INSTRUCTION AND MAINTAINANCE MANUAL

Techtrol Tilt Type Switch : FTS

Tilt type float switches are suspended from a 3 core cable in plumb and supplied in different lengths Tilt switches are categorised in 1) Disc/ Bioconical shape for large tanks 2) Tubular & Mini- tubular shape for small tanks. 3) Cone shape to detect high level in Silos.

Bio-conical

Disc

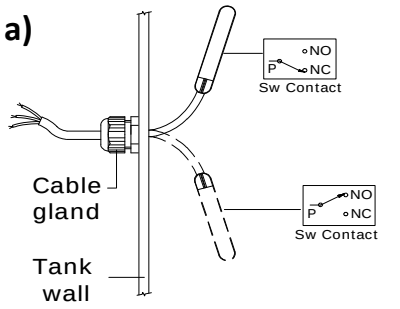
Tubular

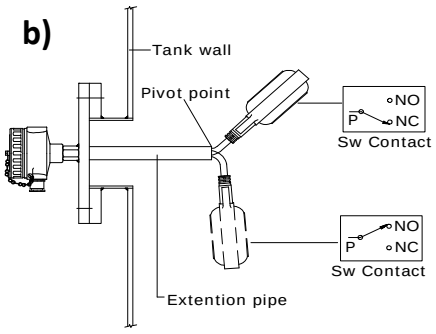
Pre installation check

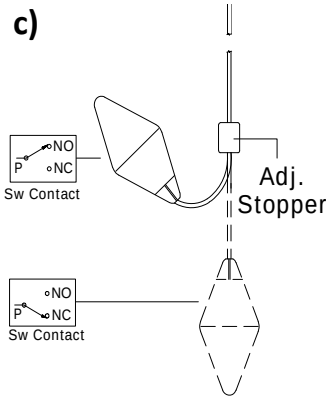
- Ensure that the **'FTS'** has not been physically damaged in transit and received with appropriate stopper assy. i.e Adj. stopper / support pipe/ extended pipe or suspended ballast.(fig 2) as per model no.
- Identify 3 different coloured wires inside the the cable. Their functions and colors are shown in fig. 3 A & B
- Flanged process connection with terminal enclosure, you will find terminal strip with connector labled according to switching level (fig 3C)
- To check the the operation of FTS, connect continuty tester as shown in fig 3 and observe open contact (discontinuty) between P & NO terminals change to close the contact (continuty) when float is tilted. In same manner, observe contact change over between P & NC ternminal.

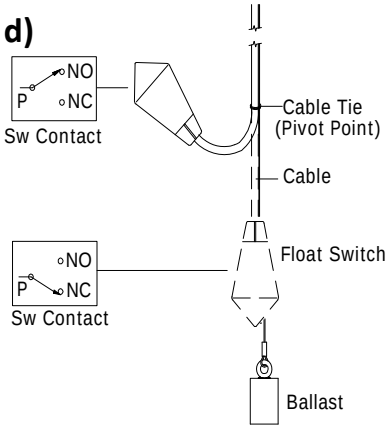
Installation

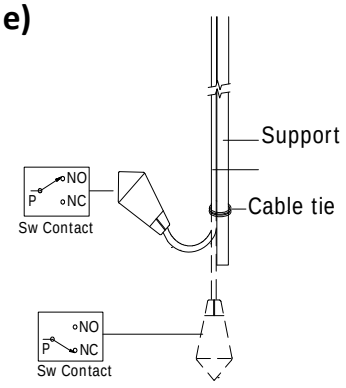
FTS is installed from top and side of tank. **Side mounted system** are cofigured and installed on the tank through 1) cable gland (fig 1a) 2) an extenstion pipe fig 1b for small tanks. **Top mounted system** are cofigured & installed on the tank through 3) adjustable stopper (fig 1c) or 4) suspended ballast (fig 1d) or 5) support pipe (fig 1e)











Please ensure -

1. Location on the tank, should be with minimum vibrations
2. Installation of switch should be away from inlet and outlet to avoid problem of turbulance & suction of float.
3. Process connection flange of FTS matches with the counter connection of tank.
4. Sufficient distance (min 500mm) should be kept between installation point and side wall to allow for unobstructed float movement for normal differential.

5. Use of suspended ballast / support rod is recommended in case liquid is turbulent in nature.
6. In case of outdoor location, especially on the top of the tank, run cable through conduit and terminate it in suitable junction box to prevent cable from damage. (crack)

Level setting - Level can be set by positioning of adjustable stopper or ' tie ' position on the support pipe / suspended ballast; slightly above the required level.

Termination and Wiring (fig. 3)

1) During wiring, power supply should be strictly **'Off'**.
2) Identify terminals **(P**, **NO & NC)** of FTS before wiring. (Refer fig 3)
3) After complition of wiring, cable termination should be routed downward before cable gland to prevent water seepage in enclosure. Fig. 3

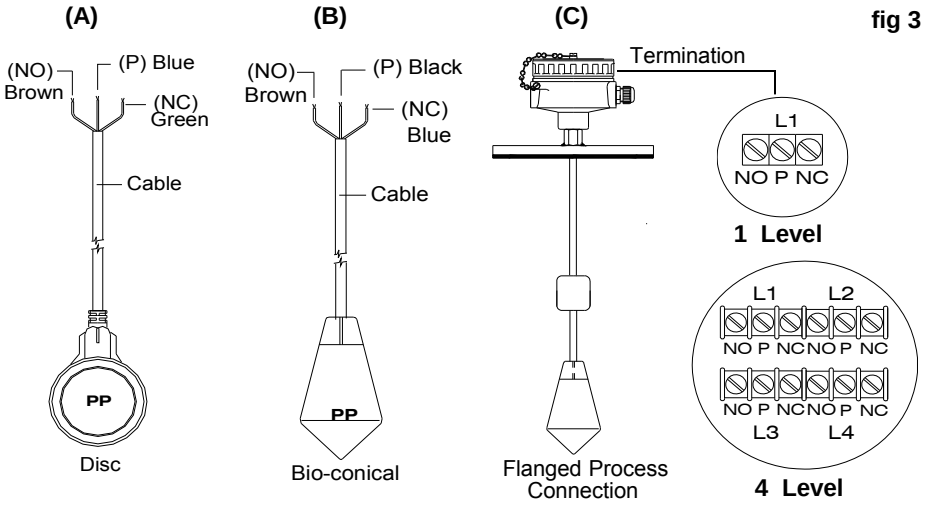
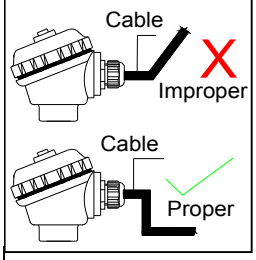


fig 3

Cabling **fig 2**



Precaution :

- Before turninig on the power supply, ensure all the wiring is correct and completed.
- Ensure process connection matches with counter connections provided on tank.
- Ensure weather proofness (IP66) by closing the enclosure with its gasket and cable should be full tight in cable gland ensuring no gap.

Maintenance

- Switch **off** power supply during maintenance .
- **'FTS'** is completely sealed and requires no maintenance. It should be replaced in case of malfunctioning..
- Ensure that temp and pressure does not exceed the limits.
- Visually examine float for puncture and cable for any damage.
- Tighten the bolts and electric connections if loose.
- After maintenance, ensure weather proofness **(IP66)** by closing the enclosure with its gasket and cable should be full tight in cable gland ensuring no gap.

Trouble shooting :

SL.	Faults	Probable causes	Remedies
1	Switch not working or Switch not working at appropriate level.	a. Loose connections b. Float movement may get obstructed by tank wall or other object. c. Switch faulty d. Position of cable tie / adjustable stopper disturbed	a.Check & tighetn loose connections if any. b. Install switch at suitable distance from tank wall or remove obstructing object. c. Consult factory. d. Set position of stopper / cable tie as required