

MAGNETIC LEVEL SWITCH

MAGNETIC LEVEL SWITCH is an economical, maintenance free and reliable device used for high, low or intermediate point level switching. It is deal for tanks with inaccessible tops or bottoms and where insertion depths of top mounted models are exceeded. **CONSTRUCTION & OPERATION :** Compact and rugged construction consisting of a free moving float assembly and a switch enclosure in non-magnetic material to achieve undisturbed magnetic flux. It employs dual magnets - one carried out by the float arm and the other by the contacts carriers, housed in the switch enclosure. A change in the liquid level brings the like poles of the dual magnets opposite to each other, and resulting repulsion force ensures a change-over of contacts, of the switch element with snap action. The magnetic transmission is glandless, leaving no scope for leakages from vessel into switch housing. These switches come in various non-magnetic materials and construction styles to suit board range of medias/applications. It is designed to provide high repeatability and to minimize effects of stock, vibration & pressure.

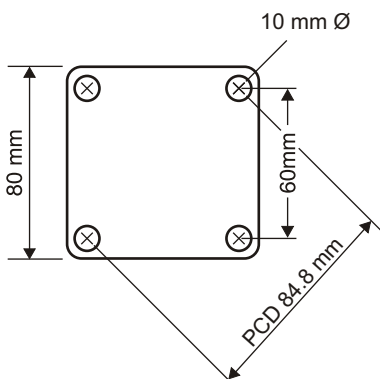
INSTALLATION : Mounted internally or external through a chamber as shown alongwith. External mounting is resorted to, where space is a limiting factor or mechanical devices like stirrers operate within the tank. Besides, in applications like boilers, reaction-kettles etc., with external mounting, isolation is possible for regular servicing. The switch is normally side-mounted, however for applications like slurry, vertical - installation is preferred. On no account must a switch be used for the direct starting of burners, heaters, motor-pumps, alarm, it is essential that the contacts are wired in series with the relay coil (N/V coil) in a contactor starter.

APPLICATIONS : Magnetic Level Switches can be used for the following applications :

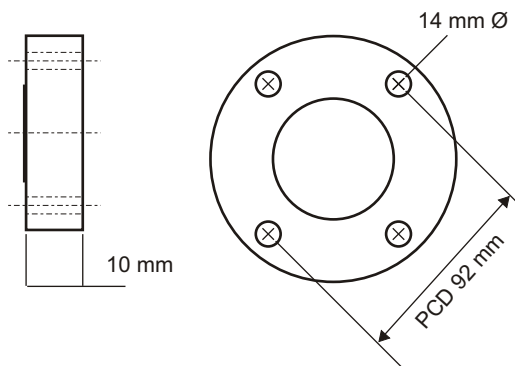
1. Manual start & auto off in storage tanks.
2. Oil storage tanks to indicate high level, low levels or filling the tank automatically.
3. Condensate receivers to control the operation of an electrically driven condensate pump.
4. Main water storage tanks to control the action of the pump used for filling or emptying the tank, automatically.
5. In Baby Boiler auto control of Pump motor & Electric Heater.
6. For the control and indication of liquid levels in vessels under vaccum.
7. In storage and service tanks on board ship to give Indication in the Engine Room when the level in the tank is too high or too low.

Where a number of level switches are employed they can be supplied together with a suitable indicator and Alarm Panel embodying signal lights and an audible alarm system.

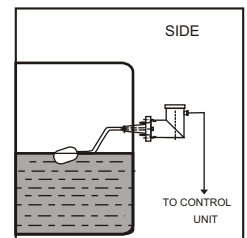
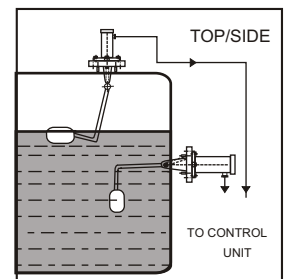
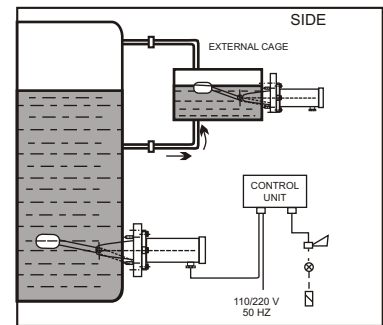
INSTALLATION



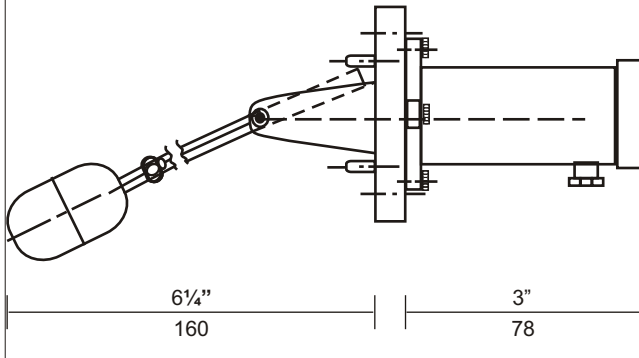
DETAILS OF FIXING



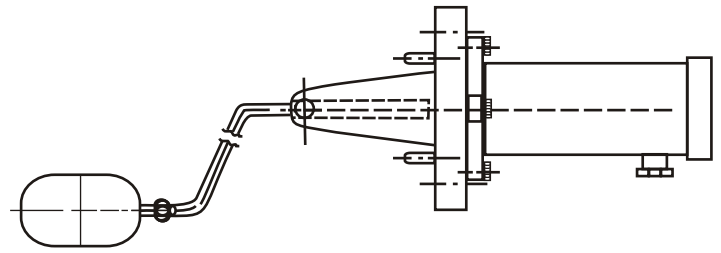
DETAILS OF FIXING



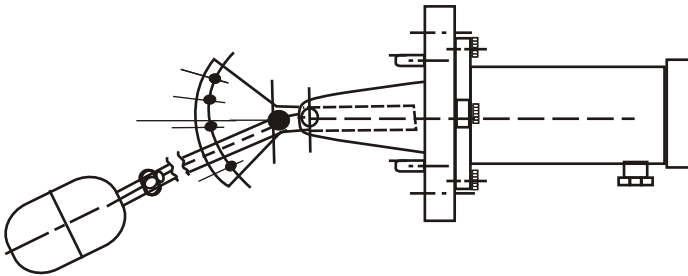
STD L.S.: Standard construction with weatherproof enclosure



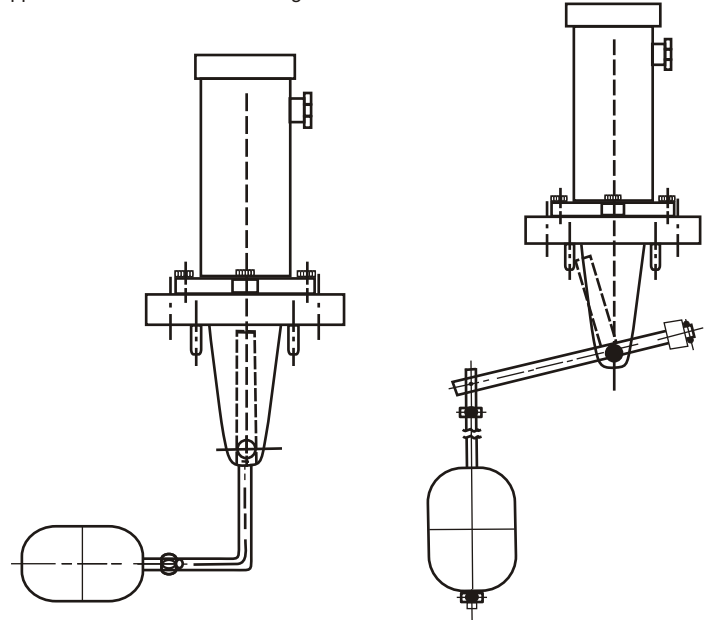
EXT. L.S.: Float Trim cranked slurry applications.



ADJ. L.S.: Cam with stops incorporated in the construction to locate float trim at a fixed angle to provide adjustable switching differentials.

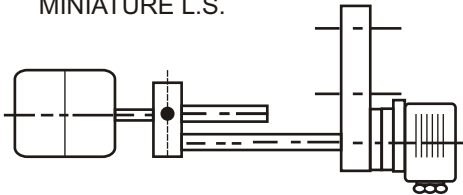


VERTICAL L.S.: Float Trim cranked for slurry applications with vertical mounting.



SEE-SAW L.S.: A see-saw type construction permits adjustments in operating level and switching differential with vertical mounting.

MINIATURE L.S.



STANDARD SPECIFICATIONS

Construction	: STD L.S. / ADJ. LS. / EXT. L.S. / Vertical	Switch	: Fixed/Adjustable in steps from
Styles	: L.S. / Vertical See-Saw L.S. / Miniature L.S.	Differential	: 10-300 mm depending upon float size/arm extension/cam positioning.
Installation	: Side / Top	Accuracy/	
Switch	: Weatherproof/Ex-proof	Repeatability	: ± 2 mm/±1 mm
Enclosure	: with 1/2" NPT.	Load/Insulation	: Resistive /150 Megaohms at 500 V.D.C.
Float	: 304SS/316SS/PP	Max. Temperature	: Upto 210°C depending upon float/switch Element configuration
Min. Sp. Gravity	: 0.7 (STD), 0.5 (Optional)	Max. Pressure	: Upto 20 Kgs/cm ² depending upon float Material & dimensions.
Mounting	: Flanged or screwed	External Cage (Optional)	: Flanged or screwed mounting in MS / 304 SS/316 S3 material.
Switch Type	: Airbreak single-pole double-throw & with silver Cadmium oxide contacts		
Capacity	: A.C. 440V-1.0 Amp. 250 V - 2.5 Amp. D.C. 24V-2.5 Amp. 240 V -0.5 Amp.		

ORDERING INFORMATION : Specify

1. Type of Level Switch
2. Specific Gravity of Liquid
3. Working Pressure & Temperature
4. Type of Function

Continuous development of our products may necessitate changes in these details without notice.

MALHOTRA BROS & CO.

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INSTALLATION

1. Installation: Mounted internally or external thorough a chamber as shown along with External mounting is resorted to, where space is a limiting factor or mechanical devices like Stirrers operate within with in the tank. Besides in applications like boilers, reaction kettles etc., with external mounting, isolation is possible for regular servicing.
2. The switch is normally side mounted , however for applications like slurry, vertical installation preferred.

PRECAUTIONS

On no account must a switch be used for the direct starting of burners, heaters, motor-pumps,alarms, it is essential that the contacts are wired in series with the relay coil (N/V coil) in a contactor starter.

TROUBLE SHOOTING

1. **Magnetic Level Switch, Float and Cam not moving up and down.**
 - i. Check the S. S. Float.
 - ii If puncture, replace the same with a new one.
 - iii Check the sediments on the cam.
 - iv If present, clean the same.
2. **Low level alarm not working.**
 - i. Check the alarm unit (hooter) and its electrical wiring.
 - ii. If shows open, replace the switch with a new one.

MAINTENANCE

1. Periodic maintenance is required in the form of cleaning of float and cam.
2. Check magnetic strength of primary magnet.
3. Ensuring that the wiring is in good order and that all screws are tight.
4. Check that the float is not waterlogged.
5. Check insulation of wires connecting switch head.

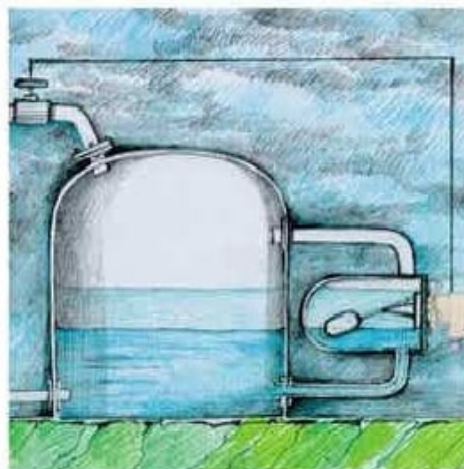
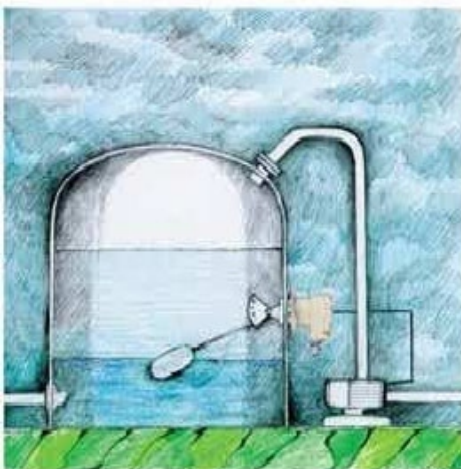
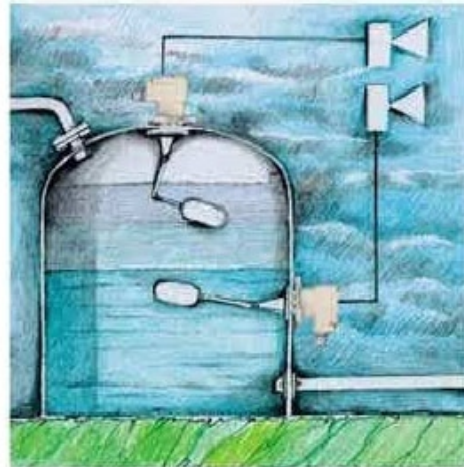
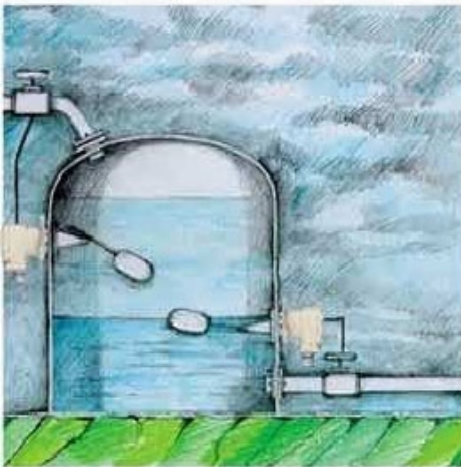
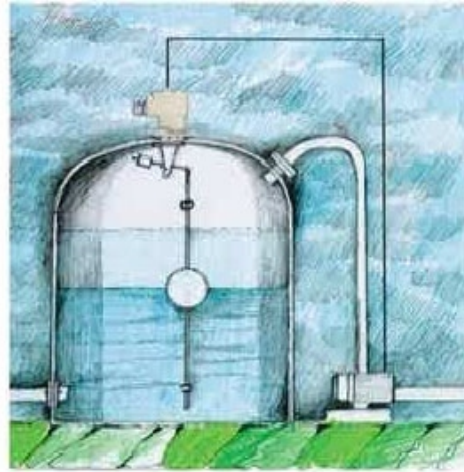
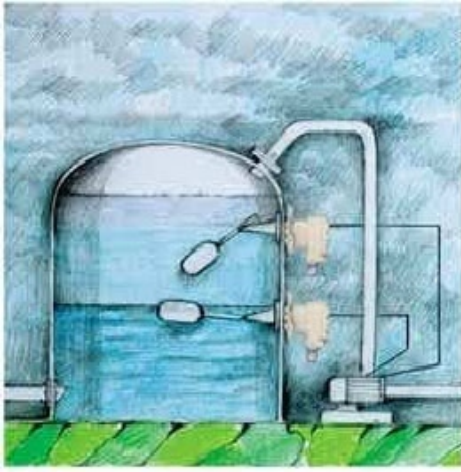
ORDERING INFORMATION

Specify

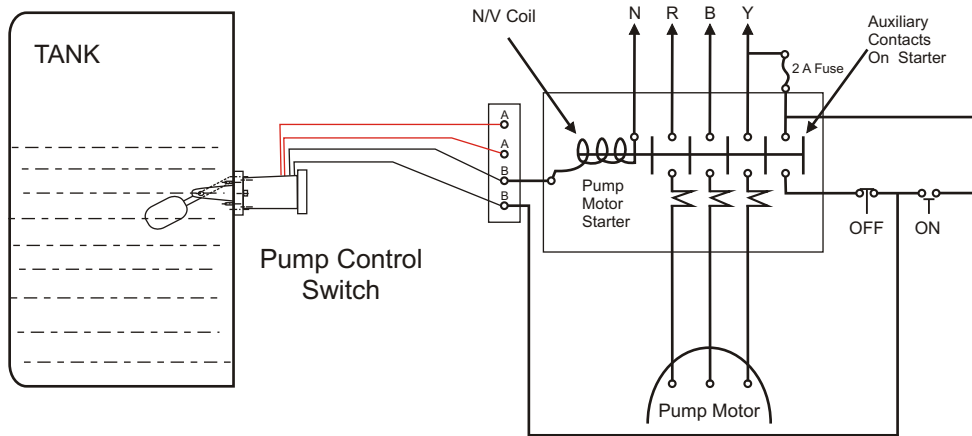
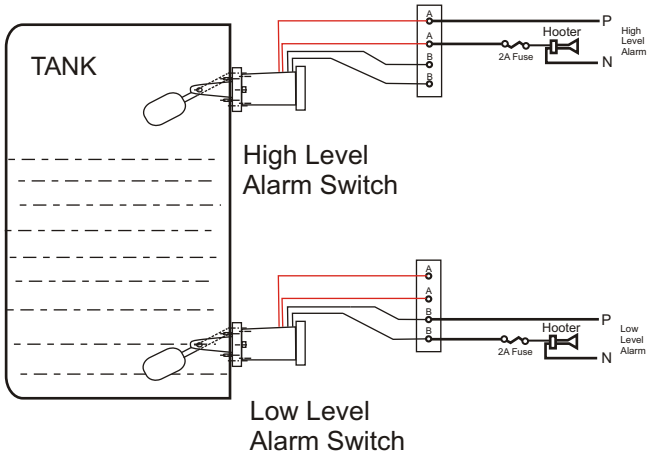
1. Type of Level Switch
2. Specific Gravity of Liquid
3. Working Pressure & Temperature
4. Type of Function
5. Liquid Medium

APPLICATIONS

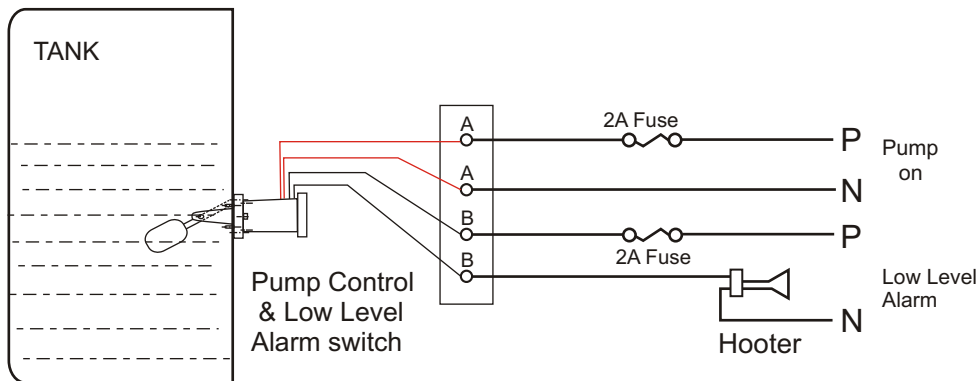
Graphical representation of fixing and showing various applications of Magnetic Level Switch



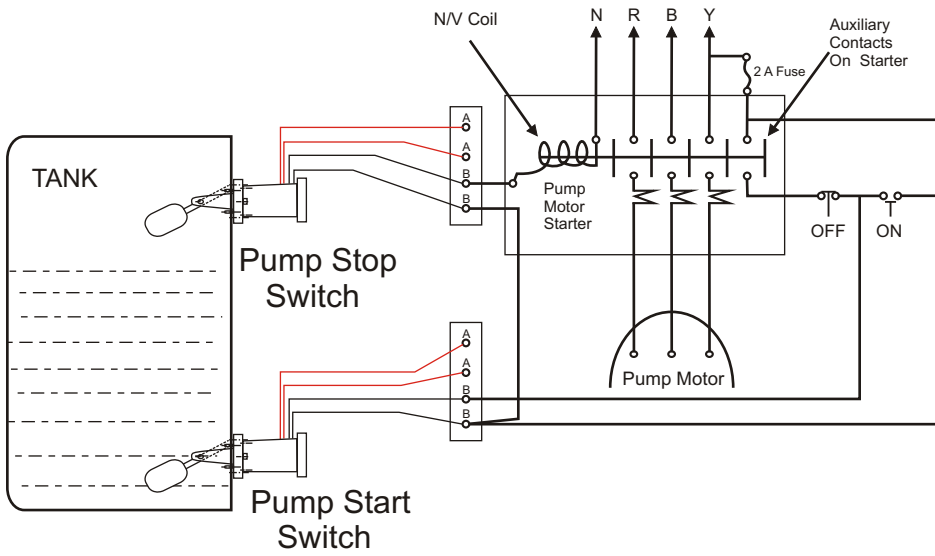
WIRING DIAGRAM



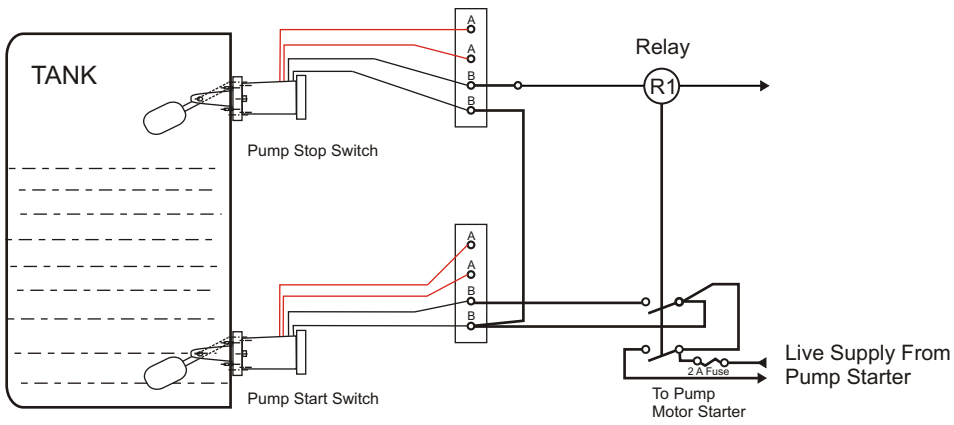
**Auto Pump On/Off
(1" Differential)**



WIRING DIAGRAM



Pump Auto Control



Pump Auto Control