

Capacitance Level Switch(VSAN 3000 SERIES)

PRINCIPAL

The capacitance level switch operates based on VSAN absorption measurement. The electronic unit generates a sinusoidal wave, applied to the electrode, creating a field around it. VSAN environment absorption changes (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 energize 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 VSAN SENSORS, the COAT-GUARD and Trance Conductance amplifier are 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 coaxial 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 and the temperature effect of the cable.

Features

- Immune to build up and coating of application material
- Suitable for conductive and non conductive applications
- Fast switching response 1 to 2 sec
- High pressure upto 40 bar for certain model
- Works well with fluffy powders

Applications

- Building Industry materials, Cement, sand, lime, etc.
- Foodstuff Industry powder, granular etc.
- Timber Industry, chemical and mining etc.

Parts

The parts of Capacitance level switch are explained in figure 1. All dimensions are in millimeters.

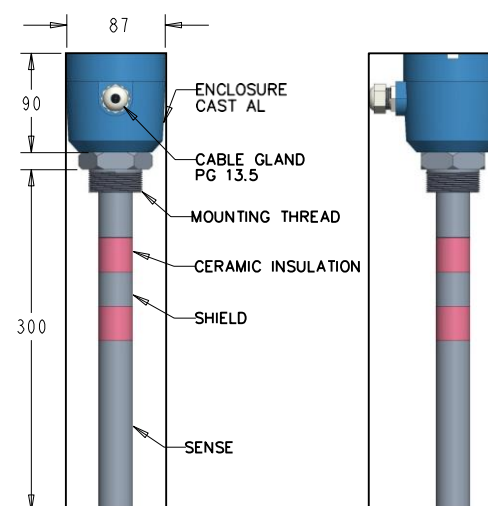


Figure 1 : Capacitance level switch (Ceramic Insulation)

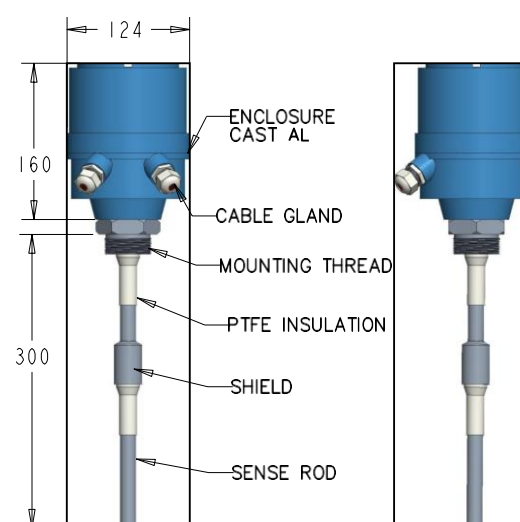


Figure 2 : Capacitance level switch (PTFE Insulation)

Technical Specification

Mechanical Housing	:	Cast aluminium
Type	:	Electronics top mounted on probe
Pressure	:	Max 40 bar on request for certain model
Mounting Arrangement	:	Threaded: 1 1/2 " BSP / NPT Flanged : As per requirement Other : As per requirement
Mounting material	:	SS 304 / SS 316 / Others
Probe Length	:	Standared : 200 mm Customized: 200 mm ~ 3000 mm
Extension	:	Stainless steel Rod/GI Flexible rope
Cable Entry	:	2 Nos of PG 13.5 (Polymer)
Temperature in vessel	:	120°C / 120°C - 200°C, up to 650
Electrical indication	:	Deg C (Optional) Special design
Power Supply	:	LED (Normal : Green, Alarm : Red)
Main power consumption	:	230VAC/110VAC/24VAC
Output Relay Rating	:	1.9 VA
Operating Frequency	:	Contact 5A, 230VAC for non-inductive load
Delay Setting	:	120KHz
Fail-safe Setting	:	1-20 seconds (Covered and minimum : Uncovered)
Response time	:	Field selectable Fail-safe Low Fail-safe High Standard : 1 - 2 Sec

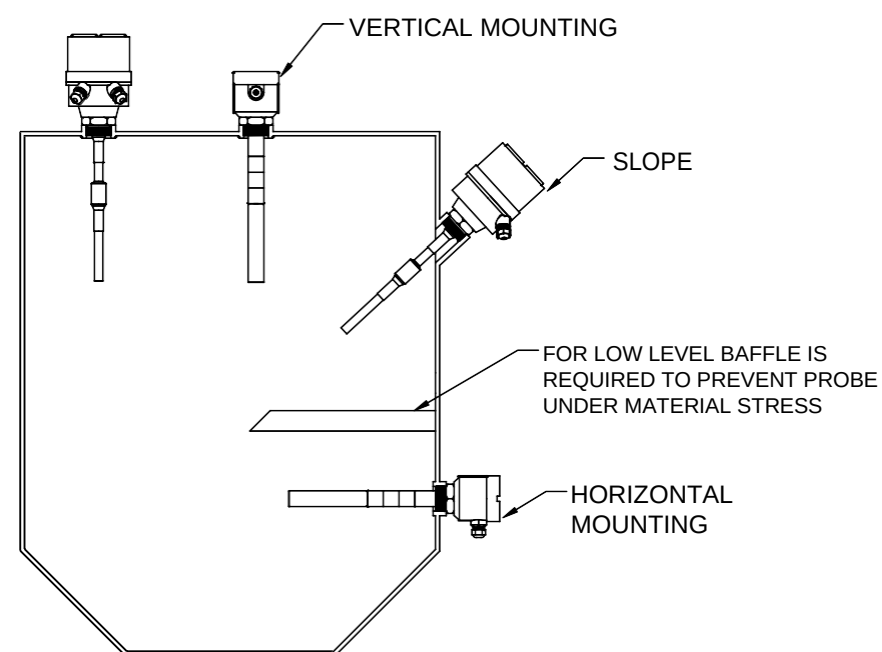


Figure 3 : Mounting Arrangement

Model Selection

VSANSENSORS

Enclosure (E)

- 1 - Weatherproof IP-65
- 2 - Flameproof

Temperature (T)

- 1- Standard Temperature Up to 150°C
- 2-High Temperature 150°C - 200°C
- 3-High Temperature 200°C - 600°C

Probe Length (Pl)

- 1- Standard Probe Length 300 mm
- 2- Extended Probe Length Up to 3000 mm

Probe type (Pt)

- 1 - Rod
- 2 - Rope ; 3 - Special

Mounting Arrangement (M)

- 1- Threaded BSP / NPT
- 2-Flanged ANSI/DIN ; 3 - Others

Extended Grounding (G)

- 1 - GI
- 2 - SS304 ; 3 - SS316

Wetted Part (W)

- 1-SS304 ; 3- SS316
- 2- PTFE Line ; 4- Others

Output (O)

- 1 - DPDT Relay Output

Insulation (I)

- 1 - Ceramic
- 2 - PTFE ; 3 - Others

Capacitance Level switch	T	Pl	Pt	M	G	W	O	I
3000	1	1	1	1	2	1	1	1