

Explosion Proof and Non-Incendive Magnetostrictive Level Sensors Series: MPX



The MPX Series Magnetostrictive Level sensor provides highly accurate and repeatable level readings in a wide variety of liquid level measurement applications. The MPX-R's large, buoyant, and robust float allows it to be used in harsh applications where fouling or buildup might otherwise be of concern. The MPX-E's lighter weight design allows it to be used in applications where space is limited. The MPX-E Chemical has a chemical resistant coating, allowing for use in corrosive, acidic, and marine environments. And the MPX-F's flexible stainless steel stem allows for installation in tall tanks without needing a crane.

Features

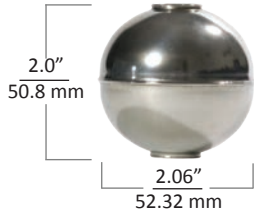
- Class 1 Division 1 Groups C & D, Class 1 Zone 1, Class 1 Zone 2
- Highly accurate and repeatable readings
- 4-20 mA, RS-485 (Modbus RTU) output
- Rugged and reliable, lengths up to 32 feet (9.75 m)
- Dual level (interface) measurement
- Tank volume/level, strapping table



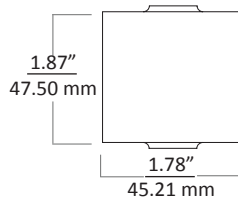
MPX-E Specifications

MPX-E Floats

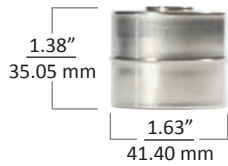
Floats A, B



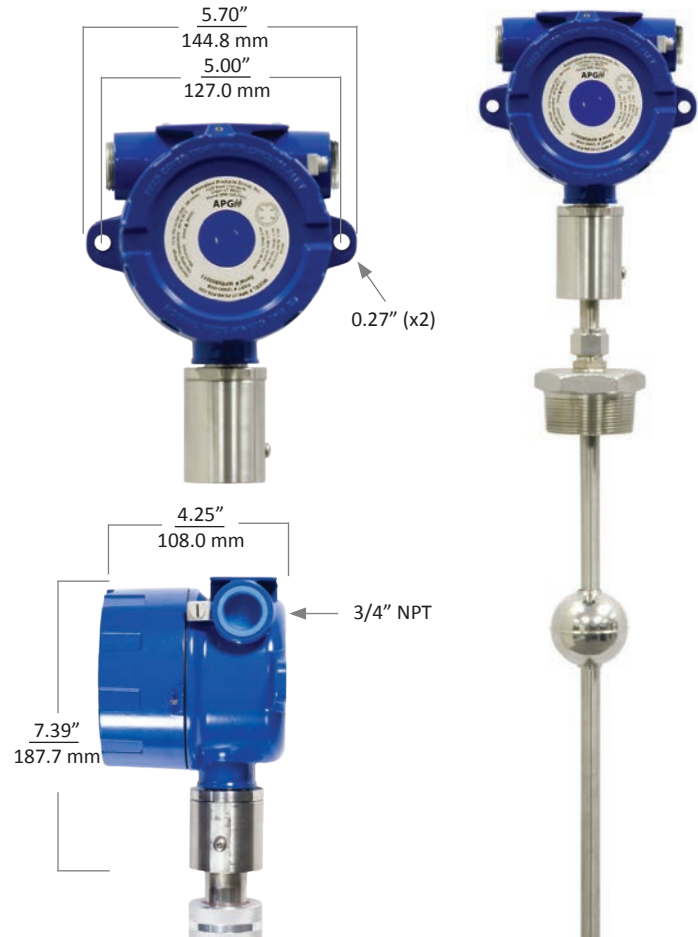
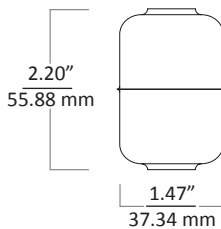
Float E



Floats C, D



Float F



Performance

- Resolution:
 - 4-20 mA: 14 bit DAC
 - Modbus: 0.04 in. (1mm)
- Accuracy: $\pm 0.05\%$ of full scale

Programming

- RS-485: optional RST-6001 USB to RS-485 converter
- 4-20 mA: factory set or optional RST-4100 programming module.

Environmental

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

Physical

- Housing: Cast aluminium, epoxy coated
- Stem: 0.5" \varnothing 316L SS
- Stem Length: 1 - 12.75 ft. (0.3 - 3.9 m)

Electrical

- Electrical Connection: Terminal Block, 12-24 VDC
- Total current draw:
 - 4-20 mA: (single) 22 mA, (dual) 44 mA
 - Modbus (RS-485): 25 mA

Connectivity

- Output:
 - Single or dual loop-powered 4-20 mA
 - Modbus RTU (RS-485) with optional Temperature output

Certification

- NEMA 4X, IP65
- CSA:
 - Class I Division 1 Groups C & D T4 (Ta 85° C)
 - Class I Division 2 Groups C & D T4 (Ta 85° C)
 - Class I, Zone 1; AEx d IIB T4
 - Class I, Zone 2; AEx nA IIB T4
 - Ex d IIB T4
 - Ex nA IIB T4

Model Configuration Options

Model Number: MPX - E - A - B - C - D - E - F - G - H - I - J - K - L - N

A. Stem Type

- E** 0.5 in. diameter 316L SS

B. Output

- 2** Single float, 4-20 mA (loop powered, 2 wire)
- 3** Dual float, 4-20 mA (loop powered, 3 wire)
- 4** Modbus RTU, surge/lightning protection

C. Housing Type

All Housing Die-cast Aluminum, NEMA 4X, IP68, Blue

- [▲] Large Housing
- A** Small Housing
- B** Large Housing with window
- C** Small Housing with window

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)

E. Float 2 (optional)

- N** None
- B** 316L SS Round (0.92 SG)

F. Mounting Type

- F** Flat Face ANSI Flange 150#
(Sizes: 2, 2.5, 3, 4, 5, 6)
- S** Tri Clamp
(Sizes: 2, 2.5, 3)
- P** NPT Plug 150#
(Sizes: 2, 2.5, 3, 4)
- N** None
- O** Other

[▲]This option is standard

G. Mounting Size

- See Mounting Type for available sizes

H. Mounting Connection

- W** Welded (fixed)
- S** Slide with Compression Fitting (adjustable)

I. Stem Material

- B** 316L SS

J. Total Stem Length in Inches

- Min. 12 in. - Max. 153 in.

K. End Plug Options

- [▲] 0.5 in. Stem, Standard
- 1** 0.5 in. Stem, Keyhole for Cotter Pin

L. Float Stop Options

- [▲] 0.5 in. Stem, 316L SS, 1 piece, 0.75 in. OD
- A** 0.5 in. Stem, 316L SS, 1 piece, 1.5 in. OD

N. Optional Temperature Sensor

MPX-E4

- T** RTD in stem, with location in inches from bottom of probe (default is 6")

N. 4-20 Output Set Points

MPX-E2/E3

- A** 4mA set point location, in inches from bottom of probe
- B** 20mA set point location, in inches from top of probe

MPX Accessories

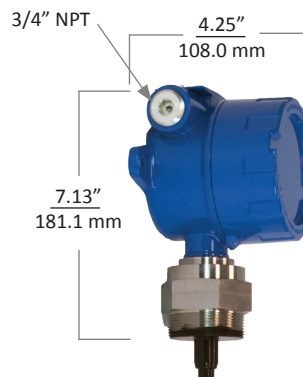
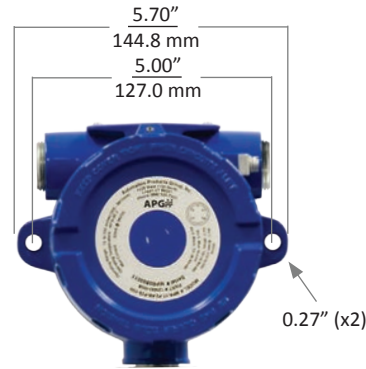
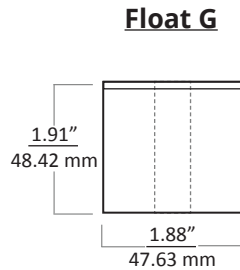
Please order separately, by part number.

Description	Part Number
Programming Module	
RST-6001 (Modbus: MPX-x4)	125734
RST-4100 (4-20mA: MPX-x2, MPX-x3)	125759
*sold with 6 ft USB cable	



MPX-E Chemical Specifications

MPX-E Chemical Float



Performance

- Resolution:
 - 4-20 mA: 14 bit DAC
 - Modbus: 0.04 in. (1mm)
- Accuracy: $\pm 0.05\%$ of full scale

Programming

- RS-485: optional RST-6001 USB to RS-485 converter
- 4-20 mA: factory set or optional RST-4100 programming module.

Environmental

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

Physical

- Housing: Cast aluminium, epoxy coated
- Stem: 0.5" \varnothing 316L SS with chemical resistant coating
- Stem Length: 1 - 12.75 ft. (0.3 - 3.9 m)
- Float: 1-7/8" \varnothing Kynar, 0.66 SG

Electrical

- Electrical Connection: Terminal Block, 12-24 VDC
- Total current draw:
 - 4-20 mA: (single) 22 mA
 - Modbus (RS-485): 25 mA

Connectivity

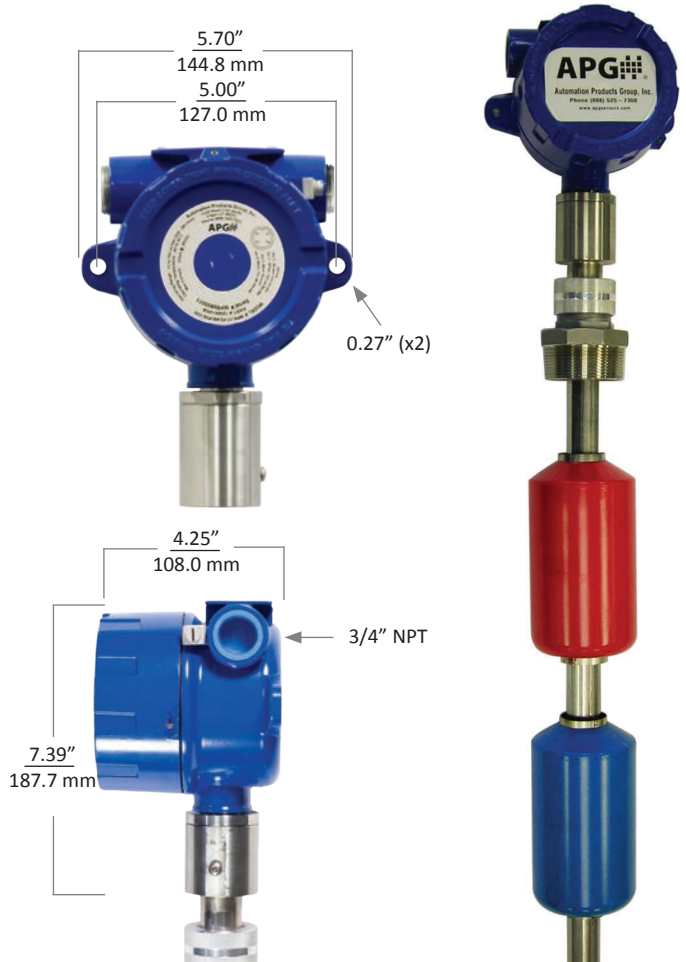
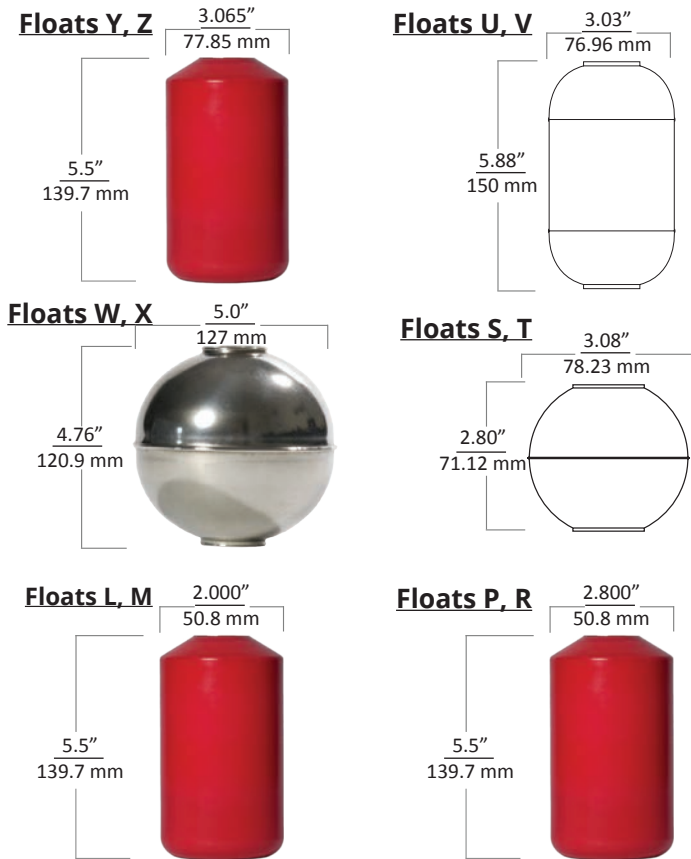
- Output:
 - Loop-powered 4-20 mA
 - Modbus RTU (RS-485) with optional Temperature output

Certification

- NEMA 4X, IP65
- CSA:
 - Class I Division 1 Groups C & D T4 (Ta 85° C)
 - Class I Division 2 Groups C & D T4 (Ta 85° C)
 - Class I, Zone 1; AEx d IIB T4
 - Class I, Zone 2; AEx nA IIB T4
 - Ex d IIB T4
 - Ex nA IIB T4

MPX-R Specifications

MPX-R Floats



Performance

- Resolution:
 4-20 mA: 14 bit DAC
 Modbus: 0.04 in. (1mm)
- Accuracy: $\pm 0.05\%$ of full scale

Programming

- RS-485: optional RST-6001 USB to RS-485 converter
- 4-20 mA: factory set or optional RST-4100 programming module.

Environmental

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

Physical

- Housing: Cast aluminium, epoxy coated
- Stem: 1.0" \varnothing 316L SS
- Stem Length: 4 - 31.5 ft. (1.22 - 9.60 m)
- Float Sleeve (Floats P & R only):
 .035" thick Titanium 2

Electrical

- Electrical Connection: Terminal Block, 12-24 VDC
- Total current draw:
 4-20 mA: (single) 22 mA, (dual) 44 mA
 Modbus (RS-485): 28 mA

Connectivity

- Output:
 Single or dual loop-powered 4-20 mA
 Modbus RTU (RS-485) with Temperature output

Certification

- NEMA 4X, IP65
- CSA:
 Class I Division 1 Groups C & D T4 (Ta 85°C)
 Class I Division 2 Groups C & D T4 (Ta 85°C)
 Class I, Zone 1; AEx d IIB T4
 Class I, Zone 2; AEx nA IIB T4
 Ex d IIB T4
 Ex nA IIB T4

Model Configuration Options

Model Number: MPX - R - A B C - D E F G H I - J K L N

A. Stem Type

- R** 1 in. diameter 316L SS

B. Output

- 2** Single float, 4-20 mA (loop powered, 2 wire)
- 3** Dual float, 4-20 mA (loop powered, 3 wire)
- 4** Modbus RTU, surge/lightning protection, stem RTD temperature sensor

Note: stem RTDs are located 6" from bottom of probe

C. Housing Type

All Housing Die-cast Aluminum, NEMA 4X, IP68, Blue

- ▲** Large Housing
- B** Large Housing with window

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)
- 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)
- R** 5.5h x 2.8d in. Red Polyurethane (0.59 SG)
- P** 5.5h x 2.8d 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)
- N** None
- O** Other

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)
- P** 5.5h x 2.8d in. Blue Polyurethane (0.94 SG)
- L** 5.5h x 2d in. Blue Polyurethane (0.94 SG)
- O** Other

▲ This option is standard

F. Mounting Type

- F** Flat Face ANSI Flange 150# (Sizes: 2, 2.5, 3, 4, 5, 6)
- S** Tri Clamp (Sizes: 2, 2.5, 3)
- P** NPT Plug 150# (Sizes: 2, 2.5, 3, 4)
- N** None
- O** Other

G. Mounting Size

- See Mounting Type for available sizes

H. Mounting Connection

- W** Welded (fixed)
- S** Slide with Compression Fitting (adjustable)

I. Stem Material

- B** 316L SS

J. Total Stem Length in Inches

- Min. 48 in. - Max. 378 in.

K. End Plug Options

- ▲** 1 in. Stem, Standard
- 2** 1 in. Stem, Keyhole for Cotter Pin
- 3** 1 in. Stem, 3/8-16 x .6" L Threads

L. Float Stop Options

- ▲** 1 in. Stem, 316L SS, 1 piece, 1.5 in. OD
- C** 1 in. Stem, 316L SS, 2 piece, 1.75 in. OD
- D** 1 in. Stem, Titanium 2, 1 piece, 1.5 in. OD

N. 4-20 Output Set Points

MPX-R2/R3

- A** 4mA set point location, in inches from bottom of probe
- B** 20mA set point location, in inches from top of probe

MPX Accessories

Please order separately, by part number.

Description	Part Number
Programming Module	
RST-6001 (Modbus: MPX-x4)	125734
RST-4100 (4-20mA: MPX-x2, MPX-x3)	125759
*sold with 6 ft USB cable	



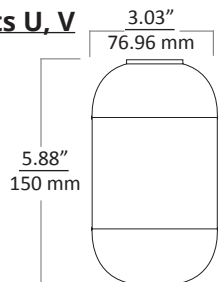
MPX-F Specifications

MPX-F Floats

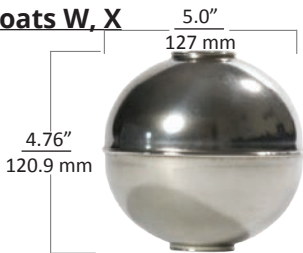
Floats Y, Z



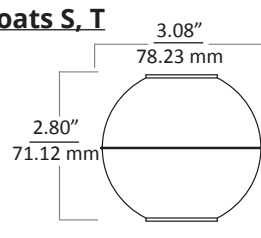
Floats U, V



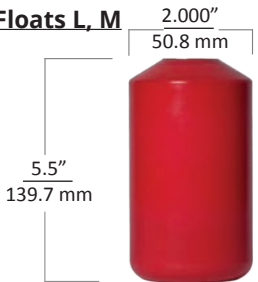
Floats W, X



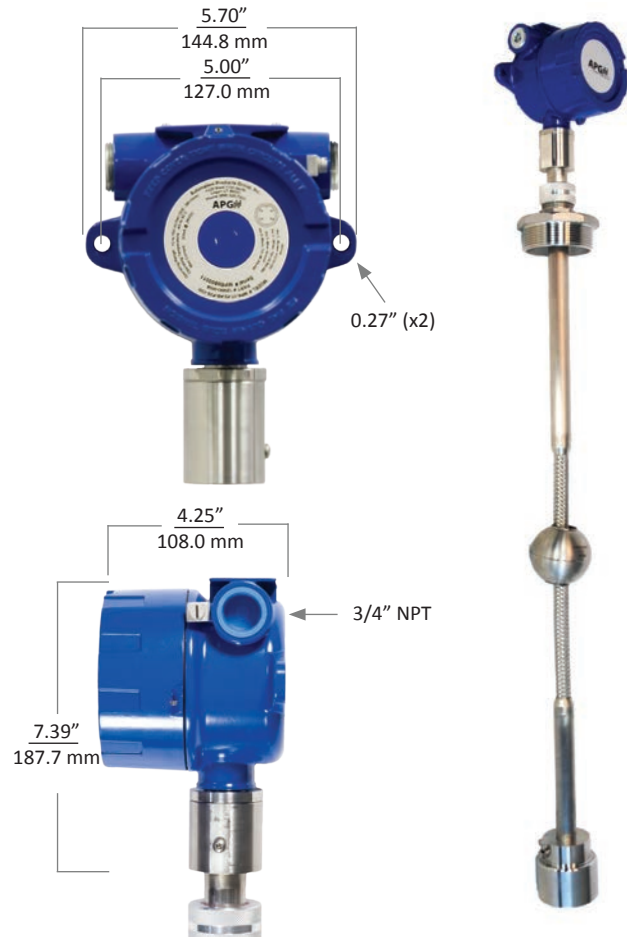
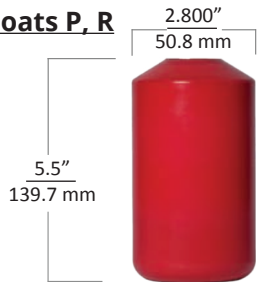
Floats S, T



Floats L, M



Floats P, R



Performance

- Resolution:
 - 4-20 mA: 14 bit DAC
 - Modbus: 0.04 in. (1mm)
- Accuracy: $\pm 0.05\%$ of full scale

Programming

- RS-485: optional RST-6001 USB to RS-485 converter
- 4-20 mA: factory set or optional RST-4100 programming module.

Environmental

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

Physical

- Housing: Cast aluminium, epoxy coated
- Stem: $7/8"$ \varnothing Flexible Tubing with Braid, 316L SS
- Stem Length: 10 - 32 ft. (3.05 - 9.75 m)
- Float Sleeve (Floats P & R only):
 - .035" thick Titanium 2

Electrical

- Electrical Connection: Terminal Block, 12-24 VDC
- Total current draw:
 - 4-20 mA: (single) 22 mA, (dual) 44 mA
 - Modbus (RS-485): 28 mA

Connectivity

- Output:
 - Single or dual loop-powered 4-20 mA
 - Modbus RTU (RS-485) with Temperature output

Certification

- NEMA 4X, IP65
- CSA:
 - Class I Division 2 Groups C & D T4 (Ta 85° C)
 - Class I, Zone 2; AEx nA IIB T4
 - Ex nA IIB T4

Model Configuration Options

Model Number: MPX - F - A B C - D E - F G H I - J - K L M - N

A. Stem Type

- F** 7/8 in. diameter Flexible Tubing with Braid, 316L SS

B. Output

- 2** Single float, 4-20 mA (loop powered, 2 wire)
- 3** Dual float, 4-20 mA (loop powered, 3 wire)
- 4** Modbus RTU, surge/lightning protection, stem RTD temperature sensor

Note: stem RTDs are located 6" from bottom of probe

C. Housing Type

All Housing Die-cast Aluminum, NEMA 4X, IP68, Blue

- ▲ Large Housing
- B** Large Housing with window

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)
- 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)
- R** 5.5h x 2.8d in. Red Polyurethane (0.59 SG)
- P** 5.5h x 2.8d 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)
- N** None
- O** Other

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)
- P** 5.5h x 2.8d in. Blue Polyurethane (0.94 SG)
- L** 5.5h x 2d in. Blue Polyurethane (0.94 SG)
- O** Other

F. Mounting Type

- F** Flat Face ANSI Flange 150# (Sizes: 2, 2.5, 3, 4, 5, 6)
- S** Tri Clamp (Sizes: 2, 2.5, 3)
- P** NPT Plug 150# (Sizes: 2, 2.5, 3, 4)
- N** None
- O** Other

G. Mounting Size

- See Mounting Type for available sizes

H. Mounting Connection

- W** Welded (fixed)
- S** Slide with Compression Fitting (adjustable)

I. Stem Material

- B** 316L SS

J. Total Stem Length in Inches

- Min. 120 in. - Max. 384 in.

K. End Plug Options

- ▲ 1 in. Stem, Keyhole Cotter Pin
- 3** 1 in. Stem, 3/8-16 x .6" L Threads

L. Float Stop Options

- ▲ 1 in. Stem, 316L SS, 1 piece, 1.5 in. OD
- C** 1 in. Stem, 316L SS, 2 piece, 1.75 in. OD
- D** 1 in. Stem, Titanium 2, 1 piece, 1.5 in. OD

M. Weights

- W1** 5lb weight, Standard for MPX-F 12 ft or shorter
- W2** 10lb weight, Standard for MPX-F longer than 12 ft

N. Temperature Sensor Options

MPX-F4

- T** Specify location of stem RTD in inches from bottom of probe (6" is standard location)
- 1T** Digital Temperature Sensor A (no RTD) and location from bottom of probe in inches
- 2T** Digital Temperature Sensors A (no RTD), B and locations from bottom of probe in inches
- 3T** Digital Temperature Sensors A (no RTD), B, C and locations from bottom of probe in inches
- 4T** Digital Temperature Sensors A (no RTD), B, C, D and locations from bottom of probe in inches
- 5T** Digital Temperature Sensors A (no RTD), B, C, D, E and locations from bottom of probe in inches

N. 4-20 Output Set Points

MPX-F2/F3

- A** 4mA set point location, in inches from bottom of probe
- B** 20mA set point location, in inches from top of probe

▲ 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

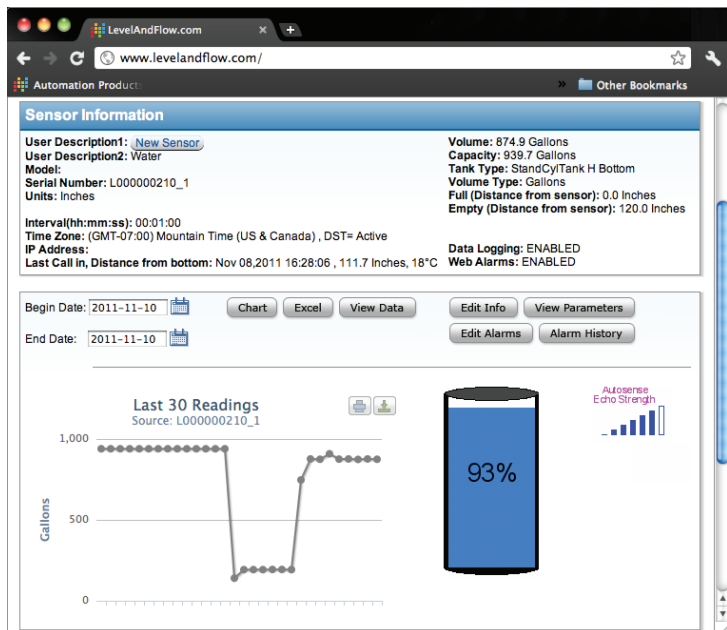
Access sensor data online through our secure portal at levelandflow.com. If the Internet is accessible, so is your information.

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.