

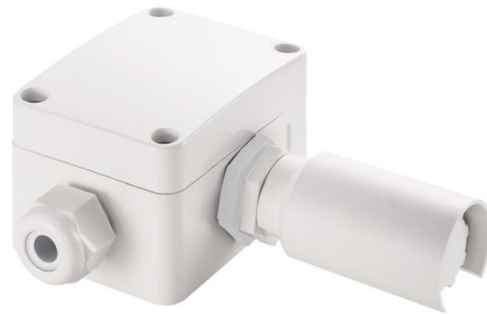
# FTA 54 LON

Outdoor sensor for relative humidity and temperature

**thermokon**  
Sensortechnik GmbH

## Data Sheet

Subject to technical alteration  
Issue date: 26.03.2014



(Illustration similar)

## Application

Sensor for measurement relative humidity and temperature in outdoor areas. Designed for locking on control and display systems.

## 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 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 Thermokon products contain valuable materials that should be recycled rather than disposed as domestic waste. Please note the relevant regulations for local disposal.

## 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 ( $\pm 0,2$  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

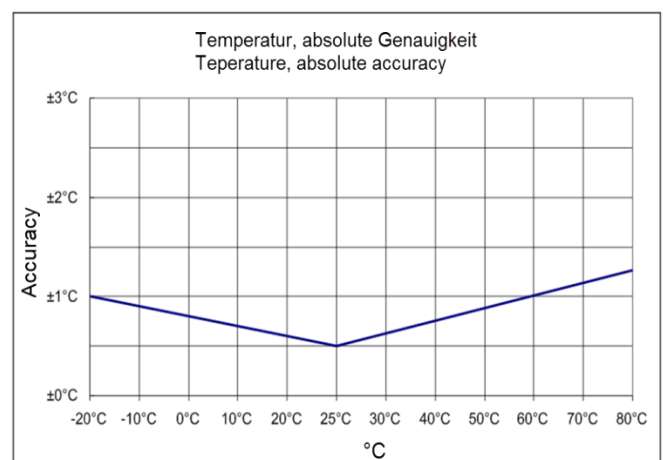
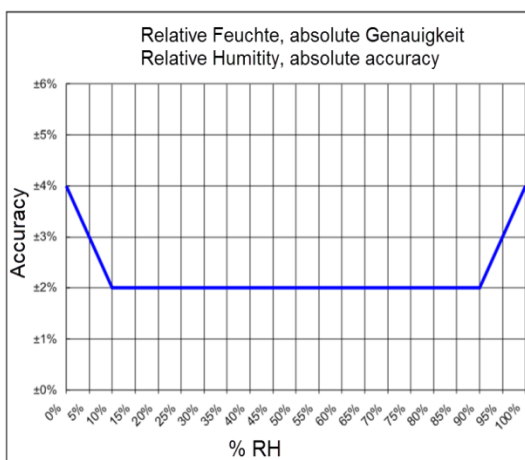
**Refrain from touching the sensitive humidity sensor. Any touch of it will result in an expiration of warranty.**

Under normal environmental conditions we recommend a recalibration interval of about 1 year to maintain the indicated accuracy. At high ambient temperatures and high humidity or when using the sensor in aggressive gases, an earlier recalibration or a change of the humidity sensor can become necessary. Such recalibrations or a probable sensor change are not part of the general warranty.

## Technical Data

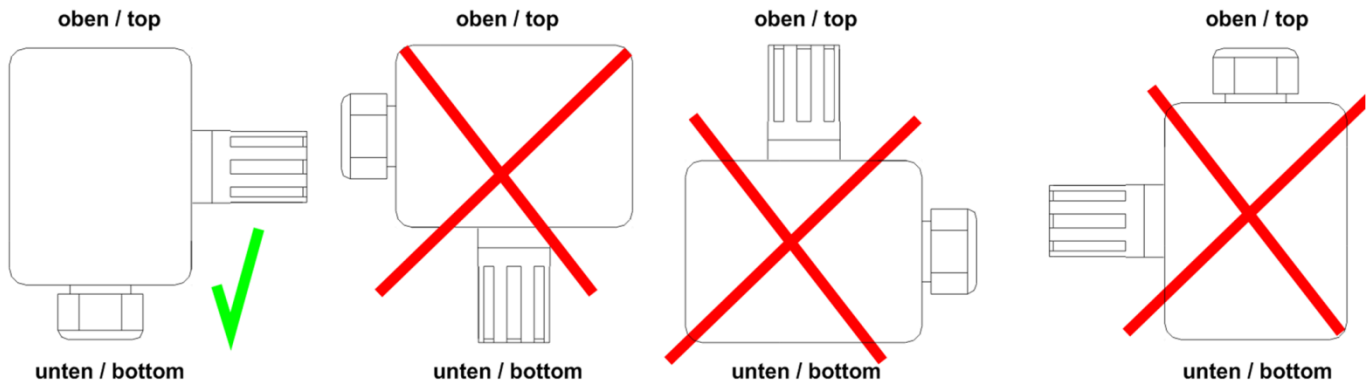
Power supply:	15..24 V= ( $\pm 10\%$ ) / 24 V~ ( $\pm 10\%$ )
Power consumption:	typ. 0,6 W (24 V =)   1,2 VA (24 V ~)
Interface:	LON FTT, free topology, in a additional housing
Repeatability:	Temp.: typ. $\pm 0,1$ °C Humidity: typ. $\pm 0,1\%$ rH
Long term drift:	Temp.: typ. $< 0,04$ °C/year Humidity: typ. $< 0,5\%$ rH/year
Measuring range temperature:	-20..+80 °C (active), depending on used sensor (passive)
Accuracy temperature:	$\pm 0,5$ °C at 25 °C, depending on used sensor (passive)
Measuring ranges humidity:	0..100% rH
Accuracy humidity:	$\pm 2\%$ at range 10..90% rH (typ. at 21 °C)
Ambient temperature:	-20.. +70 °C, max. 85% rH no condensate.
Cable entry:	Single entry M16 for cable max. D=8 mm, M20, M20 double
Clamps:	Terminal block, max. 1,5 mm <sup>2</sup>
Enclosure:	Material: PA6 Color: Pure white
Sensor pipe:	Material: PA6 Color: white
Filter material:	Stainless steel, wire mesh, mesh size 80µm
Notes:	LON-Module in separate enclosure, wire PVC, diameter 0,25 mm <sup>2</sup> , L=1 m, Please contact us for other sensor options.
Protection:	IP65 according to EN 60529
Gewicht:	Approx. 270 g

## Accuracy

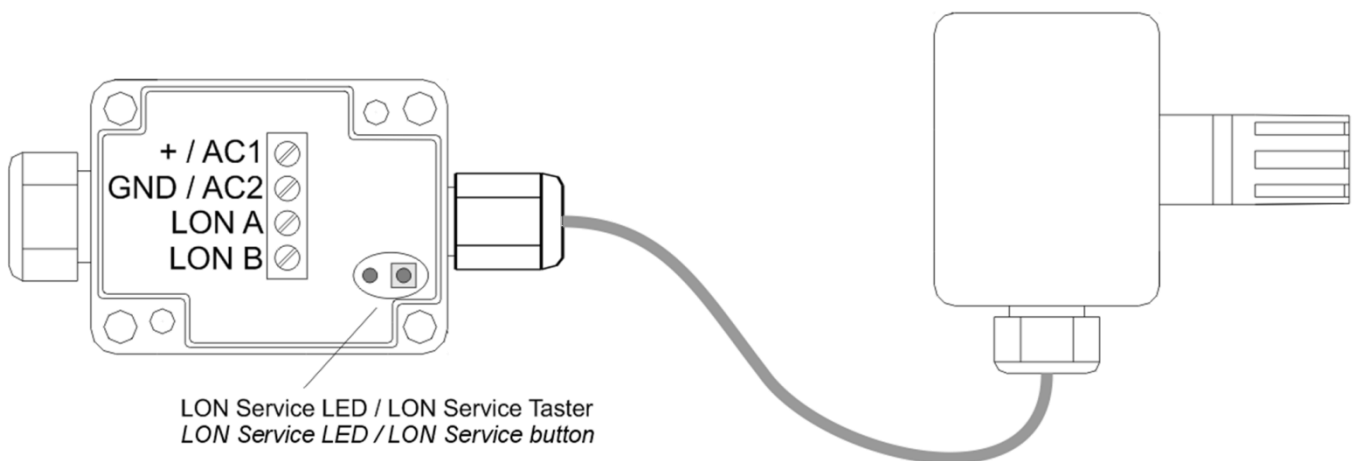


## Mounting Advice

In case of outdoor installation avoid direct rain and sun contact. Probably use our sun respectively rain protection.



## Connection Plan



## Application Notice

Due to air circulations dirt and dust particles can be piled up in the course of time on the sintered filter which is protecting the sensor. Thus, the function of the sensor can be affected. After having dismantled the filter, the same can be cleaned by blowing it out with oil-free and filtered compressed air, super-clean air or nitrogen or by washing it out with distilled water. If the filter is too dirty, the same should be replaced.

Temperature sensor with electronic components always have a dissipated 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 dissipated power has to be considered when measuring temperature. In case of a fixed operating voltage, 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 have a standard setting at a operating voltage of 24 V=. That is to say, that at this voltage, the expected measuring error of the output signal will be the least. As for other operating voltages, the offset error will be increased or lowered by a changing power loss of the sensor

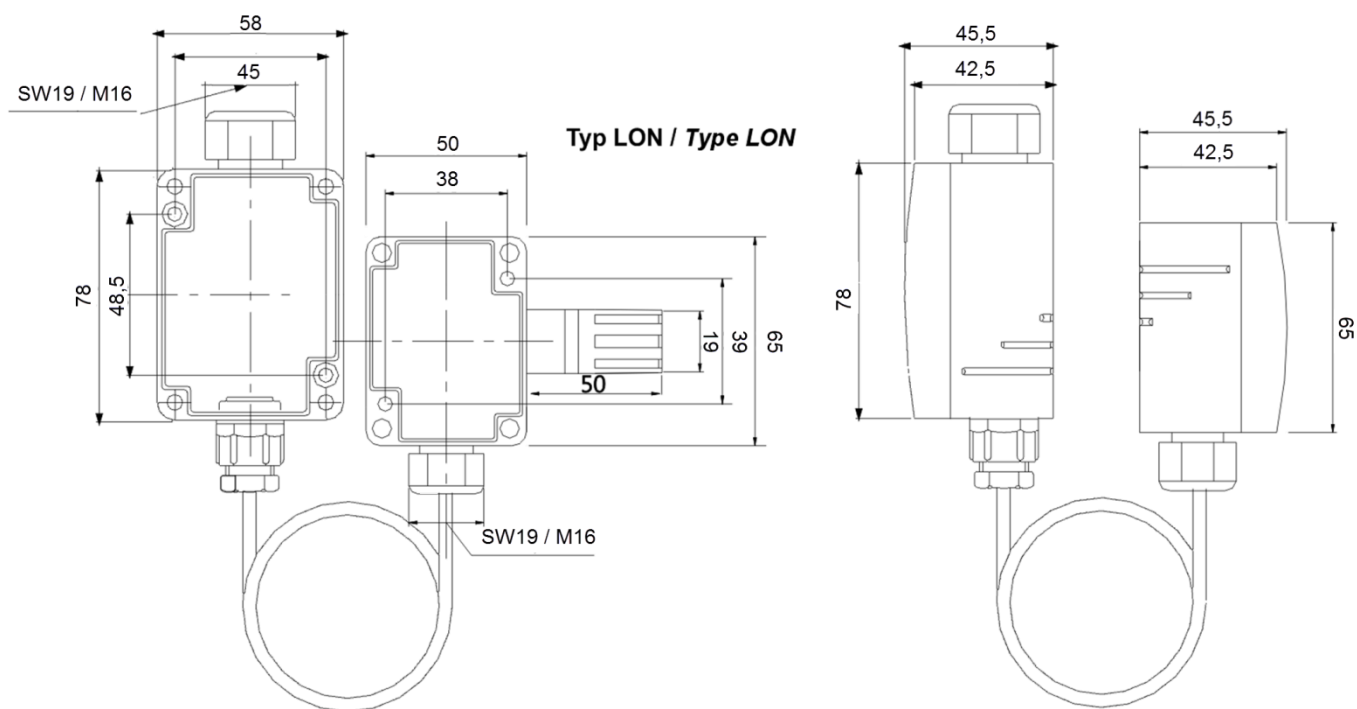
electronics. If a re-calibration should become necessary later directly on the sensor, this can be done by means of a trimming potentiometer on the sensor board (for sensors with Bus-interface, a re-calibration can be done via corresponding software variable.

Alternatively the offset value can be corrected in the control system next in line.

Occurred draft leads to a better carrying-off of dissipated power at the sensor. Thus, temporal limited fluctuations might occur upon temperature measurement.

Besides a suitable representative mounting place, corresponding to the room temperature, the accuracy of the temperature measurement also depends directly on the temperature dynamics of the wall. This phenomenon must be considered with the evaluation in the control system as well. depends directly on the temperature dynamics of the wall.

## Dimensions (mm)



## Accessories (optional)

Rain protection PA6, white

Art. No. 587709

Replacement filter stainless steel, wire mesh

Art. No. 231169

Dowels and screws (2 pcs.)

Art. No. 102209