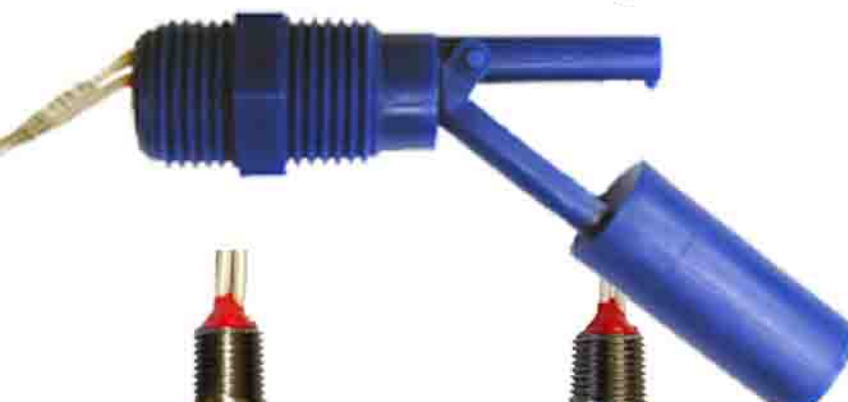
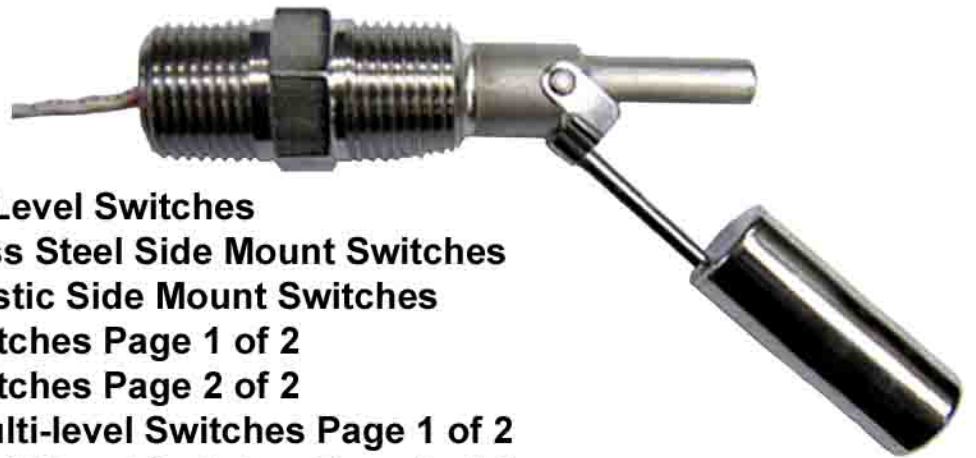


INDEX: Liquid Level Switches

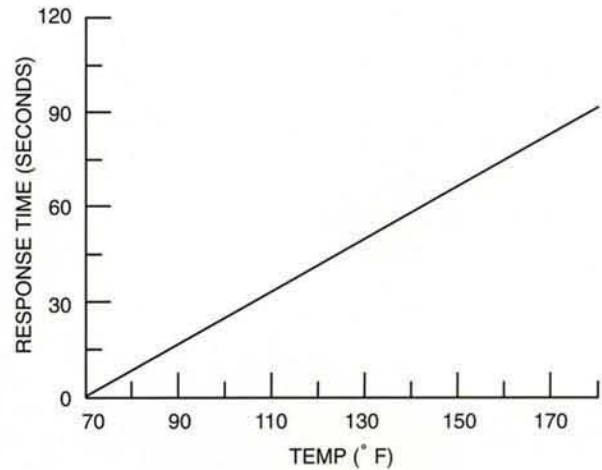
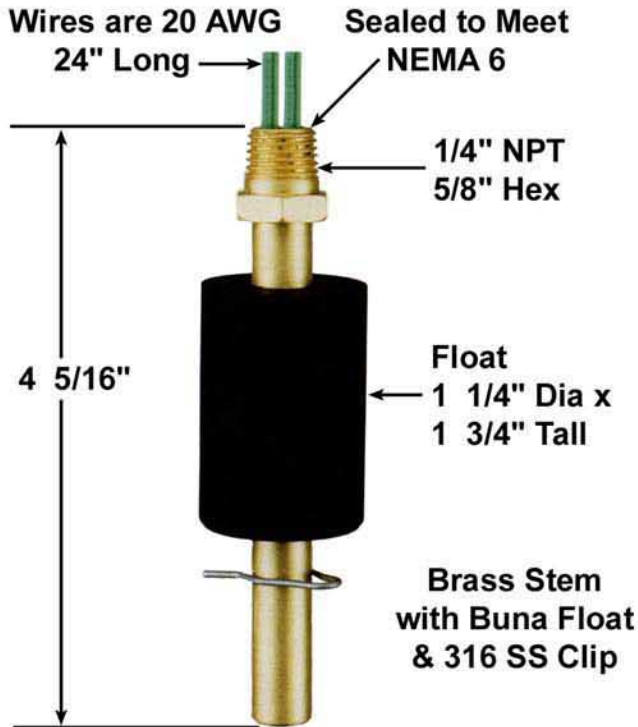
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- 4 L20 Series Stainless Steel Side Mount Switches
- 5 L20/L22 Series Plastic Side Mount Switches
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- 8 L31 Heavy Duty Multi-level Switches Page 1 of 2
- 9 L31 Heavy Duty Multi-level Switches Page 2 of 2
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- 11 L40 Vertical Stainless Steel Spherical Float Switches
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L10 Series

Temperature/Level Vertical Mount Brass

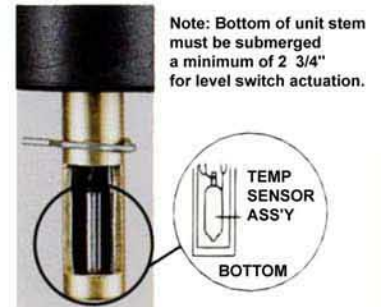
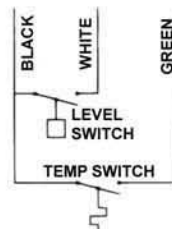


Response time curve of properly immersed temperature/level sensor.

- Response time is about 1° F/second.
- Tests conducted in exacal EX-250HT oil bath.
- Media is Dow Corning 200-50 cS silicone oil.
- Response rates vary by media and conditions.



WIRING SCHEMATIC *



*Consult factory for additional wiring types.

General Specifications:

Operating Temp: -40°F to +180°F in Water
-40°F to +225°F in Oil

Temp Settings: +100°F to +225°F
in 25°F increments, Specials Available

Repeatability: ± 5°F

Wetted Material: Brass, Buna & 316 SS

Fitting: 1/4" NPT Male

Electrical Ratings:

Level Switch: 50 Volt Amps, 1/4 A at 150 VAC

Temp Switch: 8 Amps at 12 VDC
2.6 Amps at 120 VAC

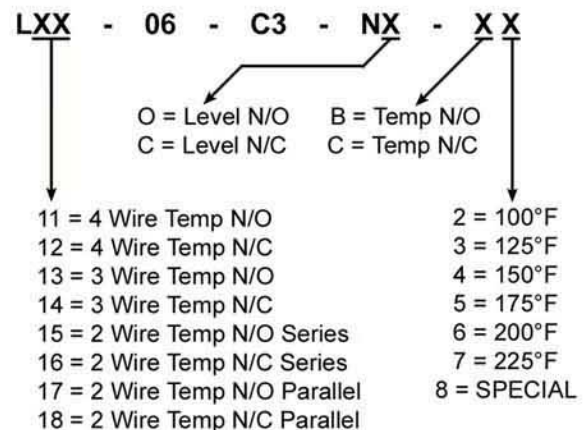
Minimum Media Specific Gravity: 0.75

Crush Pressure: 160 psig

Lead Wires: 20 AWG 24" PVC

Patent Pending Thermally Conductive Potting
Enhances Response Time to Temp Changes.

PART NUMBER CONSTRUCTION:



Caution: Customer media and environment must be compatible with construction materials as outlined above.

WIRES ARE 20 AWG
24" LONG
(~600 mm LONG)

OVERALL LENGTH =
5 1/2" NOM.
(140 mm NOM.)

1/2" NPT (1/2" BSPT)
7/8" HEX (22 mm HEX)



SEALED TO MEET
NEMA 6

FLOAT
11/16" DIA NOM. x
1 13/16" LONG NOM.
(17 mm DIA x 46 mm LONG)



General Specifications	L20-02-S2-02-NO	L25-02-S2-02-NO
FITTING	1/2" NPT	1/2" BSPT
WETTED MATERIALS	316 SS	316 SS
ELECTRICAL SWITCH RATING	50 VA	50 VA
TEMPERATURE RANGE	-40°F TO +257°F	-40°C TO +125°C
MIN. LIQUID SPECIFIC GRAVITY	0.85	0.85
CRUSH PRESSURE	500 PSI	35 BAR
LEAD WIRES	20 AWG 24" PVC	20 AWG 600mm PVC

Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.

Caution: Customer media and environment must be compatible with construction materials as outlined above.

L20/L25 Series

Side Mount
Plastic

WIRES ARE 20 AWG
24" LONG
(~600 mm LONG)

1/2" NPT (1/2" BSPT)
7/8" HEX (22 mm HEX)

OVERALL
LENGTH =
4 3/8" NOM.
(111 mm NOM.)



SEALED TO MEET
NEMA 6

FLOAT
1/2" DIA NOM. x
1 11/16" LONG NOM.
(12.7 mm DIA x 43 mm LONG)



General Specifications	L20	L25
FITTING	1/2" NPT	1/2" BSPT
WETTED MATERIALS	CPVC - Gray L20-16-S1-16-NO Kynar - White L20-17-S1-17-NO Polypropylene - Blue L20-20-S1-20-NO	CPVC - Gray L25-16-S1-16-NO Kynar - White L25-17-S1-17-NO Polypropylene - Blue L25-20-S1-20-NO
ELECTRICAL SWITCH RATING	50 VA	50 VA
TEMPERATURE RANGE	-40°F to +180°F	-40°C to +82°C
MIN. LIQUID SPECIFIC GRAVITY	CPVC - 0.90 Kynar - 1.00 Polypropylene - 0.70	CPVC - 0.90 Kynar - 1.00 Polypropylene - 0.70
CRUSH PRESSURE	100 PSI	7 BAR
LEAD WIRES	20 AWG 24" PVC	20 AWG 600 mm PVC

L20-16-S1-16-NO



CPVC

L20-17-S1-17-NO



KYNAR

L20-20-S1-20-NO



POLYPROPYLENE

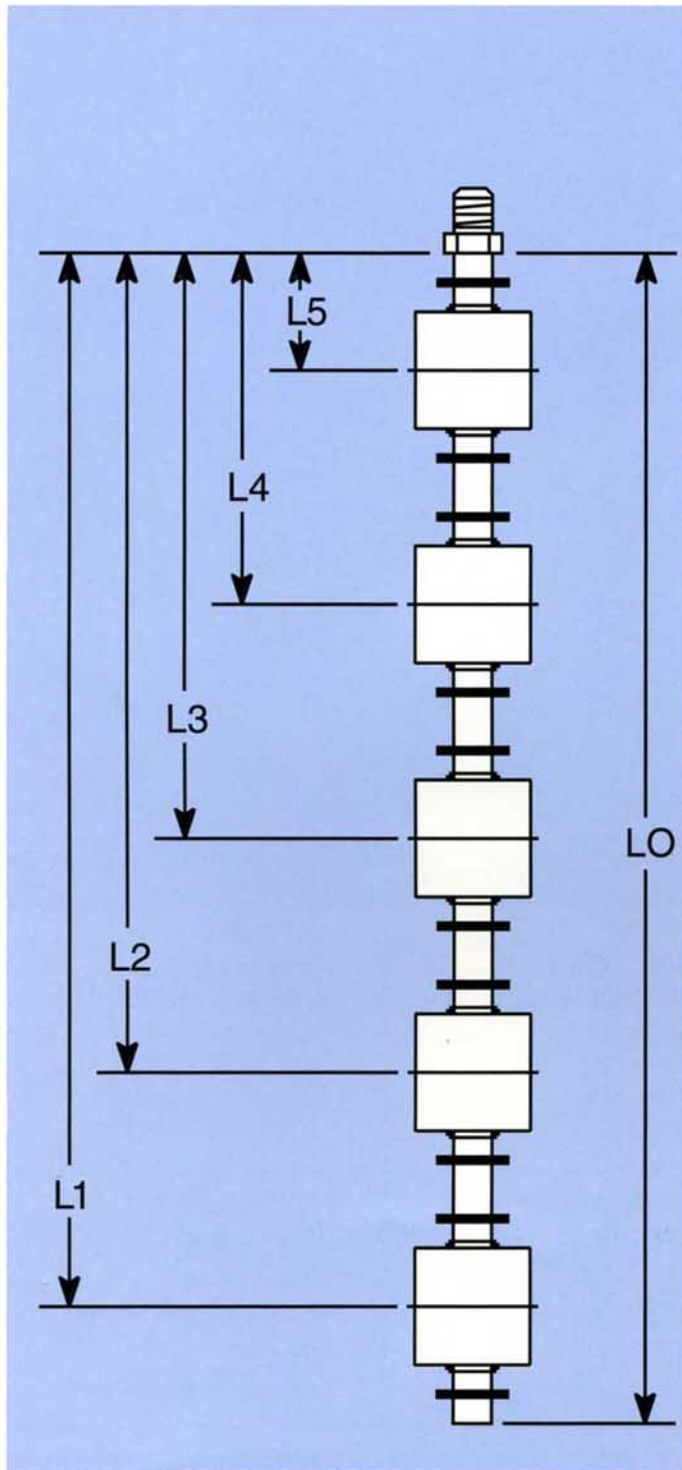
The L22 half fitting model shown at right is 3 7/8" long nominal.
It is 1/2" NPT. The part numbers are:
L22-16-S1-16-NO = CPVC
L22-17-S1-17-NO = KYNAR
L22-20-S1-20-NO = POLYPROPYLENE
BSPT versions start with L27.

L22 HALF FITTING
AVAILABLE IN
ALL 3 PLASTICS



Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.

Caution: Customer media and environment must be compatible with construction materials as outlined above.



Customize your own level switches to meet your tank size and switch requirements:

- Up to 48" overall length
- Up to 5 control points

1. Select mounting type. *Note: stem and mounting are stainless steel.*
2. Select the float material.
3. Select mounting position.
4. Specify wiring group and switch type.
5. Determine the number of actuation points and the distance from the bottom of the mounting plug – Specify L1 through L5.

Specify LO (Length overall), which is L1 plus 13/16".

Switch logic, either normally closed or normally open. When specifying switch logic, please indicate switch condition when tank is dry.

Provide a sketch or drawing along with other pertinent information for proper switch selection.



Caution: Customer media and environment must be compatible with construction materials as outlined above.

L30 Series

Vertical Multi-station Level Switch Selection Guide

Five easy steps to the right miniature multi-station level switch to meet your needs.

Miniature size, up to 48" overall length, up to 5 switch points. Stem and mounting materials are stainless steel.

1. Select Mounting Type:

(1/2" NPT conduit connection supplied on type 2.)



Other Fittings Available

2. Select Float Material:

Buna N Temperature range: -40°F to +180°F
Maximum pressure: 160 PSIG

S/S Temperature range: -40°F to +300°F
Maximum pressure: 225 PSIG or 1000 PSIG

3. Select Mounting Position:

In Tank Top

In Tank Bottom

4. Select Wiring Group and Switch Type:

Check the appropriate group



WIRING	SPST SWITCHES		
	Group 1	Group 2	
Wire	#22 AWG	#22 AWG	
Common	Black	None	
	NO/NC	SW Com	NO/NC
L5	Orange		
L4	Brown		
L3	Blue	Blue	Blue
L2	Yellow	Yellow	Yellow
L1	Red	Red	Red

Media _____
 Specific Gravity _____
 Viscosity SSU _____
 Temperature Min °F _____ Max °F _____
 Pressure: Normal PSIG _____ Max PSIG _____
 Tank Depth _____ Tank Material _____

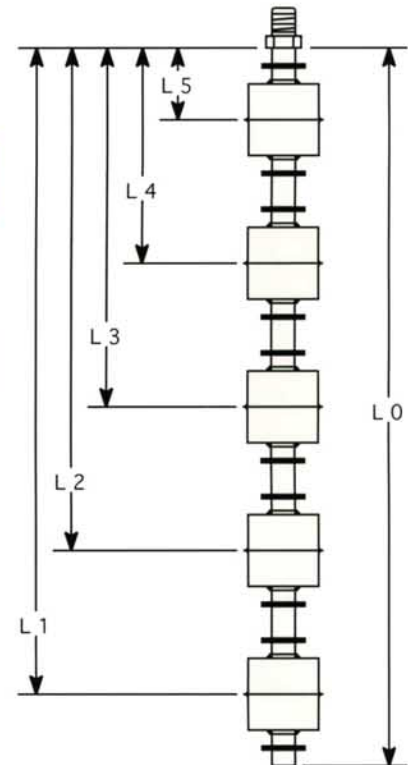
Note: Switches are 50 VA

5. Select Switch Actuation Points and Circuitry:

ACTUATION LEVEL	DISTANCE TO ACTUATION LEVEL IN INCHES	SPST SWITCH Position - Tank Dry	
		NO	NC
L5			
L4			
L3			
L2			
L1			

LO = Length overall (inches):

Note: Maximum LO = 48"



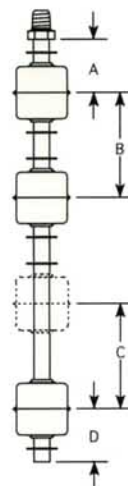
Switch actuation levels are determined following the guidelines below.

A = Minimum distance to highest actuation level (1").

B = Minimum distance between actuation levels (2 1/2").

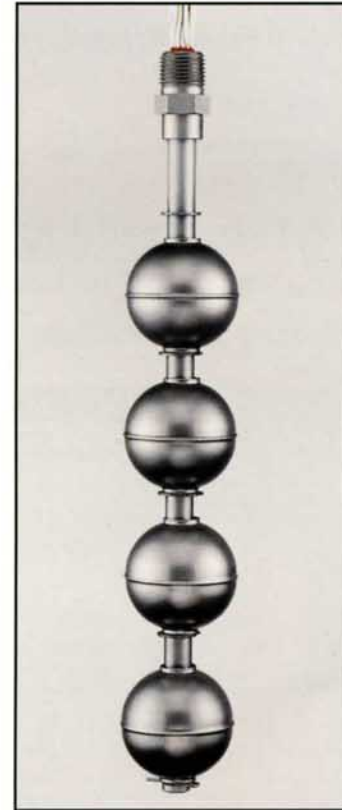
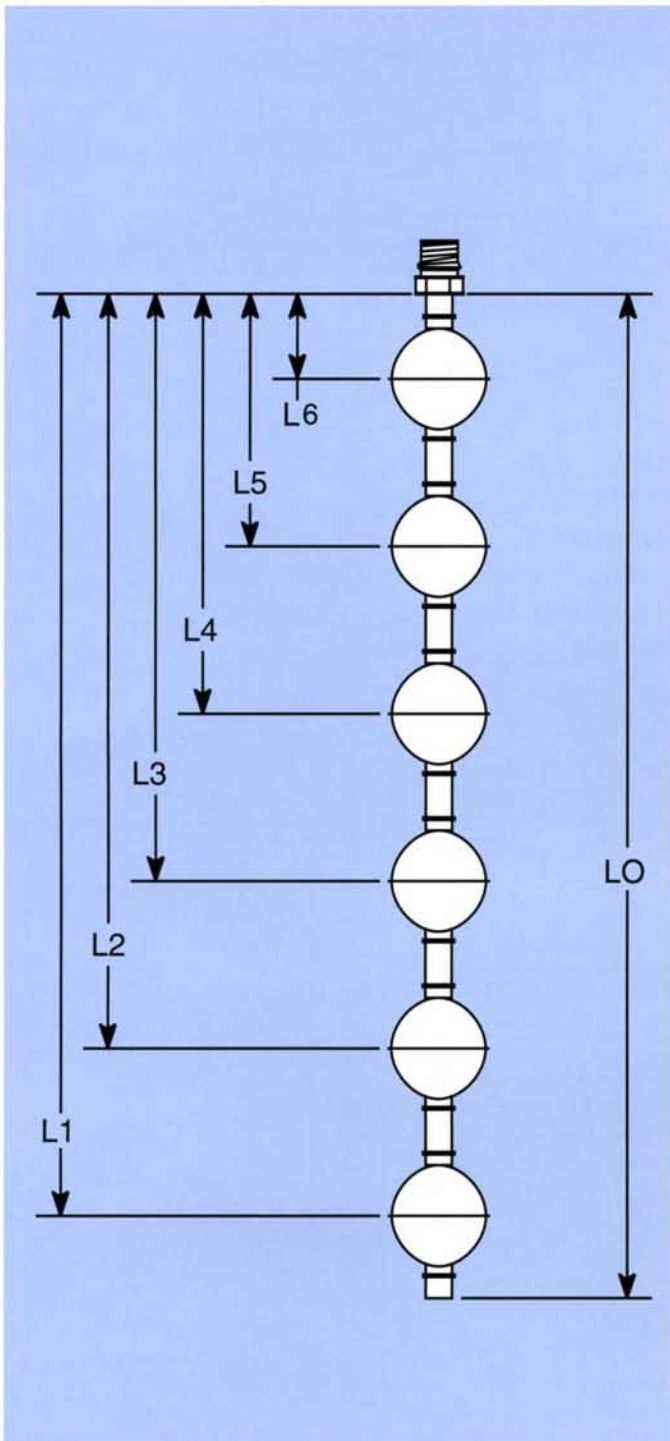
C = Minimum distance between two actuation levels with one float (1/8"). (Note: One float for two levels can be used only when low level is NC dry and high level is NO dry).

D = Minimum distance from end of unit to lowest actuation level (13/16").



* Actuation level distances and LO (length overall) are measured from inner surface of mounting plug
 ** Length Overall (LO) = L₁ + Dimension D.

Copy, complete and fax to Whitman Controls, (860) 583-5293



Customize your own level switches to meet your tank size and switch requirements:

- Up to 72" overall length
- Up to 6 control points

1. Select mounting type. *Note: stem and mounting are stainless steel.*
2. Select the float material.
3. Select mounting position.
4. Specify wiring group and switch type.
5. Determine the number of actuation points and the distance from the bottom of the mounting plug. Specify L1 through L6 and determine switch logic, either normally closed or normally open. When specifying switch logic, please indicate switch condition when tank is dry.

Specify LO (Length overall), which is L1 plus 1 7/16".

Provide a sketch or drawing along with other pertinent information for proper switch selection.



Caution: Customer media and environment must be compatible with construction materials as outlined above.

L31 Series

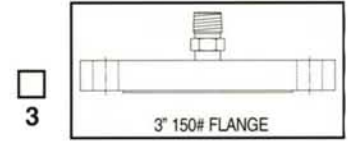
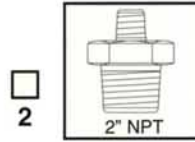
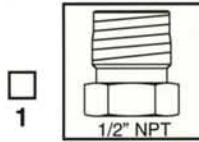
Vertical Multi-station Level Switch Selection Guide

Five easy steps to the right multi-station level switch to meet your needs.

Large size, up to 72" overall length, up to 6 switch points. Stem and mounting materials are stainless steel.

1. Select Mounting Type:

(1/2" NPT conduit connection supplied on types 2 and 3.)



2. Select Float Material: **Buna N** Temperature range: -40°F to +180°F
Maximum pressure: 160 PSIG

S/S Temperature range: -40°F to +300°F
Maximum pressure: 975 PSIG

3. Select Mounting Position: **In Tank Top**

In Tank Bottom

Other Fittings Available

4. Select Wiring Group and Switch Type:

Check the appropriate group

WIRING	SPST SWITCHES		
	Group 1	Group 2	
Wire	#22 AWG	#22 AWG	
Common	Black	None	
	NO/NC	SW Com	NO/NC
L6	Gray	Gray	Gray
L5	Orange	Orange	Orange
L4	Brown	Brown	Brown
L3	Blue	Blue	Blue
L2	Yellow	Yellow	Yellow
L1	Red	Red	Red

Media _____
 Specific Gravity _____
 Viscosity SSU _____
 Temperature Min °F _____ Max °F _____
 Pressure: Normal PSIG _____ Max PSIG _____
 Tank Depth _____ Tank Material _____

Note: Switches are 50 VA

5. Select Switch Actuation Points and Circuitry:

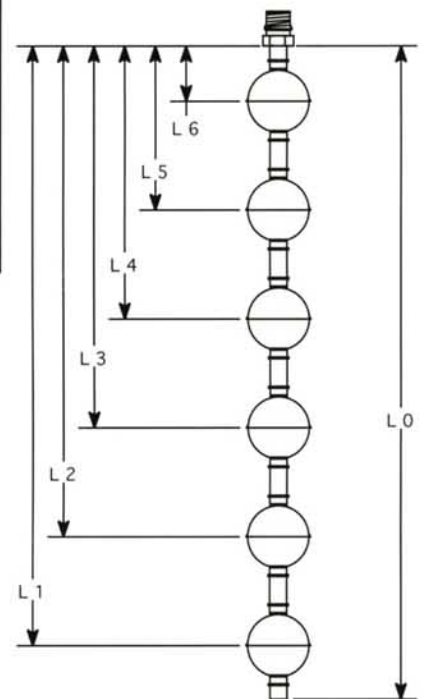
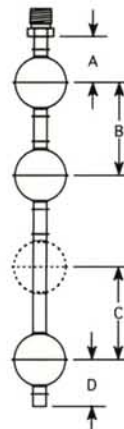
ACTUATION LEVEL	DISTANCE TO ACTUATION LEVEL IN INCHES	SPST SWITCH Position - Tank Dry	
		NO	NC
L6			
L5			
L4			
L3			
L2			
L1			

LO = Length overall (inches):

Note: Maximum LO = 72"

Switch actuation levels are determined following the guidelines below.

- A = Minimum distance to highest actuation level (1-1/2").
- B = Minimum distance between actuation levels (3").
- C = Minimum distance between actuation levels (1/4").
(Note: One float for two levels can be used only when low level is NC dry and high level is NO dry).
- D = Minimum distance from end of unit to lowest actuation level (1 7/16").



* Actuation level distances and LO (length overall) are measured from bottom of mounting plug or flange.

** Length Overall LO = L₁ + Dimension D.

Copy, complete and fax to Whitman Controls, (860) 583-5293

L40/L45 Series

Miniature Vertical Mount
Stainless Steel

WIRES ARE 20 AWG
24" LONG
(~600 mm LONG)




1/8" NPT FITTING
(1/8" BSPT FITTING)
7/16" HEX
(11 mm HEX)

SEALED TO MEET
NEMA 6



2 1/8" TALL NOM.
(54 mm TALL NOM.)

FLOAT
1" DIA x 1" TALL
(25 mm DIA x 25 mm TALL)
CYLINDER

General Specifications	L40-02-C1-02-NO	L45-02-C1-02-NO	
FITTING	1/8" NPT	1/8" BSPT	  
WETTED MATERIALS	316L SS	316L SS	
ELECTRICAL SWITCH RATING	50 VA	50 VA	
TEMPERATURE RANGE	-40° F to +257°F	-40°C to +125°C	
MIN. LIQUID SPECIFIC GRAVITY	0.90	0.90	
CRUSH PRESSURE	400 PSI	28 BAR	
LEAD WIRES	20 AWG 24" PVC	20 AWG 600mm PVC	

Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.

Caution: Customer media and environment must be compatible with construction materials as outlined above.



L40/L45 Series

High Performance
Miniature Vertical Mount
Stainless Steel

WIRES ARE 20 AWG
24" LONG
(~600 mm LONG)




1/8" NPT FITTING
(1/8" BSPT FITTING)
7/16" HEX
(11 mm HEX)

SEALED TO MEET
NEMA 6



2 1/8" TALL NOM.
(54 mm TALL NOM.)

FLOAT
1" DIA x 1" TALL
(25 mm DIA x 25 mm TALL)
SPHERE

General Specifications	L40-02-R1-02-NO	L45-02-R1-02-NO	
FITTING	1/8" NPT	1/8" BSPT	  
WETTED MATERIALS	316L SS	316L SS	
ELECTRICAL SWITCH RATING	50 VA	50 VA	
TEMPERATURE RANGE	-40° F to +257°F	-40°C to +125°C	
MIN. LIQUID SPECIFIC GRAVITY	0.85	0.85	
CRUSH PRESSURE	1000 PSI	69 BAR	
LEAD WIRES	20 AWG 24" PVC	20 AWG 600mm PVC	

Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.

Caution: Customer media and environment must be compatible with construction materials as outlined above.



WIRES ARE 20 AWG
24" LONG
(~600 mm LONG)




1/8" NPT FITTING
(1/8" BSPT FITTING)
7/16" HEX
(11 mm HEX)

SEALED TO MEET
NEMA 6



2 1/8" TALL NOM.
(54 mm TALL NOM.)

FLOAT
1" DIA x 1" TALL
(25 mm DIA x 25 mm TALL)
CYLINDER

General Specifications	L40-06-C1-15-NO	L45-06-C1-15-NO	
FITTING	1/8" NPT	1/8" BSPT	  
WETTED MATERIALS	Brass, Buna, 316 SS	Brass, Buna, 316 SS	
ELECTRICAL SWITCH RATING	50 VA	50 VA	
TEMPERATURE RANGE	-40° F to +180°F*	-40°C to +82°C*	
MIN. LIQUID SPECIFIC GRAVITY	0.70	0.70	
CRUSH PRESSURE	160 PSI	11 BAR	
LEAD WIRES	20 AWG 24" PVC	20 AWG 600mm PVC	

Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.
* Unit is rated to 230°F/110°C in oil.

Caution: Customer media and environment must be compatible with construction materials as outlined above.

**SEALED TO MEET
NEMA 6**

**1/8" NPT FITTING
(1/8" BSPT FITTING)
7/16" HEX
(11 mm HEX)**

**WIRES ARE 20 AWG
24" LONG
(~600 mm LONG)**

**FLOAT
1" DIA x 1" TALL
(25 mm DIA x 25 mm TALL)
CYLINDER**



**2 1/8" TALL NOM.
(54 mm TALL NOM.)**



General Specifications	L40	L45
FITTING	1/8" NPT	1/8" BSPT
WETTED MATERIALS	CPVC - Gray L40-16-C1-16-NO Kynar - White L40-17-C1-17-NO Polypropylene - Blue L40-20-C1-20-NO	CPVC - Gray L45-16-C1-16-NO Kynar - White L45-17-C1-17-NO Polypropylene - Blue L45-20-C1-20-NO
ELECTRICAL SWITCH RATING	50 VA	50 VA
TEMPERATURE RANGE	-40°F to +180°F	-40°C to +82°C
MIN. LIQUID SPECIFIC GRAVITY	CPVC - 0.85 Kynar - 1.00 Polypropylene - 0.70	CPVC - 0.85 Kynar - 1.00 Polypropylene - 0.70
CRUSH PRESSURE	100 PSI	7 BAR
LEAD WIRES	20 AWG 24" PVC	20 AWG 600mm PVC



CPVC



KYNAR



POLYPROPYLENE

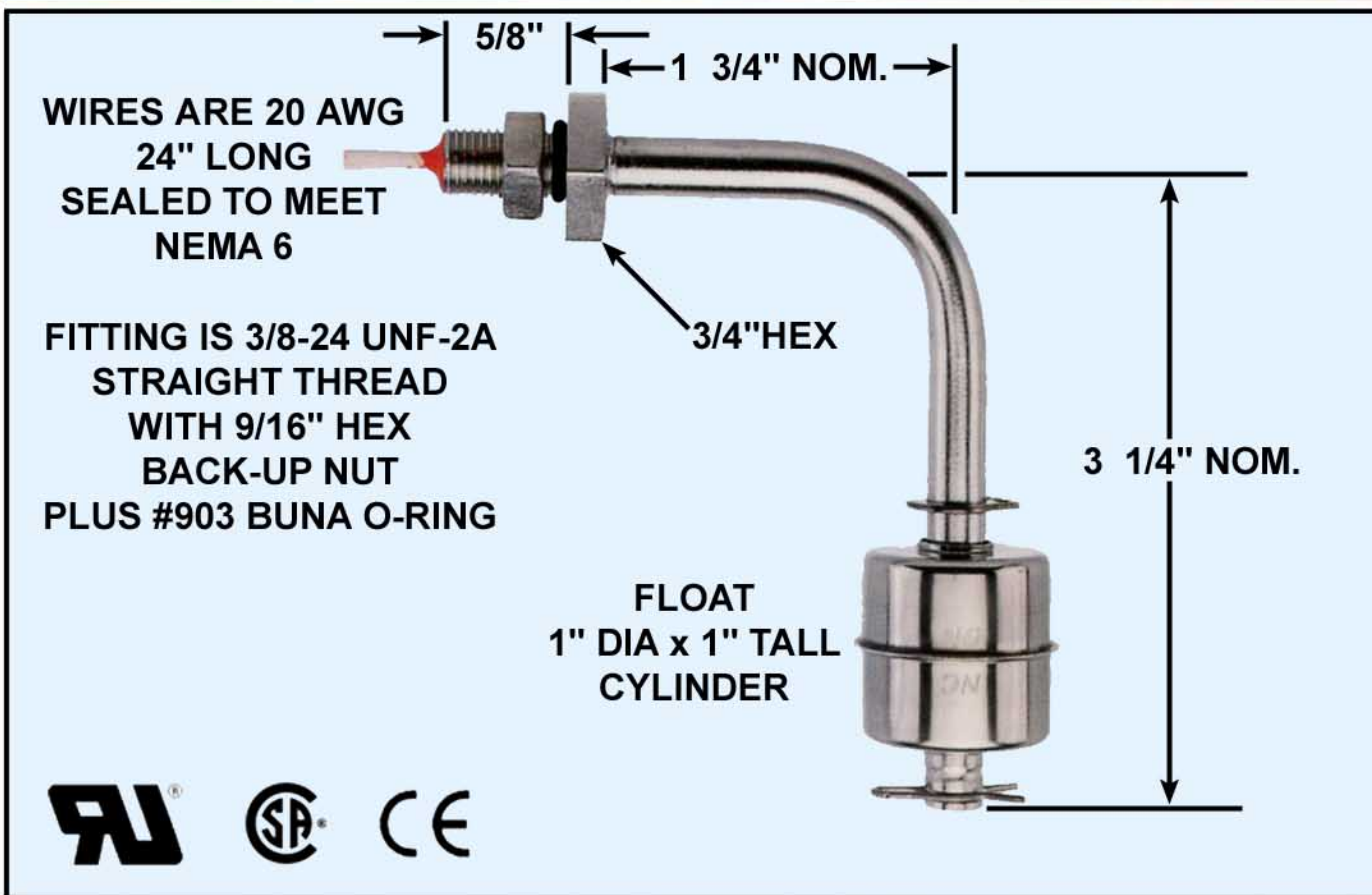
Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.

Caution: Customer media and environment must be compatible with construction materials as outlined above.

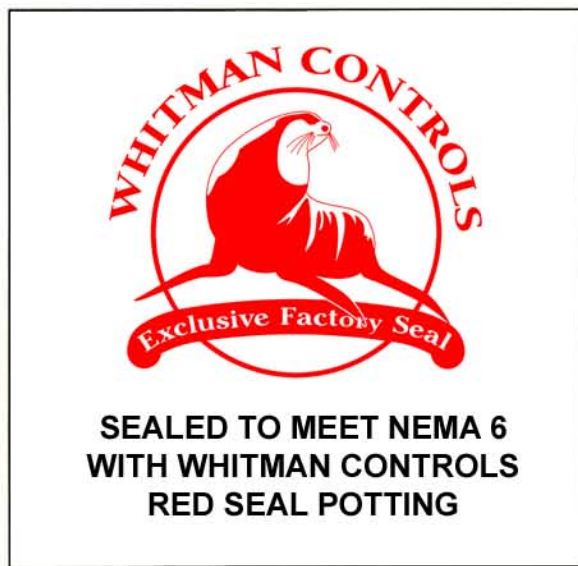


L54 Series

Bent Stem
Side Mount

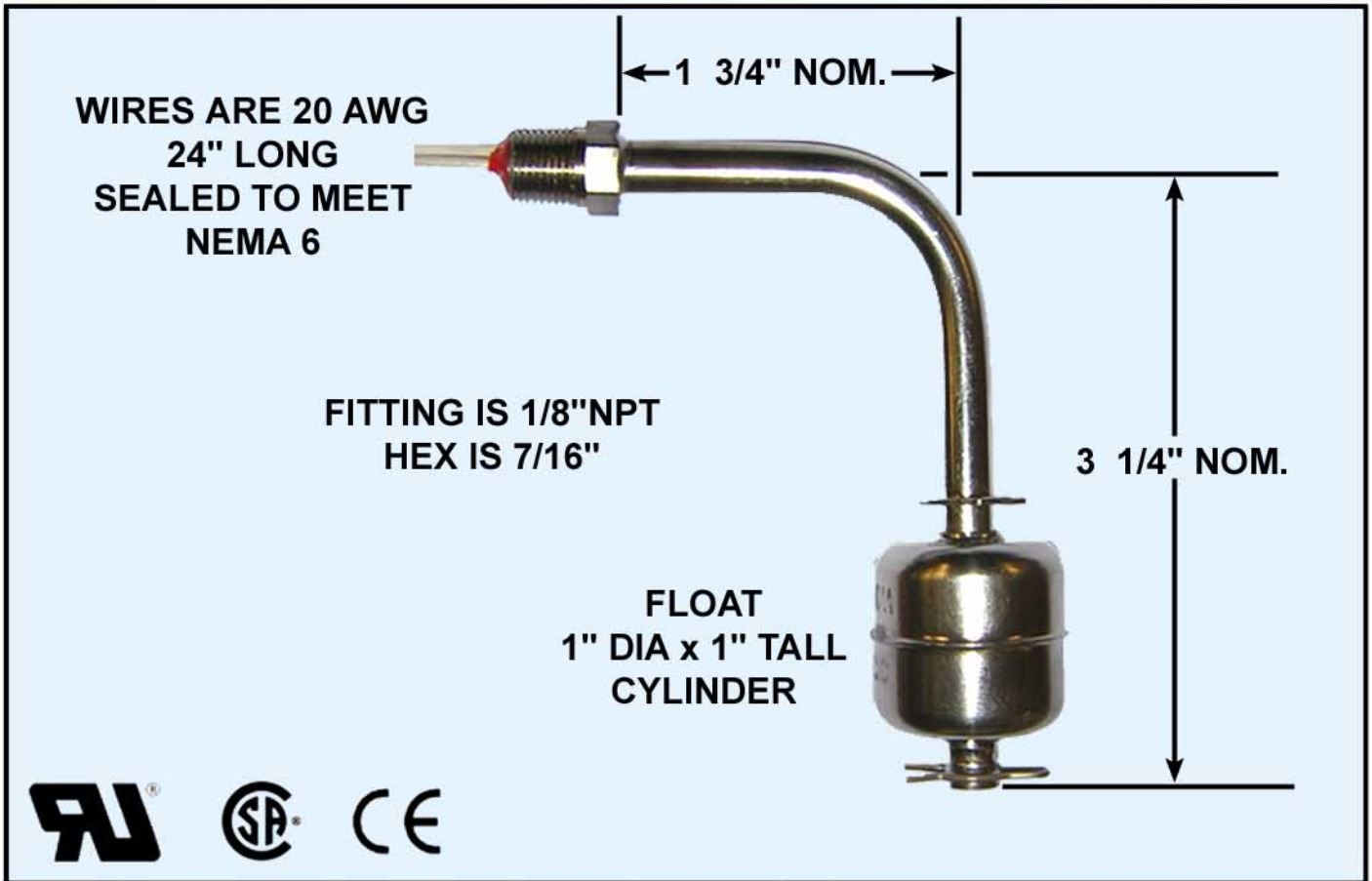


General Specifications	L54-02-C1-02-NO
FITTING	3/8"- 24 UNF - 2A Thread
WETTED MATERIALS	316L SS
ELECTRICAL SWITCH RATING	50 VA
TEMPERATURE RANGE	-40° F to +257°F
MIN. LIQUID SPECIFIC GRAVITY	0.90
CRUSH PRESSURE	400 PSI
LEAD WIRES	20 AWG 24" PVC



Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.

Caution: Customer media and environment must be compatible with construction materials as outlined above.



General Specifications	L55-02-C1-02-NO
FITTING	1/8" NPT
WETTED MATERIALS	316L SS
ELECTRICAL SWITCH RATING	50 VA
TEMPERATURE RANGE	-40°F to +257°F
MIN. LIQUID SPECIFIC GRAVITY	0.90
CRUSH PRESSURE	400 PSI
LEAD WIRES	20 AWG 24" PVC



Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.

Caution: Customer media and environment must be compatible with construction materials as outlined above.

L60/L65 Series

High Performance
Vertical Mount
Stainless Steel


1/4" NPT FITTING
(1/4" BSPT FITTING)
5/8" HEX
(16 mm HEX)

WIRES ARE 20 AWG
24" LONG
(~600 mm LONG)
SEALED TO MEET
NEMA 6



FLOAT
2" DIA x 2" TALL
(51 mm DIA x 51 mm TALL)
SPHERE

3 7/16" TALL NOM.
(87 mm TALL NOM.)

General Specifications	L60-02-R2-02-NO	L65-02-R2-02-NO	
FITTING	1/4" NPT	1/4" BSPT	  
WETTED MATERIALS	316L SS	316L SS	
ELECTRICAL SWITCH RATING	50 VA	50 VA	
TEMPERATURE RANGE	-40° F to +257°F	-40°C to +125°C	
MIN. LIQUID SPECIFIC GRAVITY	0.80	0.80	
CRUSH PRESSURE	975 PSI	67 BAR	
LEAD WIRES	20 AWG 24" PVC	20 AWG 600mm PVC	

Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.

Caution: Customer media and environment must be compatible with construction materials as outlined above.

L60/L65 Series

Vertical Mount
Brass




1/4" NPT FITTING
(1/4" BSPT FITTING)
9/16" HEX
(14 mm HEX)

WIRES ARE 20 AWG
24" LONG
(~600 mm LONG)
SEALED TO MEET
NEMA 6



FLOAT
1 1/4" DIA x 1 3/4" TALL
(32 mm DIA x 44 mm TALL)
CYLINDER

3 1/8" TALL NOM.
(79 mm TALL NOM.)

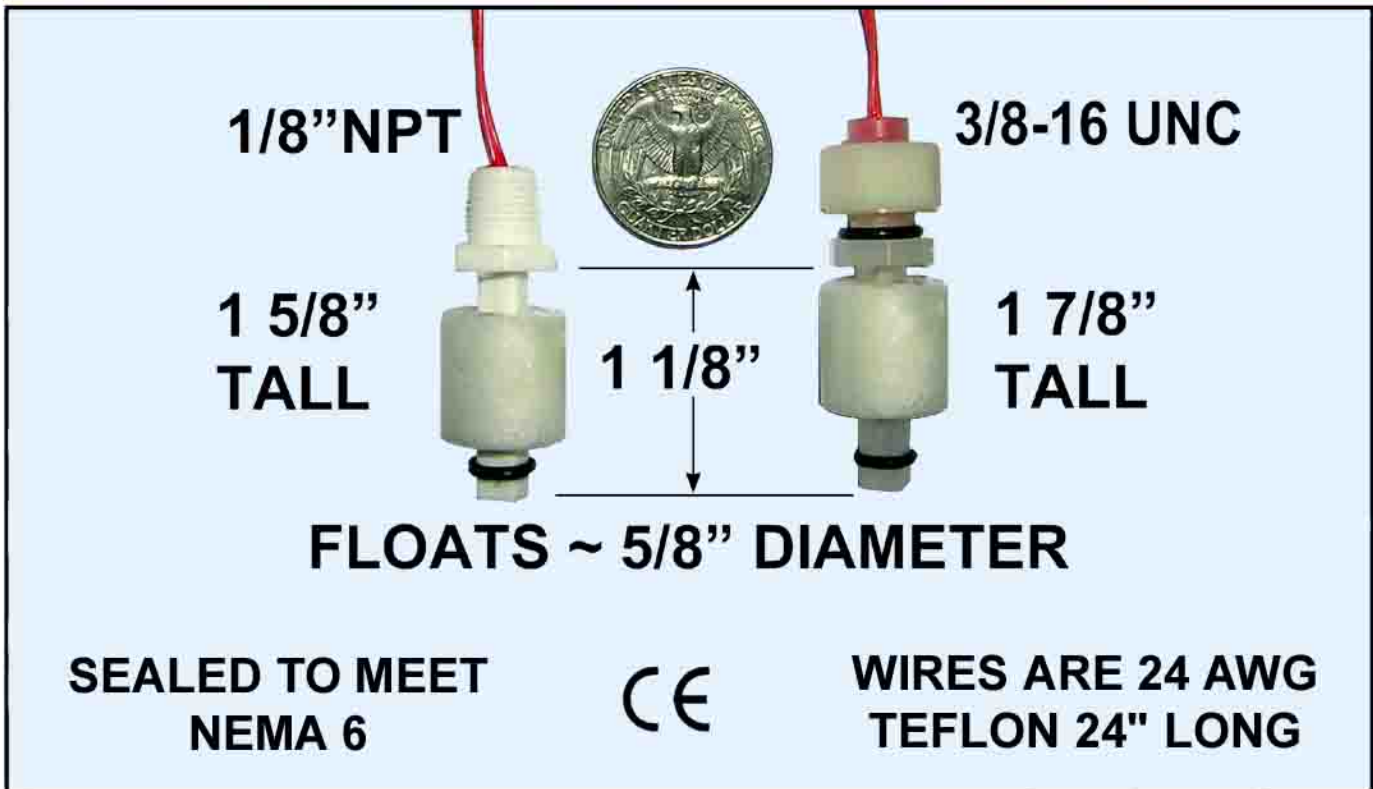
General Specifications	L60-06-C3-15-NO	L65-06-C3-15-NO	
FITTING	1/4" NPT	1/4" BSPT	  
WETTED MATERIALS	Brass, Buna, 316 SS	Brass, Buna, 316 SS	
ELECTRICAL SWITCH RATING	50 VA	50 VA	
TEMPERATURE RANGE	-40°F to +180°F*	-40°C to +82°C*	
MIN. LIQUID SPECIFIC GRAVITY	0.75	0.75	
CRUSH PRESSURE	160 PSI	11 BAR	
LEAD WIRES	20 AWG 24" PVC	20 AWG 600mmPVC	

Actuation point is roughly midway of float travel in liquid with a specific gravity of about 1.0.

* Unit is rated to 230°F/110°C in oil.

Caution: Customer media and environment must be compatible with construction materials as outlined above.

L70 Series Mini Level Switch



General Specifications	L70-1/8NPT	L70-3/8-16
FITTING	1/8" NPT PIPE THREAD	3/8-16 UNC STRAIGHT
WETTED MATERIAL: STEM AND O-RING FLOAT	POLYPROPYLENE & BUNA POLYPROPYLENE PLUS FDA FOAMING AGENT	POLYPROPYLENE & BUNA POLYPROPYLENE PLUS FDA FOAMING AGENT
ELECTRICAL SWITCH RATING	50 VA NORMALLY OPEN (N.O.) DRY	50 VA NORMALLY OPEN (N.O.) DRY
TEMPERATURE RANGE	-40°F TO +176°F	-40°F TO +176°F
MIN. LIQUID SPECIFIC GRAVITY	0.77	0.77
CRUSH PRESSURE	100 PSIG	100 PSIG

Now the current carrying capacity you want in an ultra small size.
The L70 can be placed in the most confined of spaces.

Nylon nut and Buna O-Ring are included with the 3/8-16 straight thread fitting.

Caution: Customer media and environment must be compatible with construction materials as outlined above.

Liquid Level Information

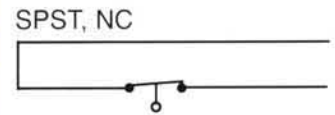
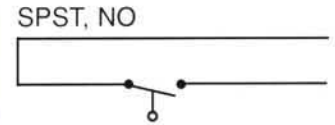
Dry Reed Switches

The dry reed switch in Whitman Controls liquid level switches is a single pole single throw device that may be run either normally open or normally closed by reversing the float or the mounting of the switch.

Low current is recommended to be 50 microamps (0.000050 amps). Typical operating time is 800 microseconds.



Electrical Ratings – Max Resistive Load AC and DC Except As Noted:			
CONTACT RATING	VOLTS	AMPS AC	AMPS DC
50 VA	0-25	1.5	1.5
	50	0.5	0.5
	120	0.4	0.4
	150 VAC RMS	0.25	
	200 VDC		0.25



How to properly tighten our Red Seal Liquid Level Switches

While our liquid level switches are rugged, care should be given to the tightening of the switches during installation. Here are some simple reminders that will make this process easy and damage free!

1. During installation, use care in tightening the connection.
2. Using an appropriate wrench, turn the switch to approximately 1/2 to 3/4 turn past "hand-tight".
3. **Over tightening WILL DAMAGE THE THREADS AND WILL CAUSE A LEAK.**
4. This connection can be subjected to a pressure equal to the crush pressure of the float.
5. **Threads damaged by over tightening WILL NOT BE COVERED BY OUR WARRANTY.**

Liquid Level Options

- Teflon tape on threads
- VibraSeal® Sealant
- Interfaced floats
- Alternate wiring and cabling
- Thermostats
- Wire tags
- O-Rings for straight thread units
- Custom labeling
- Bar code labels
- Wire connectors



**ALL LEVEL SWITCHES
SEALED TO MEET NEMA 6
WITH WHITMAN CONTROLS
RED SEAL POTTING**



3-Year Million Cycle Limited Warranty

The proven quality and reliability of Whitman Controls Corporation products is backed by our 3 year / one million cycle warranty - whichever comes first. Our complete warranty statement is available on request.

**All Product Manufactured by
Whitman Controls Corporation
is RoHS Compliant and
C E Conformant. Whitman
Controls is an ISO 9001:2008
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