

REFERENCE

CERTIFICATE

ISO 9001 : 2008
 ISO 14001 : 2004
 BS OHSAS 18001 : 2007

1 WARNING

Warnings identify potentially dangerous situations or serious hazards. In this manual, a warning indicates an imminently hazardous situation which, if not avoided, could result in serious injury or death.

For efficient working of your Level switch, please read all instructions carefully before attempting to installation and Operation.

In hazardous area, do not power the unit until the cable gland is sealed and the enclosure cover is screwed down securely.

Do not attempt to unscrew the cover of Flame proof housing before loosening locking screw in the base housing. Always retighten the locking screw after replacing cover.

Before attempting any work on the control, be certain to pull disconnect switch or otherwise assure that electrical circuit(s) through control is deactivated, close operating medium supply valve on controls equipped with pneumatic switch mechanisms.

After increasing differential adjustment, be certain to check carefully for proper operation of switch mechanism. Magnet must "snap" clearly with additional float movement available after magnet snaps. With Electrical power 'on', care should be taken to avoid contact with switch leads and connections at terminal block.

When in doubt about the condition or performance of a ITEC Level switches, return it to the factory.

Supply voltage should not exceed switch rating. For higher voltages, the use of relay circuit is recommended.

2 GENERAL

ITEC Top mounting level switch mount vertically to any tank or vessel through a treaded or flanged pipe connection. Standard models are normally equipped with a two switch mechanism for high or low level alarm or control applications. The Top Mounted Level switch is available with multi point switching 2, 3 or 4 ... switch mechanisms for different level stage applications.

3 OPERATING PRINCIPLE

Top mounting Level switch consists of latching reed switches totally enclosed in a stainless steel tube and a float containing a magnet in which the switches will detect. The sensing element (Reed switch inside the Tube) and the float are normally inserted into the tank through a top process connection and can be mounted to the tank via flange, if desired. However, the unit can usually be mounted via a single 2" (M)NPT process connection. The Top Mounting Level switch will provide for the detection of start/stop trip points of either total or interface level in virtually any vessel. These trip points can be used for alarms or to activate a pump motor starter relay.

The Level unit consist latching form, the reed (SPDT) switches operated by a movable external float containing magnets. As the float travels past the latching reed switches, in either the upward or downward direction, the switches change state. After the float has passed, the switch will remain (latch) in its respective state until the float passes the switch going in the opposite direction. The action of the switch is break before make. The Top level switch unit will accommodate up to six discrete point level contacts and each of the level set points are field adjustable.

INSTALLATION

The Top Mounting Level switch can be mounted to the process vessel via flange or pipe fitting: consult factory for special mounting configurations. After installation, virtually no maintenance is required because the switching elements are totally isolated from the process liquid. Maintenance and/or trip point adjustment can be performed without removing the vessel from service.

Before assembling the level switch to tank or vessel, check threaded or flanged mounting nozzle for the following:

- 1) Nozzle length and inside diameter must be sized correctly to allow for switch actuation at design levels within the maximum differential available
- 2) Nozzle should be checked for vertical alignment. Finished mounting must allow control switch housing to be within 4° degrees of vertical for proper operation. A four degree slant is noticeable by eye, but installation should be checked with a spirit level.
- 3) On High Temperature application the Head must to use with cooling provision, the wires should be used between level switches control and first junction box.
- 4) To gain access to switch connection on the terminal removes the switch cover.
- 5) Pull in supply wires and connect to proper terminals.
- 6) Connect power supply to level switch and test switch action by varying the liquid level in the tank or Vessel.

MAINTENANCE

All the Level switches should be checked regularly for wear and tear, accuracy, and proper functioning. Replace all broken or damaged parts immediately.

Never leave switch housing cover off the control. This cover is designed to keep dust and dirt from interfering with switch mechanism operation. In addition, it protects against damaging moisture and acts as a safety feature by keeping bare wires and terminals from being exposed. Should the housing cover become damaged or misplaced, order a replacement immediately.

ITEC Level Switches may sometimes be exposed to excessive heat or moisture. Under such conditions, insulation on electrical wires may become brittle, eventually breaking or peeling away. The resulting "bare" wires can cause short circuits. Check wiring carefully and replace at first sign of brittle insulation. Vibration may sometimes cause terminal screws to work loose. Check all terminal connections to be certain that screws are tight. Air (or gas) operating medium lines subjected to vibration may eventually crack or become loose at connections causing leakage. Check and connections carefully and repair or replace, if necessary.