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 four standard probe insertion lengths and two integral male NPT threads that allow direct mounting to the process or thermowells, eliminating the need for separate probe mounting or adapter fittings. 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, or 150mm probe insertion lengths
- 1/4" or 1/2" male NPT threads for direct mounting or in thermowells
- 4-20 mA output
- M12 quick-disconnect electrical connection

ProSense XTP Series Temperature Transmitter Probes						
Part Number	**Preconfigured Measuring Range***	**Thread Size**	**Length**	**Pcs/Pkg**	**Wt(lb)**	**Price**
XTP25N-030-N40140F	-40 to 140°F (-40 to 60°C)	1/4" MNPT	30mm	1	0.2	$120.00
XTP25N-050-N40140F			50mm	1	0.2	$121.00
XTP25N-100-N40140F**			100mm	1	0.3	$123.00
XTP25N-150-N40140F**			150mm	1	0.3	$125.00
XTP50N-030-N40140F		1/2" MNPT	30mm	1	0.3	$120.00
XTP50N-050-N40140F			50mm	1	0.3	$121.00
XTP50N-100-N40140F**			100mm	1	0.4	$123.00
XTP50N-150-N40140F**			150mm	1	0.4	$125.00
XTP25N-030-0300F	0 to 300°F (-17.8 to 148.9°C)	1/4" MNPT	30mm	1	0.2	$120.00
XTP25N-050-0300F			50mm	1	0.2	$121.00
XTP25N-100-0300F**			100mm	1	0.3	$123.00
XTP25N-150-0300F**			150mm	1	0.3	$125.00
XTP50N-030-0300F		1/2" MNPT	30mm	1	0.3	$120.00
XTP50N-050-0300F			50mm	1	0.3	$121.00
XTP50N-100-0300F**			100mm	1	0.4	$123.00
XTP50N-150-0300F**			150mm	1	0.4	$125.00
XTP25N-030-0100C	0 to 100°C (32 to 212°F)	1/4" MNPT	30mm	1	0.2	$120.00
XTP25N-050-0100C			50mm	1	0.2	$121.00
XTP25N-100-0100C**			100mm	1	0.3	$123.00
XTP25N-150-0100C**			150mm	1	0.3	$125.00
XTP50N-030-0100C		1/2" MNPT	30mm	1	0.3	$120.00
XTP50N-050-0100C			50mm	1	0.3	$121.00
XTP50N-100-0100C**			100mm	1	0.4	$123.00
XTP50N-150-0100C**			150mm	1	0.4	$125.00

** 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.*

*** Thermowells available (see XTP Series Temperature Transmitter Probe Accessories listed just below unit dimensions)*

ProSense XTP Series Temperature Transmitter Probes

ProSense XTP Series Temperature Transmitter Probes Specifications	
Operating Voltage	10 to 35 VDC
Electrical Connection	M12 connector
Process connection	1/4" NPT male (XTP25 series) or 1/2" NPT male (XTP50 series)
Short-Circuit Protection	Yes
Electrical Protection	Protection Class III, Overvoltage category II, Pollution degree 2
Reverse Polarity Protection	Yes
Analog Output	4 to 20 mA (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 configurable for ≤ 3.6 mA
Minimum Current Consumption	≤ 3.5 mA
Current Limit	≤ 23mA
Switch-on Delay	2s
Sensor Response Time	t50 < 1.0 s, t90 < 2.0 s**
Transmitter Response Time	≤ 1s**
Pressure Rating	Threaded process connection max. 1450psi (100bar)
Altitude	Up to 6600ft (2000m)
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
Measuring Element	Pt100 class A as per IEC 60751
Measuring Range	-58 to 302°F (-50 to 150°C)
Minimum Span	10K (18°F)
Minimum Installation Depth	30mm
Housing Material	Stainless steel (304)
Materials (wetted parts)	Stainless steel (316L)
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
Agency Approvals	UL # E311366, CE

**** 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.

***** Measured per IEC 60751, in flowing water at 1.3 ft/s (0.4 m/s)***

NOTE: RESPONSE TIME IS REDUCED WHEN INSTALLED IN A THERMOWELL. THERMAL COMPOUND MAY BE USED DEPENDING ON APPLICATION.

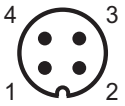
NOTE: CHECK THE CHEMICAL COMPATIBILITY OF THE SENSOR'S WETTED PARTS WITH THE MEDIUM TO BE MEASURED.

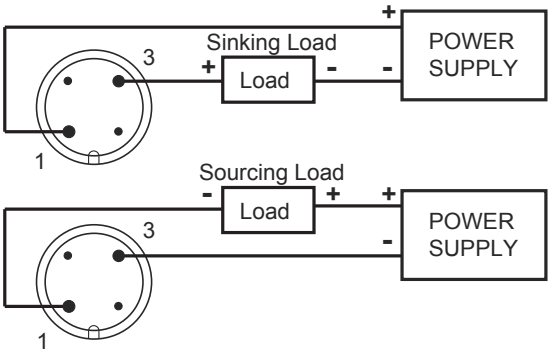
ProSense® XTP Series Temperature Transmitter Probes

Wiring

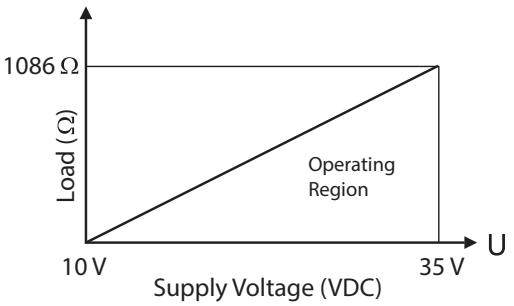
Cable Assembly Wiring Colors:
Pin 1 - Brown
Pin 2 - White
Pin 3 - Blue
Pin 4 - Black

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



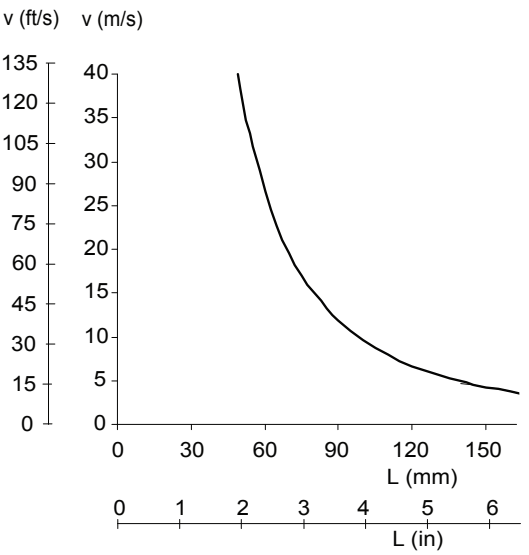


Load Impedance



RLmax = ($V_{powersupply}$-10V) / 0.023 A (current output)
e.g. (24V - 10V) / 0.023A = 608Ω

Maximum Flow Velocity Per Insertion Length



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

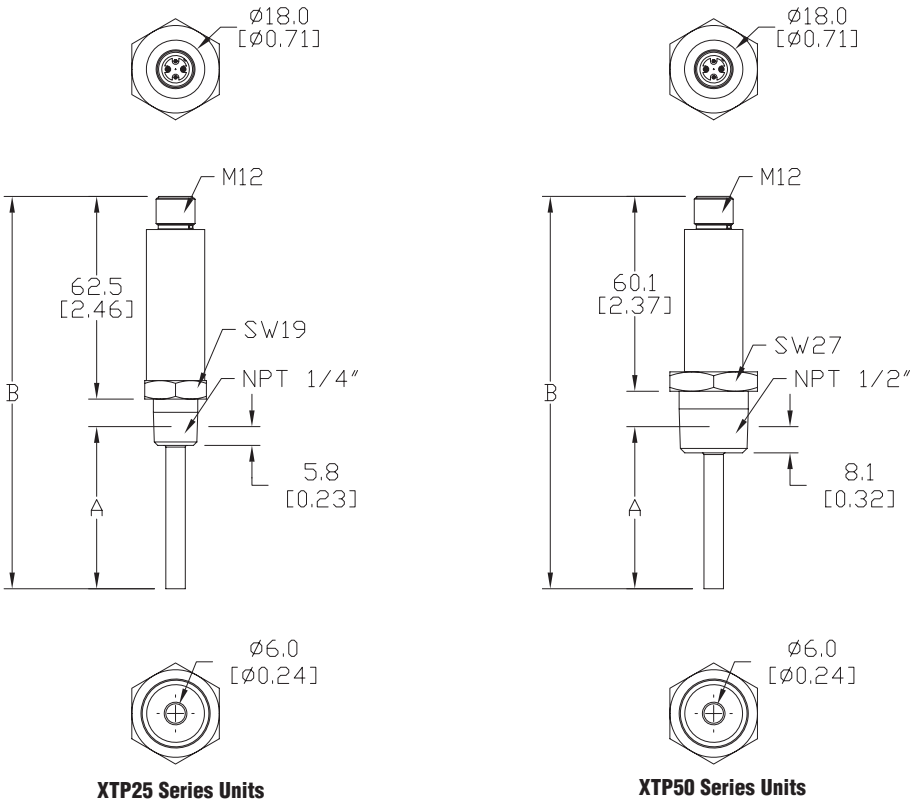
Temperature Limits

Max. Ambient Temperature	*Max. Process Temperature*
Up to 25°C (77°F)	150°C (302°F)
Up to 40°C (104°F)	135°C (275°F)
Up to 60°C (140°F)	120°C (248°F)
Up to 85°C (185°F)	100°C (212°F)

ProSense® XTP Series Temperature Transmitter Probes

Dimensions

mm [inches]



XTP25 Series Units **XTP50 Series Units**

Dimensions	
A	*B*
1.18 in [30mm]	3.98 in [101mm]
1.97 in [50mm]	4.76 in [121mm]
3.94 in [100mm]	6.73 in [171mm]
5.91 in [150mm]	8.70 in [221mm]

See our website www.AutomationDirect.com for complete Engineering drawings.

XTP Series Temperature Transmitter Probe Accessories

TW06-01

TW06-02

Part No.	*Description*	*Use with Transmitter Probe*	*Pcs/Pkg*	*Price*
TW04-01	Standard duty threaded thermowell with 1/2 inch NPT male process threads, 304 stainless steel, 4-1/4 inch overall length with 0.260 inch bore diameter, 2-1/2 inch insertion length	XTP50N-100-XXXX	1	$24.00
TW04-02	Standard duty threaded thermowell with 3/4 inch NPT male process threads, 304 stainless steel, 4-1/4 inch overall length with 0.260 inch bore diameter, 2-1/2 inch insertion length		1	$24.00
TW04-03	Standard duty threaded thermowell with 1/2 inch NPT male process threads, 316 stainless steel, 4-1/4 inch overall length with 0.260 inch bore diameter, 2-1/2 inch insertion length		1	$31.00
TW04-04	Standard duty threaded thermowell with 3/4 inch NPT male process threads, 316 stainless steel, 4-1/4 inch overall length with 0.260 inch bore diameter, 2-1/2 inch insertion length		1	$31.00
TW06-01	Standard duty threaded thermowell with 1/2 inch NPT male process threads, 304 stainless steel, 6-1/4 inch overall length with 0.260 inch bore diameter, 4-1/2 inch insertion length	XTP50N-150-XXXX	1	$32.00
TW06-02	Standard duty threaded thermowell with 3/4 inch NPT male process threads, 304 stainless steel, 6-1/4 inch overall length with 0.260 inch bore diameter, 4-1/2 inch insertion length		1	$32.00
TW06-03	Standard duty threaded thermowell with 1/2 inch NPT male process threads, 316 stainless steel, 6-1/4 inch overall length with 0.260 inch bore diameter, 4-1/2 inch insertion length		1	$41.00
TW06-04	Standard duty threaded thermowell with 3/4 inch NPT male process threads, 316 stainless steel, 6-1/4 inch overall length with 0.260 inch bore diameter, 4-1/2 inch insertion length		1	$41.00

ProSense® Temperature Transmitter Configuration Software

Quick and easy configuration with Free XT-SOFT software – NO decade box, meters, or signal generators needed!

Overview

XT-SOFT PC software is a utility program that allows users to easily configure ProSense XTH-0-UNV, XTD-0-UNV and XTP series temperature transmitters. Download your free copy of XT-SOFT at www.AutomationDirect.com and connect your transmitter to the PC through an XT-USB configuration cable (purchased separately). An XT-M12 adapter is also required when connecting to an XTP series transmitter.

System Requirements:

- Windows XP (32 Bit)
- Windows Vista, Windows 7, Windows 8 (32 and 64 Bit)
- 1 USB 2.0 Port
- 128 MB hard disk space

XTP Series Configuration Parameters:

- Measuring unit (°C/°F)
- Measuring range limits -50 to 150°C (-58 to 302°F)
- Fault condition reaction (≤ 3.6 mA or ≥ 21.0 mA)
- Output (4-20 mA or 20-4 mA)
- Filter (0...8s)
- Offset (-9.9 to +9.9 K)
- Measurement point identification/TAG
- Output simulation drives output to a fixed value

XTH & XTD Configuration Parameters:

Sensor Type:

- Thermocouple Types J, K, T, E, N, R, S, U, B, C, D, L
- RTD Types Pt100, Pt500, Pt1000, Pt50, Ni100, Ni120, Ni500, Ni1000
- Linear Resistance 10 to 400 Ohms, 10 to 2000 Ohms
- Millivolts -10 to 100 mV
- Wiring connection 2, 3, or 4-wire (RTD or Linear Resistance only)
- Measuring range start and end points
- Selectable units of °F or °C
- Choose from internal or external cold junction compensation (TC only)
- Wire resistance compensation (2-wire RTD or Linear Resistance only)
- Output action of 4-20 mA or 20-4 mA
- Selectable up scale or down scale signal for sensor lead break or short circuit detection (NAMUR NE43 fault response)
- Adjustable digital filter time constant to compensate for undesirable input fluctuations
- Zero point correction offset factor in °F or °C

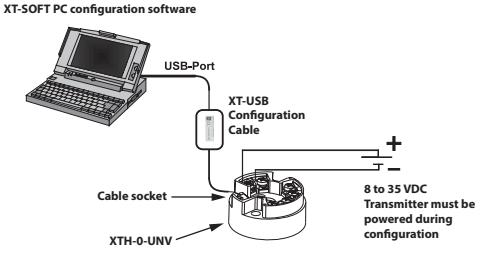
XT-USB

XT-M12

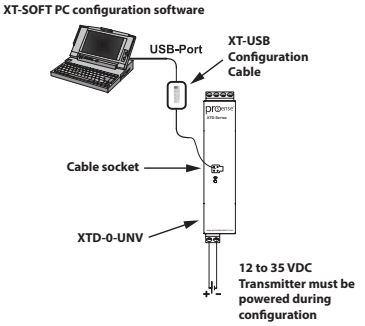
Part No.	*Description*	*Pcs/Pkg*	*Wt(lb)*	*Price*
XT-SOFT	Configuration software CD for ProSense temperature transmitter models XTH-0-UNV and XTD-0-UNV (available as a free download from the AutomationDirect web site). Requires an XT-USB configuration cable (purchased separately).	1	0.1	$9.00
XT-USB	Configuration cable for use with ProSense temperature transmitter models XTH-0-UNV and XTD-0-UNV, USB connector to keyed 4-pin male connector, 7.9-foot (2.4m) overall cable length. Use with XT-SOFT configuration software, available as a free download from the AutomationDirect Web site.	1	0.4	$89.00
XT-M12	ProSense adapter, keyed 4-pin female to 4-pin M12. For use with ProSense temperature transmitter XTP series and XT-USB cable.	1	0.1	$15.00

Connection Examples

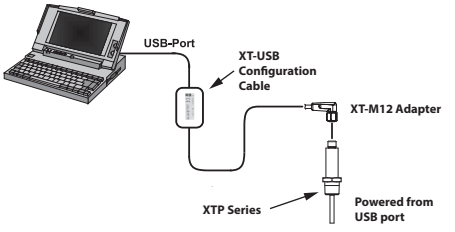
XTH-0-UNV Connection



XTD-0-UNV Connection



XTP Series Connection



Note: XT-SOFT version 1.27.13.0 or later required for use with the XTP series transmitters