The MPI Series Intrinsically Safe Magnetostrictive Level sensor provides highly accurate and repeatable level readings in a wide variety of liquid level measurement applications. The MPI-R's large, buoyant, and robust float allows for use in harsh applications where fouling or buildup might otherwise be of concern. The MPI-E's lighter-weight design allows it to be used in applications where space is limited. The MPI-E Chemical has a chemical resistant sleeve for use in corrosive, acidic, or marine environments. The MPI-F's flexible stem--stainless steel or PVDF--allows for installation in tall tanks without needing a crane or flatbed delivery truck, and the MPI-T's 1” titanium stem provides compatibility in a wider range of corrosive media--including H₂S--in larger tanks.

Features

- Class I, Division 1 and Class I, Zone 0 Hazardous Location Rating (cCSAus, ATEX, IECEx)
- Highly accurate and repeatable level and temperature readings
- RS-485 (Modbus RTU) and 4-20 mA (MPI-F only) outputs
- Low power; Start-up time under 5 seconds (MPI-F only)
- Rugged and reliable, lengths up to 50 feet (15.2 m)
- Dual level (interface) measurement
- Tank volume or level output, strapping table
- Pairs with MDI display for self-contained, intrinsically safe, level measurement and display system
### MPI-E Specifications

**Floats A, B**
- 2.0” (50.8 mm)
- 2.06” (52.32 mm)

**Floats C, D**
- 1.38” (35.05 mm)
- 1.63” (41.40 mm)
- 1.91” (48.42 mm)

**Float E**
- 1.87” (47.50 mm)
- 1.78” (45.21 mm)

**Float F**
- 2.20” (55.88 mm)

**Float G**
- 1.91” (48.42 mm)
- 1.88” (47.63 mm)
- 6.53 - 6.65” (165.9 - 169 mm)

### Performance
- **Resolution:** Modbus: 0.04 in. (1 mm)
- **Distance Accuracy:** ±0.04 in. (±1 mm)
- **Temperature Accuracy:** ±1°C

### Programming
- Optional RST-6001 USB to RS-485 converter

### Environmental
- **Operating Temperature:** -40º - 185ºF (-40º - 85ºC)
- **NEMA 4X, IP65**

### Physical
- **Housing:** Cast aluminium, epoxy coated
- **Stem:** 0.5” ø 316L SS
- **Stem Length:** 1 - 12.75 ft. (0.3 - 3.9 m)

### Electrical
- **Electrical Connection:** Terminal Block, 8-24 VDC
- **Typical current draw:** 24 mA
- **Reverse polarity protection**
- **Surge protection (IEC 61000-4-5, 4-6, 4-7)**

### Connectivity
- **Output:** Modbus RTU (RS-485) with Surge Protection

### Certification
- **NEMA 4X, IP65**
- **cCSAus Certificate CSA19CA70219727:**
  - 8-24 VDC, Imax = 280mA
  - Class I, Division 1, Groups C, D T4;
  - Class I, Zone 0; AEx ia IIB T4 Ga; Ex ia IIB T4 Ga, IP65
  - Ta = -40º to 85ºC
- **ATEX Certificate Sira 19ATEX2072X:**
  - II 1G
  - Ex ia IIB T4 Ga
  - Ta = -40º to 85ºC
- **IECEx Certificate IECEx SIR 19.0026X:**
  - Ex ia IIB T4 Ga
  - Ta = -40º to 85ºC
MPI-E MODEL CONFIGURATION OPTIONS

Model Number: MPI- E _5__ _____ - _____ _____ _____ _____ - _____ - _____ - _____

A. Stem Type
□ E 0.5 in. diameter, rigid

B. Output
□ 5 Modbus RTU, with surge protection, Intrinsically Safe

C. Housing Type
All Housing Die-cast Aluminum, NEMA 4X, IP65, Blue
□ __ Large Housing
□ A▲ Small Housing

D. Float 1 (Top Float)
□ A 316L SS Round (0.65 SG)
□ B 316L SS Round (0.92 SG)
□ C 316L SS Cylindrical (0.65 SG)
□ D 316L SS Cylindrical (0.92 SG)
□ E Buna-N (0.5 SG)
□ F 316 SS 3A Cylindrical (0.5 SG)
□ G Kynar Cylindrical (0.66 SG)

E. Float 2 (optional)
□ N None
□ B 316L SS Round (0.92 SG)†

F. Mounting Type
□ P▲ NPT Plug 150#
□ N None

G. Mounting Size
□ 1.5 1.5 in. (welded or slide connection)
□ 2▲ 2 in. (welded or slide connection)
□ 3 3 in. (slide connection only)
□ N None

H. Mounting Connection
□ W Welded (fixed)
□ S Slide with Compression Fitting (adjustable)

I. Stem Finish Material
□ B 316L SS

J. Total Stem Length in Inches
□ _ Min. 12 in. - Max. 153 in.

K. Temperature Sensor Options
□ N▲ None
□ 1D Digital Temperature Sensor A, 12 in. from bottom of probe
□ 2D Digital Temperature Sensors A, B
□ 3D Digital Temperature Sensors A, B, C
□ 4D Digital Temperature Sensors A, B, C, D
□ 5D Digital Temperature Sensors A, B, C, D, E
□ 6D Digital Temperature Sensors A, B, C, D, E, F
□ 7D Digital Temperature Sensors A, B, C, D, E, F, G

Note: Temperature sensors B - G are spaced evenly between A and the probe's zero reference.

L. Custom Housing-Electrical Connection
□ N▲ None
□ B Cable Gland (Cable sold separately)
□ C 4-pin M12 Micro Connector Female
□ D 4-pin M12 Micro Connector Male - 90°
□ F 4-pin M12 Micro Connector Female - 90°
□ G 90° Elbow
□ M 4-pin M12 Micro Connector Male

Note: ▲This option is standard.
Note: †Must be used with Top Float A.

MPI ACCESSORIES

Please order separately, by part number.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programming Module</td>
<td>RST-6001 (Modbus) 125734</td>
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<td>Programming Module</td>
<td>RST-6001 (Modbus) 125734</td>
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<td>Programming Module</td>
<td>RST-6001 (Modbus) 125734</td>
</tr>
</tbody>
</table>

*sold with 6 ft USB cable
**MPI-E CHEMICAL SPECIFICATIONS**

**MPI-E Chemical Float**

**Float K1,H**

### Physical
- **Housing:** Cast aluminum, epoxy coated
- **Stem:** 0.67" Ø PVDF (rigid)
- **Stem Length:** 1 - 12.75 ft. (0.3 - 3.9 m)
- **Float:** 2" Ø PVDF, 0.94 SG or 0.65 Max SG

### Environmental
- **Operating Temperature:** -40° - 185°F (-40° - 85°C)
- **Maximum Operating Pressure:** 30 PSIA @ 70°F / 21°C
- **NEMA 4X, IP65**

### Electrical
- **Electrical Connection:** Terminal Block, 8-24 VDC
- **Typical current draw:** 24 mA
- **Reverse polarity protection**
- **Surge protection (IEC 61000-4-5, 4-6, 4-7)**

### Connectivity
- **Output:**
  - Modbus RTU (RS-485) with Surge Protection

### Certification
- **NEMA 4X, IP65**
- **ccCSAus Certificate CSA19CA70219727:**
  - 8-24 VDC, Imax = 280mA
  - Class I, Division 1, Groups C, D T4;
  - Class I, Zone 0; AEx ia IIB T4 Ga; Ex ia IIB T4 Ga, IP65
  - Ta = -40° to 85°C
- **ATEX Certificate Sira 19ATEX2072X:**
  - II 1G
  - Ex ia IIB T4 Ga
  - Ta = -40° to 85°C
- **IECEx Certificate IECEx SIR 19.0026X:**
  - Ex ia IIB T4 Ga
  - Ta = -40° to 85°C

---

**Performance**

- **Resolution:**
  - Modbus: 0.04 in. (1 mm)
- **Distance Accuracy:**
  - ±0.04 in. (±1 mm)
- **Temperature Accuracy:**
  - ±1°C

**Programming**

- Optional RST-6001 USB to RS-485 converter
## MPI-E CHEMICAL MODEL CONFIGURATION OPTIONS

Model Number: MPI - E 5 - 2 W N L

### A. Stem Type
- □ E 0.5 in. diameter, rigid

### B. Output
- □ 5 Modbus RTU, with surge protection, Intrinsically Safe

### C. Housing Type
All Housing Die-cast Aluminum, NEMA 4X, IP65, Blue
- □ _ Large Housing
- □ A ▲ Small Housing

### D. Float 1 (Top Float)
- □ K1 ▲/H 3.5h x 2d in. PVDF (0.65 SG Max / 0.94SG)

### E. Float 2
- □ N ▲ None
- □ H 3.5h x 2d in. PVDF (0.65 SG Max / 0.94SG)

### F. Mounting Type
- □ P NPT Plug

### G. Mounting Size
- □ 2 Size 2

### H. Mounting Connection
- □ W Welded (fixed)

### I. Stem Finish Material
- □ N 0.67” diameter PVDF Sleeve

### J. Total Stem Length in Inches
- □ _ Min. 12 in. - Max. 153 in. *

### K. Temperature Sensor Options
- □ N ▲ None
- □ 1D Digital Temperature Sensor A, 12 in. from bottom of probe
- □ 2D Digital Temperature Sensors A, B
- □ 3D Digital Temperature Sensors A, B, C
- □ 4D Digital Temperature Sensors A, B, C, D
- □ 5D Digital Temperature Sensors A, B, C, D, E
- □ 6D Digital Temperature Sensors A, B, C, D, E, F
- □ 7D Digital Temperature Sensors A, B, C, D, E, F, G

Note: Temperature sensors B - G are spaced evenly between A and the probe's zero reference.

### L. Custom Housing-Electrical Connection
- □ N ▲ None
- □ B Cable Gland (Cable sold separately)
- □ C 4-pin M12 Micro Connector Female
- □ D 4-pin M12 Micro Connector Male - 90°
- □ F 4-pin M12 Micro Connector Female - 90°
- □ G 90° Elbow
- □ M 4-pin M12 Micro Connector Male

---

Note: ▲ This option is standard.

Note: *The Kynar stem is susceptible to thermal expansion when the process temperature exceeds 73°F / 23°C. This expansion can be calculated as follows: 
Expansion = (Max Process Temperature (°F) - 73) * 0.000108 * Kynar Stem Length. This is the distance that must be left between the end of the Kynar stem and the tank bottom at the maximum process temperature. Please account for this expansion by reducing the stem length to allow for this gap when installed. The gap is zero if the process temperature is less than or equal to 73 °F.*
### MPI-R Specifications

#### Performance
- Resolution: Modbus: 0.04 in. (1 mm)
- Distance Accuracy: ±0.04 in. (±1 mm)
- Temperature Accuracy: ±1°C

#### Programming
- Optional RST-6001 USB to RS-485 converter

#### Environmental
- Operating Temperature: -40º - 185ºF (-40º - 85ºC)
- NEMA 4X, IP65

#### Physical
- Housing: Cast aluminium, epoxy coated
- Stem: 1.0” Ø 316L SS
- Stem Length: 4 - 31.5 ft. (1.22 - 9.60 m)

#### Electrical
- Electrical Connection: Terminal Block, 8-24 VDC
- Typical current draw: 25 mA
- Reverse polarity protection
- Surge protection (IEC 61000-4-5, 4-6, 4-7)

#### Connectivity
- Output: Modbus RTU (RS-485) with Surge Protection

#### Certification
- NEMA 4X, IP65
- cCSAus Certificate CSA19CA70219727:
  - 8-24 VDC, Imax = 280mA
  - Class I, Division 1, Groups C, D T4;
  - Class I, Zone 0; AEx ia IIB T4 Ga; Ex ia IIB T4 Ga, IP65
  - Tₐ = -40º to 85ºC
- ATEX Certificate Sira 19ATEX2072X:
  - II 1G
  - Ex ia IIB T4 Ga
  - Tₐ = -40º to 85ºC
- IECEx Certificate IECEx SIR 19.0026X:
  - Ex ia IIB T4 Ga
  - Tₐ = -40º to 85ºC
# MPI-R Model Configuration Options

Model Number: MPI - R 5 - - - - - - - - B - - - - I J K L

## A. Stem Type
- **R** 1 in. diameter, rigid

## B. Output
- **5** Modbus RTU, with surge protection, Intrinsically Safe

## C. Housing Type
All Housing Die-cast Aluminum, NEMA 4X, IP65, Blue
- **_** Large Housing
- **A** Small Housing

## D. Float 1 (Top Float)
- **Z/Y** 5.5h x 3d in. Red Polyurethane (0.65 SG / 0.94 SG)
- **X/W** 5 in. Round 316L SS (0.52 SG / 0.92 SG)
- **V/U** 6h x 3d in. Oval 316L SS (0.58 SG / 0.94 SG)
- **T/S** 3 in. Round 316L SS (0.60 SG / 0.94 SG)
- **M/L** 5.5h x 2d in. Red Polyurethane (0.57 SG / 0.94 SG)
- **J/I** 5h x 3d in. Oval Titanium (0.60 SG / 0.94 SG)
- **N** None

## E. Float 2 (optional)
- **N** None
- **Y** 5.5h x 3d in. Blue Polyurethane (0.94 SG)
- **W** 5 in. Round 316L SS (0.92 SG)
- **U** 6h x 3d in. Oval 316L SS (0.94 SG)
- **S** 3 in. Round 316L SS (0.94 SG)
- **L** 5.5h x 2d in. Blue Polyurethane (0.94 SG)
- **I** 5h x 3d in. Oval Titanium (0.94 SG)

## F. Mounting Type
- **P** NPT Plug 150#
- **N** None

## G. Mounting Size
- **2** 2 in. (welded or slide connection)
- **3** 3 in. (slide connection only)
- **N** None

## H. Mounting Connection
- **W** Welded (fixed)
- **S** Slide with Compression Fitting (adjustable)

## I. Stem Finish Material
- **B** 316L SS

## J. Total Stem Length in Inches
- **_** Min. 48 in. - Max. 378 in.

## K. Temperature Sensor Options
- **N** None
- **1D** Digital Temperature Sensor A, 12 in. from bottom of probe
- **2D** Digital Temperature Sensors A, B
- **3D** Digital Temperature Sensors A, B, C
- **4D** Digital Temperature Sensors A, B, C, D
- **5D** Digital Temperature Sensors A, B, C, D, E
- **6D** Digital Temperature Sensors A, B, C, D, E, F
- **7D** Digital Temperature Sensors A, B, C, D, E, F, G

Note: Temperature sensors B - G are spaced evenly between A and the probe’s zero reference.

## L. Custom Housing-Electrical Connection
- **N** None
- **B** Cable Gland (Cable sold separately)
- **C** 4-pin M12 Micro Connector Female
- **D** 4-pin M12 Micro Connector Male - 90°
- **F** 4-pin M12 Micro Connector Female - 90°
- **G** 90° Elbow
- **M** 4-pin M12 Micro Connector Male

Note: **▲** This option is standard.

## MPI Accessories

Please order separately, by part number.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programming Module</td>
<td></td>
</tr>
<tr>
<td>RST-6001 (Modbus; MPI-x5, MPI-F8 only)</td>
<td>125734</td>
</tr>
<tr>
<td>RST-4100 (4-20 mA; MPI-F6, MPI-F7 only)</td>
<td>125759</td>
</tr>
</tbody>
</table>

*sold with 6 ft USB cable
**MPI-F STAINLESS STEEL SPECIFICATIONS**

**Floats Y, Z**
- 3.065” (77.85 mm)
- 5.5” (139.7 mm)

**Floats U, V**
- 3.03” (76.96 mm)
- 5.88” (150 mm)

**Floats W, X**
- 5.0” (127 mm)
- 4.76” (120.9 mm)

**Floats S, T**
- 3.08” (78.23 mm)
- 2.80” (71.12 mm)

**Floats I, J**
- 3.00” (76.2 mm)
- 4.98” (126.5 mm)

**MPI-F/B Floats**
- 3.03” (76.96 mm)
- 5.5” (139.7 mm)

**Small Housing**
- 4.92” (125 mm)
- 4.25” (108 mm)
- 0.27” (x2) 7 mm

**Large Housing**
- 5.71” (145 mm)
- 5.00” (127 mm)
- 0.27” (x2) 7 mm

---

**Performance**
- Resolution:
  - 4-20 mA: 14 bit DAC (1 mm); Modbus: 0.04 in. (1 mm)
- Distance Accuracy
  - 4-20 mA: Greater of ±0.05% of F5 or 1 mm
  - Modbus: ±0.04 in. (±1 mm)
- Temperature Accuracy
  - Digital Temp Sensor: ±1°C
  - API 18.2 Temp Sensors: ±0.25°C over -40° - 85°C
  - ±0.13°C over +20° - 70°C

**Programming**
- RS-485: Optional RST-6001 USB to RS-485 converter
- 4-20 mA: Factory set or RST-4100 programming module

**Electrical**
- Supply Voltage: 8-24 VDC (Modbus), 12-24 VDC (4-20 mA)
- Current draw:
  - 4-20mA, Single / Dual float: 22 / 44 mA (max)
  - Modbus (single or dual float): 15 mA (typ.)
- Reverse polarity protection
- CE compliant to EN 61326

**Environmental**
- Operating Temperature: -40° - 185°F (-40° - 85°C)
- NEMA 4X, IP65

---

**Physical**
- Housing: Cast aluminium, epoxy coated
- Stem: 7/8” Ø Flexible Tubing with Braid, 316L SS
- Stem Length: 4 - 32 ft. (1.22 - 9.75 m)

**Connectivity**
- Output:
  - Single or dual loop-powered 4-20 mA
  - Modbus RTU (RS-485), optional temperature sensors

**Certification**
- NEMA 4X, IP65
- cCSAus Certificate CSA19CA70219727:
  - 8-24 VDC, Imax = 280mA
  - Class I, Division 1, Groups C, D T4;
  - Class I, Zone 0; AEx ia IIB T4 Ga; Ex ia IIB T4 Ga, IP65
  - Ta = -40° to 85°C
- ATEX Certificate Sira 19ATEX2072X:
  - II 1G
  - Ex ia IIB T4 Ga
  - Ta = -40° to 85°C
- IECEx Certificate IECEx SIR 19.0026X:
  - Ex ia IIB T4 Ga
  - Ta = -40° to 85°C
# MPI-F STAINLESS STEEL STEM MODEL CONFIGURATION OPTIONS

**Model Number:** MPI - _F_ _____ _____ - _____ _____ _____ __

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>I</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>O</th>
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</thead>
<tbody>
<tr>
<td>A. Stem Type</td>
<td>□ F</td>
<td>Flexible Tubing</td>
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<td>B. Output</td>
<td>□ 6</td>
<td>Single float, loop-powered 4-20 mA (2-wire)</td>
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<td></td>
<td>□ 7</td>
<td>Dual float, loop-powered 4-20 mA (4-wire)</td>
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<td></td>
<td>□ 8 ▲</td>
<td>Modbus RTU, Optional temperature sensors</td>
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<td>C. Housing Type</td>
<td>All Housing Die-cast Aluminum, NEMA 4X, IP65</td>
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<td>□ ▲</td>
<td>Large Housing</td>
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<td></td>
<td>□ A</td>
<td>Small Housing</td>
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<tr>
<td>D. Float 1 (Top Float)</td>
<td>□ Z/Y</td>
<td>5.5h x 3d in. Red Polyurethane (0.65 SG / 0.94 SG)</td>
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<td>□ X/W</td>
<td>5 in. Round 316L SS (0.52 SG / 0.92 SG)</td>
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<td></td>
<td>□ V/U</td>
<td>6x 3d in. Oval 316L SS (0.58 SG / 0.94 SG)</td>
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<td></td>
<td>□ T/S</td>
<td>3 in. Round 316L SS (0.60 SG / 0.94 SG)</td>
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<td></td>
<td>□ M/L</td>
<td>5.5h x 2d in. Red Polyurethane (0.57 SG / 0.94 SG)</td>
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<tr>
<td></td>
<td>□ J/I</td>
<td>5h x 3d in. Oval Titanium (0.60 SG / 0.94 SG)</td>
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<td>E. Float 2 (optional)</td>
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<td></td>
<td>□ Y</td>
<td>5.5h x 3d in. Blue Polyurethane (0.94 SG)</td>
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<td></td>
<td>□ W</td>
<td>5 in. Round 316L SS (0.92 SG)</td>
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<td>□ U</td>
<td>6h x 3d in. Oval 316L SS (0.94 SG)</td>
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<td>□ S</td>
<td>3 in. Round 316L SS (0.94 SG)</td>
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<td>□ L</td>
<td>5.5h x 2d in. Blue Polyurethane (0.94 SG)</td>
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<td>□ I</td>
<td>5h x 3d in. Oval Titanium (0.94 SG)</td>
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<td>F. Mounting Type</td>
<td>□ P ▲</td>
<td>NPT Plug 150#</td>
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<td>G. Mounting Size</td>
<td>□ 2 ▲</td>
<td>2 in. (welded or slide connection)</td>
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<td>□ 3</td>
<td>3 in. (slide connection only)</td>
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<td>H. Mounting Connection</td>
<td>□ W</td>
<td>Welded (fixed)</td>
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<td>□ S</td>
<td>Slide with Compression Fitting (adjustable)</td>
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</table>

| I. Stem Finish Material | □ B | 316L SS |
| J. Total Stem Length in Inches | □ _ | Min. 48 in. - Max. 384 in. |
| K. Temperature Sensor Options | MPI-F8 |
| | □ N | None |
| | □ 1D ▲ | Digital Temperature Sensor A, 12 in. from bottom of probe |
| | □ 2D | Digital Temperature Sensors A, B |
| | □ 3D | Digital Temperature Sensors A, B, C |
| | □ 4D | Digital Temperature Sensors A, B, C, D |
| | □ 5D | Digital Temperature Sensors A, B, C, D, E |
| | □ 6D | Digital Temperature Sensors A, B, C, D, E, F |
| | □ 7D | Digital Temperature Sensors A, B, C, D, E, F, G |
| | □ AP | Sensor Quantity and Placement per API 18.2 Standard |

Note: Temperature sensors B - G are spaced evenly between A and the probe's zero reference.

| L. Housing Connection † | □ N ▲ | None |
| | □ B | Cable Gland (Cable sold separately) |
| | □ C | 4-pin M12 Micro Connector Female |
| | □ D | 4-pin M12 Micro Connector Male - 90° |
| | □ F | 4-pin M12 Micro Connector Male - 90° |
| | □ G | 90° Elbow |
| | □ M | 4-pin M12 Micro Connector Male |
| M. End Plug | □ 2 ▲ | Keyhole for cotter pin |
| N. Float Stop | □ A3 ▲ | 1-piece top float stop, held with set screw |
| | □ F3 | 2-piece clamp top float stop |
| | □ N | None |
| O. Stem Weights | □ W7 | 316L SS, 3lb, 2Ø x 4.75"H; modular |
| | □ W8 | 316L SS, 5 lb, 3"Ø x 3"H; modular |

Note: †This option is standard.  
Note: †Connectors available for use with Small Housing only. For Large Housing, choose N None.
MPI-F PVDF Specifications

**MPI-F/K Floats**

**Floats I, J**
- 3.00” (76.2 mm)
- 4.98” (126.5 mm)

**Floats H, K**
- 2.00” (50.8 mm)
- 3.50” (88.9 mm)

**Small Housing**
- 4.92” (125 mm)
- 4.25” (108 mm)
- 0.27” (x2) (7 mm)
- 6.53 - 6.65” (166 - 169 mm)

**Large Housing**
- 5.71” (145 mm)
- 5.00” (127 mm)
- 0.27” (x2) (7 mm)
- 6.84 - 6.97” (173.8 - 177 mm)

**Performance**
- Resolution:
  - 4-20 mA: 14 bit DAC (1 mm); Modbus: 0.04 in. (1 mm)
- Distance Accuracy
  - 4-20 mA: Greater of ±0.05% of FS or 1 mm
  - Modbus: ±0.04 in. (±1 mm)
- Temperature Accuracy
  - Digital Temp Sensor: ±1°C
  - API 18.2 Temp Sensors: ±0.25°C over -40° - 85°C
  - ±0.13°C over +20° - 70°C

**Programming**
- RS-485: Optional RST-6001 USB to RS-485 converter
- 4-20 mA: Factory set or RST-4100 programming module

**Electrical**
- Supply Voltage: 8-24 VDC (Modbus), 12-24 VDC (4-20 mA)
- Current draw:
  - 4-20mA, Single / Dual float: 22 mA / 44 mA (max)
  - Modbus (single or dual float): 15 mA (typ)
- Reverse polarity protection
- CE compliant to EN 61326

**Environmental**
- Operating Temperature: -40° - 185°F (-40° - 85°C)
- NEMA 4X, IP66

**Physical**
- Housing: Cast aluminium, epoxy coated
- Stem: 5/8” Ø Flexible Tubing, proprietary PVDF formulation
- Stem Length: 10 - 50 ft. (3.05 - 15.2 m)

**Connectivity**
- Output:
  - Single or dual loop-powered 4-20 mA
  - Modbus RTU (RS-485), optional digital temp. sensors

**Certification**
- NEMA 4X, IP65
- cCSAus Certificate CSA19CA70219727:
  - 8-24 VDC, Imax = 280mA
  - Class I, Division 1, Groups C, D T4;
  - Class I, Zone 0; AEx ia IIB T4 Ga; Ex ia IIB T4 Ga, IP65
  - Ta = -40° to 85°C
- ATEX Certificate Sira 19ATEX2072X:
  - II 1G
  - Ex ia IIB T4 Ga
  - Ta = -40° to 85°C
- IECEx Certificate IECEx SIR 19.0026X:
  - Ex ia IIB T4 Ga
  - Ta = -40° to 85°C
# MPI-F PVDF STEM MODEL CONFIGURATION OPTIONS

Model Number: MPI - F _____ _____ - _____ _____ ____ K ____ - _____ - _____ - ______ __2__ _____ __W6__

**A. Stem Type**
- □ F Flexible Tubing

**B. Output**
- □ 6 Single float, loop-powered 4-20 mA (2-wire)
- □ 7 Dual float, loop-powered 4-20 mA (4-wire)
- □ 8 ▲ Modbus RTU, Optional digital temperature sensors

**C. Housing Type**
All Housing Die-cast Aluminum, NEMA 4X, IP65
- □ _ ▲ Large Housing
- □ A Small Housing

**D. Float 1 (Top Float)**
- □ K/H ▲ 3.5h x 2d in. PVDF (0.65 SG / 0.94 SG)
- □ J/I 5h x 3d in. Oval Titanium (0.60 SG / 0.94 SG)
- □ N None

**E. Float 2 (optional)**
- □ N ▲ None
- □ H 3.5h x 2d in. PVDF (0.94 SG)
- □ I 5h x 3d in. Oval Titanium (0.94 SG)

**F. Mounting Type**
- □ P ▲ NPT Plug 150#
- □ N None

**G. Mounting Size**
- □ 2 ▲ 2 in. (welded or slide connection)
- □ N None

**H. Mounting Connection**
- □ W Welded (fixed)
- □ S ▲ Slide with Compression Fitting (adjustable)

**I. Stem Finish Material**
- □ K Proprietary PVDF formulation

**J. Total Stem Length in Inches**
- □ _ Min. 120 in. - Max. 600 in.

**K. Temperature Sensor Options**

**MPI-F8**
- □ N None
- □ 1D ▲ Digital Temperature Sensor A, 12 in. from bottom of probe
- □ 2D Digital Temperature Sensors A, B
- □ 3D Digital Temperature Sensors A, B, C
- □ 4D Digital Temperature Sensors A, B, C, D
- □ 5D Digital Temperature Sensors A, B, C, D, E
- □ 6D Digital Temperature Sensors A, B, C, D, E, F
- □ 7D Digital Temperature Sensors A, B, C, D, E, F, G
- □ AP Sensor Quantity and Placement per API 18.2 Standard

Note: Temperature sensors B - G are spaced evenly between A and the probe's zero reference.

**L. Custom Housing-Electrical Connection†**
- □ N ▲ None
- □ B Cable Gland (Cable sold separately)
- □ C 4-pin M12 Micro Connector Female
- □ D 4-pin M12 Micro Connector Male - 90°
- □ F 4-pin M12 Micro Connector Female - 90°
- □ G 90° Elbow
- □ M 4-pin M12 Micro Connector Male

**M. End Plug**
- □ 2 ▲ Keyhole for dowel pin

**N. Float Stop**
- □ E3 1-piece clamp, top float stop only
- □ N ▲ None

**O. Stem Weights**
- □ W6 ▲ 316L SS, 3.75lb, 2”Ø x 5” H; modular

Note: †Connectors available for use with Small Housing only. For Large Housing, choose N None.
### MPI-T Specifications

#### Performance
- Resolution: Modbus: 0.04 in. (1 mm)
- Distance Accuracy: ±0.04 in. (±1 mm)
- Temperature Accuracy: ±1°C

#### Programming
- Optional RST-6001 USB to RS-485 converter

#### Environmental
- Operating Temperature: -40º - 185ºF (-40º - 85ºC)
- NEMA 4X, IP65

#### Physical
- Housing: Cast aluminium, epoxy coated
- Stem: 1.0” ø Titanium 2
- Stem Length: 4 - 25 ft. (1.22 - 7.62 m)
- Slide Mounting: 316L SS
- Compression Fitting: Aluminum

#### Electrical
- Electrical Connection: Terminal Block, 8-24 VDC
- Typical current draw: 25 mA
- Reverse polarity protection
- Surge protection (IEC 61000-4-5, 4-6, 4-7)

#### Connectivity
- Output: Modbus RTU (RS-485) with Surge Protection

#### Certification
- NEMA 4X, IP65
- cCSAus Certificate CSA19CA70219727:
  - 8-24 VDC, Imax = 280mA
  - Class I, Division 1, Groups C, D T4;
  - Class I, Zone 0; AEx ia IIB T4 Ga; Ex ia IIB T4 Ga, IP65
  - Ta = -40º to 85ºC
- ATEX Certificate Sira 19ATEX2072X:
  - II 1G
  - Ex ia IIB T4 Ga
  - Ta = -40º to 85ºC
- IECEx Certificate IECEx SIR 19.0026X:
  - Ex ia IIB T4 Ga
  - Ta = -40º to 85ºC
MPI-T MODEL CONFIGURATION OPTIONS

Model Number: MPI - R S T A B C D E F G H I J K L

A. Stem Type
□ R 1 in. diameter, rigid

B. Output
□ 5 Modbus RTU, with surge protection, Intrinsically Safe

C. Housing Type
All Housing Die-cast Aluminum, NEMA 4X, IP65, Blue
□ _ ▲ Large Housing
□ A Small Housing

D. Float 1 (Top Float)
□ Z 5.5h x 3d in. Red Polyurethane (0.65 SG)
□ Y 5.5h x 3d in. Blue Polyurethane (0.94 SG)
□ M 5.5h x 2d in. Red Polyurethane (0.57 SG)
□ L 5.5h x 2d in. Blue Polyurethane (0.94 SG)
□ J 5h x 3d in. Oval Titanium (0.60 SG)
□ I 5h x 3d in. Oval Titanium (0.94 SG)
□ N None

E. Float 2 (optional)
□ N None
□ Y 5.5h x 3d in. Blue Polyurethane (0.94 SG)
□ L 5.5h x 2d in. Blue Polyurethane (0.94 SG)
□ I 5h x 3d in. Oval Titanium (0.94 SG)

F. Mounting Type
□ P ▲ NPT Plug 150#
□ N None

G. Mounting Size
□ 2 ▲ 2 in.
□ 3 3 in.
□ N None

H. Mounting Connection
□ S Slide with Compression Fitting (adjustable)

I. Stem Finish Material
□ T Titanium 2

J. Total Stem Length in Inches
□ _ Min. 48 in. - Max. 300 in.

K. Temperature Sensor Options
□ N None
□ 1D ▲ Digital Temperature Sensor A, 12 in. from bottom of probe
□ 2D Digital Temperature Sensors A, B
□ 3D Digital Temperature Sensors A, B, C
□ 4D Digital Temperature Sensors A, B, C, D
□ 5D Digital Temperature Sensors A, B, C, D, E
□ 6D Digital Temperature Sensors A, B, C, D, E, F
□ 7D Digital Temperature Sensors A, B, C, D, E, F, G

Note: Temperature sensors B - G are spaced evenly between A and the probe’s zero reference.

L. Custom Housing-Electrical Connection
□ N ▲ None
□ B Cable Gland (Cable sold separately)
□ C 4-pin M12 Micro Connector Female
□ D 4-pin M12 Micro Connector Male - 90°
□ F 4-pin M12 Micro Connector Female - 90°
□ G 90° Elbow
□ M 4-pin M12 Micro Connector Male

Note: ▲ This option is standard.
Tank Cloud

Put Your Tanks In The Cloud

1. Remote Sensors
   Connect to any 4-20mA signal or APG Modbus sensor for constant access to your data. Access up to 10 sensors on a single connection.

2. Use the Internet Backbone
   Connect the APG sensor or module to the Internet via landline, radio, cellular, or satellite.

3. View Secure Data 24/7
   Access sensor data online through our secure portal at levelandflow.com. If the Internet is accessible, so is your information.

4. Stay Up-To-Date
   Program custom alarms - receive email and text (sms) message alerts on your computer, mobile phone, or tablet.

The Line-Up:

Online Data Portal

The Tank Cloud data portal, located online at www.levelandflow.com, displays everything you need to know about your measurement.

Here you can:

- View your current and past readings,
- Manage alarms,
- Configure your sensors,
- and Setup user permissions for others in your organization.

Measurements are sorted by location and grouped into sites. Simply select the site you would like to view, and then choose the sensor. Current readings are prominent in the center of the screen.

Contact us today at 888-525-7300 to set-up a demonstration of our sensors and online software. We are excited to show you how it can impact your business.