

Model **SCAP-IV**

Capacitance Type Level Transmitter



Capacitance Level Transmitter

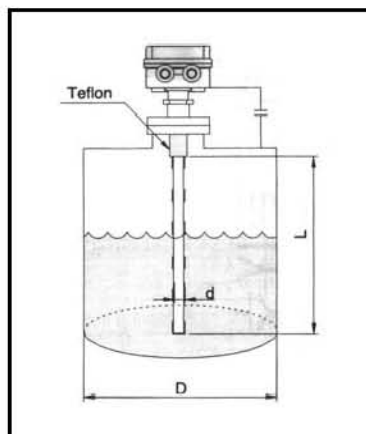
Introduction

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

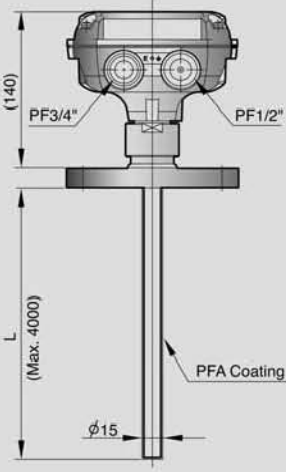
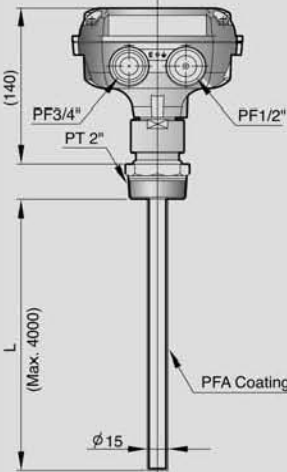
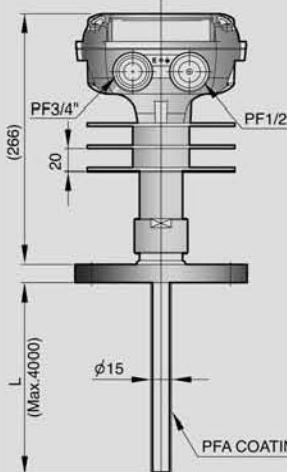
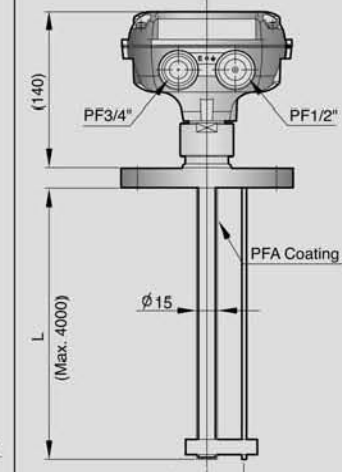
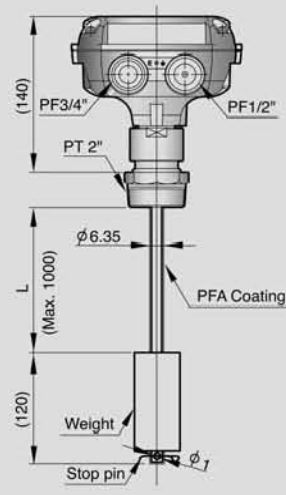
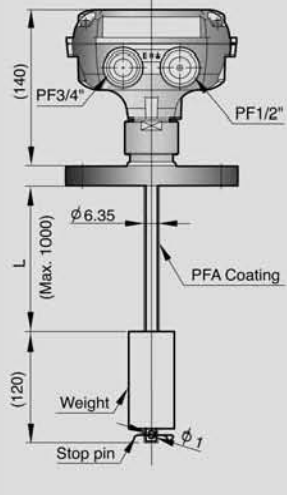
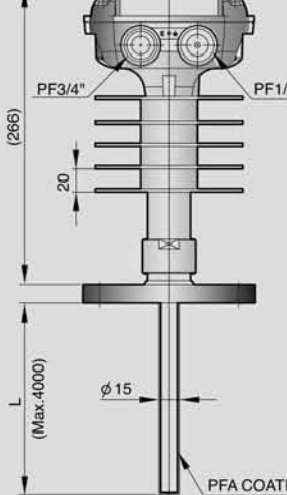
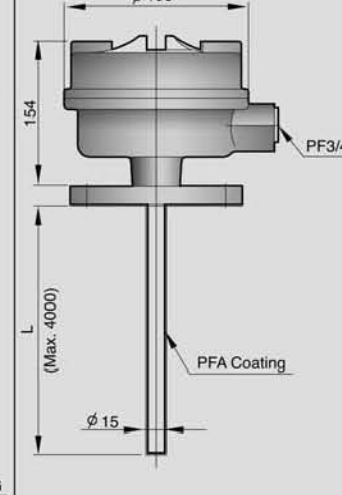
General equation for the calculation of the capacitance in a cylindrical tank.

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 (Ex d IIC T6, IP65)
Materials	Probe	304SS + PTFE, 316SS + PTFE
	Head	ADC

Overall Dimensions

Rod & Flange	Rod & Nipple	High Temp.	Rod & Earth
 <p>Diagram showing the overall dimensions of the Rod & Flange sensor. The head height is 140. The main rod length is L (Max. 4000). The rod diameter is $\phi 15$. The head features PF3/4" and PF1/2" ports. The rod is coated with PFA Coating.</p>	 <p>Diagram showing the overall dimensions of the Rod & Nipple sensor. The head height is 140. The main rod length is L (Max. 4000). The rod diameter is $\phi 15$. The head features PF3/4" and PF1/2" ports and a PT 2" port. The rod is coated with PFA Coating.</p>	 <p>Diagram showing the overall dimensions of the High Temp. Rod & Flange sensor. The head height is 140. The main rod length is L (Max. 4000). The rod diameter is $\phi 15$. The head features PF3/4" and PF1/2" ports. The rod is coated with PFA COATING.</p>	 <p>Diagram showing the overall dimensions of the Rod & Earth sensor. The head height is 140. The main rod length is L (Max. 4000). The rod diameter is $\phi 15$. The head features PF3/4" and PF1/2" ports. The rod is coated with PFA Coating. A 20mm dimension is shown at the bottom of the rod.</p>
Wire & Nipple	Wire & Flange	High Temp.	Explosion Proof
 <p>Diagram showing the overall dimensions of the Wire & Nipple sensor. The head height is 140. The main rod length is L (Max. 1000). The rod diameter is $\phi 6.35$. The head features PF3/4" and PF1/2" ports and a PT 2" port. The rod is coated with PFA Coating. A weight and stop pin are shown at the bottom of the rod, with a 120mm dimension for the weight section and a $\phi 1$ diameter for the stop pin.</p>	 <p>Diagram showing the overall dimensions of the Wire & Flange sensor. The head height is 140. The main rod length is L (Max. 1000). The rod diameter is $\phi 6.35$. The head features PF3/4" and PF1/2" ports. The rod is coated with PFA Coating. A weight and stop pin are shown at the bottom of the rod, with a 120mm dimension for the weight section and a $\phi 1$ diameter for the stop pin.</p>	 <p>Diagram showing the overall dimensions of the High Temp. Wire & Flange sensor. The head height is 140. The main rod length is L (Max. 4000). The rod diameter is $\phi 15$. The head features PF3/4" and PF1/2" ports. The rod is coated with PFA COATING.</p>	 <p>Diagram showing the overall dimensions of the Explosion Proof sensor. The head height is 154. The main rod length is L (Max. 4000). The rod diameter is $\phi 15$. The head features a $\phi 195$ diameter and a PF3/4" port. The rod is coated with PFA Coating.</p>

■ CAPACITANCE TYPE LEVEL TRANSMITTER

SCAP - IV | A | 1 | A | 1 | A | 1

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. 4M 1M Std.)
- B = Wire & Weight type (Min. 1 ~ Max. 30M 5M Std.)
- C = Wire & Tie down type (Min. 1 ~ Max. 30M 5M Std.)

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



SEOJIN INSTECH CO., LTD.

#91-18 Gunja-dong, Gwangjin-gu, Seoul, Korea
 Tel: 82-2-2204-8500 Fax: 82-2-466-6445
<http://www.seojin.biz>