

Data Sheet

Subject to technical alteration
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Application

Duct humidity and temperature sensor for all HVAC duct applications. Designed for control and monitoring applications.

Types available

FTK	xxx	VV	xxx = 140/270/400 mm	2x output 0..10 V	rel. humidity, temperature
		AA	xxx = 140/270/400 mm	2x output 4..20 mA	rel. humidity, temperature

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.

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 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.

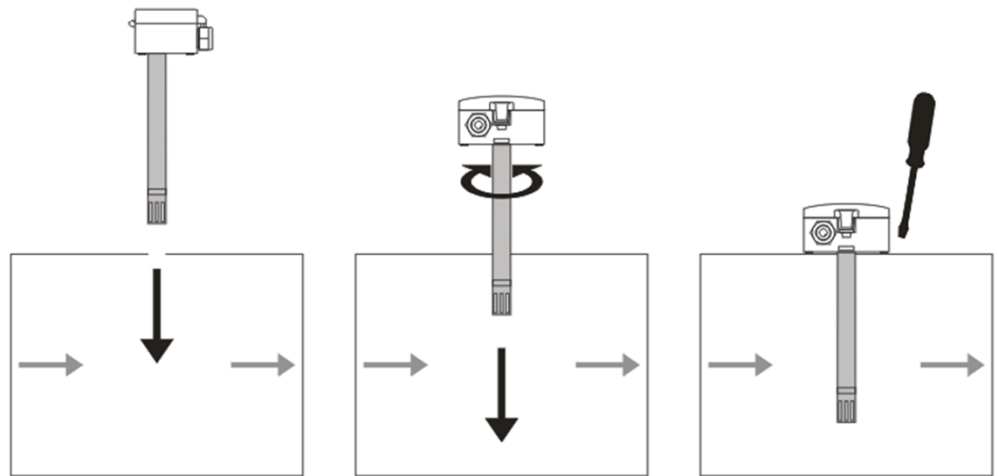
Technical Data

Measuring values		temperature, humidity
Output voltage	VV	2x 0..10 V (min. load 10 k Ω)
Output Amp.	AA	2x 4..20 mA (max. load 500 Ω)
Power supply	VV	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$)
	AA	15..24 V = ($\pm 10\%$)
Power consumption	VV	max. 0,4 W (24 V =) 0,7 VA (24 V ~)
	AA	max. 1 W (24 V =)
Measuring range temp.		-20..+80 °C
Measuring range humidity		0..100% rH non-condensing
Accuracy temperature		$\pm 0,5$ °C (typ. at 25 °C)
Accuracy humidity		$\pm 2\%$ between 10..90% rH (typ. at 21 °C)
Air speed		max. 10 m/s
Enclosure		PA6, pure white
Protection		IP65 according to EN 60529
Cable entry		M16 for cable max. $\varnothing=8$ mm
Connection electrical		terminal block, max. 1,5 mm ²
Pipe		PA6, schwarz, $\varnothing=19,5$ mm, Länge=140 270 400 mm (optional)
Filter		stainless steel wire mesh
Ambient condition		-20..+70 °C
Weight		approx. 120 g
Delivery content		MF20 TPO mounting flange

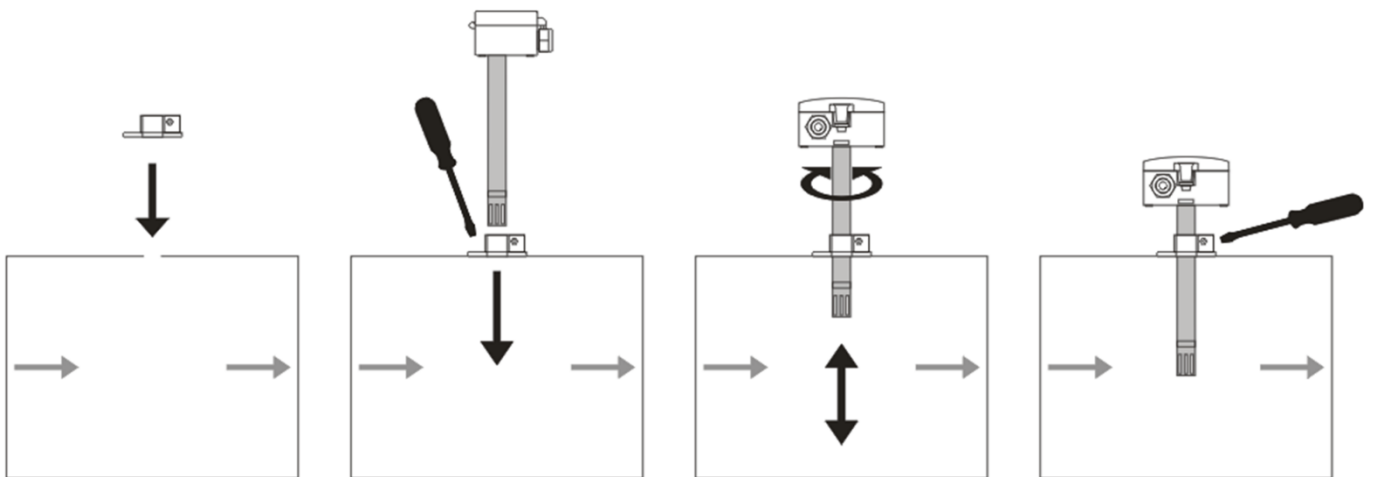
Mounting advices

The sensor can be mounted on a flange (recommended) or directly into the ventilation duct.

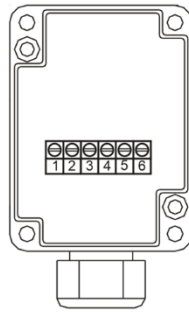
Mounting without mounting flange:



Mounting with mounting flange:



Connection plan



Clamp	Type AA	Type VV
1	rH + 24 V =	Out temp. 0..10 V
2	Out rH. 4..20 mA	Out rH 0..10 V
3	Temp. + 24 V=	Uv 24 V ~ Uv 24 V =
4	Out temp. 4..20 mA	GND
5	-	-
6	-	-

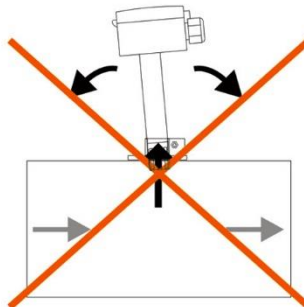
Note (type FTK-AA)

When using the temperature output, the humidity output must always be connected to mass/GND.

Dismounting Advices

Remove the lower section of the sensor carefully and pulling straight out.

Pay close attention to the correct dismantling of the component!



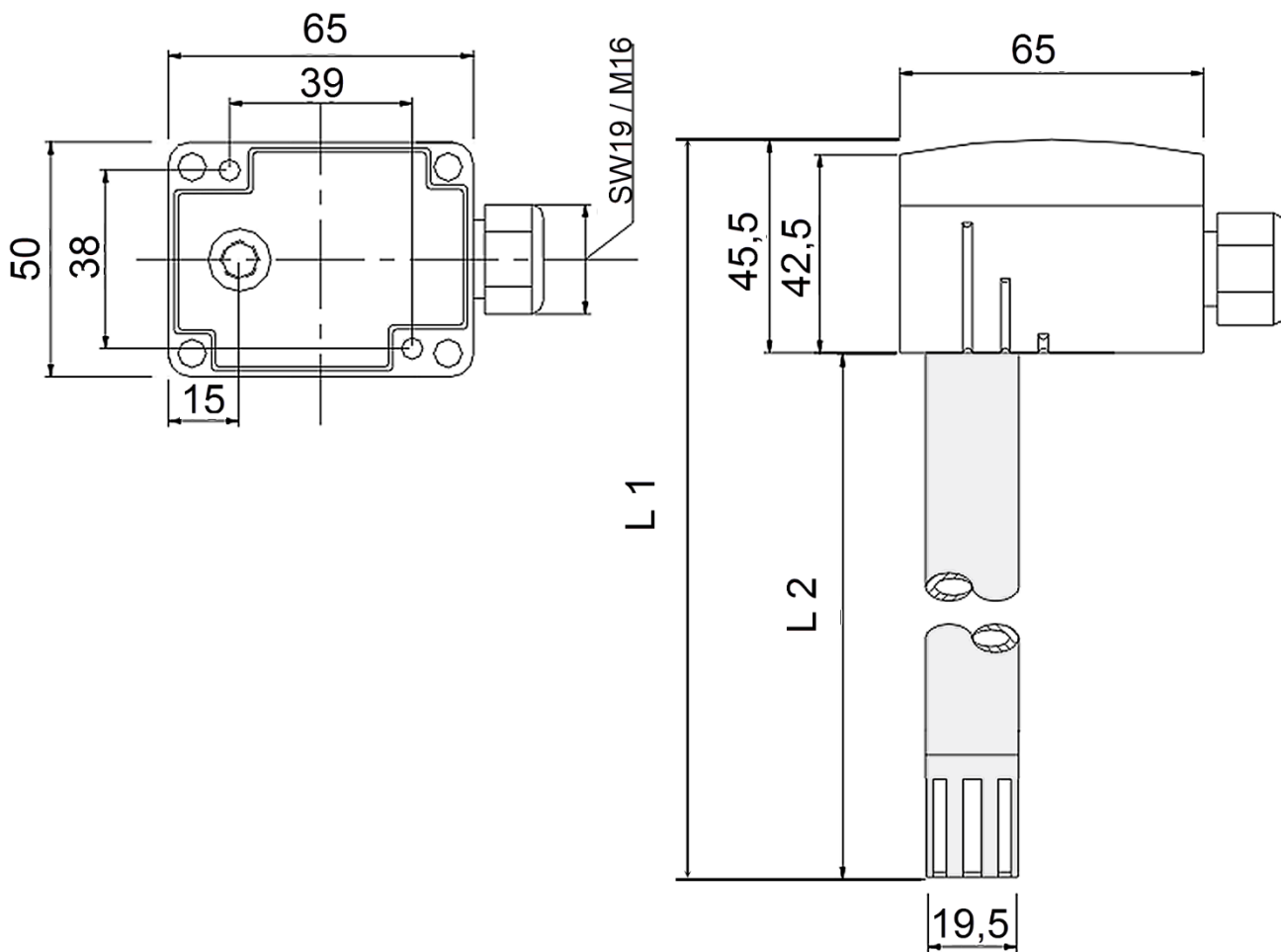
Application notice

After a certain time, dirt in the air can collect on the filter and then adversely affect the operation of the sensor.

Under normal ambient condition an annual maintenance is recommended. Rinse the filter after cleaning with distilled water and dry it using clean oil-free air or nitrogen. Extremely contaminated filters should be replaced.

At extreme ambient conditions, e.g. corrosive gases, the humidity sensor may have to be changed.

Dimensions (mm)



Length over all	L1=	185,5		315,5		445,5	mm
Length sensor tube	L2=	140		270		400	mm

Accessories

- Rawl plugs and screws (2 pcs each)
- Filter stainless steel, wire mesh
- Mounting flange MF20 TPO

- Item No. 102209
- Item No. 231169
- Item No. 612562