

Product Data

I-1K Nickel Series
Nickel Temperature Sensor

Product Description

The I-1K-Nickel Series temperature sensors incorporate a thin film RTD sensor, which provides a predictable output over the specified temperature range of -50 to 275°F. These sensors are available in a two-wire configuration, incorporating high accuracy and interchangeability throughout a side 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, Strap-On, Bullet Probe, Button Sensor, 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

Output	1K Ohms @ 70°F (21°C)		
Accuracy	Temp	Resistance	Accuracy
	-50°F	674 Ohms	+/- 1.4°F
	-30°F	725 Ohms	+/- 1.2°F
	32°F	892 Ohms	+/- 0.5°F
	70°F	1000 Ohms	+/- 0.4°F
	170°F	1314 Ohms	+/- 1.3°F
	250°F	1597 Ohms	+/- 1.7°F
Operating Temp. Range	-32 to 275°F (0 to 134.8°C)		
Temp. Coefficient	0.00527 Ohm/Ohm/°C		
Tolerance	T<0°C (32°F)	+/-0.4 + 0.028 * T(°C)	
Tolerance	T>0°C (32°F)	+/-0.4 + 0.007 * T(°C)	
For sensors with Display option see -LCD Temp display cut sheet			

RTD



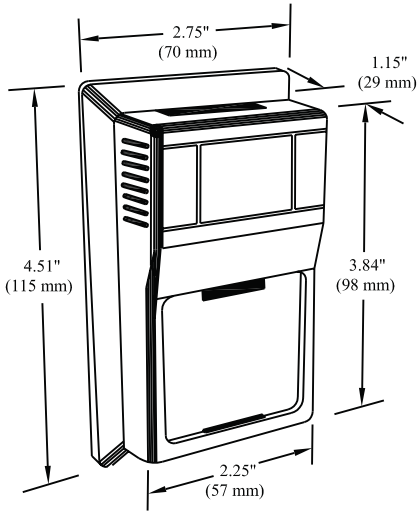
Attributes

- **Positive Temp. Coefficient (PTC)**
- **Two Year Warranty**
- **Double Potting Process avoids moisture issues**
- **Non-polarity sensitive**

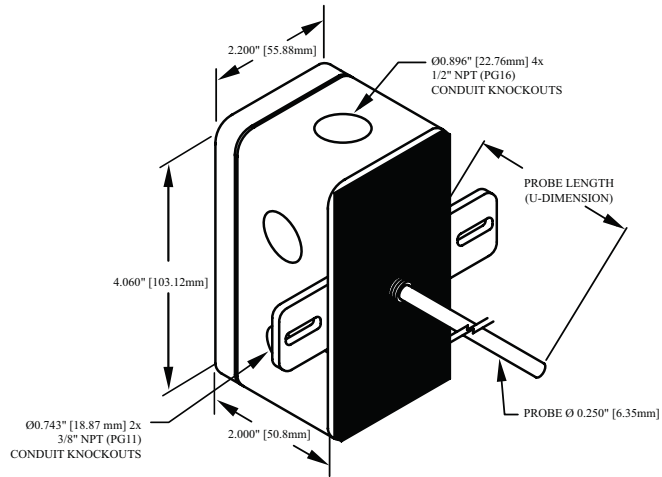
Applications

- **OEM/Industrial**
- **Light Industrial**
- **Process Control**
- **DDC Control Systems**

Room



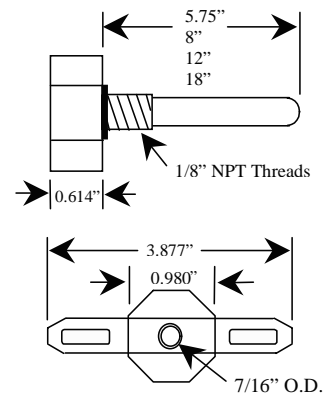
Duct / Averaging



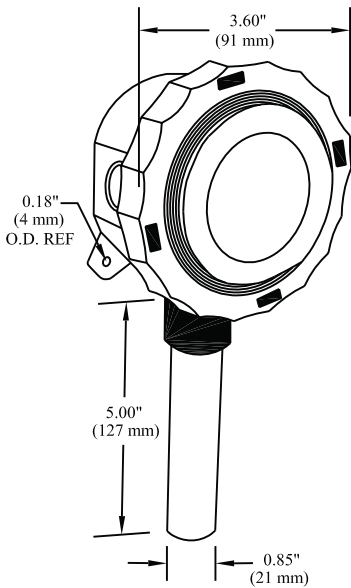
Duct Insertion (U-Dimension)
 5.5" (89 mm)
 7.5" (191 mm)
 11.5" (292 mm)
 17.5" (445 mm)

Bendable Averaging
 8' (2.4 m)
 12' (3.7 m)
 24' (7.3 m)

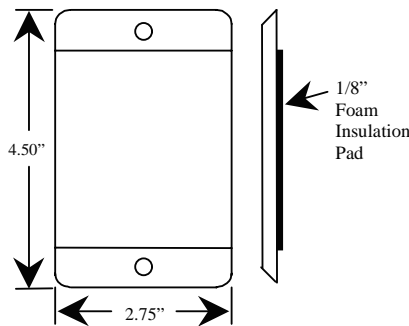
Duct without Box



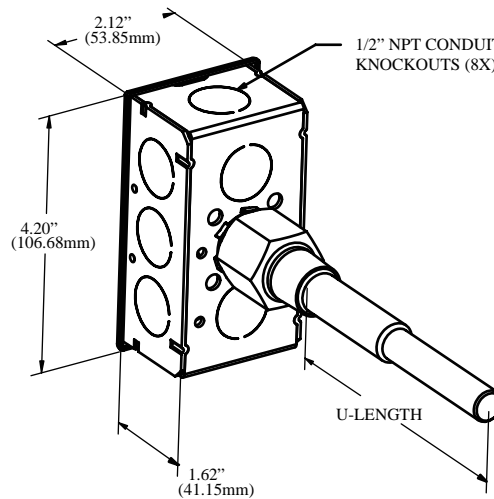
Outside Air



Stainless Plate

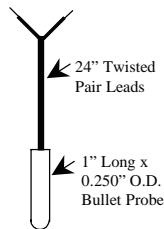


Immersion

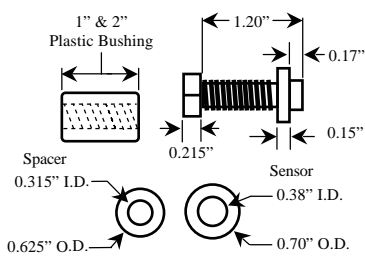


Well Insertion (U-Length)
 2.50" (64 mm)
 4.00" (102 mm)
 6.25" (158.75 mm)

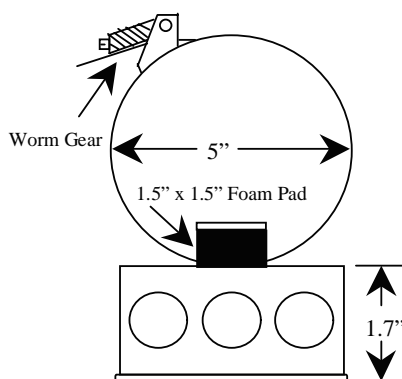
Bullet Probe



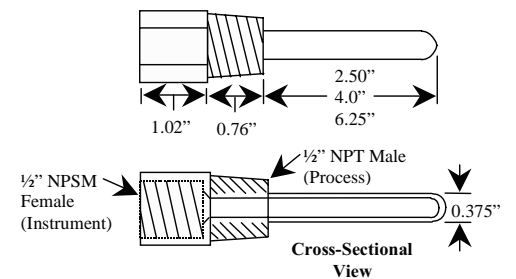
Button Sensor



Strap-On



Thermowell



Ordering Information

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

¹These Options are only available on INTEC's Room Configurations.

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

I-1KNI, 1K Nickel RTD Series' Resistance - Temperature Chart

		I-KNI
Temperature		Resistance
°C	°F	Ohms
-40.0	-40	699.0
-37.8	-36	709.2
-35.6	-32	719.5
-33.3	-28	729.8
-31.1	-24	740.1
-28.9	-20	750.5
-26.7	-16	761.0
-24.4	-12	771.5
-22.2	-8	782.1
-20.0	-4	792.8
-17.8	0	803.5
-15.6	4	814.2
-13.3	8	825.0
-11.1	12	835.9
-8.9	16	846.8
-6.7	20	857.8
-4.4	24	868.8
-2.2	28	879.9
0	32	891.1
2.2	36	902.3
4.4	40	913.5
6.7	44	924.9
8.9	48	936.3
11.1	52	947.7
13.3	56	959.2
15.6	60	970.8
17.8	64	982.4
20.0	68	994.1
21.1	70	1,000.0
22.2	72	1,005.9
24.4	76	1,017.7
26.7	80	1,029.6
28.9	84	1,041.5
31.1	88	1,053.5
33.3	92	1,065.6
35.6	96	1,077.8
37.8	100	1,090.0
40.0	104	1,102.2
42.2	108	1,114.5
44.4	112	1,126.9
46.7	116	1,139.4
48.9	120	1,151.9
51.1	124	1,164.5
53.3	128	1,177.2
55.6	132	1,189.9
57.8	136	1,202.7
60.0	140	1,215.6
62.2	144	1,228.5

		I-KNI
Temperature		Resistance
°C	°F	Ohms
64.4	148	1,241.5
66.7	152	1,254.6
68.9	156	1,267.7
71.1	160	1,280.9
73.3	164	1,294.2
75.6	168	1,307.5
77.8	172	1,320.9
80.0	176	1,334.4
82.2	180	1,348.0
84.4	184	1,361.6
86.7	188	1,375.3
88.9	192	1,389.1
91.1	196	1,402.9
93.3	200	1,416.8
95.6	204	1,430.8
97.8	208	1,444.9
100.0	212	1,459.0
102.2	216	1,473.2
104.4	220	1,487.5
106.7	224	1,501.9
108.9	228	1,516.3
111.1	232	1,530.8
113.3	236	1,545.4
115.6	240	1,560.0
117.8	244	1,574.8
120.0	248	1,589.6
122.2	252	1,604.5
124.4	256	1,619.4
126.7	260	1,634.5
128.9	264	1,649.6
131.1	268	1,664.8
133.3	272	1,680.1
135.6	276	1,695.4