"MPP" Modular Pressure Transmitter

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 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.andinst.com or call our Customer Service Department directly at 1-800-833-0081.

APPLICATIONS

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

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
**MPP 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 turndown 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 Min. Ra <8 microinches. Optional: Hastelloy® diaphragm
Non-Product Contact Metal: 316L & 304 finished to a Min. 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

**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
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
Authorized to display the 3-A Symbol, Third Party Verified, standard 74-05
Compliance: HART 7.0 Compatible
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](Image)

![Vertical Orientation](Image)

![Remote Mounting](Image)

Cable available in 5’, 10’, 15’, 20’ and 25’ lengths
### HOW TO ORDER (complete unit)

**Fixed Character (A)**

<table>
<thead>
<tr>
<th>M</th>
<th>P</th>
<th>F</th>
<th>S</th>
<th>A</th>
<th>E</th>
<th>H</th>
<th>I</th>
<th>A</th>
</tr>
</thead>
</table>

1. **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)

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

3. **Capillary Fill**
   - 1 Mineral Oil FDA approved
   - 5 Propylene Glycol (Neobee M-20)

4. **Wettable Material**
   - A 316L
   - B Hastelloy® diaphragm

5. **Remote**
   - 0 None
   - A 5' Cable
   - B 10' Cable
   - C 15' Cable
   - D 20' Cable
   - E 25' Cable

6. **Enclosure Orientation**
   - 1 Vertical
   - 2 Horizontal

7. **M16x1.5 Electrical Entry**
   - A M12 QDR STD
   - C Cord Grip
   - N 1/2" NPTF Adaptor

8. **Calibration Range (Type)**
   - 99 Custom Calibration

9. **Bar**
   - AA -1/0/1 (C)
   - AB -1/0/2.5 (C)
   - AC -1/0/3 (C)
   - AD -1/0/4 (C)
   - AE -1/0/7 (C)
   - AF 0-2 (C,A)
   - AG 0-3 (C,A)
   - AH 0-4 (C,A)
   - AI 0-6 (C,A)
   - AJ 0-7 (C,A)
   - AK 0-10 (C,A)
   - AL 0-20 (C,A)
   - AM 0-35 (C,A)
   - AN 0-70 (C)

10. **Fixed Character (H)**

11. **Enclosure Cap**
    - B Clear Cap
    - C Blind Stainless Cap

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1. Not available in Hastelloy®
2. Not 3-A Compliant

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All added cost fittings are non-cancellable/non-returnable and have additional lead times.
HOW TO ORDER (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®
3 1" Tri-Clamp®
4 1-1/2" Tri-Clamp®
5 2" Tri-Clamp®
A Varivent style "B" 3/4" 1
B Varivent style "C" 1-1/2" 1
C 1-1/2" CPM Fitting
D G 1" Industrial
F Varivent style "F" 1"
G G1" Fitting 1/2
M MINI CPM Fitting 1
N Varivent style "N" 1-1/2 to 4"

REMOTE
0 None
A 5' Cable
B 10' Cable
C 15' Cable
D 20' Cable
E 25' Cable

WETTABLE MATERIAL
A 316L
B Hastelloy® diaphragm

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

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

H FIXED CHARACTER

Calibration Range

(PSI)
99 Custom Calibration
00 Field Calibration

25 30/0 (C)
28 30/0/15 (C)
29 30/0/30 (C)
31 30/0/50 (C)
32 30/0/100 (C)
34 30/0/200 (C)
66 0-30 (C,A)
68 0-50 (C,A)
69 0-60 (C,A)
71 0-100 (C,A)
73 0-150 (C,A)
74 0-160 (C,A)
75 0-200 (C,A)
81 0-500 (C,A)
84 0-1,000 (C)

(BAR)
AA -1/0/1 (C)
AB -1/0/2.5 (C)
AC -1/0/3 (C)
AD -1/0/4 (C)
AE -1/0/7 (C)
AF 0-2 (C,A)
AG 0-3 (C,A)
AH 0-4 (C,A)
AI 0-6 (C,A)
AJ 0-7 (C,A)
AK 0-10 (C,A)
AL 0-20 (C,A)
AM 0-35 (C,A)
AN 0-70 (C)

FIXED CHARACTER

ENCLOSURE ORIENTATION
1 Vertical
2 Horizontal

M16x1.5 ELECTRICAL ENTRY
A M12 QDR STD
C Cord Grip
N 1/2" NPTF Adaptor

ACCESSORIES

Cord Sets
Shielded Molded w/25' cable 42117K0025
Shielded Molded w/50' cable 42117K0050
Shielded Molded w/100' cable 42117K1000

Clear Cap w/gaskets 56328P0001
Stainless Steel Cap w/gaskets 56329P0001
Enclosure w/Clear cap w/gaskets SP5632700066
Enclosure w/SS cap w/gaskets SP56327A0066
M12 Quick Disconnect Receptacle SP56726AN002
Cord Grip SP5633100000
1/2" NPTF adaptor SP5633200000
Seal Kit (6) gaskets 5633000001
Field Wireable Connector-Straight 42119B0000
Field Wireable Connector-90° 42119A0000

Display Kit SP56741P0066
5" Remote Kit SP73228A0005
10' Remote Kit SP73228A0010
15' Remote Kit SP73228A0015
20' Remote Kit SP73228A020
25' Remote Kit SP73228A025