prosense®

XTP Series Temperature Transmitter Probes


XTP Series Units

The ProSense XTP series conveniently combines a precision RTD sensing element and transmitter electronics in a single stainless steel temperature transmitter probe. Offered in three preconfigured temperature measuring ranges, XTP series transmitter probes are ready to use right out of the box. Or, use our free ProSense XT-SOFT software to program the XTP transmitter probe with a custom measuring range and change other configuration parameters. Choose from several probe insertion lengths and process connections including male NPT threads, 3-A approved sanitary clean in place tri-clamp, or compression fitting allowing for adjustable insertion depth. An M12 quick-disconnect provides connection to the loop powered 4-20 mA output signal that provides a linear representation of measured temperature and is compatible with PLCs, SCADA systems, and digital panel meters.

Features

- RTD and transmitter electronics combined in a single stainless steel probe
- Ready to use with preconfigured temperature measuring ranges
- Free ProSense XT-SOFT software can be used to program custom measuring ranges and change other configuration parameters
- 30, 50, 100, 150, 160, 260, or 360mm probe insertion lengths
- Process connections include 1/4" or 1/2" male NPT threads, 3-A approved sanitary CIP tri-clamp, or compression fitting for adjustable insertion depth.
- 4-20 mA output
- M12 quick-disconnect electrical connection
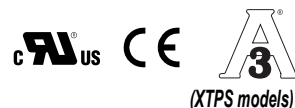
(XTPS models)

ProSense XTP Series Temperature Transmitter Probes							
Part Number	**Preconfigured Measuring Range***	**Process Connection**	**Length**	**Thermowell (purchased separately)**	**Wt(lb)**	**Price**	**Drawing Link**
XTP-160-N40140F	-40 to 140°F (-40 to 60°C)	None, use compression fitting (CF06-25N purchased separately)	160mm (6.3")	RTDTW-06-010-50N CF06-25N	0.24	$132.00	PDF
XTP-260-N40140F			260mm (10.24")	RTDTW-06-020-50N CF06-25N	0.34	$134.00	PDF
XTP-360-N40140F			360mm (14.17")	RTDTW-06-030-50N CF06-25N	0.37	$136.00	PDF
XTP25N-030-N40140F		1/4" Male NPT	30mm (1.18")	None	0.2	$168.00	PDF
XTP25N-050-N40140F			50mm (1.97")		0.2	$169.00	PDF
XTP25N-100-N40140F			100mm (3.94")		0.3	$172.00	PDF
XTP25N-150-N40140F			150mm (5.91")		0.3	$175.00	PDF
XTP50N-030-N40140F		1/2" Male NPT	30mm (1.18")		0.3	$168.00	PDF
XTP50N-050-N40140F			50mm (1.97")		0.3	$169.00	PDF
XTP50N-100-N40140F			100mm (3.94")	TW04-0x	0.4	$172.00	PDF
XTP50N-150-N40140F			150mm (5.91")	TW06-0x	0.4	$175.00	PDF
XTP-160-0300F	0 to 300°F (-17.8 to 148.9°C)	None, use compression fitting (CF06-25N purchased separately)	160mm (6.3")	RTDTW-06-010-50N CF06-25N	0.24	$132.00	PDF
XTP-260-0300F			260mm (10.24")	RTDTW-06-020-50N CF06-25N	0.27	$134.00	PDF
XTP-360-0300F			360mm (14.17")	RTDTW-06-030-50N CF06-25N	0.37	$136.00	PDF
XTP25N-030-0300F		1/4" Male NPT	30mm (1.18")	None	0.2	$168.00	PDF
XTP25N-050-0300F			50mm (1.97")		0.2	$169.00	PDF
XTP25N-100-0300F			100mm (3.94")		0.3	$172.00	PDF
XTP25N-150-0300F			150mm (5.91")		0.3	$175.00	PDF
XTP50N-030-0300F		1/2" Male NPT	30mm (1.18")		0.3	$168.00	PDF
XTP50N-050-0300F			50mm (1.97")		0.3	$169.00	PDF
XTP50N-100-0300F			100mm (3.94")	TW04-0x	0.4	$172.00	PDF
XTP50N-150-0300F			150mm (5.91")	TW06-0x	0.4	$175.00	PDF

** Free ProSense XT-SOFT software can be used to program custom measuring ranges and change other configuration parameters. An XT-USB programming cable and XT-M12 adapter are also required and purchased separately.*

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Part Number	*Preconfigured Measuring Range**	*Process Connection*	*Length*	*Thermowell (purchased separately)*	*Wt(lb)*	*Price*	*Drawing Link*
XTP-160-0100C	0 to 100°C (32 to 212°F)	None, use compression fitting (CF06-25N purchased separately)	160mm (6.3")	RTDTW-06-010-50N CF06-25N	0.25	$132.00	PDF
XTP-260-0100C			260mm (10.24")	RTDTW-06-020-50N CF06-25N	0.34	$134.00	PDF
XTP-360-0100C			360mm (14.17")	RTDTW-06-030-50N CF06-25N	0.37	$136.00	PDF
XTP25N-030-0100C		1/4" Male NPT	30mm (1.18")	None	0.2	$168.00	PDF
XTP25N-050-0100C			50mm (1.97")		0.2	$169.00	PDF
XTP25N-100-0100C			100mm (3.94")		0.3	$172.00	PDF
XTP25N-150-0100C			150mm (5.91")		0.3	$175.00	PDF
XTP50N-030-0100C		1/2" Male NPT	30mm (1.18")		0.3	$168.00	PDF
XTP50N-050-0100C			50mm (1.97")		0.3	$169.00	PDF
XTP50N-100-0100C			100mm (3.94")	TW04-0x	0.4	$172.00	PDF
XTP50N-150-0100C			150mm (5.91")	TW06-0x	0.4	$175.00	PDF
XTPS15-030-0300F	0 to 300°F (−17.8 to 148.9°C)	1-1/2" Sanitary CIP Tri-Clamp (3-A)	30mm (1.18")	None	0.45	$220.00	PDF
XTPS15-050-0300F			50mm (1.97")		0.45	$221.00	PDF
XTPS15-100-0300F			100mm (3.94")		0.47	$222.00	PDF
XTPS15-150-0300F			150mm (5.91")		0.48	$224.00	PDF

* Free ProSense XT-SOFT software can be used to program custom measuring ranges and change other configuration parameters. An XT-USB programming cable and XT-M12 adapter are also required and purchased separately.
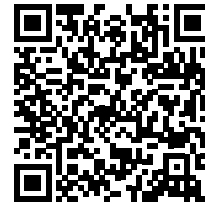
Scan the QR Code above or click to view the XTP Series product insert.

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XTP Series Temperature Transmitter Probes

ProSense XTP Series Temperature Transmitter Probes Specifications	
Operating Voltage	10 to 35 VDC
Electrical Connection	4-pin M12 quick disconnect
Probe Diameter	6mm (0.2")
Short-Circuit Protection	Yes
Reverse Polarity Protection	Yes
Electrical Protection	Protection Class III, Overvoltage category II, Pollution degree 2
Analog Output	4 to 20 mA (software configurable for 20 to 4 mA)
Maximum Load	608Ω @ 24VDC ($U_{powersupply}$ - 10V) / 0.023 A
Signal on Alarm (per NAMUR NE43)	Underranging: Linear drop to 3.8 mA Overranging: Linear rise to 20.5 mA Sensor break; Sensor short-circuit: ≥ 21.0 mA (21.5 mA output is guaranteed) or software configurable for ≤ 3.6 mA
Minimum Current Consumption	≤ 3.5 mA
Current Limit	≤ 23mA
Switch-on Delay	2s
Transmitter Response Time	≤ 3s
Pressure Rating	With or without NPT process connection** • 1450 psig (100bar) maximum With Sanitary Tri-clamp process connection • 232 psig (16bar) maximum
Altitude	Up to 6600ft (2000m) above mean sea level
Accuracy	0.25K + 0.002 |T|, |T| = Numerical value of the temperature in°C without regard to the leading sign.
Long-term Stability of Electronics	≤ 0.1 K / year or 0.05 % / year, % relates to the set span. The larger value applies.
Measuring Element	Pt100 class A as per IEC 60751
Measuring Range Limits	-58 to 302°F (-50 to 150°C), software configurable
Minimum Span	10K (18°F), software configurable
Minimum Installation Depth	30mm
Housing Material	Stainless steel (304)
Materials (wetted parts)	Stainless steel (316L) ; XTPS15 sanitary surface finish Ra ≤ 0.76 μm (30 μin)
Ambient Temperature	–40 to 185°F (–40 to 85°C)
Process Temperature	–58 to 302°F (–50 to 150°C)
Storage Temperature	–40 to 185°F (–40 to 85°C)
Shock Resistance and Vibration Resistance	4g / 2 to 150Hz as per IEC 60068-2-6
Climate Class	Per IEC 60654-1, Class C
*EMC (Electromagnetic Compatibility)**	
IEC/EN 61000-4-2	ESD (electrostatic discharge) 6kV cont., 8kV air
IEC/EN 61000-4-3	Electromagnetic fields 0.08 to 2GHz, 10 V/m
IEC/EN 61000-4-4	Burst (fast transient) 2kV
IEC/EN 61000-4-5	Surge 0.5 kV sym.
IEC/EN 61000-4-6	Conducted RF 0.01 to 80MHz, 10V
Protection	IP66/67 or IP69K with appropriately rated cable
Certifications	cURus # E311366, CE, 3-A (XTPS15 models only)

* All EMC measurements were performed with a turn down (TD) = 2:1. Maximum fluctuations during EMC - tests: < 1% of measuring span.
  Interference immunity to IEC/EN 61326 - series, requirements for industrial areas
  Interference emission to IEC/EN 61326 - series, electrical equipment Class B.
** Working pressure when using compression fitting should not exceed the fittings rated pressure.

Note: Response time will be slower when installed in a thermowell. Be sure to install the probe so that it contacts the end of the thermowell for faster response. Thermal compound may be used depending on application.

Note: Check the chemical compatibility of the sensor's wetted parts with the medium to be measured.

XTP Series Temperature Transmitter Probes

Wiring

Cable Assembly Wiring Colors:
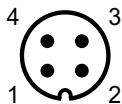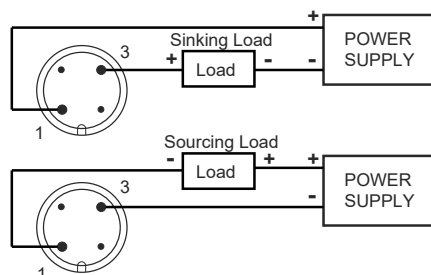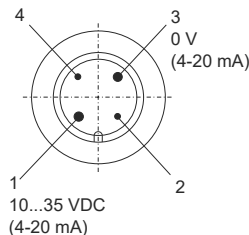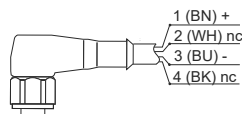**Pin 1 - Brown**
Pin 2 - White
Pin 3 - Blue
Pin 4 - Black

1 (BN) +
2 (WH) nc
3 (BU) -
4 (BK) nc

Note: wiring colors are based on Automation-Direct CD12L and CD12M 4-pole cable assemblies.

M12x1

4
3
0 V
(4-20 mA)

1
10...35 VDC
(4-20 mA)
2

NEED CABLES?
See Cables/Connectors in Wiring (WD) section

Sinking Load
Load
POWER SUPPLY

Sourcing Load
Load
POWER SUPPLY

Load Impedance

1086 Ω

Load (Ω)

Operating Region

10 V   35 V   U

Supply Voltage (VDC)
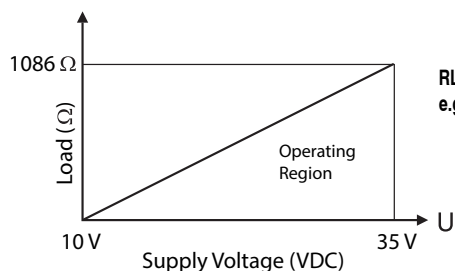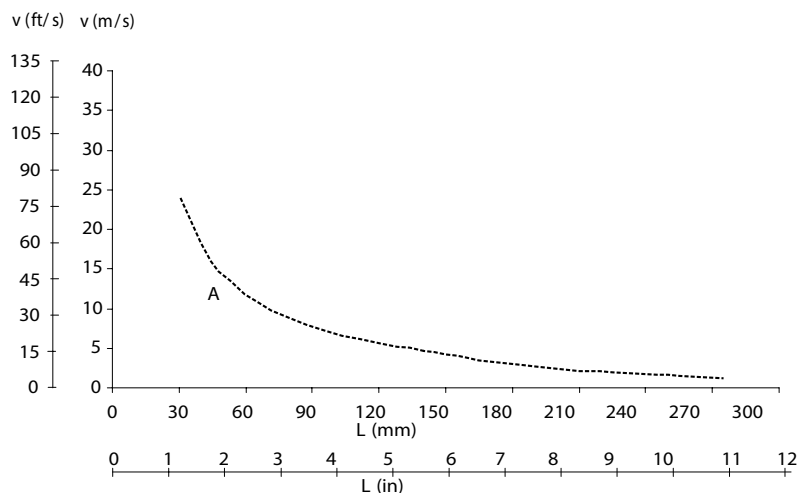
$RLmax = (V_{powersupply}-10V) / 0.023 A$ (current output)
e.g. $(24V - 10V) / 0.023A = 608\Omega$

Maximum Flow Velocity Per insertion Length

v (ft/s)   v (m/s)

135 40
120 35
105 30
90   25
75   20
60   15
45   10
30
15   5
0   0

A

0 30 60 90 120 150 180 210 240 270 300
L (mm)

0 1 2 3 4 5 6 7 8 9 10 11 12
L (in)

L   Insertion length, during flow
v   Flow velocity
A   Medium water at T = 50 °C (122 °F)