

General Specifications

Model SC4A Conductivity Sensors and Fittings for 2-electrode Systems

Insertion Sensors

Stainless steel or Titanium 2-electrode sensors with cell constants of 0.02 cm⁻¹, 0.10 cm⁻¹, and fixed cables 3 to 20 meters in length.

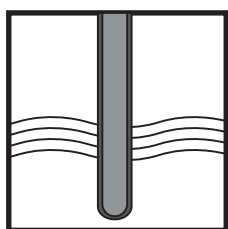
Intended for the low conductivity applications found in the semi-conductor, power, water and pharmaceutical industries, these sensors are designed in a convenient compact style. There are several mounting possibilities, including a compression gland, giving a simple effective method of direct insertion in process pipework. The sensors are made from a combination of wetted materials approved by FDA. This makes them ideally suited for the monitoring of pure water systems used in the preparation of injectable solutions. For this kind of application, sanitary clamp mountings are most often used. As with all Yokogawa conductivity sensors, the cell constants are individually calibrated in our laboratories using an ASTM method traceable to NIST international standards.

Features

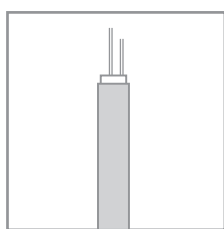
- Precise individually calibrated cell constant.
- Fast temperature response.
- Built-in Pt1000 temperature sensor.
- Fixed cable length 3, 5, 10, 15 or 20 mtr.
- Direct process insertion.
- Wide range of mountings.
- Compatible with PR10 retractable assembly.
- The sensor is polished to meet pharmaceutical requirements.
- Standard quality inspection certificate with delivery of sensor
- Peek and O-rings according to FDA standard.



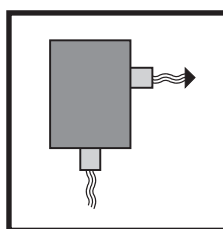
System Configuration



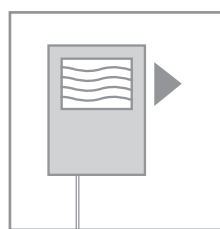
Sensors



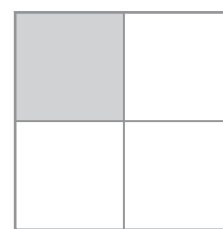
Cables



Fittings



Transmitters



Accessories

Specifications SC4A-AD

General Specifications - Materials - Wetted Parts

Body & electrodes	: Stainless steel AISI 316L or Titanium grade 2 or 3
O-ring	: EPDM FDA
Mounting adapter	: PVDF or Stainless steel AISI 316L
Insulation	: PEEK (Polyether Ether Ketone)
Surface Roughness	: 0.8µm (R432)

Operating Specifications (Sensor)

Measuring system	: 2-electrode (4-wire)
Maximum pressure	: 10 bar (142 PSIG)
Maximum temperature	: 110°C (230 °F)
Temperature response	: < 1 minute for 90% of a step change
Sterilize	: At 135°C (275 °F)

Shipping details

Package size	: wxhxd 220 x 220 x 90 cm
	: wxhxd 215 x 150 x 55 cm
Package weight	: Approx. 1.6 kg. 3.5 lb

Model	Suffix	Option	Description
SC4A*			19 mm conductivity sensor
	-T		Titanium
	-S		Stainless steel 316L (Sterilizable acc. EHEDG test)
Fitting-type	-AD		For adapter mounting
Sensor length	-09		9 cm
	-15		15 cm
Cellconstant	-002		0.02/cm
	-010		0.1/cm
Cable length	-03		3 mtr
	-05		5 mtr
	-10		10 mtr
	-15		15 mtr
	-20		20 mtr
	-T1		Pt1000
AD only		/PS	3/4"NPT Stainless Steel adapter
		/PF	3/4"NPT PVDF adapter
(option /PS required)		/FF	Stainless Steel flow fitting

* 3.1 Material certificate according to EN 10024 is standard delivered with this sensor.

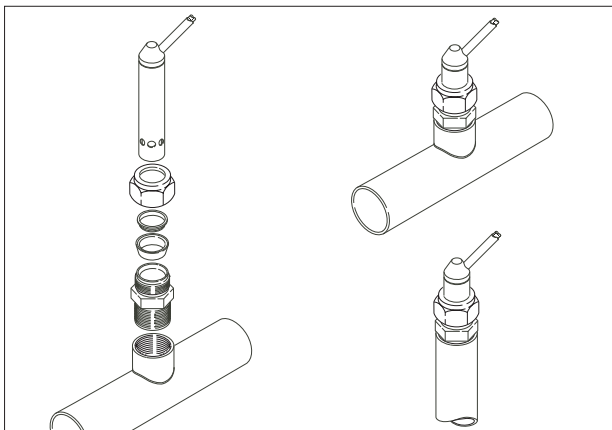
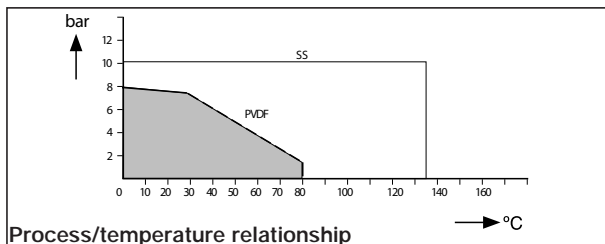


Figure 1. Mounted sensor with the option /PS and /PF

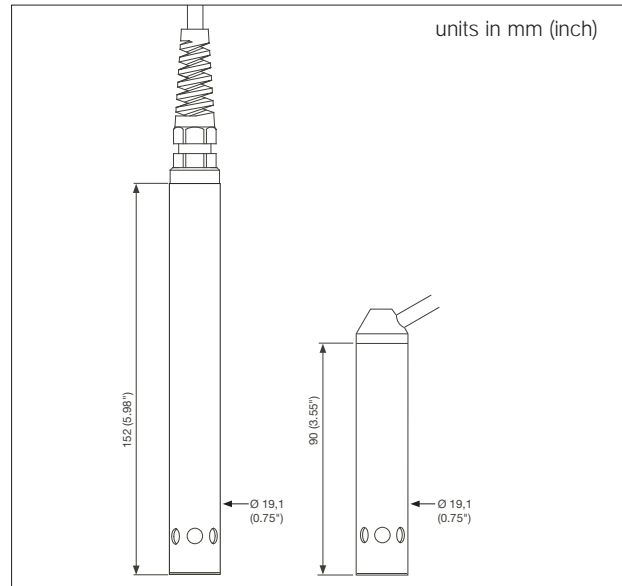


Figure 2. SC4A-AD-15

SC4A-AD-09

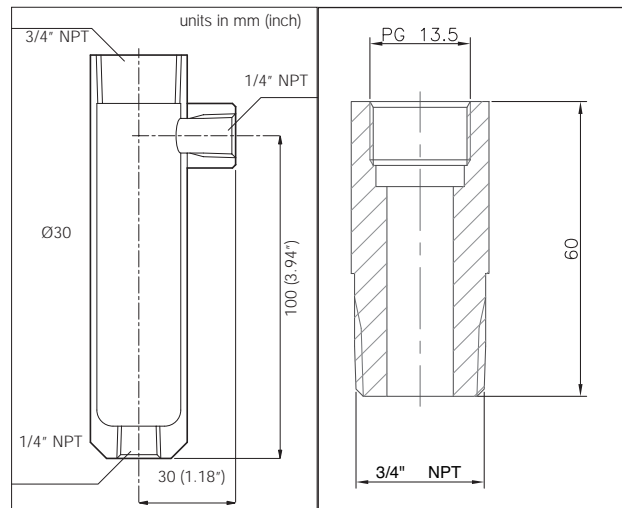


Figure 3. Flow fitting (SS) option /FF K1598 AC (incl. 3.1 B certificate)

Figure 4. Adapter K1598JB (noryl) or K1523JD (SS) to fit sensors with PG13,5 process connection in K1598AC flow fitting

Specifications SC4A-SA/SB/SC

General Specifications

The SC4A-E is a conductivity sensor made of below materials with full traceability and supporting documents.

- EPDM O-ring (21 CFR 177.2600)
- SS is 1.4435
- Double O-ring construction (EPDM 21 CFR 177.2450)
- Virgin PEEK isolator (21 CFR 177.2415)
- Surface roughness $R_a < 0.4\mu\text{m}$ (R416)
- Tested for sterilizability against EHEDG procedure
- 2% accuracy for the Cell constant
- Batch certificate downloadable from Partner portal on Yokogawa website

Materials

Wetted Parts

Body & electrodes	: Stainless steel AISI 316L (1.4435)
O-ring	: EPDM, FDA migration tested 21 CFR 177.2600
Mounting adapter	: Stainless steel AISI 316L Tri-clamp according to ISO 2852-1993
Insulation	: PEEK (Polyether Ether Ketone) FDA migration tested 21 CFR 177.2415
Surface Roughness	: $0.5\mu\text{m}$

Operating Specifications (Sensor)

Measuring system	: 2-electrode, 4-wire
Maximum pressure	: 10 bar (142 PSIG)
Maximum temperature	: 110°C (230°F)
Temperature response	: < 1 minute for 90% of a step change
Sterilize	: At 135°C (275°F)

Operating Specifications options /SB1, /SB2, /SA1, /SA2, /SC1

Stainless Steel	
Maximum pressure	: 10 bar (142 gpsi)

Model Code	Suffix Code	Option Code	Description
SC4A			19 mm conductivity sensor
	-E		with EPDM FDA O-ring
fitting-type	-SA -SB -SC		25 mm port 1-1½" tri-clamp 2" tri-clamp
cellconstant	-002 -010		0.02/cm 0.1/cm
connection type	-03 -05 -10 -15 -20		Fixed cable with wirepins, 3 m Fixed cable with wirepins, 5 m Fixed cable with wirepins, 10 m Fixed cable with wirepins, 15 m Fixed cable with wirepins, 20 m
	-T1		Pt1000

* 3.1 Material certificate according to EN 10024 is standard delivered with this sensor.

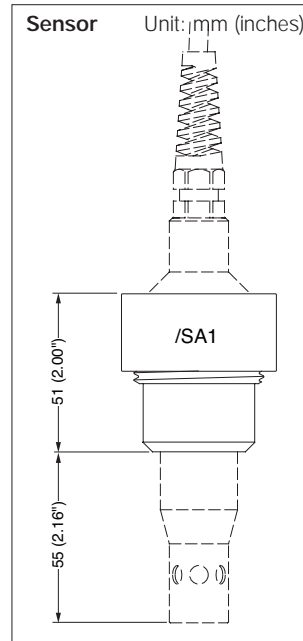


Figure 6. Option /SA1

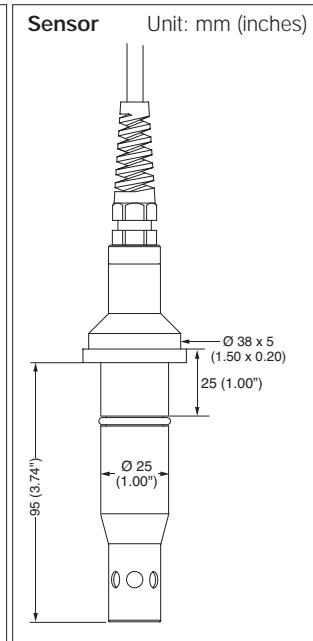


Figure 7. Sensor SC4A-SA

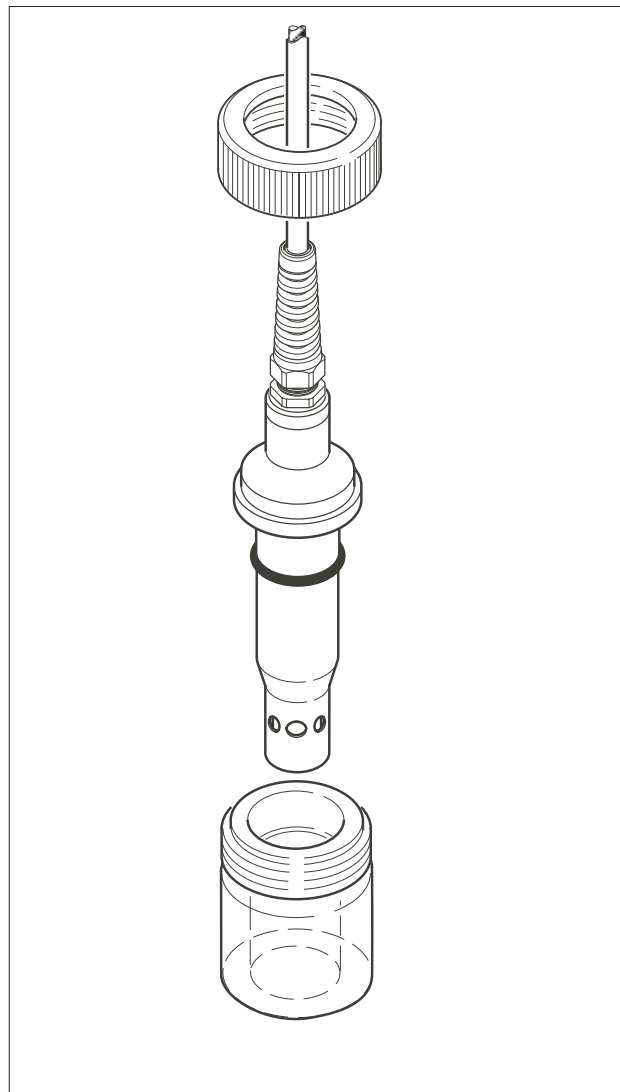


Figure 8. Mounted Sensor SC4A -SA

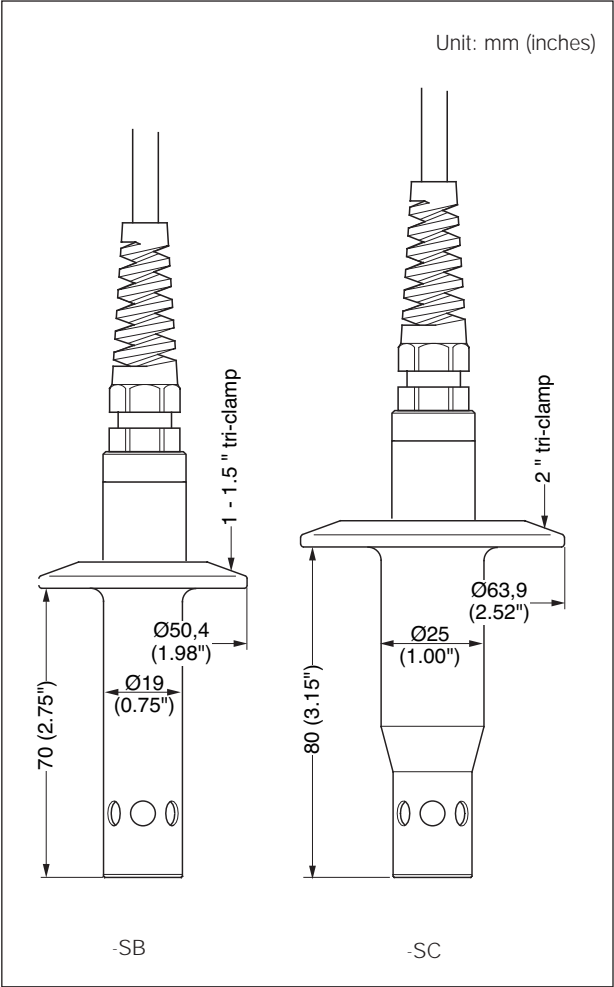


Figure 9. Sensor SC4A

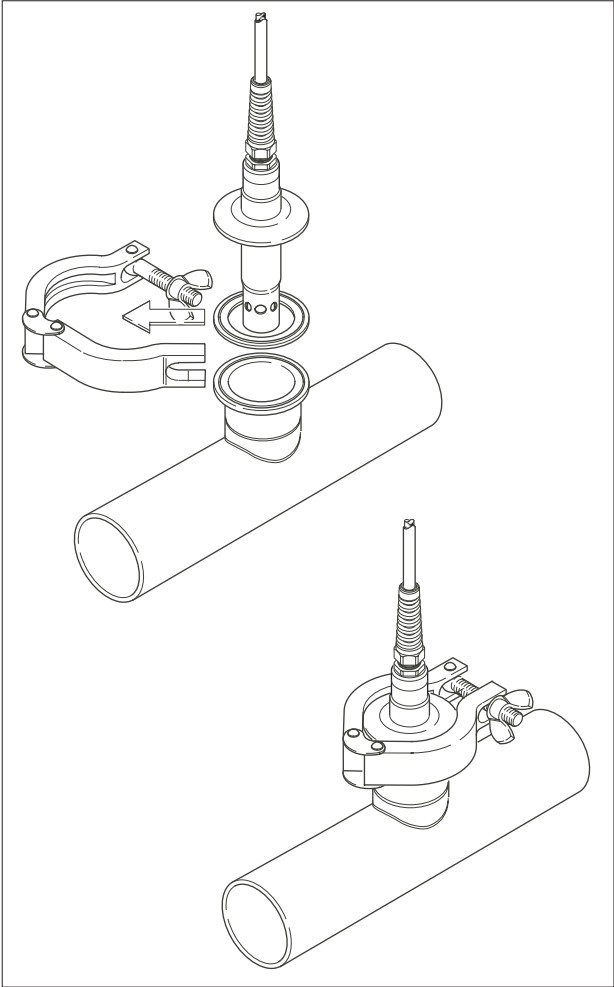


Figure 11. Mounting example

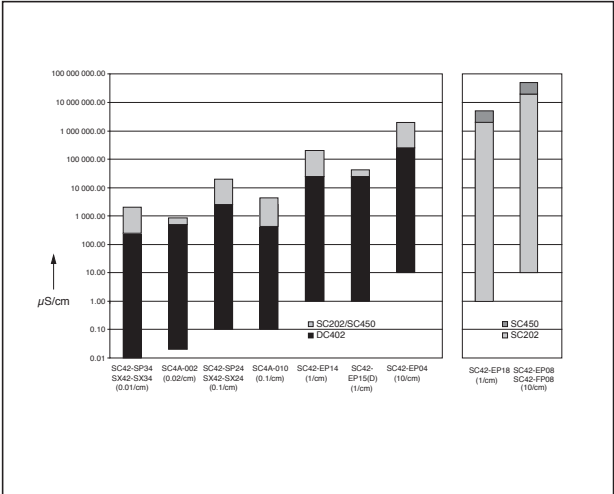


Figure 12. Suitable application area

Specifications SC4A-PR

General Specifications

Materials

Wetted Parts

Body & electrodes	: Stainless steel AISI 316L or Titanium grade 2 or 3
O-ring	: Viton
Mounting adapter	: Retractable fitting
Insulations	: PEEK (Polyether Ether Ketone)

Operating Specifications (Sensor)

Measuring system	: 2-electrode
Maximum pressure	: 10 bar (142 PSig)
Maximum temperature	: 110°C (230 °F)
Temperature response	: < 1 minute for 90% of a step change
Sterilize	: At 135°C (275 °F)
Surface Roughness	: 0.8µm (R432)

Shipping details

Package size	: wxhxd 220 x 220 x 90 cm wxhxd 215 x 150 x 55 cm
Package weight	: Approx. 1.6 kg. 3.5 lb

Model Code	Suffix code	Option	Description
SC4A*			19 mm conductivity sensor
	-T		Titanium
	-S		Stainless steel
Fitting-type	-PR		For retractable mounting
Always	-NN		fixed length
Cellconstant	-002		0.02/cm
	-010		0.1/cm
Cable length	-03		3 meter
	-05		5 meter
	-10		10 meter
	-15		15 meter
	-20		20 meter
	-T1		Pt1000

* 3.1 Material certificate according to EN 10024 is standard delivered with this sensor.

Spare Parts SC4A

Part no.	Description
SC4A-S- AD and SC4A-T-AD	
K1542DF	Compression fitting in Stainless Steel (/PS)
K1500DY	Ferrule set for K1542DF
K1542CW	3/4" npt adapter PVDF
K1598AC	Flowfitting with 3.1 material certificate
SC4A-E-SA	
K1542FA	Straight welding socket and mounting nut SS
K1500BJ	O-rings in EPDM (5), FDA migration tested
SC4A-E-SB	
K1542FC	Tri-Clamp mounting set for 1" triclamp (welding socket, sealing gasket and clamp ring) (/SB1)
K1500HN	Sealing gasket in EPDM for K1542FC (3), FDA migration tested
K1542FF	Tri-Clamp mounting set for 1,5" triclamp (welding socket, sealing gasket and clamp ring) (/SB2)
K1500BN	Sealing gasket in EPDM for K1542FF (3), FDA migration tested
SC4A-E-SC	
K1542FE	Tri-Clamp mounting set for 2" triclamp (welding socket, sealing gasket and clamp ring) (/SC1)
K1500BP	Sealing gasket in EPDM for K1542FE (3), FDA migration tested
SC4A-T-PR and SC4A-S-PR	
K1500BE	O-rings in Viton (10)
K1500ED	O-rings in Kalrez (2)

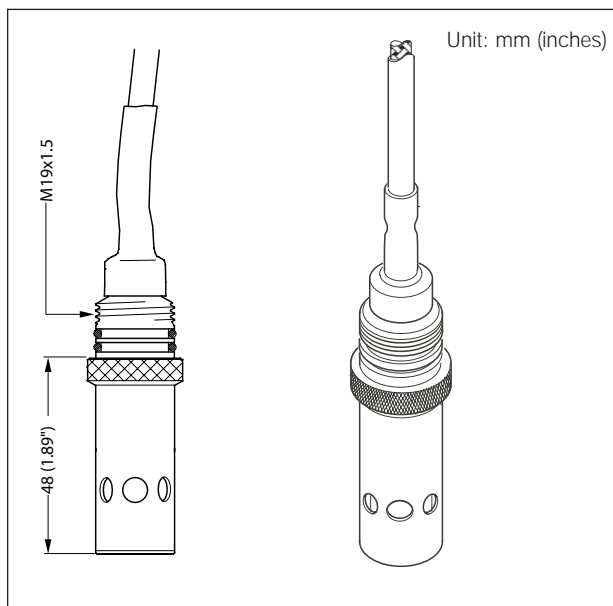


Figure 13. SC4A -PR

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