

» WRF04 IR

Room radiation temperature sensor

thermokon[®]
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
Issue date: 8/19/2020 • A110



» APPLICATION

Surface mounted room sensor for measuring of radiation temperature in room and office applications. Designed for control and monitoring systems.

» TYPES AVAILABLE

Room sensor radiation temperature – passive

WRF04 IR <Sensor>

<sensor>: PT1000/Ni1000/NTC... other sensors on request

» SECURITY ADVICE – CAUTION



The installation and assembly of electrical equipment should only be performed by authorized personnel.

The product should only be used for the intended application. Unauthorized modifications are prohibited! The product must not be used in relation with any equipment that in case of a failure may threaten, directly or indirectly, human health or life or result in danger to human beings, animals or assets. Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Please comply with

- Local laws, health & safety regulations, technical standards and regulations
- Condition of the device at the time of installation, to ensure safe installation
- This data sheet and installation manual

» NOTES ON DISPOSAL



As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

» REMARKS TO ROOM SENSORS

Location and Accuracy of Room Sensors

The room sensor should be mounted in a suitable location for measuring accurate room temperature. The accuracy of the temperature measurement also depends directly on the temperature dynamics of the wall. It is important, that the back plate is completely flush to the wall so that there is sufficient circulation of air through the vents in the cover, otherwise, deviations in temperature measurement will occur due to uncontrolled air circulation. The temperature sensor should not be covered by furniture or other objects. Mounting next to doors (due to draught) or windows (due to colder outside wall) should be avoided.

Surface and Flush Mounting

The measuring result is influenced by the thermal characteristics of the wall. A solid concrete wall responds to thermal fluctuations within a room in a much slower than a light-weight structure wall. Room temperature sensors installed in flush-mounted boxes have a longer response time to thermal variations. In extreme cases they detect the radiant heat of the wall even if the air temperature in the room is lower for example. The quicker the dynamics of the wall (temperature acceptance of the wall) or the longer the selected inquiry interval of the temperature sensor is the smaller the deviations limited in time are.

» TECHNICAL DATA

Measuring values	temperature
Output voltage	depending on used sensor
Measuring range temperature	-31..+158 °F
Operating temperature range	max. permissible operating temperature -31..+158 °F
Accuracy temperature	typ. $\pm 0,3$ K (typ. at 70 °F), depending on used sensor
Sensor	2-wire
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Cable entry	breaking points top/bottom, rear entry
Connection electrical	terminal block, max. 15AWG
Ambient condition	max. 85% rH non-condensing
Weight	1.76 oz.
Mounting	surface mounted on flush mounting box (Ø= 60 mm 2.36 in.)
Notes	special painting available on request, for other sensors please request

» PRODUCT TESTING AND CERTIFICATION



Declaration of conformity

The declaration of conformity of the products can be found on our website <https://www.thermokon.de/>.

» MOUNTING ADVICES

Make sure that the device is power-off, if you install it!

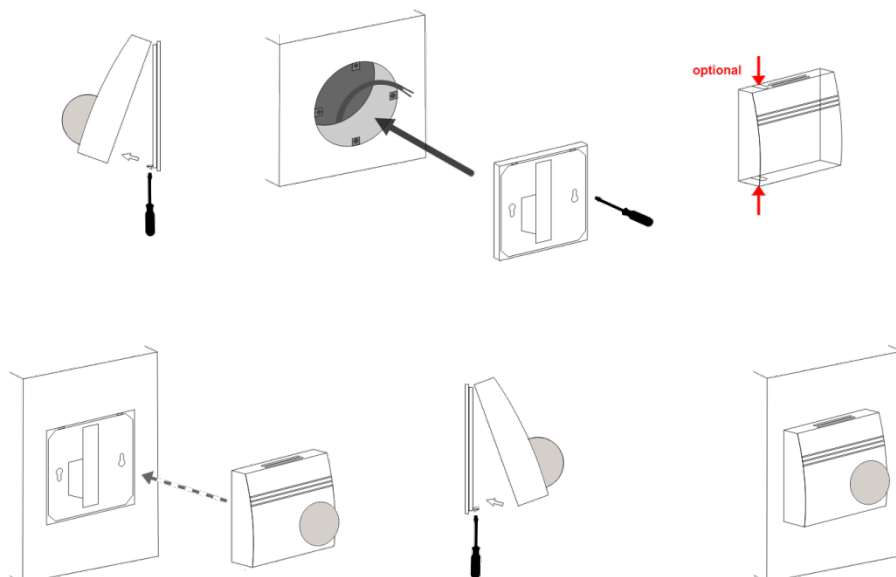
The device can be installed on a smooth wall surface or a flush box. It should be selected a representative location for the measuring medias. The use of deep installation boxes is recommended due to the increased storage capacity for the cabling.

Sunlight and drafts e.g. in conduit must be avoided so that the measuring result is not distorted. If necessary, is the end of the installation tube seal.

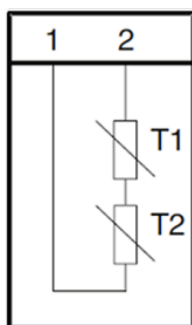
(1) For wiring, the upper part of the base plate must be solved. Base plate and upper part are connected with each other by mounting clips.

(2) The installation of the base plate to the smooth wall surface can be done with plugs and screws.

(3) Then, the device is placed on the base plate.



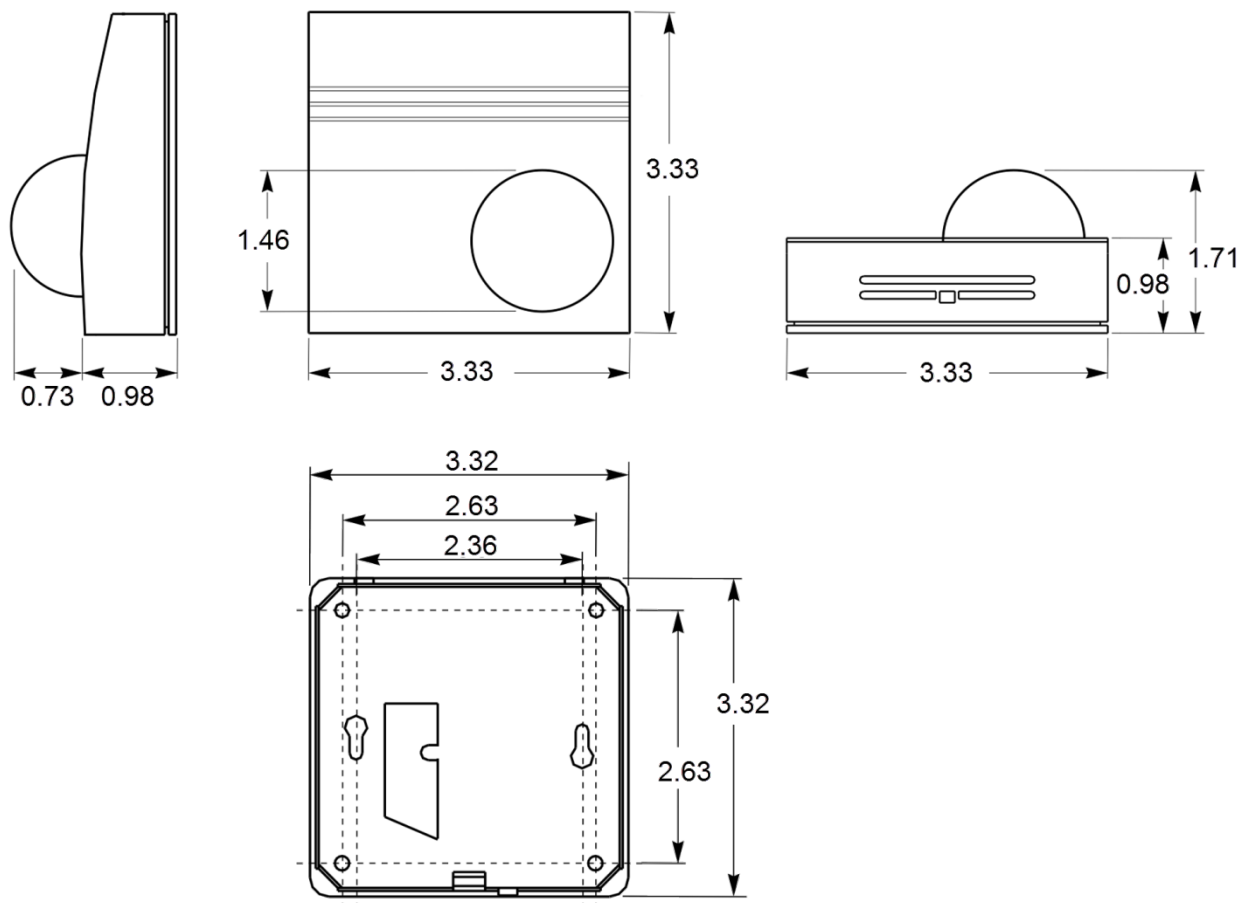
» CONNECTION PLAN AND FUNCTION DESCRIPTION



	R (T1 + T2)
Ni1000/PT1000	1 k Ω (0° C)
NTC	10 k Ω (25° C)
NTC	22 k Ω (25° C)

The value of the measuring resistors changes in relation with the sensor environment. In fact, the sensor is equipped with two measuring resistors: one for measuring the radiant temperature and the other for the room temperature. The resistor output value is the average of the two measuring one.

» DIMENSIONS (IN.)



» ACCESSORIES (OPTIONAL)

Rawl plugs and screws (2 pcs. each)
 Frame for surface mounting WRF04

Item No. 102209
 Item No. 111584