

### Product overview

Sensor for measuring relative humidity (model LC-FA54) and sensor for measuring relative humidity and temperature (model LC-FTA54) in outdoor areas. Designed for locking on control and display systems.



## Types available

Type code	Type	Description
EXT-TN-1072167	LC-FA54 V	Humidity output 0...10V
EXT-TN-1072198	LC-FTA54 AS PT1000	Humidity output 4...20mA, temperature PT1000
EXT-TN-1072174	LC-FTA54 AS NTC10k	Humidity output 4...20mA, temperature NTC10k
EXT-TN-1072181	LC-FTA54 AS NTC10kPRE	Humidity output 4...20mA, temperature NTC10k Precon
EXT-TN-1072228	LC-FTA54 VS PT1000	Humidity output 0...10V, temperature PT1000
EXT-TN-1072204	LC-FTA54 VS NTC10k	Humidity output 0...10V, temperature NTC10k
EXT-TN-1072211	LC-FTA54 VS NTC10kPRE	Humidity output 0...10V, temperature NTC10k Precon

## Technical Data

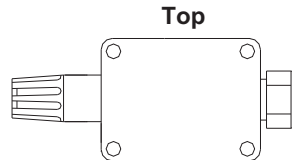
Standards	CE conformity	- 2004/108/EG Electromagnetic compatibility - 2001/95/EG Product safety
General data	EN conformity	- EN60730-1:2002 EMC - EN60730-1:2002 Product safety
	Measuring element	Relative humidity : capacitive
	Measuring range	Relative humidity : 5...95% (working range 0...100%)
	Accuracy@21°C	Relative humidity : typical ±3% in the range 35% ...75% RH
	Sensor bushing	PVC, colour pure white
	Filter element	PVDF, permeability 30%
	Clamps	Multi conductor connection, terminal screw max 1,5mm <sup>2</sup>
	Connection head	Polyamide, colour white
	Protection	-20...+60°C IP65 according to EN60529
	Cable entry	Single entry, M16 for wire conductor with max. D=8mm
Type V	Weight	90g
	Power supply	DC 15-24V(±10%) or AC 24V(±10%)
	Power consumption	Typical 0.15W / 0.5 VA
Type AS	Output	Relative humidity 0...10V, min. load 5kΩ
	Power supply	DC 15-24V(±10%)
	Power consumption	Max. 20mA / DC 24V
	Measuring current	Temperature, typical <1mA
	Measuring element	Depending on sensor used
Type VS	Measuring range	Depending on sensor used
	Output	- Relative humidity : 4...20mA max. load 800Ω / AC 24V - Temperature : passive
	Accuracy@21°C	Depending on sensor used
	Power supply	DC 15-24V(±10%) or AC 24V(±10%)
	Power consumption	Typical 0.15W / 0.5VA
	Measuring current	Temperature, typical <1mA
	Measuring element	Depending on sensor used
	Measuring range	Depending on sensor used
Output	- Relative humidity : 0...10V, min. load 5kΩ - Temperature : Passive	
Accuracy@21°C	Depending on sensor used	

## Security advice

The installation and assembly of electrical equipment may only be performed by a skilled electrician. The modules must not be used with equipment that supports, directly or indirectly, human health or life or with applications that can result in danger for people or animals.

## Mounting advice

In case of outdoor installation avoid direct rain and sun contact.



## Electrical connection

The devices are constructed for the operation of protective low voltage (SELV). For the electrical connection, the technical data of the corresponding device is valid.

With regard to passive sensors (e.g. PT100 etc.) in 2 wire conductor versions, the wire resistance of the supply wire has to be considered. It is likely that the same has to be compensated by the following electronics. Due to the self heating, the wire current affects the accuracy of the measurement. Therefore it should not exceed 1mA.

Sensing devices with transducers should in principle be operated in the middle of the measuring range to avoid deviations at the measuring end points. The ambient temperature of the transducer electronics should be kept constant. The transducers must be operated at a constant supply voltage ( $\pm 0.2V$ ). When switching the supply voltage on/off, power surges must be avoided on site.

## Application notice

Due to air circulation 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, this 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. Refrain from touching the sensitive humidity sensor. Any tampering will result in an expiration of the warranty.

With normal environmental conditions we recommend a recalibration interval of around 1 year to maintain the indicated accuracy.

At high ambient temperatures and high humidity, or when using the sensor in aggressive gases, an early recalibration or a change of the humidity sensor can become necessary. Such a recalibration or a probable sensor change do not come under the general warranty.

## Terminal connection plan

1	2	3	4	5
		GND	Out RH 0...10V	Uv DC 15-24V AC 24V

**LC-FA54 V**

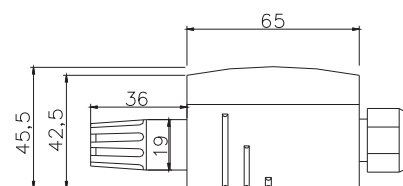
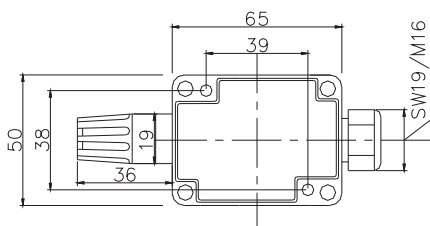
1	2	3	4	5
Sensor A-	Sensor B+	RH+ Uv DC 15-24V	RH- 4...20mA	

**LC-FTA54 AS**

1	2	3	4	5
Sensor A-	Sensor B+	GND	Out RH 0...10V	Uv DC 15-24V AC 24V

**LC-FTA54 VS**

## Dimensions (mm)



**LC-FA54, LC-FTA54**