ProSense XTH Series Head Mount Temperature Transmitters



XTH

Features - Non-programmable Models

- Sensor Types:
- Models for thermocouple Types J, K, or T
- Select from a variety of pre-configured measuring ranges
- Internal cold junction compensation for thermocouple input models
- Transmitter is powered by 8–35 VDC and is reverse- polarity protected
- Output is linearized 2-wire 4–20 mA current loop
- Up scale signal for sensor lead break or short circuit detection (NAMUR NE 43 fault response)
- Mounts in ProSense connection head or any DIN Form B sensor head
- 2 kVAC isolation between input and output

ProSense XTH Series Head Mounted Temperature Transmitters

Part Number	Input Type	Fixed Measuring Range	Pcs/Pkg	Wt(lb)	Price
XTH-0100F-J	Type J thermocouple (to NIST Monograph 175, IEC584)	0 to 100 °F (-17.8 to +37.8 °C)	1	0.09	
XTH-0200F-J		0 to 200 °F (-17.8 to +93.3 °C)	1	0.09	
XTH-0300F-J		0 to 300 °F (-17.8 to +148.9 °C)	1	0.09	
XTH-0500F-J		0 to 500 °F (-17.8 to +260 °C)	1	0.09	
XTH-0800F-J		0 to 800 °F (-17.8 to +426.7 °C)	1	0.09	
XTH-01000F-J		0 to 1000 °F (-17.8 to +537.8 °C)	1	0.09	
XTH-0100F-K	Type K thermocouple (to NIST Monograph 175, IEC584)	0 to 100 °F (-17.8 to +37.8 °C)	1	0.09	
XTH-0200F-K		0 to 200 °F (-17.8 to +93.3 °C)	1	0.09	
XTH-0300F-K		0 to 300 °F (-17.8 to +148.9 °C)	1	0.09	
XTH-0500F-K		0 to 500 °F (-17.8 to +260 °C)	1	0.09	
XTH-0800F-K		0 to 800 °F (-17.8 to +426.7 °C)	1	0.09	
XTH-01000F-K		0 to 1000 °F (-17.8 to +537.8 °C)	1	0.09	
XTH-01500F-K		0 to 1500 °F (-17.8 to +815.5 °C)	1	0.09	
XTH-02000F-K		0 to 2000 °F (-17.8 to +1093.3 °C)	1	0.09	
XTH-N2000F-T	Type T thermocouple (to NIST Monograph 175, IEC584)	-200 to 0 °F (-128.9 to -17.8 °C)	1	0.09	
XTH-N100100F-T		-100 to 100 °F (-73.3 to +37.8 °C)	1	0.09	
XTH-0200F-T		0 to 200 °F (-17.8 to +93.3 °C)	1	0.09	



Click on the thumbnail or go to https://www.automationdirect.com/VID-TE-0002 for a short video on DIN Rail Mounted Temperature Transmitters



Click on the thumbnail or go to https://www.automationdirect.com/VID-TE-0006 for a short video on Remote Temperature Sensing

Scan the QR Code above or click to view the Fixed Range XTH Series product insert.

ProSense XTH Series Head Mount Temperature Transmitters

ProSense XTH Series Head Mounted Temperature Transmitters General Specifications				
		XTH (J Series)	XTH (K Series)	XTH (T Series)
Output	Output Signal	4–20 mA		
	Signal Transmission	Output linear to temperature		
	Fault Signal	Under ranging / Standard / 3.8 mA Over ranging / Standard / 20.5 mA Sensor break; sensor short circuit down scale / To NAMUR NE 43 / M3.6 mA (only applicable to XTH-0-UNV) Sensor break; sensor short circuit up scale / To NAMUR NE 43 / M21.0 mA		
	Max. Load Impedance	(Vpowersupply - 8V) / 0.025 A e.g. (24V - 8V)/0.025A = 640 Ω		
	Galvanic Isolation	2 kV AC (input/output)		
	Input Current Requirement	≤ 3.5 mA		
	Current Limit	≤ 25 mA		
	Switch on Delay	4 seconds (during power up output current = 3.8 mA)		
	Response Time	1 second		
	Digital Filter	N/A		
	Power Supply	8 to 35 VDC, polarity protected		
	Allowable Ripple	≤ 5 V with power supply ≥ 13; Max. frequency = 1 kHz		
Accuracy	Reference Conditions	Calibration temperature 73.4 °F w 9 °F (23 °C w 5 °C)		
	Maximum Measuring Error	0.9 °F (0.5 °C) or 0.08%		
	Influence of Power Supply	≤ w 0.01%/V deviation from 24 V		
	Load Influence	≤ w 0.02%/100 Ω		
	Long Term Stability	≤ 0.1 K / Year or m 0.05% / Year		
Installation	Orientation	No restrictions		
	Location	Connection head according to DIN 43 729 Form B		
Environmental	Ambient	-40 to +185 °F (-40 to +85 °C)		
	Storage	-40 to +212 °F (-40 to +100 °C)		
	Climate Class	As per IEC 60 654-1, class C		
	Ingress Protection	IP00 / IP66 installed in appropriate housing		
	Shock and Vibration	4g / 2 to 150 Hz as per IEC 60 068-2-6		
	EMC Immunity	See Table 2		
	Moisture Condensation	Allowable		
Construction	Materials	Housing: Polycarbonate; Potting: Polyurethane		
	Terminals	Cable up to max. 1.75 mm² (16 AWG), secure screws		
Approvals		CE, UL recognized (UL 3111-1), File # E311366, RoHS		

Table 1 - Maximum Measuring Error XTH-0-UNV

	Type	Measurement Accuracy*
Thermocouple TC	K, J, T, E, L, U N, C, D S, B, R	typ. 0.9 °F (0.5 °C) or 0.08% typ. 1.8 °F (1.0 °C) or 0.08% typ. 3.6 °F (2.0 °C) or 0.08%
	Measurement Range	Measurement Accuracy*
Resistance Transmitter (Ω)	10 to 400 Ω 10 to 2000 Ω	± 0.1 Ω or 0.08% ± 1.5 Ω or 0.12%
Voltage Transmitters (mV)	-10 to 100 mV	± 20 µV or 0.08%

Table 2 - IEC Immunity

Discharge of Static Electricity	IEC 61000-4-2	6 kV cont., 8 kV air	N/A
Electromagnetic Fields	IEC 61000-4-3	80 to 1000 Hz	10 V/m
Burst (Signal)	IEC 61000-4-4	1 kV; 2 kV (B)**	N/A
Transient Voltage	IEC 61000-4-5	1 kV unsym. / 0.5 kV sym.	N/A
HF Coupling	IEC 61000-4-6	0.15 to 80 MHz	10V

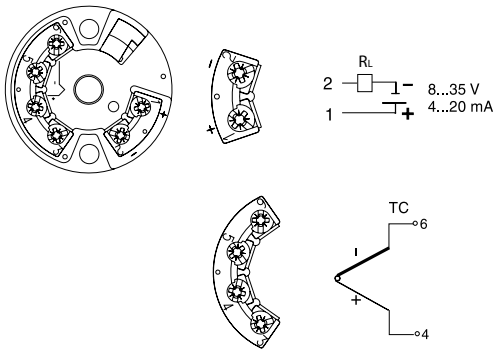
** self recovery

* % is related to the adjusted measurement range. The value to be applied is the greater.

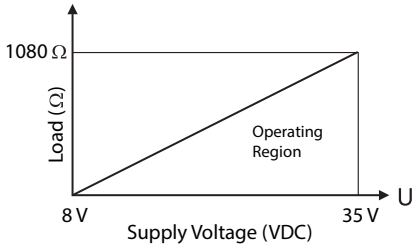
ProSense® XTH Series Head Mount Temperature Transmitters

Wiring

XTH J, K & T - Thermocouple Input



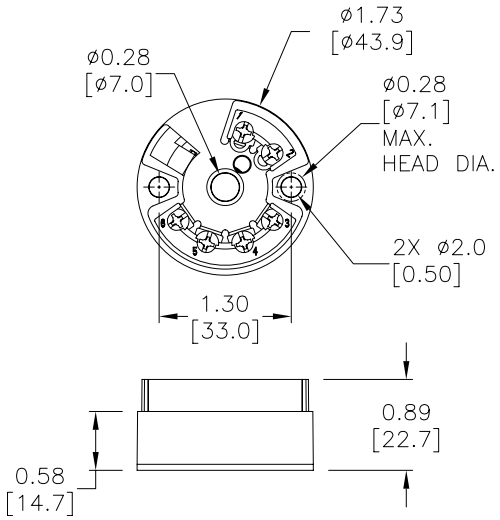
Load Impedance



RLmax = (Vpowersupply-8V) / 0.025A (current output)
e.g. (24V - 8V) / 0.025A = 640 Ω

Dimensions

inches [mm]



Application

ProSense head mounted transmitters can be easily added in the field to a ProSense connection head probe. Just order a pre-assembled ProSense connection head probe and replace the internal terminal block with an XTH series transmitter and included mounting hardware.



Pre-Assembled ProSense Connection Head Temperature Probe



XTH Series Transmitter

ProSense® Temperature Transmitter Configuration Software

Quick and easy configuration with Free XT-SOFT and ProSense Field Device Configurator 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 XTD-0-UNV, and XTP series temperature transmitters and ETS series digital temperature sensors.

ProSense Field Device Configurator is a utility program that allows users to easily configure, monitor, and retrieve diagnostic information from the ProSense XTH2 and XTD2 series temperature transmitters.

Download your free copy of XT-SOFT and ProSense Field Device Configurator 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.

XT-SOFT System Requirements:

- Windows 10, 11
- 1 USB 2.0 Port
- 128 MB hard disk space

ProSense XT-SOFT

ProSense Field Device Configurator System Requirements:

- Windows 10, 11
- 1 USB 2.0 Port
- 25 MB hard disk space
- Microsoft .Net Framework ≥4.8
- PDF Reader

XTP Series Configuration Parameters (Requires XT-SOFT):

- 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 to 8s)
- Offset (-9.9 to +9.9 K)
- Measurement point identification/TAG
- Output simulation drives output to a fixed value



XTP Series

XTH & XTD Configuration Parameters: (Requires XT-SOFT)

- 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



XTH Series



XTD Series