



... the level & gas people

Effective : March, 2011

Supersedes : Dec 2009

ISO-9001 : 2008 CERTIFIED COMPANY

## CAPACITANCE POINT LEVEL SWITCH (SERIES-2200)

### SALIENT FEATURES

- **Three- Element Coat Guard Technology.**  
Ignores material build-up on the probe : High Reliability.
- **Fast and Easy Installation**  
Simple Calibration.
- **Field selectable operation logic.**  
Can be configured either for High or Low Level point switching.
- **Provides economical solutions.**  
Various models not required. Reduces the Inventory cost.
- **The complete Instrument consists of the sensing probe and the Electronic Switching unit.**



### DESCRIPTION

Level Switch comprises of a specially designed electronics and sensing probe using DRIVEN SHIELD -COAT GUARD circuit and corresponding 3-Element Probe. The Electro-Mechanical combination of the COAT GUARD technique makes the system immune to the material build - up on the probe and material bridging between the probe and the hopper wall. The unique feature of the system is that the measured signal does not flow to the hopper wall through the probe in the backward direction but flows only through the material (actual material level) to the hopper wall.

### PRIMARY AREA OF APPLICATION

Building Industry materials, Cement, Sand ,Lime , etc  
Foodstuff Industry, Milk Powder,Flour, Salt, Food grains, etc  
Plastic Industry, Powder, Granular etc.  
Timber Industry, Chemical and Mining etc.

### WORKING PRINCIPLE

The level switch operates on the basis of Capacitance measurement. The electronic unit generates a sinusoidal wave, applied to the electrode creating a field around it. The changes in capacitance (electrical loss) around the electrode are reflected on changes of generator supply current. Such changes, caused by the increase in level is amplified and used to energise the relay.

The main drawback of the conventional method is that after the level has once increased and then decreased there may be a coating left on the probe which is sensed by the instrument as though the level is still on the probe.

In this Instrument COAT GUARD amplifier is incorporated in the circuit having its output exactly at the same voltage and phase at all times as its input.

The output is connected through the shield of the low capacitance co axial cable to the concentric tube on the sense probe, called shield element. Since both the elements, sense and shield are exactly at the same potential and phase at all times, there is no current flow through the cable. Thus there is no change in calibration due to coating on the probe.

This makes it possible to lengthen or shorten the cable connecting the switching unit without changing the original calibration.



... the level & gas people

### TECHNICAL SPECIFICATIONS

#### SWITCHING UNIT :

- Housing .....Aluminum, Integral with the probe/Remote.
- Cable entry.....2 nos.
- Ambient temperatures.....0 ° C to +60°C
- Power consumption.....1.9 VA
- Mains Voltage.....230/110VAC,50Hz/24 V DC
- Output..... 2 sets of potential free of contacts rated at 5 amps, 230 V AC for non-inductive loads.
- Switching delay (Optional)... Continuously adjustable From 1 to 20 sec.
- Safety operation.....Field selected switch over for min or max. switching points.
- Switch status display.....Green LED shows Normal, Red LED shows alarm,  
Yellow LED shows power ON condition.
- Accuracy..... ± 2mm
- Response time.....100m sec

#### COAT GUARD SENSING PROBE

- Mounting.....Screwed -1 ½" BSP or Flanged
- Sense rod.....Stainless steel
- Shield.....Stainless steel
- Insulation.....PTFE (standard) Other on request and as per application.
- Operating Temp of vessel.....100°C for integral switching unit/ 225° C for remote switching unit.
- Probe Length.....4000 mm
- Repeatability..... ± 0.5% of FS

### CAPACITANCE POINT LEVEL SWITCH ORDERING INFORMATION

