



Grown...to meet challenges

30+ years in Process Control Instrumentation

Capvel ICT - Indicator Control 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 and shield electrodes (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: 4 Digit 7 Segment Display RS485 & Analog 4/20 mA; compatible with PLC, SCADA
- Probe length between 140mm to 30m available
- Adjustable Sensitivity: 10 Choices
- Full set of Controlling: Alarm logic & Pump Control logic
- Power Supply: Universal 9-30 V DC
- Analog Output: 4-20mA (3 wire or 4 wire)
- Temperature Durability: Standard Model upto 60°C (High temp. models on demand)
- Internal Temperature Compensation
- Extrapolated Calibration range (From any two points)
- Suitable for wide range of liquids
- Low Cabling Cost
- Self Diagnosis

Applications

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

Parts

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

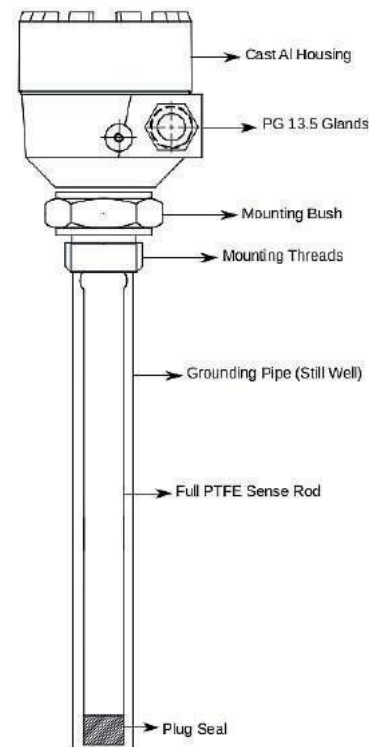


Figure 1: Parts of Capvel ICT

Manufacturing Level Instruments & Speed Monitoring Systems

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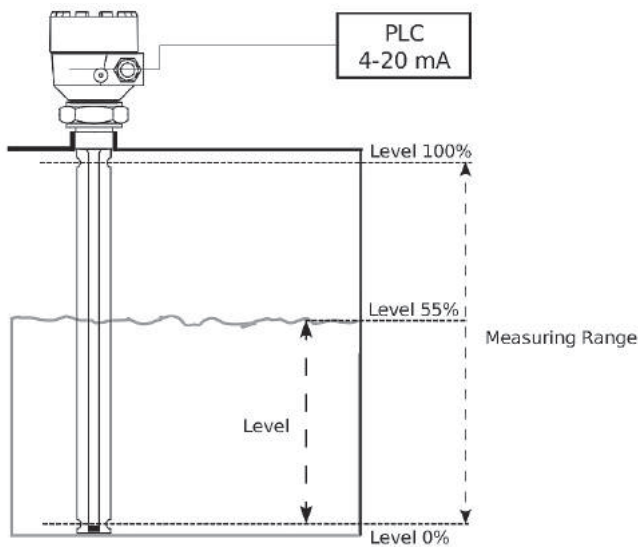


Figure 2: Mounting Arrangement for Capvel ICT

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:** 9 to 30 V DC
 - Current:** 40mA at 12 V DC
 - Power Consumption:** 480mW at 12 V DC
- **User Interface:** 4 digit LED display + 4 keys
- Output:**
 - Analog:** 4 to 20mA (Galvanically isolated)
 - Digital:** RS-485 Duplex
 - Relay Output:** External relay with control option:
Alarm/Pump; Fail-safe: H/L; Delays: Cover/Uncover
- Sensing:**
 - Cap Range:** 10 to 1,00,000 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 mA/percentage form. An external relay can also be operated by feeding the required data. See Figure 2 for reference.

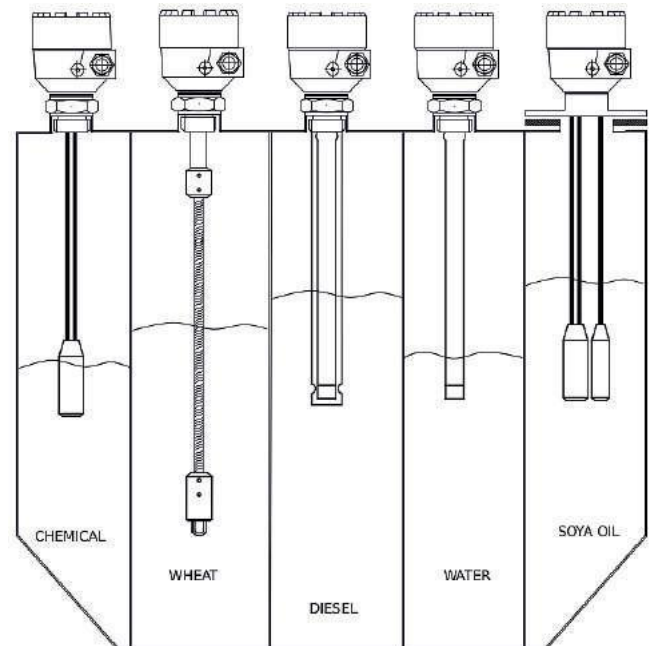


Figure 3: Installation of Various Probes

Notes

- Reference probe required for non-metallic tanks.
- Stilling-tube required for turbulent liquids and non-uniformly sectioned tanks.
- Maximum allowed loop/series resistance:
Load (Ohm) = (Supply Voltage - 4) x 50

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