

# Capacitance Type Level Switch for Liquids - CPS

## Salient Features :

- ☑ Cost effective with no moving parts.
- ☑ Easy to install with field adjustable switch points.
- ☑ Settable fail safe mode.
- ☑ Variety of electrode constructions to suit wide range of services.

## Construction & Operation (Fig. 1) :

The switch is available in two versions - Integral & Two Part. In the integral system, the controller is integral with the probe. In two part system, the controller is separate from the probe and can be mounted remotely. The probe is top / side (inclined) mounted.

The measuring principle is based on the value of capacitance formed between the sensing and metallic tank wall (ground electrode), which varies with the liquid level. The capacitance is sensed and converted into voltage signal for relay actuation.

## Specifications :

### Sensing Probe

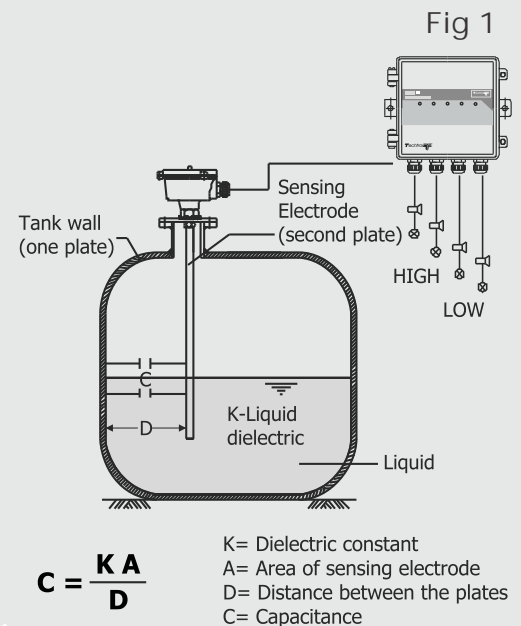
- Enclosure : Cast Al IP66 or ABS x IP65  
 Cable Gland : PG11, Polyamide  
 Probe Type : Rigid Electrode- Range : 200-1500mm,  
 Flexible Electrode - Range : 1500-5000mm  
 Concentric Pipe Electrode - Range : 200-1500mm.  
 (for low dielectric liquids)
- Installation : Top / Side  
 Sensing Electrode : SS304 or SS316 PTFE insulated.  
 Ground Electrode : Bare or PTFE insulated for corrosive applications.  
 Process Conn. : 40 NB flange / 50 mm triclover ferrule  
 for metal tanks.  
 65 NB flange / 80 mm triclover ferrule  
 for non-metal tanks.

Max Temperature : 60°C

Max Pressure : 5Kg/cm<sup>2</sup>

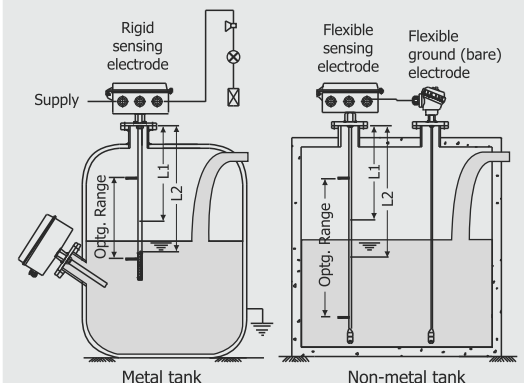
### Controller

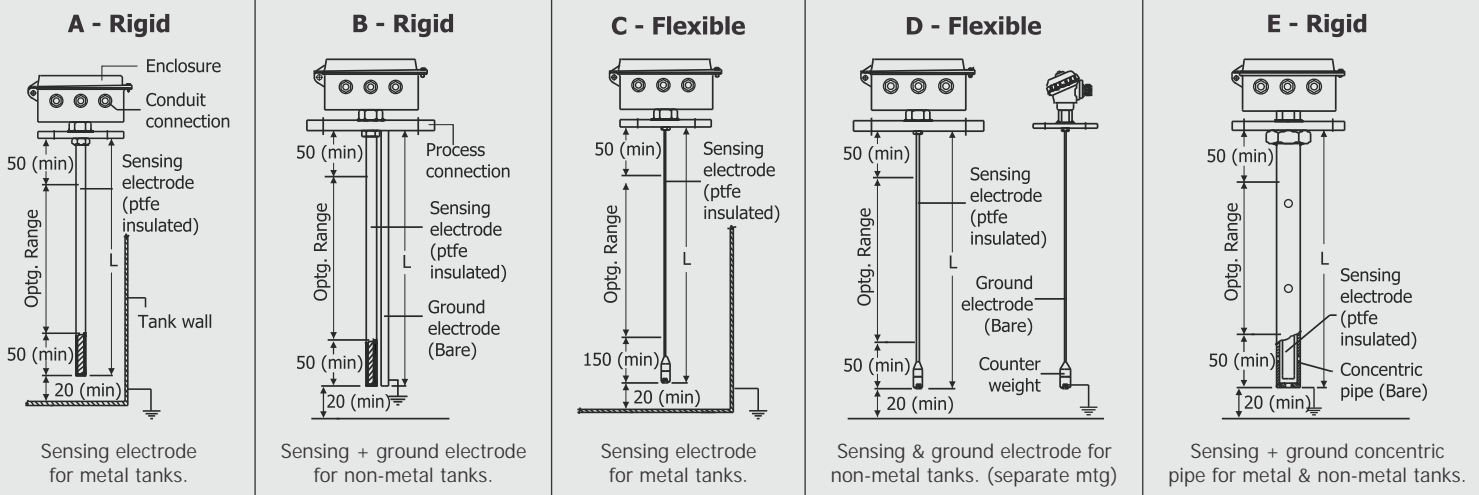
- Enclosure : Cast Al IP 65  
 Enclosure Dimns : Sq. 147mm x 75mm Ht  
 Conduit Conn. : Polyamide PG 11  
 Power Supply : 90-270 VAC, 50-60 Hz or 24 VDC  
 Control Set Points : Max. Four  
 Output : SPDT 5A, 250 VAC / DPDT(Optional)  
 Operating Diff. : 15 to 20mm  
 Indication : LED indication for power & relay status  
 Safety Operation : Field selectable failsafe high & low  
 Capacitance Range : 100 to 5000 pf  
 Dielectric constant : > 1.8  
 Accuracy : ±1%  
 Repeatability : ±0.5%



## Installation :

Fig 2



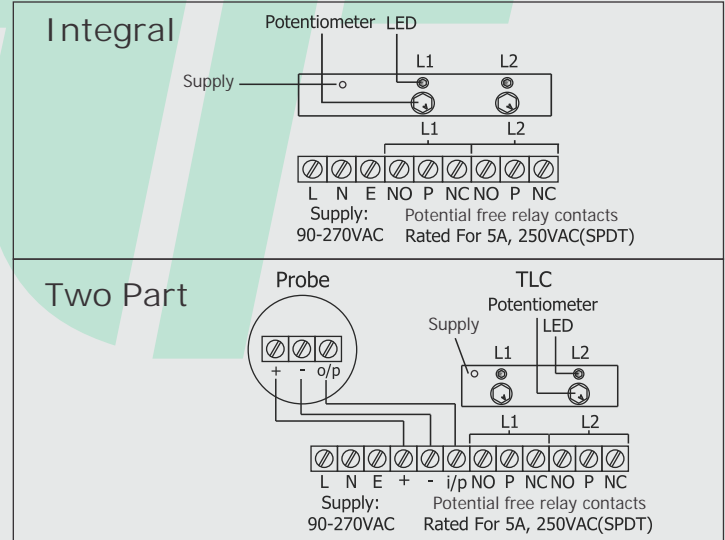


**Field Setting of Switch Points :**

Each Switch Point should be set individually at site, based on the actual dielectric constant of the process liquid, under operating conditions as per following procedure :

1. Wire the capacitance switch as per fig.4 & install it on the tank.
2. The tank should be filled with actual process medium under operating conditions, upto the desired switch point to be set. Rotate the potentiometer of the switch in question clockwise or anticlockwise, till its corresponding "LED" glows.
3. Repeat (2) for all switch points.
4. Empty the tank and refill it, to verify the correctness of all switch points under site conditions. Now, the instrument is set for desired switch points and ready for use.

**Termination & Wiring : Fig. 4**



**Ordering Information :**

Model No. along with Probe Length, Optg. Pressure & Temp. and Dielectric Constant of Liquid.

**Applications :**

Water, Milk, Oil, Syrup, Pulp

**Model Identification :**

<b>System</b>									
Integral									
Two part									
<b>Enclosure (Electrode x Control Unit)</b>									
Cast Al, IP65 (Syst-I)									
Cast Al, IP65 x Cast Al, IP65 (Syst-T)									
ABS IP65 X Cast Al, IP 65 (Syst-T)									
Others									
<b>Electrode Construction</b>									
Rigid sensing electrode									
Rigid sensing + ground electrode									
Flexible sensing electrode									
Flexible sensing & ground electrode (separate mtg)									
Rigid sensing +ground concentric pipe									
<b>Electrode MOC</b>									
SS 304									
SS 316									
Others									
<b>Electrode Insulation</b>									
PTFE									
Others									
<b>Process Conn. MOC</b>									
SS 304									
SS 316									
Others									
<b>Process Connection Size</b>									
40 NB ANSI 150 # (electrode config A & C)									
65 NB ANSI 150 # (electrode config B, D & E)									
50mm Triclover Ferrule (electrode config A & C)									
80mm Triclover Ferrule (electrode config B,D & E)									
Others									
<b>Set Points x O/P Contacts</b>									
One x SPDT									
One x DPDT									
Two x SPDT									
Two x DPDT									
Three x SPDT									
Four x SPDT									
Others									

\*All dimensions are in mm except specified