

Level Plus®

Magnetostrictive Liquid-Level Transmitters
with Temposonics Technology

Liquid-Level Transmitter Accessories Catalog

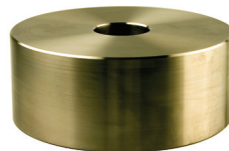


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ACCESSORIES OVERVIEW

FEATURES

- ▶ Variety of Styles and Sizes to Fit Most Applications
- ▶ Available in 316L Stainless Steel, Aluminum, Teflon®, Hastelloy® C and Nitrophyll®
- ▶ Custom Weighting Available

APPLICATIONS

- ▶ Custody Transfer
- ▶ Inventory Control
- ▶ Bulk Storage
- ▶ Sanitary Process Control

MARKETS

- ▶ Petroleum and Petrochemical
- ▶ LPG Terminals
- ▶ Biotech and Pharmaceutical
- ▶ Food and Beverage
- ▶ Waste and Wastewater



MTS Offers a Variety of Liquid-Level Product Accessories

MTS Sensors offers a variety of floats to meet your application needs. Our floats come in a variety of sizes from less than 38 mm (1.5 in.) up to 178 mm (7 in.) in diameter. Float materials are available in stainless steel, Teflon®, Aluminum, Hastelloy® C and Nitrophyll®.

Product viscosity, specific gravity, and temperature can vary widely in a process or tank gauging application. Because of these variables and others, such as tank pressure and corrosiveness, no one float can meet all requirements. Therefore, a variety of float styles are available and we will assist you in choosing the one that best meets your requirements.

When choosing a float for your application, MTS recommends you choose one that has a specific gravity of at least 0.05 less than that of the measured liquid. For interface measurement, a minimum of 0.05 specific gravity differential is recommended between upper and lower liquids.


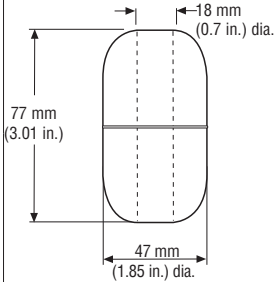

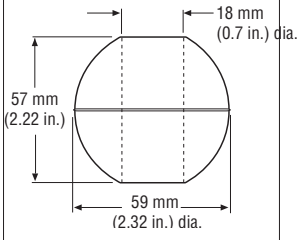

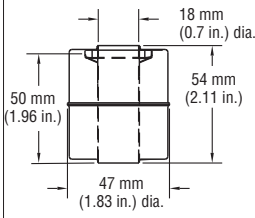
MTS Sensors also offers a variety of meters, housings, and calibration equipment as accessories to our transmitter range. Meters are available for analog, DDA, and Modbus outputs.

For more information, please contact the MTS Sensors' applications department or go to www.mtssensors.com for more information.


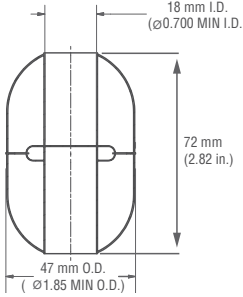

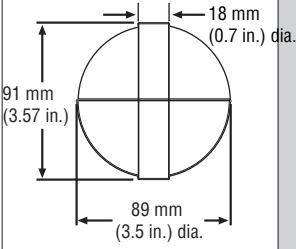
STANDARD FLOATS

General Notes:


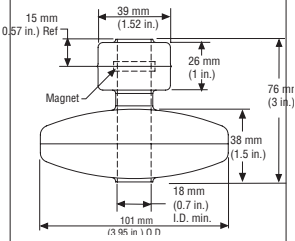
1. Be sure that the float specific gravity is at least 0.05 less than that of the measured liquid as a safety margin at ambient temperature.
2. For interface measurement: A minimum of 0.05 specific gravity differential is required between the upper and lower liquids.
3. When the magnet is not shown, the magnet is positioned at the center line of float.
4. Drawings contained in this document are for reference only. Contact the factory for engineering drawings.
5. *Standard float that can be expedited

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
 	29.3 bar (425 psi)	149 °C (300 °F)	No	0.67	SS	251981-2*
0.71				Hastelloy®-C	251981-4	
 	22.4 bar (325 psi)	149 °C (300 °F)	No	0.48	SS	251387-2
 	4 bar (60 psi)	149 °C (300 °F)	Yes	0.6	SS	201605-2*


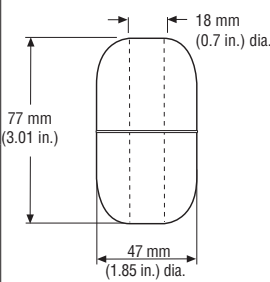

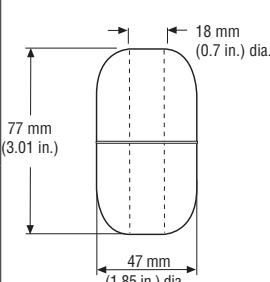

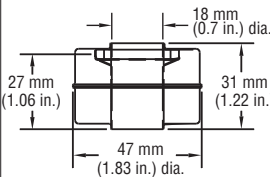
STANDARD FLOATS

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
 	69 bar (1000 psi)	149 °C (300 °F)	No	0.65	SS	254526-2*
 	22.4 bar (325 psi)	149 °C (300 °F)	No	0.45	SS	251469-2

LOW-LIFTOFF FLOATS

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
 	8.6 bar (125 psi)	149 °C (300 °F)	Yes	0.65	SS	252228-4


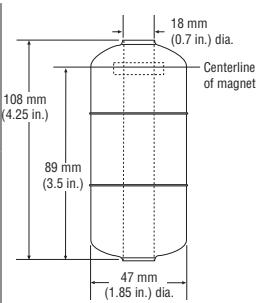
STANDARD INTERFACE FLOATS

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
 	29.3 bar (425 psi)	149 °C (300 °F)	No	0.93	SS	251982-2*
					Hastelloy®-C	251982-4
 	29.3 bar (425 psi)	149 °C (300 °F)	No	1.06	SS	251983-2*
					Hastelloy®-C	251983-4
 	4 bar (60 psi)	149 °C (300 °F)	Yes	0.93	SS	201606-2*

SANITARY FLOATS


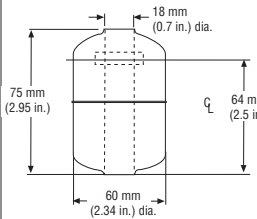
General Notes (for sanitary applications):

1. Be sure that the float specific gravity is at least 0.05 less than that of the measured liquid as a safety margin at ambient temperature.
2. For interface measurement: A minimum of 0.05 specific gravity differential is required between the upper and lower liquids.
3. Sanitary polish is available for stainless-steel floats up to 200 Grit/Ra 25.
4. Electropolish is available for stainless-steel floats up to 240 Grit/Ra 15.
5. When the magnet is not shown, the magnet is positioned at the center line of float.
6. Drawings contained in this document are for reference only. Contact the factory for engineering drawings.
7. *Standard float that can be expedited.

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
 	10.3 bar (150 psi)	149 °C (300 °F)	Yes	0.66	SS 200 Grit/ Ra 25 µin (0.625 µm)	401513-2*
					SS 240 Grit/ Ra 15 µin (0.375 µm)	401513-4

Notes:

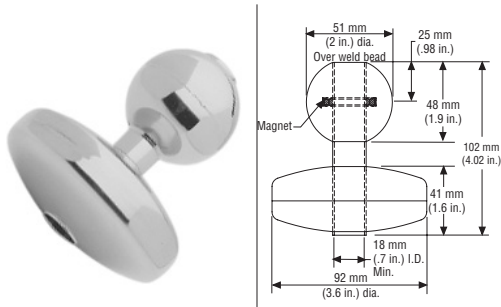
1. Float meets 3A Sanitary specifications.
2. Use this float with all Sanitary transmitter wells as other floats may enter the inactive zone when the tank is emptied.

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
 	22.4 bar (325 psi)	149 °C (300 °F)	Yes	0.63	SS 200 Grit/ Ra 25 µin (0.625 µm)	200931-6
					SS 240 Grit/ Ra 15 µin (0.375 µm)	200931-8

Notes:

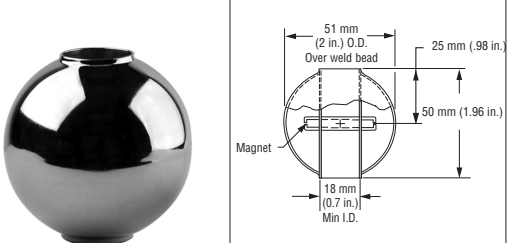
1. Float meets 3A Sanitary specifications.
2. Float may enter the inactive zone when used with 3A Sanitary transmitter wells.

SANITARY FLOATS (CONTINUED)

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
	8.6 bar (125 psi)	149 °C (300 °F)	Yes	0.48	SS 240 Grit/ Ra 15 µin (0.375 µm)	252228-2

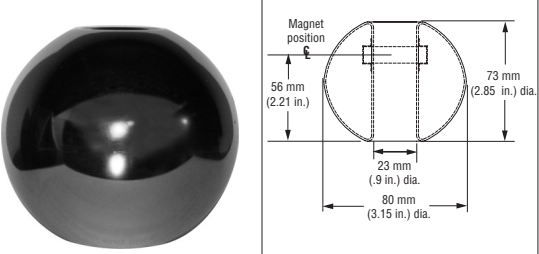
Notes:

Use this float with all Sanitary transmitter wells as other floats may enter the inactive zone when the tank is emptied.

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
	22.4 bar (325 psi)	149 °C (300 °F)	No	0.74	SS 200 Grit/ Ra 25 µin (0.625 µm)	251234-2

Notes:

1. Float meets clean-in-place and drain-in-place applications.
2. Float may enter the inactive zone. Consult factory about viability of usage.

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
	64 bar (928 psi)	149 °C (300 °F)	Yes	0.86	SS 240 Grit/ Ra 15 µin (0.375 µm)	560564-2


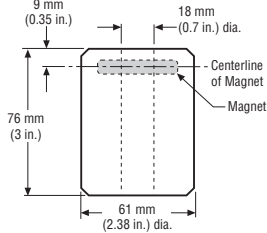

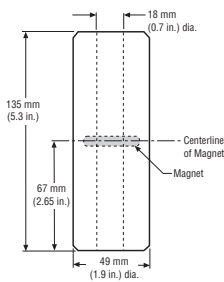

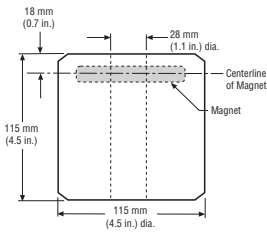
Notes:

1. Float meets 3A Sanitary specifications.
2. Float meets clean-in-place and drain-in-place applications.
3. Float may enter the inactive zone. Consult factory about viability of usage.

TEFLON FLOATS

General Notes:

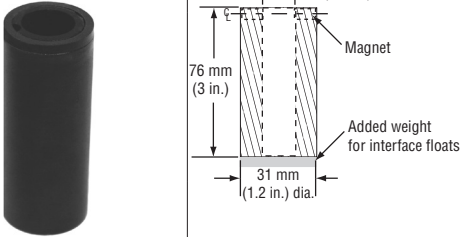
1. Be sure that the float specific gravity is at least 0.05 less than that of the measured liquid as a safety margin at ambient temperature.
2. For interface measurement: A minimum of 0.05 specific gravity differential is required between the upper and lower liquids.
3. When the magnet is not shown, the magnet is positioned at the center line of float.
4. Drawings contained in this document are for reference only. Contact the factory for engineering drawings.
5. *Floats 251939, 251119, and 251120 should not be used in hazardous areas. Please consult Brief Operation Manual for Safe Use for further details.

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
 	1.7 bar (25 psi)	38 °C (100 °F)	Yes	0.86	Teflon	201109-2
				0.93	Teflon	251115-2
				1.06	Teflon	251116-2
 	1.7 bar (25 psi)	38 °C (100 °F)	No	0.86	Teflon	251939
 	1.7 bar (25 psi)	38 °C (100 °F)	Yes	0.93	Teflon	251119
				1.06	Teflon	251120

NITROPHYL® FLOATS

General Notes:


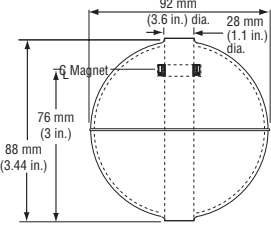

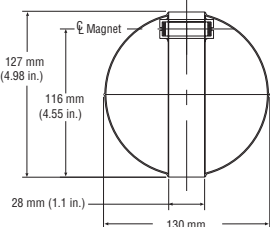
1. Be sure that the float specific gravity is at least 0.05 less than that of the measured liquid as a safety margin at ambient temperature.
2. For interface measurement: A minimum of 0.05 specific gravity differential is required between the upper and lower liquids.
3. When the magnet is not shown, the magnet is positioned at the center line of float.
4. Drawings contained in this document are for reference only. Contact the factory for engineering drawings.

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
	17.2 bar (250 psi)	104 °C (220 °F)	Yes	0.45	Nitrophyl®	201643-2
				0.80-0.86	Nitrophyl®	201649-2
				0.91-0.96	Nitrophyl®	201650-2


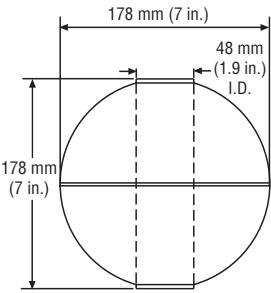

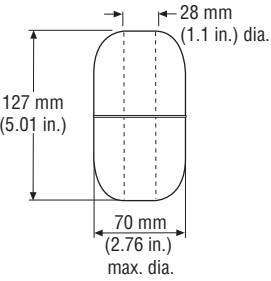
LONG-GAUGE FLOATS

General Notes:

1. Be sure that the float specific gravity is at least 0.05 less than that of the measured liquid as a safety margin at ambient temperature.
2. For interface measurement: A minimum of 0.05 specific gravity differential is required between the upper and lower liquids.
3. When the magnet is not shown, the magnet is positioned at the center line of float.
4. Drawings contained in this document are for reference only. Contact the factory for engineering drawings.
5. *Standard float that can be expedited.

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
 	29.3 bar (425 psi)	149 °C (300 °F)	Yes	0.54	SS	252961-2*
				0.65	Hastelloy®-C	252961-4
				0.93	SS	252962-2
				0.93	Hastelloy®-C	252962-4
				1.06	SS	252963-2
				1.06	Hastelloy®-C	252963-4
 	37.9 bar (550 psi)	149 °C (300 °F)	Yes	0.44	SS	201248-2
				0.52	Hastelloy®-C	201248-4
				0.93	SS	252959-2
				0.93	Hastelloy®-C	252959-4
				1.06	SS	252960-2
				1.06	Hastelloy®-C	252960-4

LONG-GAUGE FLOATS (CONTINUED)

Float and dimension reference	Pressure	Temp.	Magnet offset	Specific gravity	Material	Part number
 	17.2 bar (250 psi)	149 °C (300 °F)	No	0.44	SS	251426-2
				0.47	Hastelloy®-C*	251426-4
				0.93	SS	251427-2
				0.93	Hastelloy®-C*	251427-4
				1.06	SS	251428-2
 	22.4 bar (325 psi)	149 °C (300 °F)	No	0.66	SS	201232-2*
				0.70	Hastelloy®-C	201232-4
				0.93	SS	201233-2

* Internal Diameter for these floats is 34.8 mm (1.37 in.).

PROCESS METERS AND ENCLOSURES



Analog Process Meters

	Description	Part number
	<p>LED Display Universal Analog Process Meter* 6 Digit LED display Input: Analog 4-20 mA Output: None 110 VAC Input Power 32 point linearization Includes 24 Vdc transmitter supply Material: Standard 1/8 in. DIN, high impact plastic, NEMA Type 4X front panel</p>	380071
	<p>LED Display Universal Analog Process Meter (2 Relays)* 6 Digit LED display Input: Analog 4-20 mA Output: 2 relays 110 VAC Input Power 32 point linearization Includes 24 Vdc transmitter supply Material: Standard 1/8 in. DIN, high impact plastic, NEMA Type 4X front panel</p>	380072
	<p>LED Display Universal Analog Process Meter (4 Relays)* 6 Digit LED display Input: Analog 4-20 mA Output: 4 relays 110 VAC Input Power 32 point linearization Includes 24 Vdc transmitter supply Material: Standard 1/8 in. DIN, high impact plastic, NEMA Type 4X front panel</p>	380073
	<p>LED Display Universal Analog Process Meter (2 Relays, 4-20 mA)* 6 Digit LED display Input: Analog 4-20 mA Output: 4-20 mA and 2 relays 110 VAC Input Power 32 point linearization Includes 24 Vdc transmitter supply Material: Standard 1/8 in. DIN, high impact plastic, NEMA Type 4X front panel</p>	380095



* Contact MTS for more options including explosion proof housings.

PROCESS METERS AND ENCLOSURES (CONTINUED)

Analog Process Meters

	Description	Part number
	<p>XP Loop Powered Analog Meter Loop Powered on 4-20 mA output Displays in Percentage Only Embedded in XP Housing XP: Class I, II, III; Division 1; Groups B-G IS: Class I, II, III; Division 1; Groups A-G</p>	<p>380062</p>
	<p>Loop Powered Analog Meter Loop Powered on 4-20 mA output Displays loop current, engineering units, and/or value Selectable on screen engineering units IP 67 / NEMA Type 4X Intrinsically Safe, backlight</p>	<p>380088</p>


Modbus Process Meters

	Description	Part number
	<p>Multivariable Modbus Process Meter Display levels in feet, inches, and 16ths of an inch Scrolling Display of Product, Interface, Temperature, or combination Input: RS485 Modbus RTU Output: 2 Form A relays and 4-20 mA 110 VAC Input Power 16 point linearization Includes 24 Vdc transmitter supply Material: Standard 1/8 in. DIN, high impact plastic, NEMA Type 4X front panel</p>	<p>380086</p>
	<p>Single Variable Modbus Process Meter* 6 Digit Display in Decimal Format Display 1 process variable without interrupting Master/Slave communication Input: RS485 Modbus RTU Output: 2 Form A relays and 4-20 mA 110 VAC Input Power 16 point linearization Includes 24 Vdc transmitter supply Material: Standard 1/8 in. DIN, high impact plastic, NEMA Type 4X front panel</p>	<p>380094</p>


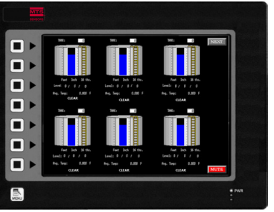
* Contact MTS for more options including explosion proof housings.

PROCESS METERS AND ENCLOSURES (CONTINUED)

Process Meter Enclosures


	Description	Part number
	<p>NEMA Enclosures†</p> <p>Single NEMA 4X</p> <p>Dual NEMA 4X</p> <p>† <i>NEMA Enclosures are available for most process meters, please contact factory for more information.</i></p>	<p>401150</p> <p>401151</p>

Modbus Terminals


	Description	Part number
	<p>LCD Modbus Terminal</p> <p>Displays up to 4 tanks (2 levels, temp, volume)</p> <p>Displays up to 8 tanks (2 levels, temp)</p> <p>Displays levels in ft., in, and 16ths in.</p> <p>Input: Up to 8 Modbus transmitters</p> <p>Output: Modbus</p> <p>Mounted in NEMA 4 box</p> <p>Class 1 Div. 2</p> <p>Includes Power Supply</p> <p>Calibrate from Screen</p>	<p>280494-X</p>
	<p>Touchscreen Modbus Terminal</p> <p>Displays up to 16 tanks (2 levels, temp, volume)</p> <p>Displays levels in ft., in, and 16ths in.</p> <p>Input: up to 16 Modbus transmitters</p> <p>Output: Modbus</p> <p>Pictorial display of tanks</p> <p>Touchscreen</p> <p>Mounted in NEMA 4 box</p> <p>Class 1 Div. 2</p> <p>Includes Power Supply</p> <p>Calibrate from Screen</p>	<p>280508-X</p>

PROGRAMMING AND HARDWARE


Programming Accessories

	Description	Part number
	<p>HT100 Hand Held Terminal MTS Transmitter with DDA output Remote setup, troubleshooting, and maintenance</p>	<p>251259</p>

Setup Software

	Description	Part number
	<p>M-Series Model MG PC setup software on CD Includes RS-485 to RS-232 adapter, part no. 380077</p> <p>M-Series Model MG PC setup software on CD</p> <p>M-Series Model MR PC setup software on CD Includes HART adapter, part no. 380068</p> <p>M-Series Model MR PC setup software on CD</p>	<p>625051</p> <p>625052</p> <p>252273-1</p> <p>252273-2</p>

Hardware

	Description	Part number
	<p>HART to USB adapter</p> <p>RS-485 to USB adapter converter</p>	<p>380068</p> <p>380114</p>
	<p>Hex Bushing 2 in. MNPT x 3/4 in. FNPT</p> <p>Hex Bushing 2 in. FNPT x 4 in. MNPT</p> <p>Hex Bushing 1 in. FNPT x 2 in. MNPT</p>	<p>561440</p> <p>561441</p> <p>561448</p>

MAGNET AND WEIGHT ASSEMBLIES

		Description	Part num-
		<p>150 lb. Pull Magnet For LDF long transmitter and M-Series transmitters. (Top ring must be removed before installation)</p>	<p>560604</p>
		<p>Standard 11 lb. Weight For M-Series transmitters</p>	<p>401059</p>
		<p>Low Liftoff 11 lb. Weight Assembly</p>	<p>402364</p>
		<p>Narrow 11 lb. Weight Use with M-Series transmitters</p>	<p>402647</p>

Document Part Number:

551103 Revision G (EN) 1/2016

MTS has a dedicated expert support team who are available to assist with your specific application needs.

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