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## Small Size – Alloys

### XM/XT-800 Series – Compact Analog Sensors

- ▶ Stainless or Brass Construction
- ▶ 1/4" Resolution
- ▶ Lengths to 144 inches (366 cm)
- ▶ OEM Configurations Available

These compact transmitters feature the rugged durability of stainless steel or brass construction. The XM-800 series provides analog output, and can be combined with GEMS Digital Meter Receiver Stations and compact Level Cubes described in this catalog. Our versatile XT-800 Series adds a choice of signal conditioning for use with GEMS digital bargraph receivers or other digital display and control equipment.

#### Approvals

XM-800 and XT-800 Series transmitters may carry the following commercial approvals:

- FM Approved, Explosion-Proof (J-Box and Stainless Steel Float required).
- UL-Recognized.

XM-800 Series transmitters only:

- CSA Certified



Lengths  
to 12 ft!



#### 1. Mounting Types

Type 1 1/2" NPT	Type 2 1-1/4" NPT	Type 3 2" NPT	Type 4 3" 150# Flange	Type 6 2-1/2" Sanitary Flange

<b>Stem Material</b>	Brass or 316 Stainless Steel	316 Stainless Steel	
<b>Mounting Material</b>	Brass or 316 Stainless Steel	Carbon Steel or 316 Stainless Steel	316 Stainless Steel
<b>Float Stop Material</b>	Brass Units: Beryllium Copper Grip Rings; Stainless Steel Units: S.S. ARMCO PH-15-7MO Grip Rings		
<b>Operating Temperature*</b> With J. Box Mounted or XM Signal Conditioners	Oil: -40°F to +230°F (-40°C to 110°C), Water to +180°F (82.2°C)—Buna N Float -40°F to +230°F (-40°C to 110°C)—Stainless Steel Float		
<b>With Stem Mounted Signal Conditioners</b>	+5°F to +160°F (-15°C to +70°C)		
<b>Operating Pressure</b>	Dependent on Float Type; See Next Page		
<b>Overall Length, Max.</b>	72" (183 cm) Tubing; 144" (366 cm) Pipe (Types 3 & 4 only)		

\* Consult factory for higher temperature ranges.



## 2. Float Types

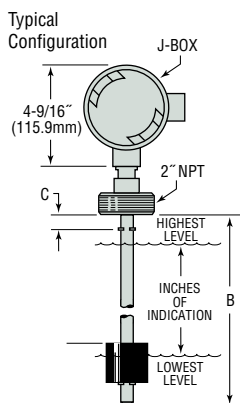
Based on the overall length required by your tank, select from two main subsets of floats below; further refine selection based on material and performance parameters.

Float Material	For Overall Lengths To 72"				For Lengths Greater Than 72" (144" Max.)	
	Buna N		Stainless Steel		Buna N	Stainless Steel
<b>Float Dimensions</b>						
<b>Compatible Mountings</b>	1, 2, 3, 4, 6	1, 3, 4	1, 3, 4, 6	1, 3, 4	3, 4	3, 4
<b>Part Number</b>	<b>164255<sup>2</sup></b>	<b>43359</b>	<b>156490</b>	<b>43590</b>	<b>69654</b>	<b>52084</b>
<b>Min. Liquid Spec. Gravity</b>	.55	.55	.70	.75	.55	.75
<b>Operating Pressure, Max.<sup>1</sup></b>	150 psi (10 bar)	150 psi (10 bar)	80 psi (6 bar)	300 psi (21 bar)	150 psi (10 bar)	300 psi (21 bar)
<b>Operating Temp., Max.</b>	Water: 180°F (82°C) Oil: 230°F (110°C)		230°F (110°C) <sup>3</sup>		Water: 180°F (82°C) Oil: 230°F (110°C)	230°F (110°C)*

Notes:

1. @ Ambient Temperature
2. Recommended for Type 2 mounting only.
3. Consult factory for higher temperature range.

## 3. To Determine Dimensions



- B: Overall Length = Inches of Indication + C + X (See Table at Right)  
 C: Distance From Bottom of Mounting to Float Stop (Customer Specified):
- 1/4" (6.4mm) Minimum
  - 1-1/4" (31.8mm) Minimum on Type 1, XT Series only.

### Calculating Length

- To find Overall Length when Inches or Indication is known:
- Inches of Indication + C\* + X = Overall Length
- To find Maximum Inches of Indication when Overall Length is known:
- Overall Length - C\* - X = Maximum Inches of Indication

\*C dimension is determined by customer.

### Float Factor – X

Float Part Number	X
<b>164255</b>	2.0" (50.8)
<b>43359</b>	2.5" (63.5)
<b>156490</b>	2.062" (52.4)
<b>43590</b>	3.437" (87.3)
<b>69654</b>	2.687" (68.3)
<b>52084</b>	3.625" (92.1)


Inch (mm)

## 4. Input/Output

For XM-800 Series, no special output designation is necessary.  
 For XT-800 Series, specify the desired signal conditioning by Part Number.  
 Additional information about GEMS signal conditioning modules is found on Page C-26.

Series	Input Voltage	Output Signal	Part Number	Electrical Termination	Compatible Mountings				
					Type 1	Type 2	Type 3	Type 4	Type 6
XM-800	10 to 30 VDC	Proportional Voltage	—	Lead Wires (3), #22 AWG, 24" (60.9 cm), PTFE Jacket	•	•	•	•	•
XT-800	8 to 24 VDC*	0-5 VDC	<b>51965</b>	Lead Wires, #22 AWG, 24" (60.9 cm), PTFE Jacket	•	•	•	•	•
	14 to 30 VDC*	0-12 VDC	<b>51970</b>		•	•	•	•	•
	8 to 24 VDC*	0-5 VDC	<b>52536</b>	Junction Box		•	•	•	•
	15 to 30 VDC*	0-12 VDC	<b>52537</b>			•	•	•	•
	10 to 40 VDC	4-20 mA	<b>52555</b>			•	•	•	•
4-20 mA		<b>112300</b> ⚡	Panel Mount with Plug-in Base	•	•	•	•	•	
	7 to 24 VDC*	4-20 mA	<b>239896</b>	Lead Wires (2), #22 AWG, 24" (60.9 cm), PTFE Jacket	•	•	•	•	•

\* Stem mounted.  
 ⚡ = Stock item

 <p><b>Photocopy This Form</b> Use one form for each product type you are selecting. <small>This form may also be completed online at <a href="http://gemssensors.com">gemssensors.com</a> for RFQ.</small></p>	This is a <input type="checkbox"/> Request for a Quote <input type="checkbox"/> Order P.O.# _____ Quantity Needed _____ Date Required ____/____/____ Shipping Method: _____ Partial Accepted: <input type="checkbox"/> Yes <input type="checkbox"/> No	Name _____ Company _____ Street _____ City _____ State ____ Zip _____ Phone (____) _____ Fax (____) _____
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## Float Type Level Transmitters – XM/XT-800 Series

### Application Environmental Conditions

This information is essential to the accurate and proper operation of your GEMS configurable sensors. Please complete fully and accurately.

- 1. Liquid Media:** \_\_\_\_\_
- 2. Pressure:** Minimum \_\_\_\_\_ psig Maximum \_\_\_\_\_ psig
- 3. Temperature:** Minimum \_\_\_\_\_ °F Maximum \_\_\_\_\_ °F
- 4. Specific Gravity:** Minimum \_\_\_\_\_ Maximum \_\_\_\_\_

- 5. Viscosity:** \_\_\_\_\_ SSU
- 6. Tank Material:** \_\_\_\_\_  
**Tank Depth:** \_\_\_\_\_
- 7. Unit is Mounted In:**  Tank Top  Tank Bottom
- 8. Moisture Protection Required?**  Yes  No

#### 1. Series:

- XM/XT-800 (1/4" Resolution)

#### 3. Materials:

- a. Stem:  
 Brass<sup>1</sup>  316 Stainless Steel
- b. Mounting:  
 Brass<sup>1</sup>  316 Stainless Steel  
 Carbon Steel (Type 4 flange only)
- c. Collar Float Stops<sup>2</sup>:  
 Brass  316 Stainless Steel

**Notes:**

1. Type 1, Type 2 and Type 3 only  
 2. Standard Float Stops supplied in PH 15-7 MO on S.S. units and Beryllium Copper on Brass units. Brass and S.S. Float Stops with Brass and S.S. units only, respectively.

#### 2. Mounting Type:

- Type 1 (1/2" NPT)  Type 2 (1-1/4" NPT)  Type 3 (2" NPT)  
 Type 4 (3" 150# flange)  Type 6 (2-1/2" sanitary flange)

#### 4. Float Type<sup>1</sup>:

Match to Overall Length of Transmitter Stem

To 72 Inches	Over 72 Inches
<input type="checkbox"/> 164255 – Buna N <sup>2</sup>	<input type="checkbox"/> 69654 – Buna N
<input type="checkbox"/> 43359 – Buna N	<input type="checkbox"/> 52084 – Stainless Steel
<input type="checkbox"/> 156490 – Stainless Steel	
<input type="checkbox"/> 43590 – Stainless Steel	

**Notes:**

1. Stainless Steel float required for FM Approved Explosion Proof units.  
 2. Recommended for Type 2 mounting.

#### 5. Dimensions:

Overall Length (complete one line only):

Float Selected	Indicating Length (Half Inches)	+	"C" Dimension ±1/16" (1.8 mm)	+	Float Factor X Inch (mm)	=	Overall Length
43359		+		+	2.5 (63.5)	=	
43590		+		+	3.44 (87.3)	=	
52084		+		+	3.63 (92.1)	=	
69654		+		+	2.69 (68.3)	=	
156490		+		+	2.06 (52.3)	=	
164255		+		+	2 (50.8)	=	

**Notes:**

1. Indicating Length: 1/2" increments  
 2. Minimum C Dimension = 1/4"; or 1/2" on units greater than 72" in length.

#### 7. Options:

- Explosion Proof J-Box\*  NEMA 4 J-Box  
 \* Required for FM Approved Explosion Proof units

Please contact Gems for any configuration or special requirements not covered on this form. **800-378-1600**

Quote: \$ \_\_\_\_\_ Date Quoted: \_\_\_\_/\_\_\_\_/\_\_\_\_

#### 6. Input/Output:

- a. Optional 24 VDC Power Supply:  
 115 VAC input  230 VAC input
- b. Signal Conditioners (XT-800 Series Only)  
 Output Shown in Parenthesis:  
 51965 (0-5 VDC – stem)  
 51970 (0-12 VDC – stem)  
 52536 (0-5 VDC – J-box)  
 52537 (0-12 VDC – J-box)  
 52555 (4-20 mA – J-box)  
 120650 (0-5 VDC – panel mount)  
 149600 (0-10 VDC – panel mount)  
 112300 (4-20 mA – panel mount)  
 239896 (4-20 mA – stem)

