

# ProCon® — C450 Series Conductivity Sensor Transmitter



**ICON**™ Corrosion-Free  
PROCESS CONTROLS Instrumentation Equipment



- ✓ Eliminate Costly Conductivity Module
- ✓ Direct 4-20mA & RS485 Outputs
- ✓ No Costly Conductivity Module Required
- ✓ High Accuracy  $\pm 0.5\%$
- ✓ Quick Response Time
- ✓ 3/4" 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.

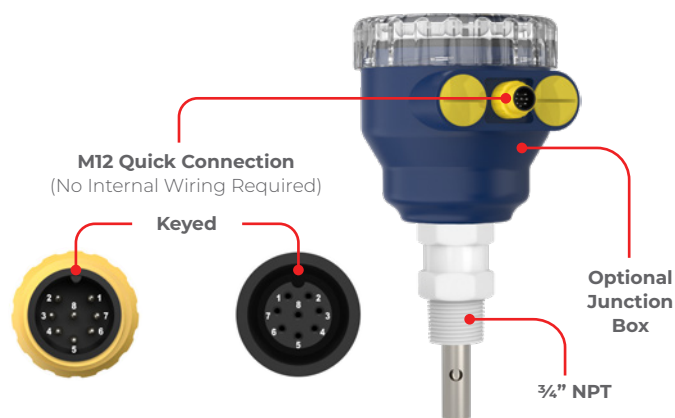
The ProCon® C450 series double electrode conductivity sensor transmitter has been proven to operate seamlessly in industrial applications up to 200,000 $\mu$ S/cm.

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 – 100 $\mu$ S   0 – 1,000 $\mu$ S 0 – 10,000 $\mu$ S   0 – 200,000 $\mu$ S
Accuracy	$\pm 0.5\%$ 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 3/4"

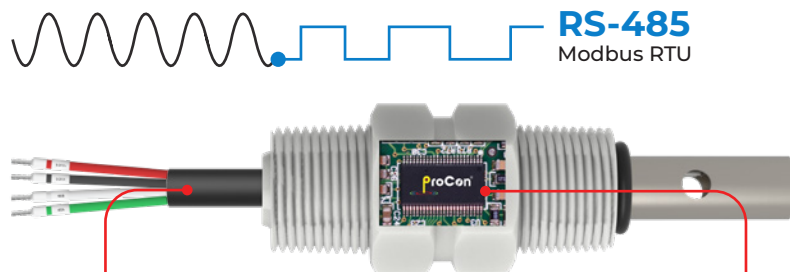


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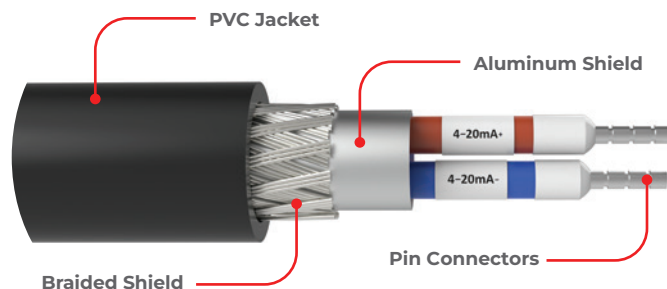
## Wiring



**RS-485**  
Modbus RTU

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

4-20mA+RS485  
Direct Sensor Output



## Double Shielded Cable

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.

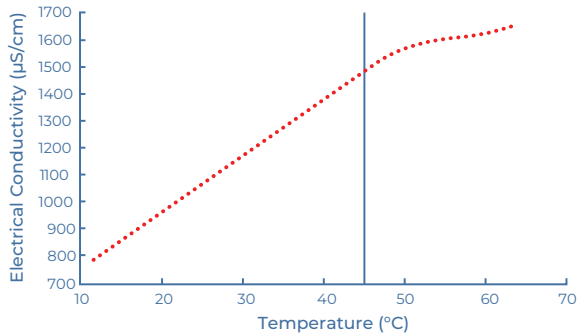
## Junction Box

No tools  
required

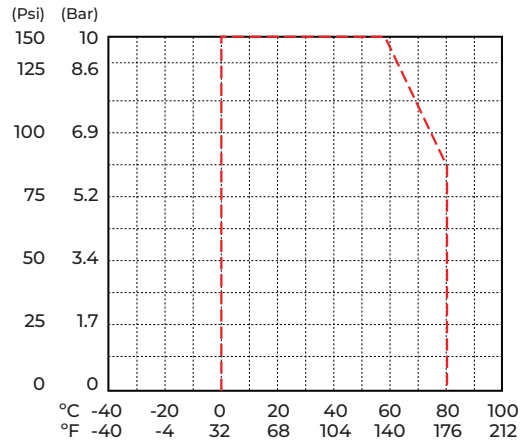


M12 Quick Connection

## Temperature Effects

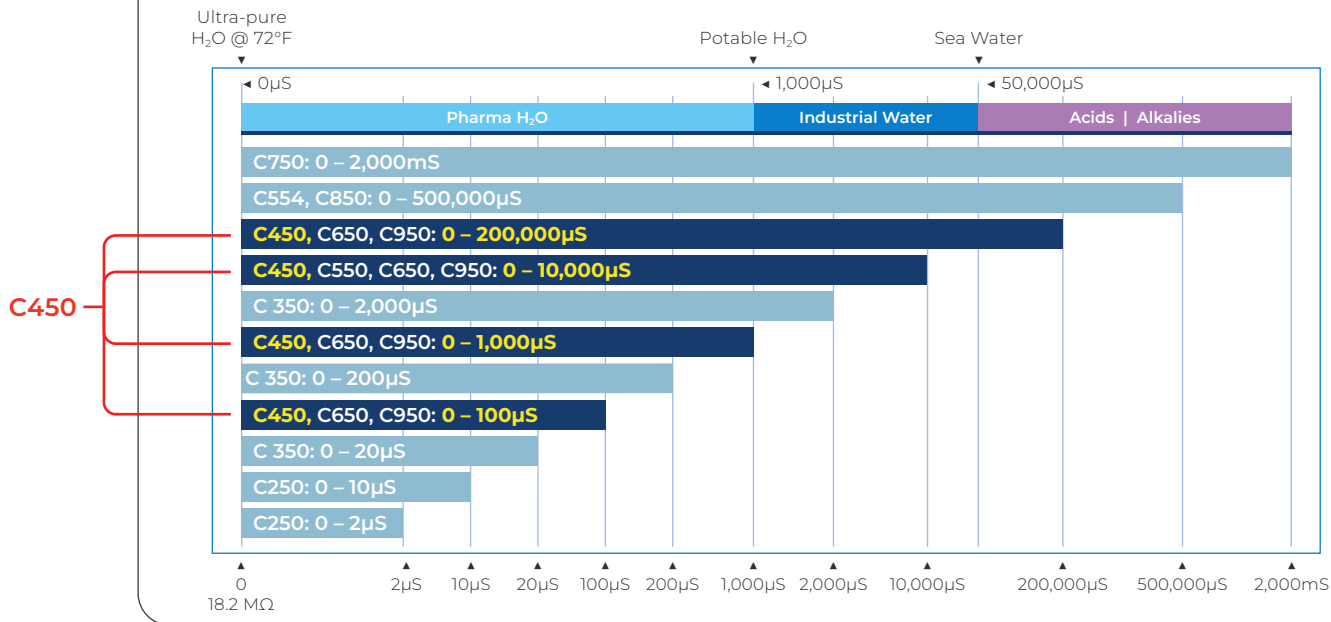


## Temperature vs. Pressure



## Factory Calibrated

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



## Sensor Type

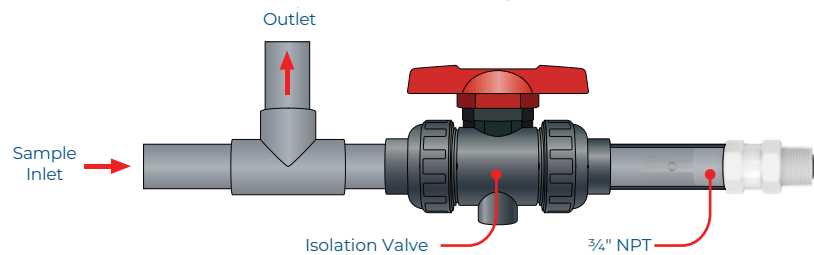
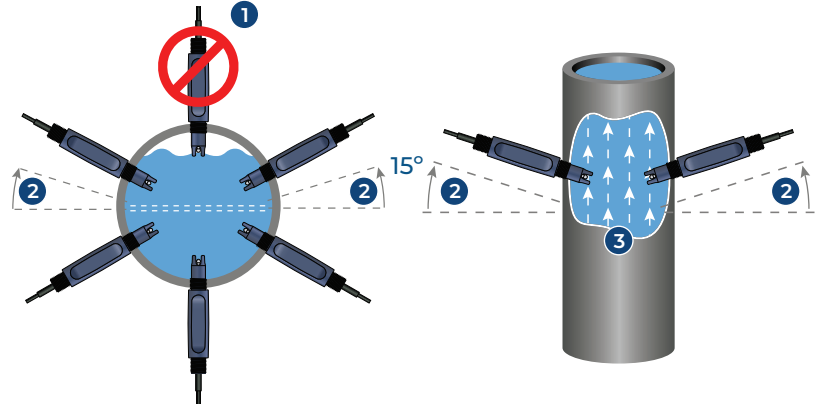
Cell	Models	Range
Cell 0.01	C250	0 – 2µS
Cell 0.01	C250	0 – 10µS
Cell 0.1	C350	0 – 20µS
<b>Cell 0.01</b>	<b>C450, C650, C950</b>	<b>0 – 100µS</b>
Cell 0.1	C350	0 – 200µS
<b>Cell 0.1</b>	<b>C450, C650, C950</b>	<b>0 – 1,000µS</b>
Cell 0.1	C350	0 – 2,000µS
<b>Cell 1.0</b>	<b>C450, C550, C650, C950</b>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

## Typical Applications

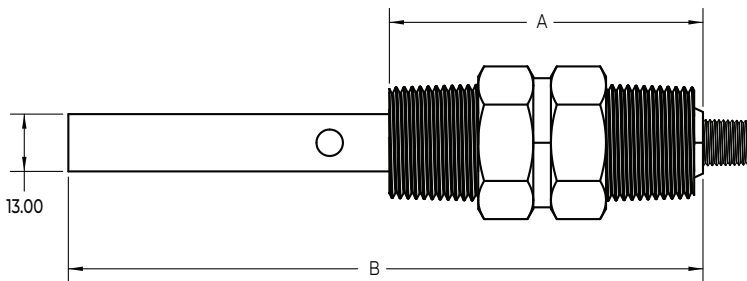
- ✓ High Purity Water
- ✓ Water Treatment
- ✓ Pharmaceutical
- ✓ Food and Beverage
- ✓ Interface Detection
- ✓ Desalination
- ✓ Chemical Plants
- ✓ Aquariums
- ✓ Agricultural Industries

## 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)



## Dimensions



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 — Complex Conductivity Sensor

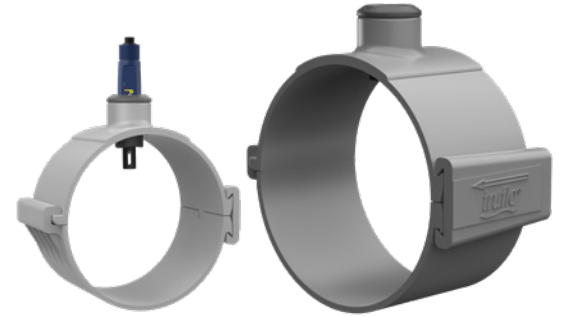
Part Number	Material	Output	Cell Constant	Range	Connection
C450-G-D-1-M	Titanium Alloy	4-wire (for ProCon® Display)	0.01	0-100µS	M12
C450-J-D-1-M	Titanium Alloy	4-wire (for ProCon® Display)	0.1	0-1,000µS	M12
C450-M-D-1-M	Titanium Alloy	4-wire (for ProCon® Display)	1	0-10,000µS	M12
C450-P-D-1-M	Titanium Alloy	4-wire (for ProCon® Display)	10	0-200,000µS	M12
C450-G-M-1-M	Titanium Alloy	4-20mA (2-wire, std)	0.01	0-100µS	M12
C450-J-M-1-M	Titanium Alloy	4-20mA (2-wire, std)	0.1	0-1,000µS	M12
C450-M-M-1-M	Titanium Alloy	4-20mA (2-wire, std)	1	0-10,000µS	M12
C450-P-M-1-M	Titanium Alloy	4-20mA (2-wire, std)	10	0-200,000µS	M12
C450-G-S-1-M	Titanium Alloy	RS485 + 4-20mA	0.01	0-100µS	M12
C450-J-S-1-M	Titanium Alloy	RS485 + 4-20mA	0.1	0-1,000µS	M12
C450-M-S-1-M	Titanium Alloy	RS485 + 4-20mA	1	0-10,000µS	M12
C450-P-S-1-M	Titanium Alloy	RS485 + 4-20mA	10	0-200,000µS	M12

Last digit: "M" for M12 Connection (std), "F" Flying Lead - consult factory  
Consult factory for custom ranges

## 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

