

SR65+ TF 868 MHz

Wireless CableTemperature Sensor

thermokon[®]
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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» APPLICATION

Self-powered wireless EnOcean duct sensor to measure the temperature in gaseous media of heating, ventilation and air-conditioning systems. Configuration via airConfig.

This product is intended for use as part of an automation solution for (functional) buildings. It transmits sensor data within a building over short distances unencrypted by radio to suitable receivers. No personal data or location data is transmitted.

The product cannot communicate directly with the Internet and is not intended for applications that use the Internet to forward unprocessed sensor data. Automation stations that forward data via the Internet, e.g. to visualise the building status, must ensure that the data to be forwarded is encrypted as required by law.

» 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

» PRODUCT TESTING AND CERTIFICATION



Declaration of conformity

The declaration of conformity of the products are available on our website
<https://www.thermokon.de/direct/en-gb/categories/sr65-tf>

» 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.

» INFORMATION ABOUT EASYSSENS® (RADIO) / AIRCONFIG GENERAL USAGE



EasySens® - airConfig

Basic information about EasySens® radio and about general usage of our airConfig software, please download from our website.

» OVERVIEW OF THE RADIO TELEGRAMS



EEP

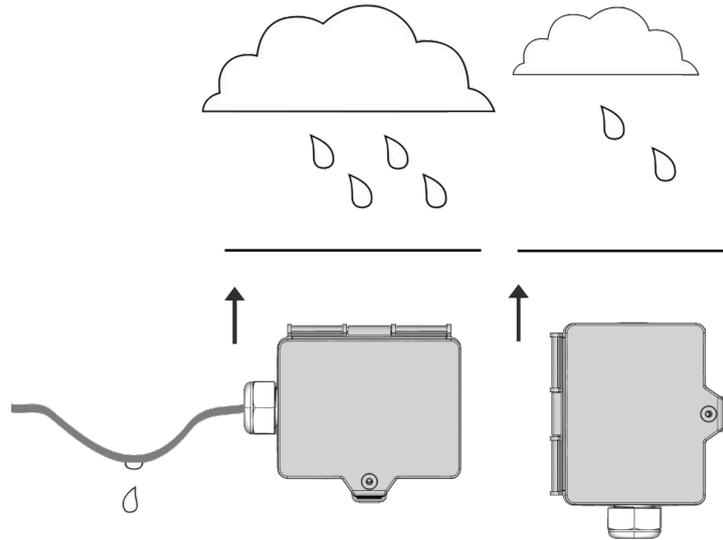
The structure of the data contained in the telegram can be found in the EEP (EnOcean equipment profile) list provided by the EnOcean Alliance.

» TECHNICAL DATA

Measuring values	temperature
Radio technology	EnOcean (IEC 14543-3-10), transmission power <10 mW
Frequency	868 MHz
Power supply	solar cell, internal super cap, optional: battery LS14250 (Lithium-Thionylchlorid)
Measuring range temp	-20..+60 °C, Configured via airConfig
Working range temp	-40..+130 °C
Accuracy temperature	±1% of measuring range (typ. at 21 °C)
Transmission interval	configured via airConfig, Default: Wake-up time =100 sec. Heartbeat cycle = 10x (every 10th Wakeup)
Enclosure	enclosure USE-S, PC, pure white, upper housing material PC, transparent, with removeable cable entry
Protection	IP65 according to EN 60529
Sensor cable entry	Flextherm M20, for wire Ø=4,5..9 mm, removable
Pocket	Stainless steel 1.4571, Ø=6 mm, L=50 mm
Ambient condition	-25..+65 °C, max. 85% rH, short term condensation
Notes	integrated battery backup possibility for usage in dark rooms, additional probe lengths available on request

» **MOUNTING ADVICES**

In case of outdoor installation avoid direct rain and sun contact. Probably use sun respectively rain protection. Cable entry from bottom or side. For side cable routing set loop so that precipitation can drain defined. Observe permissible ambient condition.



Regardless of the compass direction, the outdoor sensor should not be mounted in the following locations:

- on chimneys, under roofs, canopies or balconies
- in close proximity to an exhaust air opening
- above, below or next to windows and doors

» **CONFIGURATION WITH AIRCONFIG**

No airConfig is 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.

Settings

Device information

Firmware version: 1.00

Energy status: n/a

Device settings

EEP

A5-02-14, Temperature Sensor Range -20°C to +60°C

Temperature at byte value 0: 60.0

Temperature at byte value 255: -20.0

Change of value: 1.55 °C

Temperature offset: 0.0

Wake-up time: 100 sec

Heartbeat cycle: every 10th WakeUp

On the top there are some informations like the **Firmware version** and 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 temperature range.

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

Set **Temperature offset** for individual adjustment.

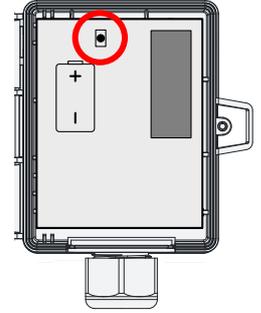
The **Wake-up** time defines the measuring interval.

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.

» OVERVIEW OF AIRCONFIG SELECTABLE RADIO TELEGRAMS

A5-02-14 (default)					
A5-02-01	A5-02-02	A5-02-03	A5-02-04	A5-02-05	A5-02-06
A5-02-07	A5-02-08	A5-02-09	A5-02-0A	A5-02-0B	A5-02-10
A5-02-11	A5-02-12	A5-02-13	A5-02-15	A5-02-16	A5-02-17
A5-02-18	A5-02-19	A5-02-1A	A5-02-1B	A5-02-20	A5-02-30

» ENERGY STATUS (SIGNAL TELEGRAM)

The device is primarily supplied from the internal energy storage. An inserted battery supports and recharges the internal energy storage.

If the energy state is low, an additional signal telegram (SIG) - [06 01] is sent every 2nd transmission interval. Ensure sufficient ambient brightness, change the battery or insert a battery for support due to insufficient ambient brightness.

Offset	Size	Data	Shortcut	Description	
0	8	Message index	MID	Enumeration: 0x06 – Energy status of the device	
				Description	Telegram (SIG)
				0..100 %	
8	8	Energy	ERG	100: Energy level good	hex(06 64)
				1: Energy level low	hex(06 01)

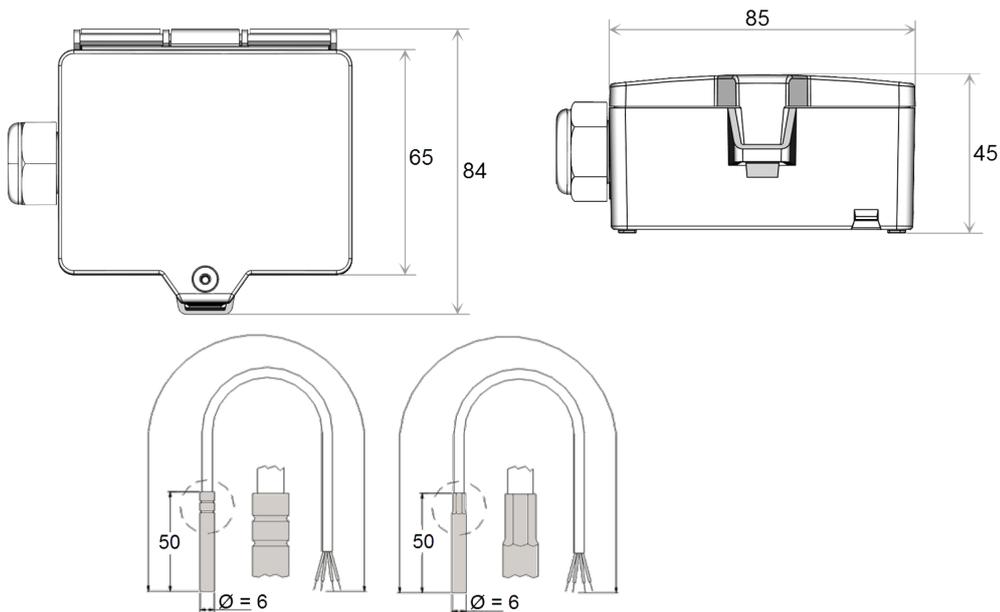
The energy status is sent with the same EURID and can be distinguished from the data telegram 'A5' via the ORG byte 'D0'.

Please charge the device for a long time in sufficient ambient light, or insert a new battery.

If the energy status is good, an additional signal telegram with the energy state 100% is transmitted with the respective first 3 transmission intervals (SIG) - [06 64].

Signal telegrams (SIG) can be received with an STC-Bacnet IP (ab V3.0.3.4) or a STC-IoT Gateway and evaluated by the superior control unit (BMS).

» DIMENSIONS (MM)



» OPTIONAL ACCESSORIES

Battery LS14250 (Lithium-Thionylchlorid)

Item No. 315098

Mounting flange (MF6)

Item No. 102407

Compression fittings G 1/4", Ø=6 mm (KL6VA)

Item No. 103213

Immersion pocket, mat. brass nickel-plated, safe up to 16 bar

THMSDS

Immersion pocket, mat. stainless steel, safe up to 40 bar

THVADS

» NOTES ON DISPOSAL



The crossed-out wheeled 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: www.thermokon.com