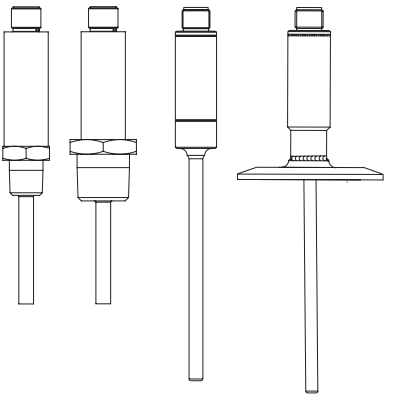
prosense®

XTP/XTPS Series Temperature Transmitter Probes and RTD1/RTD1-S Series Temperature Sensors Installation Instructions



(XTPS/RTD1-S)

XTP product insert Rev. 2
71485817

XTP and XTPS Series ProSense Temperature Transmitter Probes

Part Number	Measuring Range*	Process Connection	Length	Output
XTP-160-N40140F	-40 to 140°F (-40 to 60°C)	None, use compression fitting	160mm	4-20mA
XTP-260-N40140F			260mm	
XTP-360-N40140F			360mm	
XTP25N-030-N40140F		1/4" male NPT	30mm	
XTP25N-050-N40140F			50mm	
XTP25N-100-N40140F			100mm	
XTP25N-150-N40140F			150mm	
XTP50N-030-N40140F		1/2" male NPT	30mm	
XTP50N-050-N40140F			50mm	
XTP50N-100-N40140F			100mm	
XTP50N-150-N40140F			150mm	
XTP-160-0300F	0 to 300°F (-17.8 to 148.9°C)	None, use compression fitting	160mm	
XTP-260-0300F			260mm	
XTP-360-0300F			360mm	
XTP25N-030-0300F		1/4" male NPT	30mm	
XTP25N-050-0300F			50mm	
XTP25N-100-0300F			100mm	
XTP25N-150-0300F			150mm	
XTP50N-030-0300F		1/2" male NPT	30mm	
XTP50N-050-0300F			50mm	
XTP50N-100-0300F			100mm	
XTP50N-150-0300F			150mm	
XTP-160-0100C	0 to 100°C (32 to 212°F)	None, use compression fitting	160mm	
XTP-260-0100C			260mm	
XTP-360-0100C			360mm	
XTP25N-030-0100C		1/4" male NPT	30mm	
XTP25N-050-0100C			50mm	
XTP25N-100-0100C			100mm	
XTP25N-150-0100C			150mm	
XTP50N-030-0100C		1/2" male NPT	30mm	
XTP50N-050-0100C			50mm	
XTP50N-100-0100C			100mm	
XTP50N-150-0100C			150mm	
XTPS15-030-0300F	0 to 300°F (-17.8 to 148.9°C)	1.5" Sanitary Tri-Clamp (3-A)	30mm	
XTPS15-050-0300F			50mm	
XTPS15-100-0300F			100mm	
XTPS15-150-0300F			150mm	

***** Transmitter probes are factory configured and ready for use out of the box. If changes are desired, transmitter probes can be re-configured. See Programming section of these instructions.

RTD1 and RTD1-S Series ProSense Temperature Sensor Probes				
Part Number	**Measuring Range**	**Process Connection**	**Length**	**Output**
RTD1-25N-030-H	-58 to 302 °F (-50 to 150 °C)	1/4" male NPT	30mm	RTD Pt100 Class A 3-wire
RTD1-25N-050-H			50mm	
RTD1-25N-100-H			100mm	
RTD1-25N-150-H			150mm	
RTD1-50N-030-H		1/2" male NPT	30mm	
RTD1-50N-050-H			50mm	
RTD1-50N-100-H			100mm	
RTD1-50N-150-H			150mm	
RTD1-S15-030-H		1.5" Sanitary Tri-Clamp (3-A)	30mm	
RTD1-S15-050-H			50mm	
RTD1-S15-100-H			100mm	
RTD1-S15-150-H			150mm	

Temperature limits

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

Process pressure limits

With or without NPT process connection

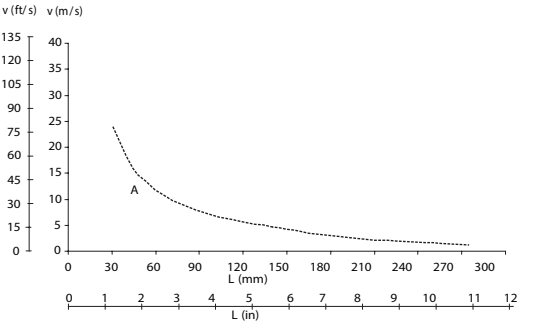
- 1450 psig (100bar) maximum

Note: Working pressure when using compression fitting should not exceed the fittings rated pressure.

With Sanitary Tri-clamp process connection

- 232 psig (16bar) maximum

Maximum flow velocity based on insertion length



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

Installation
1 Safety Instructions

1.1 Designated use

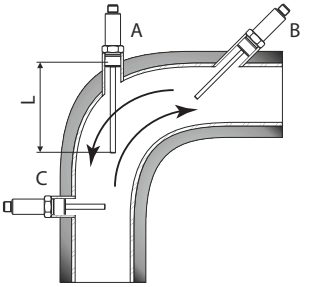
- The device is a compact temperature transmitter probe for the acquisition and conversion of temperature input signals for industrial temperature measurement.

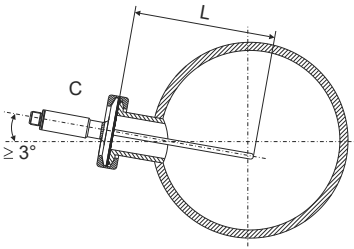
1.2 Installation, commissioning, operation

- The device must only be installed, connected and commissioned by qualified and authorized staff (e.g. electrical technicians) strictly adhering to the instructions contained in this manual, the applicable norms, legal regulations and certificates (depending on the application).
- These authorized staff members must have read and understood this manual and follow the instructions it contains.
- Damaged devices must not be put into operation and they must be labeled as defective.

1.3 Operational safety

- The device is safely built and tested according to state-of-the-art technology and has left the factory in perfect condition in regards to technical safety. The applicable regulations and European standards have been taken into account.
- Please observe the technical data on the nameplate!
- The device must only be powered by a power supply unit with a limited energy electric circuit in accordance with IEC 31010-1: "SELV or Class 2 circuit".
- Due to its design, the device is not repairable. When later disposing of the device, please observe local regulations.





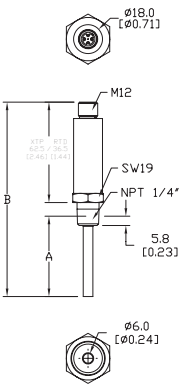
Pipe installation

- A: On angle brackets
- B: In smaller pipes, inclined
- C: Perpendicular to the direction of flow (hygienic installation 3° minimum inclination required for inlet to self drain)
- L = Insertion Length

1. For NPT and compression fittings, seal the process connection with Teflon tape before you screw in the device.
2. Ensure that the hygienic process connection and any connection adapters can withstand the maximum process pressure.
3. Install the device before the process application is started.

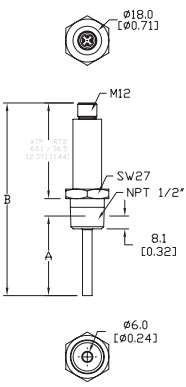
Minimum insertion length
Lmin = 30mm (1.18 in)

Dimensions
mm [inches]

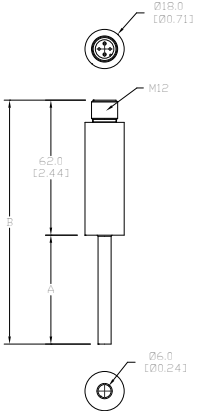


XTP25/RTD1-25N Series
NPT Units

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

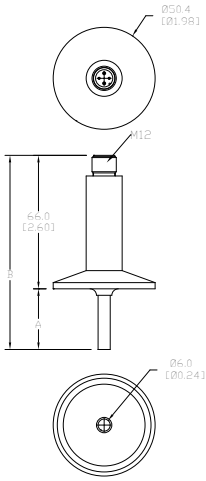


XTP50/RTD1-50N Series
NPT Units



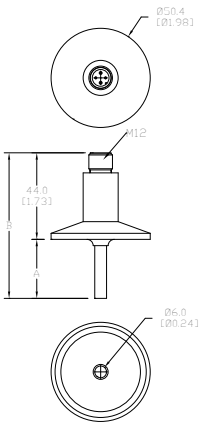
XTP Series
Compression Units

Dimensions	
A	*B*
160mm [6.30 in]	222mm [8.74 in]
260mm [10.24 in]	322mm [12.67 in]
360mm [14.17 in]	422mm [16.61 in]



XTPS Series
3-A Sanitary Units

Dimensions	
A	*B*
30mm [1.18 in]	96mm [3.78 in]
50mm [1.97 in]	116mm [4.57 in]
100mm [3.94 in]	166mm [6.54 in]
150mm [5.91 in]	216mm [8.50 in]



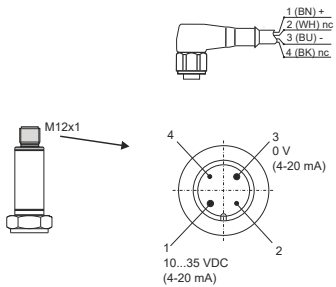
RTD1-S15 Series
3-A Sanitary Units

Dimensions	
A	*B*
30mm [1.18 in]	74mm [2.91 in]
50mm [1.97 in]	94mm [3.70 in]
100mm [3.94 in]	144mm [5.67 in]
150mm [5.91 in]	194mm [7.64 in]

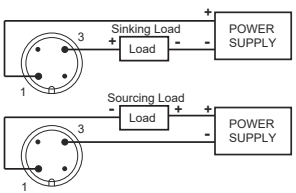
Wiring

Hygienic applications: Electrical connection cables must comply with 3-A sanitary standard, must be smooth, corrosion resistant and cleanable.

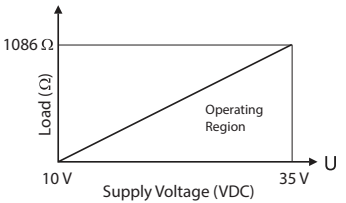
XTP and XTPS Wiring (4-20 mA)



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



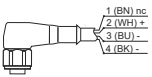
Load Impedance

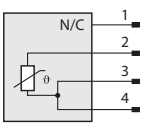


RLmax = ($V_{powersupply}$-10V) / 0.023 A (current output)

e.g. (24V - 10V) / 0.023A = 608Ω

RTD1 Wiring (3-wire Pt100 RTD)





To prevent damage to the device do not overtighten the M12 plug

Programming (XTP and XTPS units only)

Transmitter probes are factory configured and ready for use out of the box. If changes are desired, transmitter probes can be re-configured using the XT-SOFT programming software, available as a free download at www.automationdirect.com, an XT-USB configuration cable and an XT-M12 adapter (purchased separately).

Settable Parameters			Factory Settings
Standard Settings	Measuring unit	°C/°F	Part number dependent
	Measuring range (start and end values)	-50 to 150°C (-58 to 302°F) maximum range	Part number dependent
Expanded Settings	Fault condition reaction	≤ 3.6 mA or ≥ 21.0 mA	≥ 21mA
	Output	4-20 mA or 20-4 mA	4-20 mA
	Filter	0...8s	0s
	Offset	-9.9 to +9.9°C (-17.8 to 17.8°F)	0.0
	Measurement point identification/TAG	8 alpha-numeric digits	Test
Service Functions	Password (Release Code)	4 numeric digits	0000
	Output simulation drives output to a fixed value	on/off	off

XT-SOFT PC Configuration Software