



HIGH ACCURACY
measurement instruments

PRODUCT DATASHEET

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Paine 225-10-0X0 Series

Digital, RS-485, Rugged, Immersion, +150 °C, Temperature Probe



The 225-10-0X0 Series is our digital direct media temperature probe designed for temperature measurements up to +302 °F (+150 °C). Providing real time digital accuracy and rapid temperature detection, our 225-10-0X0 Series is well suited for continuous monitoring of remote fluid, material and equipment temperatures.

Along with it's small package size, our 225-10-0X0 Series provides designers with an easy installation offering greater performance in limited spaces.

Solutions

- Digital Accuracy.
- Immersion Design for Rapid Response.
- All-Welded, Sealed Construction.
- Harsh/Extreme Environment Ready.
- Longer/Simpler Network Connections.
- MIL-DTL-38999 Connector Option.

Potential Applications

- Fuel and Hydraulic Temperature Monitoring.
- Industrial and Petroleum Process Temperature Monitoring.
- Heavy Equipment/Off-Road Vehicle Hydraulic Monitoring.
- Well Bore Fluid Temperatures.
- Subsea Riser Temperatures.

Features

- **Full Direct Media/Inflow Style Measurement.**
- **Operating Temperature:** -40 °F to +302 °F
(-40 °C to +150 °C).
- **Digital Output:** RS-485, 19.2k Baud.
- **Temperature Total Error Band:** 0.05% over the calibrated temperature range.
- **Temperature Output:** °F or °C.
- **Media Compatibility:** Alloy 725 solution annealed and aged to maximum hardness of 43 HRC.

Specifications

Calibration: Calibration Certificates are supplied with each unit and available on-line.

Performance

Temperature Total Error Band: ± 0.5 °F over the calibrated temperature range.

Response Time: 50% of temperature delta: 1 second, 90% of temperature delta: 4.5 seconds.

Temperature Output: °F or °C. User selectable.

Temperature Resolution: See [225-10-0X0 Transducer series table](#).

Environmental

Operating Temperature Range: See [225-10-0X0 Transducer series table](#).

Calibrated Temperature Range: 32 °F to +212 °F
(-1 °C to +100 °C).

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Mechanical

Pressure Range: Contact factory for additional pressure ranges.

225-10-0X0 Transducer series table			
Paine part number:	Temperature range	Temperature resolution	Input Current
225-10-010-01	-40 °F to +250 °F (-40 °C to +121 °C)	12 bits minimum, better than 0.05 °F	20mA maximum at 5 VDC
225-10-020-01	-40 °F to +302 °F (-40 °C to +150 °C)	16 bits minimum, better than 0.05 °F	60mA maximum at 5 VDC

Material: Alloy 725 solution annealed and aged to maximum hardness of 43 HRC.

External Pressure Rating From Hex to Tip of Probe: 5,000 PSI maximum.

Pressure Fitting: 1/2-20 UNF 3A. Designed for use with 3-905 size O-ring.

Installation Information: Manifold/Immersion in-flow mount.

Electrical

Input Voltage: +5.00 VDC; ± 0.25 VDC.

Overvoltage Protection:

- **225-10-010-01** is not protected.
- **225-10-020-01** is protected from damage to 24 VDC with supply current limited to 60 ma max.

Reverse Polarity: Power In and Power Return are protected from the application of reverse polarity.

Input Current: See [225-10-0X0 Transducer series table](#).

Excitation Return and Communication Return⁽¹⁾: Internally connected. Customer power supply ground and communication ground must be tied together.

Digital Output: RS-485.

Insulation Resistance: All conductors together to case. 100 M Ω minimum at 50 VDC @ +75 °F (23 °C) ± 10 °F.

Electrical Connections:

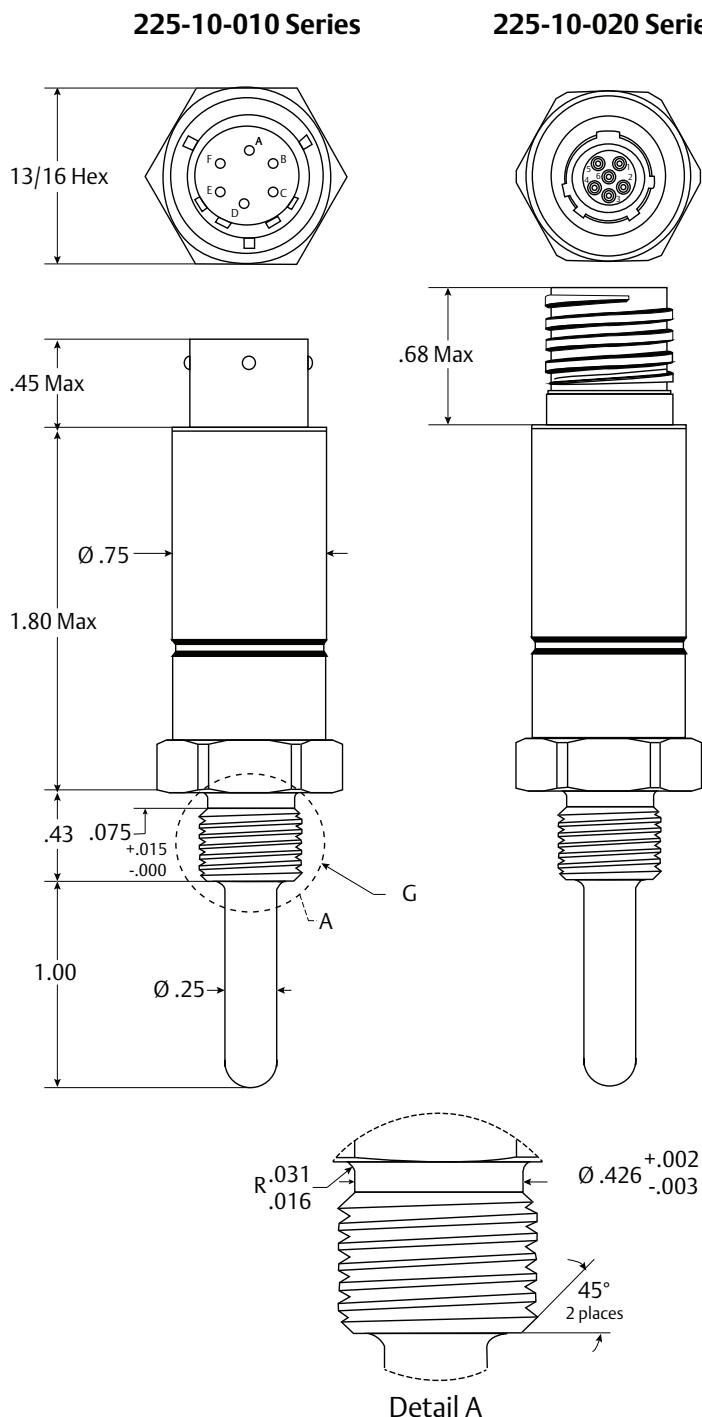
- **225-01-010-01:** 6 Pin bayonet locking electrical connector. Mates with MS3476W10-6S. (Paine P/N: 247-99-101-01 sold separately).
- **225-01-020-01:** 6 Pin circular threaded MIL-DTL-38999 series connector (D38999/25YA35PN). Mates with Paine part number 247-99-102-01 (Connector w/Strain Relief) sold separately.

User Guide and Programming: Paine document 225-10-005 provided.

1. Communication return is required.

Dimensional Drawings

Figure 1. 225-10-0X0 Series



A-F. See Connections Table

G. 1/2 UNF 3A thread

Dimensions are in inches.

225-10-010 Series

Connections	
PIN	Function
A	Power in
B	RS-485 "B" ⁽¹⁾
C	RS-485 "A" ⁽¹⁾
D	Power return
E	COMM RTN ⁽²⁾
F	Do not connect

1. Per TIA-485-A
2. Communication return is required.

225-10-020 Series

Connections	
PIN	Function
1	Power in
2	RS-485 "B" ⁽¹⁾
3	RS-485 "A" ⁽¹⁾
4	Power return
5	Sleep
6	Do not connect

1. Per TIA-485-A

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measurement instruments

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	Temperature Measurement		Flow Measurement
	Marine Measurement & Analytical		Gas Analysis
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www.high-accuracy.com

Rosemount Specialty Product LLC

Emerson Process Management

5545 Nelpar Drive
East Wenatchee, WA 98822, USA
 +1 509 881 2100
 +1 509 881 2115
 Paine.Products@Emerson.com



[Linkedin.com/company/Emerson-Process-Management](https://www.linkedin.com/company/emerson-process-management)



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