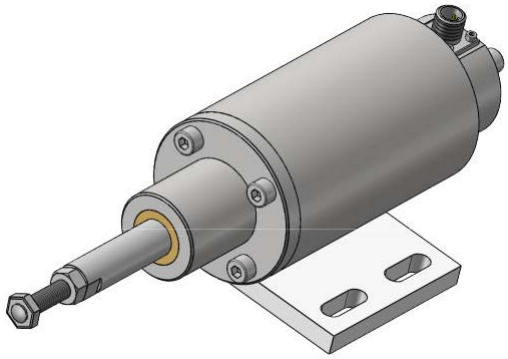
DATA SHEET

vibro-meter®

AE219 housing expansion probe



AE219 – 50 mm version

CE

KEY FEATURES AND BENEFITS

- From the vibro-meter® product line
- Expansion measurement based on linear variable differential transformer (LVDT)
- Integrated electronics (no need for additional signal conditioner)
- Measurement range: 50 or 100 mm
- Frequency response: 5 Hz
- Temperature range: 0 to 100°C
- Output signal: 4 to 20 mA current loop
- Integral position scale for local readout
- Rugged industrial device with aluminum and hardened stainless-steel construction
- IP55 protection rating

APPLICATIONS

- Expansion measurement for machinery protection and/or condition monitoring
- Suitable for large to medium sized machines, such as gas and/or steam turbines

DESCRIPTION

The AE219 is a housing expansion probe from Parker Meggitt's vibro-meter® product line. It is a dedicated sensor designed to measure the expansion that machines experience, typically due to variations in temperature.

The AE219 housing expansion probe is available with a measurement range of either 50 or 100 mm. This allows a wide range of different sized machines to be monitored and protected.

The AE219 uses a linear variable differential transformer (LVDT) sensing element to measure displacement, so it is non-wearing. The signal processing electronics are incorporated in the body/housing of the sensor, so it simply requires a 24 V_{DC} power supply in order to produce an output signal that is proportional to the measured expansion. The output is an industry-standard 4 to 20 mA current-loop signal, with the maximum current given when the measurement rod is fully extracted.

A range of cable assemblies can be used to connect a AE219 to a machinery monitoring system, such as VM600^{Mk2}/VM600, VibroSmart® or DCS/PLC. The cables are configurable for length and level of protection, depending on the application and environment.

For specific applications, contact your local Parker Meggitt representative.

SPECIFICATIONS

General operation

Measurement range

- 50 mm version (PNR 800-219-000-011) : 50 mm (±25 mm)
- 100 mm version (PNR 800-219-000-111) : 100 mm (±50 mm)

Mechanical travel

- 50 mm version : 52 mm
- 100 mm version : 105 mm

Sensitivity

- 50 mm version : 0.32 mA/mm
- 100 mm version : 0.16 mA/mm

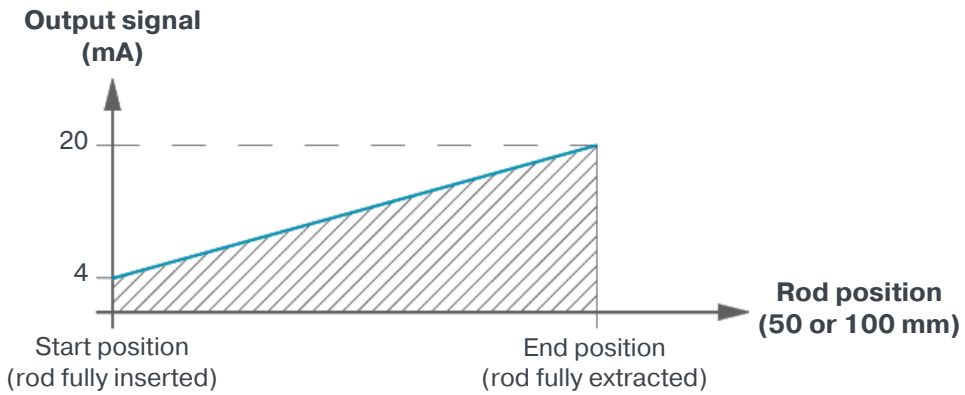
Linearity : ±0.6%

Frequency response

- Mechanical : 0 to 5 Hz
- Electrical : 0 to 200 Hz

Output signal

- Current output : 4 to 20 mA current loop (constant-current signal)
- Start position : 4 mA ±0.15 mA.
  Note: Measurement rod fully inserted / inner position scale end-mark.
- End position : 20 mA ±0.3 mA.
  Note: Measurement rod fully extracted / outer position scale end-mark.
  Note: The AE219 expansion probe is factory calibrated.



Spring force

- 50 mm version : F_0: 30 N, initial force on the spring when the measurement rod is in end position, that is, fully extracted.
  F_{MAX}: 50 N, force on the spring when the measurement rod is in start position, that is, is fully inserted.
- 100 mm version : F_0: 30 N, initial force on the spring when the measurement rod is in end position, that is, is fully extracted.
  F_{MAX}: 70 N, force on the spring when the measurement rod is in start position, that is, is fully inserted.

SPECIFICATIONS *(continued)*

Local readout

Integral position scale	: Position (measurement) is indicated on a scale engraved/marked on the probe rod, providing a local readout. The scale provides a min. to max. readout on one side and a max. to max. readout on the other side. For example, 0 to 50 mm and 50 to 0 mm (for the 50 mm version).

Power supply

Power supply voltage (for current loop)	: 14 to 36 V_{DC} (24 V_{DC} nominal). Note: 4 to 20 mA current loop voltage between pins A and B.
Current consumption	: 3.5 mA max. loop current (at corresponding voltage level)
Maximum loop resistance	: 500 Ω
Grounding	: Shield is connected to common Note: Loop voltage limited to 23 to 36 V_{DC} with 500 Ω max. load, loop voltage of 21.5 to 36 V_{DC} acceptable with 400 Ω load, and loop voltage of 14 to 36 V_{DC} with < 20 Ω load.

Environmental

Temperature range (operating and storage)	: 0 to 100°C (32 to 212°F)
Protection rating (according to IEC 60529)	: IP55

Approvals

Conformity	: European Union (EU) declaration of conformity (CE marking)
Electromagnetic compatibility (EMC)	: EMC compliant (2014/30/EU): EN 61000-6-2:2019-11. EN 61000-6-4:2020-09.
Electrical safety	: EN 61010-1:2020-03
Environmental management	: RoHS compliant (2011/65/EU and 2015/863/EU)

Physical

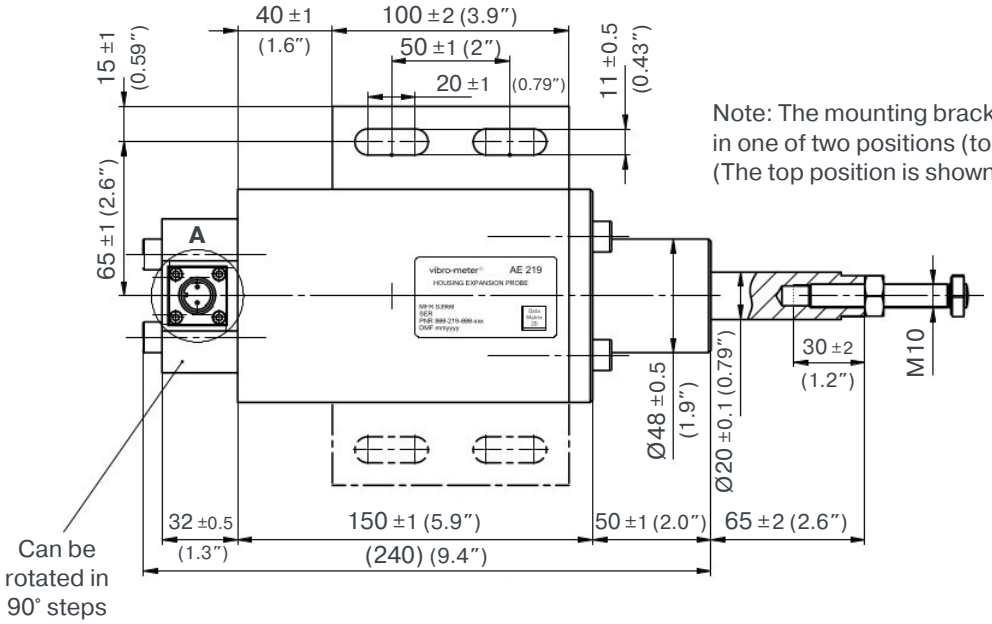
Material	
• Body/housing	: Aluminium and stainless steel
• Probe rod	: Stainless steel, hardened
• Probe tip	: Stainless steel, hardened
Dimensions	: See **Mechanical drawings and ordering information on page 5**
Weight	
• 50 mm version	: 3.65 kg (8.1 lb) approx.
• 100 mm version	: 4.56 kg (10.1 lb) approx.

SPECIFICATIONS *(continued)*

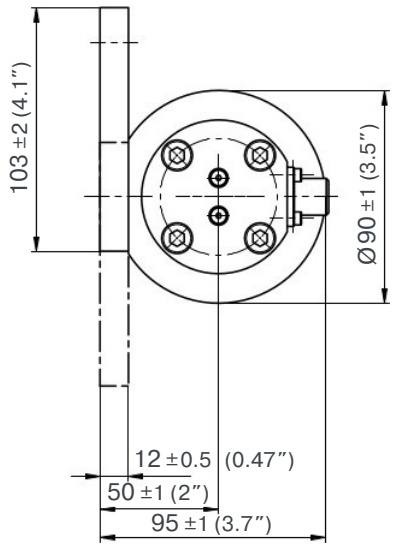
Mounting	:	The AE219 probe is installed by means of a mounting bracket (base plate) that can be positioned on either side of the probe (see **Mechanical drawings and ordering information on page 5**). The mounting bracket (plate) is fixed to the AE219 probe body/housing using 2 × hex (hexagonal) socket screws with a nominal tightening torque of 5 N • m (3.7 lb-ft). The AE219 probe (mounting bracket) is installed on a machine using 2 × M10 hex (hexagonal) screws and spring washers with a nominal tightening torque of 44 N • m (32.5 lb-ft). Refer also to the *Housing expansion measurement using the AExxx housing expansion probe manual*.
Cable connection / connector	:	Rugged circular (MIL-C-5015 type), threaded coupling, 2-pin connector with keyway. Note: Mates with MIL-C/DTL-5015 type connectors, as used by the recommended cable assemblies (see below).
Connector pinouts (pin allocation)		
• Pin A	:	Loop positive (supply positive (+))
• Pin B	:	Loop negative (supply common (0 V))
Recommended cable assemblies	:	EC622, EC632, EC318 and EC319 (see **Accessories on page 7**)

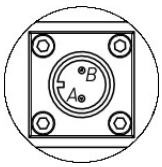
MECHANICAL DRAWINGS AND ORDERING INFORMATION

50 mm version (PNR 800-219-000-011)



Note: The mounting bracket (plate) can be mounted in one of two positions (top or bottom).
(The top position is shown here.)



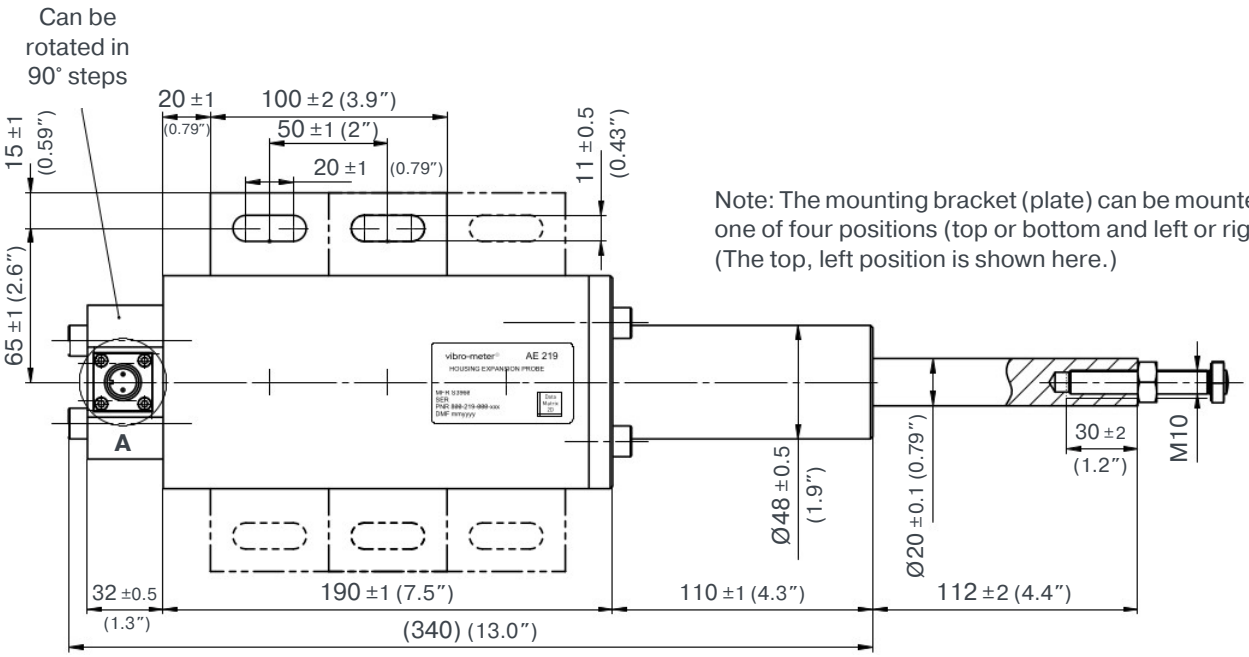


Detail A (connector)

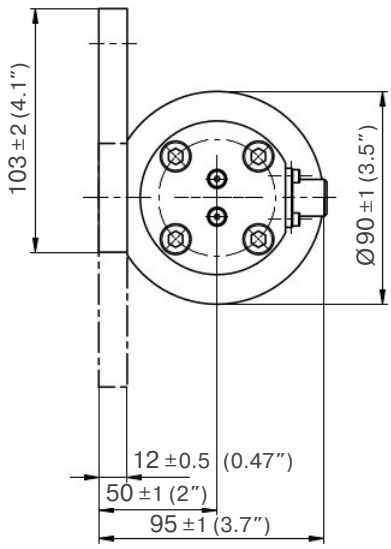
Note: All dimensions are in mm (in) unless otherwise stated.

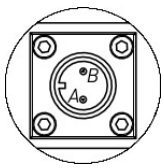
MECHANICAL DRAWINGS AND ORDERING INFORMATION *(continued)*

100 mm version (PNR 800-219-000-111)



Note: The mounting bracket (plate) can be mounted in one of four positions (top or bottom and left or right). (The top, left position is shown here.)





Detail A (connector)

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

ORDERING INFORMATION

To order, please specify the version(s) of the AE219 housing expansion probe required …

Type	Designation	Part number (PNR)
AE219	Housing expansion probe with 50 mm measurement range (50 mm version)	800-219-000-011
AE219	Housing expansion probe with 100 mm measurement range (100 mm version)	800-219-000-111

ACCESSORIES

Item	Type	Part number (PNR)
• Cable assemblies	EC622. Standard version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire Polyurethane (PUR) cable, IP67 cable boot (overmold).	922-622-000-001
	EC632. Higher-temp. version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire Teflon® FEP cable, IP67 cable boot (overmold).	922-632-000-001
	EC632. Higher-temp. version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire Teflon® FEP cable, IP67 cable boot (overmold) and cable protection (stainless steel (AISI 316L) overbraid).	922-632-000-101
	EC318. Standard version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire RADOX® cable.	922-318-000-002
	EC318. Standard version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire RADOX® cable and cable protection (flexible stainless-steel hose).	922-318-000-403
	EC319. Splashproof version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire RADOX® cable.	922-319-000-002
	EC319. Splashproof version with a 2-pin MIL-C/DTL-5015 type connector, 2-wire RADOX® cable and cable protection (sealed, flexible stainless-steel hose).	922-319-000-103

Notes

The cable length must be specified when ordering a cable assembly.

When ordering a EC6x2 cable assembly, the ordering option code -L is used to specify the overall cable length.
EC6x2 cable assembles must be specified with a standard length of 2, 5, 10, 15, 20 or 30 m (corresponding to ordering option codes of L2000, L5000, L10000, L15000, L20000 or L30000, respectively).

When ordering a EC31x cable assembly, the ordering option code -L or -U is used to specify the overall cable length.
EC31x cable assemblies can be specified with any cable length.

Refer to the cable assembly product drawings for further information.

Parker Hannifin Corporation – usually referred to as just Parker – is a global leader in motion and control technologies, providing precision-engineered solutions for a wide variety of mobile, industrial and aerospace markets. For more than a century the company has been enabling engineering breakthroughs that lead to a better tomorrow.

Parker Meggitt joined the Parker Aerospace Group in September 2022 following the successful acquisition of Meggitt PLC, a world leader in aerospace, defense and energy. This includes the Meggitt facility in Fribourg, Switzerland, operating as the legal entity Meggitt SA (formerly Vibro-Meter SA). Accordingly, the vibro-meter® product line is now owned by Parker.

Sales offices and distributors

Parker has sales offices and distributors all around the world. For information on your local contact, please visit our website.

Local representative

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