FTW04 KNX

Room sensor for temperature and humidity

thermokon® Sensortechnik GmbH

Datasheet

Subject to technical alteration
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Application

Surface mount room humidity and temperature sensor for room and space monitoring and control applications. Using the ETS software the required program components and parameter settings can be loaded into the device.

Types Available

Room sensor temperature + humidity – active BUS

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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

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.

Build-up of Self-Heating by Electrical Dissipative Power

Temperature 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. As Thermokon transducers work with a variable operating voltage, only one operating voltage can be taken into consideration, for reasons of production engineering. Transducers 0..10 V / 4..20 mA have a standard setting at an operating voltage of 24 V =. That means, that at this voltage, the expected measuring error of the output signal will be the least. For other operating voltages, the offset error will be increased or lowered by a changing power loss of the sensor electronics. If a re-calibration should become necessary later directly on the sensor, this can be done by means of a trimming potentiometer on the sensor board.

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

Application Notice for Humidity Sensors

Refrain from touching the sensitive humidity sensor/element. Touching the sensitive surface will void warranty.

For standard environmental conditions re-calibration is recommended once a year to maintain the specified accuracy.

When exposed to high ambient temperature and/or high levels of humidity or presence of aggressive gases (i.e. chlorine, ozone, ammonia) the sensor element may be affected and re-calibration may be required sooner than specified. Re-calibration and deterioration of the humidity sensor due to environmental conditions are not subject of the general warranty.

Technical Data

Measuring values	temperature, humidity
Network technology	KNX (TP)
Power supply	supply via BUS
Measuring range temp	-55..+125 °C
Measuring range humidity	0..100% rH non-condensing
Cable entry	breaking points top/bottom, rear entry
Connection electrical	KNX terminal block
Enclosure	PC, pure white
Protection	IP30 according to EN 60529
Ambient condition	-20..+60 °C, max. 85% rH short term condensation
Weight	95 g
Mounting	surface mounted on flush-mounting box (Ø=55 mm)
Notes	special painting available on request

Connection

The connection of the device with the KNX bus is established by using a bus terminal. When connecting via the bus terminal, pay attention to the correct polarity corresponding to the imprint. Power is supplied via the internal KNX bus terminal.

Mounting Advices

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

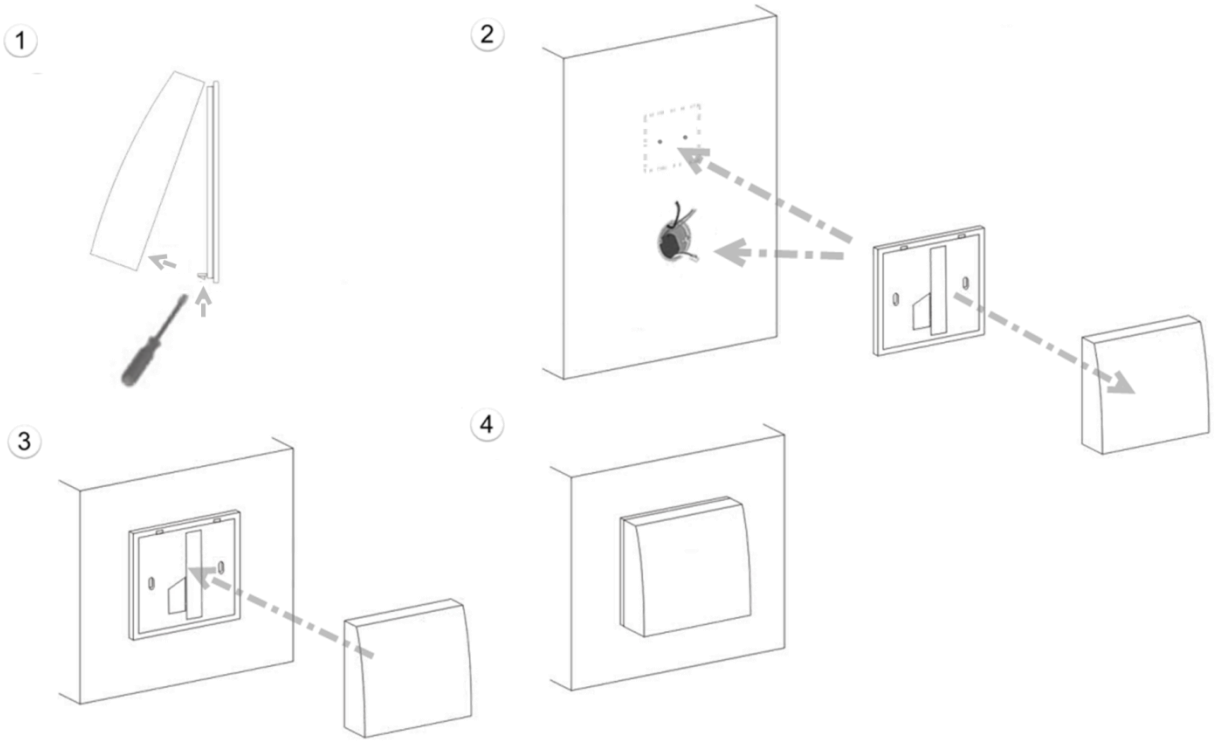
The device can be installed on a smooth wall surface or a flush box. It should be selected a representative location for the measuring medias. The use of deep installation boxes is recommended due to the increased storage capacity for the cabling.

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.



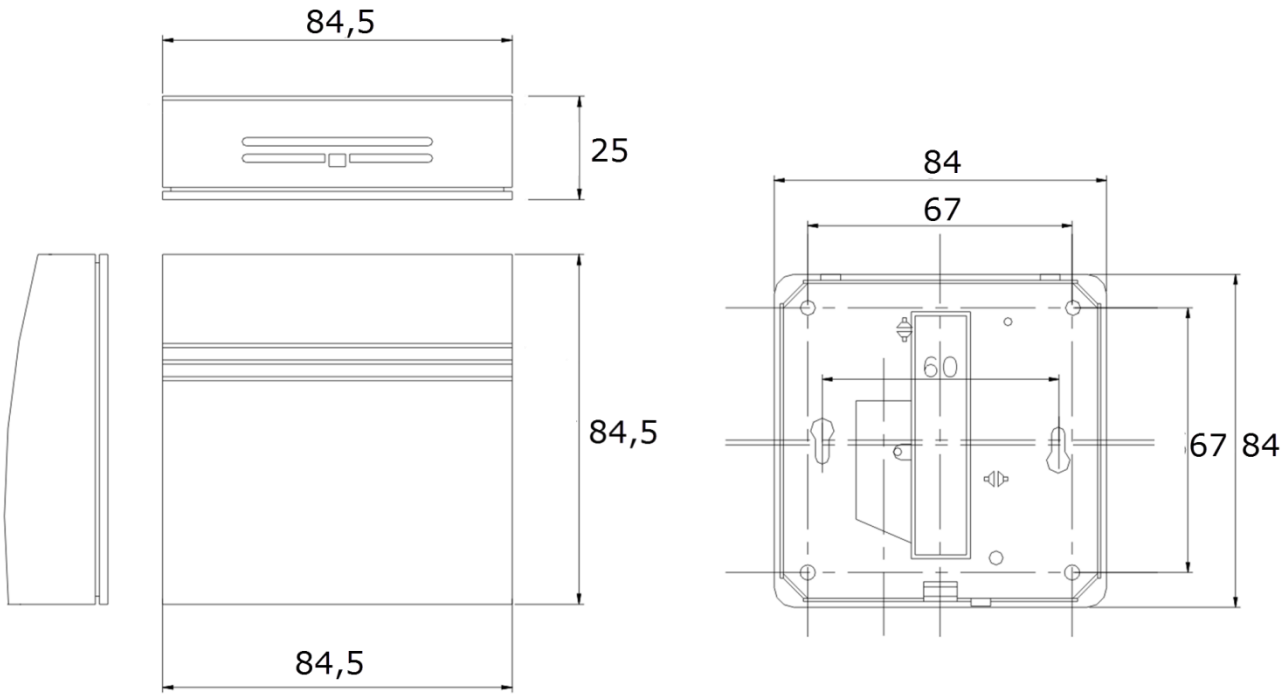
Commissioning

In delivery state no device or group addresses are available. The required functions may be released in the parameter settings.

Important

- configuration with ETS 3.0b and later
- product database not older since 05/2006
- the latest service patch must be installed

Dimensions (mm)



Accessories (optional)

Rawl plugs and screws (2 pcs. each)	Item No. 102209
Balls stroke protection BS100	Item No. 103312