

Product Features

- *Compact design for restricted spaces*
- *Probe lengths to 48" (122 cm)*
- *Actuation levels 1 to 4 user specified*
- *All stainless steel wetted parts available*
- *NPT male fittings standard, many others available*
- *High quality Teflon® wiring*

Description

The LFS70 small size multipoint level switches feature the rugged durability of stainless steel construction. Ideal for tanks less than 48" (122 cm) in height.

The LFS70 uses the highest quality reed switches with ratings of 20 VA, 100 VA, 250 VA actuated by a magnet in the float. As the float rises and falls, the magnetic field causes the switch inside the stem to open and close. User specifies up to 4 actuation points.

To save space and simplify wiring, Intempco can incorporate a temperature sensor in the end of the float stem. Three sensor types are available: resistance temperature detectors (RTDs) or Thermocouples for continuous output, and thermistors for switch actuation. To select the right sensor for your application see the LFS70 Product Selection Sheet.

Connection heads of various types are available to meet environmental application needs. For mounting, NPT fittings are standard but sanitary fittings and flanges are also available; consult factory.

Reliable operation and simple design makes the LFS70 an excellent choice for many level switching applications.

Ordering

The LFS70 is customer configured and requires engineering drawings for manufacture. As such, it is costly to make just one unit. It becomes more cost effective on ten units or more. For each unit a Product Selection Sheet must be filled out along with the part number from the Custom Builder.

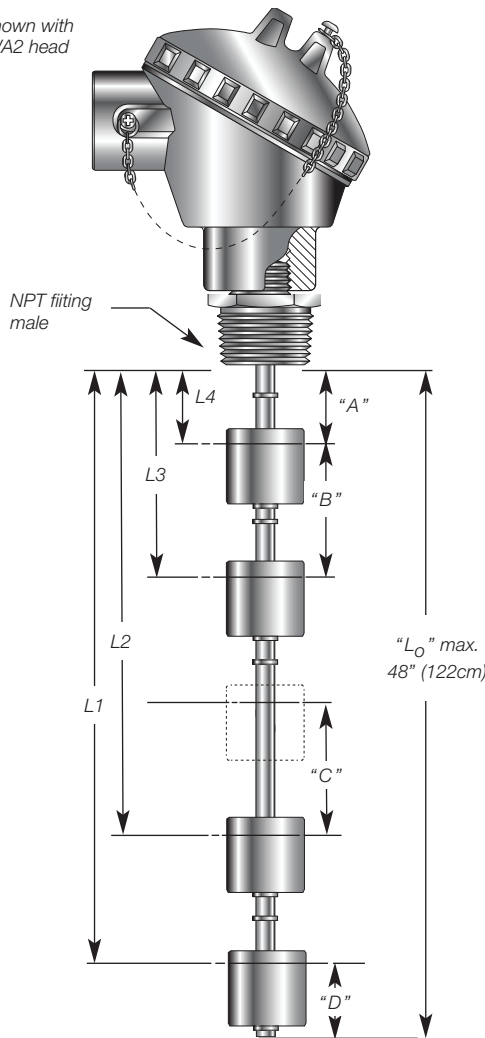
Application / Process Notes

- *Water based liquids*
- *Acids compatible with Stainless 316*
- *Hydraulic and other clean oil applications*
- *Chemical holding tanks with clean liquids*
- *Measurement of liquid levels in mobile equipment*
- *Ideal for many OEM applications*
- *Not recommended where liquids are dirty or sticky*



Dimensions

Shown with WA2 head



A = 3/4" (19mm) minimum distance to highest level
 B = 1-1/2" (38mm) minimum distance between levels
 C = 1/2" (12mm) minimum distance between two actuation levels with one float
 D = 1" (25mm) minimum distance from end of unit to lowest level, except for float type SB which requires 1.75" (44mm)

Actuation Point Location And Logic

Actuation Level-(Inches)	SPST Switch Operation	
L₀:	Lo= L1+1" for floats SA,SC,BA,PA Lo= L1+1.75" for float SB	
L1: _____	<input type="checkbox"/> N/O	<input type="checkbox"/> N/C
L2: _____	<input type="checkbox"/> N/O	<input type="checkbox"/> N/C
L3: _____	<input type="checkbox"/> N/O	<input type="checkbox"/> N/C
L4: _____	<input type="checkbox"/> N/O	<input type="checkbox"/> N/C

- Switch operation assumes float is dry (empty tank).
- Actuation level is measured from the inner surface of the fitting or the flange.
- Tolerance on actuation levels is +/-1/8" (3.2mm).
- L1 is the distance to the lowest actuation level.

Specifications

Maximum Length "Lo" :	48 in (122cm)
Wetted Parts	
Stem :	316 SS
Fitting :	316 SS
Float :	316SS, Buna-N, Polypropylene
Fitting Size :	3/4", 1", 1-1/4" and 2"NPT male others available, consult factory
Minimum Liquid SG:	See "Float Types", depends on float selection
Temperature Range :	-40°C to 150 °C (-40 °F to 300 °F) max. depends on float selection
Max. Pressure :	500 PSIG (34 bar) 25 °C (70 °F) for probe, max. depends on float selection
Switch (N.O. or N.C.) :	SPST: 20 VA, 100 VA, 250VA SPDT: 20 VA
Lead Wires :	22 AWG stranded, PTFE insulation
Electrical Connection :	Enclosure, see Box 5 of Custom Builder
Protection :	NEMA 4 or 4X/IP65

Float Types (other float types are available; see "Tubed Magnetic Floats" in LEVEL section of Intempco website)

Float Dimensions	SA	SC	SB	BA	PA
Part Number	SA	SC	SB	BA	PA
Float Material	Stainless steel 316	Stainless steel 316	Stainless steel 316	Buna-N	Polypropylene
Min. Liq.SG (SG)	0.73 (0.63 float)	0.70 (0.60 float)	0.85 (0.75 float)	0.60 (0.50 float)	0.75 (0.65 float)
Pressure, Max.	300 psi (21 bar)	500 psi (34 bar)	300 psi (21 bar)	150 psi (10 bar)	50 psi (3.4 bar)
Temp, Max.	150°C (300°F)			Water: 82°C (180°F) Oil: 110°C (230°F)	82°C (180°F)

Wiring Information

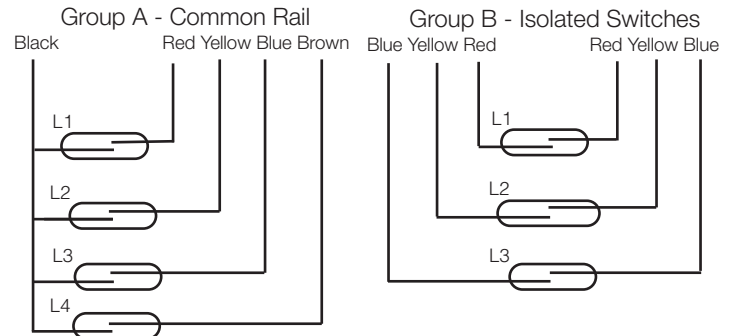
Wiring Color Code

SPST Switches			
Wiring	Group A	Group B*	
Common Wire	Black	None	
L1	Red	Red	Red
L2	Yellow	Yellow	Yellow
L3	Blue	Blue	Blue
L4	Brown	N/A	N/A

* Maximum 3 switches for group B

Wiring Type...specified in BOX1 of Custom Builder

Group A & B wiring diagrams are shown below. One float is required for each point of actuation.



SPST Switches are available in either NO or NC

RTD Temperature Wiring Information

<p>3-Wire Single RTD</p>	<p>CODE</p> <p>S3</p>	<p>Lead configuration S3 provides two connections on one side of the sensor and one to the other side of the sensor. This construction is used for measurements with very high precision.</p>
<p>4-Wire Single RTD</p>	<p>CODE</p> <p>S4</p>	<p>Lead configuration S4 provides two connections to each end of the sensor. This construction is used for measurements of the highest precision and should be preferred to S3 for higher accuracy measurement.</p>

Thermocouple Wiring Information

ANSI CODE	Thermocouple Type
J	Iron-Constantan White (+) & Red (-)
K	Nickel-Chromium Yellow (+) & Red (-)
T	Copper-Constantan Blue (+) & Red (-)
E	Nickel-Constantan Purple (+) & Red (-)

Custom Builder

MODEL 1 2 3 4 5 6 7 8 9 10

LFS70 - [] - [] - [] - [] - [] - [] - [] - [] - [] - []

BOX 1 CODE	Wiring Type
A	Group A Common rail switches
B	Group B Isolated switches

Other wiring types available. See application sheet.

BOX 2 CODE	Switch Rating
02	20 VA
10	100VA

Other switch ratings available. See application sheet.

BOX 3 CODE	Fitting Type & Size
FN	3/4" NPT male (float PA only)
GN	1" NPT male
HN	1-1/4" NPT male
JN	1-1/2" NPT male
KN	2" NPT male

Other fittings available. Consult factory.

BOX 4 CODE	Fitting/Probe Material
S	316 Stainless Steel

Other materials available. Consult factory.

BOX 5 CODE	Enclosure
00	No head, supplied with 24" single Teflon leads
WA*	Aluminum die cast screw cover, meets NEMA 4/IP65 requirements
P03	White polypropylene screw cover, meets NEMA 4X/IP65 requirements
AH2	Aluminum die cast flip cover, meets NEMA 4/IP65 requirements
CA*	Aluminum cast screw cover, epoxy coated, NEMA 4X/IP66
CS*	Cast stainless steel 316 screw cover, meets NEMA 4X/IP66 requirements
EX*	Cast aluminum, Explosion Proof, CSA, FM Approval Class I, Div. 1, Gps. B,C & D Class II, Div. 1, Gps. E, F & G, Type 4x
CX*	Cast stainless steel, Explosion Proof, CSA, FM Approval Class I, Div. 1, Gps. B,C & D Class II, Div. 1, Gps. E, F & G, Type 4x
AD*	Cast aluminum, Explosion Proof, CSA, FM Approval Class I, Div. 1, Gps. B,C & D Class II, Div. 1, Gps. E, F & G, Type 4x
XD*	Cast aluminum, Explosion Proof, CSA, FM Approval Class I, Div. 1, Gps. B,C & D Class II, Div. 1, Gps. E, F & G, Type 4x

*2 = 1/2" NPT Conduit *3 = 3/4" NPT Conduit

BOX 6 CODE	Float Style
SA	SS316, ϕ 1.10" x 1.10" L, SG=0.63
SB	SS316, ϕ 0.90" x 1.57" L, SG=0.75
SC	SS316, ϕ 1.06" spherical, SG=0.60
BA	Buna-N, ϕ 1.00" x 1.00" L, SG=0.50
PA	Polyp., ϕ 0.75" x 0.88" L, SG=0.65

Other float styles available. See "Tubed Magnetic Floats" in LEVEL section of INTEMPCO website.

BOX 7 CODE	Quantity of Floats
-	1-4*

* Maximum 3 switches for group B: Isolated Switches

BOX 8 CODE	Probe Type
EA	Tube ϕ .312" (8.00mm)

BOX 9 CODE	Probe Length "L ₀ "
---	In inches, 48" max. (122cm) (Ex.: 036 = 36.0" long)

BOX 10 CODE	Options
NO	None
TS	Temperature Sensor Option
SY	Specify

A. Application General Enviromental Information

- 1 Liquid Media: _____
- 2 Pressure Range: Minimum: _____, Maximum: _____; Units: _____(PSIG/MPa)
- 3 Temperature: Minimum: _____, Maximum: _____; Units: _____(°C/°F)
- 4 Specific Gravity: Minimum: _____, Maximum: _____;
- 5 Viscosity of Media: _____(SSU)
- 6 Tank Material: _____
- 7 Tank Depth: _____
- 8 Unit is mounted: Tank Top Tank Bottom

B. Probe Information

- Overall Length, "Lo": _____ (maximum 48", in inches)

Mounting and Stem Material

- Stainless Steel 316

Mounting Type

- 3/4" NPT Male
- 1" NPT Male
- 1-1/4" NPT Male
- 1-1/2" NPT Male
- 2" NPT Male

C. Level Switch Type & Rating

- SPST 20 VA, 1A/250 V_{dc or ac}
- SPST 100 VA, 2A/300V_{dc or ac}
- SPST 250 VA, 5A/250V_{dc or ac}
- SPDT 20 VA

Switch Load

- Inductive
- Resistive
- PLC/Mircoprocessor

D. Float Information

- Float P/N: | ____| ____| ____| ____| ____| ____| ____| ____|

Actuation Level-(Inches)	SPST Switch Operation	
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L2: _____	<input type="checkbox"/> N/O	<input type="checkbox"/> N/C
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L4: _____	<input type="checkbox"/> N/O	<input type="checkbox"/> N/C

- Switch operation assumes float is dry (empty tank).
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- Tolerance on actuation levels is ±1/8" (3.2mm).
- L1 is the distance to the lowest actuation level with mounting "up".

E. Temperature Options

- Temperature Output:
 - None
 - RTD: 100-Ohm 1000-Ohm
 - Circuit Type: 3-Wire 4- Wire
 - Thermistor*
 - Thermocouple: Type J, Type K Type T Type E
- Thermostat:
- Temperature Switch Set Point: _____ (°C/°F)
- On temperature rising, switch: Opens Closes
- Comments: _____

*Many thermistors available, specify type by R-T curve or supplier P/N

Customer Information

- Name: _____
- Company: _____
- Street: _____
- City: _____
- State/Province: _____
- Zip/Postal Code: _____
- Phone: (____) _____
- Fax: (____) _____
- Quantity Needed: _____
- Date Required: _____
- Shipping Method: _____
- Partials Accepted: _____ (Yes/No)

- Comments/Notes:
