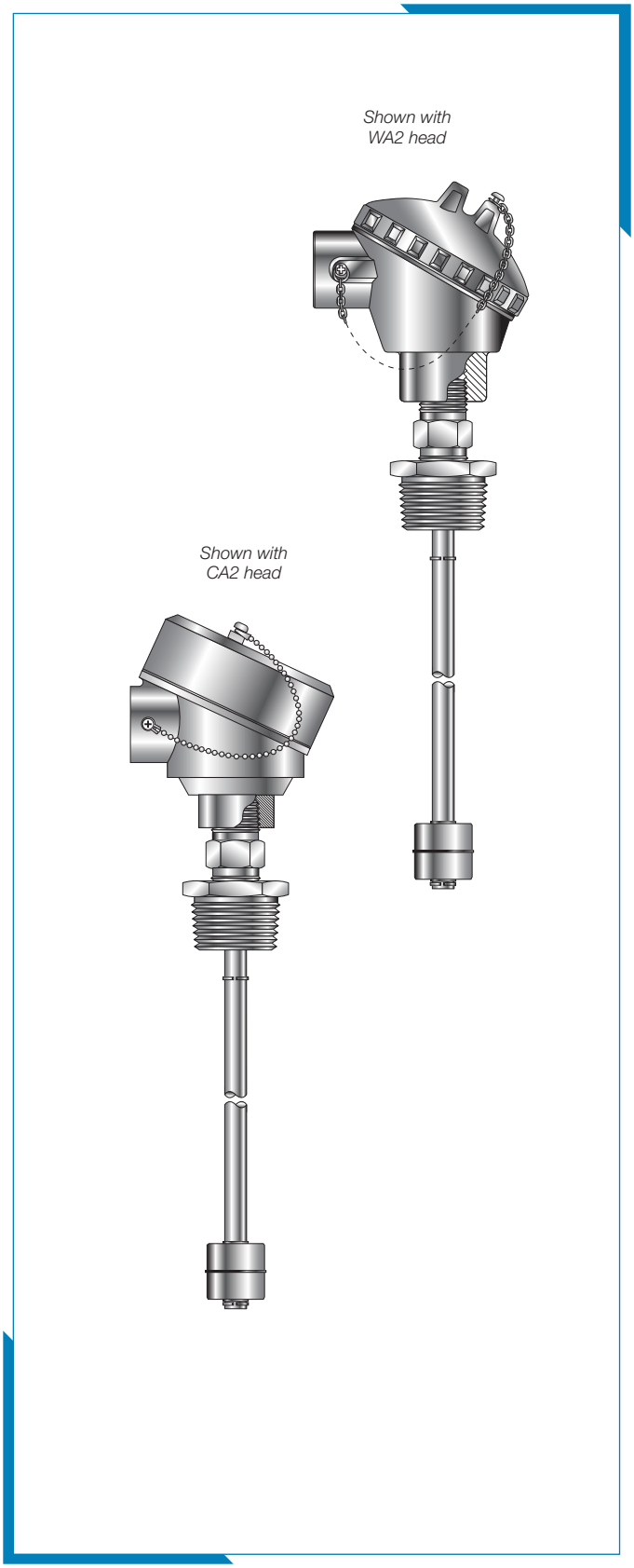
Product Features

- *Compact design, ideal for OEM applications*
- *Various process fittings available*
- *Probe lengths to 96”*
- *1/4” or 1/2”resolution*
- *All stainless steel wetted parts*
- *Aluminum, stainless, polypropylene enclosures available; general purpose or explosion proof*
- *Continuous analog level measurement*
- *Analog output via head mounted hockey puck transmitter or remotely mounted DIN Rail transmitter*
- *Undisturbed by foaming*
- *Vapor insensitive*
- *Liquid interface detection*



Description

The LFT01 is a reed-chain type float level transducer suitable for level measurement in vessels of up to 96 inches in height. Of high quality construction, all wetted parts are stainless 316; other materials are available upon request.

Each transducer comes standard with an enclosure, head-mounted hockey-puck or remote mounted DIN rail transmitter, float and a fitting/probe. Reliable operation and simple design makes the LFT01 an excellent choice for many level sensing applications.

Application / Process Notes

- *Ideal for level measurement where installation space is limited or tanks are compact*
- *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*
- *Machinery, Energy, Naval, Industrial, Automation*
- *Not recommended where liquids are dirty or sticky*

Index

Item		Page
	Product Features	1
	Description	1
	Application/Process Notes	1
	Index	2
1.	Summary	3
2.	Specifications	4
3.	Note	5
4.	Control of Units	5
5.	Energy Efficiency	5
6.	Reed sensor technology	6
7.	Calibration	7
8.	Installation	8
	8.1 Precautions	8
	8.2 Procedure	9
9.	Wiring basics	10
10.	Noise/Ground loops	10
11.	Corrosion and compatibility	11
12.	Liquid turbulence	13
13.	Contamination/Metal particles	13
14.	Maintenance	14
15.	Cautions	14
16.	Customization	14
17.	Level sensor terminology	15
18.	Disclaimer	16
19.	Other documents	16
20.	Order builder	17

1. Summary

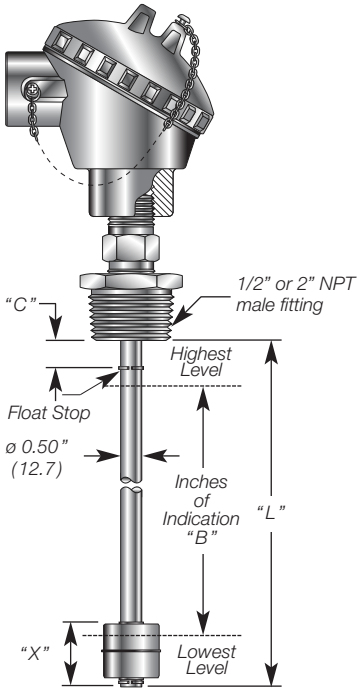
The LFT01 is a simple, reliable and cost effective means of continuous sensing of liquid levels. This device uses a magnetic float which is free to move vertically along a stem equipped with reed magnetic switches giving a resolution of ¼". The switches are fully contained within the stem.

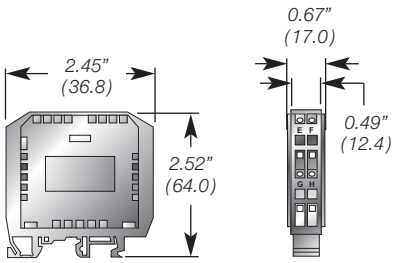
There are a number of materials available depending on the liquid which will be measured. The use of a 2" or 1-1/2" NPT fitting accommodates the diameter of the float and allows the unit to be installed from the top of the vessel without removal of the float.

Each transducer comes standard with a shielded cable or a 5-pin M12 Micro-DC plug. The transmitted analog level signal is generated via either an onboard puck mounted transmitter or a DIN rail transmitter, mounted remotely. The puck or DIN rail transmitter can be used to calibrate the device for different spans within the full length of the stem. The output signal is a stepped analog signal of the industry standard 4-20mA current loop or 0-5Vdc, 0-10Vdc, or 0-5K ohms range.

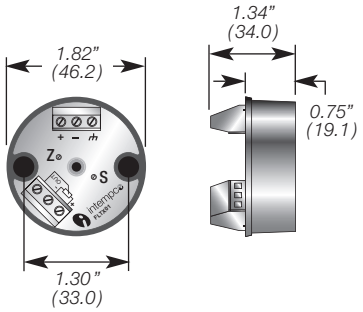
LFT01
All Stainless Steel Float Level Transmitter

Dimensions





DIN Rail type, remote transmitter



Hockey puck type, transmitter

Float Factor - X

Float P/N	X
BA	2.36" (60)
CA	2.32" (59)

To Determine Dimensions

L: Overall Length
B: Inches of indication
C: Distance from bottom of mounting to float stop

Calculating Length

To find Overall Length ***"L"***
when Inches of Indication ***"B"*** is known:
L = B + C* + X

To find Maximum Inches of Indication ***"B"***
when Overall Length "***L***" is known:
B = L - C* - X

** C dimension is determined by customer. Floats are field-removable.*

Technical Specifications

Sensor Specifications

Sensing Technology : Reed Switch chain type
Measuring Range : From 12 to 96 inches (304 to 2438 mm)
Resolution : ± 0.50 inch (13 mm) standard
± 0.25 inch (6.5 mm) optional
Applicable Floats : See Float Types - **BA, CA,**
Dead Band : Dependent on Float: See Float Types
Minimum Liquid SG : Dependent on Float: See Float Types
Max. Pressure : Dependent on Float: See Float Types
Media Temperature Range : –20 to 120 °C (–4 to 250 °F)
Wetted Parts
Stem : Stainless 316 std.
Float : See Float Types
Fitting : Stainless 316 std.
Process Connection Size : 1/2" or 2" NPT male
Enclosures : See Head Types - **WAx, POx, AHx, CAx, CSx, EXx, ADx, XDx**
Transmitter Type Hockey puck or DIN Rail,
Hockey Puck : Zinc die cast enamel coated, NEMA 1/IP40
DIN Rail : Polyamide, NEMA 1/IP40
Adjustments : Via potentiometer, 20 turn

Environmental Specifications

Ambient Temperature Range : – 20 to 60 °C (– 4 to 140 °F)
Storage Temperature Range : – 40 to 80 °C (– 40 to 176 °F)
Media Temperature Range : – 20 to 120 °C (– 4 to 250 °F)
Environmental Protection : NEMA 4/IP65 or NEMA 4X/IP66 depending on enclosure selection

Output Data, 2-wire

Output Signals : 4-20 mA 2-wire
Maximum Loop Resistance : Rmax. = [Vsupply – 9 VDC] / 20 mA
Accuracy : ≤ ± 3.0 % FS max. ≤ ± 1.5 % FS typ.
Open Circuit Detection : Over-scale limit (27.0 mA) or Under-scale limit (2.2 mA)
Sensing Voltage & Current : 5 VDC max., 2.5 mA max.
Warmup : 30 sec.

Output Data, 3-wire

Output : 1-5 VDC, 0-5 VDC, 0-10 VDC, 3-wire
Accuracy : ≤ ± 3.0 % FS max. ≤ ± 1.5 % FS typ.
Output Impedance : >1 MΩ
Sensing Voltage & Current : 5 VDC max., 2.5 mA max.
Warmup : 30 sec.

Electrical Specifications

Supply Voltage : 12-32 VDC
Residual Ripple Supply Voltage : ≤ 5 %
Supply Voltage Protection : Reverse polarity, excess voltage, override and short circuit protected
Supply Effect : <0.02 % / V

3. Note

Prior to unpacking and installation, please read the operating instructions and follow them carefully. These units are to be installed, used and serviced only by individuals who are familiar with the operating instructions and the applicable regulations for operational safety and accident prevention.

The unit is constructed using the most up to date production equipment and complies with the safety requirements of the local guidelines. The manufacturer cannot be held responsible for damage caused by misuse or incorrect installation. The installation conditions and connection values indicated in the operating instructions must be followed.

Handle the instrument with care, as sudden impacts or drops could cause damage. This device is not ESD sensitive, so no such precautions need to be taken during handling or unpacking.

4. Control of units

The units are calibrated and checked before shipment and shipped in good condition. If you detect a visible defect on the unit we recommend that you carefully check the packing material. In the event of a defect, please immediately notify the mail service/freight forwarder, as they are responsible for shipping damage.

5. Energy efficiency and production economy

One of the prime methods for implementing more efficient systems in an industrial setting is through better process control and maintenance practices. This starts with accurate and energy efficient sensing of the processes.

The results of implementing more efficient systems are wide ranging. Less cost in energy, waste minimization due to increased quality control, labor and time savings, less down time and improved safety. This often also has the advantage of offering your clients a superior product with better quality control.

Choosing the cheapest sensor is often a false economy. What kind of cost will there be if there is a degradation of quality in the product? How much down time will there be if there is an increase in failure rate of the sensors? Could there be safety considerations if the sensor fails? How much energy or material will be lost if your sensors don't perform to expectations? Choosing a quality sensor has the potential to solve many future problems. The LFT01 is robust in design and very energy efficient, running off the normal operating current in a 4-20mA current loop control system.

6. Reed Sensor Technology

The core technology of this product is the reed sensor. It is similar in design to a reed relay except it uses a moving permanent magnet to cause it to switch instead of a magnetic current induced by the flow of electricity. As such the basic design has characteristics that allow a host of useful functions.

-Energy efficiency. The reed relay draws absolutely no energy when it is not switched on. Unlike active devices that need energy producing transducers to operate this device is activated by the movement of a permanent magnet which draws no power in order to function and the reed itself draws no power while in the non-conducting state.

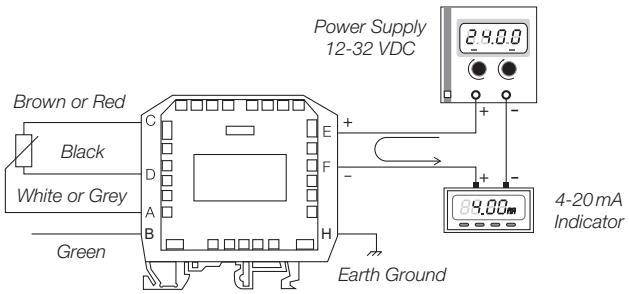
-Low signal current. Extremely small signals can be switched over the reed relay without any loss in signal. This is good for areas requiring low voltage and low current sensing due to hazardous vapors or gasses.

-Reliability. There are no discrete components that could fail within the reed sensor. No transistors, no resistors, no capacitors. There are only two components, the reed and the moving magnet. This simplicity greatly reduces the chance of failure.

-Robust. This device is not ESD sensitive and it is also physically robust. It can withstand fairly broad changes in temperature without affecting its performance. Since the reed is completely encased it can also withstand environments that are toxic, humid and that have high levels of particulates in the air.

7. Calibration

1. Install an appropriate power supply and calibration display.



2. Zero adjust: place the float at the bottom of the stem, or the lowest desired spot on the stem and adjust the Z screw on the DIN transmitter until the calibration display shows the desired value (4mA for current loop, 0 volts for voltage 5 or 10 volts, 1 ohm approximate for 5Kohms resistor range).

3. Span adjust: Move the float to the highest desired location on the stem or the top and adjust the S screw until the calibration display shows the desired max value (20mA for cur rent loop, 5 volts for 5 volts, 10 volts for 10 volts and 5Kohms for 5Kohms.

4. Adjusting the span may move the zero point, so repeat steps 2 and 3 until there is no longer any deviation.

5. Install the LFT01 in the vessel.

8. Installation

Care should be taken in selecting the mounting location. High voltage wires and moving parts should be avoided. The location should also be chosen for ease of access. The probe should have sufficient space around it to allow the float sensor a full range of motion. Listed here are some concerns that should be factored into the installation of this product.

Specific Gravity

All liquids have a specific gravity. The magnetic float should be chosen such that its specific gravity falls within the range of that appropriate for the liquid being measured. The different specific gravities for each float are listed at the end of the manual in the custom builder.

Magnetic Interference

This device is sensitive to magnetic fields, so it should be located a sufficient distance away from any devices that create or intrinsically have magnetic fields. Also, if it is mounted in a vessel that is ferrous it should be mounted a sufficient distance from any surface to prevent it from affecting the float.

Thermal

Although the rating for the probe is -20 to +120C it should be noted that the electronics in the DIN or puck transmitter are only rated for -20 to +60C and the location of these devices should ensure that they remain within those ratings.

Vibration

The LFT01 series of float sensors could be affected by vibration or momentary impact. Excessive vibration may cause false sensor readings and may even cause permanent damage to the unit. The reed switches are electro-mechanical devices that physically move under the pull of the float magnet, but they could be caused to move by excessive vibration.

Mounting

The float stem should be mounted rigidly so that it does not move with turbulence. It should also be mounted as vertical as possible. A few degrees off of vertical will not harm operation.

8.1 Precautions

Although this is a sealed and intrinsically safe device, precautions should always be taken to ensure that this device is properly grounded when used in an explosive or flammable environment otherwise a significant static charge could build up on the body of the sensor and be a source of ignition.

8.2 Installation Procedure

1. Before installation ensure that the LFT01 is properly calibrated for the expected range of measurement. (See Calibration page 7)

2. Clean the float and the stem of the sensor to ensure there is no contamination to the liquid due to residue that may remain from the production process.

3. If the installation hole is larger than the size of the float proceed to step 4 , otherwise remove the retaining collar at the bottom of the stem and remove the float.

4. Insert the stem through the mounting hole and hand tighten the body of the sensor by screwing it into the threaded mount.

5. Further tighten the sensor in the NPT threaded hole using a wrench going only ½ turn further.

6. If the float was removed in step 3, put the float back onto the stem and replace the retaining collar at the base of the stem.

7. Install an appropriate cable from the controller or input device to the LFT01. Ensure that the cable is shielded and that the shielding is only connected to ground at the controller end, not at the sensor end.

8. Verify the LFT01 is functioning properly.

9. Wiring Basics

If installation is to take place in a hazardous environment then all necessary precautions need to be taken. All wiring should be run in a conduit and signal wires should be run separate from load wires.

The current signal output of 4-20mA has been an industry standard for some time. It is popular because fairly long cable runs are usable without signal problems caused by EMI. It is also fairly easy to convert from current to voltage just by installing a resistor in series. If a voltage signal is needed typically a 250 ohm resistor would be installed in series that would give a 1 to 5 volt output based on 4 to 20mA range of current.

IR=V (.004A X 250ohms= 1 and 0.02AX250ohms=5V)

Intempco does offer other outputs for non-standard applications. 0-5Vdc, 0-10Vdc and 0-5kohms.

The 4-20mA standard uses only two conductors and requires a supply of 12 to 32 volts. The DIN rail or hockey-puck transmitter unit is powered by the current loop and causes no discrepancy in the signal. Current signals are inherently noise immune, but proper shielding practices are still advised.

10. Noise

Ground loop problems:

It is often assumed that ground is an absolute and all ground connections will be equal to zero, but this is a misconception. Often different grounding points can have a fairly large voltage difference in respect to each other. This can be fairly common in larger operations where equipment may be spaced far distances apart. Typically ground potentials are a function of the conductivity of the soil in a particular area and they can even change over time as there are changes in temperature and humidity.

Ground loops can cause errors in measurement, lead to premature failure of equipment and even corrosion in some cases.

Ground loop problems usually manifest themselves as either noise on the signal wire, an offset or drift in the signal that cannot be calibrated for or even total failure of the signal since it has been offset past the point where it can be read by the receiving equipment.

Checking for ground loops

If you suspect that you are having ground loop problems follow this procedure to check.

1. Disconnect your shield ground between the controller input and the signal wire.
2. Install an ammeter in series with the shield to the ground point at the controller.
3. There should be no significant current present. If there is, try and identify where the shield is coming into contact with ground and remove that contact. Remember, shield ground should only be grounded at the controller and not at the sensor end of the cable. If you are unable to determine where the problem lies it might be advisable to leave the shield ungrounded where you can.

11. Compatibility and Corrosion

Materials Compatibility

Failure to check chemical compatibility can lead to disastrous consequences. Although stainless steel is robust and resistant to most chemicals it can be susceptible to corrosion with others. Sulfuric acid, Iodine, phosphoric acid and bromine all react to stainless steel. Be aware of the properties of your liquid at different temperatures as well. Change in viscosity due to temperature can affect the operation of the float as it moves along the stem of the sensor.

Corrosion

Corrosion can be caused by a number of reasons, and not just to the sensor. Improper cleaning, scratches, or damage to the stainless steel sensor can be a starting point for corrosion. Micro-scratches or cracks can lead to internal corrosion in some instances. Cracks and crevices that are starved of oxygen become anodic and this leads to corrosion.

Corrosion can also be caused by electrolysis, also known as galvanic corrosion. If the sensor is installed in a dissimilar metal and both metals are in contact with a liquid that promotes electrolysis there could be corrosion problems. Liquids high in salt content are good examples of this. Salt water, tomato sauce, high saline solutions can all cause electrolysis.

Any time there are two different metals in contact there is a flow of electrons from the more negatively charged metal to the more positively charged metal. Often corrosion may manifest itself not necessarily in the sensor, but in the mount that the sensor is attached to. If the tank or mount is aluminum the metal surrounding the sensor may degrade or even become powder over time. This can lead to material failure and can complicate removal of the sensor for cleaning or recalibration. This can be solved by using a suitable isolating compound on the threads of the sensor during installation and by following proper grounding techniques. Improper grounding can lead to ground loops which will increase the rate of corrosion in cases of electrolysis. In extreme cases it may be necessary to install a galvanic isolator.

The compatibility of two different types of metal can be seen by looking at their Anodic Index. Metals should not be in contact if the difference in their index is greater than 0.15 and if they are being used with harsh or saline liquids.

Here are some examples of typical materials and their Anodic Index

	Plated Nickel	-0.30
	Copper	-0.35
	Brass or Bronze	-0.40
*	18% chromium corrosion resistant steels	-0.50
	12% chromium corrosion resistant steels	-0.60
	2000 series wrought aluminum	-0.75
	Iron, low alloy steels	-0.85
	Aluminum cast alloys	-0.95
	Galvanized steels	-1.20

*approximate Anodic index value for the stem and fittings of the LFT01.

12. Liquid motion, turbulence, sloshing or wave action

In some cases there might be movement in the liquid being measured due to processing, turbulence, sloshing, or wave motion. In this case it may be advisable to install a stilling tube. This tube is fixed at the top and bottom of the tank and has holes at the top and bottom as well. This ensures that the liquid will rise and fall with the level in the tank while getting rid of turbulence.

Another possibility would be to install a sensor that has built in processing which can average the signal before it is transmitted. The *MIST* series of float sensors may be advisable in these cases. These sensors use the same technology to read the level but they have built in processors to average the 4-20mA output over a set period of time. The averaging can take place over a long enough time period to cancel out any motion in the liquid. Installation is the same and they use the same 4-20mA two wire current loop, the processor runs parasitically off the signal current, so there is no extra supply needed. The *Mist* float sensors come calibrated from the factory or they can be field calibrated with the optional programmer. Choosing this sensor may be a more economical solution as it does not require any modifications to the tank in order to adapt to sloshing or turbulence.

13. Contamination/Metal Particles

If this product is used in a liquid where there may be contamination by a suspension of metal particles it should be noted that if the particles are ferrous they will be attracted to the magnetic float and will accumulate there over time changing the characteristics of the float and degrading the performance of the sensor. Wear from pumps and transmissions or even improper control of a fluid resulting in cavitation or flashing can cause metal particles to break off and end up in the fluid and possibly collect at the sensor location. Proper engineering principles should be observed at all stages of the process. Clogging of the FT01 sensor by metal particles may be an early indication of more serious problems.

14. Maintenance

Under normal operation this unit should be maintenance free. The exception is buildup of material from the liquid or scaling which can cause the float to stick or restrict its movement. In this case remove the sensor from the tank and clean it with a suitable cleanser that will not damage the stainless steel and will also not form any dangerous reaction with the liquid being measured or the scale that has formed on the stem and the float. Always follow all necessary safety protocols when conducting maintenance. Remove all cleanser residues after cleaning to avoid contamination of the liquid being measured. When maintenance is finished the device should be recalibrated before it is reinstalled in the tank to ensure it is operating properly.

15. Cautions

If installing this product in a location where there are flammable or explosive liquids, gasses or air born particulates be careful to follow all necessary precautions. Ensure that there is no power to the device before installation and take adequate grounding precautions to make sure there is no spark upon inserting the unit into the vessel or mount.

The reed relay is sensitive to physical impacts. If the unit were dropped or impacted against a hard surface the enclosure for the reed could be damaged and the reed itself could be damaged. This device should be installed carefully to avoid this type of damage.

16. Customization:

We build all our sensors as we receive the order; this enables us to customize each sensor to suit the needs of our customers. If you have specific needs that are not shown in our product listings feel free to contact us. Also, if you should encounter any difficulties or problems in your measurement application feel free to contact Intempco and make use of our extensive experience.

17. Level Sensor Terminology

Anodic Index: measurement used to determine materials compatibility in respect to galvanic corrosion.

Calibration: the application of known values of the measured variable to the sensor and the adjustment of the corresponding output in order to decrease errors in measurement.

Din rail transmitter: an electronic unit that is located near the sensor which converts the output from the reed switches to a useful calibrated output. Normally 4-20mA, but could also be 0-5Vdc, 0-10Vdc, or 0-5K ohms.

EMI: Electro Magnetic Interference.

Float: the permanent magnet which moves with the liquid activating reed switches within the stem.

Galvanic Isolator: a device which has an electrical voltage drop of approximately 1.5 volts dc which prevents low voltage electrolytic currents from passing.

Head: the top of the level sensor unit where electrical connections can be made and where a hockey puck transmitter would be located if that option is chosen. Different head configurations are available.

Hockey puck transmitter: an electronic unit that is located near the sensor which converts the output from the reed switches to a useful calibrated output. Normally 4-20mA, but could also be 0-5Vdc, 0-10Vdc, or 0-5K ohms.

MIST level sensor: a range of Intempco level sensors that includes an embedded device for averaging and calibration. An external programmer is available for calibration of this device, it needs no DIN rail or hockey puck transmitter. It can be ordered with pre-set averaging.

NPT: National Pipe Thread. Refers to the fitting at the top of the stem and below the head that allows the sensor to be installed in a tank or mount. Various sizes are available.

Reed sensor: the physical switches that are inside the stem which are activated by the presence of a magnetic field. The float contains the permanent magnet which activates the reed sensors as the float changes level along the stem.

SG or Specific Gravity: refers to the properties of both the liquid and the float. SG of water at room temperature is 1 and the listed specific gravities for the floats are in relation to that. For an SG of 1 it would be recommended to have a float with an SG of approximately 0.70. If a float has an SG too close to that of the liquid it is measuring it could fail to move properly along the stem or it could even sink in the fluid if it has a higher SG.

Stem: the stem is the vertical component or rod of the sensor that extends from the mounting location downward into the measured fluid. This part does not move, but it contains the reed sensors and provides a range of motion for the magnetic float to move along. A stop at the bottom prevents the float from coming off the stem.

Stilling tube: a tube mounted within the tank that contains the stem of the level sensor and allows the measured fluid to freely rise and fall within it while reducing the amount of wave action or turbulence that might give false or fluctuating sensor readings.

316 Stainless steel: this is an industry standard stainless steel. The addition of Molybdenum gives the steel greater resistance to corrosion, pitting and oxidising fluids.

18. Disclaimer

Intempco guarantees that its products are free from defects in material and workmanship. This warranty is valid for a period of one year from the date of purchase, and covers these components of the products which are non-moving and not subject to normal wear. This warranty does not cover products which are modified or altered. Moreover, it does not cover electrical cables which are cut during installation.

The above stated warranty becomes null and void if anyone, other than service personnel authorized by Intempco, attempts to repair a defective product.

Intempco's only obligation under this warranty is to repair or replace, at Intempco's option, products that are found, upon Intempco's examination, to be defective. Intempco shall have no obligation for consequential damages to personal or real property, or for injury to any person.

19. Other documents

See LFT01 Quick Reference Guide

LFT01
All Stainless Steel
Float Level Transmitter

Custom Builder

MODEL	1	2	3	4	5	6	7	8	9	10
LFT01	- __	- ___	- _	- __	- __	- __	- __	- N__	- ___	- _

BOX 1 CODE	Electronic Module
HA	4-20 mA, 2-wire output Hockey-puck type, installed
HD	1-5 VDC, 3-wire output Hockey-puck type, installed
HE	0-5 VDC, 3-wire output Hockey-puck type, installed
HF	0-10 VDC, 3-wire output Hockey-puck type, installed
DA	4-20 mA, 2-wire output DIN Rail type, remote
DD	1-5 VDC, 3-wire output DIN Rail type, remote
DE	0-5 VDC, 3-wire output DIN Rail type, remote
DF	0-10 VDC, 3-wire output DIN Rail type, remote
RA	0-5 KΩ, 3-wire output
RB	0-10 KΩ, 3-wire output
RC	0-20 KΩ, 3-wire output
Rx	0-xx KΩ, 3-wire output, Specify

Other outputs available. Consult factory.

BOX 2 CODE	Resolution
A	± 0.50 inch (12.7 mm) resolution
B	± 0.25 inch (6.4 mm) resolution

BOX 3 CODE	Enclosure
00	No head, supplied with 36" single Teflon leads
WA*	Aluminum die cast screw cover, meets NEMA 4/IP65 requirements
PO3	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 4 CODE	Certificates of Compliance
X	None, for non-hazardous areas

BOX 5 CODE	Float Style
BA	SS316, ø2.10" x 2.10" L, SG=0.49
CA	SS316, ø2.06" Spherical, SG=0.60

Floats are field-removable.
Other floats available. Consult factory.

BOX 6 CODE	Fitting Type & Size
EN	1/2" NPT male*
KN	2" NPT male

**Float must be removed prior to installation.*

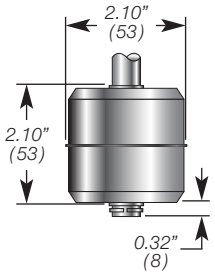
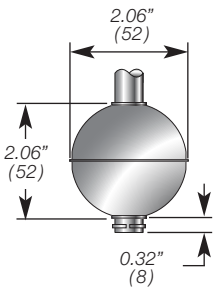
BOX 7 CODE	Fitting Material
S	Stainless steel 316/316L

BOX 8 CODE	Probe Type
HA	Tube Ø.500" x .062" wall, SS316L

BOX 9 CODE	Float Stop Distance "C"
N __	In 0.1" increments Ex.: **N20** = 2.0" long

BOX 10 CODE	Probe Length "L"
___	In 0.1" increments (from 6" to 36") Ex.: **165** = 16.5" long

Float Types

Float Dimensions				
Part Number	**BA**	**CA**		
Float Material	Stainless steel 316	Stainless steel 316		
Float SG/Min. Liquid SG	0.49/0.75	0.60/0.85		
Operating Pressure, Max.	300 psi (21 bar)	750 psi (51 bar)		
Operating Temp. Max.	150°C (302°F)	150°C (302°F)		