

# Capacitance Type Level Transmitter 'CPT'

It is a microcontroller based, compact transmitter for continuous level measurement for conductive & nonconductive liquids in open or pressurized tanks.

## Salient Features :

- Compact microcontroller based design.
- 2-wire, 4-20 mA output (loop powered).
- Easy calibration through push button.
- Variety of electrode constructions to suit wide range of services viz corrosive, low conductive & low dielectric media.

## Construction & Operation : Fig 1

Consists of sensing and grounding electrode with integral electronics housed in an enclosure. The probe is top mounted with flanged or screwed process connection. The capacitance between the sensing & ground electrode is proportional to the change in liquid level, which is sensed and converted to 4-20mA o/p.

## Specifications :

Enclosure	: Cast Al x IP 66 or ABS x IP 65
Cable Gland	: Polyamide x PG 9
Electrode type	: Rigid - 500 to 1500mm, Flexible - 1500 to 5000mm
Installation	: Top
Electrode Construction	: Rigid or Flexible sensing electrodes with rigid or flexible or concentric ground pipe electrodes
Electrode Material	: SS304 or SS316
Sensing Electrode	: PTFE lined
Ground Electrode	: Bare or PTFE lined for corrosive applications
Process Connection	: 1) 40 NB flange / 50mm Triclover Ferrule (w/o ground electrode) 2) 65 NB flange / 80mm Triclover Ferrule (with ground electrode)
Calibration	: Zero & Span calibration through push button keys
Power Supply	: 24 VDC
Output	: 4-20 mA
Wiring System	: 2 wire
Max Load	: 400 ohms at 24 VDC
Capacitance Range	: 10 to 2000 pf
Accuracy	: ±2% of FSD
Max Temperature	: 60°C
Max Pressure	: 5 Kg/cm <sup>2</sup>

## Calibration Procedure :

The capacitance transmitter should be calibrated at site with process medium, to take into consideration the actual value of its dielectric constant (Er) under operating conditions. Adopt following procedure to calibrate capacitance level transmitter at site.

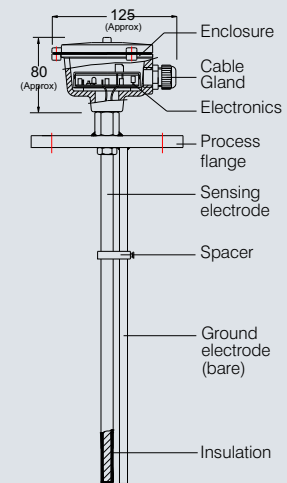
- Wire the terminals as indicated in '**Termination**'
- Fill tank to minimum level corresponding to o/p of 4mA. Press "**ZERO**" key until red '**LED**' is switched '**ON**' and then '**OFF**'.  
Now the x'mitter is set for 4mA, which can be confirmed thru multimeter.
- Now fill tank to maximum level corresponding to o/p of 20mA. Press "**SPAN**" key until red "**LED**" is switched '**ON**' and then '**OFF**'.  
Now the x'mitter is set for 20mA, which can be confirmed thru multimeter.
- Now transmitter stands calibrated for use under site operating conditions.

## Precautions

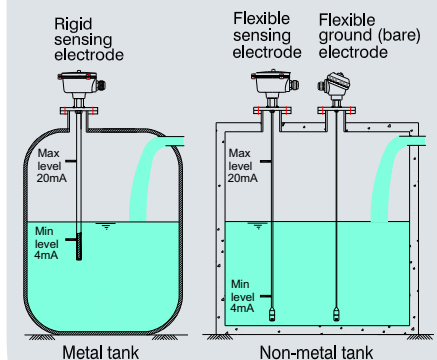
For outdoor installations, provide protection shield to protect electronics from direct sunrays, which may raise its temperature beyond its maximum limit.



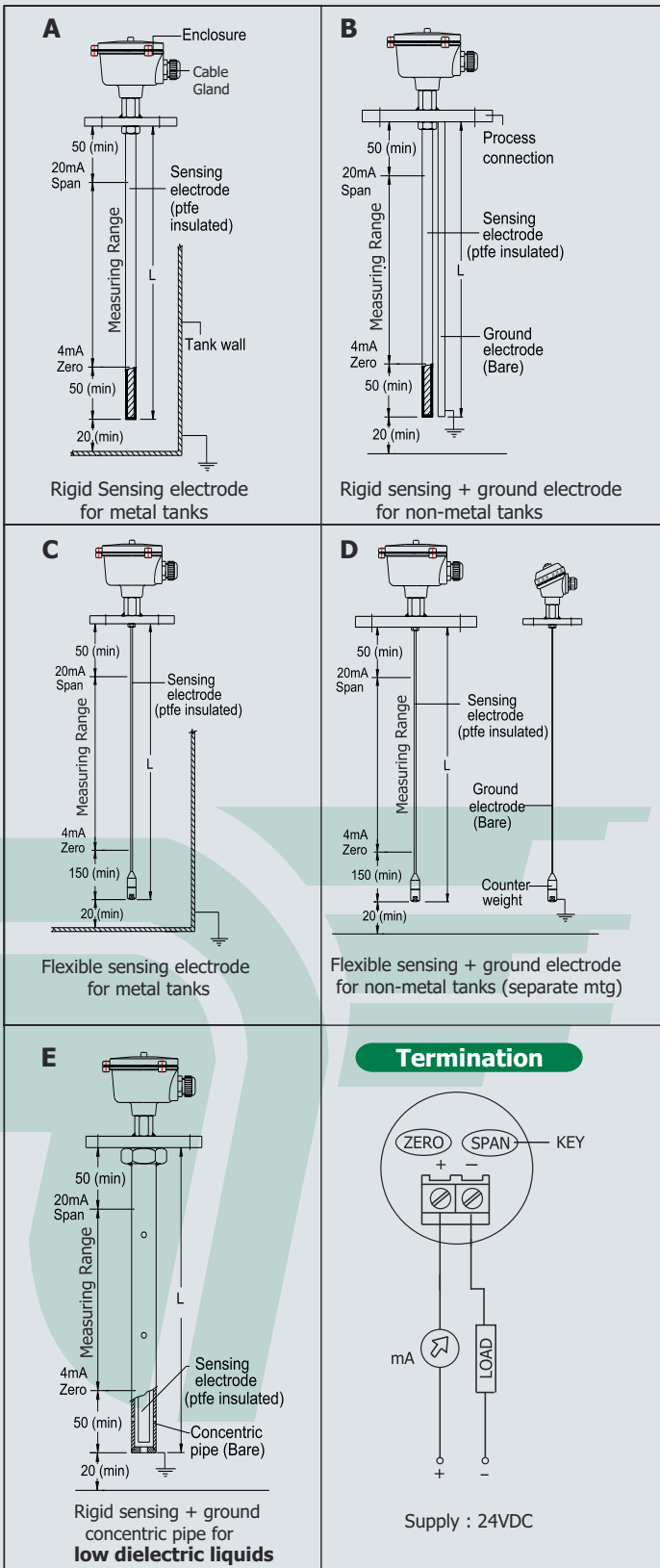
**Fig. 1**



## Installation : Fig. 2



# Electrode Construction: Fig 3



## Model Identification

CPT -									
<b>Enclosure</b>	Cast Al x IP-66	J							
	ABS x IP-65	B							
	Others	O							
<b>Electrode Construction</b>	Rigid sensing electrode	A							
	Rigid (sensing + ground) electrode	B							
	Flexible sensing electrode	C							
	Flexible (sensing + ground) electrode	D							
	Rigid Concentric (sensing + ground) electrode	E							
<b>Electrode MOC</b>	SS 304	N							
	SS 316	S							
<b>Electrode Insulation</b>	PTFE	P							
	Others	O							
<b>Process Conn MOC</b>	SS 304	N							
	SS 316	S							
	Others	O							
<b>Process Conn Size</b>	40 NB ANSI 150 # (elect. const. A & C)	1							
	65 NB ANSI 150 # (elect. const. B, D & E)	2							
	50mm Triclover Ferrule (elect. const. A & C)	3							
	80mm Triclover Ferrule (elect. const. B, D & E)	4							
	Others	O							
<b>Level Indicator Controller</b>	Without	W							
	TLIC	L							
	LP- Cator	P							
	TUIC	T							
	Others	O							

## Service / Applications :

Raw / Sea / Treated / DM / Purified Water, Coolant, Transformer Oil, Milk, Fruit Juice, Water Storage Tanks, Underground Tanks, Fuel Oil Tanks, Water Treatment Plants & Fire Protection Systems.

## Ordering information :

Model x Electrode Length (Range) alongwith Material Dielectric, Optg. Pressure & Temp.

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Custom built specs./options available on demand.

We reserve the right to modify design and specifications without prior notice.



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