

SR65 rH

Wireless sensor for detection of temperature and rel. humidity

thermokon[®]
HOME OF SENSOR TECHNOLOGY

Datasheet

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Application

Wireless sensor for detection of temperature and rel. humidity in outdoor areas, cold stores, greenhouses, production plants and warehouses. Self-powered EnOcean wireless technology. Configuration via airConfig.

Security Advice – Caution



The installation and assembly of the device 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.

Guidelines for Devices with Solar Energy Storage

Due to the energy-optimized EnOcean radio technology used in "EasySens" wireless sensors, the devices can work without batteries and self-charge themselves using electric energy generated by integrated solar cells. This makes the devices almost maintenance free and environmentally sound due to not having to replace batteries.

For optimum use, the device should be mounted in a location with sufficient ambient brightness. Minimum illumination of 200 lx (artificial light or ambient) is required for at least 3 to 4 hours each day. (The health and safety regulations at work require a minimum illumination of 500 lx for office workplaces).

The solar cell should be mounted facing towards the window direction if possible. If the device has a temperature sensor, then even periodic direct sun radiation should be avoided due to incorrect false temperature readings.

The mounting position should be selected so that the device will not be obstructed in the future: for example by placement areas, additional furniture or roll-fronted cupboards.

The sensor is supplied in an operational state. If the sensor has been stored in darkness for longer periods, the internal solar energy storage will most likely need to be recharged. This would normally happen automatically during commissioning or during initial start up in ambient light. If the initial charge is not sufficient, the sensor will reach its full operating state up to 3 to 4 days, if the requirements for minimum illumination per day are met. The sensor will then transmit continuously in darkness as specified f (2/3 days on factory default telegram timing). Depending on the application it is also possible for the devices to operate in darker rooms (with brightness <100 lx) by using the battery back-up option. Batteries to be used are listed in accessories.

The operating time when using batteries will depend on the transmission frequency as well as the component aging and the self-discharge of the battery. Standard operating time will be 5-10 years on factory default telegram timing. Changing of the device from solar to battery operation is done automatically by simply adding a battery to the device.

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.

Information about EasySens (Radio) / airConfig in general

See Information: http://www.thermokon.de/ftp/info/Information_Radio_airConfig_en.pdf



Technical Data

Measuring values	temperature, humidity
Radio technology	EnOcean (IEC 14543-3-10)
Frequency	868 MHz
Data transmission	airConfig ready
Power supply	solar cell, internal super cap, optional: backup battery LS14250 (3,6 V)
Measuring range temp.	-20..+60 °C, configured via airConfig
Measuring range humidity	0..100% rH non-condensing
Accuracy Temperature	±1% of measuring range (typ. at 21 °C)
Accuracy humidity	±5% between 30..70% rH (typ. at 21 °C)
Measuring interval	WakeUp time = 100 sec. (default), heartbeat cycle = every 10th wakeup, configured via airConfig
Enclosure	PA6.6, pure white, cover PC, transparent, with quick lock screws
Protection	IP65 according to EN 60529
Ambient condition	-20..+70 °C, max. 85% rH short term condensation
Weight	120 g
Delivery content	incl. rain protection PA6, white
Notes	integrated battery backup possibility for usage in dark rooms, to use the free software airConfig (download) an usb stick, which is able to send and receive EnOcean telegrams, is necessary. We offer such a stick with the package airScan (item No. 566704 for 868 MHz)

Overview of airConfig selectable radio telegrams

A5-04-02 (default)	
A5-04-01	A5-04-03

EEP:

Which data contained in the telegram is in the EEP (EnOcean equipment profile) defined <http://www.enocean-alliance.org/eep/>.

Configuration with airConfig

NO airConfig needed if default settings will be used. airConfig and a EnOcean USB transceiver (i.e. USB300) will be mandatory if the default EEP and other settings shall be changed.

The screenshot shows the 'Settings' window in the airConfig software. It is divided into two main sections: 'Device information' and 'Device settings'.
 In the 'Device information' section, the 'Energy status' is shown as 'n/a'.
 The 'Device settings' section includes:
 - An 'EEP' dropdown menu set to 'A5-04-01, Range 0°C to +40°C and 0% to 100%'.
 - A 'Temperature at byte value 0' input field set to '0.0'.
 - A 'Temperature at byte value' dropdown set to '250' and an input field set to '40.0'.
 - A 'Change of value' dropdown set to '0.16 °C'.
 - 'Temperature offset' and 'Humidity offset' input fields, both set to '0.0'.
 - A 'Wake-up time' dropdown set to '10 sec'.
 - A 'Heartbeat cycle' dropdown set to 'every 10th WakeUp'.

The Device information provides information regarding the **Energy status** of the device.

It is necessary to ensure that the device is full charged or a battery is inserted. The Energy status must be **OK** to configure the device.

Clicking on the drop-down menu **EEP** to choose the desired measuring range. The corresponding **Byte values** of the Temperature values are shown below.



Attention: Only operate the sensor in the specified measuring range.

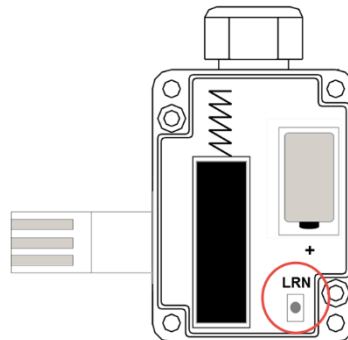
Change of value defines the minimal temperature change required since the last transmission to send a new telegram.

Set **Temperature offset** or **Humidity offset** for individual adjustment.

The **Wake-up** time defines the measuring interval.

Heartbeat cycle defines the maximal number of Wake-ups without transmitting the temperature between 2 transmissions. Receivers monitor this interval to detect missing sensor signals.

Right-click on the device icon and send configuration to initiate the transfer of the new settings. As the sensor will be sleeping it will need to be woken up by pressing the LRN button. Once the configuration has been transferred successfully into the device the sensor will be highlighted in green. Highlighted in Red indicates a problem during the transmission.

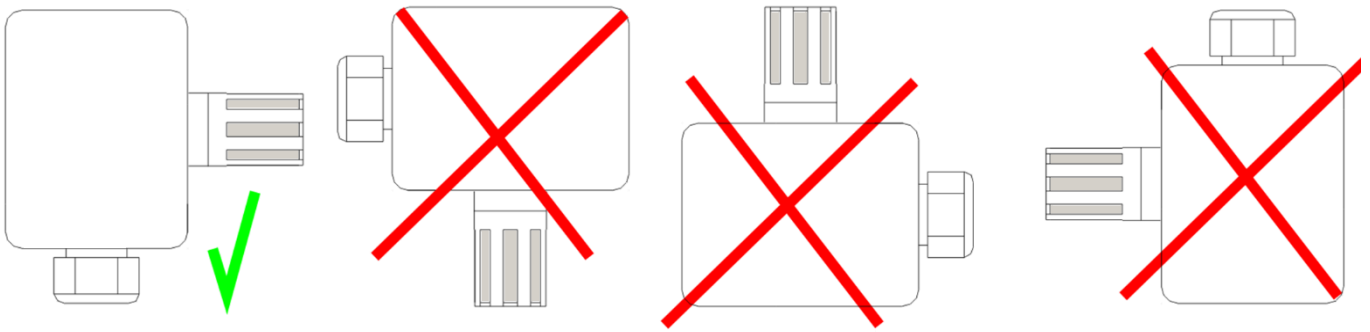


Note:

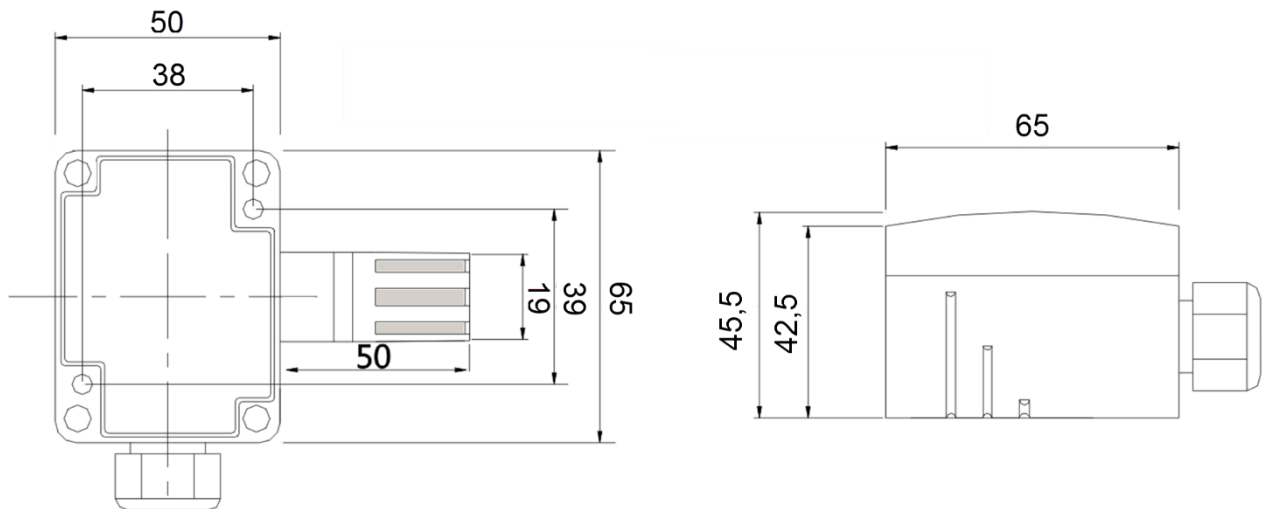
The more frequently a device is programmed to wake up, measure and send data, the more energy is being consumed, which can lead to insufficient energy charge of the sensor by ambient illumination.

Mounting Advice

When mounting outdoors, protect the device against direct sun or rain. If necessary use a protective cover.



Dimensions (mm)



Accessories (optional)

Battery LS14250
 Rain protection PA6, white
 Filter stainless steel, wire mesh (spare part)
 Raw plugs and screws (2 pcs. each)

Item No. 315098
 Item No. 587709
 Item No. 231169
 Item No. 102209