# WRF04 (LCD) x

Room Operating Unit Wall Mounted



# Datasheet · 208468

Subject to technical alteration Issue date: 20.03.2025 · A141





(Fig. deviating depending on type)

# » APPLICATION

The room operating panel is designed for temperature detection and integrated manual control of HVAC applications (change Set point, change Occupancy, change Fan Speed).

## »TYPES AVAILABLE

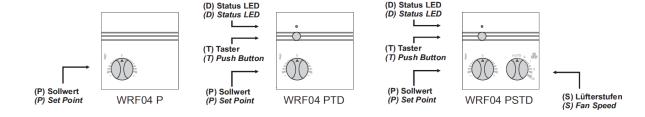
### Room operating unit temperature - passive, optional active potentiometer

- WRF04 P <Sensor>, 10 kOhm
- WRF04 S <Sensor>, FS5
- WRF04 TD <Sensor>, LED green
- WRF04 PTD <Sensor>, 10 kOhm, LED green
- WRF04 PSD <Sensor>, 10 kOhm, FS5, LED green
- WRF04 PSTD <Sensor>, 10 kOhm, FS5, LED green

< Sensor>: without sensor/PT100/PT1000/NI1000/NI1000TK5000/LM235Z/NTC.../PTC...additional sensors on request the sensor of the

## Room operating unit temperature optional with LCD - active 0..10 V, active potentiometer

- WRF04 (LCD) P TRV3, Poti\_active
- WRF04 (LCD) PTD TRV3, Poti\_active, LED green
- WRF04 (LCD) PSD TRV3, Poti active, FS5, LED green
- WRF04 (LCD) PSTD TRV3, Poti\_active, FS5, LED green



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## » 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. Unauthorised 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



The crossed-out wheelie bin symbol indicates that the product or removable batteries must not be disposed of with household or commercial waste. Within the EU, you are legally obliged to dispose of the product separately and appropriately in accordance with the national laws of your country. Alternatively, please contact your supplier or Thermokon Sensortechnik GmbH. Further information can be found at: <a href="https://www.thermokon.com">www.thermokon.com</a>

# » MOUNTING ADVISE ROOM SENSORS

The Accuracy of the room sensors are influenced by the technical specifications as well as the positioning and the installation type.

### **During Assembly:**

- Seal mounting box (if present).
- Installation type, air draught, heat source, radiation heat or direct sunlight can affect the measurement.
- Bulding material specific properties of the installation place (brick-, concrete-, partition wall, cavity wall, ...) can affect the measurement.

### Assembly not recommendet in...

- Air draught (e.g.: close to windows / doors / fans ...)
- Near heating sources,
- Direct sunlight
- Niches / between furniture / ...

# » BUILD-UP OF SELF-HEATING BY ELECTRICAL DISSIPATIVE POWER

Sensors with electronic components always have a dissipative power, which affects the temperature measurement of the ambient air. The dissipation in active temperature sensors shows a linear increase with rising operating voltage. This dissipative power has to be considered when measuring temperature. In case of a fixed operating voltage (±0,2 V) this is normally done by adding or reducing a constant offset value.

Thermokon transducers can be operated with variable operating voltages. The transducers are set at the factory with a reference operating voltage of 24 V =. At this voltage, the expected measuring error of the output signal will be the least. Other operating voltages, can cause a measurement deviation changing power loss of the sensor electronics.

A recalibration can be carried out directly on the unit or via a software variable (app or bus).

Remark: Occurring draught leads to a better carrying-off of dissipative power at the sensor. Thus temporally limited fluctuations might occur upon temperature measurement.

# » PRODUCT TESTING AND CERTIFICATION





Declaration of conformity

The declaration of conformity of the products are available on our website <a href="https://www.thermokon.de/">https://www.thermokon.de/</a>

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## »TECHNICAL DATA

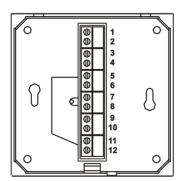
Measuring values	temperature	
Output voltage	TRV3 010 V, min. load 5 kΩ	
Output passive	passive optional, PT100/PT1000/NI1000/NI1000TK5000/ LM235Z/NTC/PTC other sensors on request	
Power supply	1524 V = (±10%) or 24 V~ (±10%) SELV	
Power consumption	typ. 0,42 W (24 V =)   0,84 VA (24 V ~)	
Measuring range temp	<b>TRV3</b> 0+50 °C	passive depending on used sensor
Accuracy temperature	TRV3 ±1% of measuring range (typ. at 21 °C)	passive depending on used sensor
Set point (P)	potentiometer, 3-wire connection, default value 10 k $\Omega$ (for other values please request), active output 010 V (optional)	
Rotary switch (S)	for fan stage adjustment (max. 5 stages), 5-stages (auto,0,I,II,III), 2-stages (0,I), 3-stages (0,I,II), 4-stages (0,I,II,III), switching capacity max. 24 V =/~, 5 W	
Button (T)	for presence detection, switching capacity max. 600 mW	
LED (D)	for status feedback, green (standard), several LEDs possible (e.g. green, yellow, red)	
Labelling	rotary switch 0,I or 0,I,II or 0,I,II,III or Auto,0,I,II,III	set point' -,0,+
Display (optional)	LCD 29x12 mm, monochrome	
Enclosure	PC, pure white	
Protection	IP30 according to EN 60529	
Cable entry	breaking points top/bottom, rear entry	
Connection electrical	terminal block max. 1,5mm²	
Ambient condition	-35+70 °C, max. 85% rH non-condensing	
Weight	50 g	
Mounting	flush mounted with standard EU box ( $\emptyset$ =60 mm), to be mounted flat onto the surface using adhesive foil or screws	
Notes	for further variants see chapter room controller, special labelling available on request, special painting available on request, other sensors   operating elements on request	

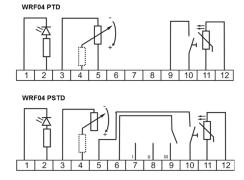
<sup>\*\*</sup>Passive variant with active potentiometer: The self-heating results in a deviation of the actually measured value. Therefore, it is necessary to compensate the actual deviation of the passive sensor in the BMS with an offset.

# » CONNECTION PLAN

The terminal assignments vary depending on the type of the device. Terminal plan is attached to the device. The standard terminal assignment follows the connection plan below.

# Room operating unit temperature – passive, optional active potentiometer

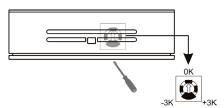




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## Room operating unit temperature optional with LCD - active 0..10 V, active potentiometer

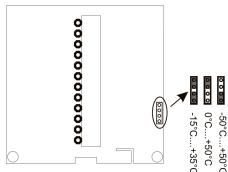
## Temperature Offset



# 0 1 2 2 3 4 4 5 6 6 7 7 8 9 10 11 11 11 12 0

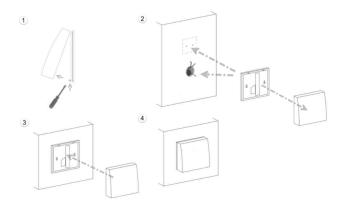
- 1: GND
- 2: UB+ | 15..24 V = or 24 V~
- 3: 0..10 V Temperature | 0..+50 °C
- 4: 0..10 V Setpoint

# Measuring range adjustment

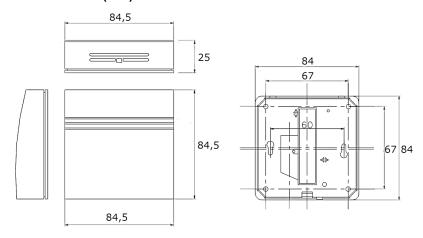


# » MOUNTING ADVICES

The device may be installed in a voltage free condition only. The device can be installed on a flush-mounted box or directly onto the wall. If installed on a flush-mounted box, seal the pipe to eliminate drafts.



# » DIMENSIONS (MM)



# » ACCESSORIES (OPTIONAL)

Rawl plugs and screws (2 pcs. each)
Frame for surface mounting WRF04
Balls stroke protection BS100 VA (only for WRF04)

Item No. 102209 Item No. 111584 Item No. 103312