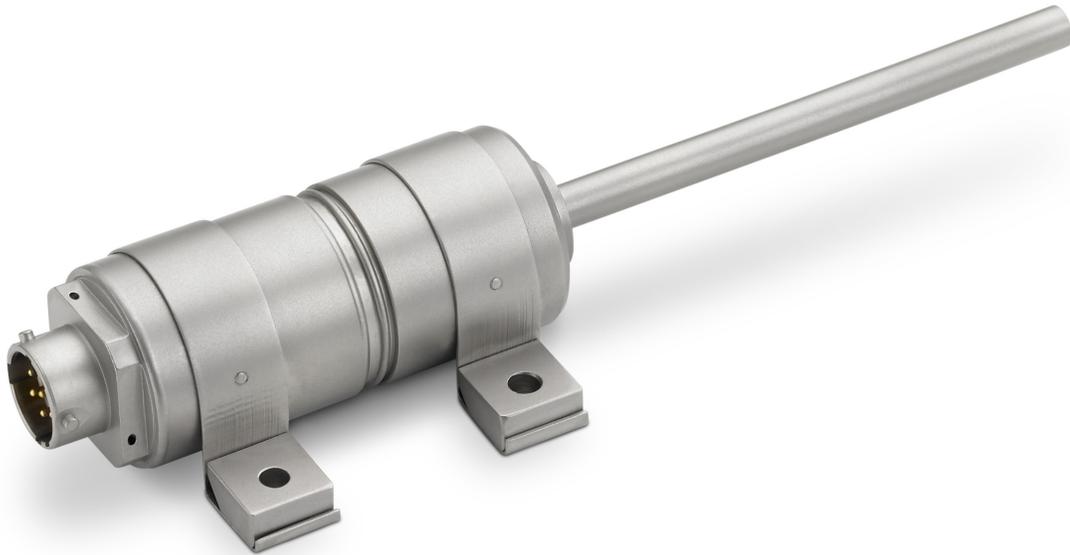


Paine Heritage-Satellite Series Pressure Transmitter

VDC, Space Qualified, Heritage, +70 °C, Ranges to 0-500 to 0-5,000 PSIA (0-34 to 0-344 BAR)



The Heritage-Satellite Series is a space qualified amplified transmitter that offers pressure ranges from 0-500 to 0-5,000 PSIA (34 to 344 BAR), operates at temperatures from -20 °F to +175 °F (-29 °C to +70 °C). Perfected over decades of mission critical satellite and space probe missions.

From satellite thruster propellant pressure systems to space vehicle propellant tank gauging, the Heritage-Satellite Series is designed to tolerate the high levels of shock and vibration of launch and normal operation without damage.

Designed with electronics to meet EEE INST-002/MSFCSTD- 3012 Level 2 standards, this series is utilized as a reference in the design of many new custom sensors and provides a baseline for design engineers in developing a new space rated measurement solution.

Solutions

- Low and high pressure series options
 - 213-76-860-01 Series: 0-500 psia (34 bar)
 - 213-36-740-01 Series: 0-5,000 psia (344 bar)
- Orbital environment ready
- EEE INST-002/MSFCSTD-3012 Grade 2 standard electronics

Potential Applications

- Thruster propellant pressure
- Propellant tank gauging
- Control surface actuator controls
- Propellant temperature
- Manipulator arm controls

Features

- **Accuracy:** ± 1.5% of full scale over the calibrated temperature range
- **Operating temperature:** -20 °F to +175 °F (-29 °C to +70 °C)
- Pressure Range:
 - 213-76-860-01: 0-500 psia (34 bar)
 - 213-36-740-01: 0-5,000 psia (344 bar)
- **Input voltage:** + 22.0 VDC to +39.0, reverse voltage protected, +40.0 VDC maximum.
- **Operating media:** Any compatible with 15-5 PH CRES, H1025 CRES and 304L CRES.
- **Mass:** 8.0 oz (226 grams) maximum

Specifications

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

Performance

- **Accuracy:** ± 1.5% of full scale over the calibrated temperature range
- **Full scale output:** +5.000 nominal
- **Zero pressure output:** (10⁻² TORR or less) 0.000 VDC nominal.

Environmental

Operating temperature range: -20 °F to +158 °F (-29 °C to +70 °C)

Compensated temperature range: 43 °F to +140 °F (+6 °C to +60 °C)

Non-operating temperature range: -40 °F to +160 °F (-40 °C to +71 °C)

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Mechanical

Pressure range: Contact factory for additional pressure ranges.

| Pressure Table | | | |
|----------------------|---------------------------|---------------------------|---------------------------|
| Standard part number | Pressure range PSIA (BAR) | Proof pressure PSIA (BAR) | Burst pressure PSIA (BAR) |
| 213-76-860-01 | 0-500 (0-34) | 750 (51) | 1,250 (86) |
| 213-36-740-01 | 0-5,000 (0-344) | 6,300 (434) | 10,500 (723) |

Operating media: any compatible with 15-5 PH CRES and 321 CRES

Pressure tube: weldable, type 321 CRES

Total Ionizing Doze: 100K Rad minimum

Weight/mass: 8.0 oz. (226 grams) maximum

Mounting requirements:

- Mounting surface: metal, flat ± 0.005 (± 0.13)
- Surface finish: 125-µin. (.0032)
- Contact area: metal to metal point contacts between pads and mounting surface are sufficient. Use of heat sink compound under pads is optional.
- Mounting surface area total: 0.83-in.² (535 mm²)

Electrical

Input voltage: + 22.0 VDC to +39.0, reverse voltage protected, +40.0 VDC maximum

Input power: 30.0 mA, MAX (1.02 W @ 34 VDC)

Output impedance: 150 Ω maximum

Output load: 100K Ω minimum, 0.5M Ω or greater recommended, short circuit protection

Output voltage: 0–5 Vdc

- Full scale pressure: +5.000 VDC nominal
- Zero pressure: 10⁻² torr or less, 0.000 VDC nominal

Output ripple: ≤10 mV peak to peak, DC to 10kHz

Insulation resistance (Input/Output): 100M Ω MIN at 100 VDC for 30 seconds

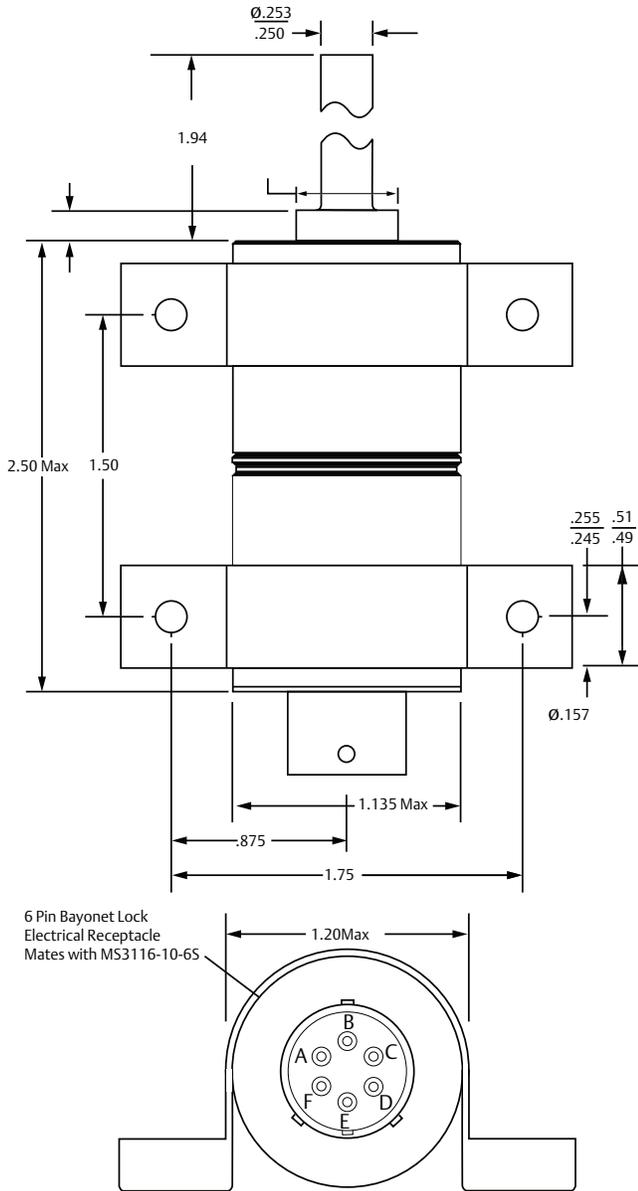
Insulation resistance: all pins (except F) to case, 100M Ω MIN at 50 VDC for 30 seconds

Electrical connections: mates with MS3116-10-6S or equivalent, sold separately

Electrical connections: determined to be ESD Insensitive when tested per DOD-STD-1686, Appendix B (16000 V)

Dimensional Drawings

Figure 1. Miniature-Satellite Series



Connection:

| PIN | 213-36-740-01 213-76-860-01 |
|-----|--------------------------------|
| A | + Input |
| B | Input return |
| C | No Connection |
| D | Signal return |
| E | Signal output |
| F | Case ground |

Dimensions are inches.

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Product Name

Paine 213-Heritage-Satellite-DS, Rev E

Product Data Sheet

February 2017

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