

MPI-R

Intrinsically Safe Rugged Magnetostrictive Level Sensor

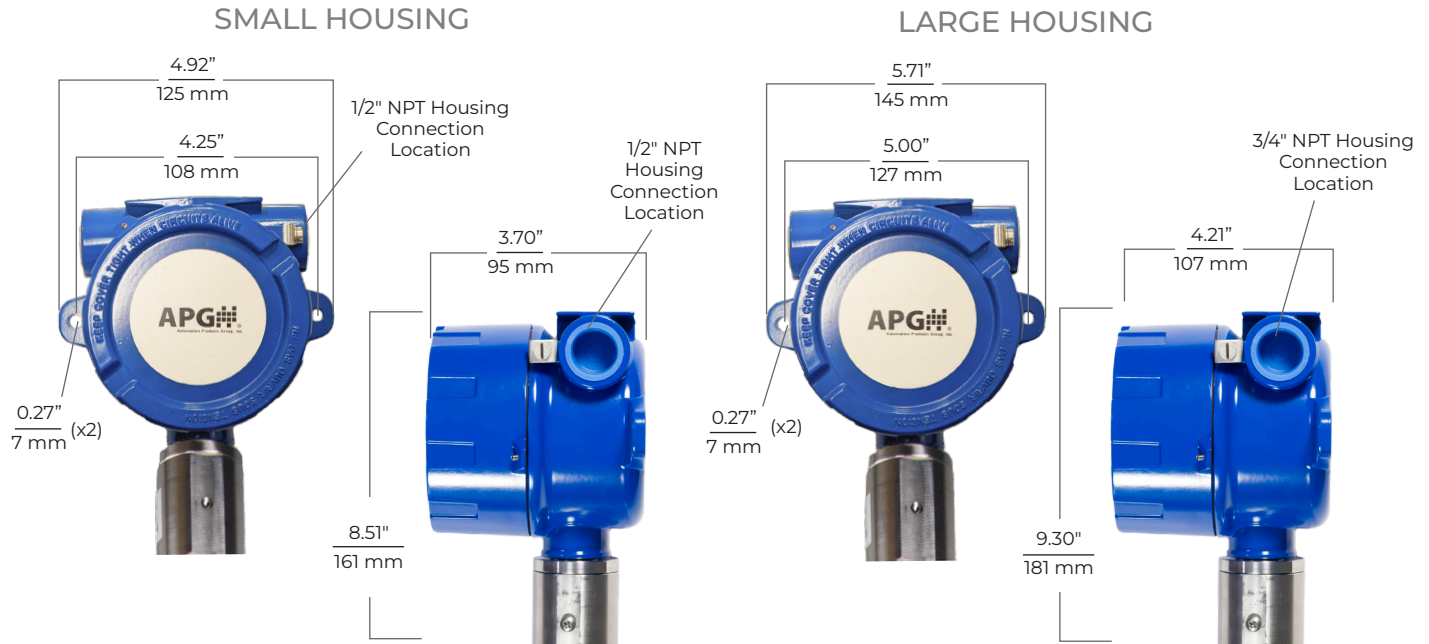
The MPI Series Intrinsically Safe Magnetostrictive Level Sensor provides highly accurate and repeatable level readings in a wide variety of liquid level measurement applications. The MPI-R's large, buoyant, and robust floats allows for use in harsh applications where fouling or buildup might otherwise be of concern.

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) outputs
- Low power
- Rugged and reliable, lengths up to 31.5 feet (9.6 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-R SPECIFICATIONS



PERFORMANCE

- Resolution:
 - Modbus: 0.04 in. (1 mm)
- Distance Accuracy: ± 0.04 in. (± 1 mm)
- Temperature Accuracy: $\pm 1^\circ\text{C}$

CONNECTIVITY

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

ENVIRONMENTAL

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

PHYSICAL

- Housing: Cast aluminum, epoxy coated
- Stem: 1.0 in. ϕ 316L SS
- Stem Length: 4–31.5 ft. (1.22–9.60 m)

PROGRAMMING

- RS-485:
 - APG Modbus Scout (SCT-1)* — Modbus to Bluetooth® adapter
 - APG Settler & Explorer* — Online control and datalogging

*Optional

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)

CERTIFICATION

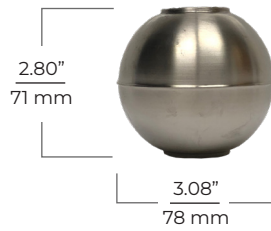
- NEMA 4X, IP65
- cCSAus Certificate CSA19CA70219727:
 - 8–24 VDC, $I_{\text{max}}=280$ mA
 - Class I, Division 1, Groups C, D T4;
 - Class I, Zone 0; AEx ia IIB T4 Ga; Ex ia IIB T4 Ga, IP65
 - $T_a=-40^\circ$ to 85°C
- ATEX Certificate Sira 19ATEX2072X:
 - II 1G
 - Ex ia IIB T4 Ga
 - $T_a=-40^\circ$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

MPI-R FLOATS

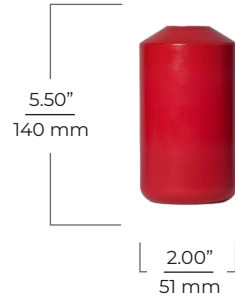
FLOATS W, X



FLOATS S, T



FLOAT L, M



FLOAT A3



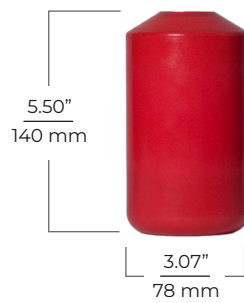
FLOAT I, J



FLOAT U, V



FLOAT Y, Z



MODEL CONFIGURATION OPTIONS

MODEL NUMBER: MPI - $\frac{R}{A}$ - $\frac{5}{B}$ - $\frac{\quad}{C}$ - $\frac{\quad}{D}$ - $\frac{\quad}{E}$ - $\frac{\quad}{F}$ - $\frac{\quad}{G}$ - $\frac{\quad}{H}$ - $\frac{B}{I}$ - $\frac{\quad}{J}$ - $\frac{\quad}{K}$ - $\frac{1}{L}$ - $\frac{\quad}{M}$ - $\frac{\quad}{N}$

A. Stem Type

- R 1 in. diameter, rigid

B. Output

- 5 Modbus RTU, w/ 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)

- N None
- J 5h x 3d in. Oval Titanium (0.60 SG)
- M 5.5h x 2d in. Red Polyurethane (0.57 SG)
- T 3 in. Round 316L SS (0.60 SG)
- V 6h x 3d in. Oval 316L SS (0.58 SG)
- X 5 in. Round 316L SS (0.52 SG)
- Z 5.5h x 3d in. Red Polyurethane (0.65 SG)
- I 5h x 3d in. Oval Titanium (0.94 SG)
- L 5.5h x 2d in. Blue Polyurethane (0.94 SG)
- S 3 in. Round 316L SS (0.94 SG)
- U 6h x 3d in. Oval 316L SS (0.94 SG)
- W 5 in. Round 316L SS (0.92 SG)
- Y 5.5h x 3d in. Blue Polyurethane (0.94 SG)
- A3 4d x 8.6h in. Cylinder Red Polyurethane (0.65 SG)

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. 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.

***Note:** This option is standard

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 configurations.

MODEL CONFIGURATION OPTIONS

MODEL NUMBER: MPI - $\frac{R}{A}$ - $\frac{5}{B}$ - $\frac{\quad}{C}$ - $\frac{\quad}{D}$ - $\frac{\quad}{E}$ - $\frac{\quad}{F}$ - $\frac{\quad}{G}$ - $\frac{\quad}{H}$ - $\frac{B}{I}$ - $\frac{\quad}{J}$ - $\frac{\quad}{K}$ - $\frac{\quad}{L}$ - $\frac{1}{M}$ - $\frac{\quad}{N}$

L. Housing Connection

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

M. End Plug

- 1 Flat End

N. Float Stop

- A1 1 Piece with Set Screw, Bottom Only (for slide connection only)
- A2 1 Piece with Set Screws, Top and Bottom (for weld connection only)
- F1 2 Piece Clamp, Bottom Only (for slide connection only)
- F2 2 Piece Clamp, Top and Bottom (for weld connection only)

***Note:** This option is standard

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ACCESSORIES

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 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.

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/.



MODBUS SCOUT (SCT-1)

Effortless Modbus to Bluetooth® Adapter

Streamline field diagnostics with this portable and user-friendly RS485 Modbus communication tool. APG's Modbus Scout allows users to connect to their Modbus sensor in the field via an easy-to-use app or a USB port. Unlock the ability to configure, communicate with, and broadcast simple in-range readings with your Modbus sensor.

Make your setup easy and save time with APG's Modbus Scout. Get started today at apgsensors.com/product/modbus-scout.

OTHER COMMON ACCESSORIES

Please order separately, by part number.

Description	Part Number
Programming Module	
MDI (See MDI Datasheet for Options)	124119-10xx

Note: Accessories may not carry hazardous area certifications. Please refer to the corresponding datasheets for detailed information on accessory specifications. All datasheets can be found at apgsensors.com/resources/datasheets.