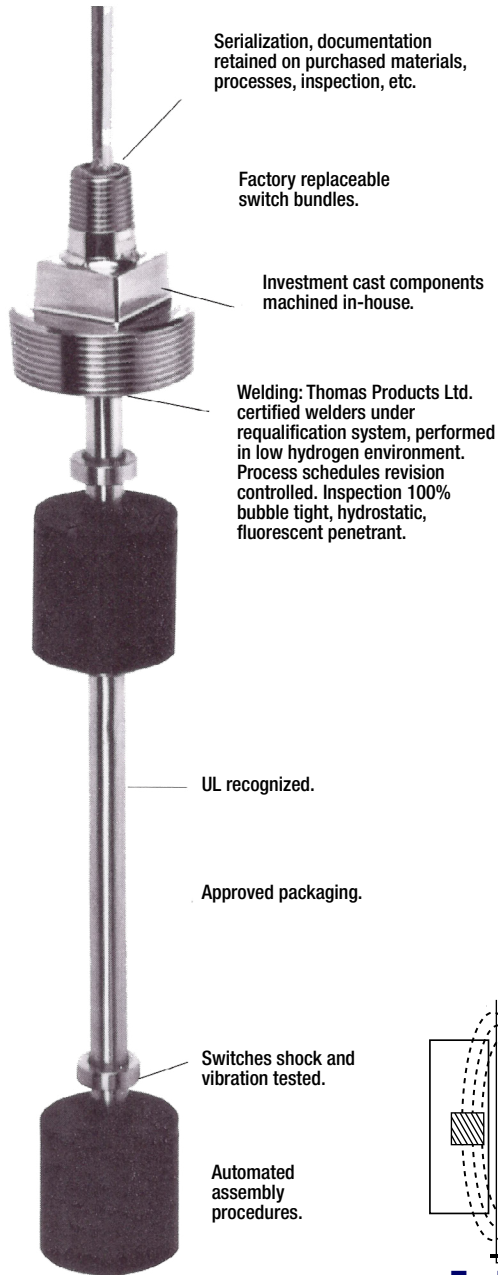


LEVEL SWITCH SELECTION GUIDE

Model 4000 Custom Level Switch



Serialization, documentation retained on purchased materials, processes, inspection, etc.

Factory replaceable switch bundles.

Investment cast components machined in-house.

Welding: Thomas Products Ltd. certified welders under requalification system, performed in low hydrogen environment. Process schedules revision controlled. Inspection 100% bubble tight, hydrostatic, fluorescent penetrant.

UL recognized.

Approved packaging.

Switches shock and vibration tested.

Automated assembly procedures.

Operational Q.C. systems and manual, MIL I 45208 and MIL STD 45662.

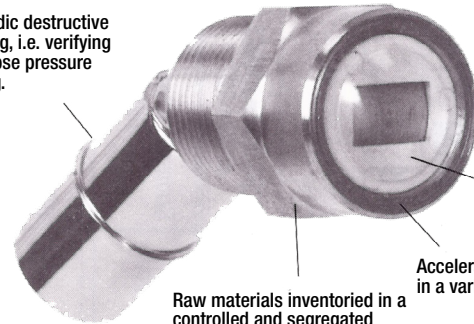


Model 5100 Liquid Level Indicator

Inspection using calibrated tools and gages traceable to National Bureau of Standards under Thomas Products, Ltd. recalibration system.

Injection molding in-house, Thomas Products Ltd. can certify that only virgin materials are used and no reprocessing is done nor has color concentrate been added during molding.

Periodic destructive testing, i.e. verifying collapse pressure rating.



DRY
Indicator Not In Contact With Liquid

New technology patent pending design.

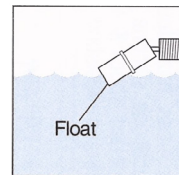
Accelerated life tested in a variety of fluids.

Raw materials inventoried in a controlled and segregated department under Thomas Products, Ltd. stock rotation program.

Call-outs provided are typical to their respective models.

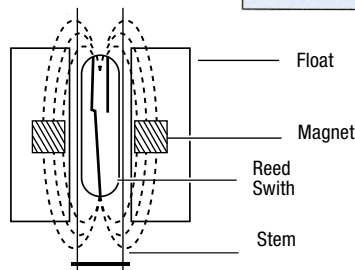
Operation:

The housing has 2 separate chambers. In the front chamber behind a transparent lens is a 2 color roller, half red, half green and it is equipped with a magnet. In the rear chamber is a magnet equipped float free to swing with the action of the liquid's level. The poles of the 2 magnets are opposite creating a permanent interlock. As the liquid level falls, the float and magnet swing to rotate the roller exposing the red side indication low liquid level. Accordingly, as the level rises, the green side indicating a satisfactory liquid level condition appears.



Indicator Turns Red When Liquid Is Low;

Green Means Liquid Is OK.



Typical Operation:

A magnet equipped float moves directly with the liquids level to actuate the hermetically sealed reed switch within the stem.

- ☐ Ideas
- ☐ Solutions
- ☐ Technical Support
- ☐ On-Time Delivery
- ☐ Quality



4000 CUSTOM LEVEL SWITCH

METAL ($\frac{1}{2}$ " Diameter Stem)

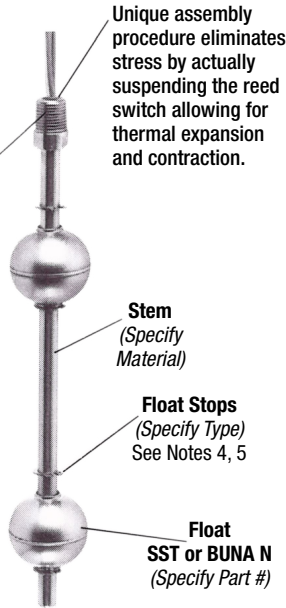
Please turn to our *Company Profile* and *Level Switch Selection Guide* to learn more of the advantages in specifying *Thomas Products Ltd.*® sensors.

$\frac{1}{2}$ " NPT Plug Mounting

STYLE 1

See Notes 7 & 15

$\frac{1}{2}$ " NPT Plug Mounting
(Specify Material)



Mounted From Inside of Tank

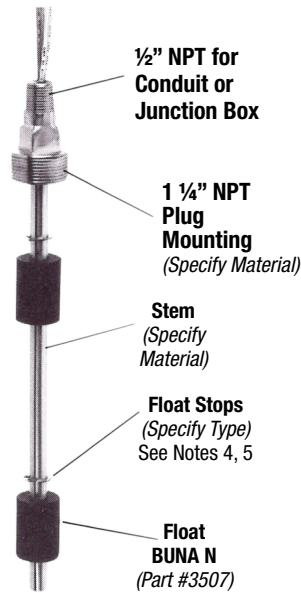
1 $\frac{1}{4}$ " NPT Plug Mounting

STYLE 2

See Notes 8 & 15

$\frac{1}{2}$ " NPT for Conduit or Junction Box

1 $\frac{1}{4}$ " NPT Plug Mounting
(Specify Material)



Plug-Mounted From Outside of Tank

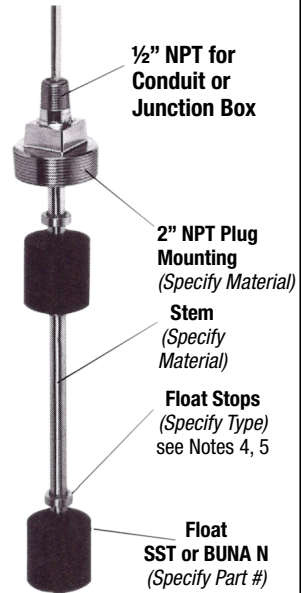
2" NPT Plug Mounting

STYLE 3

See Notes 9 & 15

$\frac{1}{2}$ " NPT for Conduit or Junction Box

2" NPT Plug Mounting
(Specify Material)



Plug-Mounted From Outside of Tank

METAL ($\frac{1}{2}$ " Diameter Stem)

3" 150# ANSI Flange Mounting

STYLE 4

See Notes 10, 14, 15

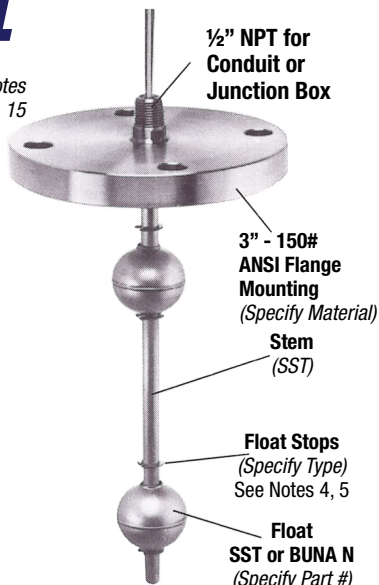
$\frac{1}{2}$ " NPT for Conduit or Junction Box

3" - 150# ANSI Flange Mounting
(Specify Material)

Stem (SST)

Float Stops
(Specify Type)
See Notes 4, 5

Float
SST or BUNA N
(Specify Part #)



Flange Mounting From Outside of Tank

1" NPT External Tank Mounting

STYLE 10

See Notes 11, 13, 15

$\frac{1}{2}$ " NPT for Conduit or Junction Box

Wrench flats to be used in eliminating stress on process fillings when removing switch assembly

1" NPT Ports

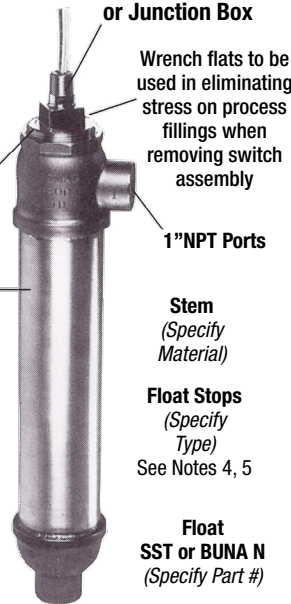
Style 3 Mounting

Housing
(Specify Material)

Stem
(Specify Material)

Float Stops
(Specify Type)
See Notes 4, 5

Float
SST or BUNA N
(Specify Part #)



Mounts to Outside of Tank

3" 150# ANSI Flange Mounting

STYLE 11

See Notes 12, 14, 15

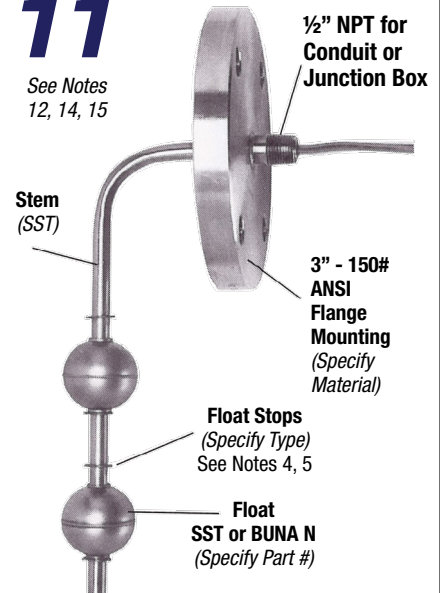
$\frac{1}{2}$ " NPT for Conduit or Junction Box

3" - 150# ANSI Flange Mounting
(Specify Material)

Stem (SST)

Float Stops
(Specify Type)
See Notes 4, 5

Float
SST or BUNA N
(Specify Part #)




Flange Mounting from Outside of Tank

4000 CUSTOM LEVEL SWITCH

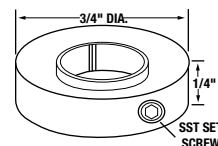
SPECIFICATIONS

4000 (Styles 1, 2, 3, 4, 10 and 11)

METAL

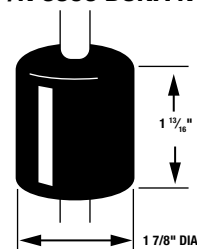
Style	1, 2, 3	4	10	11
Mounting <i>See Note 18</i>	Brass or Stainless Steel	Carbon Steel or SST	Mounting & Housing Bronze or SST	Carbon Steel or SST
Stem	Brass or Stainless Steel	Stainless Steel	Brass or SST	Stainless Steel
Float	Customer to Specify Part Number			
Float Stops: Grip Rings <i>See Note 4</i>	Brass units - Beryllium Copper; SST units Ph 15-7 Mo SST	Ph 15-7 Mo SST	Brass units - Beryllium Copper; SST units Ph 15-Mo SST	Ph 15-7 Mo SST
Float Stops: Collars <i>See Note 5 Drawing 1.0</i>	Brass units - Brass collars; SST units - 316 SST collars	316 SST Collars	Brass units - Brass collars; SST units - 316 SST collars	316 SST Collars
Stem Length	Per Customer Requirements			
Reed Switches and Wire  <i>See Notes 2 & 3</i>	UL Recognized units: SPST Pilot Duty 20 VA 120-240 VAC. Polymeric leads: See Multi-Level Specification Form.			
Reed Switches and Wire <i>See Notes 2 & 3</i>	SPST Pilot Duty 20 VA 120-240 VAC; SPST Pilot Duty 100 VA 120-240 VAC; SPDT Pilot Duty 20 VA 120-240 VAC. Teflon leads: See Multi-Level Specification Form.			
Hysteresis	1/16" Total Envelope <i>Note 6</i>			

Collars:
Brass or 316 SST

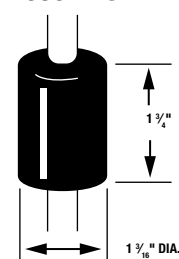


Drawing 1.0

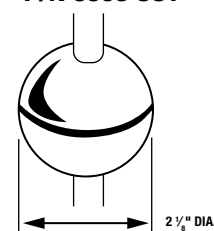
P/N 3506 BUNA N



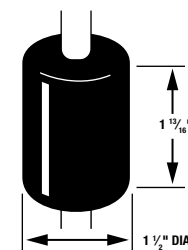
P/N 3507 BUNA N



P/N 3508 SST



PVC Units Only: P/N 3555



FLOAT SPECIFICATIONS: (Styles 1, 2, 3, 4, 10 and 11)

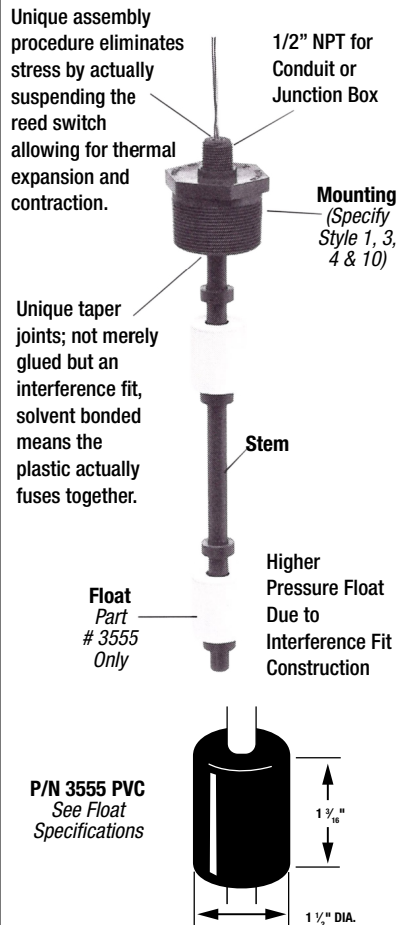
Float Part Number	Temperature Range	Pressure Max.	Specific Gravity
3506 BUNA	-40° to 180°F in water -40° to 230°F in oil	150 PSI	.55 <i>See Note 17</i>
3507 BUNA	-40° to 180°F in water -40° to 230°F in oil	150 PSI	.65 <i>See Note 17</i>
3508 S.S.T.	-40° to 300°F	750 PSI	.65 <i>See Note 17</i>
3555 PVC <i>Note 1</i>	-30°F to +140°F	100 PSI	.85 <i>See Note 17</i>

4000 CUSTOM LEVEL SWITCH


Notes:

1. Part Number 3555 PVC float is used for PVC Model 4000. See specifications
2. Also available: leads in different lengths, cable, terminated ends, etc. consult factory.
3. Relays are available for handling higher electrical loads than allowed. See accessory section for details.
4. Grip rings come standard at no extra charge.
5. Optional collars are available from stock. See drawing 1.0.
6. Special reed switches are stocked to yield a hysteresis of 1/4". Consult factory.
7. Style 1 mounting installs from the inside of the tank into a 1/2" NPT boss. Specify float part number: 3506, 3507, 3508, or 3555.
8. Style 2 mounting installs from the outside of the tank into a 1 1/4" NPT boss. Specify float part number 3507.
9. Style 3 mounting installs from the outside of the tank into a 2" NPT boss. Specify float part number: 3506, 3507, 3508, or 3555.
10. Style 4 flange mounting installs from the outside of the tank onto a 3" ANSI flange mating surface. Specify float part number 3506, 3507, 3508, or 3555.
11. Style 10 external tank mounting installs to the tank exterior. Bottom "run" port can be fabricated at branch position typical to top port. Thomas Products LTD. can machine ports on both bronze and stainless steel housings for silver braze or socket weld end connections. Consult factory. Specify float part number: 3506 or 3508.
12. Style 11 mountings install from the outside of the tank onto a 3" ANSI flange mating surface. Note: The bolt patterns angular position must be followed per drawing. See Multi-Level Specification Form 4000. Specify float part number: 3506, 3507 or 3508.
13. Style 10 external tank unit is available in all PVC construction. Consult factory.
14. Styles 4 & 11 flange mounting types are also available with a 1", 2" or 4" 150# ANSI flanges.
15. Multi-level Specification Form 4000 must be used to ensure correct dimensional data.
16. All wetted parts PVC.
17. Custom interface floats are available. Consult factory.
18. Materials of copper-nickel, titanium, hastelloy and aluminum are stocked. Consult factory.

PVC

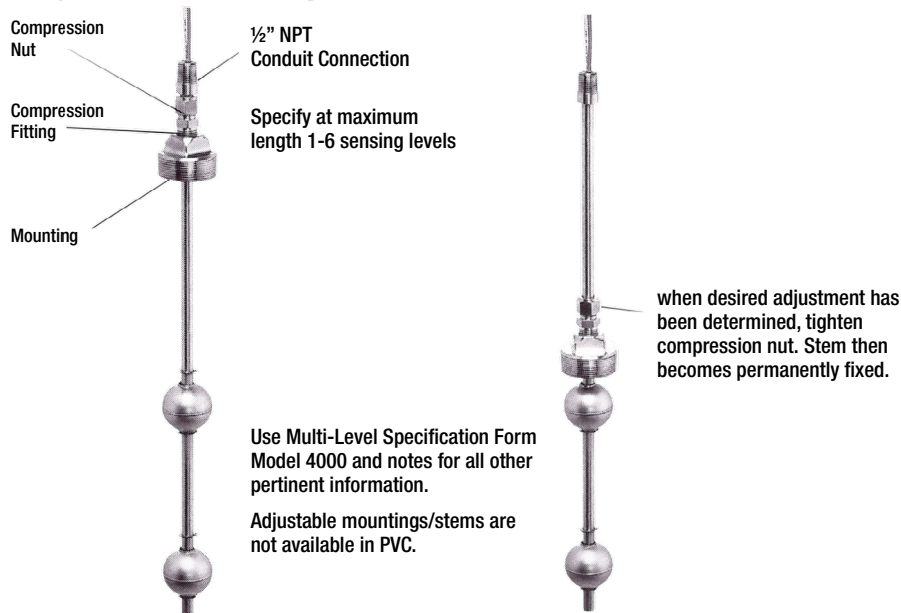


SPECIFICATIONS:

Style	Styles 1, 3, 4 & 10 See Notes 1, 13, 15 & 16
Mounting	PVC
Stem	PVC. 1/4" Schedule 80 Pipe
Float	PVC. Part # 3555
Float Stops	PVC. Solvent Bonded to Stem
Stem Length	Per Customer Requirements
Reed Switches 	UL Recognized Units SPST Pilot Duty 20 VA 50 - 240 VAC
Reed Switches	Non UL Recognized Units SPST Pilot Duty 100 VA 50 - 240 VAC SPDT Pilot Duty 20 VA 50 - 240 VAC See Notes 6
Wire	PVC 24" Long Extended See Notes 2 & 3
Hysteresis	1/16" Total Envelope See Notes 6

ADJUSTABLE STEM

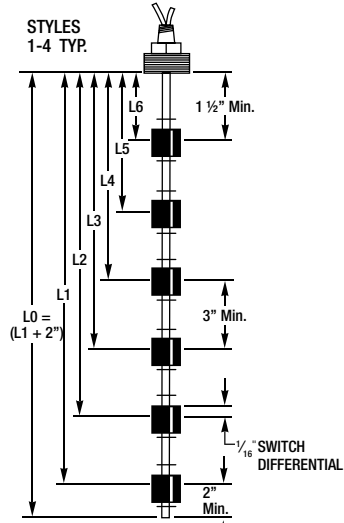
For Styles 2, 3, 4 & 10. Option for Model 4000 -1/2" Diameter Stem



4000 CUSTOM LEVEL SWITCH

All Model 4000 Custom Level Switches are fabricated in-house. Quick shipment of 2 weeks are standard, but if you need a unit sooner, our Short Order Department can satisfy almost any delivery requirement.

MULTI-LEVEL SPECIFICATION FORM 4000

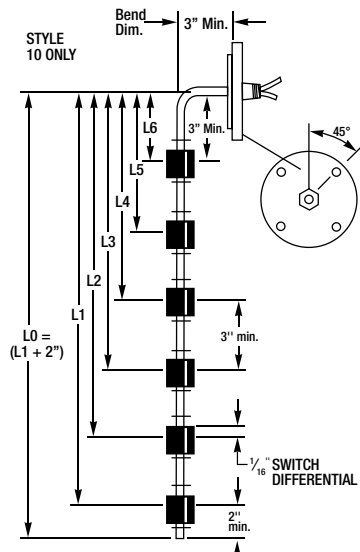
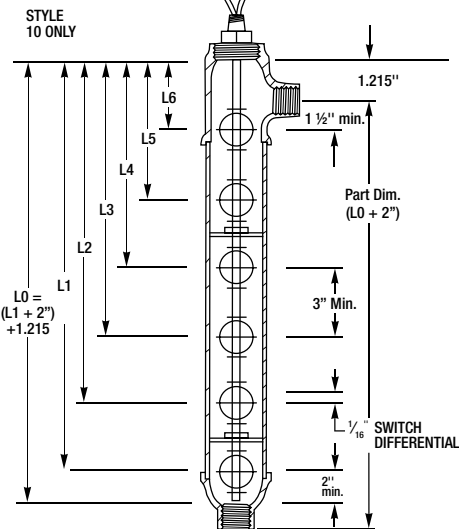


STYLES 1, 2, 3, 4, 10, 11
LOGIC IN TANK EMPTY CONDITION

L6	<input type="checkbox"/>	"	<input type="checkbox"/>	<input type="checkbox"/>	NO or NC
L5	<input type="checkbox"/>	"	<input type="checkbox"/>	<input type="checkbox"/>	NO or NC
L4	<input type="checkbox"/>	"	<input type="checkbox"/>	<input type="checkbox"/>	NO or NC
L3	<input type="checkbox"/>	"	<input type="checkbox"/>	<input type="checkbox"/>	NO or NC
L2	<input type="checkbox"/>	"	<input type="checkbox"/>	<input type="checkbox"/>	NO or NC
L1	<input type="checkbox"/>	"	<input type="checkbox"/>	<input type="checkbox"/>	NO or NC

FURNISH DIMENSIONAL DATA
IN APPROPRIATE BOXES
LISTED ABOVE

SELECT
APPROPRIATE
SWITCH LOGIC
IN TANK
EMPTY CONDITION



Style: 1 ☐ 2 ☐ 3 ☐ 4 ☐ 10 ☐ 11 ☐

Style 1, 2, 3:

Mounting & Stem Material: Brass ☐ SST ☐

Style 4: Stem SST

Mounting: Carbon Steel ☐ SST ☐

PVC Styles 1, 3, & 4 Only:

PVC ☐

Style 10:

Mounting & Stem Material: Brass ☐ SST ☐

Housing Material: SST ☐

Port Size: 1" ☐

Port Dim:

Style 11:

Mounting Material: Carbon Steel ☐ SST ☐

Stem Material: SST ☐

Bend Dim:

Mounting Attitude:

VTL to 30° Inclination

Tank Top ☐ Tank Bottom ☐

Adjustable Mounting:

Yes ☐ No ☐

Float Part Number:

Float Stops:

Brass Units: (See Notes 4 & 5)

Beryllium Copper Grip Rings ☐

Brass Collars ☐

SST Units: (See Notes 4 & 5)

Ph 15-7 Mo SST Grip Rings ☐

316 SST Collars ☐

PVC UNITS:

PVC Collars Only ☐

Wiring Configurations:

W-A ☐ W-B ☐

W-C ☐ W-D ☐

Electrical Connection:

24" LG. Lead Wire ☐

Junction Box ☐

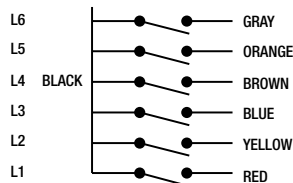
Switch Type:

SPST 20 VA ☐

SPDT 20 VA ☐

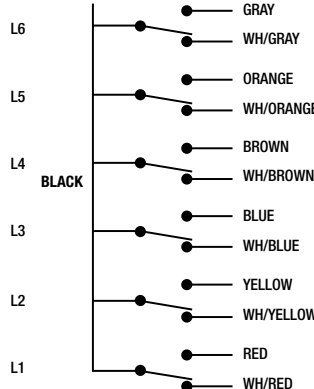
SPST 100 VA ☐

W-A SPST 20 WATT OR 100 WATT



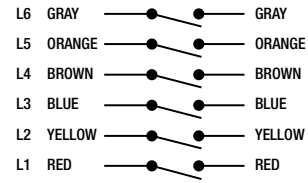
WIRE SIZES FOR STYLES 1-4, 10 & 11
1 - 5 sensing levels 22 AWG 24" Lg. Polymeric or Teflon-UL 1213
6 sensing levels 22 AWG 24" Lg. Teflon-UL 1213

W-C SPST 20 WATT



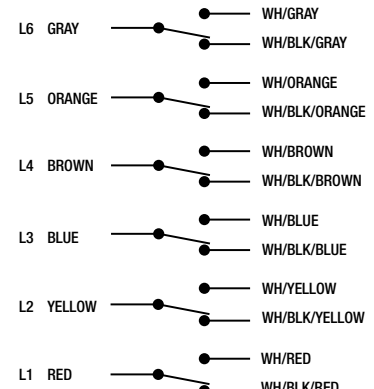
WIRE SIZES FOR STYLES 1-4, 10 & 11
1 - 2 Stations 18 AWG 24" Lg. Polymeric or Teflon-UL 1213
3 - 6 Stations 22 AWG 24" Lg. Teflon-UL 1213

W-B SPST 20 WATT OR 100 WATT



WIRE SIZES FOR STYLES 1-4, 10 & 11
1 - 3 sensing levels 18 AWG 24" Lg. Polymeric or Teflon-UL 1213
4 - 6 sensing levels 22 AWG 24" Lg. Teflon-UL 1213

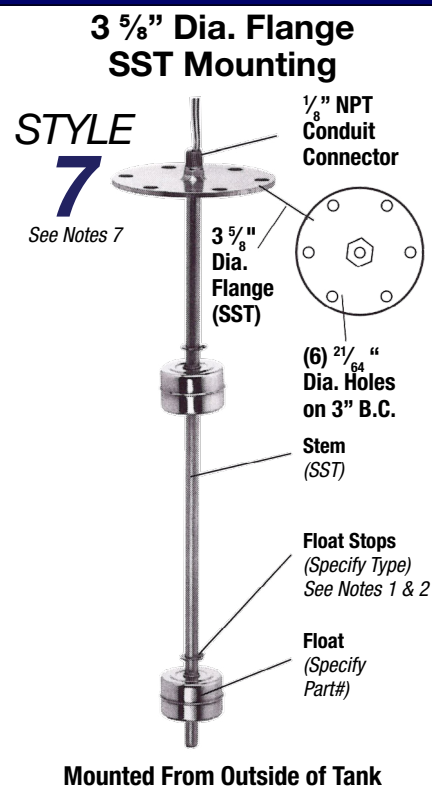
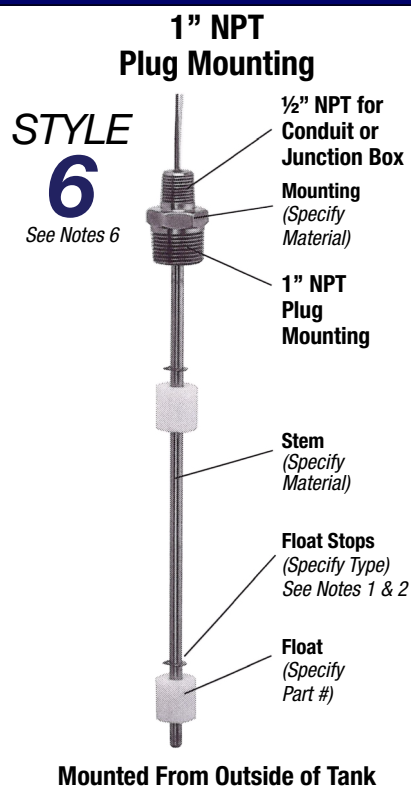
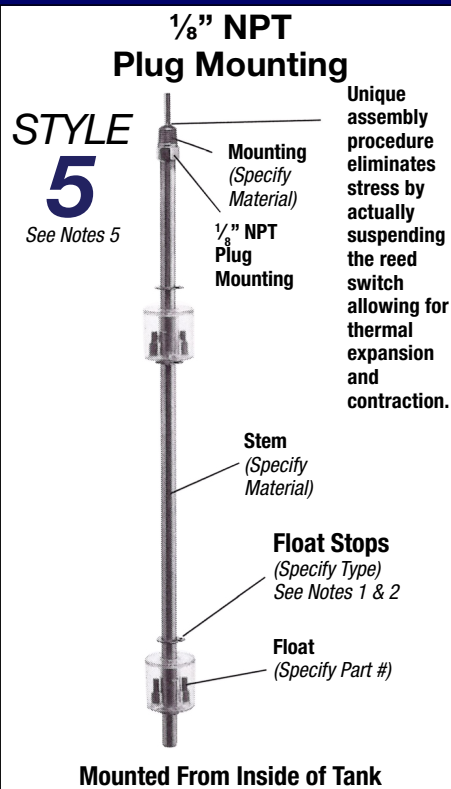
W-D SPST 20 WATT



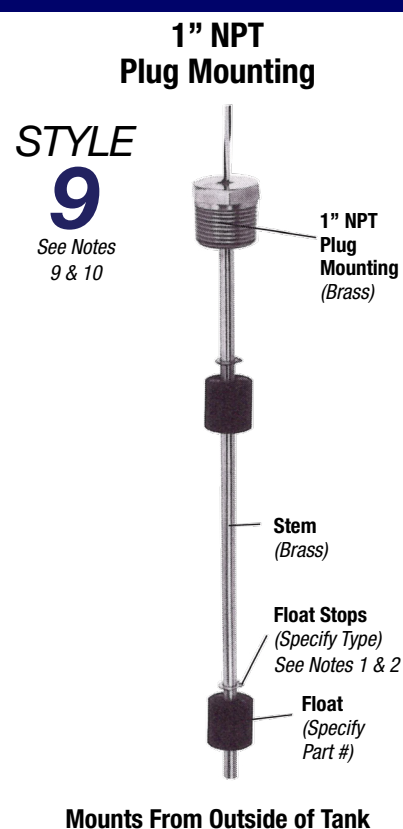
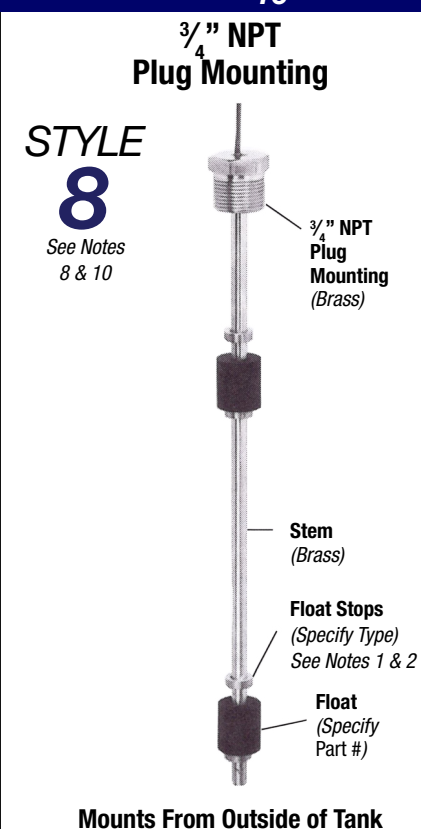
WIRE SIZES FOR STYLES 1-4, 10 & 11
1 - 2 Stations 18 AWG 24" Lg. Polymeric or Teflon-UL 1213
3 - 6 Stations 22 AWG 24" Lg. Teflon-UL 1213

4000 CUSTOM LEVEL SWITCH

METAL ($\frac{5}{16}$ " Diameter Stem)

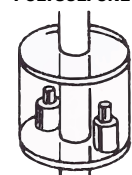


METAL ($\frac{5}{16}$ " Diameter Stem)

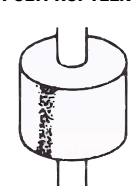


Part Numbers 3458 and 3510 plastic floats are molded in-house. We can certify that our polysulfone and polypropylene floats use only virgin material, and runners are not reintroduced, nor have blow agents or color concentrates been added during processing.

P/N 3458
POLYSULFONE

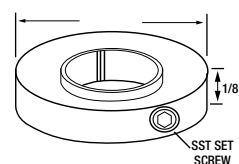


P/N 3510
POLYPROPYLENE



Part Number 3510: the magnets are heat-sealed in place using pure polypropylene welding rods.

Collars: Brass or
316 SST Optional



Drawing 1.1

4000 CUSTOM LEVEL SWITCH

5/16" Diameter Stem

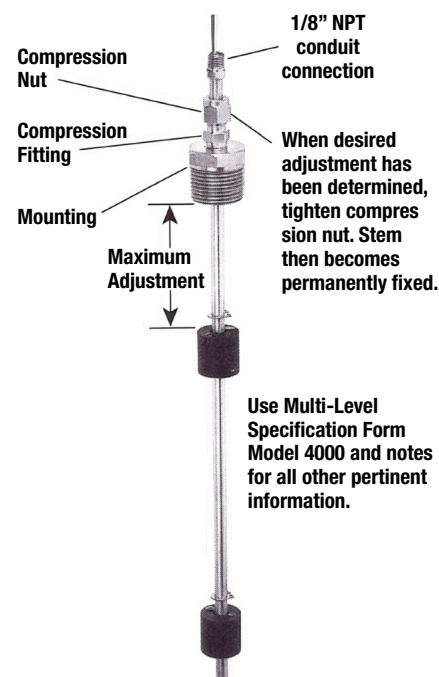
ADJUSTABLE STEM

4000 (Styles 5, 6, 7, 8 and 9)

SPECIFICATIONS:

Style	5 & 6	7	8 & 9
Mounting	Brass or Stainless Steel	Stainless Steel	Brass <i>See Note 10</i>
Stem	Brass or Stainless Steel	Stainless Steel	Brass <i>See Note 10</i>
Float	Customer to Specify Part Number		
Float Stops Grip Rings <i>See Note 1</i>	Brass units: Beryllium Copper Grip Rings SST Units: Ph 15-7 Mo SST Grip Rings	Ph 15-7 Mo Stainless Steel	Beryllium Copper <i>See Note 10</i>
Float Stops: Collars <i>See Note 2</i> <i>Drawing 1.1</i>	Brass Units: Brass Collars SST Units: Stainless Steel Collars	Stainless Steel	Brass <i>See Note 10</i>
Stem Length	Per Customer Requirements		
Reed Switches and Wire <i>See Notes 3 & 4</i>	UL Recognized units: SPST Pilot duty 20 VA 120-240 VAC Polymeric Leads: See multi-level specification form		
Reed Switches and Wire <i>See Notes 3 & 4</i>	Non UL Recognized units: SPST Pilot duty 20 VA 120-240 VAC SPST Pilot duty 100 VA 120-240 VAC Teflon Leads: See multi-level specification form		
Hysteresis	1/16" Total Envelope		

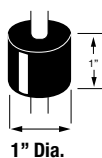
For Styles 6, 7 & 8. Option for Model 4000 - 5/16" Diameter Stem



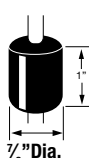
FLOAT SPECIFICATIONS: (Styles 5, 6, 7, 8 and 9)

1 1/2"

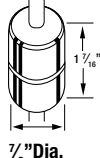
P/N 3476
BUNA N



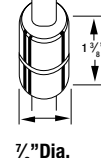
P/N 3489
BUNA N



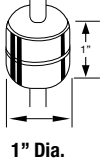
P/N 3660
SST



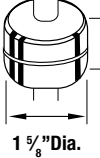
P/N 3671
SST



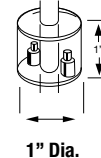
P/N 3509
SST



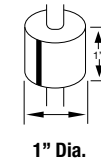
P/N 3482
SST



P/N 3458
POLY-SULFONE



P/N 3510
POLY-PROPYLENE



Float P/N	3476 BUNA	3489 BUNA	3660 SST	3671 SST	3509 SST	3482 SST	3458 Polysulfone	3510 Polypropylene
Temperature Range	-40° to 180°F in water -40° to 230°F in oil		-40°F to +300°F				-40° F to +225°F	
Pressure Max.	150 PSI		500 PSI	750 PSI	400 PSI	150 PSI	75 PSI	100 PSI
Specific Gravity	.55	.51	.7	.88	.77	.57	.65	.81

4000 CUSTOM LEVEL SWITCH

INSTALLATIONS/OPTIONS

Notes:

1. Grip rings come standard at no extra charge.
2. Optional collars are available from stock. See drawing 1.1.
3. Also available, leads in different lengths, cable, terminated ends, etc. Consult factory.
4. Relays are available for handling higher electrical loads than allowed. See accessory section for details.
5. Style 5 mounting installs from the inside of the tank into a 1/8" NPT boss. Specify float part number: 3476, 3489, 3660, 3671, 3509, 3482, 3458, or 3510.
6. Style 6 mounting installs from the outside of the tank into a 1" NPT boss. Specify float part number 3476, 3489, 3660, 3671, 3509, 3458, or 3510.
7. Style 7 mounting installs from the outside of the tank onto a mating surface as dimensions. Bore float clearance hole to suit specified float. Specify float part number 3476, 3489, 3660, 3671, 3509, 3482, 3458 or 3510.
8. Style 8 mounting installs from the outside of the tank into a 3/4" NPT boss. Specify float part number 3489, 3660 or 3671.
9. Style 9 mounting installs from the outside of the tank into a 1" NPT boss. Specify float part number 3476, 3489, 3660, 3671, 3509, 3458 or 3510.
10. Styles 8 and 9 are available constructed of 316 stainless steel and may be ordered with grip rings of Ph 15-7 Mo stainless steel or 316 SST collars. Consult factory.
11. Custom interface floats are available. Consult factory.
12. Multi-level Specification Form 4000 must be used to ensure correct dimensional data.
13. Material of copper-nickel, titanium, hastelloy and aluminum are stocked. Consult factory.

SPECIALTY OPTIONS:

