

ProCon® — R7C with NEXUS®
ORP Sensor Transmitter

ICON™ Corrosion-Free
PROCESS CONTROLS Instrumentation Equipment™



IO-Link


RoHS
Compliant

CE

ProCon® — R7C with NEXUS®

ORP Sensor Transmitter



- ✓ 4-20mA Output
- ✓ Temperature Compensated
- ✓ No Preamp Required
- ✓ Platinum Electrode
- ✓ RS485 Modbus Communication
- ✓ IO-Link Compatible



Industrial-Grade ORP Performance With Platinum Stability

The ProCon® R7 Series with Nexus® is engineered for ruggedness, longevity, and high-accuracy ORP measurement, utilizing a precision platinum electrode for stable and consistent sensor performance.

The double-junction design combined with the solid Nexus® KCl-infused reference provides exceptional resistance to reference contamination and ensures reliable operation across a wide range of process media.

All measurement functions, including the platinum sensing element, temperature sensor, and inner reference chamber are integrated into a compact, durable body. Multiple output options (2-wire 4–20mA, 4-wire for display, 4–20mA + RS485), along with optional IO-Link connectivity via the LinkPro® adapter, enable simplified calibration and seamless integration with modern automation and control systems.

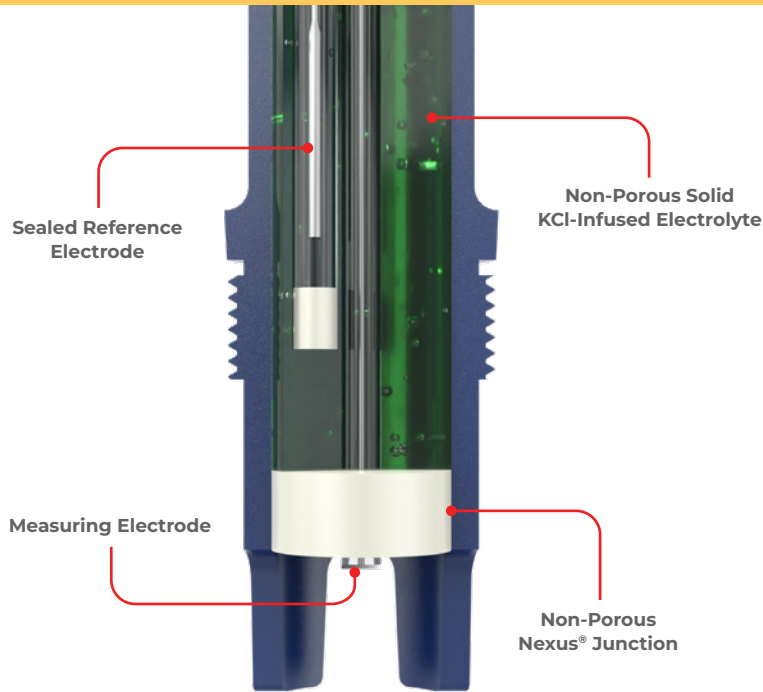
Specifications

Measuring Range	-2000mV ~ +2000mV
Power Supply	9 ~ 36VDC
Outputs	4-20mA (2-wire loop) ProCon® Display (4-Wire) 4-20mA + RS485 (6-wire) IO-Link*
Accuracy	Measurement Value: ±20mV Temperature: ± 0.5°C
Operating Temperature	32 to 140°F 0 to 60°C
Maximum Pressure	≤ 87 psi
Sensor Body	PP Polypropylene
Reference System	Ag / AgCl / 3.3 Mol KCl Double Junction
Measuring Electrode	Platinum
Reference Junction	Non-Porous KCl Nexus® Junction
Process Connection	3/4" NPT
Measuring Electrode Resistance	< 500 MΩ
Temperature Compensation	PT1000

* Requires LinkPro IO-Link Adapter

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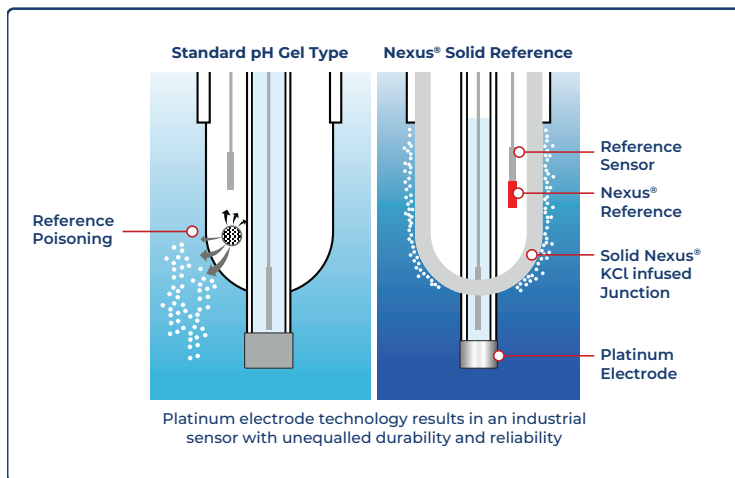
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NEXUS®

The NEXUS Generation of Sensor Technology

Both the measuring and reference electrodes are encapsulated within a non-porous, advanced KCl infused polymer known as **Nexus®**.



- ✓ Double-junction reference increases service life and blocks poisoning ions
- ✓ Crack-resistant low-ionic glass improves durability and reliability
- ✓ Operates in sub-zero temperatures down to 14°F (-10°C)
- ✓ Advanced diagnostics ensure repeatability and stable long-term accuracy

Smart Sensor Technology

Advanced electronic circuitry stores calibration data for automatic sensor recognition and trouble-free calibration when connected to the ProCon® Controller.

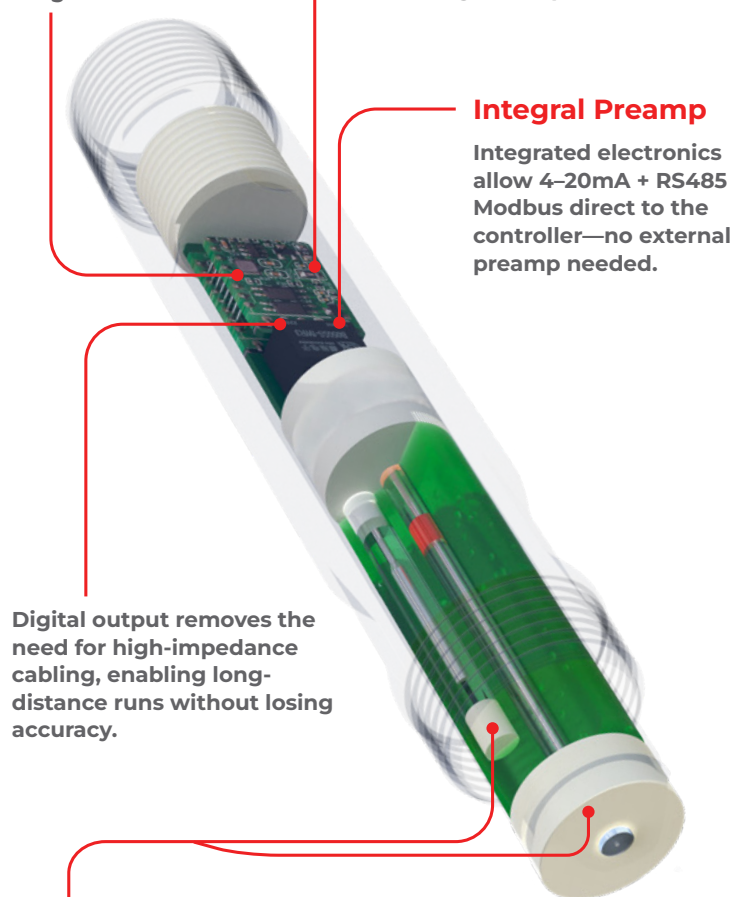
Less Calibration and Maintenance

Most ORP sensors require frequent recalibration due to junction fouling, reference poisoning, and electrolyte loss.

The Nexus® solid-reference design minimizes these failure modes by eliminating electrolyte leaching and shielding the reference from contaminating ions. This delivers longer service life, greater measurement stability, and significantly fewer calibration cycles.

Advanced chip design enables remote calibration and provides full diagnostic information.

Built-in processing delivers direct 4–20mA or RS485 digital outputs.

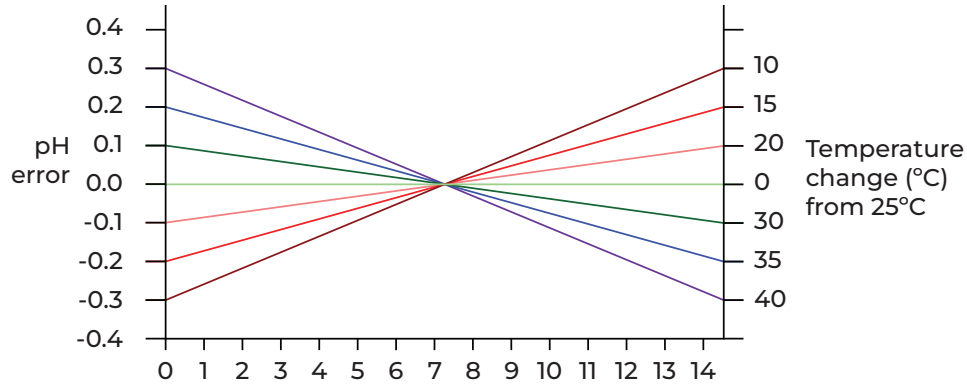


Nexus® Technology

- Solid KCl-infused reference junction
- Eliminates reference poisoning and electrolyte leaching
- Greatly extends sensor life

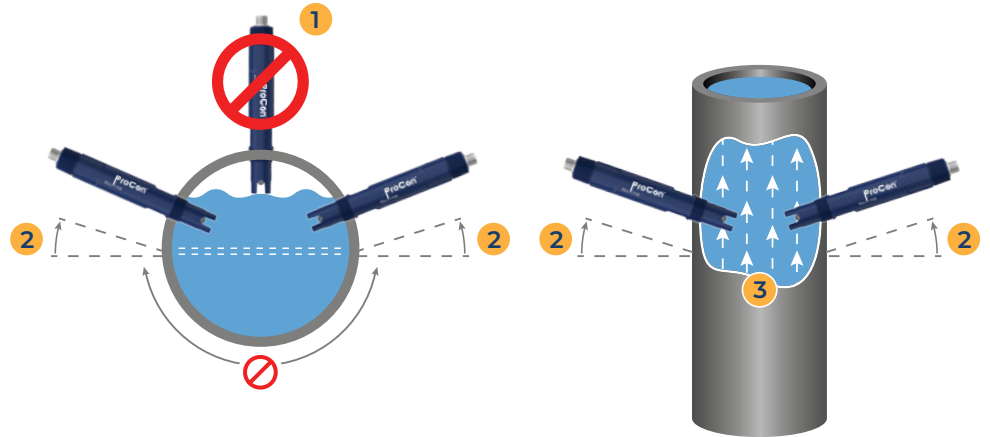
Temperature Control

pH measurement deviation relative to temperature variation from 25°C

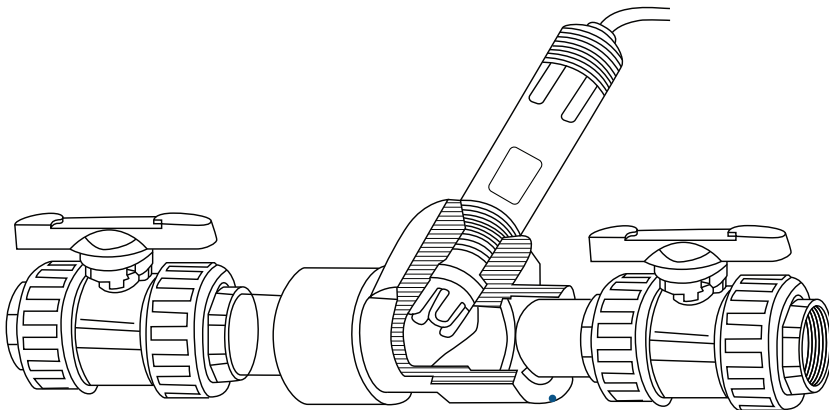


In-line Mounting

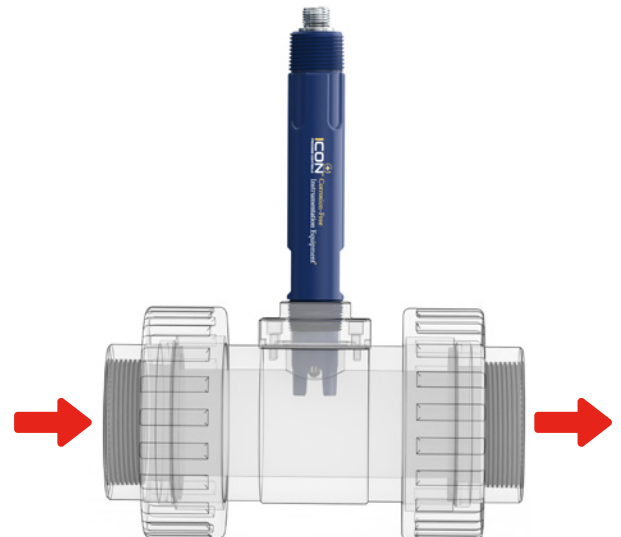
- 1 Avoid vertical installation.
(Air may be present when pipe is not full)
- 2 Optimum installation 15° above horizontal.
- 3 Process liquid should flow upward.
(For downward flow ensure backpressure is present to avoid air within pipe)



Typical Installation



Mount the ORP sensor in a Tee fitting, angled downward to avoid air bubbles. Align with flow direction and fully insert the probe into the stream.

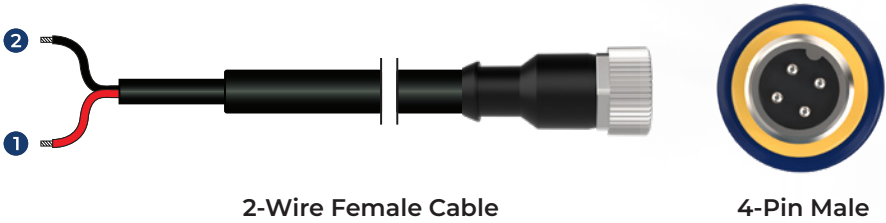


True Union Fitting

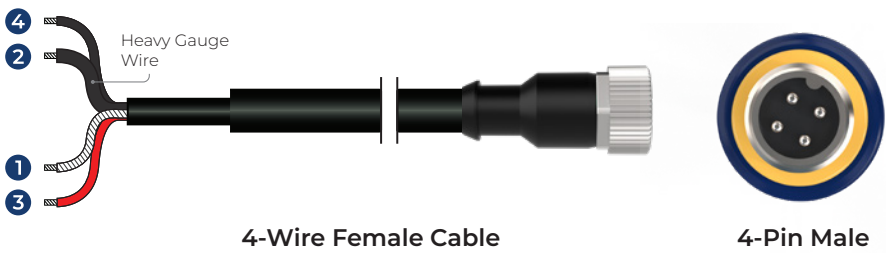
Wiring Schematic



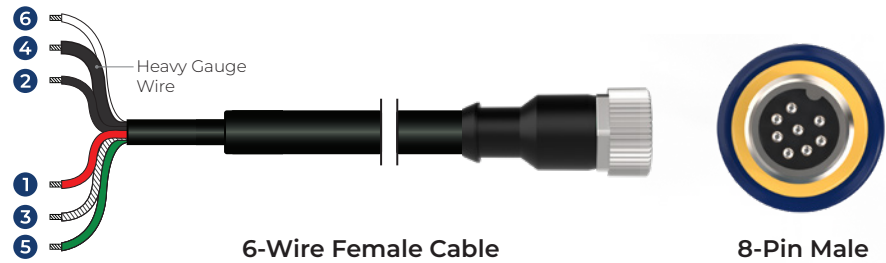
4-20mA (4-Pin 2-Wire)		
Pin	Wire Color	Description
1	Red	mA+
2	Black	mA-



For ProCon® Display (4-Pin 4-Wire)		
Pin	Wire Color	Description
1	Transparent	Input
2	Black (Heavy Gauge)	Reference
3	Red	Temperature
4	Black	Temperature

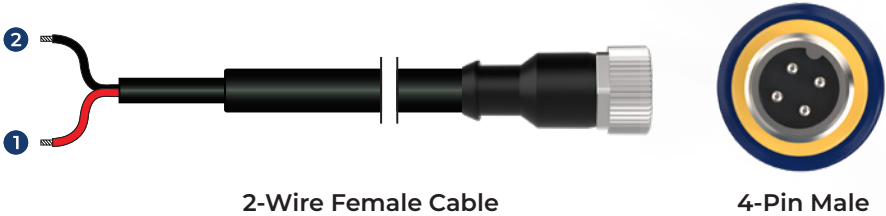


4-20mA + RS485 (8-Pin 6-Wire)		
Pin	Wire Color	Description
1	Red	+VDC
2	Black	-VDC
3	Transparent	mA+
4	Black (Heavy Gauge)	mA-
5	Green	RS485A
6	White	RS485B

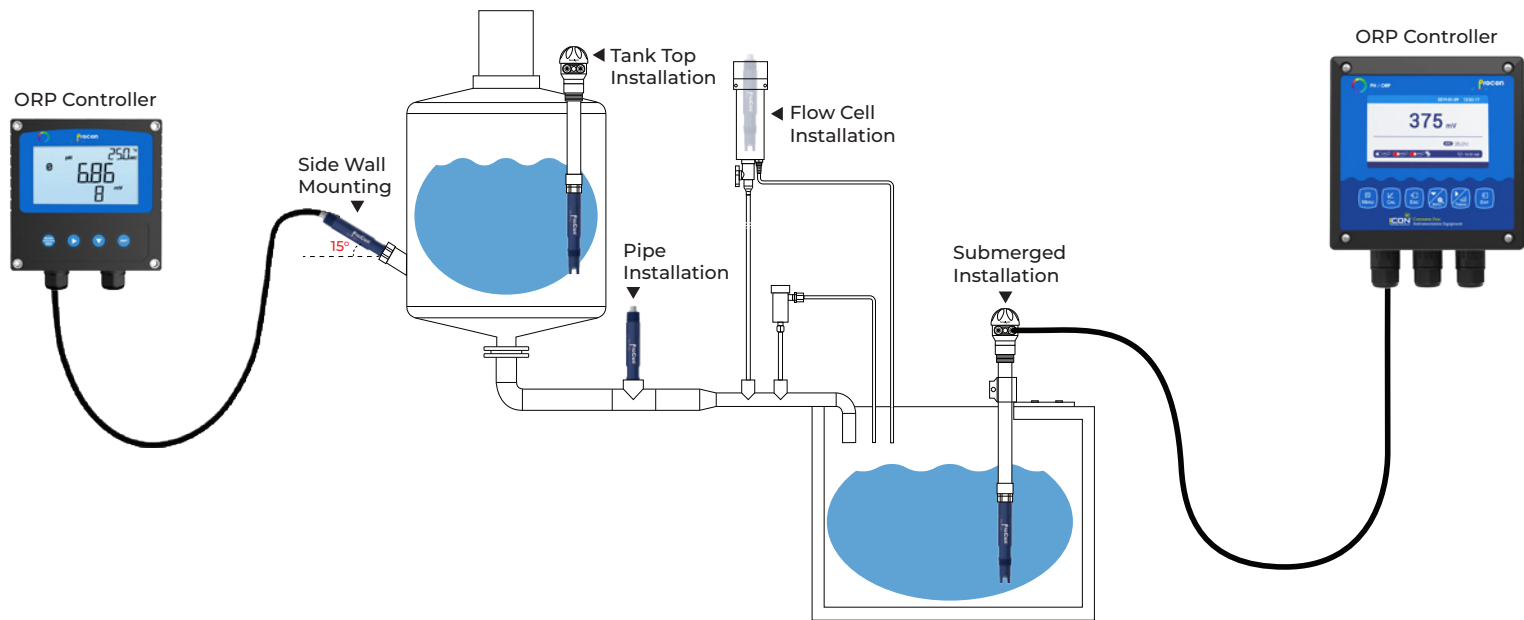


For IO-Link Adapter (4-Pin 2-Wire)		
Pin	Wire Color	Description
1	Red	mA+
2	Black	mA-

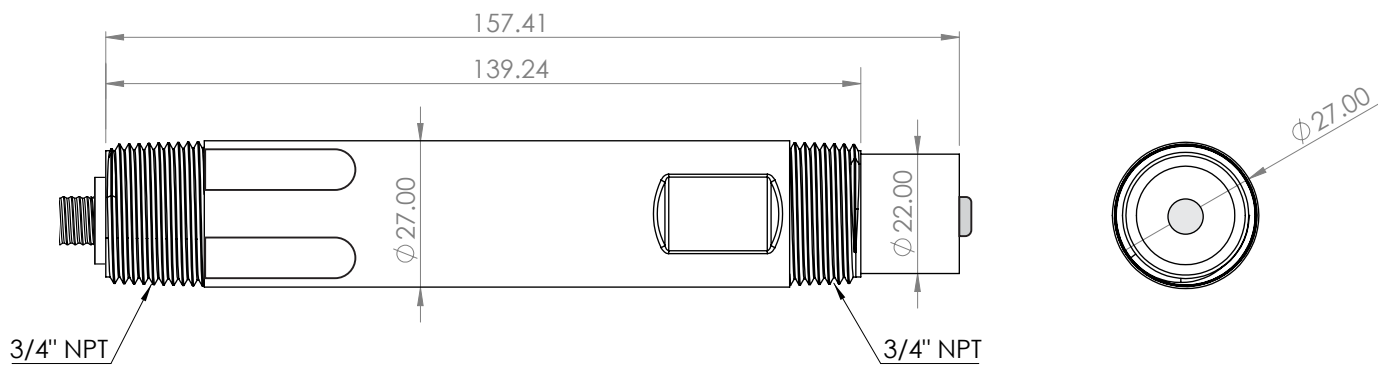
Note: IO-Link adapter can be connected directly to the sensor



Typical Application



Dimensions (mm)



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Model Selection

R7C — ORP Sensor				
Part Number	Material	Output	Electrode	Connection
R7C-P-D-1-F-M	PP	4-wire (for ProCon® display)	Platinum	M12
R7C-P-M-1-F-M	PP	4-20mA (2-wire loop powered)	Platinum	M12
R7C-P-S-1-F-M	PP	RS485 + 4-20mA (6-wire)	Platinum	M12
R7C-P-1-1-F-M-Y	PP	4-20mA (2-wire), IO-Link Adapter Incl.	Platinum	M12

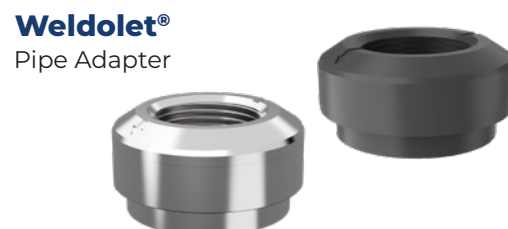
Last digit: "M" for M12 Connection (std), "F" Flying Lead

LinkPro® — IO-Link Adapter	
Part Number	Description
IOA-5-4	5to4 Pin IO-Link Adapter + LED Display
M12-4P-F	Flying Lead to Female M12 Adapter
M12-4P-M	Flying Lead to Male M12 Adapter

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

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-10	PVC	1"	FPM (std) EPDM	¾" NPT	Socket NPT
TUPA-PP-10	PP	1"	FPM (std) EPDM	¾" NPT	Butt NPT
TUPA-PF-10	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-20	PVC	2"	FPM (std) EPDM	¾" NPT	Socket NPT
TUPA-PP-20	PP	2"	FPM (std) EPDM	¾" NPT	Butt NPT
TUPA-PF-20	PVDF	2"	FPM (std) EPDM	¾" NPT	Butt NPT

Weldolet® Pipe Adapter			
Part Number	Material	Size	Connection
WAS-2	PVC	2"-4"	¾" NPT
WAS-6	PVC	6"-24"	¾" NPT
WPF-SS-2	SS	2"-4"	¾" NPT
WPF-SS-6	SS	6"-24"	¾" NPT



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CablePro® — M12 Shielded Instrumentation Cable					
Part Number	Size	Pins	LED	Connector	Tinned Length
M12-4-2M-LED	2m	4	YES	Female	10mm
M12-4-M-LED	5m	4	YES	Female	10mm
M12-4-10M-LED	10m	4	YES	Female	10mm
M12-4-15M-LED	15m	4	YES	Female	10mm
M12-4-2M	2m	4	NO	Female	10mm
M12-4-5M	5m	4	NO	Female	10mm
M12-4-10M	10m	4	NO	Female	10mm
M12-4-15M	15m	4	NO	Female	10mm
M12-4-25M	25m	4	NO	Female	10mm
M12-8-2M	2m	8	NO	Female	10mm
M12-8-5M	5m	8	NO	Female	10mm
M12-8-10M	10m	8	NO	Female	10mm
M12-8-15M	15m	8	NO	Female	10mm
M12-8-25M	25m	8	NO	Female	10mm

Contact factory for alternate lengths

CablePro®

M12 Shielded Instrumentation Cable

