"MPF" Modular Pressure Transmitter

Introduction
The industry’s first fully modular sanitary pressure transmitter offers not only best in class performance within harsh process environments, but also the ability to be custom configured on site both for process parameters and enclosure form factor. Diagnostic routines continuously check on the health of the circuitry and visually report any issues that could impact performance.

The illuminated internal display provides a simple user interface to ease start up commissioning and configuration. The optional display interface provides class leading legibility and intuitive configuration functions.

Patent pending dual seals at every enclosure penetration and a fully potted electronic puck assure long life and problem free operation.

The modular design and universal electronics puck significantly lowers cost of ownership as critical spare inventory is reduced to manageable, replaceable components. When accidents do happen, the damaged component is easily and economically replaced saving the cost of full sensor replacement. While the sensor industry trends toward cheaper designs with the inevitable reduction of durability, and longevity, the MPF provides quality and value through innovation.

For more information on this product, or any of our other products, visit 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
- Available HART communications simplifies commissioning and maintenance for HART protocol adapters

Applications
- Sanitary pressure line direct or remote measurement
- Process sensor control including pressurized fillers, pressurized vessels, filter monitoring, etc
- Aseptic processing, steam injection and other high temperature processes
- Sanitary environment including wash downs, condensing humidity, and wide temperature swings
## Specifications

**PERFORMANCE MECHANICAL & ELECTRICAL:**

- **Calibrated Accuracy:** ± 0.1% of calibrated range up to 5:1 turndown
  
  (± 0.15% 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 gauge and compound
  30, 100, 500 absolute

- **Ranges, URL (BAR):**
  
  2, 7, 35 gauge and 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 & IP66

**CONSTRUCTION / FINISH:**

- **Product Contact:**
  
  316L finished to a Min. Ra =25 microinches.

  Optional: Hastelloy® diaphragm

- **Non-Product Contact Metal:**
  
  304 finished to a Min. Ra =32 microinches

- **Non-Product Contact Plastic:**
  
  polycarbonate threaded cap.

  Delrin atmospheric vent

**Electrical Connection:**

- **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:**
  
  Analog 2-wire user selectable 4-20 mA

  Optional - HART 7.0 digital communications protocol

- **Internal Display:**
  
  4 digit LED nominally displays

  loop current. Process variable selectable - PSI or BAR.

- **Display Interface:**
  
  Optional; modular field replaceable -

  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:**
  
  3-A compliant, Third Party Verified

- **Compliance:**
  
  Compliant with the Pressure Equipment Directive relative to Sound Engineering Practices(PED);

  CE compliant

  CSA - B 5 1 - 0 3

  CRN# CSAOF9754.5R1

**Warranty:**

2 years

## Dimensions

### Dimensions

<table>
<thead>
<tr>
<th>Orientation</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Horizontal</td>
<td>3.56&quot; (91mm)</td>
</tr>
<tr>
<td>Vertical</td>
<td>3.56&quot; (91mm)</td>
</tr>
<tr>
<td>Remote Mounting</td>
<td>7.87” (200mm)</td>
</tr>
</tbody>
</table>

Cable available in 5', 10' and 25' lengths
Quick Order Instructions: Quick order numbers may be used when standard no charge features are selected. All choices omitted and not covered below default to the standard option. If a choice other than the standard option is required, the full part number must be utilized.

1) Select desired URL or CALIBRATION RANGE 3 place code
   a) If URL is selected TYPE will default to Compound and will be calibrated from 0 psig to max range
   b) If CALIBRATION RANGE is selected, Sensor type will default to (C) Compound or (G) Gauge depending on range
2) Select FITTING 3 place code
3) Select fixed "0" ELECTRICAL ENTRY and ENCLOSURE ORIENTATION

Choose from a URL or Calibration Range code

<table>
<thead>
<tr>
<th>Quick Part</th>
<th>MPF</th>
<th>S1</th>
<th>0</th>
<th>01</th>
</tr>
</thead>
</table>

URL
966 30 psi / 2 BAR
971 100 psi / 2 BAR
981 500 psi / 35 BAR
984 1000 psi / 70 BAR
(not available in Absolute)

TYPE
G Gauge (positive pressure)
C Compound (vacuum/pressure)
A Absolute

FITTING
002 3/4" Tri-Clamp®
004 1-1/2" Tri-Clamp®
005 2" Tri-Clamp®
010 1-1/2" APC "K"
011 2" APC "K"
016 1-1/2" Cherry "I" (male)
017 2" Cherry "I" (male)
027 1-1/2" G & H "H" line (male)
028 2" G & H "H" line (male)
044 1-1/2" #14 Bevel Seat (w/nut)
045 2" #14 Bevel Seat (w/nut)
059 1-1/2" NPT 2
123 AIC CPM Flushmount
129 38mmd IDF w/Nut 2
131 51mm IDF w/Nut 2
160 G 1" CLEANadapt 1
(EHEDG compliant)

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

WETTABLE MATERIAL
A 316L (Standard)
B Hastelloy® diaphragm

REMOTE
0 None
A 5' Cable
B 10' Cable
E 25' Cable

FIXED CHARACTER
0 FIXED CHARACTER
A No Certs (Standard)
B Compliance and Material
C Accuracy and Material

ENCLOSURE CERTIFICATION
A Must be same as stem certification
B Compliance and Material
C Accuracy and Material

ENCLOSURE ORIENTATION
1 Vertical
2 Horizontal

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

DISPLAY
0 No Display
A Display

CALIBRATION RANGE (TYPE)
Custom Calibration
025 30/0 (C)
028 30/0/15 (C)
029 30/0/30 (C)
031 30/0/60 (C)
032 30/0/100 (C)
314 30/0/200 (C)
066 0-30 (G,A)
068 0-50 (G,A)
069 0-60 (G,A)
071 0-100 (G,A)
073 0-150 (G,A)
074 0-160 (G,A)
075 0-200 (G,A)
077 0-300 (G,A)
081 0-500 (G,A)
084 0-1,000 (G)

ENGINEERING UNITS
P PSI
B Bar

OUTPUT
A Analog
H HART and Analog

ENCLOSURE
2 Clear Cap (Standard)
3 Stainless Steel Cap
E FIXED CHARACTER

1 Not available in Hastelloy®

2 Not 3-A Compliant

All added cost fittings are non-cancellable/non-returnable and have additional lead times
### HOW TO ORDER (modular components)

#### Stem

<table>
<thead>
<tr>
<th>URL</th>
<th>Description</th>
<th>Pressure</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>966</td>
<td>30 psi / 2 BAR</td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>971</td>
<td>100 psi / 7 BAR</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>981</td>
<td>500 psi / 35 BAR</td>
<td></td>
<td>G</td>
</tr>
<tr>
<td>984</td>
<td>1000 psi / 70 BAR</td>
<td></td>
<td>Fixed G</td>
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</table>

(not available in Absolute)

#### Fitting

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<th>Description</th>
<th>Size</th>
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</thead>
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<tr>
<td>002</td>
<td>3/4&quot; Tri-Clamp®</td>
<td>1</td>
</tr>
<tr>
<td>004</td>
<td>1-1/2&quot; Tri-Clamp®</td>
<td>1</td>
</tr>
<tr>
<td>005</td>
<td>2&quot; Tri-Clamp®</td>
<td>1</td>
</tr>
<tr>
<td>010</td>
<td>1-1/2&quot; APC &quot;K&quot;</td>
<td>1</td>
</tr>
<tr>
<td>011</td>
<td>2&quot; APC &quot;K&quot;</td>
<td>1</td>
</tr>
<tr>
<td>016</td>
<td>1-1/2&quot; Cherry &quot;I&quot; (male)</td>
<td>1</td>
</tr>
<tr>
<td>017</td>
<td>2&quot; Cherry &quot;I&quot; (male)</td>
<td>1</td>
</tr>
<tr>
<td>027</td>
<td>1-1/2&quot; G &amp; H &quot;H&quot; line (male)</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Type

- A: Gauge (positive pressure)
- C: Compound (vacuum/pressure)
- A: Absolute

#### Certifications

- A: No Certs (Standard)
- B: Compliance and Material

#### Enclosure Orientation

- 1: Vertical
- 2: Horizontal
- 0: For Puck only (enclosure option 1)

#### Engineering Units

- P: PSI
- B: Bar
- 0: Field Calibrated

#### Calibration Range (Type)

<table>
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<th>Description</th>
<th>Range</th>
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<td>000</td>
<td>Field Cal (G.C.A.)</td>
<td>PSI</td>
</tr>
<tr>
<td>999</td>
<td>Custom Calibration</td>
<td>PSI</td>
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<td>(C)</td>
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<td>028</td>
<td>30/G</td>
<td>(C)</td>
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<tr>
<td>029</td>
<td>30/G</td>
<td>(C)</td>
</tr>
<tr>
<td>031</td>
<td>30/G</td>
<td>(C)</td>
</tr>
<tr>
<td>032</td>
<td>30/G</td>
<td>(C)</td>
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<td>30/G</td>
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<td>081</td>
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</tr>
<tr>
<td>084</td>
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<td>(G.A)</td>
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</table>

#### Bar

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</thead>
<tbody>
<tr>
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<td>(C)</td>
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<td>(G.A)</td>
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<td>(G.A)</td>
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<tr>
<td>081</td>
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<td>(G.A)</td>
</tr>
<tr>
<td>084</td>
<td>0-1,000</td>
<td>(G.A)</td>
</tr>
</tbody>
</table>

#### Fixed Characters

- 0: None
- 5: 5′ Cable
- 10: 10′ Cable
- 25: 25′ Cable

#### Wettability Material

- A: 316L
- B: Hastelloy® diaphragm

#### Capillary Fill

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

#### Accessories

- **Cord Sets**
  - Shielded Molded w/25′ cable: 42117K0005
  - Shielded Molded w/50′ cable: 42117K0005
  - Shielded Molded w/100′ cable: 42117K1000

- Clear Cap w/gaskets: 5632800001
- Stainless Steel Cap w/gaskets: 5632900001
- Enclosure w/Clear cap w/gaskets: SP5632700001
- Enclosure w/SS cap w/gaskets: SP56327A0001
- M12 Quick Disconnect Receptacle: SP56726A0001
- Cord Grip: SP5633100001
- 1/2″ NPTF Adaptor: SP5633200001
- Seal Kit (6) gaskets: SP5630000001
- Field Wireable Connector-Straight: 42119B0000
- Field Wireable Connector-90°: 42119A0000
- Display Kit: SP56741A0001
- 5′ Remote Kit: SP73228A0005
- 10′ Remote Kit: SP73228A0010
- 25′ Remote Kit: SP73228A0025
- Coverplate: SP56741B0001

1 Not available in Hastelloy
2 Not 3-A Compliant