

Casper - Capacitance Level Limit Switch

Version 1.3

Casper is a microcontroller based compact level switch suitable for free-flowing solids and liquids.

Principle

Casper work on the principle of capacitance. The probe comprises of sense electrode, electrically isolated from the metallic tank by means of suitable insulator. The sense electrode and tank wall serve as two electrode of capacitor with the service material act as dielectric. A change in level of material causes a change in dielectric, which in turn causes the value of this tank capacitor to change.



Approvals IP-68 Marking, RoHS Compliance, Flameproof Enclosure (Gas Group IIA, IIB, IIC)

Features

- Compact Probe Size (minimum probe length of 100 mm)
- Output: Relay / PNP / Analog
- Microcontroller-based design
- Self-diagnosis of installation errors
- Suitable for conductive and non conductive media
- External visible output and error indication
- Works well with fluffy powders
- Universal power supply of 18 - 55 V DC & 90 - 265 V AC on same terminal.

Applications

- Dairy
- Grain Handling
- Food & Beverages
- Chemicals
- Brewery

Parts

The parts of Casper are explained in the Figure 1.

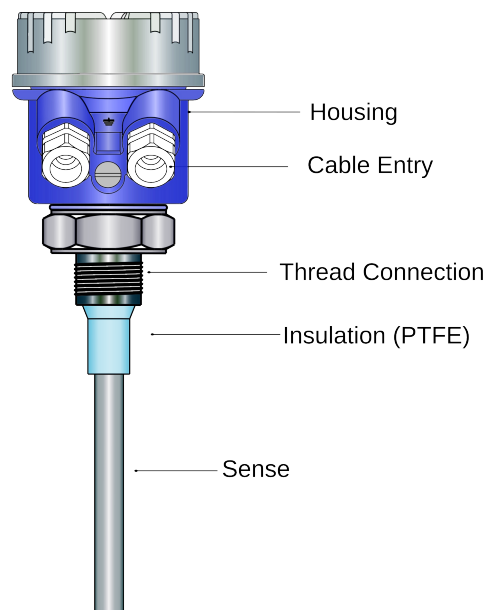


Figure 1: Parts of Casper

Measuring System

The instrument when calibrated at a single point i.e. in air, can be used with a variety of materials for level detection. When material reaches the switching point, the instrument detects the presence of material according to the principle mentioned above and changes the outputs accordingly. The relay contacts / PNP output / Current Output could be used for maintaining the level of the material within the desired range in the tank. See Figure 2.

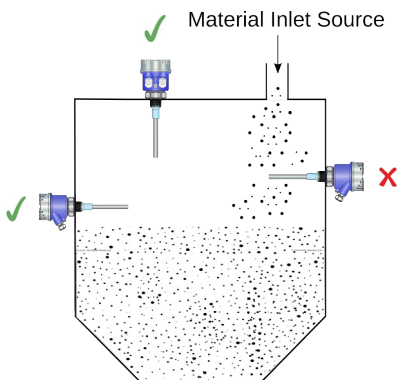


Figure 2: Mounting Arrangement for Casper

Mechanical Specifications :

Housing: Pressure die-cast aluminium, flameproof, weatherproof

Mounting: • Screwed: 1/2", 3/4", 1", 1½" BSP / NPT
• Flange: Available as per specification

Cable Entry: 2 X 1/2" BSP/NPT or PG 13.5

Probe Length: 100 mm to 3000 mm

Electronical Specifications :

Input Supply: 18-55 V DC / 90-265 V AC (on same terminal)

Indication: Bi-color LED (Normal: Green, Alarm: Red)

Output: SDPT / DPDT / PNP / Analog

Temperature: 0°C to 60°C

Fail Safe: Field Selectable

- **Minimum:** Fail-safe Low
- **Maximum:** Fail-safe High

Power Consumption: • 1.5W (SPDT, PNP) at 24 V
• 2.2W (DPDT) at 24 V

Time Delay Setting: 1-25 seconds (For both Covered and Uncovered Delays)

Product Variants

Casper

Type

- Integral

Housing

- Cast Aluminium weather & flameproof
- Pressure die-cast aluminium weatherproof IP66
- Weatherproof plastic housing with transparent cover for LED illumination

Probe Housing Cable Entry

- PCPG13 : Threaded, PG 13.5 cable gland, Polyamide
- PCB5D : Threaded, G ½ " (BSP), DC gland, Brass (Ni plated)
- PCN5D : Threaded, ½ " NPT, DC gland, Brass (Ni plated)

Output

- DPDT Relay
- SPDT Relay
- Two point Independent SPDT Relay
- DPDT Relay operate on pump control logic
- Two SPDT Relay: • Relay 1: Pump Control Logic
• Relay 2: Operate on Single Independent set point
- One SPDT Relay operates on Pump Control Logic and One Open Collector PNP output operates on Pump Control Logic

Power Supply

- Universal Power Supply: 18 - 55 V DC & 90 - 265 V AC

Reference

- Still Well, GI
- Still Well, SS 304
- Still Well, SS 316

Probe Type

- Rod Probe
- Rope Probe

Mounting

- **Screwed Thread:** 1/2"-1½" BSP/NPT, SS 304, SS 316
- **Flange:** 1"-3" ANSI/ASME Flange, MS, SS 304, SS316
- **Tri-Clamp:** 1"-2" , SS316

Insulation Type

- Part PTFE
- Full PTFE
- Ceramic (≥ 1" threaded, 1 ½ " Flange ANSI)

Grounding

- GI
- SS 304
- SS 316

Sense

- SS 316

Operating Temperature

- Up to 100° C
- Up to 250° C
- 35T : Upto 350 ° C (For Ceramic)

Standoff Material

- GI
- SS 304
- SS 316

Probe Length

- 100 to 1500mm
- 500 to 3000mm
- 100 to 3000mm

Connect to us

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