

# "MPP" Modular Pressure Transmitter

## Introduction

The model MPP modular pressure transmitter has been specifically designed for placement in sanitary process applications in the Life Sciences industry where accurate and repeatable pressure measurements in difficult (vibration, wide temperature swings, humidity) environments are required. A sanitary diaphragm on the process boundary acts on an FDA and USP approved actuating fluid transferring pressure to an internally sealed piezo resistive transducer. The transducer's millivolt output is then converted an analog 4-20 mA DC-signal that is proportional to the pressure exerted on the diaphragm. The resulting signal may be interfaced with Anderson-Negele Digital Indicators, PLC or other customer supplied instrumentation. The MPP is sealed from environmental conditions via fully potted electronics, patented double o-ring sealed enclosure and all welded construction. Modular construction allows a high degree of field customization with the benefit of individual component replacement. All product contact surfaces are constructed of 316L stainless steel, (available Hastelloy) and electropolished with a surface finish not exceeding 8 micro inch Ra. Non-product contact surfaces are constructed of both 316L and 304.

For more information on this product, or any of our other products, visit [www.anderson-negele.com](http://www.anderson-negele.com) or call our Customer Service Department directly at 1-800-833-0081.

## Features

- State of the art sanitary design delivers class leading performance
- Replaceable components reduce cost of ownership
- Diagnostic routines promote reliability, display verifies problem free operation
- Intuitive menu driven setup simplifies commissioning

## Applications

- Bio-reactor head space pressure monitoring
- Chromotography column pressure measurement
- SIP monitoring
- Pressure measurement of sterile gas lines
- Pressure measurement within sterile transfer lines
- Pressure measurement within filtration processes



# RODEM<sup>®</sup>

PROCESS EQUIPMENT

[www.rodem.com](http://www.rodem.com) 800-543-7312

**Specifications**

**PERFORMANCE MECHANICAL & ELECTRICAL:**

Calibrated Accuracy: ± 0.07% of calibrated range up to 5:1 turndown  
 (± 0.10% if over 5:1 turndown)  
 Repeatability: 0.05% as calibrated  
 Long Term Stability: 0.2% URL for 2 years  
 Process Temperature Effect: ± 0.1 psi/10°F (5.5°C) typical  
 Ambient Temperature Effect: ± 0.1 psi/10°F (5.5°C) typical  
 Over-Range Capability: 30/100/500 psi stem:  
 1.5x URL no effect on accuracy  
 2x URL to failure  
 1000 psi stem:  
 1.1x URL no effect on accuracy  
 1.25x URL to failure  
 Response Time: <100 Milliseconds  
 Sampling Rate: <50 Milliseconds  
 Damping: Menu adjustable  
 Range Turndown Capability: 10 to 1 turn down from URL  
 Ranges, URL (PSI): 30,100,500,1K compound  
 30,100,500 absolute  
 Ranges, URL (BAR): 2,7,35,70 compound  
 2,7,35 absolute

**ENVIRONMENTAL:**

Process Temperature Limits:  
 0 to 350°F (-18 to 177°C) with ambient temperatures to 140°F (60°C) and  
 0 to 330°F (-18 to 165°C) with ambient temperatures to 160°F (71°C)  
 Ambient Temperature Limits: 32 to 160°F (0 to 71°C)  
 Enclosure Protection: NEMA 4X & IP67  
 IP69K(when equipped with QDR)

**CONSTRUCTION / FINISH:**

Product Contact: 316L Electropolished and finished to a Max. Ra <8 microinches. Optional: Hastelloy® diaphragm  
 Non-Product Contact Metal: 316L & 304 finished to a Max. Ra <32 microinches and polished to a high gloss  
 Non-Product Contact Plastic: polycarbonate threaded cap. Delrin atmospheric vent  
 Wiring Connection: M16 x 1.5 threaded housing electrical entry

Equipped with: Standard - replaceable M12 5 pin Eurofast QDR  
 Optional - M16 Cord Grip, M16 x 1.5" NPTF adaptor, Minifast 7/8" 4pin

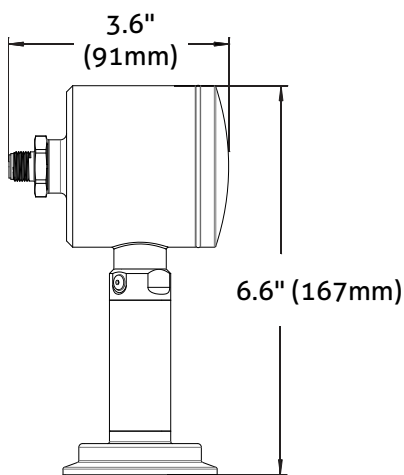
**OPERATIONAL:**

Internal Fill: ETR (Extended Temperature Range) FDA approved mineral oil  
 Optional Neobee M-20  
 Output: 2 wire, HART 7.0 with user selectable 4-20 mA DC or 20-4 ma DC, or Foundation Fieldbus  
 Internal Display: 4 digit LED nominally displays loop current.  
 Display Interface: Modular field replaceable. User selectable units - Millibar, Torr & Kg/cm2, PSI, BAR, kPA, In H2O, In Hg, mm H2O, mA  
 Loop Resistance: 0-300 ohms at 24 VDC  
 Electrical Connection: screw terminals with a conductor cross section range of 14-26 AWG  
 Recommended Cable: Anderson shielded molded cordset, alternatively: 22-24 AWG, foil shielded, 0.17 - 0.26" Cable Sheath OD for use with cord grip or field wiring connector  
 Electrical Protection: Voltage spike and reverse polarity  
 Operating Voltage: 18-36 VDC (24 VDC Nominal regulated or unregulated)  
 Zero Adjustment: one touch  
 Re-Span: With switch through user interface & with or without a reference pressure source  
 Electronics Puck: Modular, Field replaceable  
 Fitting & Sensor Stem: Modular, Field replaceable

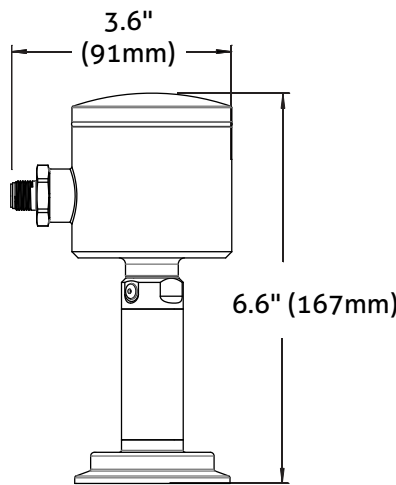
**APPROVALS AND DOCUMENTATION**

Sanitary: ASME-BPE 2012 compliant  
 Compliance: HART 7.0 Compatible  
 Fieldbus Foundation Registered  
 CE compliant  
 Designed and manufactured to sound engineering practices in accordance with Article 3.3 of the PED 97/23/EC  
 CSA-B51-03  
 CRN# CSAOF9754.5R1  
 Warranty: 2 years

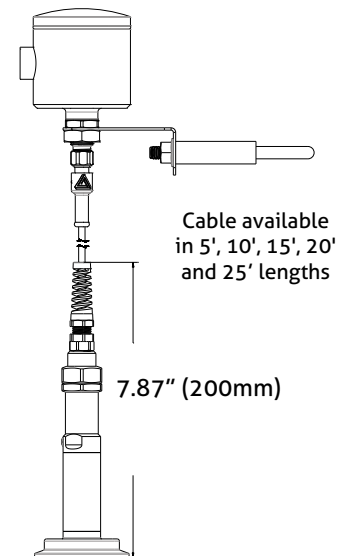
**Dimensions**



Horizontal Orientation

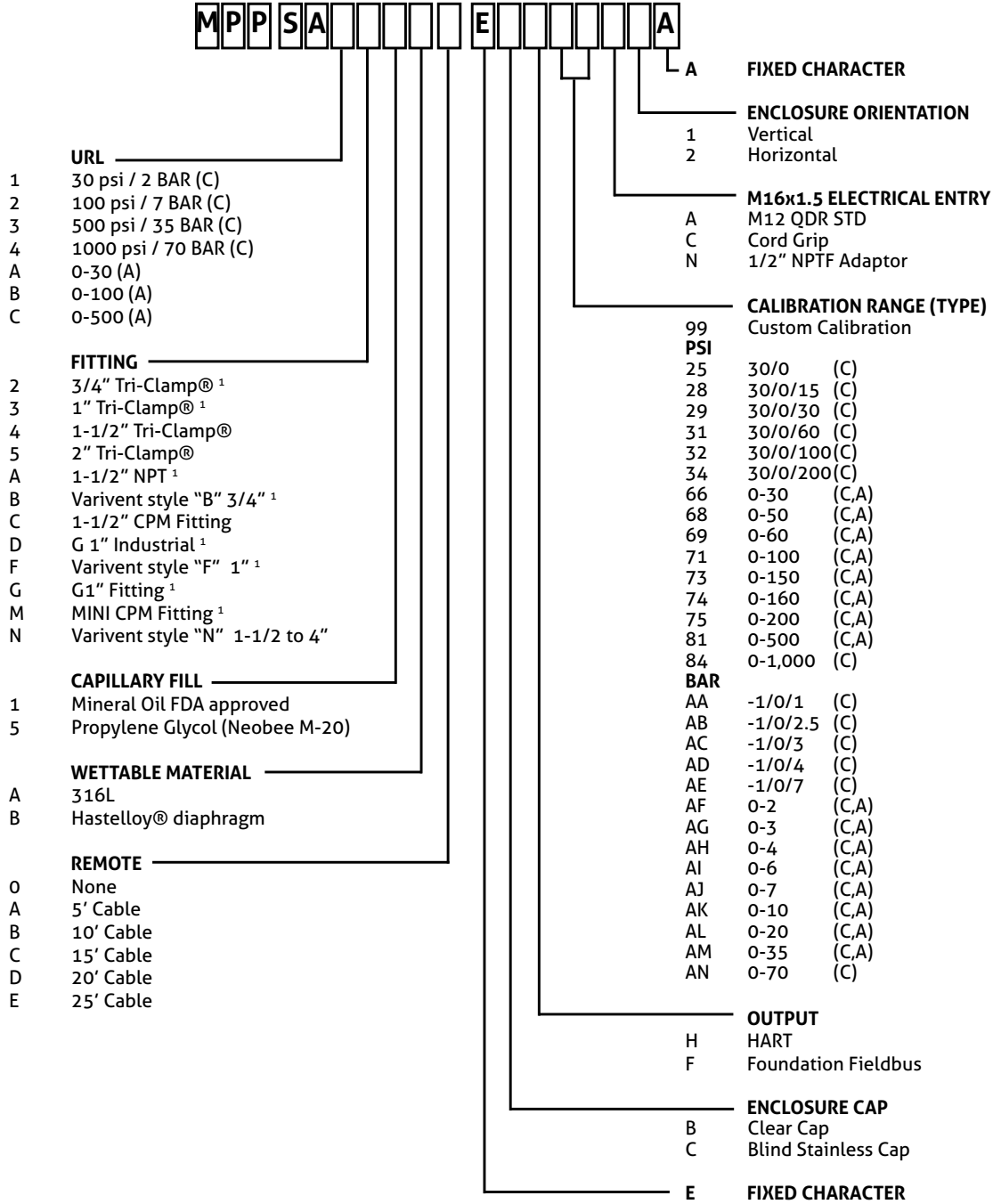


Vertical Orientation



Remote Mounting  
 (also available in a kit)

Order Information (complete unit)



<sup>1</sup> Not available in Hastelloy®  
 All added cost fittings are non-cancellable/  
 non-returnable and have additional lead times

Order Information (Modular Components)

Stem



- URL**
- 1 30 psi / 2 BAR (C)
  - 2 100 psi / 7 BAR (C)
  - 3 500 psi / 35 BAR (C)
  - 4 1000 psi / 70 BAR (C)
  - A 0-30 (A)
  - B 0-100 (A)
  - C 0-500 (A)

- FITTING**
- 2 3/4" Tri-Clamp<sup>1</sup>
  - 3 1" Tri-Clamp<sup>1</sup>
  - 4 1-1/2" Tri-Clamp<sup>1</sup>
  - 5 2" Tri-Clamp<sup>1</sup>
  - A 1-1/2" NPT<sup>1</sup>
  - B Varivent style "B" 3/4"<sup>1</sup>
  - C 1-1/2" CPM Fitting
  - D G 1" Industrial<sup>1</sup>
  - F Varivent style "F" 1"<sup>1</sup>
  - G G1" Fitting<sup>1</sup>
  - M MINI CPM Fitting<sup>1</sup>
  - N Varivent style "N" 1-1/2 to 4"

- REMOTE**
- O None
  - A 5' Cable
  - B 10' Cable
  - C 15' Cable
  - D 20' Cable
  - E 25' Cable

- WETTABLE MATERIAL**
- A 316L
  - B Hastelloy<sup>®</sup> diaphragm

- CAPILLARY FILL**
- 1 Mineral Oil FDA approved
  - 5 Propylene Glycol (Neobee M-20)

<sup>1</sup> Not available in Hastelloy<sup>®</sup>

All added cost fittings are non-cancellable/non-returnable and have additional lead times

Puck/Enclosure



- ENCLOSURE**
- A Puck Only
  - B Puck and Enclosure w/Clear Cap
  - C Puck and Enclosure w/SS Cap
- OUTPUT**
- H HART
  - F Foundation Fieldbus
- CALIBRATION RANGE**
- 00 Field Calibration

- A FIXED CHARACTER**
- ENCLOSURE ORIENTATION**
- 1 Vertical
  - 2 Horizontal
  - 0 For Puck only (enclosure option A)
- M16x1.5 ELECTRICAL ENTRY**
- A M12 QDR STD
  - C Cord Grip
  - N 1/2" NPTF Adaptor
  - 0 For Puck only (enclosure option A)

ACCESSORIES

Cord Sets

Shielded Molded w/25' cable	42117K0025	1/2" NPTF adaptor	SP5633200000
Shielded Molded w/50' cable	42117K0050	Seal Kit (6) gaskets	5633000001
Shielded Molded w/100' cable	42117K0100	Field Wireable Connector-Straight	42119B0000
Clear Cap w/gaskets	56328P0001	Field Wireable Connector-90°	42119A0000
Stainless Steel Cap w/gaskets	56329P0001	Display Kit - HART option	SP56741P0066
Enclosure w/Clear cap w/gaskets	SP5632700066	Display Kit - FFB option	SP56741F0066
Enclosure w/SS cap w/gaskets	SP56327A0066	5' Remote Kit	SP73228A0005
M12 Quick Disconnect Receptacle	SP56726AN002	10' Remote Kit	SP73228A0010
Cord Grip	SP5633100000	15' Remote Kit	SP73228A0015
		20' Remote Kit	SP73228A0020
		25' Remote Kit	SP73228A0025