

## INTRODUCTION

Thank you for choosing an HK Instruments PTE-Room series passive temperature sensor. The PTE-Room series is intended for use in commercial environments in HVAC/R applications. PTE-Room is particularly easy to install. The cover can be opened without tools and the cable can be routed from behind or above/below the installation surface. PTE-Room can be installed on top of a standard electrical switch box.

The design approach has been to offer user-friendly and premium quality products with economical pricing. PTE products are available with wide range of sensor types: NTC1.8k, NTC10k, NTC20k, Pt1000, Ni1000 and Ni1000-LG.

## APPLICATIONS

PTE-Room is commonly used in HVAC systems for:

- measuring indoor air temperature in offices, hospitals, schools etc.

## SPECIFICATIONS

### Performance

**Accuracy:**

NTC1.8k  
 $\pm 0.5\text{ }^{\circ}\text{C}$  @  $25\text{ }^{\circ}\text{C}$   
NTC10k  
 $\pm 0.25\text{ }^{\circ}\text{C}$  @  $25\text{ }^{\circ}\text{C}$   
NTC20k  
 $\pm 0.25\text{ }^{\circ}\text{C}$  @  $25\text{ }^{\circ}\text{C}$   
Pt1000  
 $\pm 0.3\text{ }^{\circ}\text{C}$  @  $0\text{ }^{\circ}\text{C}$   
Ni1000  
 $\pm 0.4\text{ }^{\circ}\text{C}$  @  $0\text{ }^{\circ}\text{C}$   
Ni1000-LG  
 $\pm 0.4\text{ }^{\circ}\text{C}$  @  $0\text{ }^{\circ}\text{C}$

**Protection class:**

IP20

### Technical Specifications

**Environment:**

Operating temperature:  
 $-10\text{ }^{\circ}\text{C}$  ...  $+50\text{ }^{\circ}\text{C}$

**Physical****Housing material:**

ABS

**Housing dimensions:**

80.0 x 75.0 x 27.5 mm

**Weight:**

50 g

### Conformance

Meets the requirements for CE marking:  
RoHS Directive 2011/65/EU  
WEEE Directive 2012/19/EU

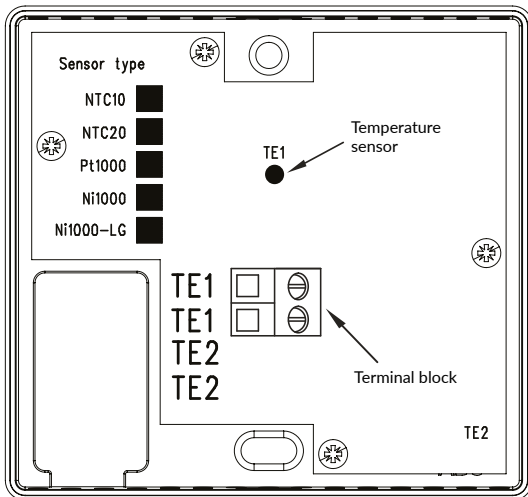
COMPANY WITH  
MANAGEMENT SYSTEM  
CERTIFIED BY DNV GL  
= ISO 9001 = ISO 14001 =



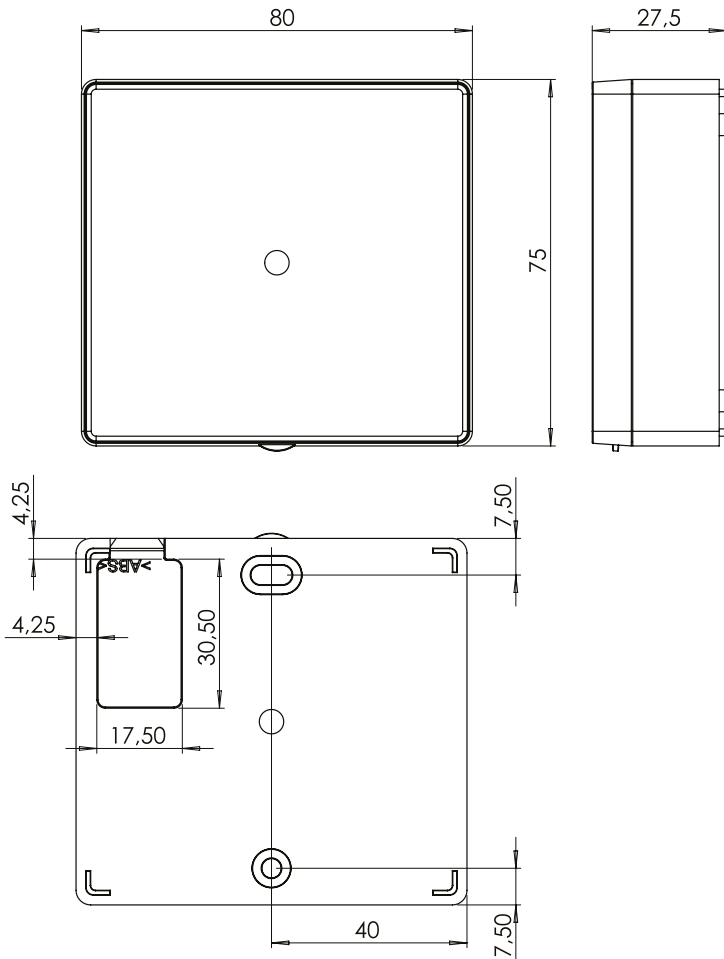
## ⚠ WARNING

- READ THESE INSTRUCTIONS CAREFULLY BEFORE ATTEMPTING TO INSTALL, OPERATE OR SERVICE THIS DEVICE.
- Failure to observe safety information and comply with instructions can result in PERSONAL INJURY, DEATH AND/OR PROPERTY DAMAGE.
- To avoid electrical shock or damage to equipment, disconnect power before installing or servicing and use only wiring with insulation rated for full device operating voltage.
- To avoid potential fire and/or explosion do not use in potentially flammable or explosive atmospheres.
- Retain these instructions for future reference.
- This product, when installed, will be part of an engineered system whose specifications and performance characteristics are not designed or controlled by HK Instruments. Review applications and national and local codes to assure that the installation will be functional and safe. Use only experienced and knowledgeable technicians to install this device.

## SCHEMATICS



## DIMENSIONAL DRAWINGS



## INSTALLATION

- 1) Mount the device in the desired location (see step 1).
- 2) Route the cables and connect the wires (see step 2).
- 3) The device is now ready to be used.

### STEP 1: MOUNTING THE DEVICE

- 1) Select a mounting location on the wall at 1.2–1.8 m (4–6 ft) above the floor and at least 50 cm (20 in) from the adjacent wall. Locate the unit in an area with good ventilation and an average temperature, where it will be responsive to changes to the room conditions.

Do not locate PTE-Room where it can be affected by:

- Direct sunlight
- Drafts or dead areas behind doors
- Radiant heat from appliances
- Concealed pipes or chimneys
- Outside walls or unheated / uncooled areas

- 2) Open the lid and mount the device with screws (see Figure 1a and 1b).

Figure 1a - Opening the lid

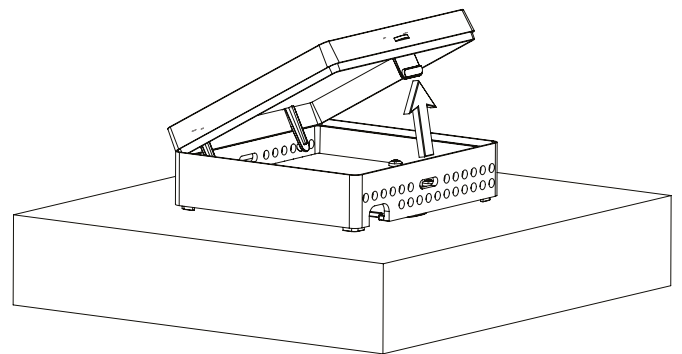
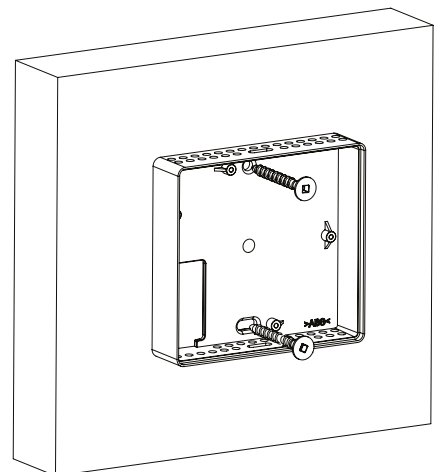


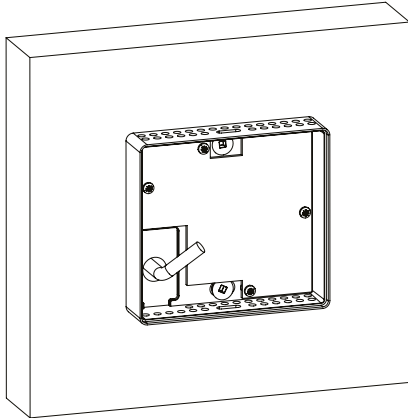
Figure 1b - Surface mounting



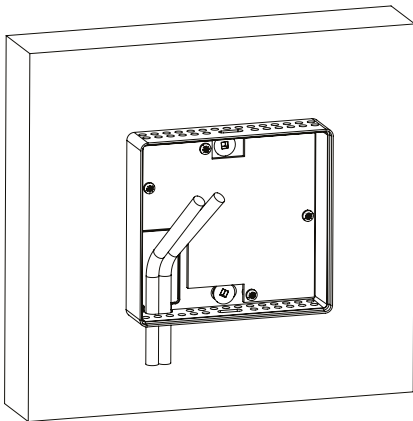
## STEP 2: WIRING DIAGRAMS

- 1) Route the cables through opening in the back plate or for surface wiring select a knockout on the bottom of the device, as shown in Figure 2a.
- 2) Connect the wires as shown in Figure 2b

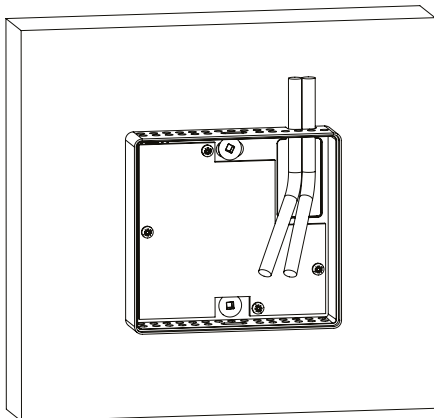
Figure 2a - Routing the cables



Wires can be routed through the opening in the back plate.



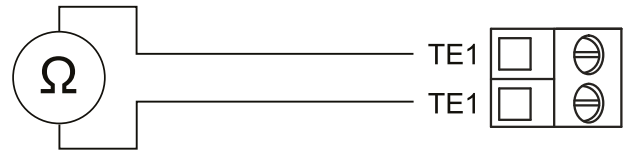
Wires can be routed through the bottom knockout.



The device can be flipped and the wires can be routed from above through the knockout.

## WIRING DIAGRAMS CONTINUED

Figure 2b - Wiring diagram



## RECYCLING/DISPOSAL

The parts left over from installation should be recycled according to your local instructions. Decommissioned devices should be taken to a recycling site that specializes in electronic waste.



## WARRANTY POLICY

The seller is obligated to provide a warranty of five years for the delivered goods regarding material and manufacturing. The warranty period is considered to start on the delivery date of the product. If a defect in raw materials or a production flaw is found, the seller is obligated, when the product is sent to the seller without delay or before expiration of the warranty, to amend the mistake at his/her discretion either by repairing the defective product or by delivering free of charge to the buyer a new flawless product and sending it to the buyer. Delivery costs for the repair under warranty will be paid by the buyer and the return costs by the seller. The warranty does not comprise damages caused by accident, lightning, flood or other natural phenomenon, normal wear and tear, improper or careless handling, abnormal use, overloading, improper storage, incorrect care or reconstruction, or changes and installation work not done by the seller or his/her authorized representative. The selection of materials for devices prone to corrosion is the buyer's responsibility, unless otherwise is legally agreed upon. Should the manufacturer alter the structure of the device, the seller is not obligated to make comparable changes to devices already purchased. Appealing for warranty requires that the buyer has correctly fulfilled his/her duties arisen from the delivery and stated in the contract. The seller will give a new warranty for goods that have been replaced or repaired within the warranty, however only to the expiration of the original product's warranty time. The warranty includes the repair of a defective part or device, or if needed, a new part or device, but not installation or exchange costs. Under no circumstance is the seller liable for damages compensation for indirect damage.

## TEMPERATURE SENSOR ELEMENT: RESISTANCE TABLE

Resistance ( $\Omega$ )						
	NTC1.8 $\beta = 3540$	NTC10 $\beta = 3976$	NTC20 $\beta = 4286$	Pt1000 EN 60751	Ni1000 DIN 43760	Ni1000-LG DIN 43760
200 °C	19,9	65,1	87,7	1 758,6	2 406,6	2 137,0
175 °C	31,1	106,6	149,4	1 666,3	2 189,3	1 963,0
150 °C	51,0	184,6	266,4	1 573,2	1 986,3	1 799,3
125 °C	88,4	340,9	520,1	1 479,5	1 796,3	1 645,1
100 °C	163,8	679,4	1 099	1 385,2	1 617,8	1 500,0
90 °C	214,3	917,4	1 521	1 347,2	1 549,3	1 444,4
80 °C	284,1	1 258	2 135	1 309,0	1 482,5	1 390,1
70 °C	382,2	1 755	3 061	1 270,8	1 417,2	1 337,1
60 °C	522,3	2 491	4 474	1 232,4	1 353,4	1 285,4
50 °C	726,1	3 606	6 673	1 194,0	1 291,1	1 235,0
40 °C	1 028,3	5 331	10 148	1 155,5	1 230,1	1 185,7
30 °C	1 486	8 063	15 884	1 116,8	1 170,6	1 137,6
29 °C	1 543	8 414	16 744	1 112,9	1 164,7	1 132,9
28 °C	1 603	8 783	17 530	1 109,1	1 158,8	1 128,1
27 °C	1 666	9 171	18 352	1 105,2	1 153,0	1 123,4
26 °C	1 731	9 578	19 213	1 101,3	1 147,1	1 118,7
25 °C	1 800	10 000	20 000	1 097,4	1 141,3	1 114,0
24 °C	1 872	10 455	21 059	1 093,5	1 135,5	1 109,3
23 °C	1 947	10 927	22 047	1 089,7	1 129,7	1 104,6
22 °C	2 025	11 424	23 081	1 085,8	1 123,9	1 100,0
21 °C	2 107	11 946	24 164	1 081,9	1 118,1	1 095,3
20 °C	2 193	12 496	25 366	1 078,0	1 112,4	1 090,7
15 °C	2 688	15 712	32 408	1 058,6	1 083,8	1 067,6
10 °C	3 315	19 892	41 720	1 039,1	1 055,5	1 044,8
5 °C	4 115	25 369	54 238	1 019,6	1 027,6	1 022,3
0 °C	5 141	32 600	71 126	1 000,0	1 000,0	1 000,0
-5 °C	6 468	42 225	94 154	980,5	972,7	978,0
-10 °C	8 198	55 147	125 854	960,9	945,8	956,2
-15 °C	10 469	72 648	169 020	941,3	919,2	934,7
-20 °C	13 477	96 575	229 320	921,6	893,0	913,5
-25 °C	17 494	129 604	312 820	901,9	867,0	892,5
-30 °C	22 906	175 664	431 340	882,2	841,5	871,7
-40 °C	40 375	333 110	838 760	842,7	791,3	830,8
-50 °C	74 060	661 301	1 688 780	803,0	742,6	790,9

Beta ( $\beta$ ) constant mentioned is of type 25/85