

**Product Data**

**I-100 Series**  
**I-1K Series**

Platinum RTD Temperature Sensors

**Product Description**

The I-100 and I-1K Series temperature sensors incorporate a Class A, Thin Film Platinum RTD sensor that conforms to DIN-IEC-751 platinum RTD standards. These sensors are available in either two- or three-wire configurations, incorporating high accuracy and interchangeability throughout a wide operating temperature range.

These units are offered in Room, Room with Set Point, Room with Override, Room with Setpoint and Override, and Room with Setpoint, Override, and RJ11 Jack, Duct and Duct without Box, Immersion, Stainless Plate, Raw, Bendable Copper and Stainless Steel Rigid Averaging, Strap-On, Bullet Probe, and Outdoor Air Configurations.

All INTEC Room sensors may be ordered with an optional setpoint (see chart on the following page), override, or with a 4 pin RJ11 or 6 pin RJ12 communication jack with terminal blocks, for remote programming. These units are also available with a 1/8" RS232 Stereo Jack.

**Product Specifications**

|  |   |
|--|---|
| <b>Output</b>  | 100 Ohms @ 32°F (0°C)<br>1K Ohms @ 32°F (0°C)                         |
| <b>Accuracy</b>  | +/- 0.06% @ 32°F (0°C) Single Point<br>+/- 1.0 Ohm @ 70°F (Averaging) |
| <b>Stability</b>   | less than +/- 0.1°C drift   |
| <b>Repeatability</b>   | +/-0.2°C (+/-0.36°F)  |
| <b>Operating Temp Range:</b><br><b>Single Point</b>                  | -58 to 392°F (-50 to 200°C)   |
| <b>Continous Element Averaging</b>                                   | -50 to 275°F (-45.5 to 134.8°C)                                       |
| <b>Temp. Coefficient</b>   | 0.00385 Ohm/Ohm/°C  |
| <b>Standardization</b>   | DIN-IEC-751(formerly DIN 43760)                                       |
| <b>Resistance Characteristics</b>                                    | +/- 0.06% Class A (Standard)<br>+/- 0.12% Class B (Averaging)         |
| For sensors with Display option, see the <b>LCD Series</b> cut sheet |   |

**RTD**



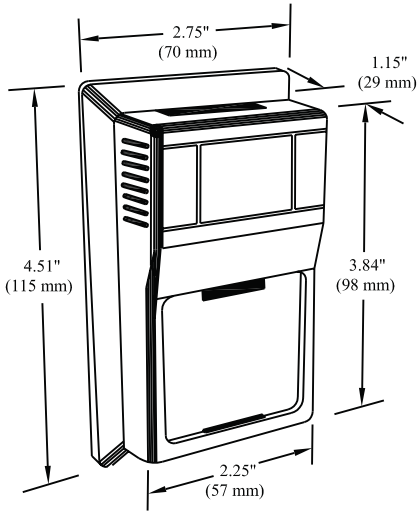
**Attributes:**

- **Double Potting Process to avoid Moisture Issues**
- **European enclosure for outside air**
- **Class A Standard exceeds most specifications**
- **Four-way Airflow design for wall mount**
- **Can be used with a transmitter to provide a 4 to 20mA signal**
- **Continuous Element Averaging Sensors**

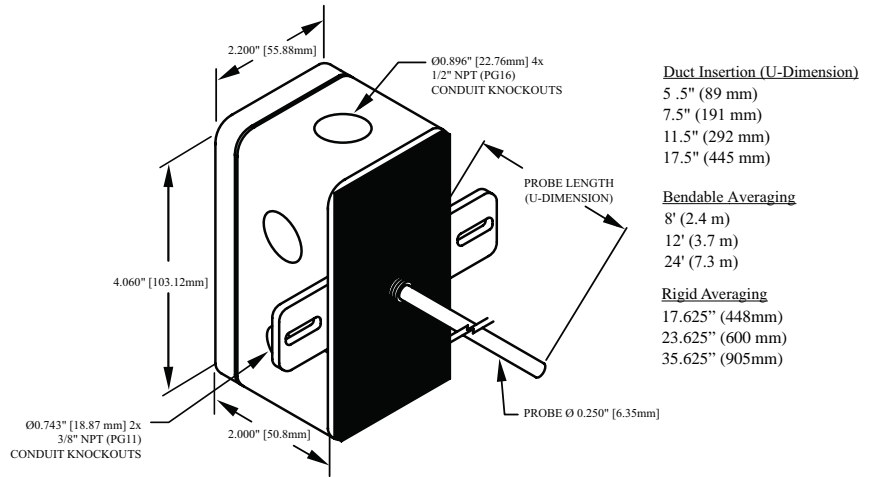
**Applications:**

- **DDC Systems**
- **Refrigeration Systems**
- **OEM / Industrial**
- **Light Industrial**

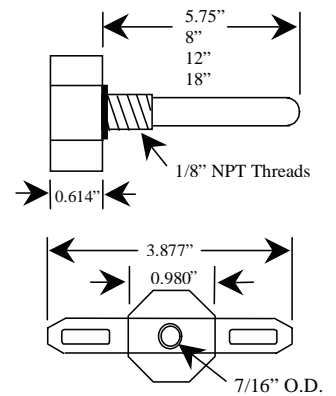
## Room



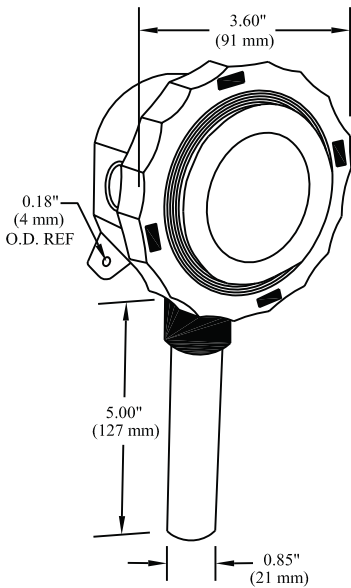
## Duct / Bendable & Rigid Averaging



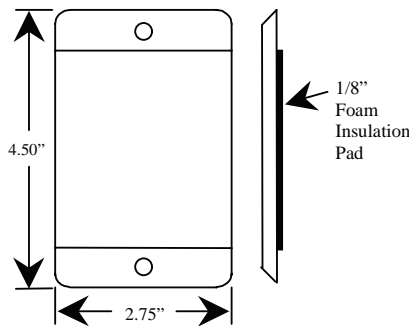
## Duct without Box



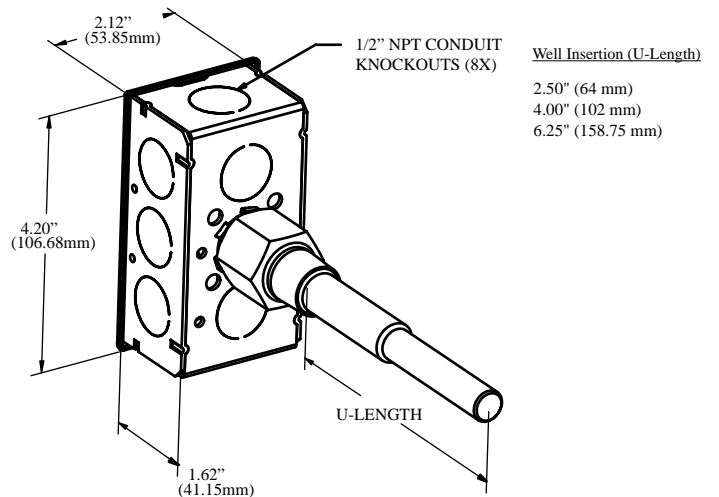
## Outside Air



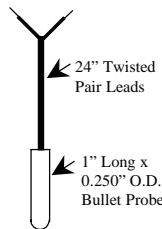
## Stainless Plate



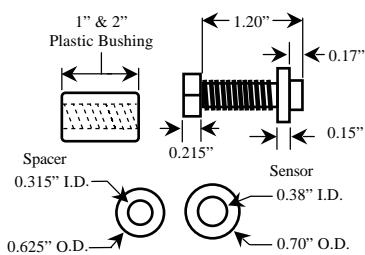
## Immersion



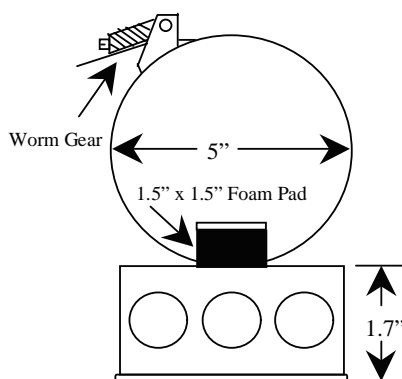
## Bullet Probe



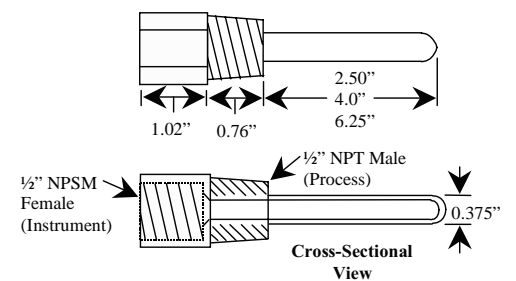
## Button Sensor



## Strap-On



## Thermowell



## Ordering Information

| Sensor     | # Wires             | Configuration   | Communication Jack <sup>1</sup>                     | Display <sup>1</sup>  | Housing Type <sup>2</sup>                  |
|------------|---------------------|---|---|---|--|
| I - [ ]    | - [ ]               | - [ ]   | - [ ]   | - [ ]   | - [ ]                                      |
| ↑          | ↑                   | ↑   | ↑   | ↑   | ↑  |
| <b>100</b> | <b>2W</b> (2-Wire)  | <b>R</b> - Room   | <b>J4</b> (4 Pin RJ11)                              | ( ) No Display<br>(Standard)  | <b>Add-On Options</b>                      |
| <b>1K</b>  | <b>3W</b> (3-Wire)* | <b>RS</b> - Room w/ Setpoint***<br><b>RO</b> - Room w/ Override<br><b>RSO</b> - Room w/ Setpoint & Override***<br><b>D</b> - Duct 4", 8", 12", 18", 24"<br><b>DO</b> - Duct without box 4", 8", 12", 18"<br><b>I</b> - Immersion 2.5", 4", 6"<br><b>A</b> - Bendable Copper Averaging 8', 12', 24'<br><b>RA</b> - Rigid Averaging 18", 24", 36"<br><b>S</b> - Strap On<br><b>O</b> - Outdoor Air<br><b>SP</b> - Stainless Plate<br><b>BP</b> - Bullet Probe<br><b>W</b> - Raw<br><b>W-6'</b> - Raw Sensor w/6'Leads<br><b>BBS</b> - Brass Button Sensor<br><b>SBS</b> - Stainless Button Sensor | <b>J6</b> (6 Pin RJ12)<br><b>S232</b> (Stereo Jack) | ( <b>L</b> ) LCD Display<br>(Degrees F)<br>( <b>LC</b> ) LCD Display<br>(Degrees C) | <b>(BB)</b> NEMA 3R<br><b>(4X)</b> NEMA 4X |

\* 3-Wire Configuration not available w/ RSO and/or LCD display

<sup>1</sup>These Options are only available on INTEC's Room Configurations.

<sup>2</sup>Standard Housing Types:

- Plastic Housing for Duct and Averaging sensors
- Galvanized Junction Box for Immersion and Strap-On sensors

Add-on option (BB) NEMA 3R housing is not available for Strap-On sensors

**RS / RSO\*\*\*** setpoint adjuster option requires additional ordering decisions for the following:

| Pot Value <sup>1</sup> | Setpoint Indicator <sup>1</sup> | Pot Action <sup>1</sup> |
|------------------------|---------------------------------|-------------------------|
| - [ ]                  | - [ ]                           | - [ ]                   |
| ↑                      | ↑                               | ↑                       |
| <b>400</b>             | <b>Cool   Warm</b>              | <b>DA</b> (Direct)      |
| <b>1K</b>              | <b>55 to 85</b>                 | <b>RA</b> (Reverse)     |
| <b>2K</b>              | <b>10 to 30° C</b>              |                         |
| <b>3K</b>              |                                 |                         |
| <b>5K</b>              |                                 |                         |
| <b>8.5K</b>            |                                 |                         |
| <b>10K</b>             |                                 |                         |
| <b>20K</b>             |                                 |                         |
| <b>100K</b>            |                                 |                         |

## I-100 and I-1K Ohm Platinum RTD Resistance - Temperature Chart

|             |            | I-100      | I-1K     |
|-------------|------------|------------|----------|
| Temperature |            | Resistance |          |
| °C          | °F         | Ohms       | Ohms     |
| -50         | <b>-58</b> | 80.31      | 803.07   |
| -45         | <b>-49</b> | 82.29      | 822.91   |
| -40         | <b>-40</b> | 84.27      | 842.71   |
| -35         | <b>-31</b> | 86.25      | 862.48   |
| -30         | <b>-22</b> | 88.22      | 882.22   |
| -25         | <b>-13</b> | 90.19      | 901.92   |
| -20         | <b>-4</b>  | 92.16      | 921.60   |
| -15         | <b>5</b>   | 94.12      | 941.24   |
| -10         | <b>14</b>  | 96.09      | 960.86   |
| -5          | <b>23</b>  | 98.04      | 980.44   |
| 0           | <b>32</b>  | 100.00     | 1,000.00 |
| 5           | <b>41</b>  | 101.95     | 1,019.53 |
| 10          | <b>50</b>  | 103.90     | 1,039.03 |
| 15          | <b>59</b>  | 105.85     | 1,058.49 |
| 20          | <b>68</b>  | 107.79     | 1,077.94 |
| 25          | <b>77</b>  | 109.74     | 1,097.35 |
| 30          | <b>86</b>  | 111.67     | 1,116.73 |
| 35          | <b>95</b>  | 113.61     | 1,136.08 |
| 40          | <b>104</b> | 115.54     | 1,155.41 |
| 45          | <b>113</b> | 117.47     | 1,174.70 |
| 50          | <b>122</b> | 119.40     | 1,193.97 |
| 55          | <b>131</b> | 121.32     | 1,213.21 |
| 60          | <b>140</b> | 123.24     | 1,232.42 |
| 65          | <b>149</b> | 125.16     | 1,251.60 |
| 70          | <b>158</b> | 127.08     | 1,270.75 |
| 75          | <b>167</b> | 128.99     | 1,289.87 |
| 80          | <b>176</b> | 130.90     | 1,308.97 |
| 85          | <b>185</b> | 132.80     | 1,328.03 |
| 90          | <b>194</b> | 134.71     | 1,347.07 |
| 95          | <b>203</b> | 136.61     | 1,366.08 |
| 100         | <b>212</b> | 138.51     | 1,385.05 |
| 105         | <b>221</b> | 140.40     | 1,404.00 |
| 110         | <b>230</b> | 142.29     | 1,422.93 |
| 115         | <b>239</b> | 144.18     | 1,441.82 |
| 120         | <b>248</b> | 146.07     | 1,460.68 |
| 125         | <b>257</b> | 147.95     | 1,479.51 |
| 130         | <b>266</b> | 149.83     | 1,498.32 |
| 135         | <b>275</b> | 151.71     | 1,517.10 |
| 140         | <b>284</b> | 153.58     | 1,535.84 |
| 145         | <b>293</b> | 155.46     | 1,554.56 |
| 150         | <b>302</b> | 157.33     | 1,573.25 |
| 155         | <b>311</b> | 159.19     | 1,591.91 |
| 160         | <b>320</b> | 161.05     | 1,610.54 |
| 165         | <b>329</b> | 162.92     | 1,629.15 |
| 170         | <b>338</b> | 164.77     | 1,647.72 |
| 175         | <b>347</b> | 166.63     | 1,666.27 |
| 180         | <b>356</b> | 168.48     | 1,684.78 |
| 185         | <b>365</b> | 170.33     | 1,703.27 |
| 190         | <b>374</b> | 172.17     | 1,721.73 |
| 195         | <b>383</b> | 174.02     | 1,740.16 |
| 200         | <b>392</b> | 175.86     | 1,758.56 |