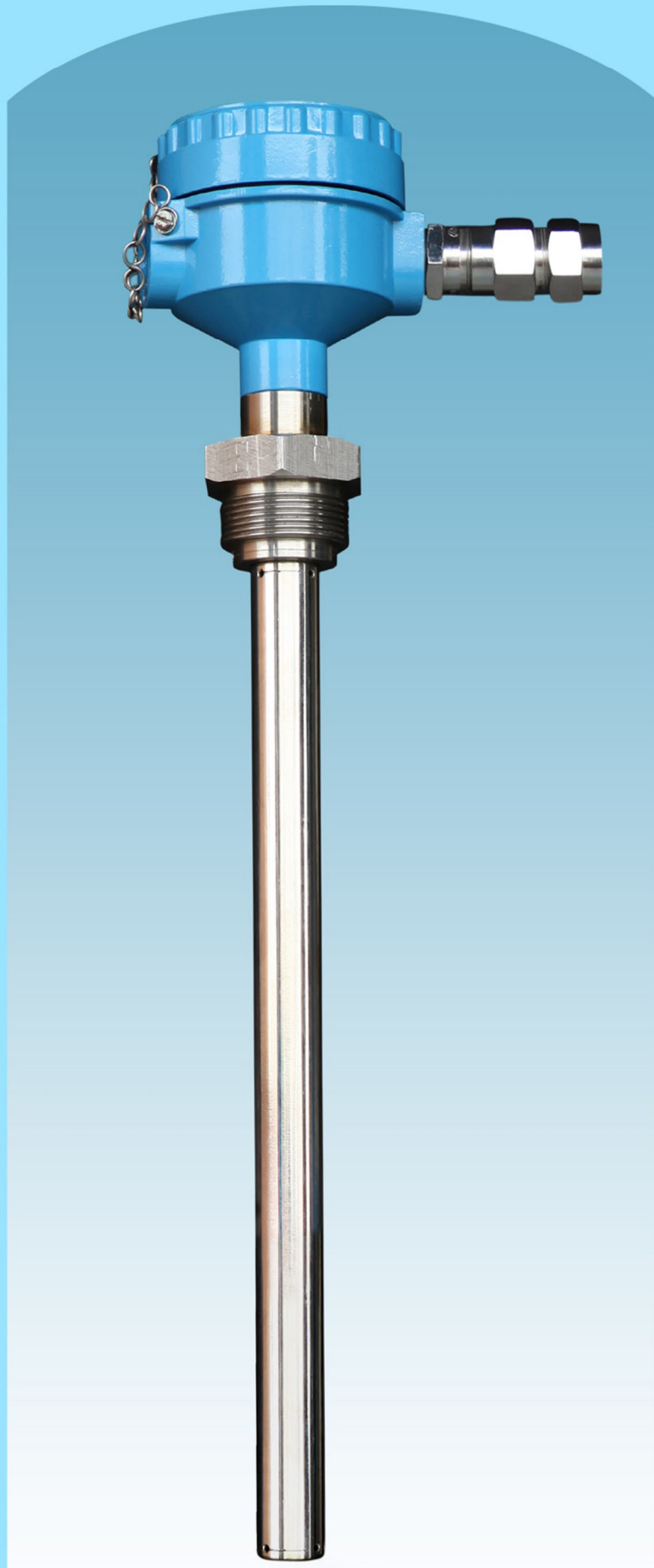


# CAPACITANCE TYPE LEVEL TRANSMITTER



# Capacitance Type Liquid Level Transmitter

- # Length up to 3 meters
- # Stainless Steel and Teflon Wetted parts
- # Analog Output
- # Field Calibration
- # Non Conductive Liquids

## CONSTRUCTION

Capacitance type level transmitter consists of Stainless steel shield, Teflon coated stainless steel electrode, stainless steel mounting adopter and flameproof cast aluminum enclosure containing electronics.

## OPERATING PRINCIPLE

Capacitance between electrode and shield is given by

$$C = K \times L \times \epsilon_r$$

Where,

$K$  = Constant depends upon the geometry of Construction .

$L$  = Length of the electrode assembly

$\epsilon_r$  = Relative permittivity of dielectric medium of Capacitor.

When no liquid is present in the tank, air covers the area between electrode and shield

as shown in fig (1).  $\epsilon_r$  is equal to one for air medium, hence capacitor is given by

$$C = K \times L$$

When liquid is present in the tank, liquid covers the area between electrode and shield to the extent of liquid level as shown in fig (2). Capacitance is given by

$$C = K \times L \times (x + y \epsilon_r)$$

where,

$x$  = % of  $L$  for air column inside electrode

$y$  = % of  $L$  for liquid column inside electrode

$\epsilon_r$  = Relative permittivity of liquid medium.

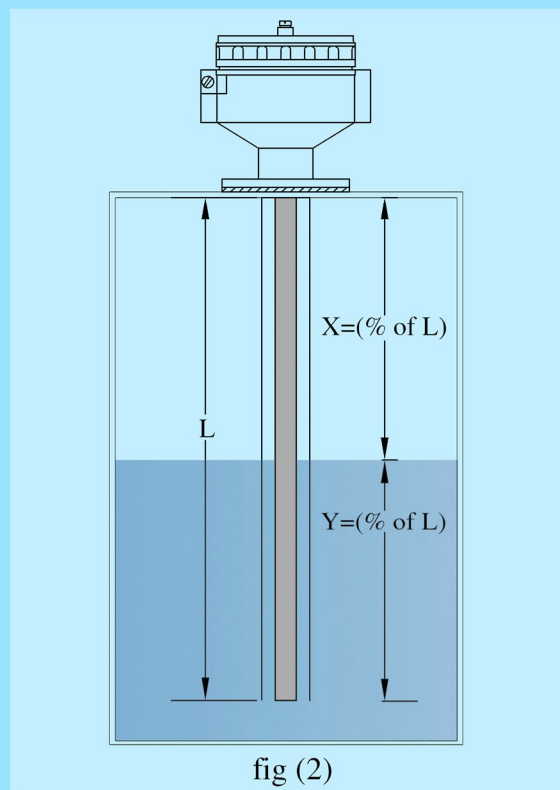
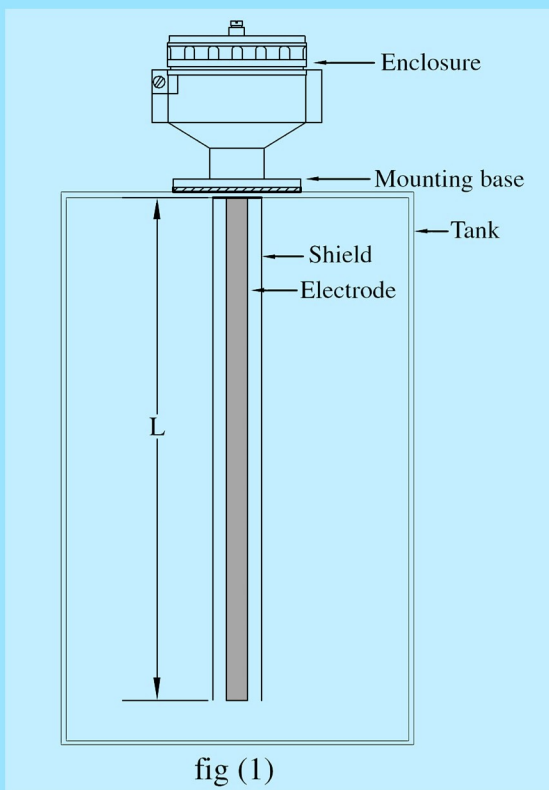
Electronics inside the enclosure calculate this change in the capacitance and provide linear industry standard analog output (0...10VDC or 4...20mA)

## TYPICAL APPLICATIONS

Consider our transmitters for all your continuous liquid level monitoring needs like Diesel, fuels, petrochemical liquids and many more.

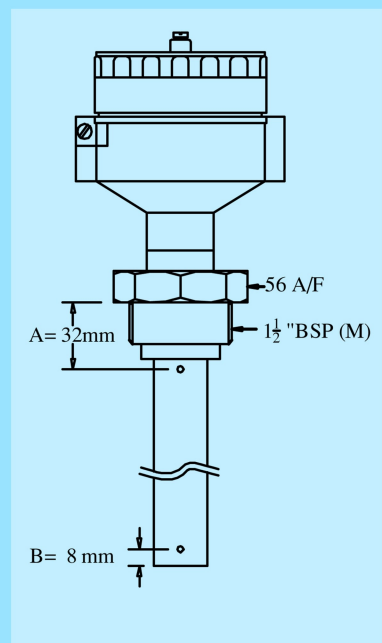
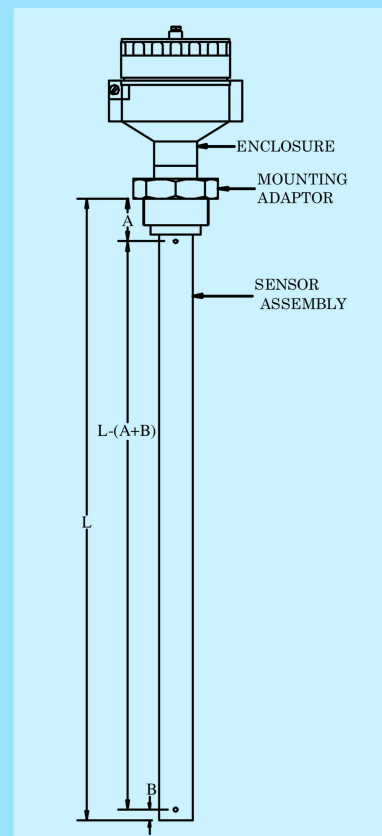
## LIMITATIONS

Capacitance type liquid level transmitter does not work with conductive liquids and liquid with high viscosity.

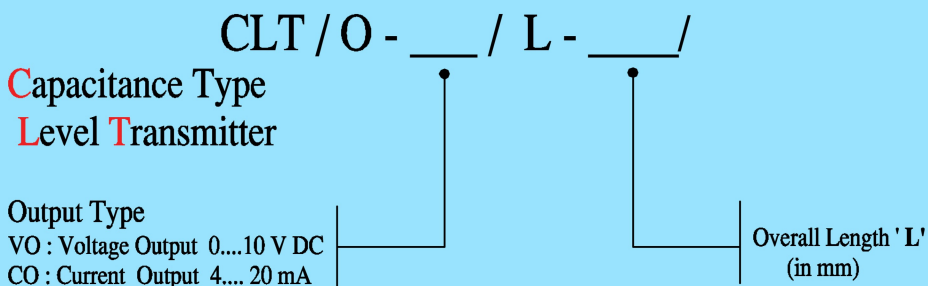


## TECHNICAL DATA

Overall Length	: 300mm to 3000mm
Measuring Error	: $\pm 0.1\%$ of Span
Output Temperature Co- efficient	: 50 PPM / °C
Ambient Temperature	: -10°C to +70°C
Liquid Temperature	: 25°C to +125°C
Max.Pressure	: Atmospheric
Process Connection	: 1 1/2" BSP (M)
Protection Category	: Flame proof to Gr IIA & IIB IS: 2148
Cable Entry	: 3/4" ET (Gland not Supplied)
Current Output	: 0...10VDC (3 Wire), 4...20mA (3 Wire)
Span Suppression	: 30% of Span
Zero Elevation	: 25% of Span
Excitation Voltage	: 24 VDC $\pm 10\%$
Power Consumption	: 60mA (Max)
Loop Resistance	: Max 1000 Ohms (For excitation Voltage of 21V) for 4...20mA Output.
Load Resistance	: Not less than 10K $\Omega$ for 0...10V output



## ORDERING INFORMATION:



ex: Capacitance Type Level Transmitter with 0.... 10 V DC Output of length 1000 mm.  
CLT / O- VO / L- 1000 /

NOTE: In case of any other mounting type required like flange etc, please consult us



# OTHER PRODUCTS

Process Indicator



Vertical Float Switch



Magnetic Roller Type Level Indicator



Pressure Base Level Transmitter



Float Operated Level Transmitter



Temperature / Humidity Indicator



Temperature Indicator



since continuous development is our policy, the above specification and details may change without prior notice

CT-013/CLT/01-19/R 01

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