



- -40-125°C Operating Temperature
- Temperature Sensor - .1C Resolution
- Clip-On Style probe
- IP65
- Digital Temperature Sensor (I2C, SPI)
- Media –Air, & Gas

DESCRIPTION

The PTS32 temperature sensor is designed for measuring temperature on the exterior of pipes. The Clip-On style digital temperature copper sensor allows for accurate (+-.25 Degree C) temperature measurement and a quick response time. The low cost semi-automated manufacturing process allows for a cost effective solution.

APPLICATIONS

- Commercial Refrigeration
- HVAC
- Semiconductor
- Liquid /Gas Chromatography
- Commercial Ovens

Maximum Environmental Ratings

Operating Temperature -40°C to 125°C

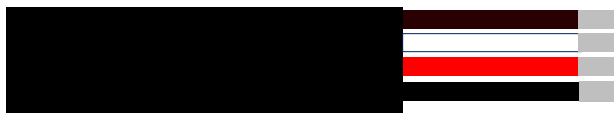
Storage Temperature Range -55°C to 130°C

PTS32 Electrical Operational Characteristics

| V ₊ = 5V, V ₋ = 0V, Temperature = 25°C | | | | | |
|--|-----------------------------|------|------|-------|-------------------|
| PARAMETER | SYMBOL | Min | Typ | Max | UNITS |
| Supply Voltage | V _{DD} | 2.7 | 3 | 3.3 | V |
| Operating Temperature | T _S | -40 | | 125 | C |
| Supply Current (Note 1) | I _{DD} | 70 | 120 | 2500 | μA |
| Sleep Mode Supply Current | I _{standby} | | .5 | 32 | μA |
| Accuracy | | | | | |
| Temperature Error (Null and Span) (Note 3) | | -.25 | .20 | .25 | C |
| Response Time | t _R | 500 | 750 | 2,500 | ms |
| Analog-to-Digital | | | | | |
| Resolution | ADC | | .004 | | %Full Scale |
| Temperature Resolution | | | .05 | | %Full Scale |
| I2C & SPI Interface | | | | | |
| Input Low Level | V _{in_low} | 0 | | .2 | V _{DD} % |
| Input High Level | V _{in_high} | .8 | | 1 | V _{DD} % |
| Output Low Level | V _{o_low} | | | .1 | V _{DD} % |
| Load Capacitance @SDA | C _{sda} @400khz | | | 200 | pF |
| Pull-Up Resistor | R _{I2C_PU} | 500 | | | Ω |
| Input Capacitance (each pin) | C _{I2C_in} | | | 10 | pF |

Notes: 1) Measured at zero pressure. 2) Defined as best straight line 3) Measured from 0°C to 70°C.

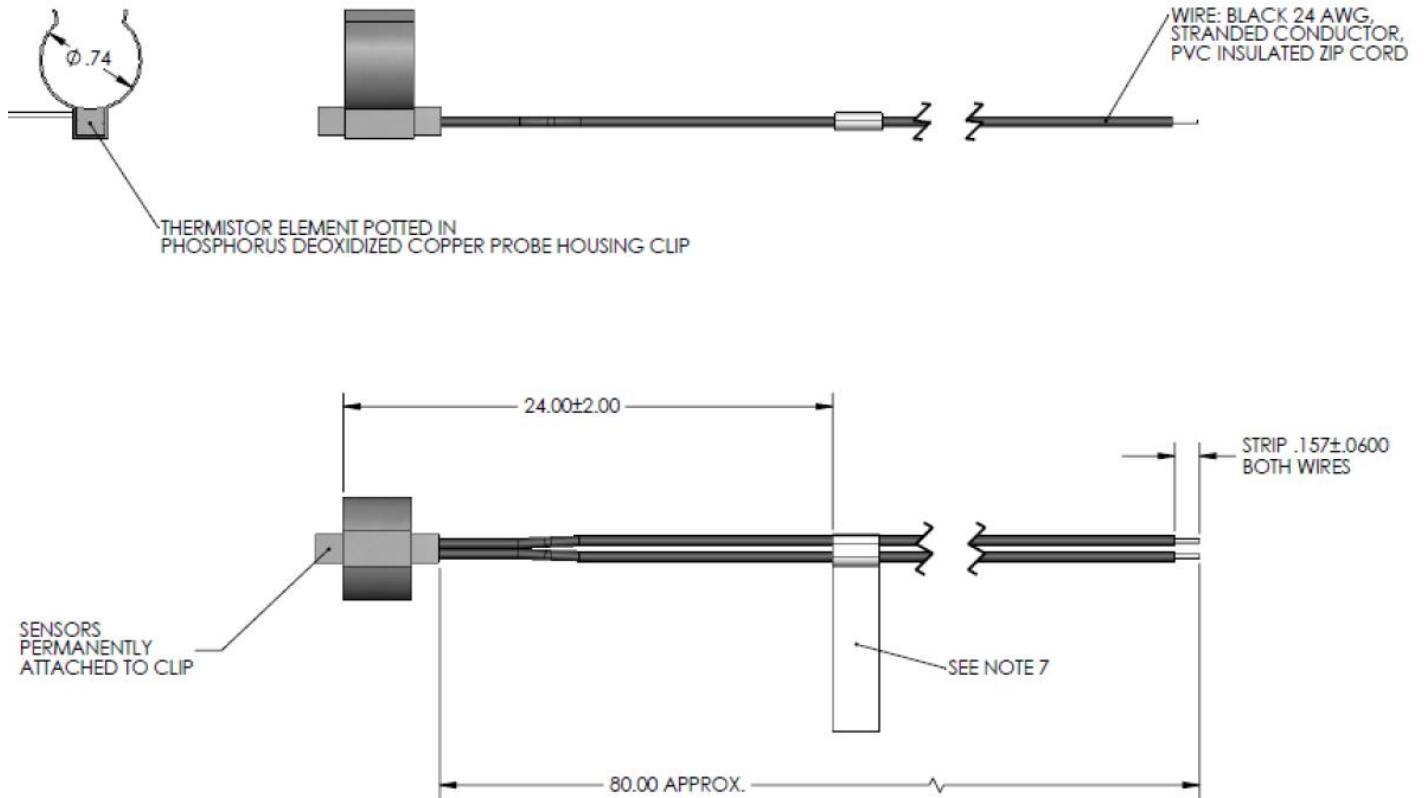
Electrical Pin Configuration (Digital [SPI, I2C])



Brown - SCL/SCLK
White - SDA/MISO
Red- V+In
Black GND

Fig. 2

Mechanical Dimensions (inches),

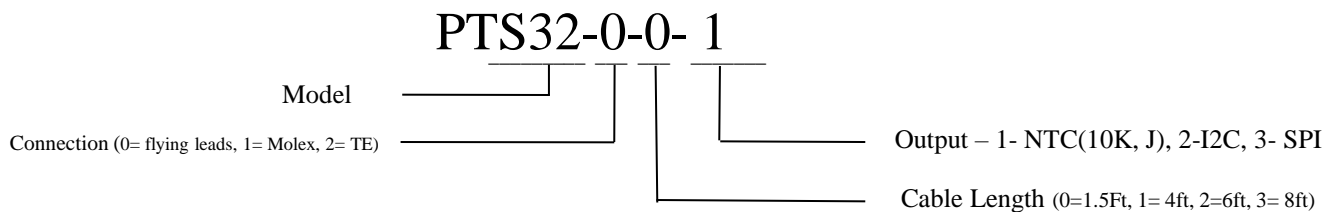


NTC Option - Resistance vs Temperature Chart

| Temperature © | Resistance Value (Kohm) | Temperature © | Resistance Value (Kohm) |
|---------------|-------------------------|---------------|-------------------------|
| -50 | 200.250 | 80 | 0.37680 |
| -40 | 100.680 | 85 | 0.32130 |
| -30 | 53.010 | 90 | 0.27486 |
| -20 | 29.091 | 100 | 0.20361 |
| -10 | 16.590 | 110 | 0.15306 |
| 0 | 9.795 | 120 | 0.11661 |
| 10 | 5.970 | 125 | 0.10227 |
| 20 | 3.747 | 130 | 0.08997 |
| 25 | 3.0000 | 140 | 0.07026 |
| 30 | 2.4168 | 150 | 0.05547 |
| 40 | 1.5975 | | |
| 50 | 1.0803 | | |
| 60 | 0.7461 | | |
| 70 | 0.5250 | | |

Beta: 25/85- 3976 , Temperature Coefficient @ 25C –4.4%/C

Part Number Configuration



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