

# prosense® Temperature Transmitters - Head Mounted

## Features - Non-programmable Models



XTH2

- Sensor Types:
  - Models for RTD Type Pt100 3-wire
- Select from a variety of pre-configured non-programmable (fixed) measuring ranges
- Transmitter is powered by 10-36 VDC and is reverse-polarity protected
- Output is linearized 2-wire 4-20mA 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



| ProSense Head Mounted Temperature Transmitters |                                           |                                          |         |        |         |                     |
|------------------------------------------------|-------------------------------------------|------------------------------------------|---------|--------|---------|---------------------|
| Part Number                                    | Input Type                                | Non-programmable (Fixed) Measuring Range | Pcs/Pkg | Wt(lb) | Price   | Drawing Link        |
| <a href="#">XTH2-N40140F-PT1</a>               | Pt100 RTD<br>(to IEC 751)<br>(a= 0.00385) | -40 to 140°F (-40 to 60°C)               | 1       | 0.15   | \$86.00 | <a href="#">PDF</a> |
| <a href="#">XTH2-0100F-PT1</a>                 |                                           | 0 to 100°F (-17.8 to 37.8°C)             | 1       | 0.15   | \$86.00 | <a href="#">PDF</a> |
| <a href="#">XTH2-0200F-PT1</a>                 |                                           | 0 to 200°F (-17.8 to 93.3°C)             | 1       | 0.15   | \$86.00 | <a href="#">PDF</a> |
| <a href="#">XTH2-0300F-PT1</a>                 |                                           | 0 to 300°F (-17.8 to 148.9°C)            | 1       | 0.15   | \$86.00 | <a href="#">PDF</a> |
| <a href="#">XTH2-0500F-PT1</a>                 |                                           | 0 to 500°F (-17.8 to 260°C)              | 1       | 0.15   | \$86.00 | <a href="#">PDF</a> |



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 XTH2 Series product insert.

# pro<sup>sense</sup> Temperature Transmitters - Head Mounted

| ProSense Head Mounted Temperature Transmitters General Specifications |                           |                                                                                                                                                  |
|-----------------------------------------------------------------------|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                       |                           | XTH2 (PT1 Series)                                                                                                                                |
| Output                                                                | Output Signal             | 4-20 mA                                                                                                                                          |
|                                                                       | Signal Transmission       | Output linear to temperature                                                                                                                     |
|                                                                       | Fault Signal              | Under ranging / Standard / 3.8 mA<br>Over ranging / Standard / 20.5 mA<br>Sensor break; sensor short circuit upscale / To NAMUR NE 43 / ≤22.5 mA |
|                                                                       | Max. Load Impedance       | (Vpowersupply-10V) / 0.0225A (current output)<br>e.g. (24V - 10V) / 0.0225A = 622.2 Ω                                                            |
|                                                                       | Input Current Requirement | ≤ 3.5 mA                                                                                                                                         |
|                                                                       | Current Limit             | ≤ 22.5 mA                                                                                                                                        |
|                                                                       | Switch on Delay           | ≤ 5 seconds (during powerup output current = 3.8 mA)                                                                                             |
|                                                                       | Response Time             | ≤ 0.5 second                                                                                                                                     |
|                                                                       | Digital Filter            | N/A                                                                                                                                              |
|                                                                       | Power Supply              | 10 to 36 VDC, polarity protected                                                                                                                 |
|                                                                       | Allowable Ripple          | ≤ 5 V with power supply ≥ 13; Max. frequency = 1 kHz                                                                                             |
| Accuracy                                                              | Reference Conditions      | Calibration temperature 77°F ±5.4°F (+25°C, ±3°C)                                                                                                |
|                                                                       | Maximum Measuring Error   | 0.15 K or 0.07 % of span*                                                                                                                        |
|                                                                       | Influence of Power Supply | ≤ ± 0.01%/V deviation from 24 V                                                                                                                  |
|                                                                       | Load Influence            | ≤ ± 0.02% / 100Ω                                                                                                                                 |
|                                                                       | Long Term Stability       | 0.05 K or 0.03% / 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                   | -58 to 212°F (-50 to 100°C)                                                                                                                      |
|                                                                       | Climate Class             | As per IEC 60 654-1, class C1                                                                                                                    |
|                                                                       | Ingress Protection        | IP00 / IP66 installed in appropriate housing                                                                                                     |
|                                                                       | Shock and Vibration       | DIN EN 60068-2-27 : 30g, 18ms                                                                                                                    |
|                                                                       | EMC Immunity              | See Table                                                                                                                                        |
|                                                                       | Moisture Condensation     | Allowable                                                                                                                                        |
| Construction                                                          | Materials                 | Housing: Polycarbonate; Potting: SIL gel; Screw terminals: nickel-plated brass                                                                   |
|                                                                       | Terminals                 | Cable up to max. 1.5 mm <sup>2</sup> (16AWG), secure screws                                                                                      |
| Approvals                                                             |                           | CE, cCSAus, File#: 601711, RoHS                                                                                                                  |

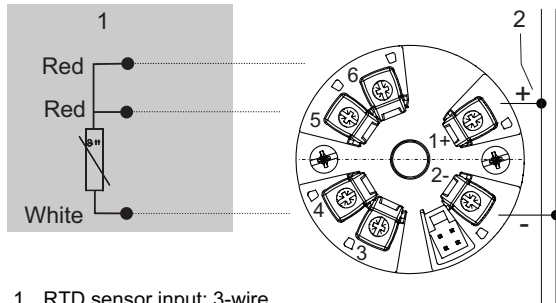
\* Whichever is higher

| IEC Immunity                    |               |                                                  |       |
|---------------------------------|---------------|--------------------------------------------------|-------|
| Discharge of Static Electricity | IEC 61000-4-2 | 4kV cont., 8kV air                               | N/A   |
| Electromagnetic Fields          | IEC 61000-4-3 | 80MHz - 1GHz with 10V/m<br>1GHz - 6GHz with 3V/m | 10V/m |
| Burst (Signal)                  | IEC 61000-4-4 | 1kV                                              | N/A   |
| Transient Voltage               | IEC 61000-4-5 | 1kV unsym.                                       | N/A   |
| HF Coupling                     | IEC 61000-4-6 | 0.15 to 80MHz                                    | 3V    |

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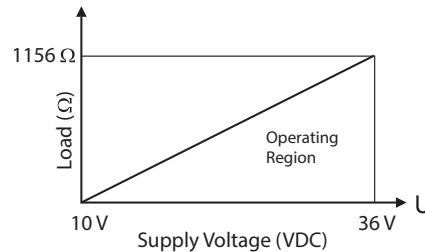
## Wiring

### XTH2 PT1 - Pt100 3-wire RTD Input



- 1 RTD sensor input: 3-wire
- 2 Power supply (10 to 36 VDC)

## Load Impedance

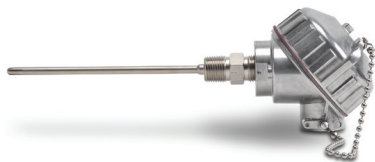


$$R_{Lmax} = (V_{powersupply} - 10V) / 0.0225A \text{ (current output)}$$

e.g.  $(24V - 10V) / 0.0225A = 622.2 \Omega$

## 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 XTH2 series transmitter and included mounting hardware.



Pre-Assembled ProSense Connection Head Temperature Probe



XTH2 Series Transmitter