

Description

Electronet series CTS 001-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.

CTS 001-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.



Features

- Electrode-Free Toroidal Measurement Technology
- Resistant to Coating, Scaling & Fouling Effects
- Wide Conductivity Range: 0.4 mS to 2,000 mS
- Integrated RTD (PT100/PT1000) Temperature Compensation
- Rugged, Corrosion-Resistant Construction for Harsh Processes

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.

Assembly Overview

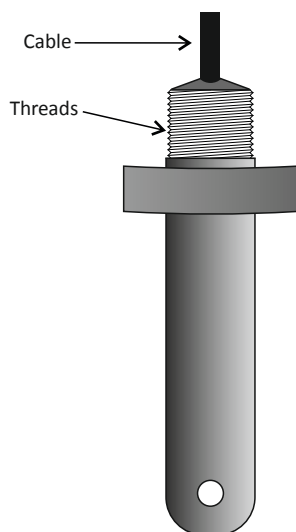


Fig. 1 Toroidal conductivity sensor

Installation Details

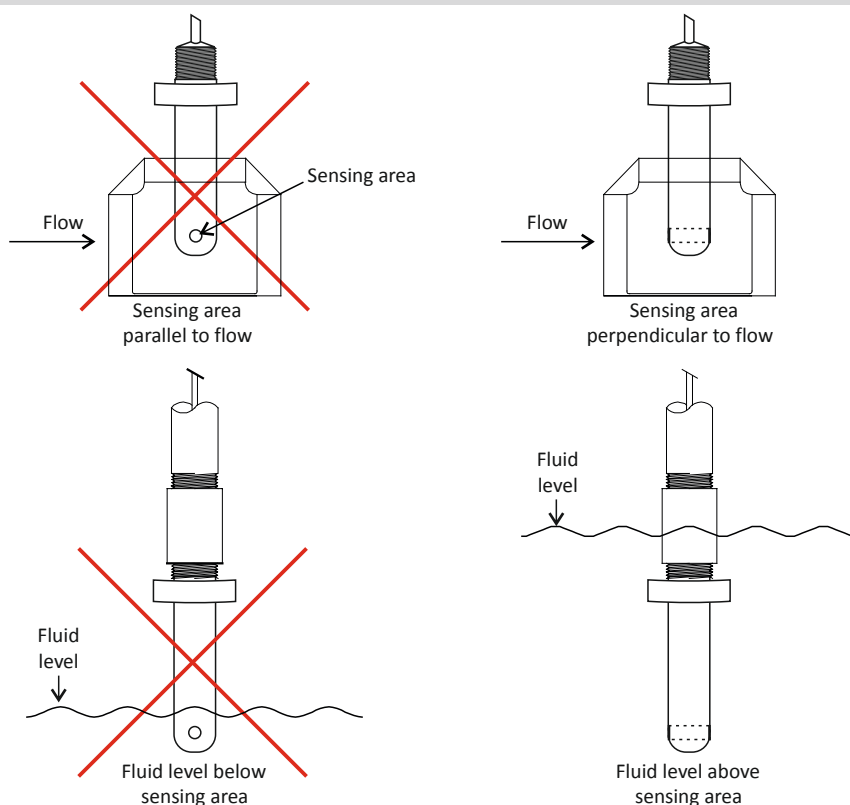


Fig.2 Installation

TABLE - CORROSION - RESISTANT MATERIALS

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

✓ Very Suitable
● Suitable
▲ Slightly unsuitable
x Unsuitable

Ordering Information

Sample Order Code : CTS 001-A1-B1-C1-D1

Parameter	Code	Value	Parameter	Code	Value
A Temperature Compensation	A1	RTD PT-100	C Sensor Cable Length	C1	5 Meter
	AY	Other		C2	10 Meter
	AX	NA		C3	15 Meter
B Process Connection	B1	1½" BSP Threaded		CY	Other
	B2	1½" NPT Threaded	D Cable Connection Method	D1	Fixed Cable
	B3	1½" ASA 150 Flanged		D2	Terminal Head
	B4	1½" Triclover		D3	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. • This product is meant for laboratory/Process application only
 • For other requirement please consult factory. and not for custody transfer application.
 • Please specify service media / process temperature / process pressure at the time of ordering.

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