



Housing Expansion Probe

HEP-100

The HEP-100 is a linear inductive displacement sensor for housing expansion monitoring, featuring an integrated 4–20 mA transmitter for direct connection to PLC, DCS or SCADA systems, enabling reliable measurement of thermal growth in rotating machinery.

KEY FEATURES

- Linear inductive displacement measurement
- Measuring range to 50 mm
- Integrated 4–20 mA output signal
- Temperature range: –20 to +85 °C
- Robust design for industrial environments
- IP66 protection rating
- Simple installation with integrated electronics

MONITORING SOLUTIONS

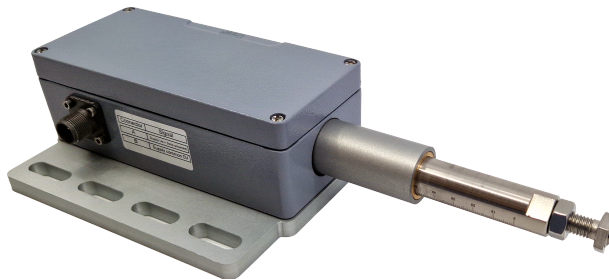


Casing expansion

TYPICAL APPLICATIONS



Gas & steam turbines



DESCRIPTION

The HEP-100 is a linear inductive displacement sensor designed for housing expansion monitoring in rotating machinery. It enables accurate measurement of thermal expansion caused by temperature variations, helping to monitor and protect critical assets. Available with a measuring range up to 50 mm, it is suitable for a wide range of machine sizes. The sensor features integrated electronics and an industry-standard 4–20 mA output signal, allowing direct connection to PLC, DCS or SCADA systems without additional signal conditioning. Based on an inductive measurement principle, the position of an internal movable core inside a coil is converted into a signal proportional to displacement. Its compact and robust design ensures reliable operation and easy installation in demanding industrial environments.

MEASURING DIRECTION

INCREASING

When configured in the increasing direction, the output current rises from 4 mA to 20 mA as the measurement rod moves from its fully inserted (start) position to its fully extracted (end) position. In this configuration, maximum thermal expansion of the monitored machine corresponds to the maximum output current of 20 mA.

DECREASING

When configured in the decreasing direction, the output current falls from 20 mA to 4 mA as the measurement rod moves from its fully inserted (start) position to its fully extracted (end) position. In this configuration, maximum thermal expansion of the monitored machine corresponds to the minimum output current of 4 mA.

GLOBAL SPECIFICATIONS

COMMON

Measurement range	50 mm (± 25 mm)
Sensitivity	0.32 mA/mm
Frequency response	
• Cutoff frequency	800 Hz
Output signal	
• Current output	4–20 mA
Connection	Connector MIL5015; 2-pin
Accuracy	< 0.5%
Temperature drift	< 0.01% / °C
Shock resistance	250 g SRS, 20–2000 Hz
Vibration resistance	20 g rms (50 g peak)
Power supply voltage	20 to 32 VDC (24 VDC nominal)
Current consumption	max 60 mA
Load resistance	0...500 Ω
Grounding	Screen has no connection to the sensor. One-sided shielding concept; shield connected in the sub-distribution (UV) up to the sensor connection

PHYSICAL CHARACTERISTICS

Outer tube	Stainless steel
Measuring rod	Stainless steel
Core	NiFe alloy
Connector housing	Nickel-plated brass
Contact	Gold-plated brass
Spring	Spring steel
Weight	1.6 kg

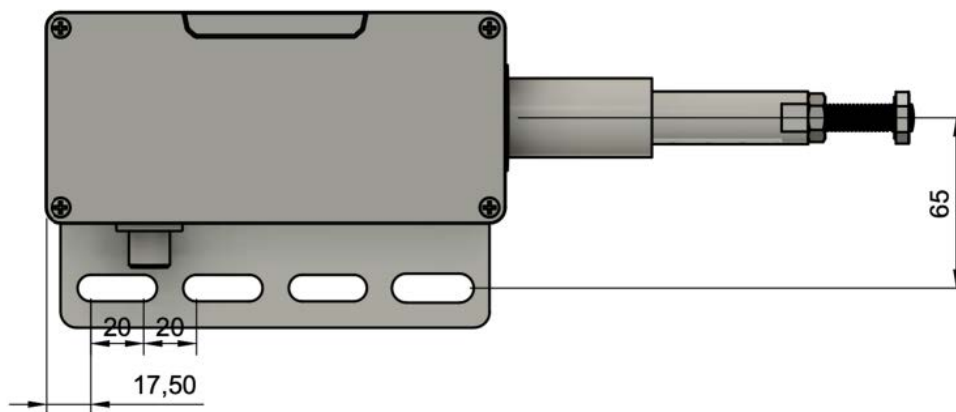
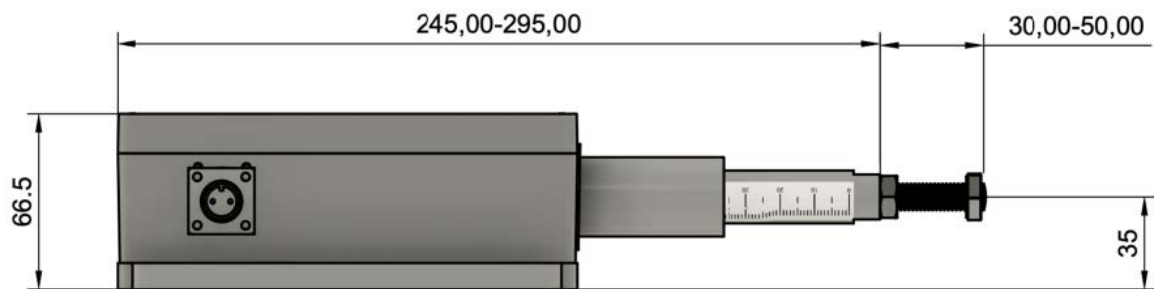
ENVIRONMENTAL

Temperature range	
• Operating and storage	-20°C to 85°C
Protection rating	
• According to IEC 60529	IP 66 (achieved when the connection cable is connected)

COMPLIANCE AND CERTIFICATIONS

Conformity	EU Declaration of Conformity (CE marking)
Electromagnetic compatibility (EMC)	Compliant with Directive 2014/30/EU EN 61000-6-2:2019-11 EN 61000-6-4:2020-09
RoHS compliance	Compliant with 2011/65/EU and 2015/863/EU

MECHANICAL DRAWINGS



ORDERING INFORMATION

Part type HEP-100
Ordering Number 161.100.000 – AXXX.BX

A	Measuring range	050	50mm
		100	100mm - Available soon
B	Measuring direction	1	Increasing
		2	Decreasing

Example: 161.100.000 – A**050**.B**1**: HEP-100 measuring range 50mm, measuring direction increasing.

ACCESSORIES

Ordering code	Description
01.300.200 DD	Cable Assembly - MIL / 90°C / Shield Connected
01.300.201 DD	Cable Assembly - MIL / 90°C / Armored / Shield Connected

DD = Cable length (standard lengths: 05 = 5m, 10 = 10m, 15 = 15m)

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Quality certification



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