

Model **SCAP-IV**

Capacitance Type Level Transmitter



Capacitance Level Transmitter

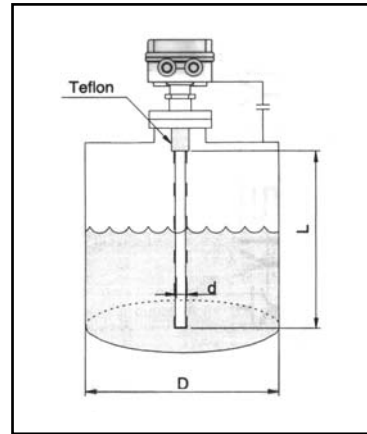
Introduction

SCAP-IV type sensor are 2-Wire style level transmitter that is designed to sense liquid levels continuously in tanks as a function of the capacitance between the probe and the tank.

Features

- Stable operation through low voltage wiring.
- 2-wire method reduces the cost of material and installation.
- Can be used in contact with corrosive materials by selecting proper coating material for the probe.
- The structurally simple probe is easy to install and maintain, and can be expected to give reliable service for a long time.
- Various probe styles are available to accommodate high temperature, high pressure or low pressure applications.
- Earth-Bar needs to be installed with Rod in parallel shape unless the material of tank is steel.

Operating Principle



$$C = 24 \epsilon L / \log(d/D)$$

C: Capacitance
 ϵ : Dielectric constant
 L: Probe Length
 D: Inside diameter of the tank
 d: Probe Diameter

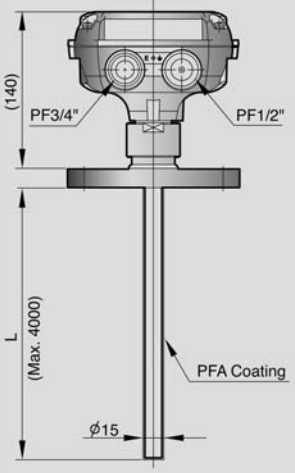
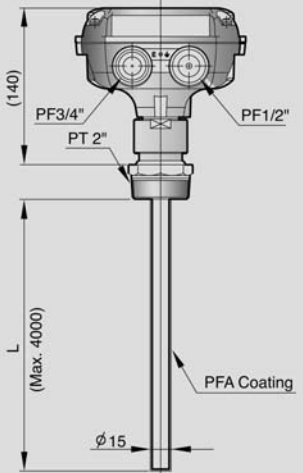
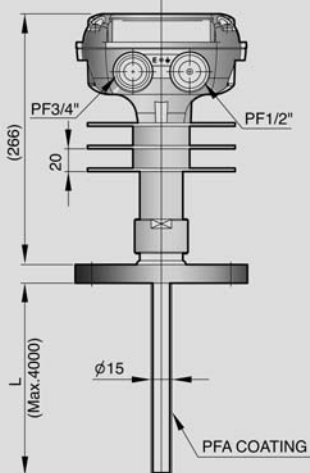
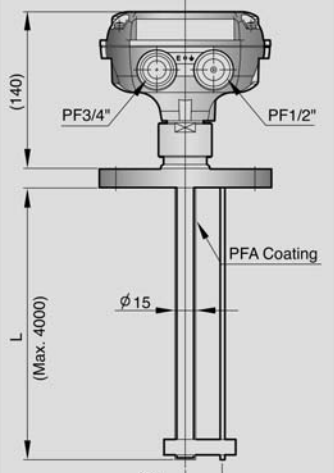
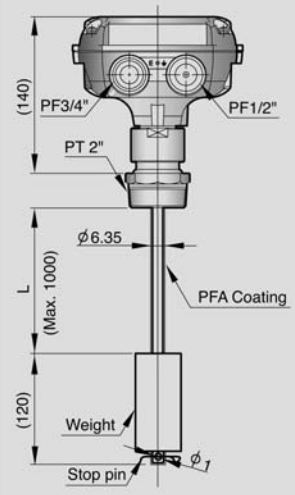
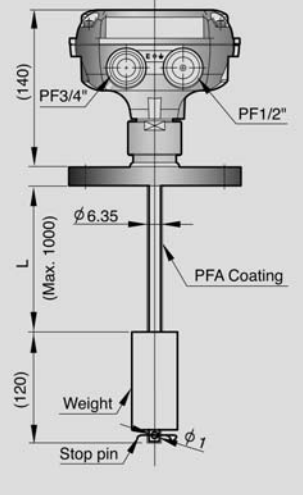
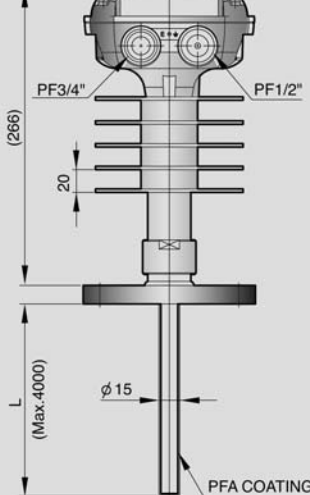
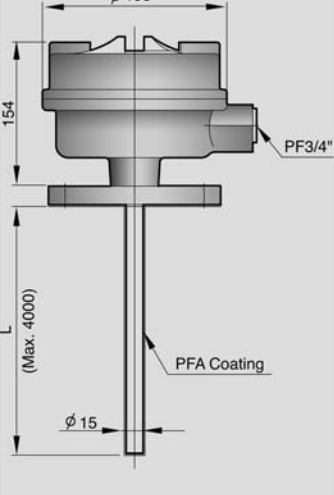
General equation for the calculation of the capacitance in a cylindrical tank.

Although it is not expressed in this over-simplified expression, in reality the capacitance is a function both of L and the depth of the liquid in the tank. Therefore, the depth can be determined by measuring the capacitance, since ϵ , L, d and D are all fixed for a probe in a given tank. The transmitter converts the capacitance into 4-20 mA DC current.

Specifications

Description	Model	SCAP - IV
Power supply		Nominal 24V DC(15~32V DC)
Application		Liquid, Solid(Over 50 pF)
Output Signal		4 ~ 20mA DC(2-wire)
Power & Load		12.6 ~ 36V DC(No load)
		$R(\text{Kohm}) = (V_{in} - 12.6) / 22.6$
Accuracy		$\pm 1\%$ F.S.
Measure Range		50 ~ 5000 pF
Operating Temp.		-20 ~ +80 °C(Operating Temp. Range)/120 °C(Option)
Construction		Explosion Proof (Exd IIC T6, IP65)
Materials	Probe	304SS + PTFE, 316SS + PTFE
	Head	ADC

Overall Dimensions

Rod & Flange	Rod & Nipple	High Temp.	Rod & Earth
 <p>Technical drawing of Rod & Flange probe. Dimensions: Head height 140, PF3/4" and PF1/2" ports, PFA Coating on rod, rod diameter 15, max length L (Max. 4000).</p>	 <p>Technical drawing of Rod & Nipple probe. Dimensions: Head height 140, PF3/4" and PF1/2" ports, PT 2" port, PFA Coating on rod, rod diameter 15, max length L (Max. 4000).</p>	 <p>Technical drawing of High Temp. probe. Dimensions: Head height 266, PF3/4" and PF1/2" ports, 20mm offset, PFA COATING on rod, rod diameter 15, max length L (Max. 4000).</p>	 <p>Technical drawing of Rod & Earth probe. Dimensions: Head height 140, PF3/4" and PF1/2" ports, PFA Coating on rod, rod diameter 15, max length L (Max. 4000), 20mm offset.</p>
Wire & Nipple	Wire & Flange	High Temp.	Explosion Proof
 <p>Technical drawing of Wire & Nipple probe. Dimensions: Head height 140, PF3/4" and PF1/2" ports, PT 2" port, PFA Coating on rod, rod diameter 6.35, max length L (Max. 1000), Weight, Stop pin, 120mm offset, rod diameter 1.</p>	 <p>Technical drawing of Wire & Flange probe. Dimensions: Head height 140, PF3/4" and PF1/2" ports, PFA Coating on rod, rod diameter 6.35, max length L (Max. 1000), Weight, Stop pin, 120mm offset, rod diameter 1.</p>	 <p>Technical drawing of High Temp. probe. Dimensions: Head height 266, PF3/4" and PF1/2" ports, 20mm offset, PFA COATING on rod, rod diameter 15, max length L (Max. 4000).</p>	 <p>Technical drawing of Explosion Proof probe. Dimensions: Head diameter 195, head height 154, PF3/4" port, PFA Coating on rod, rod diameter 15, max length L (Max. 4000).</p>

■ CAPACITANCE TYPE LEVEL TRANSMITTER

SCAP -IV	A	1	A	1	A	1
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CONDUIT CONNECTION

- 1 = PF 3/4" & PF 1/2" (Std.)
- 2 = PT 3/4" & PT 1/2"
- OP = etc.

ENCLOSURE

- A = Weather Proof (Std.)
- B = Explosion Proof (Exd IIC T6, IP65)

MOUNTING SIZE

- 1 = PF1" (Std.)
- 2 = PT2"
- 3 = JIS 10K 80A FF Flange
- 4 = JIS 10K 100A FF Flange
- OP = etc.

OPERATING TEMPERATURE

- A = -10 ~ + 80 °C Nipple & Flange type (Std.)
- B = -20 ~ +120 °C

WET PARTS MATERIAL & MEASURING LENGTH

- 1 = 304SS Standard Length PFA Tubing (Per 1M)
- 2 = 304SS Rod Extension & PFA Tubing (Per 1M)
- 3 = 304SS Wire & Weight Ex.. + PFA Tubing (Per 1M)
- OP = etc.

MODEL SELECTION

- A = Rod type (Min. 1 ~ Max. 4M1M Std.)
- B = Wire & Weight type (Min. 1 ~ Max. 30M5M Std.)
- C = Wire & Tie down type (Min. 1 ~ Max. 30M5M Std.)

■ When placing an order, selected ordering number should be indicated on the purchase order sheet.



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