ProCon® — C650 Series
Conductivity Sensor Transmitter

Industrial Analytical Equipment

ICON PROCESS CONTROLS™ Corrosion-Free Instrumentation Equipment

- Eliminate Costly Conductivity Module
- Direct 4-20mA & RS485 Outputs
- Temperature Compensated
- High Accuracy
- ¾" 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

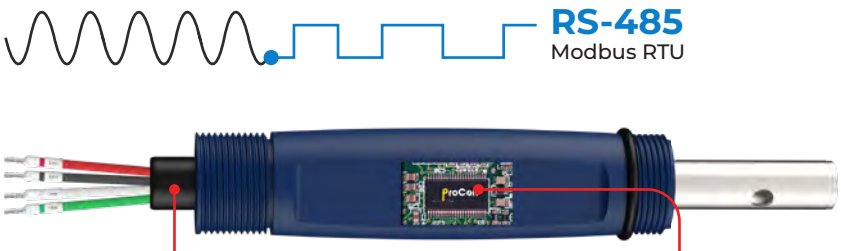
Power Supply	9 – 36VDC
Sensor Electrode Material	Titanium
Housing Material	PP
IP Rating	IP68
Measurement Range	0 – 100µS | 0 – 1,000µS 0 – 10,000µS | 0 – 200,000µS
Accuracy	±1% of Reading
Pressure Resistance	150 Psi
Temperature Compensation	PT1000 (Std)
Temperature Range	14 – 176°F | -10 – 80°C
Calibration	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 ¾"

ProCon® — C650 Series
Conductivity Sensor Transmitter

Industrial Analytical Equipment

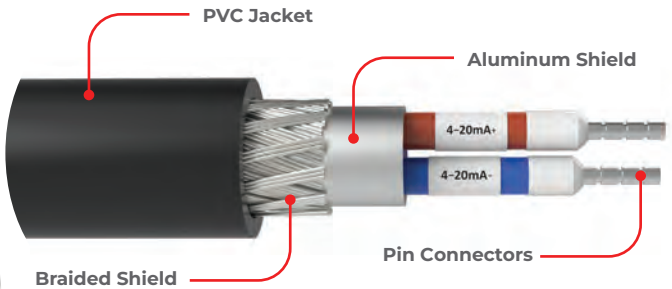
ICON PROCESS CONTROLS™ Corrosion-Free Instrumentation Equipment

Wiring

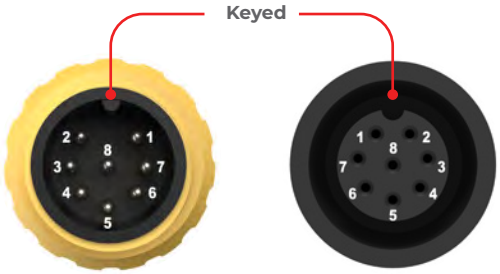


4-20mA+RS485
Direct Sensor Output

Advanced electronic circuity 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.

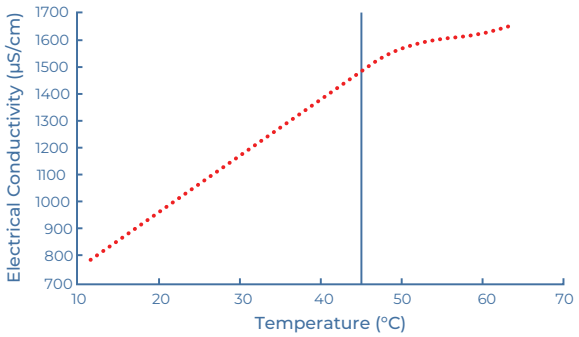
Junction Box

ProCon® — C650 Series
Conductivity Sensor Transmitter

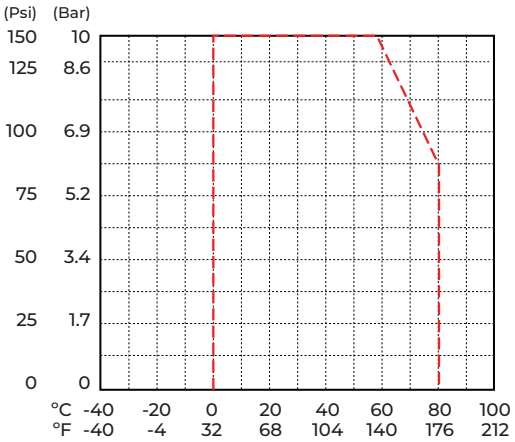
Industrial Analytical Equipment

ICON PROCESS CONTROLS™ Corrosion-Free Instrumentation Equipment

Temperature Effects

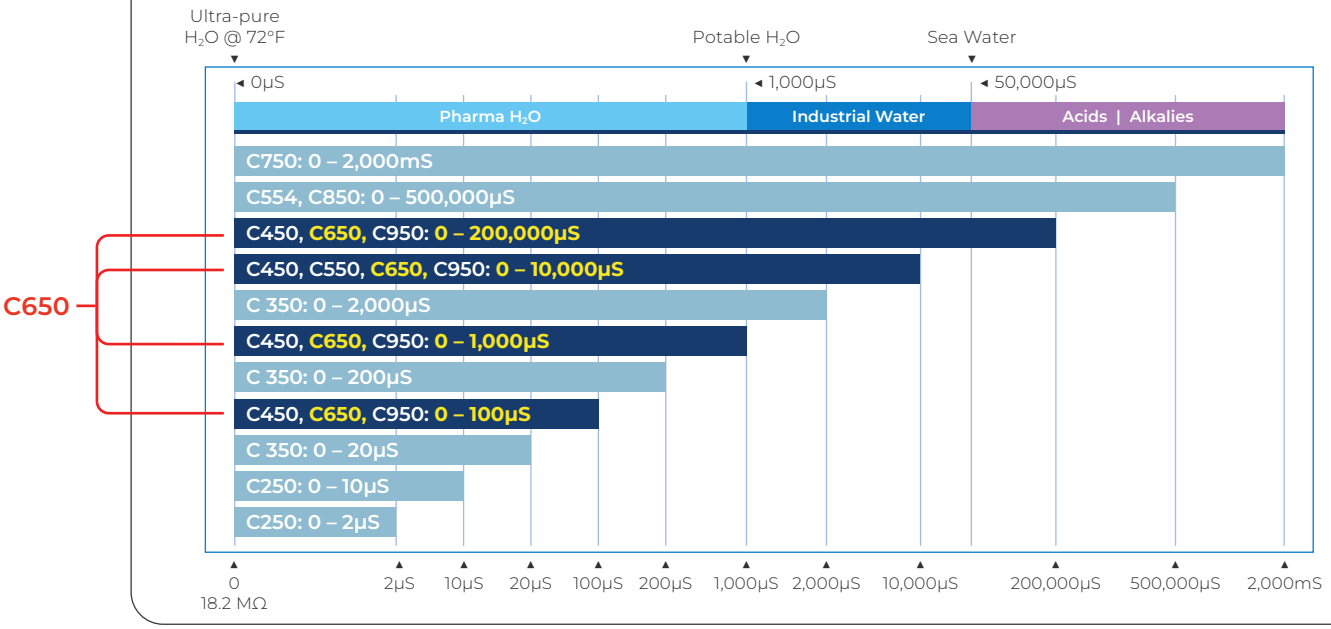


Temperature vs. Pressure



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

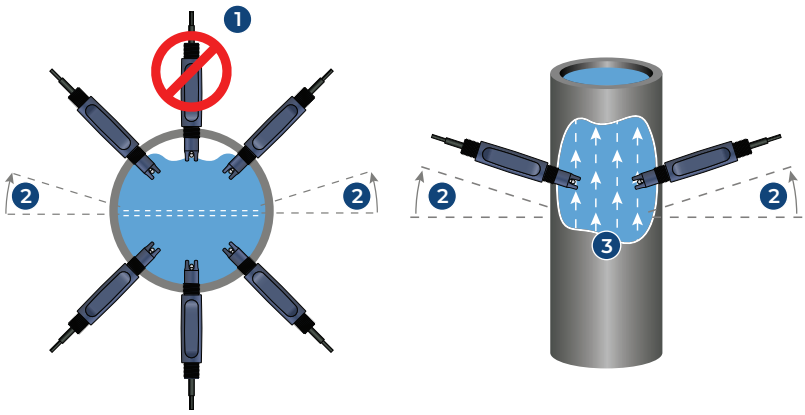
ProCon® — C650 Series
Conductivity Sensor Transmitter

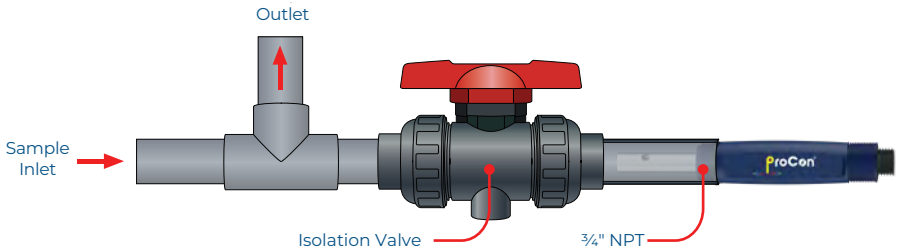
Industrial Analytical Equipment

ICON PROCESS CONTROLS™ Corrosion-Free Instrumentation Equipment

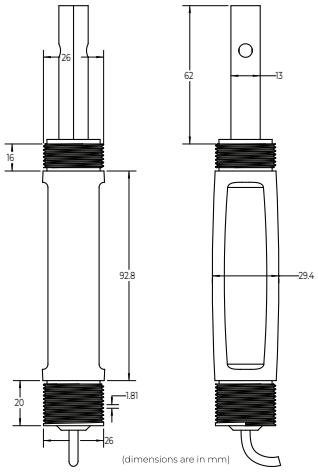
In-line Mounting

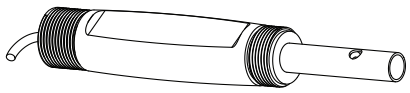
1. If air is present, avoid vertical installation (okay if pipe is full).
2. Optimum installation 15° above horizontal.
3. Process liquid should flow upward. (for downward flow ensure backpressure is present in order to avoid air within pipe)





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