ProCon® — C450 Series
Conductivity Sensor Transmitter

Industrial Analytical Equipment

ICON PROCESS CONTROLS ™ Corrosion-Free Instrumentation Equipment

Direct 4-Wire

M12 Quick Connection

¾" NPT Connection

Titanium Electrode

- ✓ **Eliminate Costly Conductivity Module**
- ✓ **Direct 4-20mA & RS485 Outputs**
- ✓ **No Costly Conductivity Module Required**
- ✓ **High Accuracy ±0.5%**
- ✓ **Quick Response Time**
- ✓ **¾" NPT Connection**
- ✓ **Factory Calibrated**
- ✓ **2-Electrodes**
- ✓ **Conductivity | TDS | Salinity | Resistivity**
- ✓ **Optional Local Display c/w High/Low Alarm Set-points**

This rugged titanium workhorse is available in 4 different cell classes for a truly versatile sensor

The ProCon® line of analytical sensor transmitters are designed for difficult industrial applications and to outperform even in extreme conditions.

The sensor transmitters come pre-calibrated and can be configured with or without a junction box. The C450 also features the convenience and safety of the M12 quick connection with no additional conductivity module required.
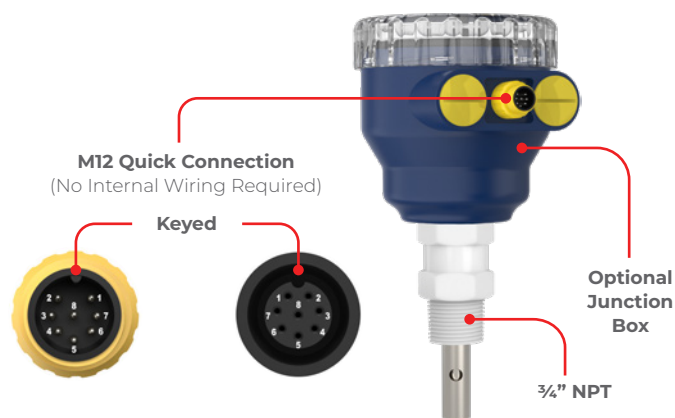
The ProCon® C450 series double electrode conductivity sensor transmitter has been proven to operate seamlessly in industrial applications up to 200,000μS/cm.

The 2-wire 4-20mA, 4-wire or 4-20mA + RS485 output options simplify calibration and communication with remote displays and controllers.

Always ask for **ProCon® C450** by name to be sure you are getting a genuine **Icon Process Controls** product.

Specifications

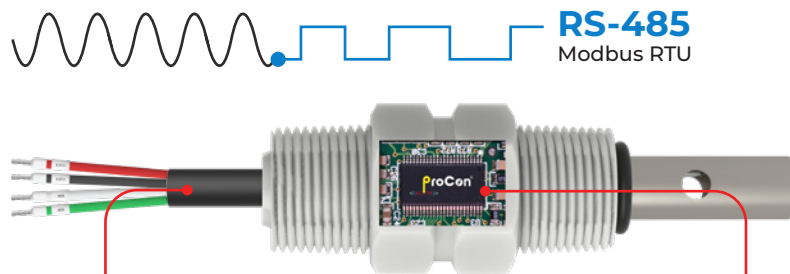|	
Power Supply	9 – 36VDC
Sensor Electrode Material	Titanium Alloy
Housing Material	PP
IP Rating	IP68
Measurement Range	0 – 100μS | 0 – 1,000μS 0 – 10,000μS | 0 – 200,000μS
Accuracy	±0.5% of Reading
Pressure Rating	150 Psi
Temperature Compensation	PT1000 (Std)
Temperature Range	14 – 176°F | -10 – 80°C
Calibration	Factory Calibrated
Connection Methods	• 4-20mA 2 wire • 4-wire (direct to ProCon® controller) • 4-20mA + RS485
Cable Length (w/o J-Box)	M12: 5m cable can be extended to 100m
Installation Thread	NPT ¾"

M12 Quick Connection (No Internal Wiring Required)

Keyed

Optional Junction Box

¾" NPT

Wiring

RS-485
Modbus RTU

PVC Jacket

Aluminum Shield

4-20mA+

4-20mA-

Braided Shield

Pin Connectors

Double Shielded Cable

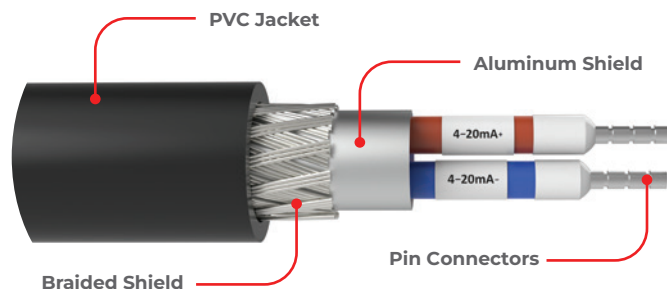**Advanced electronic circuity for automatic sensor recognition ensuring trouble-free calibration when connected to the ProCon® controller**

4-20mA+RS485 Direct Sensor Output

IO-Link OUT to PLC

4-20mA IN from Sensor

LinkPro®

IO-Link
(No Internal Wiring Required)

Cable Options

The ProCon® series offer complete flexibility of cabling options throughout the range. All cables are shielded against spurious EMI and are potted inside the sensor ensuring environmental protection.

The standard cable length for most sensors is 5m (15 ft). However, cables can be supplied as any continuous size up to 100m.
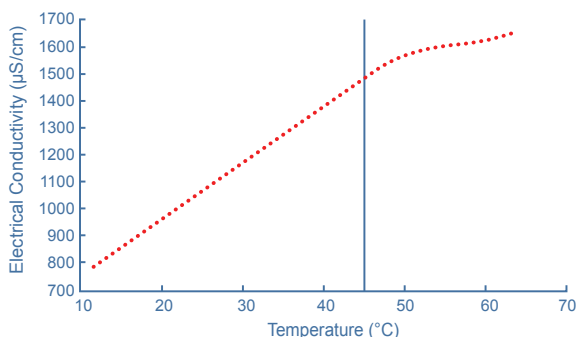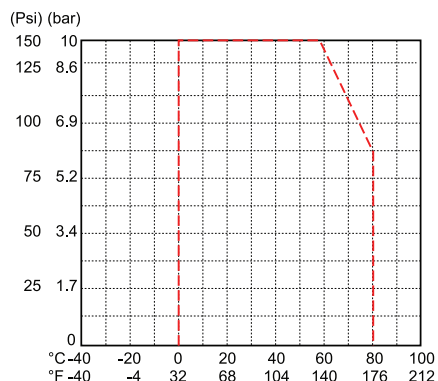
Blind Display

Junction Box

No tools required

M12 Quick Connection

Temperature Effects

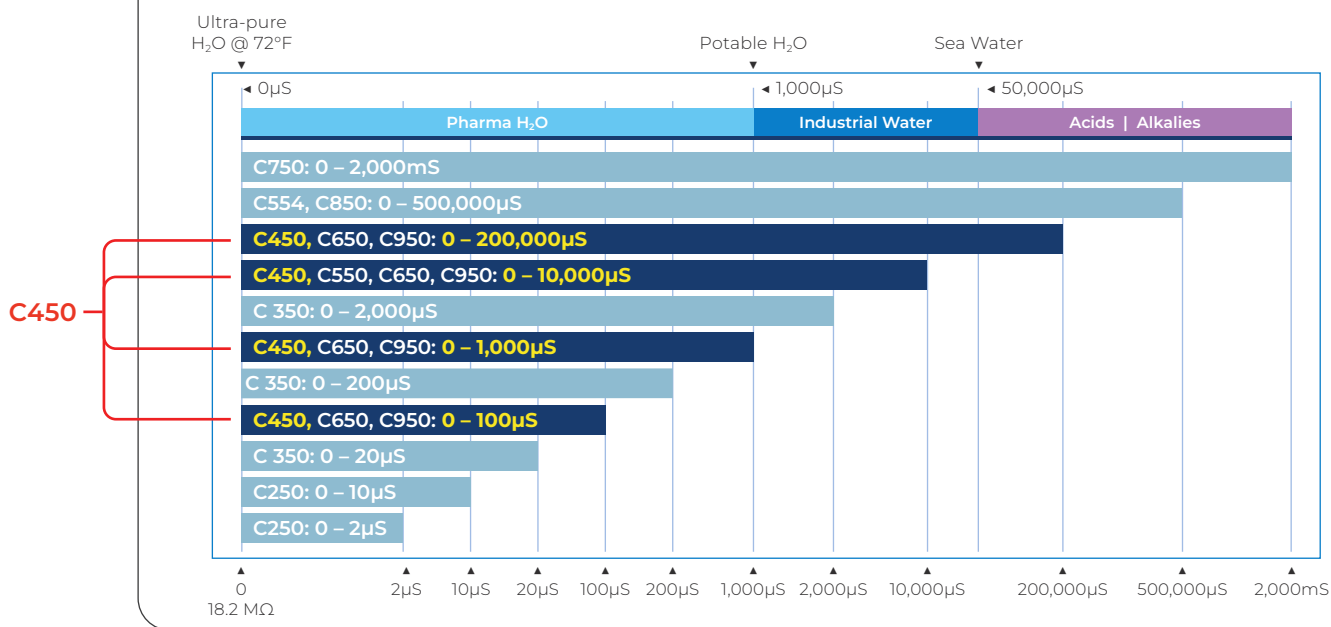Electrical Conductivity (µS/cm) vs Temperature (°C)

Temperature vs. Pressure

(Psi) (bar)

Factory Calibrated

ProCon® conductivity sensors come with a factory default that covers the range of the sensor
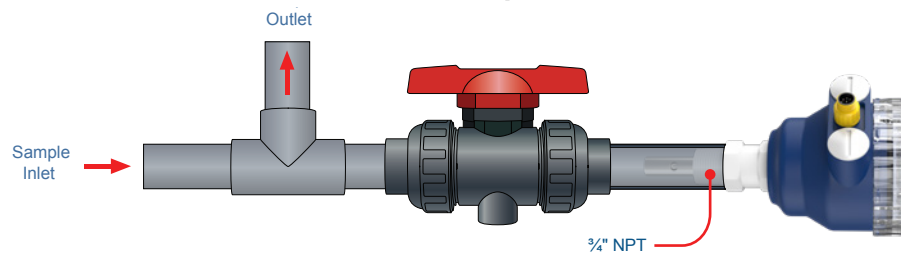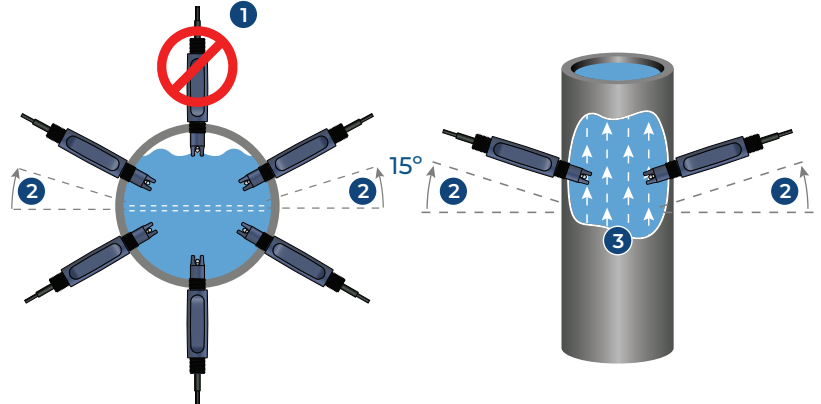

Ultra-pure H₂O @ 72°F — Potable H₂O — Sea Water

◄ 0µS   ◄ 1,000µS   ◄ 50,000µS

| Pharma H₂O | Industrial Water | Acids | Alkalies |

- C750: 0 – 2,000mS
- C554, C850: 0 – 500,000µS
- **C450, C650, C950: 0 – 200,000µS**
- **C450, C550, C650, C950: 0 – 10,000µS**
- C 350: 0 – 2,000µS
- **C450, C650, C950: 0 – 1,000µS**
- C 350: 0 – 200µS
- **C450, C650, C950: 0 – 100µS**
- C 350: 0 – 20µS
- C250: 0 – 10µS
- C250: 0 – 2µS

C450

0 / 18.2 MΩ — 2µS — 10µS — 20µS — 100µS — 200µS — 1,000µS — 2,000µS — 10,000µS — 200,000µS — 500,000µS — 2,000mS

Sensor Type

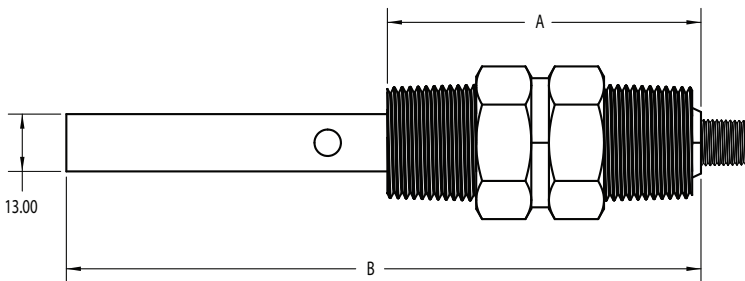| Cell	Models	Range
Cell 0.01	C250	0 – 2µS
Cell 0.01	C250	0 – 10µS
Cell 0.1	C350	0 – 20µS
Cell 0.01	**C450, C650, C950**	**0 – 100µS**
Cell 0.1	C350	0 – 200µS
Cell 0.1	**C450, C650, C950**	**0 – 1,000µS**
Cell 0.1	C350	0 – 2,000µS
Cell 1.0	**C450, C550, C650, C950**	**0 – 10,000µS**
Cell 10	**C450, C650, C950**	**0 – 200,000µS**
Cell 0.4	C554, C850	0 – 500,000µS
Toroidal	C750	0 – 2,000mS

Typical Applications

- ⊘ High Purity Water
- ⊘ Water Treatment
- ⊘ Pharmaceutical
- ⊘ Food and Beverage
- ⊘ Interface Detection
- ⊘ Desalination
- ⊘ Chemical Plants
- ⊘ Aquariums
- ⊘ Agricultural Industries

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In-line Mounting

1. If air is present, avoid vertical installation (ensure full pipe).

2. Optimum installation 15° above horizontal.

3. Process liquid should flow upward. (for downward flow ensure backpressure is present in order to avoid air within pipe)

15°

Outlet

Sample Inlet

¾" NPT

Dimensions

13.00

A

B

Cell Class	M12		Flying Lead	
	A (mm)	**B** (mm)	**A** (mm)	**B** (mm)
Cell 0.01	78	151	67.8	140.8
Cell 0.1	78	113	67.8	102.8
Cell 1.0	78	119	67.8	108.8
Cell 10	78	119	67.8	108.8

Model Selection

C450 - G - M - 1 - M

Cell Constant	Output	Electrode	Connection
G : 0.01 | 0 – 100µS **J :** 0.1 | 0 – 1,000µS **M :** 1.0 | 0 – 10,000µS **P :** 10 | 0 – 200,000µS	**M:** 4-20mA (2-wire) **D:** 4-wire (for ProCon® display) **S:** RS485 + 4-20mA	**1:** PT1000 (std)	**M:** M12 **B:** Blind (J-Box with M12) **F:** Flying Lead

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Fittings

Easy Install Clamp On Pipe Saddles					
Part Number	Material	Size	Seal	Thread	Connection
PSA-2	PVC	2"	FPM	¾" NPT	PVC
PSA-3	PVC	3"	FPM	¾" NPT	PVC
PSA-4	PVC	4"	FPM	¾" NPT	PVC
PSA-6	PVC	6"	FPM	¾" NPT	PVC
PSA-8	PVC	8"	FPM	¾" NPT	PVC

True Union Tee Fitting					
Part Number	Material	Size	Seal	Thread	Connection
TUPA-PV-5	PVC	1/2"	FPM (std) | EPDM	¾" NPT	Socket | NPT
TUPA-PP-5	PP	1/2"	FPM (std) | EPDM	¾" NPT	Butt | NPT
TUPA-PF-5	PVDF	1/2"	FPM (std) | EPDM	¾" NPT	Butt| NPT
TUPA-PV-7	PVC	3/4"	FPM (std) | EPDM	¾" NPT	Socket | NPT
TUPA-PP-7	PP	3/4"	FPM (std) | EPDM	¾" NPT	Butt | NPT
TUPA-PF-7	PVDF	3/4"	FPM (std) | EPDM	¾" NPT	Butt| NPT
TUPA-PV-1	PVC	1"	FPM (std) | EPDM	¾" NPT	Socket | NPT
TUPA-PP-1	PP	1"	FPM (std) | EPDM	¾" NPT	Butt | NPT
TUPA-PF-1	PVDF	1"	FPM (std) | EPDM	¾" NPT	Butt| NPT
TUPA-PV-15	PVC	1 1/2"	FPM (std) | EPDM	¾" NPT	Socket | NPT
TUPA-PP-15	PP	1 1/2"	FPM (std) | EPDM	¾" NPT	Butt | NPT
TUPA-PF-15	PVDF	1 1/2"	FPM (std) | EPDM	¾" NPT	Butt| NPT
TUPA-PV-2	PVC	2"	FPM (std) | EPDM	¾" NPT	Socket | NPT
TUPA-PP-2	PP	2"	FPM (std) | EPDM	¾" NPT	Butt | NPT
TUPA-PF-2	PVDF	2"	FPM (std) | EPDM	¾" NPT	Butt| NPT

ProCon®
Sensing Tomorrow's Innovations Today

by

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