MEGGiTT
smart engineering for
extreme environments

AE 119

Housing expansion probe

FEATURES

- From the Vibro-Meter® product line
- Eddy current principle
- Integrated processing electronics
- Measurement range: 50 mm or 100 mm
- Splash proof (IP54 protection rating)

AE 119
(50 mm measuring range)

DESCRIPTION

The AE 119 transducer uses the eddy current principle so it is non-wearing. The processing electronics are contained in its supporting body and it requires a 20 to 32 V_{DC} supply to produce an output signal that is proportional to the measured absolute expansion.

The transducer uses the 2-wire current transmission technique. The output current range is from 4 to 20 mA, with the maximum current given when the rod is fully extracted.

The AE 119 housing expansion probe can measure the absolute expansion that all thermal machines experience due to variations in temperature. The transducer is available with either a 50 mm or 100 mm measuring range and is suitable for medium or large gas turbines and steam turbines.

SPECIFICATIONS

Electrical

Input power requirements

- *Voltage* : +20 to +32 V_{DC}
- *Current* : 60 mA nominal at 24 V_{DC} (70 mA max.)
- *Max. load resistance* : 500 Ω

Operating

Frequency response

- *Electrical* : 0 to 1000 Hz
- *Mechanical* : 0 to 5 Hz

Accuracy

- *Linearity* : <1% of FSD
- *Resolution* : <0.05‰ of FSD
- *Reproducibility* : <0.05‰ of FSD

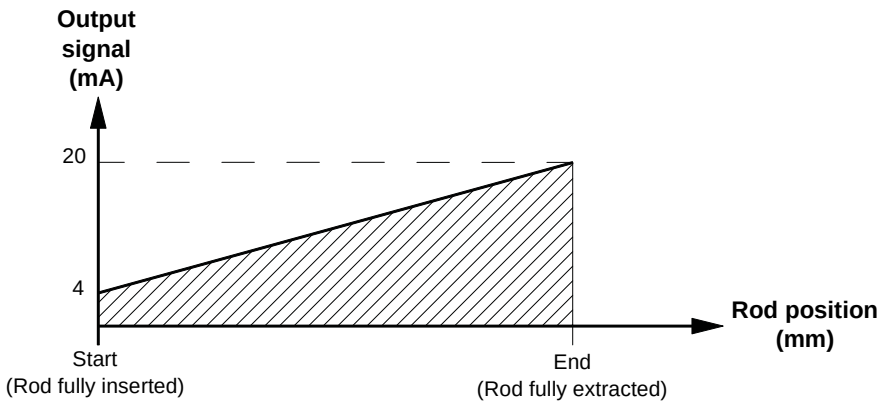
Temperature drift

- *On zero* : <150 ppm/°C of FSD
- *On sensitivity* : <150 ppm/°C of FSD

Output signal

- *Constant current signal* : 4 to 20 mA
- *Start position* : Adjusted to 4 mA ±0.15 mA (rod fully inserted)
- *End position* : Adjusted to 20 mA ±0.3 mA (rod fully extracted)

  Note: The transducer and measuring tube are calibrated at the factory



Environmental

Temperature range

- *Operating* : 0 to +80°C
- *Storage* : 0 to +100°C

Protection rating (according to IEC 60529) : IP54

Admissible shock (according to IEC 60068-2-27) : Half-sine, 3 ms duration

- *Radial* : 100 g
- *Axial* : 300 g

SPECIFICATIONS *(continued)*

Mechanical

Weight

- *AE 119 housing expansion probe – 50 mm* : 4.0 kg
- *AE 119 housing expansion probe – 100 mm* : 5.1 kg

Mounting : The transducer is fixed by means of a mounting flange and M10 bolts

Material : Aluminium and stainless steel

Spring forces

F_0, initial force on the spring when the measurement rod is fully extracted (corresponding to 0 mm)

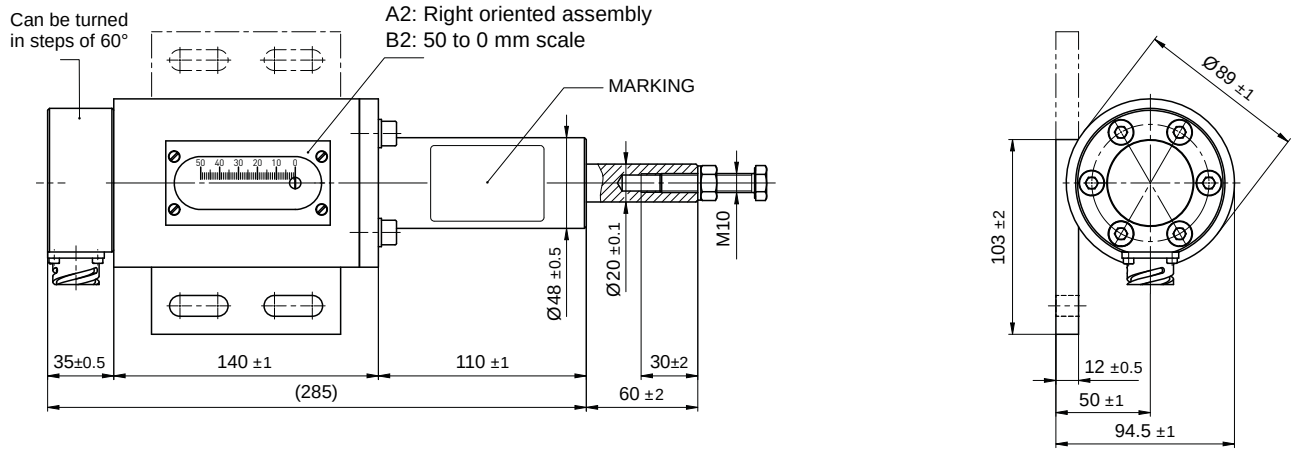
- *AE 119 housing expansion probe – 50 mm* : 30 N
- *AE 119 housing expansion probe – 100 mm* : 20 N

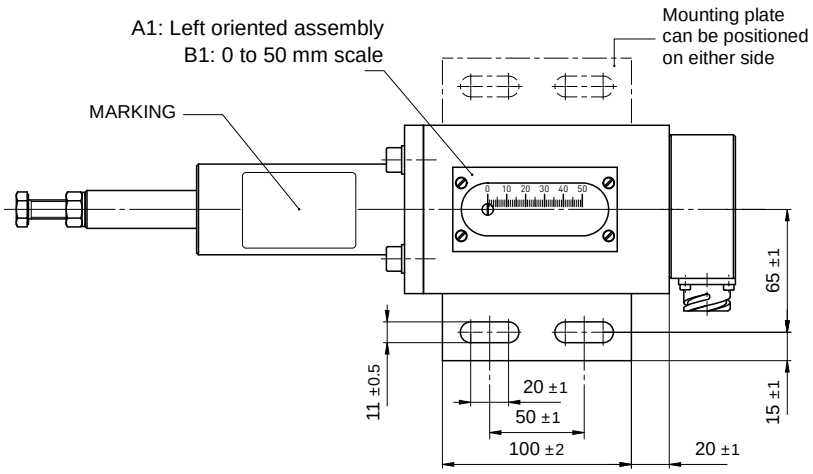
F_{max}, force on the spring when the measurement rod is fully inserted (corresponding to 50 or 100 mm)

- *AE 119 housing expansion probe – 50 mm* : 73 N
- *AE 119 housing expansion probe – 100 mm* : 74 N

MECHANICAL DRAWINGS AND ORDERING INFORMATION

AE 119 housing expansion probe – 50 mm





Note: All dimensions are in mm unless otherwise stated.

Ordering number: 800-119-000-025- A B

Orientation (A)	
Left	1
Right	2

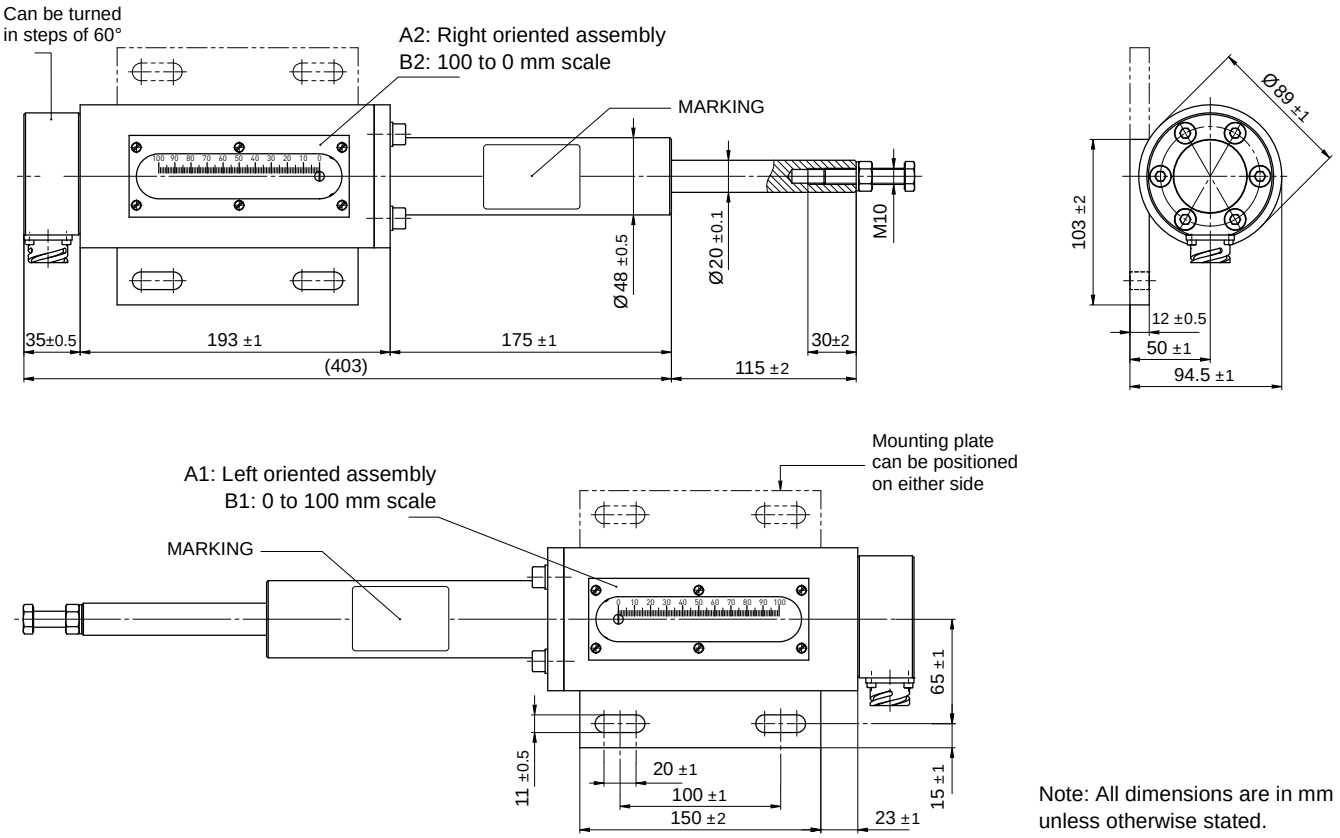
(1)

Scale (B)	
0 to 50 mm	1
50 to 0 mm	2

(1) Reading from left to right.

MECHANICAL DRAWINGS AND ORDERING INFORMATION *(continued)*

AE 119 housing expansion probe – 100 mm



Note: All dimensions are in mm unless otherwise stated.

Ordering number: 800-119-000-112- [A] [B]

Orientation (A)	
Left	1
Right	2

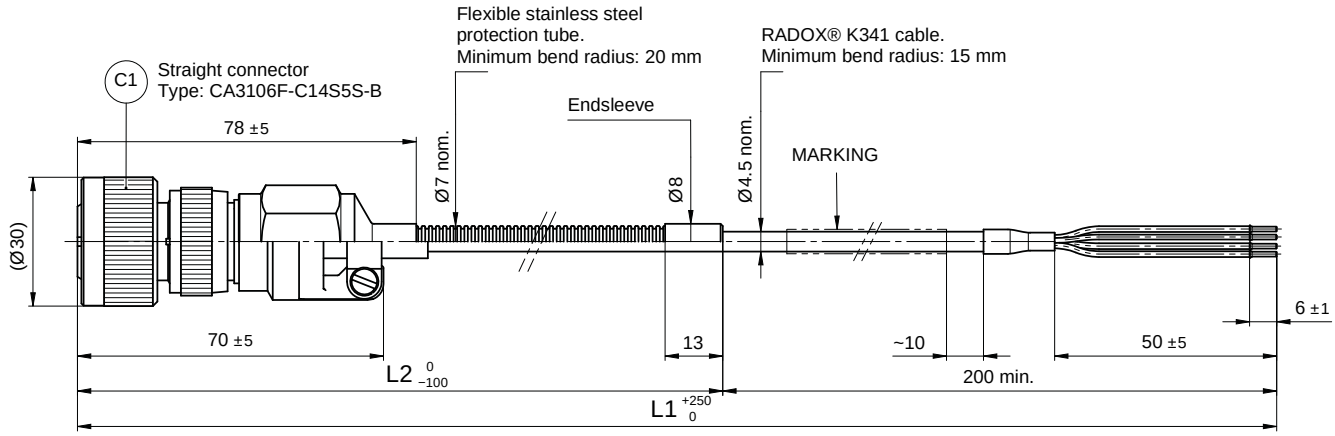
(1)

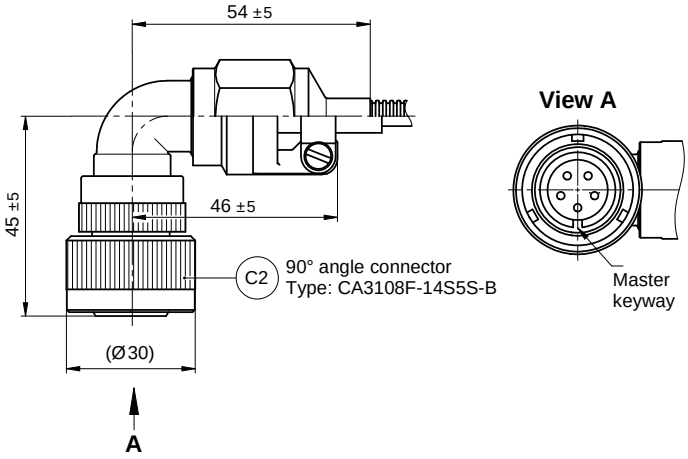
Scale (B)	
0 to 100 mm	1
100 to 0 mm	2

(1) Reading from left to right.

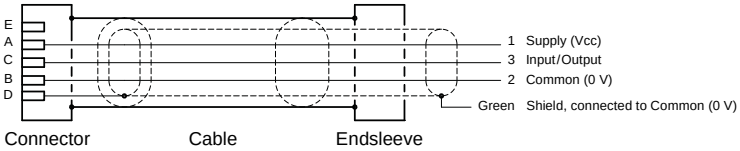
ACCESSORIES

EH 140 cable assembly for AE 119





Connection diagram



Note: All dimensions are in mm unless otherwise stated.

Ordering number: 943-140-000-031- C L1 L2

Connector (C)	
Straight	1
90° angle	2

Cable (L1)	
Length in mm from 500 mm, in multiples of 500 mm	L1: x

Flexible protection tube (L2)	
None	L2: 0
Length in mm from 500 mm to 20000 mm, in multiples of 500 mm	L2: x

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.

Meggitt Sensing Systems is the operating division of Meggitt specializing in sensing and monitoring systems, which has operated through its antecedents since 1927 under the names of ECET, Endevco, Ferroperm Piezoceramics, Lodge Ignition, Sensorex, Vibro-Meter and Wilcoxon Research. Today, these operations are integrated under one strategic business unit called Meggitt Sensing Systems, headquartered in Switzerland and providing complete systems, using these renowned brands, from a single supply base.

The Meggitt Sensing Systems facility in Fribourg, Switzerland was formerly known as Vibro-Meter SA, but is now Meggitt SA. This site produces a wide range of vibration and dynamic pressure sensors capable of operation in extreme environments, leading-edge microwave sensors, electronics monitoring systems and innovative software for aerospace and land-based turbo-machinery.

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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