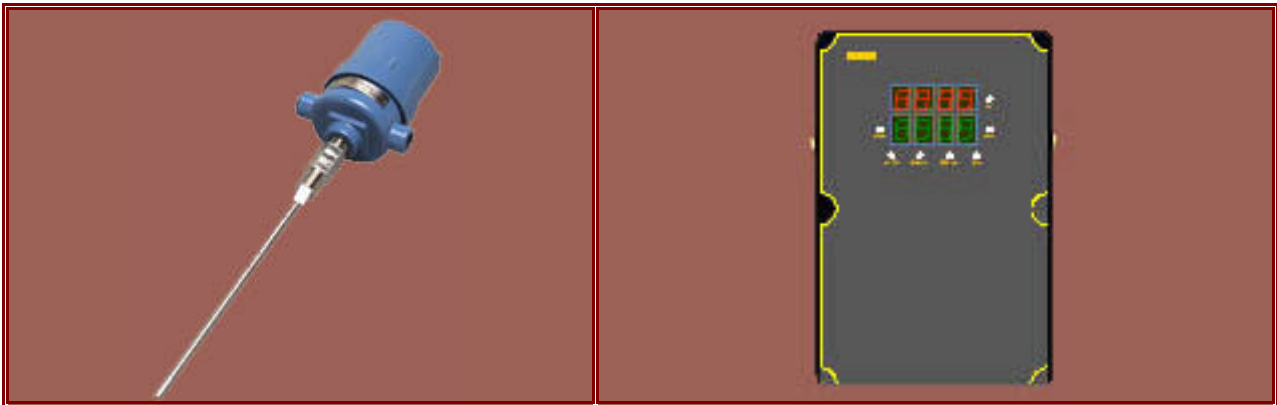


# CAPACITANCE TYPE LEVEL MONITORING INSTRUMENTS

**DK INSTRUMENT** brings you proven RF Technology to solve all process Level measurement and control problem. Whatever may be your application or control requirement we have the widest range to cater to all your needs.

The principle of detection involved is the Capacitance phenomenon, which is developed between the probe and the reference. The amount of capacitance developed in any vessel is determined by the size (surface area) of the probe, the distance from the probe to its ground reference, and the dielectric constant of the medium being measured. The amount of capacitance developed in a vessel becomes dependent upon the amount of the probe, which is covered with media. As the media rises and falls in the tank, the amount of capacitance developed between the probe and the ground reference also rises and falls. This change in capacitance is detected by employing Radio Frequency (RF) and converted to a digital waveform proportional to the change in level which in turn is used for level detection and monitoring.



## Ranges we offer:

- 1) **Single Point Capacitance type Level Switch** – This is to be used where only a particular fixed level is to be monitored. Output is relay contact, which can be used to operate, pump, agitator etc. This is suitable for most solid/liquid and can be mounted horizontally / vertically as per requirement. For vertically mounted unit the alarm point can be adjusted anywhere throughout the probe length.
- 2) **Multipoint Capacitance type Level Switch** – This switch is suitable when you need to control the level at various points (max up to 4 nos.) and can be used for most liquids. The output for each alarm points can be independent or latched. Latched version is suitable for starting & stopping of pumps at two different levels. The alarm point can be adjusted anywhere throughout the probe length.
- 3) **Capacitance type Level Transmitter** – The output of transmitter, which may be 4-20mA signal or 0-5VDC, can be used for remote indication or control application. This is suitable for most liquids and provides cost effective solution whenever you need to monitor the level continuously.
- 4) **Loop Powered Capacitance type Level Transmitter** – Whenever you want to reduce the cabling cost, loop powered transmitter is the best answer. The current signal (4 to 20mA) and the supply line (24 VDC) reside in the same two wire that is connected to transmitter.
- 5) **Capacitance type Level Indicator** – This can be used to judge the level position at any instance. This is suitable for most liquids and is available with 4-20mA outputs and alarms Set Points. The display can be seven segments LED or LCD as required.

Each instruments comes with a probe electronics unit and a control electronics unit. The probe electronics unit senses the capacitance changes and converts it into an equivalent signal, which is processed by the control electronics unit for level indication and or for operating alarm set point(s) or for generating retransmission output as the case may be. When the control electronics unit is merged with the probe electronics unit and housed inside the same probe unit housing, we get integral version. In case of non-integral version the control electronics unit is housed in a separate unit known as Remote unit.

All the above are available either in Integral and Non-Integral version. Besides for hazardous area application CMRI/ERTL approved Flameproof enclosure is also available.

**Features:**

- ❖ No moving part.
- ❖ Wide range of application.
- ❖ Easy installation and maintenance.
- ❖ Weatherproof/Flameproof enclosure as per requirement.
- ❖ Wide range of probes to suit applicator requirement.
- ❖ Fail safe mode with On-Off delay available for alarm set point.
- ❖ Adjustable time delay for turbulence problem.
- ❖ Process connection threaded or flanged.
- ❖ Remote indication and control possible.
- ❖ Separate non-interacting zero & span controls to ease calibration at site.

**General Specification:**

<b>Model No.:</b>	<b>: CLS – 100</b>
Material of Construction – Probe	: 304 SS / 316 SS / Hastalloy C, etc.
Material of Construction - Housing	: Cast Aluminium.
Protection	: Weatherproof / Flameproof (if required).
Probe Type	: Rigid or flexible
Probe Insulation	: PTFE / PVC insulation full or partial
Supply	: 230V AC or 110V AC or 24V DC.
Time Delay (for alarm)	: 0 to 10 sec.
Process Connection	: Flanged / Threaded as per requirement
Mounting	: Horizontal / Vertical as per type.
Indication	: LED for alarm and seven segment LED or LCD for Level Display.
Output	: Alarm – DPDT Relay. Transmitter – 4-20mA.

**For Transmitter Output, Model No. – CLT 100****Probe Selection:**

Probe is the active element that goes inside the vessel and plays the important role in capacitance forming. So proper selection of probe type is needed for trouble free functioning of capacitance type level instruments. The probe is available in various design type to suit your application need. The following Information is required for providing you best possible level monitoring solution-

- a) Process Parameters: Temperature, pressure, atmosphere hazardous or not.
- b) Application media characteristics: Sp. Gr., Dielectric constant, hazardous or not, corrosiveness, viscosity.
- c) Type of monitoring required: Single point alarm, multipoint alarm, indication or transmission.
- d) Vessel details- Dimension, Mounting location and MOC.

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