

SR-MDS

Ceiling multi sensor 360°

thermokon[®]
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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» APPLICATION

The wireless ceiling multi sensor is designed for movement detection in room or office spaces. In addition, the sensor detects the ambient brightness in rooms.

The device has the following functions:

- Occupancy detection 360°
- Integrated light sensor 0-510 Lux
- Optional: Integrated temperature sensor 0-51 °C

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.

» TYPES AVAILABLE

Type of device	Power supply	
	3x battery 1/2 AA, 3,6 V (LS14250)	15..240 V =/~
Radio ceiling sensor light + motion	SR-MDS BAT	SR-MDS
Radio ceiling sensor light + motion + temperature	SR-MDS Temp BAT	SR-MDS Temp

» 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.



CAUTION! Risk of electric shock due to live components within the enclosure, especially devices with mains voltage supply (usually between 90..265 V).

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

» 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 ($\pm 0,2$ 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.

» 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 wertedone automatically by simply adding a battery to the device.

» INFORMATION ABOUT CEILING SENSORS

When using ceiling sensors, the measured values can differ from the perceived values in the room (physical basic rules, etc. ...). Always consider the usage of offset values in the processing system (or devices).

» PRODUCT TESTING AND CERTIFICATION



Declaration of conformity

The declaration of conformity of the products can be found on our website
<https://www.thermokon.de/direct/en-gb/categories/sr-mds>

» 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.

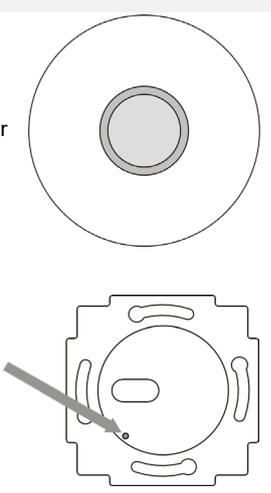
» **TECHNICAL DATA**

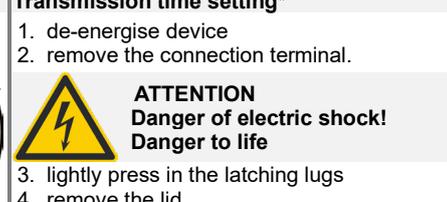
Measuring values <i>(type-dependent)</i>	Brightness, motion, optional temperature	
Radio technology	EnOcean (IEC 14543-3-10), transmission power <10 mW EEP A5-08-01	
Power supply	SR-MDS (Temp) flex. 15..240 V =/~,	SR-MDS (Temp) BAT 3x battery LS14250, 3,6 V
Power consumption	typ. 0,8 W (24 V =) 1,2 VA (24 V ~)	
Measuring range temperature <i>(type-dependent)</i>	0..+51 °C	
Measuring range light	0..510 Lux	
Accuracy temperature <i>(type-dependent)</i>	±0,5 K (typ. at 21 °C)	
Accuracy light	±30 Lux	
Transmission interval	WakeUp time = 100 sec. (default) every 100 sec. at change of brightness >10 lux in case of detected motion, every 1000 sec. at change of brightness <10 lux in case of no motion detected, every 100 sec. at change of brightness <10 lux in case of detected motion, every 10 sec. at change of brightness >10 lux in case of detected motion, immediately at status change from no motion to motion, status change from motion to no motion after ≈ <200 sec.	
Detection range	Ø=5 m at a sensor height of approx. 2,5 m	
Sensor	PIR (passive infrared)	
Enclosure	ABS, pure white	
Protection	IP20 according to EN 60529	
Connection electrical	terminal, max. 1,5 mm², plugable	
Ambient condition	-10..+50 °C, max. 85% rH non-condensing	
Notes	appropriate for constant light control	

» **COMMISSIONING AND TRANSMISSION TIME INTERVAL SETTING**

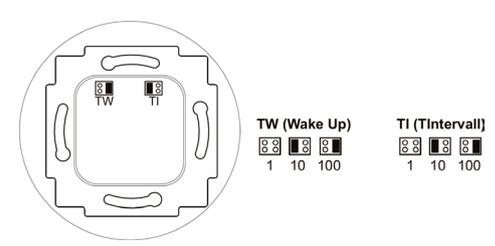
For commissioning, programme the device with a teach-in button or 32bit EnOcean sensor ID in suitable receivers.
(see Software manual of the receiver).

<p>Teach in</p> <ol style="list-style-type: none"> turn the white sensor cover anti-clockwise remove the sensor cover The teach-in button is located on the lower part Assemble device after teach-in process 	<p>Transmission time setting*</p> <ol style="list-style-type: none"> de-energise device remove the connection terminal. lightly press in the latching lugs remove the lid Configure device. Assemble device after configuration.
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ATTENTION
Danger of electric shock!
Danger to life



TW (Wake Up)	TI (Interval)

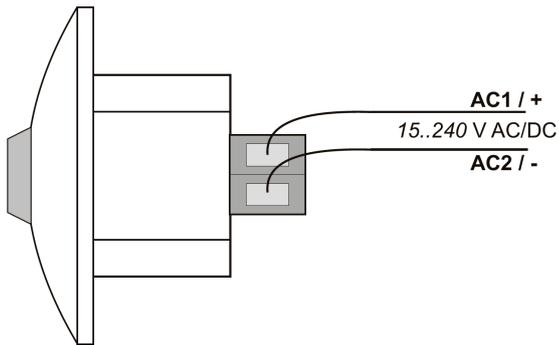
Default settings: T_wake up: 100, T_interval: 10

Transmission time = 100 seconds (T_wake up) x 10 (T_interval) = 1000 seconds = approx. 16 minutes

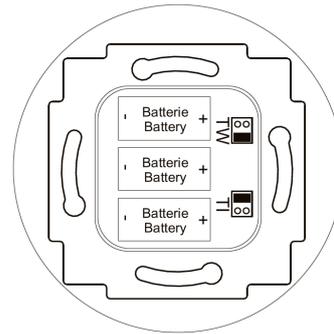
***Note for the BAT version: The transmission frequency has a direct influence on the operating energy available in the energy store and therefore on the discharge time of the energy store during operation.**

» CONNECTION PLAN

SR-MDS (Temp)



SR-MDS (Temp) BAT



The SR-MDS BAT is battery powered, a wired connection is not necessary. Remove the cover from the backside of the device to insert/exchange the batteries.

» MOUNTING ADVICES

Installation

It is recommended that the installation is done in a deep flush-mounted box- or cavity installation box ($\varnothing=60\text{mm}$)

Mounting height

The mounting height has a direct influence on the range of the motion detector. The optimum mounting height is 2.70m. All other dimensions will change the range.

Fixed mounting

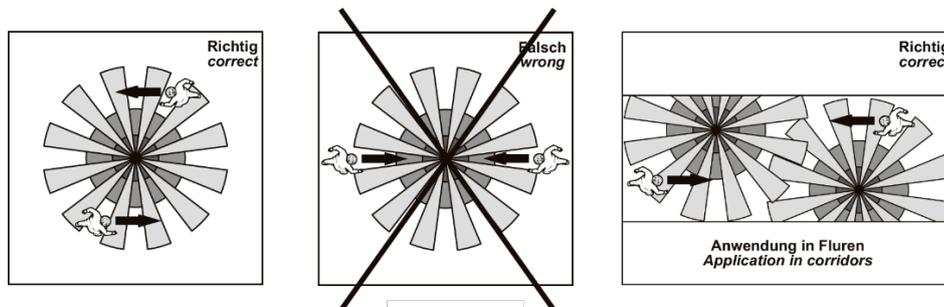
The motion detector must be mounted on a solid surface, as any movement of the detector will result in false alarms.

Distance to switched luminaires

In order to avoid unintentional switching on of the luminaire by the motion detector, the luminaire should not be mounted in the detection area of the motion detector. Also avoid mounting the motion detector above a luminaire. The heat radiation of the luminaire can influence the function of the motion detector and possibly lead to a false triggering of the detector.

Mounting sideways to the walking direction

For optimum motion detection, the detector must be mounted to the side of the detection area so that the zones are cut as vertically as possible. Mounting locations where the objects to be detected move directly onto the motion detector result in a significant reduction of the range.



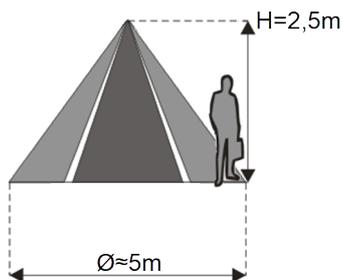
Distance to interference sources

To avoid false alarms, sources of interference such as radiators, lamps, air outlets from air conditioning systems, etc. should be outside the detection range. Direct sunlight should also be avoided.

Feedback on detected movement

Motion detection by the sensor is signalled by the integrated signal LED (flashing for approx. 2 seconds). Note: The signalling LED is independent of the set follow-up time of the relay output. During initialisation of the device (voltage reset), the signalling LED and the relay output are switched on for approx. 45 seconds.

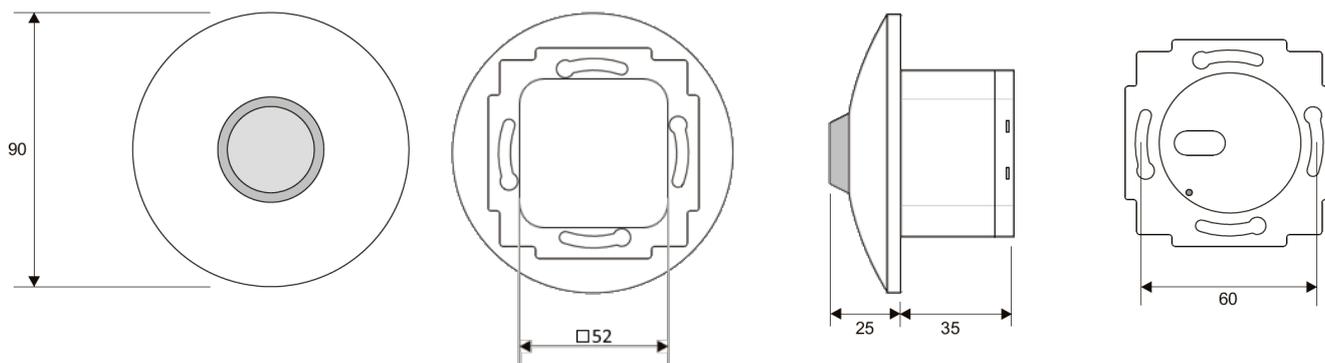
» **DETECTION RANGE**



This sensor detects changes in infrared radiation that occur when a person (or object) moves whose temperature is different from the environment.

The specified ranges refer to average conditions at a certain installation height and are therefore to be regarded as guide values. The range can vary greatly with changing temperature conditions. The necessary temperature difference between the detectable object and the environment should be at least 4 K. The speed of the object should be at least 0.3 to 1.0 m/s.

» **DIMENSIONS (MM)**



Befestigungspunkte

» **ACCESSORIES (OPTIONAL)**

Enclosure for surface mounting SR-MDS pure white

Item No. 514439

» **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