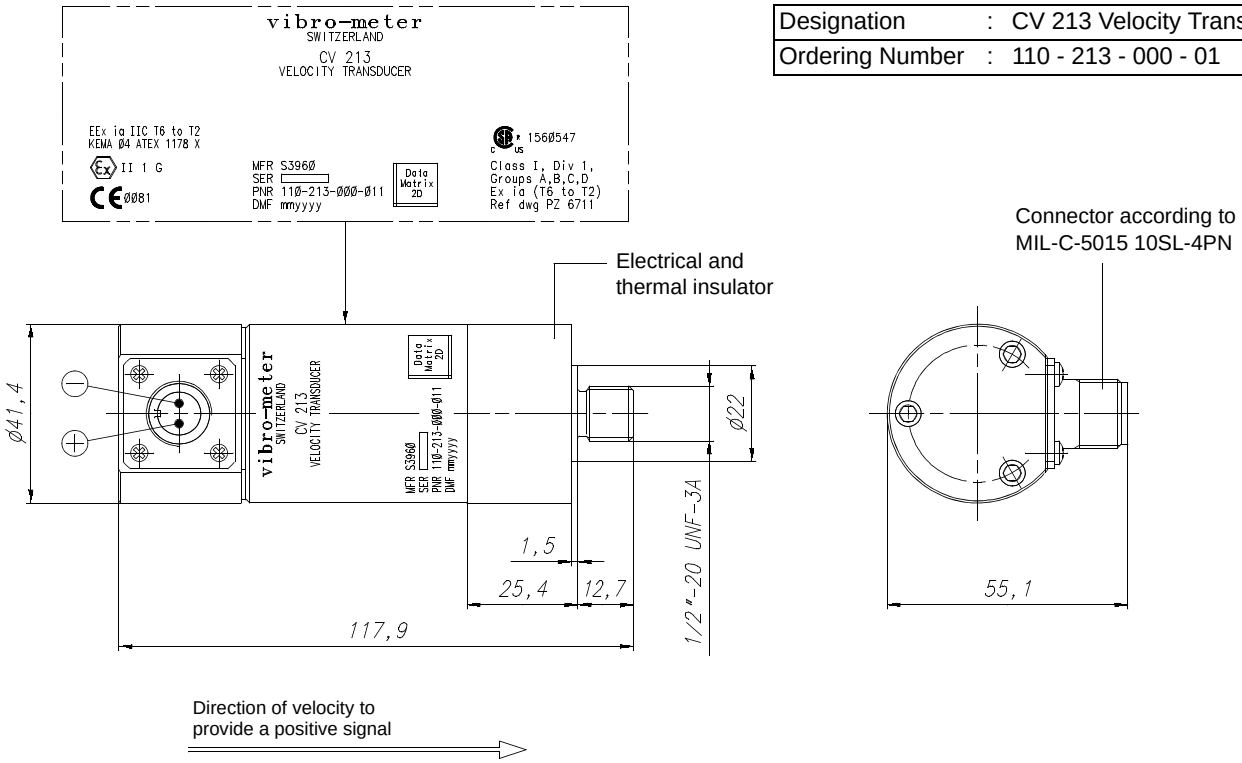


Phase



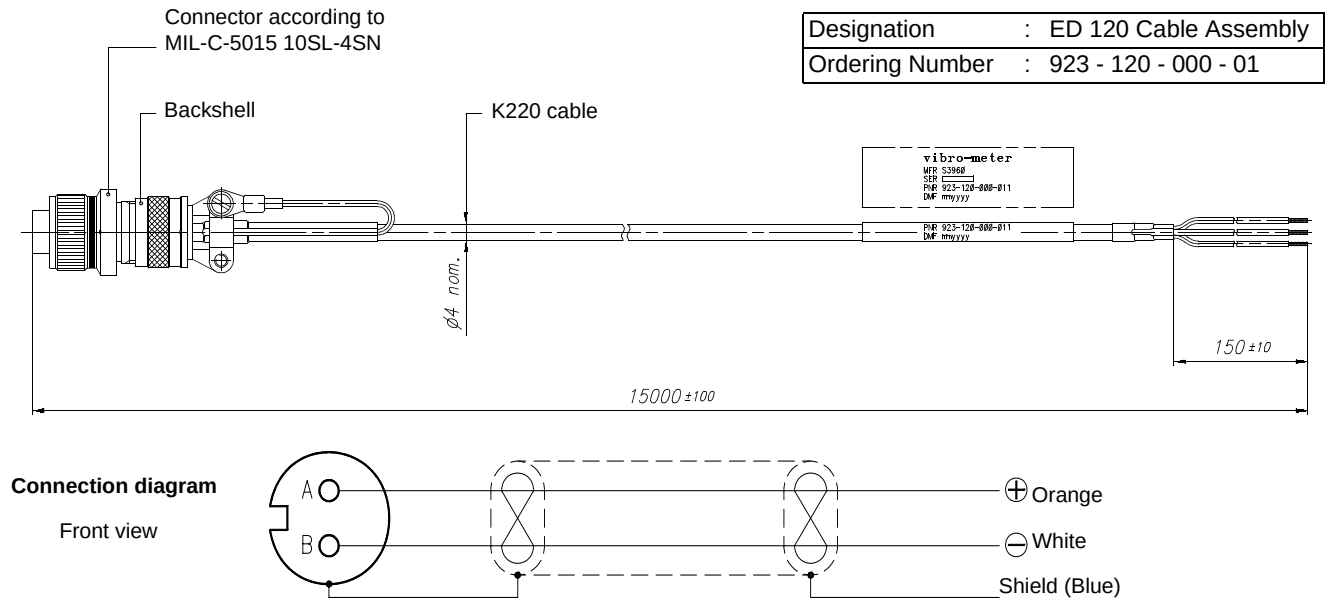
DIMENSIONS AND ORDERING INFORMATION

CV 213 Velocity Transducer



Designation	:	CV 213 Velocity Transducer
Ordering Number	:	110 - 213 - 000 - 01

ED 120 Cable Assembly for CV 213



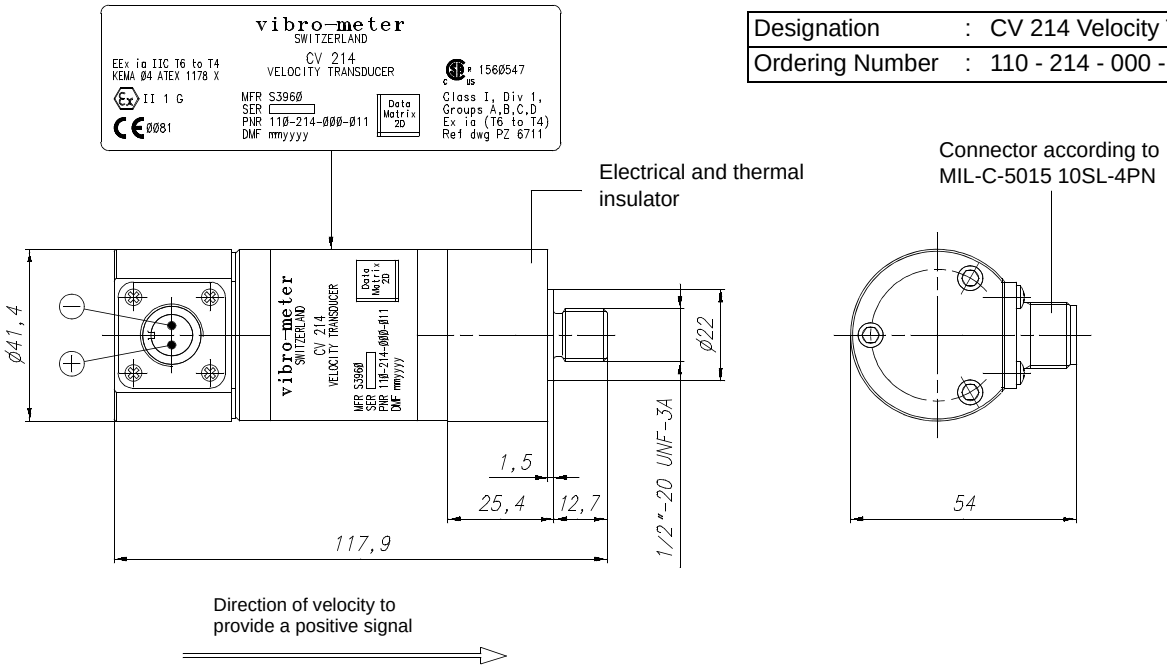
Designation	:	ED 120 Cable Assembly
Ordering Number	:	923 - 120 - 000 - 01

Connection diagram

Front view

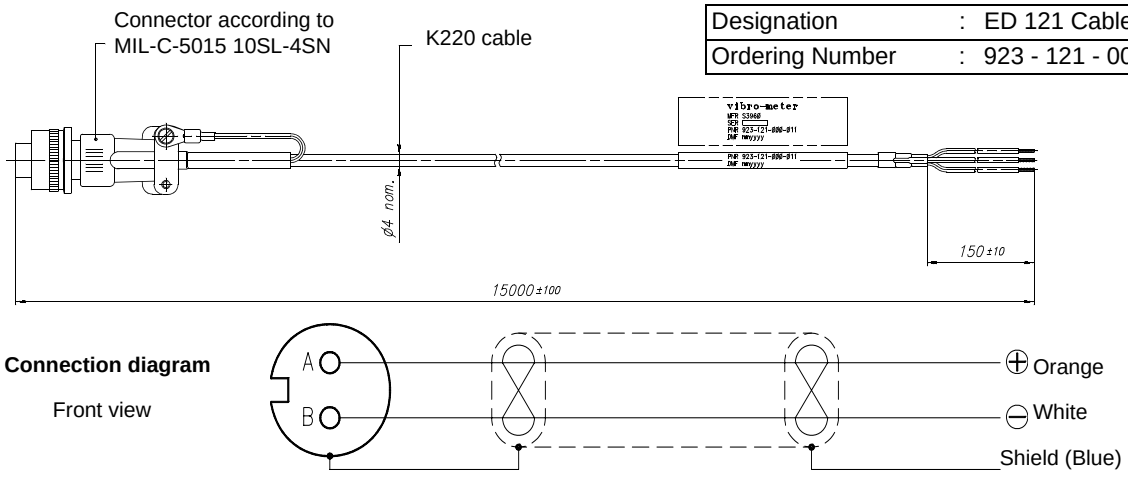
DIMENSIONS AND ORDERING INFORMATION *(Continued)*

CV 214 Velocity Transducer



Designation	:	CV 214 Velocity Transducer
Ordering Number	:	110 - 214 - 000 - 01

ED 121 Cable Assembly for CV 214



Designation	:	ED 121 Cable Assembly
Ordering Number	:	923 - 121 - 000 - 01

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