

ProCon® — C650 Series Conductivity Sensor Transmitter



ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment



- ✓ Eliminate Costly Conductivity Module
- ✓ Direct 4-20mA & RS485 Outputs
- ✓ Temperature Compensated
- ✓ High Accuracy
- ✓ 3/4" NPT Connection
- ✓ Factory Calibrated
- ✓ 2-Electrodes
- ✓ Conductivity | TDS | Salinity | Resistivity
- ✓ Optional Local Display c/w High/Low Alarm Set-points

Tough but sensitive — High performance with industrial strength titanium alloy electrode

The ProCon® C650 series double electrode conductivity sensor has been proven to operate seamlessly in industrial applications up to 200,000µS/cm.

Industrial environments can be harsh, featuring corrosive substances and fluctuating temperatures. The ProCon® C650 series conductivity sensor transmitter is built with durability in mind. Constructed from rugged materials such as titanium, corrosion-resistant plastics and double shielded cable, this robust build ensures longevity and reliability. Pair it with a ProCon® conductivity controller (featuring SimplCal®) for a truly seamless experience.

The sensor transmitters come pre-calibrated and can be configured with or without a junction box. The C650 also features the convenience and safety of the M12 quick connection with no additional conductivity module required.

The ProCon® C650 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.

Specifications

| | |
|---------------------------|--|
| Power Supply | 9 – 36VDC |
| Sensor Electrode Material | Titanium |
| Housing Material | PP |
| IP Rating | IP68 |
| Measurement Range | 0 – 100µS 0 – 1,000µS 0 – 10,000µS 0 – 200,000µS |
| Accuracy | ±1% of Reading |
| Pressure Resistance | 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" |



ProCon® — C650 Series Conductivity Sensor Transmitter



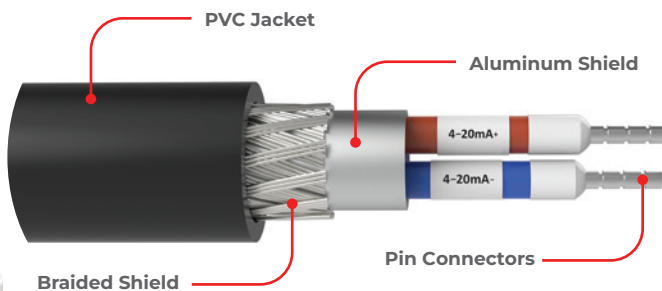
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PROCESS CONTROLS Instrumentation Equipment

Wiring

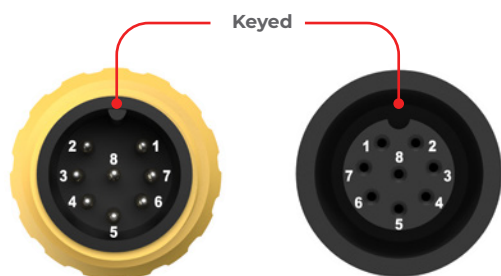


4-20mA+RS485
Direct Sensor Output

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



Double Shielded Cable



M12 Connection
(No Internal Wiring Required)



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.

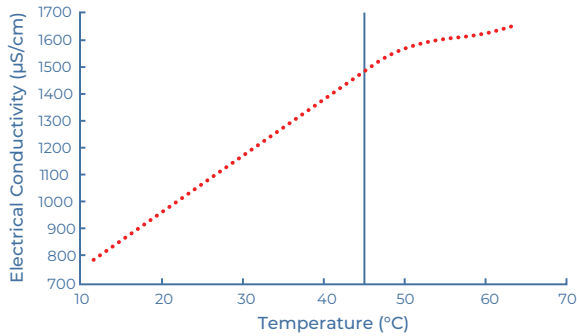
Junction Box

No tools
required

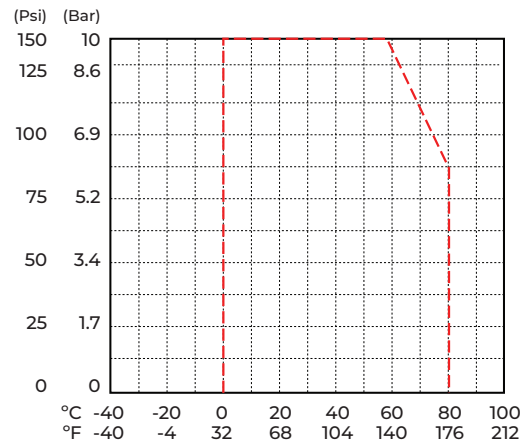


M12 Quick Connection

Temperature Effects

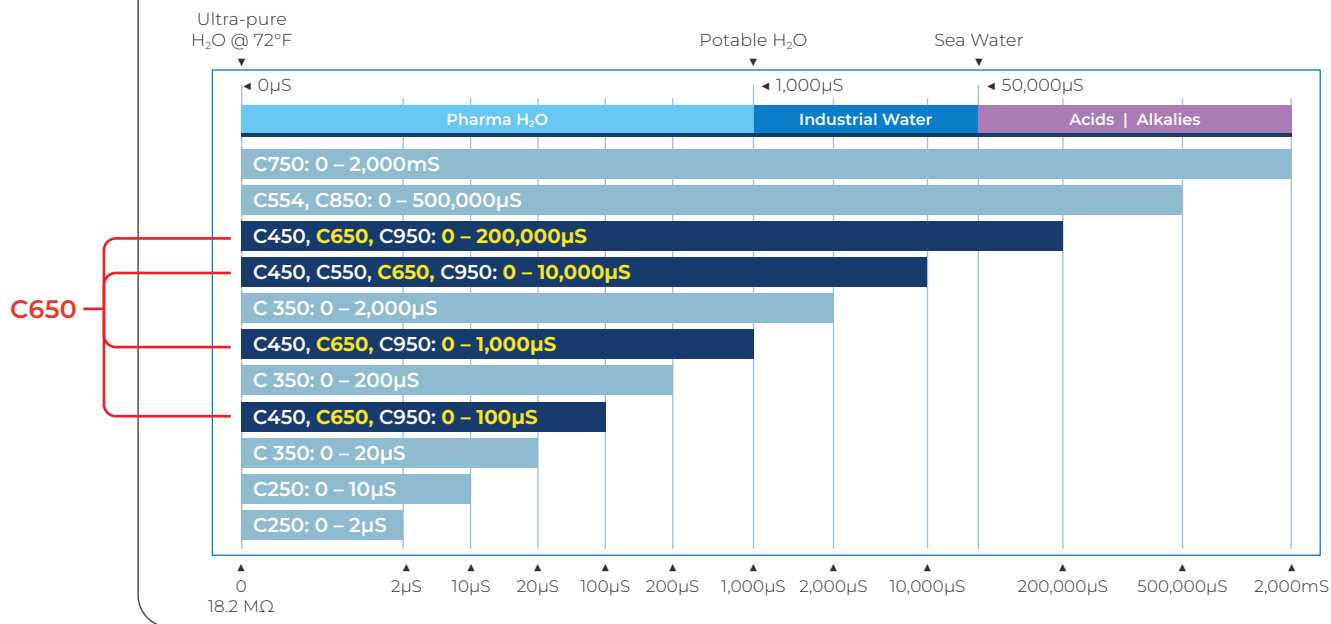


Temperature vs. Pressure



Factory Calibrated

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



Industrial GP Purpose

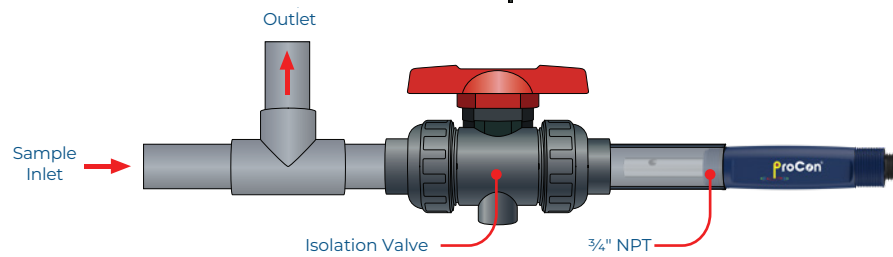
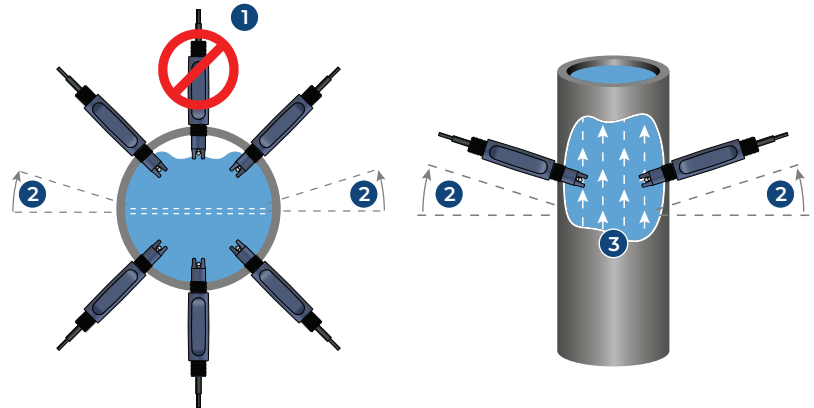
| Cell | Models | Range |
|------------------|--------------------------------|----------------------|
| Cell 0.1 | C250 | 0 – 2µS |
| Cell 0.1 | C250 | 0 – 10µS |
| Cell 0.1 | C350 | 0 – 20µS |
| Cell 0.01 | C450, C650 , C950 | 0 – 100µS |
| Cell 0.1 | C350 | 0 – 200µS |
| Cell 0.1 | C450, C650 , C950 | 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

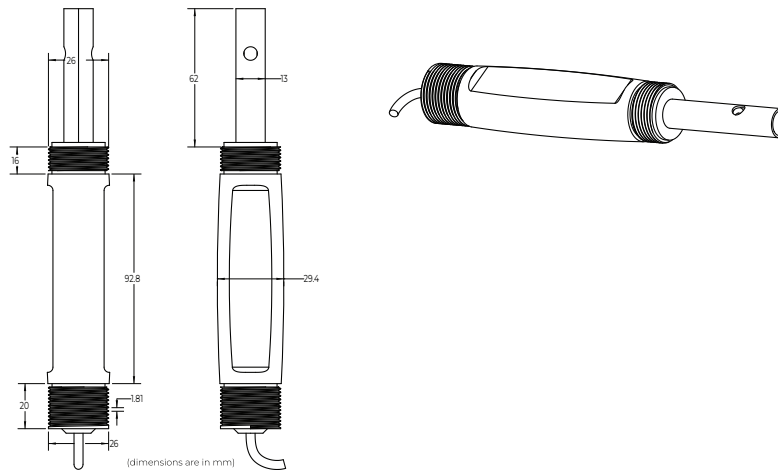
- ✓ High Purity Water
- ✓ Water Treatment
- ✓ Pharmaceutical
- ✓ Food and Beverage
- ✓ Interface Detection
- ✓ Desalination
- ✓ Chemical Plants
- ✓ Aquariums
- ✓ Agricultural Industries

In-line Mounting

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



Dimension



Model Selection

C650 — Titanium Conductivity Sensor

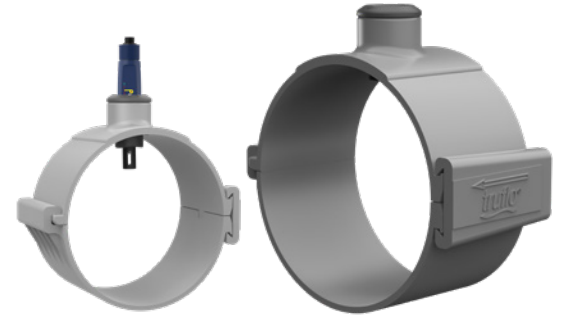
| Part Number | Material | Output | Cell Constant | Range | Connection |
|--------------|--------------|------------------------------|---------------|-------------|------------|
| C650-G-D-1-M | PP, Titanium | 4-wire (for ProCon® Display) | 0.01 | 0-100µS | M12 |
| C650-J-D-1-M | PP, Titanium | 4-wire (for ProCon® Display) | 0.1 | 0-1,000µS | M12 |
| C650-M-D-1-M | PP, Titanium | 4-wire (for ProCon® Display) | 1 | 0-10,000µS | M12 |
| C650-P-D-1-M | PP, Titanium | 4-wire (for ProCon® Display) | 10 | 0-200,000µS | M12 |
| C650-G-M-1-M | PP, Titanium | 4-20mA (2-wire, std) | 0.01 | 0-100µS | M12 |
| C650-J-M-1-M | PP, Titanium | 4-20mA (2-wire, std) | 0.1 | 0-1,000µS | M12 |
| C650-M-M-1-M | PP, Titanium | 4-20mA (2-wire, std) | 1 | 0-10,000µS | M12 |
| C650-P-M-1-M | PP, Titanium | 4-20mA (2-wire, std) | 10 | 0-200,000µS | M12 |
| C650-G-S-1-M | PP, Titanium | RS485 + 4-20mA | 0.01 | 0-100µS | M12 |
| C650-J-S-1-M | PP, Titanium | RS485 + 4-20mA | 0.1 | 0-1,000µS | M12 |
| C650-M-S-1-M | PP, Titanium | RS485 + 4-20mA | 1 | 0-10,000µS | M12 |
| C650-P-S-1-M | PP, Titanium | RS485 + 4-20mA | 10 | 0-200,000µS | M12 |

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

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 |

