CTS - 001

ELECTRONET™

TOROIDAL CONDUCTIVITY SENSOR

Description

Electronet series CTS001–Toroidal conductivity sensors expand the advancements in process conductivity measurement. Toroidal sensors have no electrodes. The sensor comprises two wound toroids encapsulated in a chemically resistant nonconductor made of anti–corrosive materials.

CTS001–Toroidal conductivity measurement is applicable to a wide variety of industrial process needs including sewer and condensate monitoring, pulping and sugar liquors, chemical concentration monitoring, liquids containing algae, cleaning and clean–in–place solutions, food and pharmaceutical installations, liming applications, brine, solutions with solids and / or high ionic strength and countless other applications.

Technical Specifications

Materials	The wetted area of the CTS001–Toroidal Conductivity Sensor is completely encapsulated. The interior of the sensor contains 316 stainless steel / copper.
Accuracy	+/– 2% F. S.
Measuring Range	1) Min. 0.4 to 20 mS
	2) Max. 40 to 2,000 mS/cm
Temperature Range	1) Max. 140 °C (284 °F) with Kynar adapter
	2) Max. 80 °C (176 °F) with CPVC adapter
O–Ring Material	Viton
Pressure	Max. 689 kPag (100 psig)
Temperature Compensation	RTD PT 100 / RTD PT 1000
Cable length from sensor to transmitter	5 to 10 Meters (Additional on request)
Process Connection	1) 1½" BSP Threaded
	2) 1½" NPT Threaded
	3)1½" ASA 150 Flanged
	4) 1½" Triclover

Toroidal conductivity theory

Toroidal conductivity measurement is performed in contact with the solution without using any electrodes. The conductivity instrument supplies a constant drive to one of the two toroids. This drive toroid generates a strong magnetic field in the solution.

Toroidal conductivity measurement is made through a non–conductive material, so it is not affected by coatings or scales that add resistance and error to conventional conductivity measurements.

Overall Drawing

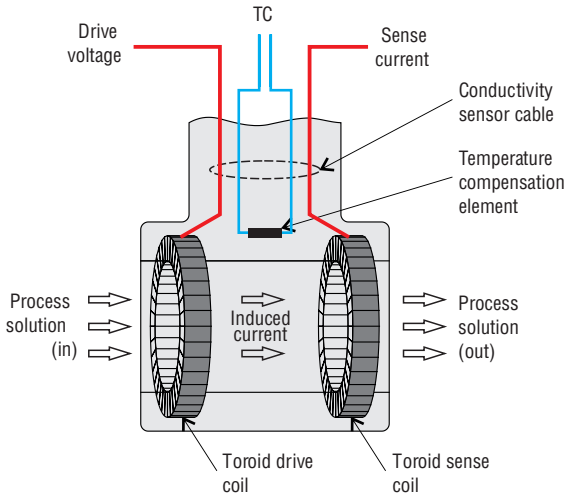

Fig.1 Toroidal conductivity measurement

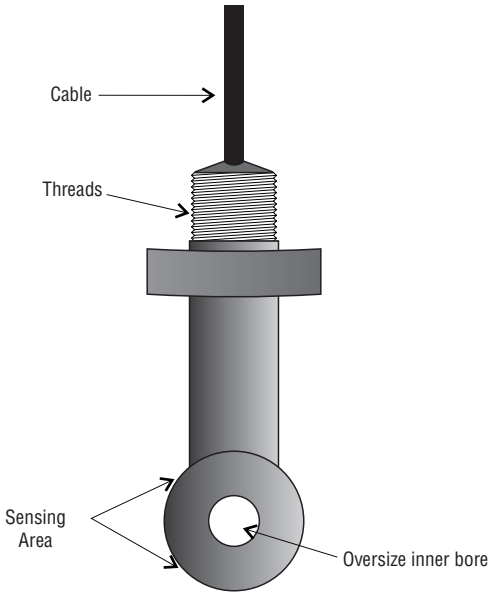

Fig.2 Toroidal conductivity sensor

Installation Drawing

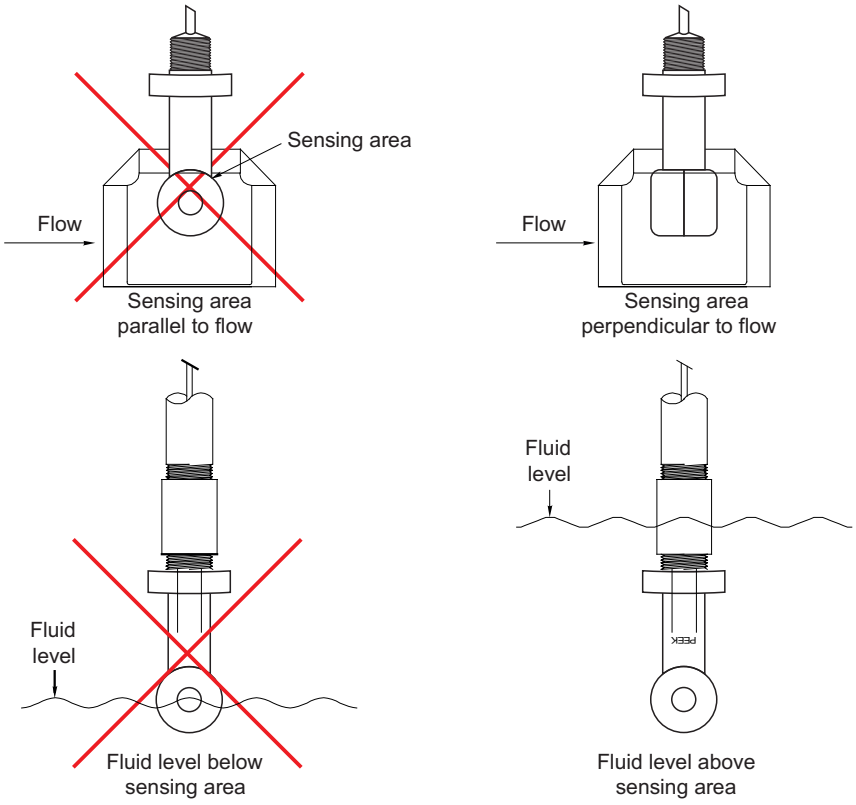

Fig.3 Installation

TABLE - CORROSION - RESISTANT MATERIALS

Reagent	Temp°C / conc.	Holder Material: PVDF 20	PVDF 60	PVDF 100	316 SS 20	316 SS 60	316 SS 100	PP 20	PP 60	PP 100	PVC 20	PVC 60	PVC 100	Sealing Material: FPM 20	FPM 60	FPM 100	EPDM 20	EPDM 60	EPDM 100	Sensor Body: PEEK	PEEK 20	PEEK 100
Fuming Sulfuric Acid	98%	×	×	×	●	●	×	×	×	×	×	×	×	×	×	×	×	×	×		×	×
Hydrochloric Acid	15%	✓	✓	✓	×	×	×	✓	✓	×	✓	✓	×	✓	✓	▲	✓	✓	×		✓	✓
	38%	✓	✓	●	×	×	×	✓	✓	×	●	×	×	●	×	×	▲	×	×		✓	×
Nitric Acid	30%	✓	✓	✓	✓	✓	×	✓	●	×	✓	×	×	✓	●	▲	●	×	×	10%	✓	✓
	50%	✓	✓	●	✓	●	×	✓	▲	×	✓	×	×	✓	▲	×	×	×	×	30%	✓	×
	98%	✓	×	×	×	×	×	×	×	×	×	×	×	▲	×	×	×	×	×	50%	×	×
Phosphoric Acid	10%	✓	✓	✓	✓	✓	×	✓	✓	×	✓	✓	×	✓	✓	×	✓	✓	✓		✓	✓
	50%	✓	✓	✓	✓	✓	×	✓	✓	×	✓	×	×	✓	✓	×	✓	✓	✓		✓	✓
	98%	✓	✓	✓	✓	✓	×	✓	●	×	●	×	×	✓	✓	×	✓	✓	✓		✓	✓
Hydrofluoric Acid	40%	✓	✓	✓	×	×	×	✓	●	×	●	×	×	✓	✓	●	✓	▲	×		×	×
	50%	✓	✓	✓	×	×	×	✓	●	×	●	×	×	✓	✓	●	✓	▲	×		×	×
Acetic Acid	20%	✓	✓	●	✓	×	×	✓	●	×	●	▲	×	●	▲	×	✓	●	×	10%	✓	✓
	80%	✓	▲	×	✓	▲	×	●	×	×	●	▲	×	●	×	×	×	×	×			
Sodium carbonate	Saturated	✓	✓	✓	✓	●	×	✓	✓	×	✓	✓	×	✓	✓	✓	✓	✓	×		✓	✓
Sodium chloride	Saturated	✓	✓	✓	×	×	×	✓	✓	×	✓	✓	×	✓	✓	×	✓	✓	×		✓	✓
Ethanol	100%	✓	✓	×	●	●	×	✓	●	×	✓	●	×	✓	✓	×	✓	✓	×		✓	✓
Water	100%	✓	✓	✓	✓	✓	✓	✓	✓	×	✓	✓	×	✓	✓	×	✓	×	●		✓	✓

✓ Very Suitable ● Suitable ▲ Slightly unsuitable × Unsuitable

Ordering Information

Sample Order Code : I1 | O5 | Q2 | R2

Parameter		Code	Value
I	Temperature Compensation	I1	RTD PT–100
		IY	Other
		IX	NA
O	Process Connection	O5	1½" BSP Threaded
		O6	1½" NPT Threaded
		O7	1½" ASA 150 Flanged
		O8	1½" Triclover

Parameter		Code	Value
Q	Sensor Cable Length	Q1	5 Meter
		Q2	10 Meter
		Q3	15 Meter
		QY	Other
R	Cable Connection Method	R1	Fixed Cable
		R2	Terminal Head
		R3	Detachable Connector

Note :
- Due to our continuous product revisions, design specification and model numbers are subject to change without notice.
- Accuracy defined at Lab Conditions.
- For other requirement please consult factory.
- Please specify service media / process temperature / process pressure at the time of ordering.

ELECTRONET EQUIPMENTS PVT. LTD.

Factory Address:
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Khandala, Dist.– Satara
Pin: 412 801, Maharashtra, India.

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