

Визуальные индикаторы уровня и указатели уровня в резервуарах

Технические характеристики

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ORDER IT!

Ordering is Easy! See Page D-9.
Easy online ordering too!

Standard Alloy Versions – Standard Size

- ▶ Temperatures to 750°F (399°C)
- ▶ Pressures to 700 psi (48 bar)

Rugged, welded construction makes these 2-1/2" (63.5 mm) diameter design, alloy SureSite Indicators dependable over a long service life indoors and out.

1. Mounting Configuration Types

To choose the best configuration for your application, focus on the process connections (connections where the liquid typically enters/leaves the SureSite).

	Type AA	Type BA	Type CA	Type DA
	Top and Bottom Process Connections	Side and Side Process Connections	Top and Side Process Connections	Side and Bottom Process Connections
L = Length of Visual Indication				
Typical Lengths*	C to C = L + 10-1/4" (260.4 mm)	C to C = L	C to C = L + 3-3/4" (95.2 mm)	C to C = L + 6-1/2" (165.1 mm)
Flag Material	Plastic (300°F / 148.9°C) or Aluminum (750°F / 399°C)			
Length of Indication (Uninterrupted)	240" (610 cm)			
Minimum Specific Gravity	0.39			

* Dimensions vary due to connections, material and specific gravity.

Note: Additional materials, floats, connections and manufacturing techniques are available to extend lengths and operational capabilities. Please contact GEMS Sensors if the parameters above do not meet your requirements.

2. Material

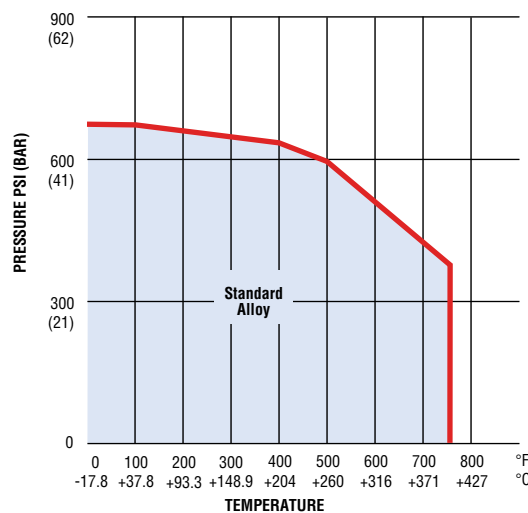
Housing and Float: 316 Stainless Steel

Pressure/Temperature performance parameters for alloy SureSite versions are specified in the chart at right. Please consult the factory with temperature/pressure requirements that fall outside the parameters shown here.

= Stock Material (Best economy and delivery).

Materials		Code
Housing	Float	
316L Stainless Steel	316L Stainless Steel	2
Carpenter 20	Hastelloy C276	3*
Hastelloy C276	Hastelloy C276	4*

* Consult factory for pressure/temperature capabilities.












Note: SureSite Indicators are available for temperatures as low as -200°F (-129°C).

















Type BA Shown










3. Connection Codes

(See complete descriptions below)

TOP		T								
			Blind		NPT				Flange	
			Fixed	Removable	Fixed		Removable		Fixed	Removable
										
			T1	T2	T3	T5	T6	T8	T9	T10

SIDE		Sa				
			Blind	NPT		Flange
				Male	Female	
						
			S1	S2	S3	S4

SIDE		Sb								
			Blind		NPT				Flange	
			Fixed	Removable	Fixed		Removable		Fixed	Removable
										
			B1	B2	B3	B5	B6	B8	B9	B10

BOTTOM		B								
			Blind		NPT				Flange	
			Fixed	Removable	Fixed		Removable		Fixed	Removable
										
			B1	B2	B3	B5	B6	B8	B9	B10

— Connection Codes and Materials background-shaded in this color are stocked by Gems. Select these connections where possible to obtain the most economical SureSite Indicators with a prompt 3-day delivery.

Connection Code Descriptions

Please provide all connections when completing the Order! Product Check List (located on the following page).

Note: Before selecting your connections, consider incorporating your vent and drain requirements.

T & B (Top and Bottom)

- T/B 1. Welded pipe cap
- T/B 2. Standard fixed flange/blind mating flange
- T/B 3. Welded pipe cap w/FNPT
- T/B 5. Welded pipe cap w/MNPT nipple
- T/B 6. Standard fixed flange/mating FNPT reducing flange
- T/B 8. Standard fixed flange/mating flange with MNPT nipple
- T/B 9. Welded pipe cap with ANSI flange
- T/B 10. Standard fixed flange/mating reducing flange spool

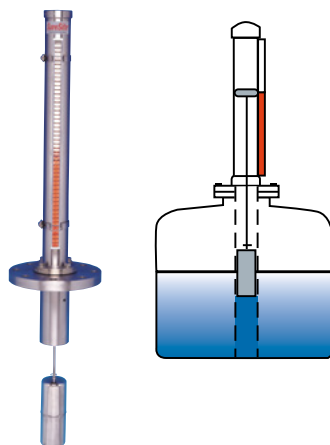
Sa & Sb Sides

- S1. No connection
- S2. MNPT nipple
- S3. FNPT coupling
- S4. ANSI flange



Top Mount Units

When it's not practical to access the side of a tank for liquid monitoring, look to SureSite Top Mount Indicators for the solution. Please consult with the factory for these specially configured indicators 1-800-378-1600.



Accessories – Pages D-13 to D-15

Make more of your SureSite® Indicator with the productivity-enhancing accessories found at the end of this section.

- **Indicating Scales**
Add graduations to your flag indication.
- **Switch Modules**
Control pumps, valves, alarms, etc. Mount externally on housing for infinite positioning.
- **Continuous Output Transmitters**
Signal conditioned for compatibility with most electronic instruments to 300°F (149°C).

Engineered Plastics Versions – Standard Size

- ▶ Temperatures to 280°F (139°C)
- ▶ Pressures to 150 psi (10.3 bar)
- ▶ Up to 19 feet (5.8 meters) of continuous visual indication

The 2" Schedule 80 pipe design is ideal for use on chemical storage tanks, or with almost any liquid where temperature and pressure requirements are moderate. All SureSite Indicators feature the same patented flag and guide assemblies used on our alloy versions, so you can be assured of excellent visibility and long-life reliability.

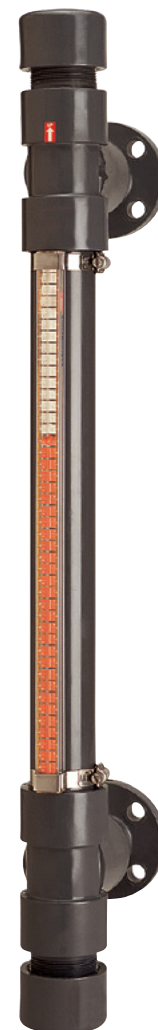
1. Mounting Configuration Types

To choose the best configuration for your application, focus on the process connections (connections where the liquid typically enters/leaves the SureSite).

	Type AP Top and Bottom Process Connections	Type BP Side and Side Process Connections	Type CP Top and Side Process Connections	Type DP Side and Bottom Process Connections
Typical Lengths*	C to C = L + 11" (279 mm) Overall Length = C to C	C to C = L + 8" (203 mm) Overall Length = C to C + 11" (279 mm)	C to C = L + 9.5" (241 mm) Overall Length = C to C + 5-1/2" (140 mm)	C to C = L + 9.5" (241 mm) Overall Length = C to C + 5-1/2" (140 mm)
Flag Indicator Material	Plastic			
Length of Indication, Max.	228" (579 cm)			

* Dimensional data varies due to connections, material and specific gravity.

Note: Additional materials, floats, connections and manufacturing techniques are available to extend lengths and operational capabilities. Please contact GEMS Sensors if the parameters above do not meet your requirements.



Type BP Shown

2. Material

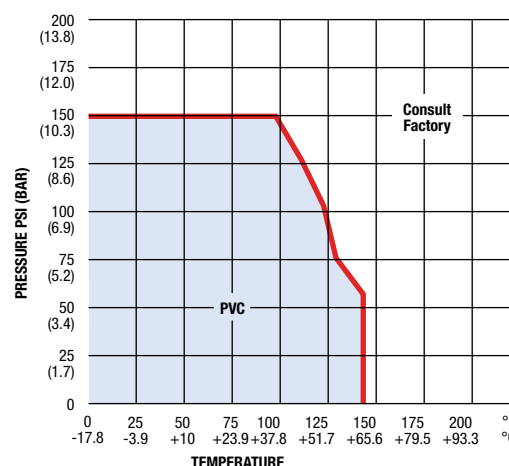
Select desired material from those tabulated below. Mark the Code Number on your Order! Check List. The pressure/temperature performance parameters are specified in the charts at right. Consult the factory with pressure/temperature requirements that fall outside the parameters shown here.

Materials	Code
Housing & Float	
PVC	1
Clear PVC Housing/ PVC Float	1A*

* 2" Schedule 40 pipe

= Stock Material
(Best economy and delivery).

Pressure/Temperature Performance



3. Connection Codes

(See complete descriptions below)

(see complete descriptions below)

TOP

T

Blind			NPT						Flange	
			Fixed		Removable				Fixed	Removable
Fixed	Removable		Female	Male	Male		Female			
T1	T2	T3	T4	T5	T6	T7	T9	T10	T11	

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange
	Male	Female	
S1	S2	S3	S4

— Connection Codes and Materials background-shaded in this color are stocked by Gems. Select these connections where possible to obtain the most economical SureSite Indicators.

BOTTOM

B

Blind			NPT						Flange	
			Fixed		Removable				Fixed	Removable
Fixed	Removable		Female	Male	Male		Female			
B1	B2	B3	B4	B5	B6	B7	B9	B10	B11	

— Connection Codes and Materials background-shaded in this color are stocked by Gems. Select these connections where possible to obtain the most economical SureSite Indicators.

Connection Code Descriptions

Please provide all connections when completing the Order! Product Check List.

Note: Before selecting your connections, consider incorporating your vent and drain requirements.

T & B (Top and Bottom)

- T/B 1. Welded cap
- T/B 2. Threaded cap (PVC only)
- T/B 3. Fixed flange/blind mating flange
- T/B 4. Welded coupling/FNPT
- T/B 5. Welded coupling/MNPT
- T/B 6. Threaded union/MNPT
- T/B 7. Fixed flange/mating flange MNPT
- T/B 9. Fixed flange/mating flange/FNPT
- T/B 10. Welded coupling flange
- T/B 11. Threaded union flange

Sa & Sb (Sides)

- S1 – Blind–No Connection
- S2 – MNPT nipple
- S3 – FNPT coupling
- S4 – ANSI flange

Accessories – Pages D-17 to D-19

Make more of your SureSite® Indicator with the productivity-enhancing accessories found at the end of this section.

- **Indicating Scales**
Add graduations to your flag indication.
- **Switch Modules**
Control pumps, valves, alarms, etc. Mount externally on housing for infinite positioning.
- **Continuous Output Transmitters**
Signal conditioned for compatibility with most electronic instruments.

LED Transmitter Versions – Miniature Size

- ▶ LED indicators ideal in low or no ambient light
- ▶ Integral transmitter with choice of signal conditioned output
- ▶ Lengths to 10 feet (3 meters)
- ▶ Pressures to 400 PSI (27 bar) – Temperature to 300°F (149°C)

These Mini SureSite Indicators excel where zero and low ambient light make visual indicators difficult to read. These mini indicators feature all the benefits of a SureSite, like safe and durable stainless steel process fluid containment, while combining a continuous output transmitter with a bright LED channel.

The LED indicator assembly integrates a continuous level transmitter reducing overall footprint. A variety of signal conditioners provide the output you require. Forget the flashlights and squinting required to view antiquated sightglasses.

Typical Applications

- Pharmaceuticals • Medical Equipment • Food and Beverages
- Marine • Rail • Boilers

Specifications

Indication Length	5" to 120" (13 to 305 cm) in 0.5" (13 mm) increments
Media	Waters, Coolants, Light Oils, Diesel, Hydraulics
Specific Gravity	Minimum 0.8 SG to 1.2 SG
Materials	
Chamber Housing	316/316L Stainless Steel
Float	316/316L Stainless Steel
Shroud	Polycarbonate
O-Ring (Wetted)	Viton®, unless otherwise specified
J-Box Enclosure	Die cast Aluminum
Reliability and Durability	Expected 10 year service life
Performance	
Resolution	3/8" (9.5 mm)
Accuracy	±1/2" (13 mm)
Output Signal	4-20 mA to within ±3% of full scale
Temperature Ranges	
Process	-40°F to +300°F (-40°C to +149°C)
Ambient	-40°F to +160°F (-40°C to +71°C)
Operating Pressure	Vacuum to 400 psig (27.6 bar)
Environmental	Enclosure: NEMA 4X IP65 (Water Resistant)
Input Power	20 to 28VDC, @100mA. Consult Factory for other voltages
Outputs	4-20 mA continuous current loop (3 wire) 0-5 V continuous (3 wire) 0-10 V continuous (3 wire)
Mechanical Interface	Custom configured for tank (per mini SureSite offering), 1/2" NPT to junction box
Mounting Orientation	
Unit Positions	AM-L, BM-L, CM-L, DM-L
Shroud Position	See Selection Guide; Step 2 for Codes
Calibration	Field Adjustment Null and Span/Factory Calibrated



1. Mounting Configuration Type

Based on process connection locations.

	Type AM-L Top and Bottom Process Connections	Type BM-L Side and Side Process Connections	Type CM-L Top and Side Process Connections	Type DM-L Side and Bottom Process Connections
Typical Lengths*	C to C = L + 9.5" (241 mm)	C to C = L	C to C = L + 6" (152 mm)	C to C = L + 6" (152 mm)
Length of Indication (Uninterrupted)	120" (305 cm), Maximum			

* Formula provided is for approximation only. Final dimensions will vary due to connections type, position, cable or junction box location, and specific gravity of process liquid. Gems will confirm final dimensions before manufacturing.

2. LED Transmitter Assembly Location

Position relative to process connection location. All illustration views are from the top. Codes with "+" indicate views when 3/4" side ports are used.

Transmitter Assembly Location Code						
A	A+	B	C	D	E	E+
Approximate angle of view - 270°						

3. J-Box Location

Drawings are typical, and for reference only. Final, specific locations are determined at time of manufacture.

J-Box Location Code		
1 Side Mount Below Bottom Port	2 Side Mount Above Top Port	3* Top Mount

* Requires a Blind Fixed Top Connection. See Connection Code T1 in the chart on next page.

LED Assembly Cable Egress

For J-Box Location 1,
LED Transmitter Assembly
cable will egress from the
bottom of the assembly.

For J-Box Locations
2 and 3, the cable will
egress from the top of
the assembly.



4. Connection Codes

(See complete descriptions below)

descriptions below)

TOP

T

SIDE

Sa

SIDE

Sb

BOTTOM

B

	Blind		NPT				Flange		Weld	
			Fixed		Removable		Fixed	Removable	Socket Butt	Removable Butt
	Fixed	Removable	Female	Male	Female	Male				
Standard Connections										
Sanitary Connections										

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Sanitary Flange	Buttweld Nipple
	Male	Female			

SIDE

Sa

SIDE

Sb

	Blind		NPT				Flange		Weld	
			Fixed		Removable		Fixed	Removable	Socket Butt	Removable Butt
	Fixed	Removable	Female	Male	Female	Male				
Standard Connections										
Sanitary Connections										

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

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SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

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Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

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Blind	NPT		Flange	Weld	
	Male	Female			

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Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

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SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld	
	Male	Female			

SIDE

Sa

SIDE

Sb

Blind	NPT		Flange	Weld

— Connection Codes and Materials background-shaded in this color are stocked by Gems. Select these connections where possible to obtain the most economical SureSite Indicators with prompt delivery.

Note: Gems recommends a removable top and/or bottom connection for float access.

Connection Code Descriptions

Please provide all connections when completing the **OrderIt!** Product Check List (located on the following page).

Note: Before selecting your connections, consider incorporating your vent and drain requirements.

T & B (Top and Bottom)

- T/B 1. Welded cap
 T/B 2. Welded cap with FNPT
 T/B 3. Welded cap with MNPT
 T/B 7. Sanitary flange
 T/B 8. Sanitary flange with mating blind flange
 T/B 10. Standard fixed flange/mating blind flange
 T/B 11. Standard fixed flange/mating FNPT reducing flange

- T/B 12. Standard fixed flange/mating flange with MNPT nipple
 T/B 13. Standard fixed flange/mating flange with butt weld nipple
 T/B 18. Welded cap with butt weld nipple
 T/B 19. Welded cap with ANSI flange
 T/B 20. Standard fixed flange/mating reducing flange spool with ANSI flange

Sa & Sb (Sides)

- S1. No connection
 S2. MNPT nipple
 S3. FNPT coupling
 S4. ANSI flange
 S5. Sanitary flange
 S6. Buttweld nipple

5. Signal Conditioner Assemblies

Gems signal conditioners provide outputs for direct connection to a wide range of instrumentation. They are ideal for large, multi-tank complexes. Units with 4-20 mA outputs are particularly well suited for instrumentation control loops. Consult LED SureSite Installation, Operation and Maintenance bulletin.



Alloy Versions—Miniature Size

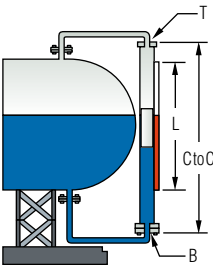
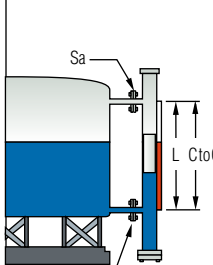
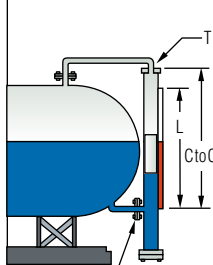
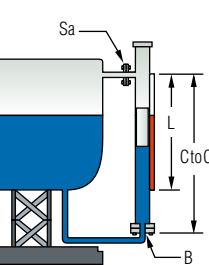
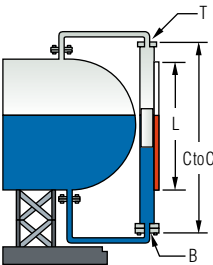
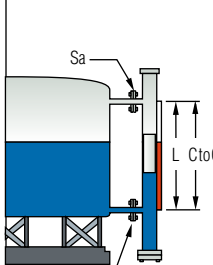
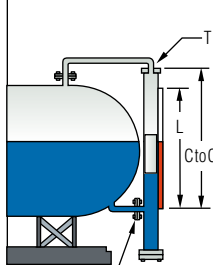
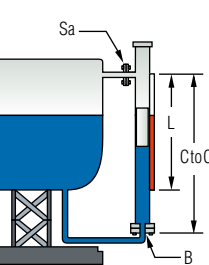
- ▶ Lengths to over 20 feet (6.1 meters)
- ▶ 316 Stainless Steel construction
- ▶ Pressures to 400 psi (27 bar) – Temperature to 400°F (204°C)

Use these Mini SureSite Indicators where space is tight—they feature a diameter of only 1-1/4"! They can replace existing, antiquated sightglasses for excellent external, visual liquid level indication. Mini SureSite Indicators are ideal for use with clean, low viscosity liquids.

Typical Applications

- Pharmaceuticals • Medical Equipment • Food and Beverages
- Semiconductor Manufacturing • Boilers

1. Mounting Configuration Types

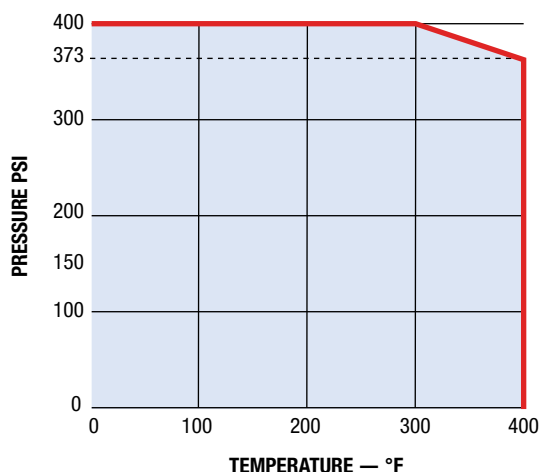
	Type AM	Type BM	Type CM	Type DM
	Top and Bottom Process Connections	Side and Side Process Connections	Top and Side Process Connections	Side and Bottom Process Connections
L = Length of Visual Indication				
				
Typical Lengths*	C to C = L + 7.72" (196 mm)	C to C = L	C to C = L + 3" (76 mm)	C to C = L + 5" (127 mm)
Flag Material	Plastic (300°F / 148.9°C) or Aluminum (400°F / 204°C)			
Length of Indication (Uninterrupted)	240" (610 cm)			

* Dimensions vary due to connections, material and specific gravity.

Note: Additional materials, floats, connections and manufacturing techniques are available to extend lengths and operational capabilities.
Please contact Gems if the parameters above do not meet your requirements.

Miniature SureSite Performance

Gems configures Miniature SureSite Indicators, using various materials and fittings, to perform within the Pressure/Temperature parameters specified in the chart at right. Consult the factory with pressure/temperature requirements that fall outside the parameters shown here.



Note: SureSite Indicators are available for temperatures as low as -200°F (-129°C)




























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Easy online ordering too!



2. Connection Codes

(See complete descriptions below)

		Blind		NPT				Flange		Weld	
				Fixed		Removable					
		Fixed	Removable	Female	Male	Female	Male	Fixed	Removable	Socket Butt	Removable Butt
TOP 	Standard Connections	 T1	 T10	 T2	 T3	 T11	 T12	 T19	 T20	 T18	 T13
	Sanitary Connections							 T7	 T8		
SIDE 	Sa										
	Sb										
BOTTOM 	Standard Connections	 B1	 B10	 B2	 B3	 B11	 B12	 B19	 B20	 B18	 B13
	Sanitary Connections							 B7	 B8		

— Connection Codes and Materials background-shaded in this color are stocked by Gems. Select these connections where possible to obtain the most economical SureSite Indicators with a prompt 3-day delivery.

Note: Gems recommends a removable top and/or bottom connection for float access.

Connection Code Descriptions

Please provide all connections when completing the OrderIt! Product Check List (located on the following page).

Note: Before selecting your connections, consider incorporating your vent and drain requirements.

T & B (Top and Bottom)

- T/B 1. Welded cap
- T/B 2. Welded cap with FNPT
- T/B 3. Welded cap with MNPT
- T/B 7. Sanitary flange
- T/B 8. Sanitary flange with mating blind flange
- T/B 10. Standard fixed flange/mating blind flange
- T/B 11. Standard fixed flange/mating FNPT reducing flange
- T/B 12. Standard fixed flange/mating flange with MNPT nipple
- T/B 13. Standard fixed flange/mating flange with butt weld nipple
- T/B 18. Welded cap with butt weld nipple
- T/B 19. Welded cap with ANSI flange
- T/B 20. Standard fixed flange/mating reducing flange spool with ANSI flange

Sa & Sb (Sides)

- S1. No connection
- S2. MNPT nipple
- S3. FNPT coupling
- S4. ANSI flange
- S5. Sanitary flange
- S6. Butt weld nipple



Performance Notes:

- As an option **either** the Switch Modules or Transmitter can be used on a Miniature SureSite Indicator - **Not Both**.
- Minimum specific gravity is 0.7.
- Standard O-ring seal material is Viton®. Others available upon request.
- Electropolished Outer Diameter (OD) and/or Inner Diameter (ID) housings available upon request.

Accessories – Pages D-13 to D-15

Make more of your SureSite® Indicator with the productivity-enhancing accessories found at the end of this section.

- Indicating Scales**
Add graduations to your flag indication.
- Switch Modules**
Control pumps, valves, alarms, etc. Mount externally on housing for infinite positioning.
- Continuous Output Transmitters**
Signal conditioned for compatibility with most electronic instruments to 300°F (149°C).

DIPTAPE™ Indicators – Alloy Versions

- ▶ Temperatures to 300°F (148°C)
- ▶ Pressures to 750 PSI (52 bar)

Rugged brass or stainless steel units are ideal for use in water and oils. Select these units for best temperature and pressure capabilities.

1. Mounting Types

“B” Dimension
(Length Overall):
Indicating Length + A + C

Note: Dimensions “C” and “A”
are dependent on float selected.
See Float Types below.

	Type 3 2" NPT	Type 4 3" -150# ANSI Flange
Stem and Mounting Material	Brass or 316 Stainless Steel	316 Stainless Steel Stem with Carbon Steel or 316 Stainless Steel Flange
Indicating Length**	6" to 72" (15.2 cm to 182.9 cm)	
Std. Indication Markings	1/16" or 1 mm increments	

* Dimensions listed below, under “Float Types.”

** For longer lengths, please contact factory.

2. Float Types

	Buna N*	Stainless Steel	
Float Part Number	73710	73709	138935
Min. Liquid Specific Gravity	0.45	0.67	0.67
Operating Temperatures	Oil: -40°F to +230°F (-40°C to +110°C) Water: to 180°F (+82.2°C)	-40°F to +300°F (-40°C to +148.8°C)	-40°F to +220°F (-40°C to +104°C)
Operating Pressure, Max.	300 psi (21 bar) max. @ 77°F (25°C)	750 psi (52 bar) Mounting Type 3 150 psi (10 bar) Mounting Type 4	150 psi (10 bar)
“A” Dimension (From Mounting Types)	1-1/4" (31.7 mm)	1-3/8" (34.9 mm)	1" (25.4 mm)
“C” Dimension (From Mounting Types)	11/16" (17.5 mm)	3/4" (19.05 mm)	9/16" (14.3 mm)

* Other Wetted Material: Hvsol.

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Easy online ordering too!



All-PVC Versions Are Economical for Light Duty

ORDERIT!

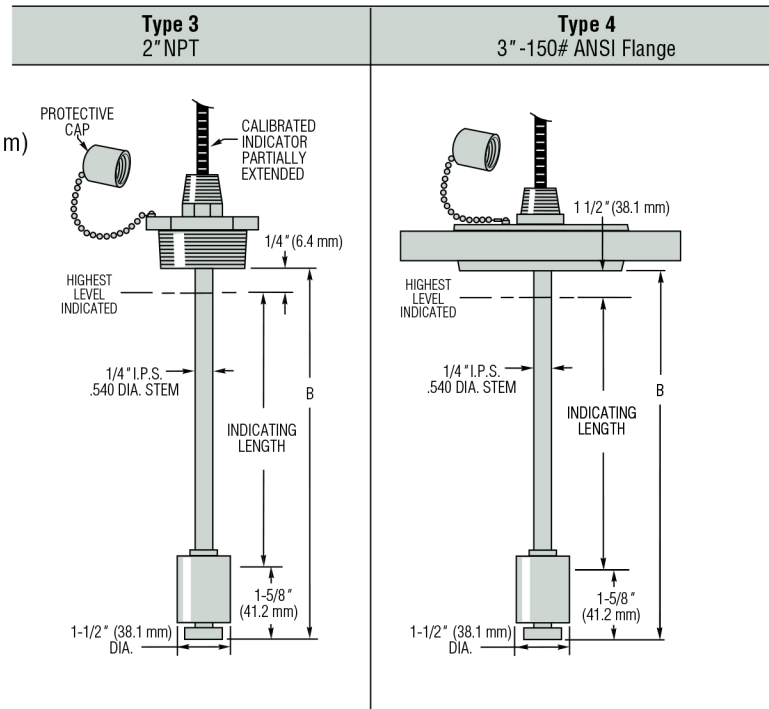
Ordering is Easy! See Page D-27.
Easy online ordering too!

- ▶ Temperatures to 140°F (60°C)
- ▶ Pressures to 15 PSI (1 bar) Max.

Ideal for chemical storage tanks, our all-PVC DIPTAPE Indicators provide one of your best values for liquid level monitoring. These light duty versions are recommended for use in calm liquids and ambient temperature and pressure levels. See Engineered Plastic versions on the next page for enhanced performance characteristics.

1. Mounting Types

"B" Dimension (Length Overall):
Indicating Length + 1-7/8" (47.6 mm)



Stem, Float and Mounting Material	PVC
Min. Liquid Specific Gravity	0.65
Operating Temperatures	0°F to +140°F (-17.7°C to 60°C)
Operating Pressure, Max.	15 psi (1 bar)
Indicating Length*	6" to 72" (15.2 cm to 182.9 cm)
Std. Indication Markings	1/16" or 1 mm increments

*For longer lengths, please consult factory.

Ordering Is Easy

1. To specify DIPTAPE Level Indicators, start by photocopying the OrderIt! Product Check List located on Page D-27.
2. Use the product information in this section to make your selections on the Check List. Please use a separate Check List for each unique configuration.
3. Fax your completed OrderIt! Check List to Gems for a price quotation.
Fax: 860-747-4244

Digital Bargraph Display Receivers - 163000 Series

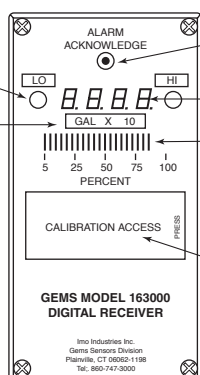
Gems Digital Bargraph Receivers improve the way you are able to visualize the data being received from your liquid level transmitters. These new receivers display liquid level information in digital numerals in conjunction with a 0-100% LED bargraph readout. The numeric portion is a 1/2" 4-digit display that provides detailed quantification of tank contents, while the bright LED bargraph represents the tank contents as a bar length relative to the percentage of fluid volume within the tank.

If you have a non-linear tank, such as a sphere or a cylinder laying on its side, these receivers are a blessing. They can be calibrated easily so that the digital and bargraph displays will indicate accurate content information for "odd" shape tanks. See "Linearization" below.

In addition to the dual visual displays, the Gems Bargraph Receiver features two independent alarms with adjustable time delays, 10 amp auxiliary dry contacts and easy user set-up. The receiver is available in component form for mounting into custom enclosures or panels, or housed within a NEMA 4X enclosure.

2 Independent Alarms with adjustable time delays. Labels are supplied and user applied.

Example of units measured: Gallons, Liters, Pounds, etc. Labels are supplied and user applied.



Touch to acknowledge alarm activation.

Large 4 Digit Numerical Display.

LED Bargraph represents percentage of tank contents.

Calibration conveniently accessible from front of panel (access plate is supplied loose in a cloth bag along with labels).

Linearization

Certain tanks, like a sphere or a cylinder laying on its side, are considered "Non-Linear" in terms of volume versus tank height. In these cases this receiver may be linearized according to your tank parameters so that the correct volume is displayed. Any units may be displayed by the receiver. Gallons, inches, tons, cubic inches, liters and etc.

The receiver uses a scheme where 9 points or 8 straight lines are used to calculate the numbers to be displayed. These 8 lines approximate the curve of the non-linear tank.

Examples of Non-Linear Display Values.

1. Gallons in a spherical tank.
2. Gallons in a cylindrical tank laying down.
3. Pounds of liquid in a spherical tank.
4. Cubic meters in a conical shaped tank.
5. Gallons in a non-linear shaped tank.

IMPORTANT: Customer must supply a sounding table, capacity curve and/or tank drawing for linearization of the digital bar graph display receiver.

Specification

Input Signal	4-20mA, Proportional Voltage*, Serial
Accuracy Over Given Range	± 1.0%
Operating Voltage	24VDC or 115VAC
Operating Temperature	32°F to 122°F (0°C to 50°C)
Alarm Contacts, Load	10Amp, Dry Contact
Digital Readout	0000 to 9999

* Proportional voltage as produced by the non-signal conditioned Gems Liquid Level Transmitters (Section H) and SureSite Transmitters (Section G).

Note: Customer alarms (High & Low) set upon request.

Panel Mounted Versions

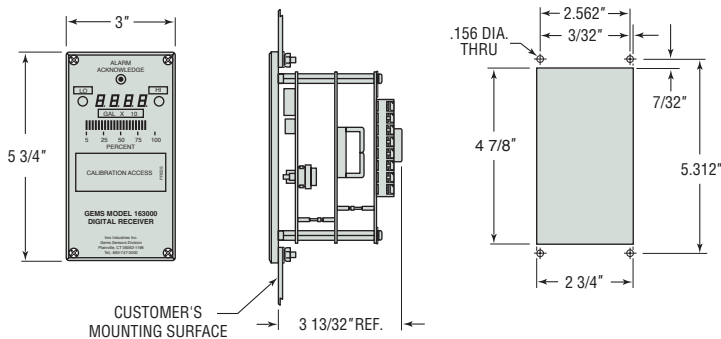


Enclosed Versions



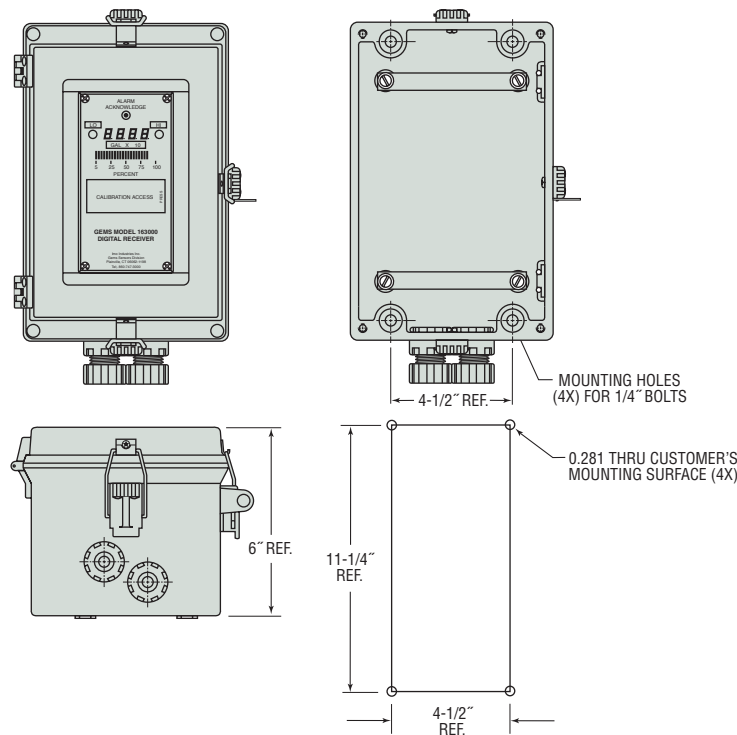
Dimensions

Panel Mounting Receivers



Static Sensitive.
Handling Precautions Required.

NEMA 4X Enclosed Receivers



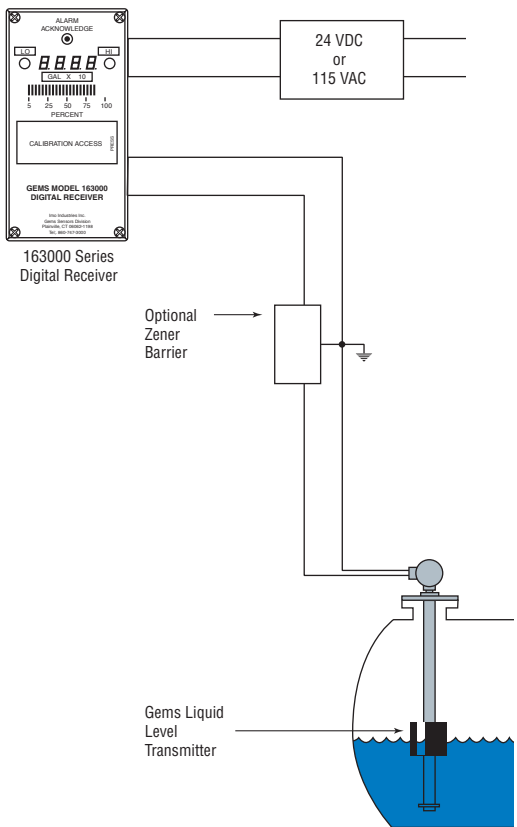
How To Order - Standard

Select receiver type by Part Number based on Input Power and Input/Output Signals required.

Input Power	Input/Output Signals		Part Number	
	Input	Output	Panel Mount	NEMA 4X Fiberglass Enclosed
24 VDC	Transmitter*	None	170680-0100	170690-0100
	Serial	None	170681-0100	170691-0100
	Transmitter*	4-20mA	170682-0100	170692-0100
	4-20mA	4-20mA	170683-0100	170693-0100
115 VAC	Transmitter*	None	170684-0100	170694-0100
	Serial	None	170685-0100	170695-0100
	Transmitter*	4-20mA	170686-0100	170696-0100
	4-20mA	4-20mA	170687-0100	170697-0100
		None	170688-0100	170698-0100
			170689-0100	170699-0100

* Proportional voltage as produced by the non-signal conditioned Gems Liquid Level Transmitters (Sections C) and SureSite Transmitters (Section D). When used in conjunction with RE-163000, no additional signal conditioning required.

Typical Installation



Economical Digital Process and Strain Gauge Panel Meters

- ▶ Easily Scaled in any Engineering Units from -19999 to 99999
- ▶ Large 18 mm (.71") high Red or Green Display
- ▶ Front Panel MIN, MAX and Alarm Reset Functions
- ▶ High or Low Alarms
- ▶ Process Meters for Amplified Transducers
- ▶ Strain Gauge Meters for Millivolt Transducers

The DM28 meter line is easily programmed to read out in any engineering units (psi, bar, Kg/cm²) and can be retro fitted in the field with plug in boards. Units can be scaled by applying known loads to the sensors or purely by software keystrokes without requiring any electronic instrumentation. Scaling the meter using up to 10 points can compensate for non-linear signals and profiling curved tanks in level applications. The display color (red or green), latching or non-latching alarms and the optional analog outputs are all programmable. The meter also features a help character that indicates max, min and normal operation, it also gives additional help when programming. The DM28 meter line is available in 5 different models, the specifications below are for the process and strain gauge meter lines only.

Specifications

Accuracy	.01% Process, .03% Strain
Resolution	14 bits
Display	5 digits, red or green LED
Display Height	18 mm (.71")
Operating Temperature	0° to 55°C (32° to 130°F)
Relative Humidity	20% to 95% non-condensing
Span Temp. Coefficient	25 ppm/°C
Storage Temperature	-20° to 80°C (-4° to 176°F)
Approvals	CE
Display Filter	100 ms to 100 seconds programmable
Output #1	5 Amp @ 120 Vac SPDT & NPN collector 30 Vdc @ 100 mA max.
Output #2	NPN collector (SPDT relay optional)
Remote Features	Optional Tare or Security lockout
Analog Output	Scalable 4-20 mA or 0-10 V (8 bit)
Meter Supply	90-264 Vac @ 50/60 Hz, 4 Watts (optional 20-50 Vdc/Vac)
Sensor Supply	24 Vdc @ 30 mA process meter 5 or 10 Vdc @ 60 mA strain meter
Physical	
Front Bezel	96 mm x 48 mm x 10 mm
Depth Behind Panel	100 mm
Panel Cut-out	1/8 DIN 92 mm x 45mm (3.622" x 1.772")
Front Panel Rating	IP65 (Nema 4X)
Terminals	Screw type
Weight	250 g (.56 lbs)

How To Order

Use the **Bold** characters from the chart below to construct a product code.

SELECT:	DM28	2	0	0	0	0
1. Meter Input (*for additional information contact sales)						
2 DC Process Meter input: 4-20mA, 0-20mA, 10-50mA (24 Vdc excitation)						
6 Strain Meter input: 100mV (5 or 10 Vdc excitation)						
2. Relay Output						
0 One SPDT, one NPN						
1 Two SPDT						
3. Analog Output						
0 Standard none						
3 Programmable analog output						
4. External Digital Input						
0 Standard none						
6 Digital input for tare or security lockout						
5. Meter Power Supply						
0 Standard 90-264 Vac						
2 20-50 Vac or Vdc						



По вопросам продаж и поддержки обращайтесь:

Алматы (727)345-47-04
Ангарск (3955)60-70-56
Архангельск (8182)63-90-72
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Благовещенск (4162)22-76-07
Брянск (4832)59-03-52
Владивосток (423)249-28-31
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Владимир (4922)49-43-18
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89

Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Коломна (4966)23-41-49
Кострома (4942)77-07-48
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Курган (3522)50-90-47
Липецк (4742)52-20-81

Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Ноябрьск (3496)41-32-12
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Петрозаводск (8142)55-98-37
Псков (8112)59-10-37
Пермь (342)205-81-47

Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Саранск (8342)22-96-24
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Сыктывкар (8212)25-95-17
Тамбов (4752)50-40-97
Тверь (4822)63-31-35

Тольятти (8482)63-91-07
Томск (3822)98-41-53
Тула (4872)33-79-87
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Улан-Удэ (3012)59-97-51
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Чебоксары (8352)28-53-07
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Чита (3022)38-34-83
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