

Design Considerations

- Pressure
- Temperature
- Mounting
- Termination
- Media Characteristics, such as
 - Specific gravity
 - Corrosive characteristics
 - Viscosity
- Actuation Point(s)
- Materials of construction
- Switch life/Switch load

Our liquid level switches are designed to meet a complete range of application requirements. We have the design engineering and application engineering expertise to help you select the best level control for your application.

The switch contact ratings, as listed in the switch data chart, are based on use with a resistive type load. For applications requiring the control of an inductive or capacitance load, additional interface circuitry may be required. Please contact technical support for assistance or to have a life-cycle test performed on your load with Leveline switches.

Operation

The hermetically sealed reed switch located inside the stem is actuated by a magnetic field created by a magnet equipped float. As the float rises and falls the magnetic field passing the switch in the stem causes the switch to either close or open.

Switches can be mounted from tank top or tank bottom or can be adapted for side mounting. Switches will operate normally with up to a 30° tilt from vertical.

Most single point switches operate in either a Normally Open (NO) or Normally Closed (NC) mode. Selecting the mode is as easy as removing the retaining clip and reversing the float on the stem. Switches are shipped normally open as standard. However, some are non reversible and must be ordered as NO, NC or SPDT.

Design Flexibility

Interface Detection

Many models can be modified to detect the level of two dissimilar liquids such as oil and water.

Mounting Styles

Other mounting configurations are available such as flanges, bent stem, different NPT, straight thread and metric size mounting plugs.

Terminations

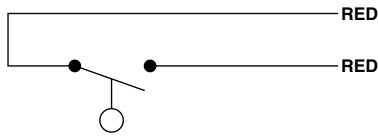
A variety of wire terminations, custom lead lengths, cable jackets and connectors are also available.

In addition to single point detectors, we offer multipoint products for OEM applications. Complete the Application Inquiry Sheet and fax to 860-677-4999 or call 800-722-5547.

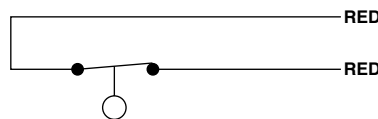
Standard Reed Switches are SPST or SPDT. The Diagrams Below Show the Typical Wiring.

Form A SPST - Single Pole / Single Throw

Normally Open Dry

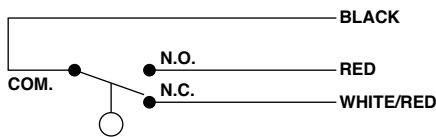


Normally Closed Dry



Form C SPDT - Single Pole / Double Throw

SPDT Dry Condition



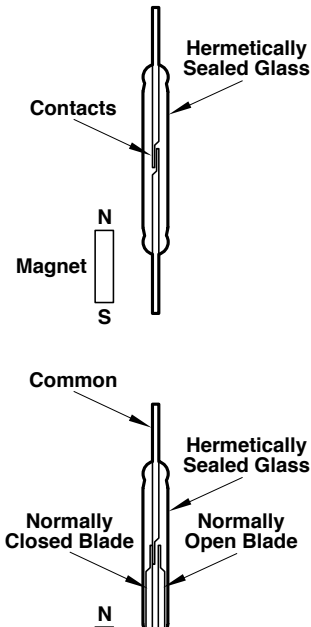
Each level switch varies in rating depending on the unit, see the chart below for electrical ratings.

Switch Ratings Max - Resistive Loads

Contact Rating	Volts	Amps AC	Amps DC
10 VA	0-50	.20	.13
	120	.08	.05
	240	.04	N/A
20 VA	0-50	.40	.30
	120	.17	.13
	240	.08	.06
50 VA	0-50	.50	.50
	120	.41	.41
	240	.20	.20
100 VA	120	.83	N/A
	240	.41	N/A

NOTE: Above ratings are for resistive loads only

The reed switch is designed for reliability to millions of cycles. To ensure long life and repeatability, see the contact protection information below.

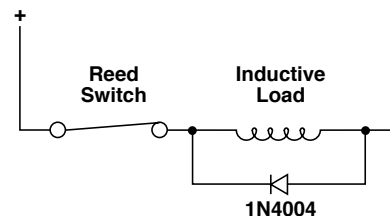


Contact Protection

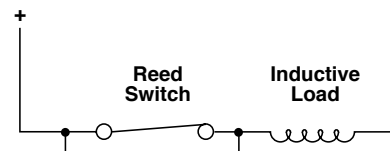
In order to take advantage of the long life, highly reliable characteristics of a reed switch, it is essential to provide protection when switching inductive loads.

When current is interrupted, the inductance of the load generates a high frequency voltage, which appears across the switch contacts. If the voltage is large enough, it can cause arcing. Arcing can cause the contacts to weld to each other resulting in unreliable switching performance. It is essential to protect the circuit by suppressing the voltage to prevent arcing. This can easily be accomplished through the use of a diode for DC circuits (Figure 1) and a resistor-capacitor network for AC circuits (Figure 2).

**Figure 1
D.C. Contact Protection**



**Figure 2
A.C. Contact Protection**

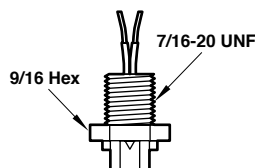
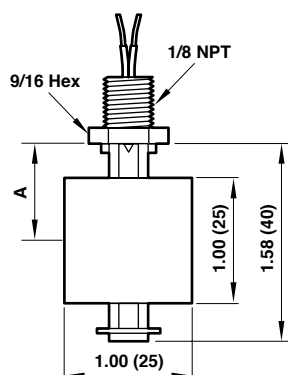




Polypropylene
Foamed Float



Polypropylene
Hollow Float



UL Recognized
File No. E 129277



CSA Approved
File No. LR 90981



A - actuation point is approximately
midway of float travel in liquid
with a specific gravity of 1.0.

LS 1 Series Level Switches Compact, Rugged, Yet Economical!

The LS 1 Series of liquid level switches provide a reliable, compact, low cost solution to liquid-level control for the selective OEM. This family of plastic level switches offers a broad variety of answers to many of today's demanding applications. Whether your problem is size, material compatibility, or wave motions falsely actuating switches, your answer should be found on these pages or through a quick conversation with technical support. A variation to these standards will surely solve the most discriminating application.

Small, compact size with small displacement

Highly reliable, yet inexpensive

Seamless cellular construction

Temperature range up to 225°F

Excellent chemical resistance

NSF Approved

Unique hex designed stem

Specifications

Maximum Pressure	@70° F
Foamed Float	150 PSI (10.3 bar)
Hollow Float	10 PSI (.69 bar)
Temp. Operating Range	
Foamed Float	-40° to 150° F (-40° to 66° C)
Leadwire	
Polypro Units	22 AWG, 24" long
Recommended Minimum Liquid SP GR	
Foamed Polypro Float	.72
Hollow Polypro Float	.55

LS 1 Series Ordering Numbers:

Part Number	MTG	Stem Material	Float Material	Other Wetted Parts	Switch Rating
0255-024†	1/8" NPT	Polypro	Polypro	Polypro	20VA*
0342-024	1/8" NPT	Polypro	Buna	Polypro	20VA*
0506-024†	1/8" NPT	Polypro	Polypro	316 SS	10VA
0507-024†	1/8" NPT	Polypro	Polypro	Polypro	10VA
0615-024†	7/16-20 UNF	Polypro	Polypro	Polypro	20VA*
0689-024†	1/8" NPT	Polypro	Polypro	Polypro	3VA SPDT
2574-024	1/8" NPT	Polypro	Hollow polypro	Polypro	20VA
2839-024	7/16-20 UNF	Polypro	Hollow polypro	Polypro	20VA

* UL and CSA switch ratings are 20VA pilot duty rated; 120VAC - 240VAC

† "NSF Certified" - These products conform to the requirements of NSF Criteria C2 - Special and/or Devices.
- For NSF label add prefix N to the part number when ordering.

Mini LS 1 Series

The LS 1 Series with a Float Diameter of .75 Fits Into Those Hard to Reach Places

Ultra compact size fits through small bottle or tank openings

Seamless cellular construction for a rugged float design

Ideal for food and beverage applications

Unique hex stem design minimizes potential for liming

Specifications

Maximum Pressure	150 PSI (10.3 bar) @ 70°F
Temp. Operating Range	-40°F to 150°F (-40°C to 66°C)
Mounting	1/8" NPT or 7/16 - 20 UNF
Leads	22 AWG, 24" long
Recommended Minimum Liquid SP GR	.90
Float Material	Seamless Cellular Polypropylene
Stem and Other Parts	Polypropylene

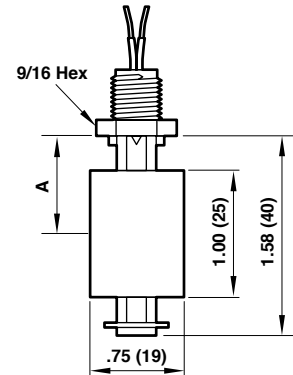
Mini LS 1 Series Ordering Numbers:

Part Number	MTG	Material	Switch Rating
0763-024†	1/8" NPT	Polypro	20VA
1340-024†	7/16-20 UNF	Polypro	20VA

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LS 1 Series with Slosh Shield

The LS 1 Series with Slosh Shield Provides a Means of Dampening Turbulent Fluids

All Polypropylene construction ideal for beverage dispensing and ice machines

Compact size allows for minimum displacement

Easily adaptable to other switch types and float combinations for OEM applications

Specifications

Maximum Pressure	@70° F
Foamed Float	150 PSI (10.3 bar)
Hollow Float	10 PSI (.69 bar)
Temp. Operating Range	
Foamed Float	-40°F to 150° F (-40°C to 66° C)
Hollow Float (PP)	-40°F to 150° F (-40°C to 66° C)
Leadwire	
Polypro Units	22 AWG, 24" long
Recommended Minimum Liquid SP GR	
Foamed Polypro Float	.72
Hollow Polypro Float	.55



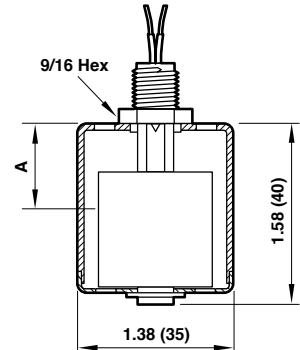
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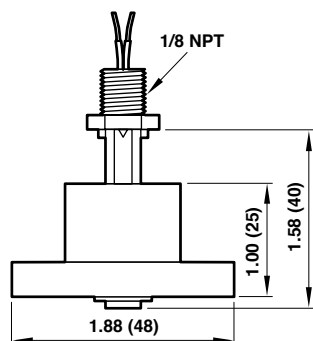
A - actuation point is approximately midway of float travel in liquid with a specific gravity of 1.0.



LS 1 Series with Slosh Shield:

Part Number	MTG	Stem Material	Float Material	Other Wetted Parts	Switch Rating
1347-001†	1/8" NPT	Polypro	Polypro	Polypro	20VA
1347-002†	7/16-20 UNF	Polypro	Polypro	Polypro	20VA
2841-024	1/8" NPT	Polypro	Hollow Polypro	Polypro	20VA
2842-024	7/16-20 UNF	Polypro	Hollow Polypro	Polypro	20VA

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- for NSF label add prefix N to the part number when ordering.



LS 1 Series Ultra Low Level

When You Just Can't Detect Low Enough - The Ultra Low Level Switch Can Detect Liquids as Low as 5/8"

Due to the float shape and displacement, the reed switch is activated with float riding close to the surface of the liquid

Variety of stem materials to meet your specific requirements

Float can be combined with other floats on a miniature multi-level control only (see pages 18-19) for a custom liquid level sensor to meet your needs

Available in different lead wire lengths, with connectors for OEM's

Specifications

Maximum Pressure	50 PSI (3.4 bar)
Temp. Operating Range	-40° to 150°F in Water (-40° to 82°C) -40° to 225°F in Oil (-40° to 107°C) (Stainless and Brass)
Mounting	1/8" NPT
Leads	22 AWG, 24" long

LS 1 Series Ultra Low Level:

Part Number	Stem Material	Float Material	Other Material	Switch Rating
0768-024	Polypro	Buna N	316 SS	20VA N.C.
0769-024	Brass	Buna N	316 SS	20VA N.C.
0774-024	316 SS	Buna N	316 SS	20VA N.C.

Type B



LS 1 Series - Sidemount

Sidemounted Unit Ideal for Tight Spaces

Sidemount design fits small vessels

Minimal float travel and displacement

Highly chemical resistant

Specifications

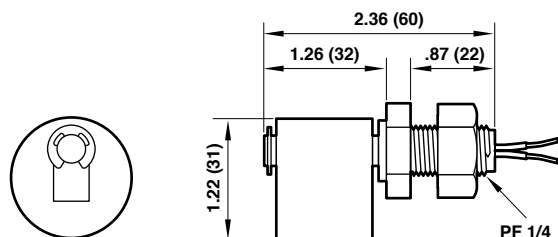
Maximum Pressure	Type B 70 PSI (4.8 bar) Type P 40 PSI (2.8 bar)
Temperature Range	Type B -40°F to 176°F (-40° to 80°C) Type P -40°F to 176°F (-40° to 80°C)
Mounting	PF 1/4
Leads	22 AWG, 24" long
Recommended Minimum Liquid SP GR	Type B .60 Type P .80

Type P



LS 1 Sidemount Ordering Numbers

Part Number	Stem Material	Float Material	Other Wetted Parts	Switch Rating
0508-024	Polyacetal	Buna N	316 SS	20VA
0509-024	Polypro	Polypro	Polypro	20VA



LS 11 Plastic Sidemount

Direct side mounted level controls in Polypropylene and PBT

All polypropylene construction offers broad fluid compatibility

Single unit offers normally open or normally closed operation

Mounting available internally or direct external entry

Normally Open Dry Condition:

Float rises with liquid level to stop, where upon switch closes.

Normally Closed Dry Condition:

Float falls with liquid level to stop, where upon switch closes.

Actuation point is 15° +10° of float arc.

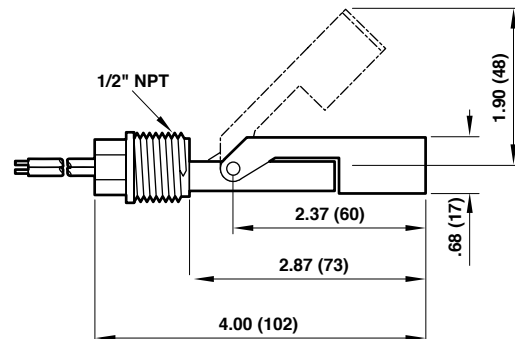
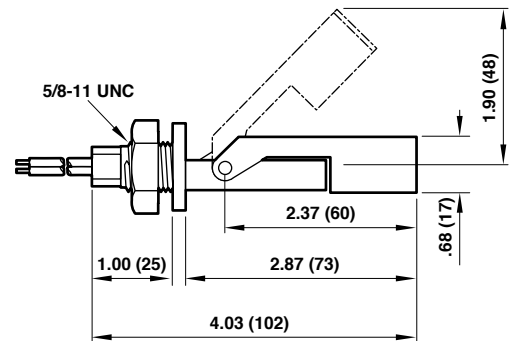
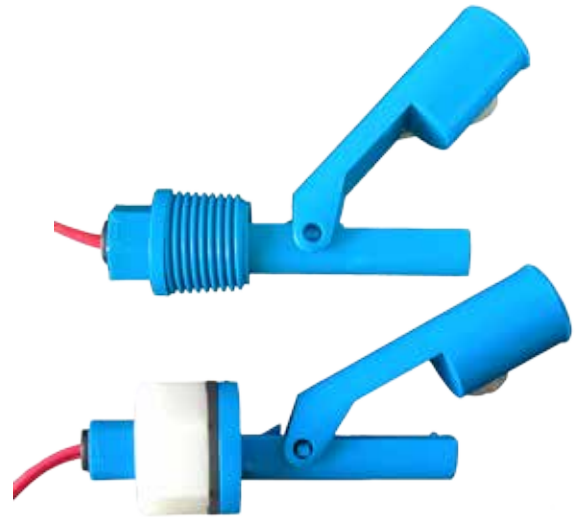
Specifications

Maximum Pressure	100 PSI (6.9 bar) @ 70°F
Temp. Operating Range	-40°F to 150°F (-40° to 66°C)
	Polypro
	-40°F to 225°F (-40° to 107°C) PBT
Leads	22 AWG, 24" long
Recommended Minimum Liquid SP GR	.65

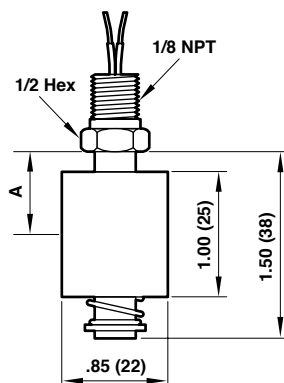
LS 11 Ordering Numbers:

Part Number	Mounting	Material	Switch Rating
1870-024†	1/2" NPT	Polypro	20VA
1871-024	1/2" NPT	PBT	20VA
1872-024†	5/8-11 UNC	Polypro	20VA
1873-024	5/8-11 UNC	PBT	20VA

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- for NSF label add prefix N to the part number when calling



All Dimensions in Inches (mm)



A - actuation point is approximately midway of float travel in liquid with a specific gravity of 1.0.

25 BN Series—PTFE Float

25 BN Series with a Spring Biased PTFE Float for High Pressure Applications

Small float design (.850 Dia.) provides flexibility for those tight spaces

Solid PTFE float design for pressures up to 1000 PSI

Variety of stem float combinations to meet your technical and cost requirements

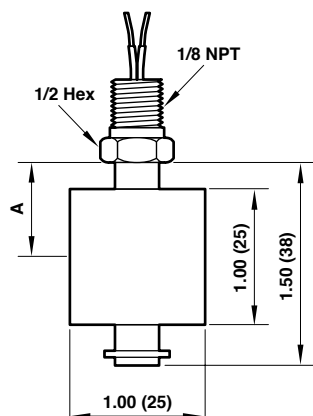
Specifications

Switch Rating	SPST 20VA
Operating Pressure	1000 PSI Maximum (68.9 bar)
Operating Temperature	-40° to 300°F (-40 to 149°C)
Float Material	PTFE
Other Wetted Materials	300 Series Stainless, Epoxy
Leads	22 AWG, 24" long
Recommended Minimum Liquid SP GR	.75

25 BN Series Ordering Numbers:

Part Number	Stem Material	Switch Rating
1275-024	316 SS	20VA N.O. DRY*
1276-024	316 SS	?20VA N.C. DRY*

* UL and CSA switch ratings are 20VA pilot duty rated; 120VAC - 240VAC
PTFE is a registered trademark of E.I. DuPont De Nemours Co.



UL Recognized
File No. E 129277



CSA Approved
File No. LR 90981



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25 BN Series

Buna N General Purpose Single Point Detector

Small, compact size

Precise repeatability

Reliable, long-life performance

Highly resistant to shock and vibration

Stem available in 316 SS or Brass

Specifications

Maximum Pressure	150 PSI (10.3 bar)
Temperature Operating Range	-40° to 225°F (-40° to 107°C) in oil to 180°F (82°C) in water
Mounting	1/8" NPT
Leads	22 AWG, 24" long
Recommended Minimum Liquid SP GR	.50

25 BN Series Ordering Numbers:

Part Number	Stem Material	Float Material	Other Wetted Parts	Switch Rating
0105-024	316 SS	Buna N	316 SS	20VA
0106-024	Brass	Buna N	316 SS	20VA

50 BN Moisture Resistant Liquid Level Switch

Construction Provides Maximum Resistance to Moisture, Condensation or Water.

Ideal for use in sumps or bilges

Construction can be adapted to other switches

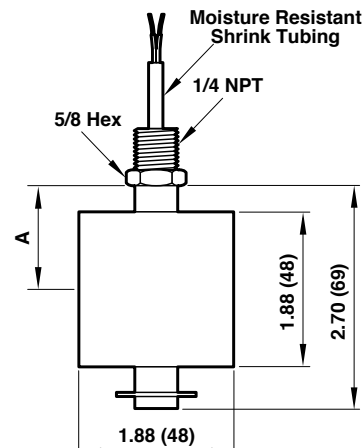
Dual wall polyolefin shrink tubing resists moisture

Specifications

Maximum Pressure	150 PSI (10.3 bar)
Temperature	-40°F to 225°F (-40°C to 107°C) in oil
Operating Range	-40°F to 180°F (-40°C to 82°C) in water
Mounting	1/4" NPT
Leads	18 AWG, 36" long
Recommended Minimum Liquid SP GR	.55

Liquid Level Switch Ordering Numbers:

Part Number	Stem / Float Material	Other Wetted Mounting Material	Switch Rating
1344-001	Brass / Buna	Stainless / Epoxy	SPST 20VA
1344-002	Brass / Buna	Stainless / Epoxy	SPST 100VA
1344-003	304 SS / Buna	Stainless / Epoxy	SPST 20VA
1344-004	304 SS / Buna	Stainless / Epoxy	SPST 100VA
1344-005	304 SS / 316 SS	316 SS	SPST 20VA
1344-006	304 SS / 316 SS	316 SS	SPST 100VA



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50 BN Series Intermediate

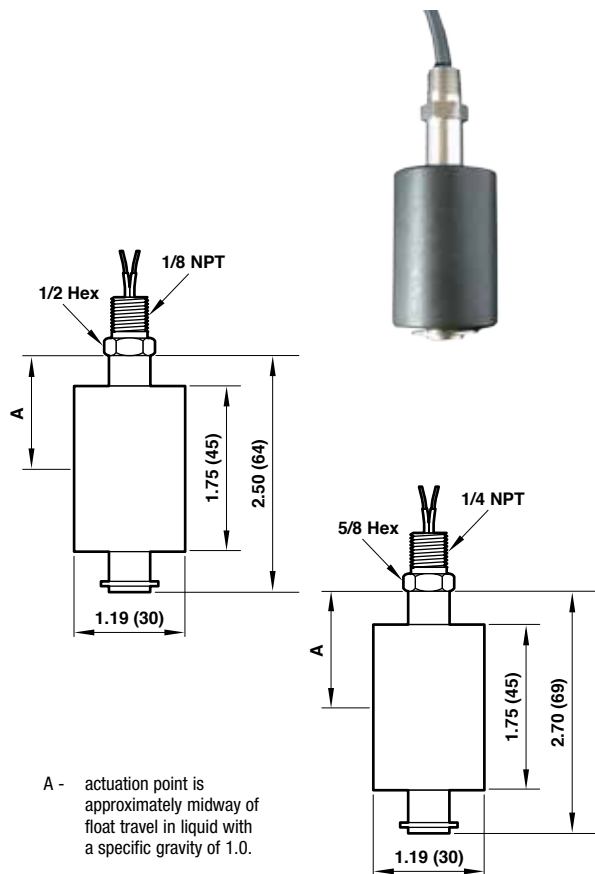
Intermediate Size General Purpose Detector

Highly reliable, yet inexpensive**Compact, narrow displacement****Stem available in 316 SS or Brass****Long operating life****Specifications**

Maximum Pressure	150 PSI (10.3 bar)
Temp. Operating Range	-40°F to 225°F (-40°C to 107°C) in oil -40°F to 180°F (-40°C to 82°C) in water
Mounting	1/8" NPT - 1/4" NPT
Leads	18 AWG, 24" long
Recommended Minimum Liquid SP GR	.58

50 BN Series Inter. Ordering Numbers

Part Number	MTG	Stem Material	Float Material	Other Wetted Parts	Switch Rating
0108-024	1/8"	316 SS	Buna N	316 SS	100VA
0109-024	1/8"	Brass	Buna N	316 SS	100VA
0500-024	1/4"	316 SS	Buna N	316 SS	100VA
0501-024	1/4"	Brass	Buna N	316 SS	100VA
0502-024	1/8"	316 SS	Buna N	316 SS	20VA
0503-024	1/8"	Brass	Buna N	316 SS	20VA
0504-024	1/4"	316 SS	Buna N	316 SS	20VA
0505-024	1/4"	Brass	Buna N	316 SS	20VA

**50 BN Series Large**

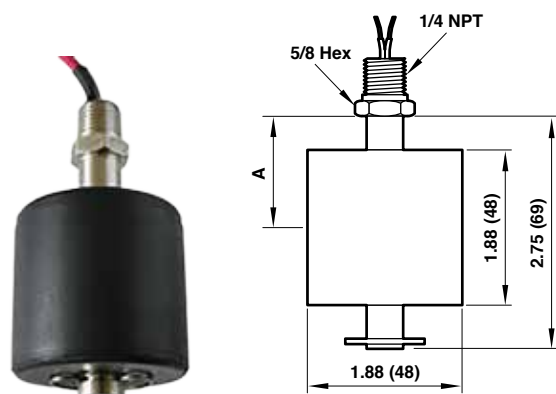
Large Size General Purpose Detector

Large float provides maximum displacement in high viscosity fluids**Can be easily extended to multiple float arrangement up to 72" long****Rugged design for heavy duty service****Specifications**

Maximum Pressure	150 PSI (10.3 bar)
Temp. Operating Range	-40°F to 225°F (-40°C to 107°C) in oil -40°F to 180°F (-40°C to 82°C) in water
Mounting	1/4" NPT
Leads	18 AWG, 24" long
Recommended Minimum Liquid SP GR	.55

50 BN Series Large Ordering Numbers:

Part Number	MTG	Stem Material	Float Material	Other Wetted Parts	Switch Rating
0512-024	1/4"	316 SS	Buna N	316 SS	100VA
0513-024	1/4"	Brass	Buna N	316 SS	100VA
0514-024	1/4"	316 SS	Buna N	316 SS	20VA
0515-024	1/4"	Brass	Buna N	316 SS	20VA



35 SS Series

Compact Stainless Steel Detector for High Corrosive, High Temperature Applications

Compact size

Long operating life

Highly resistant to shock and vibration

Specifications

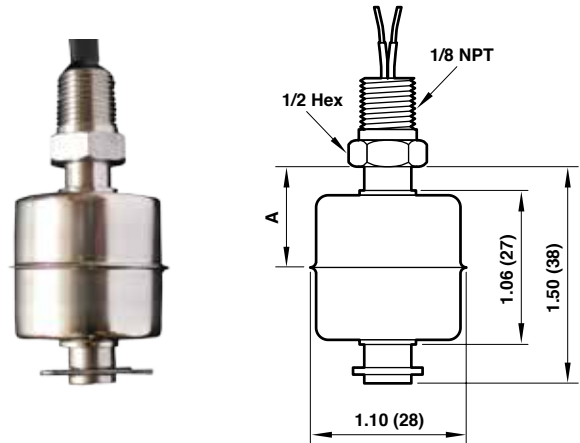
Maximum Pressure	275 PSI (19.0 bar)
Temp. Operating Range	-40° to 300°F (-40° to 149°C)
Mounting	1/8" NPT
Leads	22 AWG, 24" long
Recommended Minimum Liquid SP GR	.80

35 SS Series Ordering Numbers:

Part Number	Stem Material	Float Material	Other Wetted Parts	Switch Rating
0107-024†	316 SS	316 SS	316 SS	20VA*
0511-024	Brass	304 SS	316 SS	20VA*

* UL and CSA switch ratings are 20VA pilot duty rated; 120VAC - 240VAC

† "NSF Certified" - these products conform to the requirements of NSF Criteria C2 - Special and/or Device.
- for NSF label add prefix N to the part number when ordering



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35 SS Series - Sidemount

"Bent Stem" Level Control for Mounting through Tank Walls

90° bend allows for side mounting where access to tank top and bottom is restricted

Available in all 316 SS construction

Specifications

Maximum Pressure	SS	275 PSI (19.0 bar)
	Buna	150 PSI (10.3 bar)
Temp. Operating Range		-40°F to 300°F (-40°C to 149°C)
	Buna Float	-40°F to 225°F (-40°C to 107°C) in oil -40°F to 180°F (-40°C to 82°C) in water
Mounting		3/8 - 24
Leads		22 AWG, 24" long
Recommended Minimum Liquid SP GR	SS .80 Buna .50	

35 SS Series Sidemount Ordering Numbers:

Part Number	Stem Material	Float Material	Other Wetted Parts	Switch Rating
2350-024	316 SS	316 SS	PH 15-7 MO	20VA
2351-024	316 SS	Buna	PH 15-7 MO	20VA
2352-024	Brass	316 SS	Beryllium Copper	20VA
2353-024	Brass	Buna	Beryllium Copper	20VA

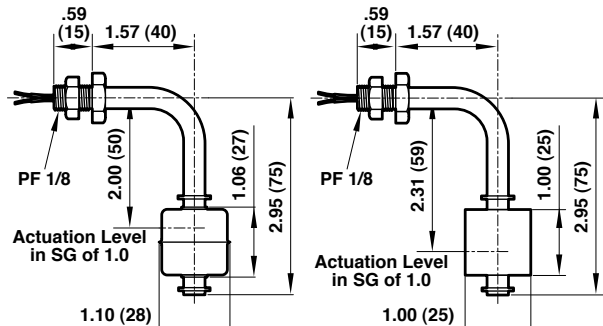


Buna Floats:

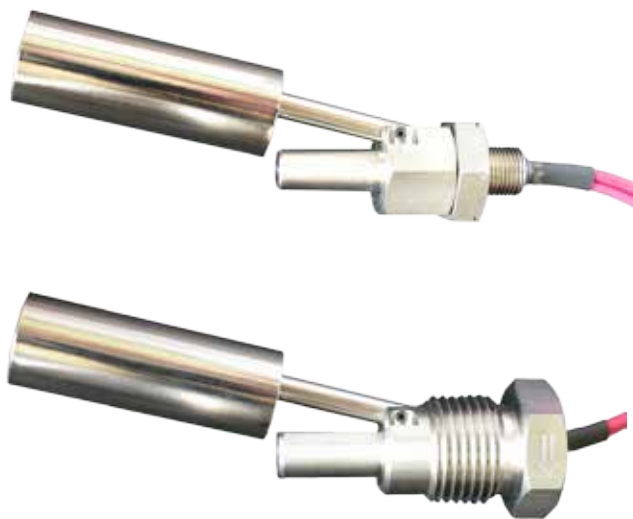
L1=2.75 (69.9mm) ±3/16"

Stainless Steel Floats:

L1=2.50 (63.5mm) ±3/16"



L1 Dimension is Actuation Level in Liquid Specific Gravity of 1.0

**40 SS Series Sidemount**

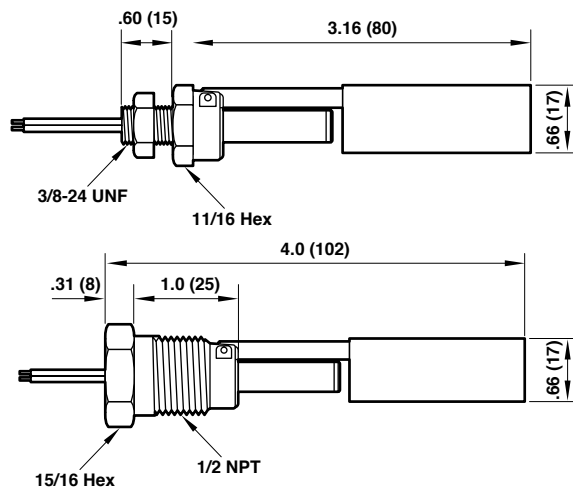
Direct Side Mounted Level Controls

Precise repeatability**Ease of installation****Internal and external mounting available****Specifications**

Maximum Pressure	400 PSI (27.6 bar)
Temp. Operating Range	-40° to 300°F (-40° to 149°C)
Leads	22 AWG, 24" long
Recommended Minimum Liquid SP GR	.58

40 SS Series Sidemount Ordering Numbers:

Part Number	Mounting	Stem Material	Other Wetted Materials	Switch Rating
3736-024	3/8-24 UNF	316 SS	304 SS	20VA
3735-024	1/2" NPT	316 SS	304 SS	20VA



50 SS Series Low Specific Gravity

Buoyant Float Design for Media with Specific Gravity as Low as .40

Ideal for use as a high, low or intermediate level alarm in the storage of propane and butane
Float design can be adapted to multi-level configuration for total control

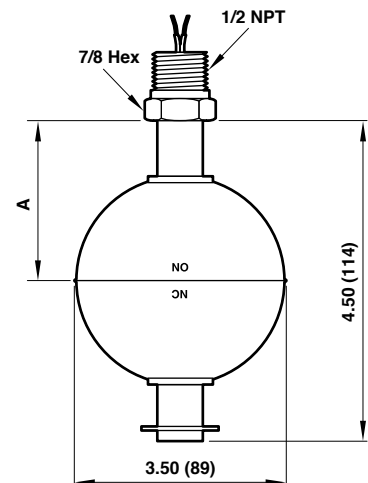
Temperature range of -40°F to 300°F

Specifications

Maximum Pressure	300 PSI (20.7 bar)
Temp. Operating Range	-40°F to 300°F (-40°C to 149°C)
Mounting	1/2" NPT
Lead Wires	18 AWG, 24" long
Recommended Minimum Liquid SP GR	.40

Low Gravity Float Ordering Numbers:

Part Number	Stem / Float Material	Other Wetted Materials	Switch Rating
1348-001	Brass / 316 SS	Stainless Steel	SPST 20VA
1348-002	Brass / 316 SS	Stainless Steel	SPST 100VA
1348-003	Brass / 316 SS	Stainless Steel	SPDT 20VA
1348-004	316 SS / 316 SS	Stainless Steel	SPST 20VA
1348-005	316 SS / 316 SS	Stainless Steel	SPST 100VA
1348-006	316 SS / 316 SS	Stainless Steel	SPDT 20VA



A - actuation point is approximately midway of float travel in liquid with a specific gravity of 1.0.

50 SS Series

Stainless Steel Detector for High Pressure, Corrosive and High Temperature Applications

All stainless steel wetted surfaces
High resistance to corrosive chemicals
Operates in high temperatures
Operates in high pressure environments

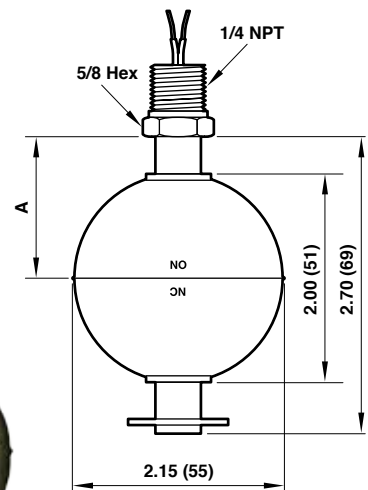
Specifications

Maximum Pressure	750 PSI (51.7 bar)
Temp. Operating Range	-40°F to 300°F (-40°C to 149°C)
Mounting	1/4" NPT
Leads	18 AWG, 24" long
Recommended Minimum? Liquid SP GR	.73

50 SS Series Ordering Numbers:

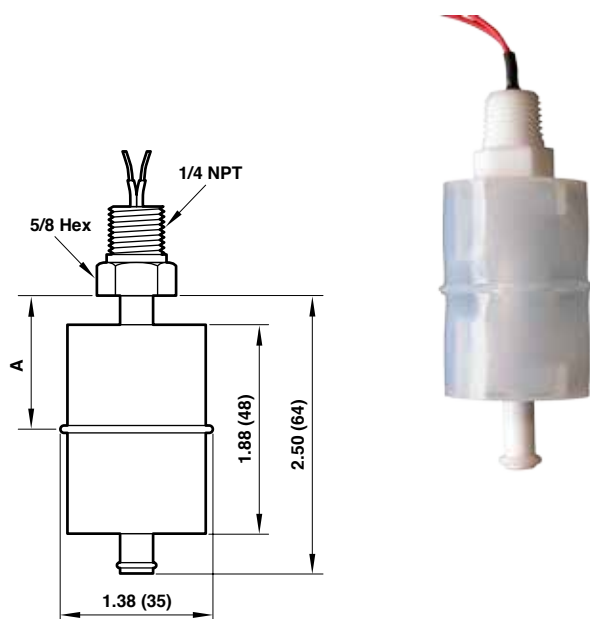
Part Number	Stem Material	Float Material	Other Wetted Parts	Switch Rating
0110-024†	316 SS	316 SS	316 SS	100VA
0520-024	Brass	316 SS	316 SS	100VA
0521-024†	316 SS	316 SS	316 SS	20VA
0522-024	Brass	316 SS	316 SS	20VA

† "NSF Certified" - these products conform to the requirements of NSF Criteria C2 - Special and/or Devices.
 - for NSF label add prefix N to the part number when ordering.



A - actuation point is approximately midway of float travel in liquid with a specific gravity of 1.0.





UL Recognized
File No. E 129277



CSA Approved
File No. LR 90981



A - actuation point is approximately midway of float travel in liquid with a specific gravity of 1.0.

50 TT Series

PTFE Level Detector for High Purity, High Corrosive Applications

All PTFE wetted surfaces

PFA float for greater resistance to corrosives

Low particulate generation

Chemically inert

Specifications

Maximum Pressure	70 PSI (4.8 bar)
Temp. Operating Range	-40°F to 300°F (-40°C to 149°C)
Mounting	1/4" NPT
Leads	22 AWG, 24" long
Recommended Minimum? Liquid SP GR	.90

50 TT Series Ordering Numbers

Part Number	Stem Material	Float Material	Description	Switch Rating
0111-024	TFE	PFA	SPST, NO Dry	20VA*
0112-024	TFE	PFA	SPST, NC Dry	20VA*
0113-024	TFE	PFA	SPDT	3VA

* UL and CSA switch ratings are 20VA pilot duty rated; 120VAC - 240VAC
PTFE is a registered trademark of E.I. DuPont De Nemours Co.

Designed specifically for overfill protection of Refrigerant Recovery Tanks
Meets rigid UL Requirements for Refrigerant Recovery Equipment
Switches have been specified to meet the dimensions of the recovery tank manufacturer

Customize a switch to meet your specific needs including multiple floats, various actuation levels and a variety of wire or connector terminations

Pressure rating to 400 PSIG (27.6 bar)

Standard for 30# and 50# D.O.T. refrigerant tanks

Grooved stems keep floats from moving or falling off

Can be customized for use in other size cylinders

Available with multiple floats

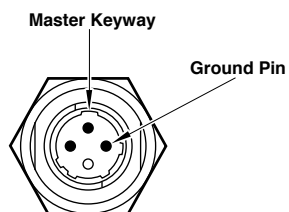
UL endurance tests performed at 120/60, 240/60, 24/60, 5 VDC, 12 VDC, 24 VDC



Connector Selection Data

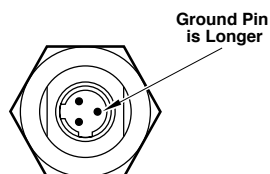
AMP Connector

Mates with AMP P/N 206060-1



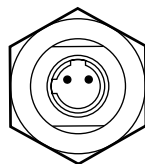
Brad Harrison 3-pin

Mates with BH-P/N 70303

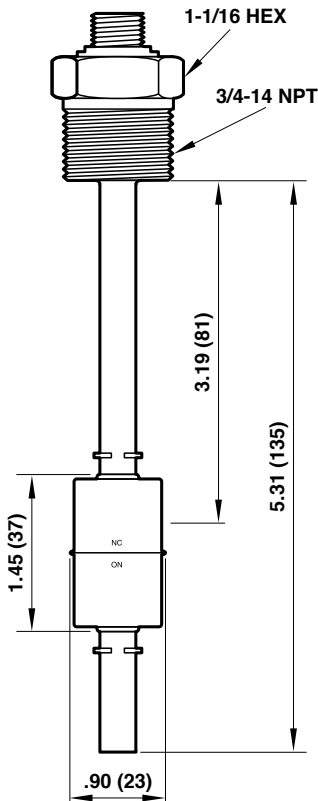
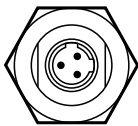


Brad Harrison 2-pin

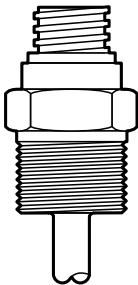
Mates with BH-P/N 70023



3 PIN Receptacle
Brad Harrison #70212



4 PIN Receptacle
AMP #206153-1



Specifications

Maximum Pressure	400 PSIG Maximum (27.6 bar)
Temperature Operating Range	-40° to 221°F SS Float (-40° to 105°C)
Switch Type	SPST, Normally Closed Dry
Switch Rating	20VA
Mounting Plug	3/4" NPT

Refrigerant Level Ordering Numbers:

Part Number	"A" Dim.	"B" Dim.	Tank Mfr.	Tank Size	PIN Type
0708-001	3.19 (81)	5.31 (135)	(MAN)*, (WOR)**	30#, 50#	Brad 3-Pin
0808-001	3.19 (81)	5.31 (135)	(MAN)*, (WOR)**	30#, 50#	AMP 3-Pin
1007-001	3.19 (81)	5.31 (135)	(MAN)*, (WOR)**	30#, 50#	Brad 3-Pin
1038-001	8.40 (213)	10.13 (257)	(MAN)*, (WOR)**	250#	Brad 3-Pin
1047-001	6.75 (172)	8.88 (226)	(MAN)*, (WOR)**	100#	Brad 3-Pin
1302-001	3.562 (90)	5.688 (144)	(AMTROL)	26#	Brad 3-Pin
1303-001	3.875 (98)	6.00 (152)	(AMTROL)	50#	Brad 3-Pin
1546-001	8.40 (213)	10.13 (257)	(MAN)*, (WOR)**	250#	AMP 3-Pin
1628-001	3.562 (90)	5.688 (144)	(AMTROL)	26#	AMP 3-Pin
1629-001	3.875 (98)	6.00 (152)	(AMTROL)	50#	AMP 3-Pin
1632-001	6.75 (172)	8.88 (226)	(MAN)*, (WOR)**	100#	AMP 3-Pin

* MAN = Manchester
** WOR = Worthington

627 Series Miniature Multi-Point Level Switches

Apply any of our Single Point Detectors to
your Multi-Point Application

Up to 48" overall length

Up to 5 control points

UL Recognized File #E129277 

CSA Approved File #90981 

Miniature Multi-Point Level controls provide a convenient method of customizing your level control with standard lead times and costs. Our Miniature Multi-Point offers floats as small as .787" diameter for those hard to reach areas with up to 5 actuation levels on a single tank entry. Extend your imagination and allow us to build your custom level control when an off the shelf switch won't do.

Obtain a copy of the Level Switch Inquiry Application Sheet and define the general requirements:

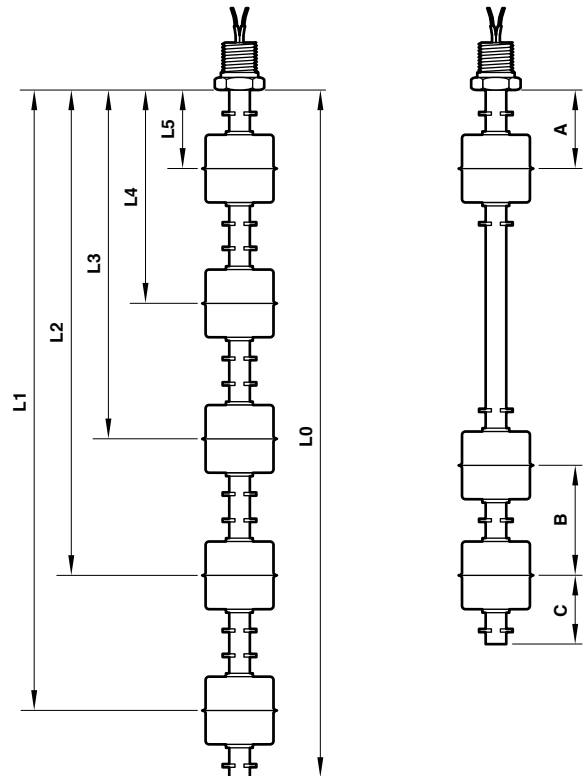
1. Mounting type.
2. Stem and float material.
3. Float type, noting temperature ranges, pressure limitations and minimum recommended specific gravity.
4. Switch type, considering voltage and load requirements.
5. Wiring group, noting that wiring group I can be utilized with up to 5 levels and wiring group II can be utilized with 3 levels max.
6. Number of actuation points and the distance from the bottom of the mounting plug- Specify L1 through L5.
7. LO-Overall length, which is L1 plus the "C" dimension of your float selection.
8. Switch logic, either normally closed or normally open. When specifying switch logic, please indicate switch condition when tank is dry.
9. Provide a sketch or drawing along with other pertinent information for proper switch selection.

A = minimum distance to highest level

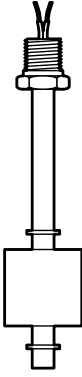
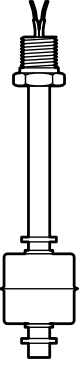
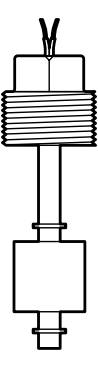
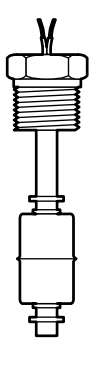
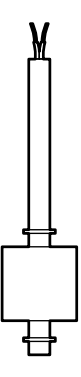
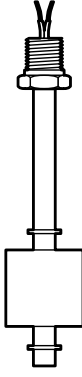
B = minimum distance between levels using two floats

C = distance from lowest level to end of unit

Float Number	A Dim.	B Dim.	C Dim.
0118-001	3/4"	1-1/2"	1"
0126-002	3/4"	1-1/2"	1"
0630-001	3/4"	1-1/2"	1"
0564-002	1"	2"	1-1/8"
1093-001	3/4"	1-1/2"	1"
1415-001	5/8"	1-9/32"	3/4"
1416-001	3/4"	1-1/2"	1"
2161-001	3/4"	1-1/2"	1"
2304-001	3/4"	1-1/2"	1"

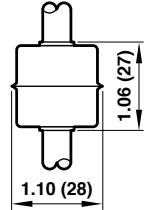
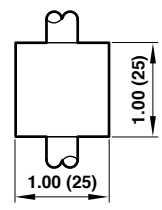
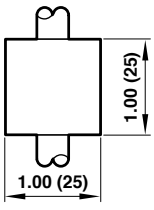
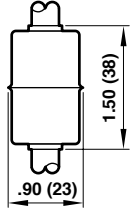
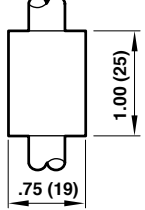
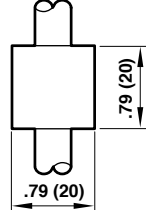


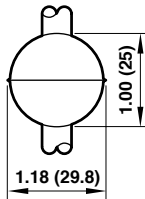
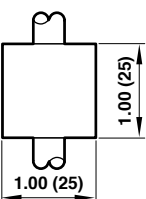
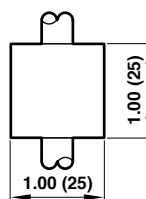
Mounting Styles

SELECTION CHOICES	TYPE A	TYPE B	TYPE C	TYPE D	TYPE E	TYPE F
Unit Configuration						
Mounting	1/8" NPT	1/4" NPT	1" NPT	3/4" NPT	5/16" Tubing	3/8" -24 THD
Maximum Length	316 SS, Brass up to 48" or PVC up to 24"					

Specifications

Stem and Mounting Material	316 SS and Brass up to 48" Length PVC up to 24" Length
Switches	SPST, 10VA or 50VA SPDT, Optional
Float Stops	Brass Units - Beryllium Copper Grip rings SS Units - ARMCO PH 15-7 MO PVC Units - PVC 316 SS Collar Optional
Leads	22 AWG, 24" long

	0630-001 316 SS Float	0118-001 Buna N (closed cell) Float	0126-002 Polypropylene	0564-002 304 SS Float	1093-001 Polypro Float	1415-001 Buna Float
FLOAT CHOICES						
Maximum Pressure	400 PSI (19 bar)	150 PSI (10.3 bar)	150 PSI (10.3 bar)	400 PSI (27.6 bar)	150 PSI (10.3 bar)	150 PSI (10.3 bar)
Operating Temperature	-40°F to 300°F (-40°C to 149°C)	(Oil) -40°F to 225°F (-40°C to 107°C) (Water) -40°F to 180°F (-40°C to 82°C)	-40°F to 150°F (-40°C to 66°C)	-40°F to 300°F (-40°C to 149°C)	-40°F to 150°F (-40°C to 66°C)	(Oil) -40°F to 225°F (-40°C to 107°C) (Water) -40°F to 180°F (-40°C to 82°C)
Rec. Min. Liquid SP GR	.80	.50	.72	.95	.90	.80

	2161-001 316 SS Float	2304-001 PVC Float	1417-001 Polypro Float (Hollow)
FLOAT CHOICES			
Maximum Pressure	275 PSI (19 bar)	50 PSI (3.4 bar)	10 PSI (.69 bar)
Operating Temperature	-40°F to 300°F (-40°C to 149°C)	-40°F to 150°F (-40°C to 66°C)	-40°F to 150°F (-40°C to 66°C)
Rec. Min. Liquid SP GR	.70	.80	.55

WIRING

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



Standard Multi-Point Level Switches

Customize larger single point detectors for your multi-point application

Up to 72" overall length

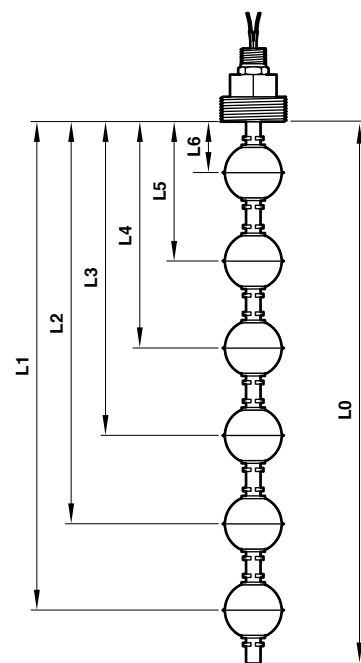
Up to 6 control points

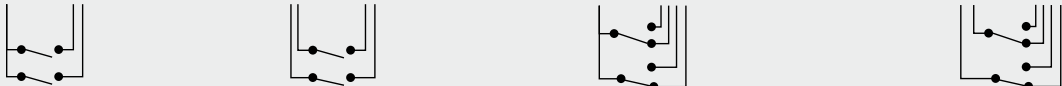
Standard Multi-Point Level controls provide a convenient method of customizing your level control with standard lead times and costs

Standard Multi-Point offers up to 6 actuation levels on a single tank entry

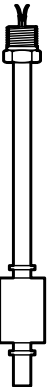
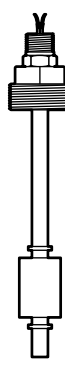
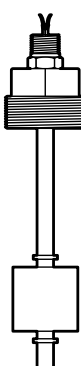
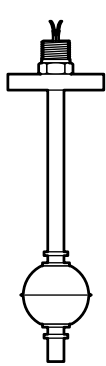
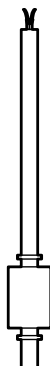
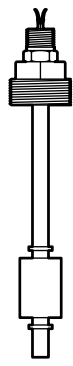
Obtain a copy of the Level Switch Inquiry Application Sheet and define the general requirements:

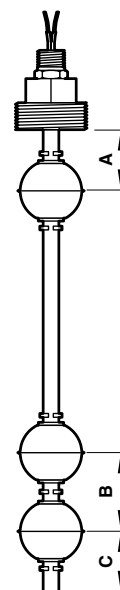
1. Determine mounting type.
2. Select the stem and float material.
3. Choose float type, noting temperature ranges, pressure limitations, and minimum recommended specific gravity.
4. Select switch type considering voltage and load requirements.
5. Specify wiring group.
6. Determine the number of actuation points and the distance from the bottom of the mounting plug. Specify L1 through L6.
7. Specify LO-Overall length, which is L1 plus the "C" dimension of your float selection.
8. Determine switch logic, either normally closed or normally open. When specifying switch logic, please indicate switch condition when tank is dry.
9. Provide a sketch or drawing along with other pertinent information for proper switch selection.

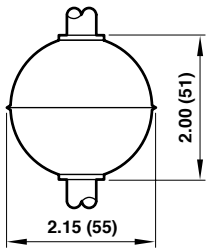
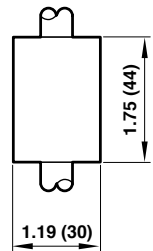
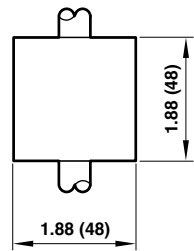
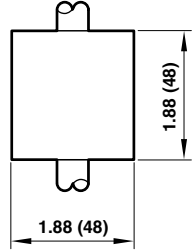


WIRING Wire Common	SPST SWITCHES			SPDT SWITCHES		Group 4 #22 AWG None SW Com		
	Group 1 #22 AWG Black NO/NC	Group 2 #22 AWG None SW Com.	NO/NC	Group 3 #22 AWG Black NO	NC		NO	NC
L1	Red	Red	Red	Red	Wh/Red	Red	Wh/Red	Wh/Blk/Red
L2	Yellow	Yellow	Yellow	Yellow	Wh/Yellow	Yellow	Wh/Yellow	Wh/Blk/Yel
L3	Blue	Blue	Blue	Blue	Wh/Blue	Blue	Wh/Blue	Wh/Blk/Blue
L4	Brown	Brown	Brown	Brown	Wh/Brown	Brown	Wh/Brown	Wh/Blk/Brn
L5	Orange	Orange	Orange	Orange	Wh/Orange	Orange	Wh/Orange	Wh/Blk/Orng
L6	Gray	Gray	Gray	Gray	Wh/Gray	Gray	Wh/Gray	Wh/Blk/Gray
								

Mounting Styles

SELECTION CHOICES	TYPE 1	TYPE 2	TYPE 3	TYPE 4	TYPE 5	TYPE 6
Unit Configuration						
Mounting	1/2" NPT	1-1/4" NPT	2" NPT	3" 150# CS Flange	1/2" Tubing	1-1/2" NPT
Max. Length	72"	72"	72"	72"	72"	72"



	0127-001 316 SS Float	0114-001 Buna N (closed cell) Float	0489-001 Buna N (closed cell) Float	2305-001 PVC Float
FLOAT CHOICES				
Maximum Pressure	750 PSI (51.7 bar)	150 PSI (10.4 bar)	150 PSI (10.4 bar)	15 PSI (1.03 bar)
Operating Temperature	-40°F to 300°F (-40°C to 149°C)	(Oil) -40°F to 225°F (-40°C to 107°C) (Water) -40°F to 180°F (-40°C to 82°C)	(Oil) -40°F to 225°F (-40°C to 107°C) (Water) -40°F to 180°F (-40°C to 82°C)	-40°F to 150°F (-40°C to 66°C)
Recommended Min. Liquid SP GR	.73	.58	.55	.55

Float Number	A Dim.	B Dim.	C Dim.
0127-001	1-1/2"	3"	2"
0114-001	1-1/2"	3"	2"
0489-001	1-1/2"	3"	2"
2305-001	1-1/2"	3"	2"

A = minimum distance to highest level
B = minimum distance between levels using two floats
C = distance from lowest level to end of unit

Specifications:

Stem and Mounting Material	316 SS and Brass up to 72" Length
Switches	SPST, 10VA, 50VA or 100VA SPDT, Optional
Float Stops	Brass Units - Beryllium Copper Grip rings SS Units - ARMCO PH 15-7 MO 316 SS Collar Optional
Leads	22 AWG, 24" long

Copy this page. Fill in the blanks.

Fax it to IMI Norgren at (860) 677-4999

Call us at (800) 722-5547

Date ____/____/____

Level Switch Inquiry Application Sheet

Name _____ Company _____
 Address _____ City _____ E-mail _____
 State Zip _____ Telephone _____ Fax _____
 Description of application _____

Immediate Quantity _____ Prototype Y _____ N _____ Estimated Yearly Quantity _____
 Submit Sketch of Tank with Switch Location or Competitor Part Number _____

MEDIA INFORMATION

Liquid Media _____ Specific Gravity _____ Viscosity _____
 Maximum Temp. _____ Minimum Temp. _____ Operating Temp. _____
 Maximum Pressure _____ Operating Pressure _____ Tank Material _____

MINIATURE MULTI-POINT LEVEL SWITCH

Mounting: Top _____ Bottom _____ Side _____
 Mounting Type: Type A _____ Type B _____ Type C _____ Type D _____ Type E _____ Type F _____
 1/8" NPT _____ 1/4" NPT _____ 1" NPT _____ 3/4" NPT _____ 5/16" Tubing _____ 3/8-24 _____ Other _____
 Stem Material: 316 SS _____ Brass _____ PVC _____ Other _____ Float Part Number _____

STANDARD MULTI-POINT LEVEL SWITCH

Mounting: Top _____ Bottom _____ Side _____
 Mounting Type: Type 1 _____ Type 2 _____ Type 3 _____ Type 4 _____ Type 5 _____ Type 6 _____
 1/2" NPT _____ 1-1/4" NPT _____ 2" NPT _____ 3"150# FL(CS) _____ 1/2" Tubing _____ 1-1/2 NPT _____ Other _____
 Stem Material: 316 SS _____ Brass _____ Other _____ Float Part Number _____

SUCTION TUBE LIQUID LEVEL CONTROL

Mounting Type: Type E _____ Type F _____ Type G _____ Other _____
 Stem Material: PVC _____ Polypropylene _____ Other _____ Float Part Number _____
 Overall Length Suction Tube: LS _____ LSE (Extended) _____

OTHER SELECTION CRITERIA

Junction Box _____ Conduit Adapter _____

SWITCH TYPE

10VA SPST _____ 50VA SPST _____ 100VA SPST _____ 3VA SPDT _____ 20VA SPDT _____
 Voltage _____ Load Description _____ Wiring Group I _____ Wiring Group II _____

DIMENSIONAL DATA

Actuation Level:	Inches/MM	Indicate N.O. or N.C. with Float in Dry Condition	
L6	_____	N.O. _____	N.C. _____
L5	_____	N.O. _____	N.C. _____
L4	_____	N.O. _____	N.C. _____
L3	_____	N.O. _____	N.C. _____
L2	_____	N.O. _____	N.C. _____
L1	_____	N.O. _____	N.C. _____

Length Overall LO _____

Please Refer to Catalog for Limitation on Numbers of Levels with Each Switch Type and Wiring Group

Application Comments _____