

Capvel Capacitive Level Transmitter

Capvel is suitable for continuous level measurement and controlling in conductive or non conductive liquids, granular materials of homogeneous composition that have stable dielectric constant.

Principle

It consists of electronic insert and probe. Probe comprises sense electrode (reference probe in absence of metallic tank). The probe is mounted on top of the tank. The sense electrode and the tank's wall serve as the two electrodes of imperfect capacitor with service material as dielectric. Change in material level causes a change in capacitance of this capacitor. The electronic insert measures change of capacitance accurately & shows the result in mA.



Features

- A complete solution: Scanning, Displaying, Controlling & Transmitting
- Convenient outputs: OLED Display RS485(ICT only) & Analog 4-20 mA; compatible with PLC, SCADA
- Probe length: 100mm to 3000mm(Rod Version), 500mm to 2000mm(Rope Version)
- Power Supply:18-24V DC(4-Wire) 24V DC(2-Wire)
- Analog Output:4- 20mA (2 wire or 4 wire)
- Temperature Durability: Standard Model upto 60°C (High temp. models on demand)
- Internal Temperature Compensation
- Suitable for wide range of liquids
- Low Cabling Cost-(2 Wire)
- Self Diagnosis
- Enhanced noise performance
- Ability to work with custom irregular shaped tanks
- ESD and surge protection

Applications

- Telecom industry
- Automobile industry
- Refineries
- Water treatment plants
- Townships
- Flour mills

Parts

The parts of Capvel are explained in the following figure (Figure 1).

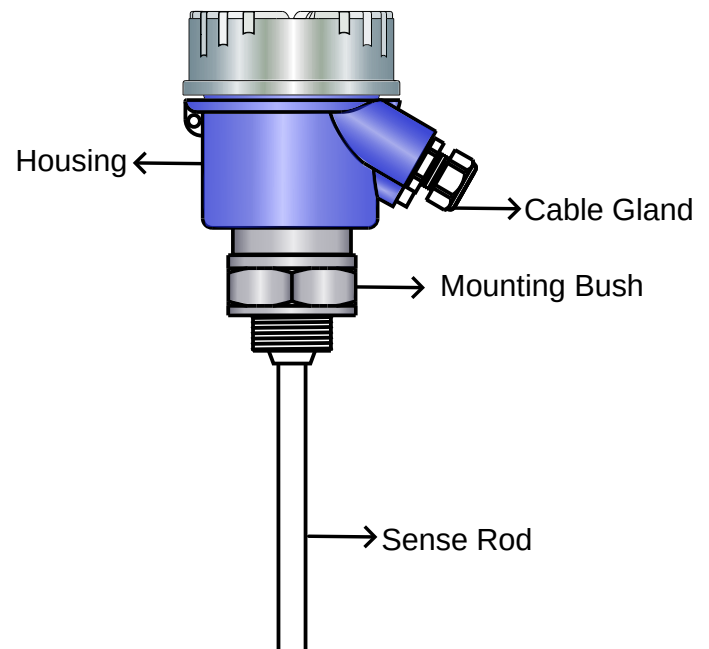


Figure 1: Parts of Capvel

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Grown...to meet challenges

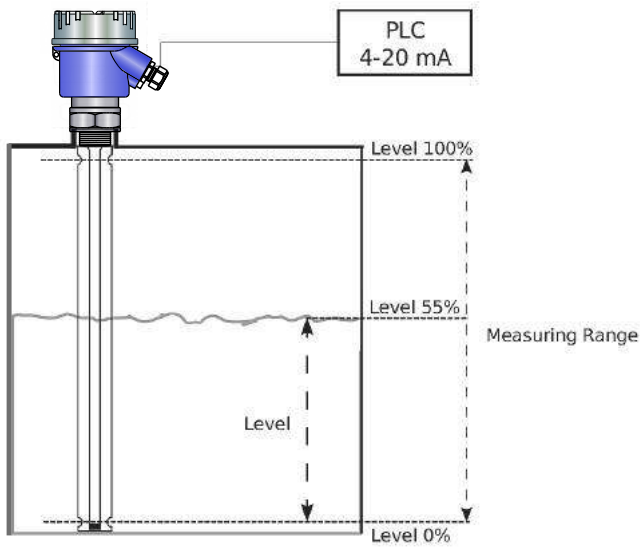


Figure 2: Mounting Arrangement for Capvel

Technical Specifications

- **Housing:** Cast aluminum weatherproof
- **Type:** Integral with sense rod or probe
- **Cable Entry:** 2 X 1/2" BSP / NPT / DC
- **Mounting:**
 - Screwed:** 1" or 1 1/2" or 2" BSP/NPT(M)
 - Flange:** As per order or adjustable flange
 - Material:** MS (Plated) / SS
- **Ambient Temperature:** 0°C to 80°C
- **Power Supply Required:**
 - Voltage :**24 V DC
 - Power Consumption:** < 1.0W at 24VDC
- **User Interface:** OLED display + 4 keys
- Output:**
 - Analog:** 4 to 20mA (Galvanically isolated)
 - Digital:** RS 485 MODBUS
- Sensing:**
 - Cap Range:** 16 to 3000 pF
 - Response Time:** Adjustable
- **Calibration:** At 0% and 100% (or any 2 levels) through push buttons

Measuring System

Capvel is suitable for continuous level measurement and controlling in conductive or non conductive liquids, granular materials of homogeneous composition with stable dielectric constant. It consists of electronic insert and probe. Probe comprises of sense and the shield electrodes (reference probe in absence of non metallic tank). The probe is mounted on the top of the tank. The sense electrode and the tank's wall (reference probe in absence of non metallic tank) serve as the two electrode of imperfect capacitor with the service material as the dielectric. Change in material's level causes a change in capacitance of imperfect capacitor. The electronic insert measure the change of capacitance accurately and shows the result on display in Percentage, Level, Volume from Figure 2 for reference.

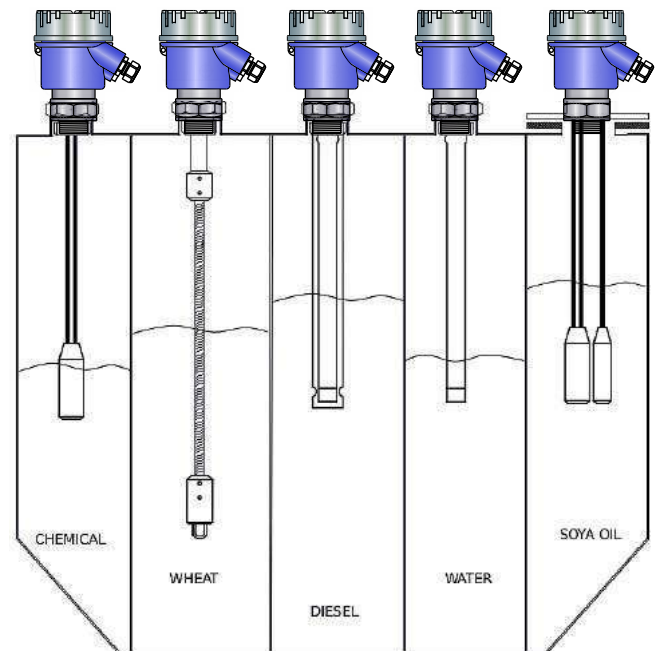


Figure 3: Installation of Various Probes

Notes

- Reference probe required for non metallic tanks.
- Stilling tube required for turbulent liquids and non uniformly sectioned tanks.
- Maximum allowed loop/serie resistance :
 - Max. 750 Ohms(4 -WIRE) & Max. 500 Ohms(2 -WIRE)

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