

INSTRUCTION & MAINTENANCE MANUAL

Float Operated Tilt Type Liquid Level Switch-"FTS"



Innovating Level Controls since 1984

We are glad to know that you are using a reliable 'Techtrol' product. This product contains fragile parts like glass tube and hence we suggest that you go through this manual carefully before installation.

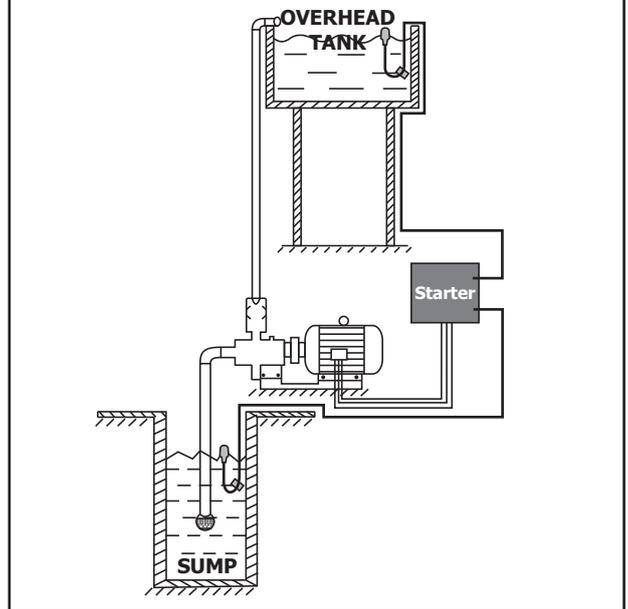
Introduction & Working :

This is a simple, low cost, easy to install and maintenance free device used for level switching in large tanks, sumps for various liquid services like water, effluents, soil water with suspended solids etc. limited to atmospheric pressure and ambient temperature. Multiple floats mounted on the same flange can be used to sense different levels and operate pumps, solenoid valves, alarms etc.

Basic device is a PP Float attached to a 3 core cable of desired length. Inside the float are a fixed micro switch and a moving steel ball. When the liquid level rises above the suspended float, it gets tilted and in the process movement of the steel ball operates the micro switch plunger to open or close an electric circuit.

TYPICAL ARRANGEMENT

Fig - 1



Unpacking & Checking :

- Unpack carefully & ensure that the product has not been damaged in transit.
- Identify that the product received is in line with approved Drawing.
- If the material is found damaged in transit, take further action as per transit insurance clause.

Installation :

Please Ensure That Operating Conditions Are Within Limits As Per Techtrol Test Report.

- Select a suitable location on tank, where vibrations if any, are minimal.
- Ensure that the Flange connection of the level gauge matches the counter connection provided on the tank.
- The Float and the connected cable together with Support Pipe / Suspended Ballast are let inside the tank through a suitable opening / the flange bore and the device is secured by fixing the flange or other connection.
- The levels can be set by positioning of (A) Adjustable Stopper, (B) 'Tie' position on the Support Pipe / Suspended Ballast; slightly above the required level.

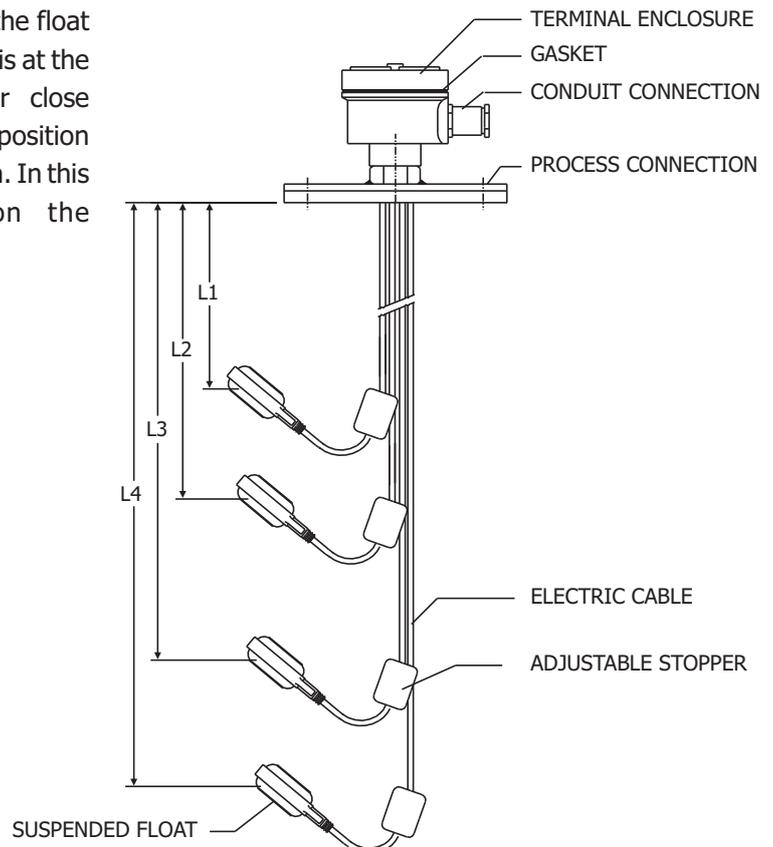
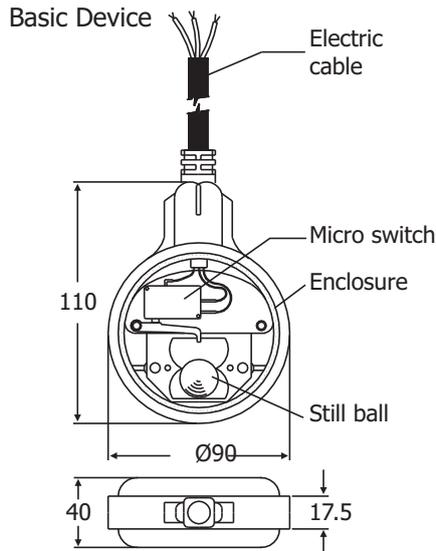
Fig.2	Adjustable Stopper	Fig.3	Support Pipe	Fig.4	Suspended Ballast

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Operation :

When the liquid level is below the suspended float, the float is in a vertical position. In this position the steel ball is at the lowest position with the Micro Switch in open or close condition. When Liquid level rises above the float position float starts floating on the surface in a tilted position. In this steel ball rolls away from its original position the changing the Micro Switch condition.



Fault / Defect	Cause	Solution
Leakage through glands.	a) Gland packing assembly not tightened properly. b) Gland packings have become hard.	a) Tighten gland bolts uniformly. b) Replace gland packings.
Shows correct reading initially, but faulty readings after some period.	a) Gases entrapped within the liquid. b) Scaling/deposition of dirt/foreign particles inside the glass tube & packing bore.	a) Effect Venting. b) Clean glass tube and gland packing bore.
Breakage of glass tube.	a) High operating pressures & Temp. b) Mating flanges orientation is not proper. c) Level gauge connections & tank connections are not properly aligned.	a) Maintain rated Pressure & Temp. b) Arrange proper orientation of mating flanges to get co-planarity and Plumb. c) Align process connections.
Auto ball check not working.	a) Scaling / deposition of foreign particles on auto ball and its seat. b) Auto ball is damaged.	a) Maintain rated Pressure & Temp. b) Arrange proper orientation of mating flanges to get co-planarity and Plumb. c) Align process connections.
Leakage through Isolation valve. (Integral / Straight / Offset Assembly)	a) Wear out of packing bush in Isolation valve assembly due to frequent operation.	a) Replace packing bush. (teflon)

All dimensions in mm, except specified.

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MAN/FTS/Rev 00/00-00