

# MPI-F 316L SS

## Intrinsically Safe Flexible SS Magnetostrictive Level Sensor

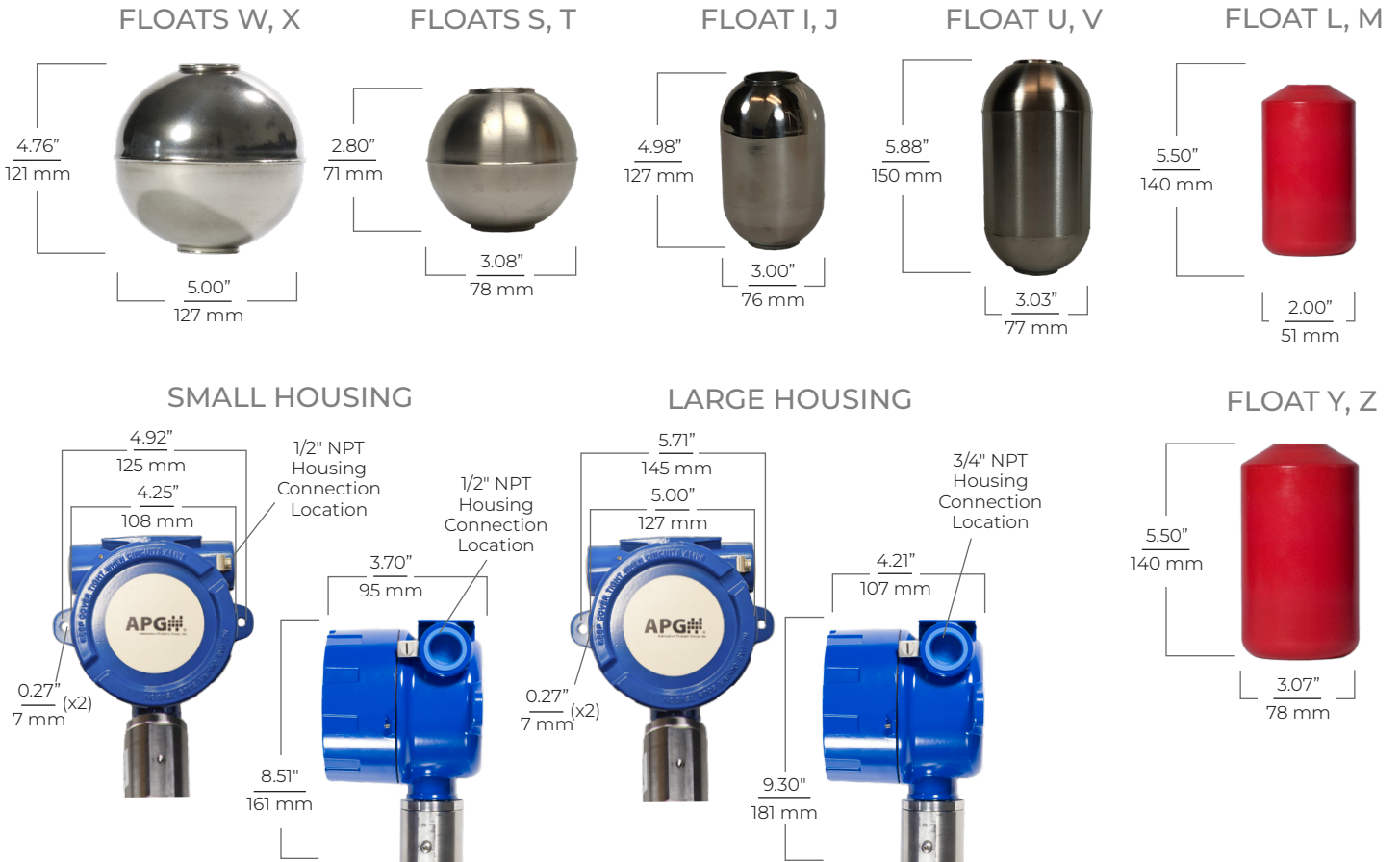
The MPI Series Intrinsically Safe Magnetostrictive Level Sensor provides highly accurate and repeatable level readings in a wide variety of liquid level measurement applications. The MPI-F's flexible 316L SS stem allows for installation in tall tanks without needing a crane or flatbed delivery truck.

### 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 outputs
- Low power
- Rugged and reliable, lengths up to 32 feet (9.75 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-F 316L SS SPECIFICATIONS



## PERFORMANCE

- **Resolution:**  
 4-20 mA: 14 bit DAC (1 mm)  
 Modbus: 0.04 in. (1 mm)
- **Distance Accuracy:**  
 4-20 mA: Greater of  $\pm 0.05\%$  of FS or 1 mm  
 Modbus:  $\pm 0.04$  in. ( $\pm 1$  mm)
- **Temperature Accuracy:**  
 Digital Temp. Sensor:  $\pm 1^\circ\text{C}$

## CONNECTIVITY

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

## ENVIRONMENTAL

- **Operating Temp.:**  $-40^\circ$ – $185^\circ\text{F}$  ( $-40^\circ$ – $85^\circ\text{C}$ )
- **NEMA 4X, IP65**

## PHYSICAL

- **Housing:** Cast aluminum, epoxy coated
- **Stem:** 7/8 in.  $\phi$  Flexible Tubing with Braid, 316L SS
- **Stem Length:** 4–32 ft. (1.22–9.75 m)

## 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:**  
 4-20 mA, Single/Dual float: 22/44 mA (max)  
 Modbus (single or dual float): 15 mA (typ.)
- **Reverse polarity protection**
- **CE compliant to EN 61326**

## CERTIFICATION

- **NEMA 4X, IP65**
- **cCSAus Certificate CSA19CA70219727:**  
 8–24 VDC,  $I_{\text{max}}=280$  mA  
 Class I, Division 1, Groups C, D T4;  
 Class I, Zone 0; AEx ia IIB T4 Ga; Ex ia IIB T4 Ga, IP65  
 Ta= $-40^\circ$  to  $85^\circ\text{C}$
- **ATEX Certificate Sira 19ATEX2072X:**  
 II 1G  
 Ex ia IIB T4 Ga  
 Ta= $-40^\circ$  to  $85^\circ\text{C}$
- **IECEx Certificate IECEx SIR 19.0026X:**  
 Ex ia IIB T4 Ga  
 Ta= $-40^\circ$  to  $85^\circ\text{C}$

# MODEL CONFIGURATION OPTIONS

MODEL NUMBER: MPI –  $\frac{F}{A}$  –  $\frac{\quad}{B}$  –  $\frac{\quad}{C}$  –  $\frac{\quad}{D}$  –  $\frac{\quad}{E}$  –  $\frac{\quad}{F}$  –  $\frac{\quad}{G}$  –  $\frac{\quad}{H}$  –  $\frac{B}{I}$  –  $\frac{\quad}{J}$  –  $\frac{\quad}{K}$  –  $\frac{\quad}{L}$  –  $\frac{2}{M}$  –  $\frac{W6}{N}$  –  $\frac{N}{P}$  –  $\frac{\quad}{Q}$

## 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 temperature sensors

## C. Housing Type

All Housing Die-cast Aluminum, NEMA 4X, IP65

- ☐ \* 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. Red Polyurethane (0.92 SG)  
☐ X 5 in. Round 316L SS (0.52 SG)  
☐ W 5 in. Round 316L SS (0.92 SG)  
☐ V 6h x 3d in. Oval 316L SS (0.58 SG)  
☐ U 6h x 3d in. Oval 316L SS (0.94 SG)  
☐ T 3 in. Round 316L SS (0.60 SG)  
☐ S 3 in. Round 316L SS (0.94 SG)  
☐ M 5.5h x 2d in. Red Polyurethane (0.57 SG)  
☐ L 5.5h x 2d in. Red 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)  
☐ 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

- ☐ S Slide with Compression Fitting (adjustable)  
☐ W Welded (fixed)  
☐ N None

## I. Stem Finish Material

- ☐ B 316L SS

## J. Total Stem Length in Inches

- ☐ — Min. 48 in.—Max. 384 in.

**\*Note:** This option is standard

**\*\* Note:** Connectors available for use with Small Housing only. For Large Housing, choose N None.

**DISCLAIMER:** Please note that selecting certain options may limit or eliminate availability of other options, as some floats and accessories are only compatible with a select number of configuration.

# MPI ACCESSORIES

Please order separately, by part number.

Description	Part Number
Programming Module	
RST-6001 (Modbus; MPI-x5, MPI-F8 only)	125734
RST-4100 (4-20mA MPI-X6, X7 only)	125759
MDI (See MDI Datasheet for Options)	

# MODEL CONFIGURATION OPTIONS

MODEL NUMBER: MPI –  $\frac{F}{A}$  –  $\frac{\quad}{B}$  –  $\frac{\quad}{C}$  –  $\frac{\quad}{D}$  –  $\frac{\quad}{E}$  –  $\frac{\quad}{F}$  –  $\frac{\quad}{G}$  –  $\frac{\quad}{H}$  –  $\frac{B}{I}$  –  $\frac{\quad}{J}$  –  $\frac{\quad}{K}$  –  $\frac{\quad}{L}$  –  $\frac{2}{M}$  –  $\frac{\quad}{N}$  –  $\frac{\quad}{O}$  –  $\frac{N}{P}$  –  $\frac{\quad}{Q}$

## 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.

**Note:** Options 1D–7D are only available when Output 8 is selected.

## L. Housing Connection\*\*

- ☐ N\* None
- ☐ B Cable Gland (Cable sold separately)
- ☐ M 4-pin M12 Micro Connector Male
- ☐ D 4-pin M12 Micro Connector Male-90°
- ☐ C 4-pin M12 Micro Connector Female
- ☐ F 4-pin M12 Micro Connector Female-90°
- ☐ G 90° Elbow

## 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 Weights for SS and 2 in. Floats
- ☐ W8 Weights for SS and 3 in. Floats

## P. Level Switch

- ☐ N No High Level Switch

## Q. Setpoints

- ☐ N No Setpoints
- ☐ S Standard Locations (for Outputs 6 or 7 only)
- ☐ C Custom Locations (contact for more details; for Outputs 6 or 7 only)

**\*Note:** This option is standard

**\*\* Note:** Connectors available for use with Small Housing only. For Large Housing, choose N None.

**DISCLAIMER:** Please note that selecting certain options may limit or eliminate availability of other options, as some floats and accessories are only compatible with a select number of configuration.

# MPI ACCESSORIES

Please order separately, by part number.

Description	Part Number
Programming Module	
RST-6001 (Modbus; MPI-x5, MPI-F8 only)	125734
RST-4100 (4-20mA MPI-X6, X7 only)	125759
MDI (See MDI Datasheet for Options)	

# **SETTLER**

## Your Gateway to Smarter Monitoring

Settler, APG's next remote monitoring gateway, makes getting real-time level data easier than ever.

Settler seamlessly connects Modbus and 4-20 mA sensors—transmitting encrypted data securely to Explorer, APG's cloud-based interface. View tank and well levels anytime, anywhere, with reliable Ethernet connectivity and robust data security powered by MQTT with AES (Advanced Encryption Standard). Plus, with over-the-air (OTA) firmware updates, your system stays up to date without hassle.

**Designed for general-purpose environments, Settler is not intended for use in hazardous areas.**

Explorer makes monitoring simple. Access real-time readings, enable datalogging, and set up alarms so you're always informed of critical changes—right from your smartphone, tablet, or desktop.

Save time, reduce costs, and gain peace of mind with remote monitoring powered by Settler and Explorer. Contact us today to learn more or visit [apgsensors.com/settler-remote-monitoring-gateway/](https://apgsensors.com/settler-remote-monitoring-gateway/).

