

FTA54+ LCD (Relay)

Outdoor sensor for relative humidity and temperature

thermokon[®]
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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FTA54+ VV Relais



FTA54+ LCD (VV | AA | Relais)

» APPLICATION

Sensor for measuring humidity and temperature in outdoor areas. In delivery condition, the sensor is designed for measuring temperature and relative humidity. Alternatively the output can be set to absolute humidity, enthalpy or dew point (depending on the model, changeable via jumper or using Thermokon USEapp). LCD models with RGB background light have a transparent cover. Display configuration and threshold values for color changes can be parameterized via Thermokon USEapp. With the option board relay two-point controllers or a 2-stage 2-point controller for temperature or humidity can be realized. A mounting base for mounting on a level surface and fixing material are included in delivery.

» TYPES AVAILABLE

Outdoor humidity sensor with display temperature + humidity – active 2x 0..10 V | 4..20 mA

- FTA54+ LCD VV
- FTA54+ LCD AA

Outdoor humidity sensor optional with display temperature + humidity – active 2x 0..10 V | Relay

- FTA54+ (LCD) VV Relay

Options: Additional passive temperature sensor (type VVS|AAS)

eg: PT100/PT1000/Ni1000/Ni1000TK5000/NTC10K... and other sensors on request.

» 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/fta54plus>

» NOTES ON DISPOSAL



The crossed-out wheellie 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

» 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.

» APPLICATION NOTICE FOR HUMIDITY SENSORS

At regular environmental condition, it is recommended to calibrate the sensor annually to check the compliance with the accuracy required in the application. The following conditions can damage the sensor element or lead in long term to loss of the specified accuracy:

- Mechanical stress
- Contamination (e.g. dust / fingerprints)
- Aggressive chemicals
- Ambient conditions (e.g. condensation on measuring element)



Do not touch the sensor elements!

Re-calibration or exchange of the sensor element are not subject of the general warranty.

» USE ENCLOSURE WITH UV AND WEATHER RESISTANCE

After some time, outdoor mounted plastics can lose their color and quality. Therefore, all USE housings are made of special white polycarbonate (PC). The light-stable colorants and additives are used to achieve optimum protection of the polymer while maintaining color stability. The titanium dioxide used is specially developed for polycarbonate and offers excellent UV protection through the reflection of the entire light spectrum including the UV component by 340 nm. This effectively counteracts the otherwise occurring photochemical polymer degradation. The colors stay full for a long time without fading. The material is also resistant to cold and frost.

» 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.

» TECHNICAL DATA

Measuring values	temperature, humidity (humidity output configurable)	
Output voltage	VV 2x 0..10 V or 0..5 V, min. load 10 k Ω (live-zero configuration via Thermokon USEapp)	
Output Amp	AA 2x 4..20 mA, max. load 500 Ω	
Output passive	passive Options: additional passive temperature sensor eg: PT100/PT1000/Ni1000/Ni1000TK5000/NTC10K... and other sensors on request	
Output switching contact	Relay 2 floating contacts for 24 V ~ or 24 V = / 3 A	
Power supply*	VV 15..35 V = or 19..29 V ~ SELV	AA 15..35 V = SELV
Power consumption	max. 2,3 W (24 V =) 4,3 VA (24 V ~)	
Measuring range temp	VV AA Relay +4..+176 °C (default setting), optionally configurable via Thermokon USEapp	passive -4..+158 °F
Measuring range humidity	0..100% rH non-condensing, optionally configurable via Thermokon USEapp (enthalpy, absolute humidity, dew point)	
Accuracy temperature	typ. 0,3 K (typ. at 70 °C)	
Accuracy humidity	±2% between 10..90% rH (typ. at 70 °F)	
Display (optional with type relay)	LCD 1.14x1.38 in. with RGB backlight	
Enclosure	enclosure USE-M, PC, pure white, cover PC, transparent, with removable cable entry	
Protection	IP65 according to EN 60529	
Cable entry	VV AA Flextherm M20, for wire max. \varnothing =0.18..0.35 in., removable	Relay M25 with fourfold cable entry for wire with max. \varnothing =0.28 in., removable
Connection electrical	removable plug-in terminal, max. 14AWG	
Pipe	PC, pure white	
Filter	stainless steel wire mesh	
Ambient condition	-4..+158 °F, max. 85% rH short term condensation	
Notes	additional passive sensor available (type VVS AAS)	

» MOUNTING ADVICES

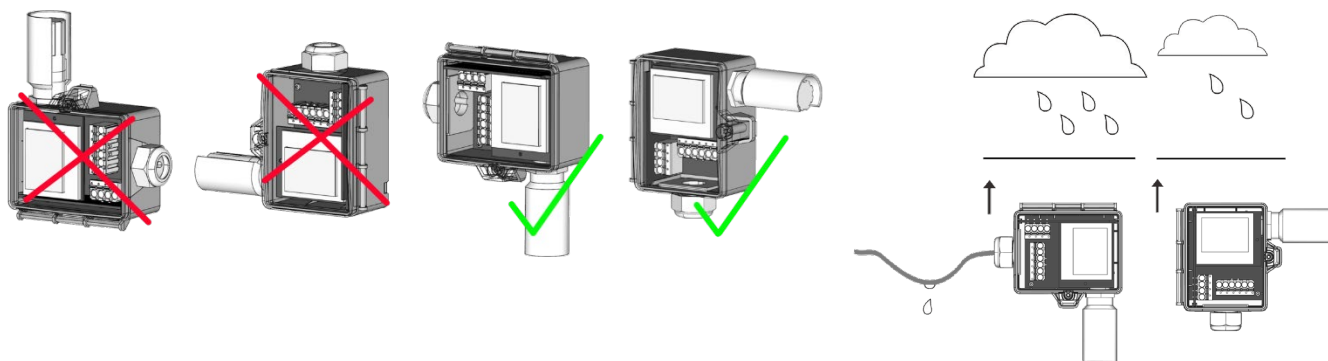
When installing outdoors, avoid direct sunlight and disturbing heat sources. If necessary, use sun or rain protection.

Cable entry from below or from the side. If cable entry is from the side, lay a loop so that precipitation can drain off in a defined manner. The permissible ambient conditions must be observed during use.

orientation wrong

Orientation right

Cable entry



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

- on chimneys, under roofs, canopies or balconies
- in the immediate vicinity of an exhaust air opening
- above, below or next to windows and doors

» CONFIGURATION



The Thermokon bluetooth dongle with micro-USB (Item No.: 668262) is required for communication between USEapp and USE-M / USE L products. Commercial bluetooth dongles are not compatible.



Application-specific reconfiguration of the devices can be carried out using the Thermokon USEapp. The configuration is carried out in the voltage-supplied state.



The configuration-app and the app description can be found in the Google Play Store or in the Apple App Store.

» APPLICATION NOTICE

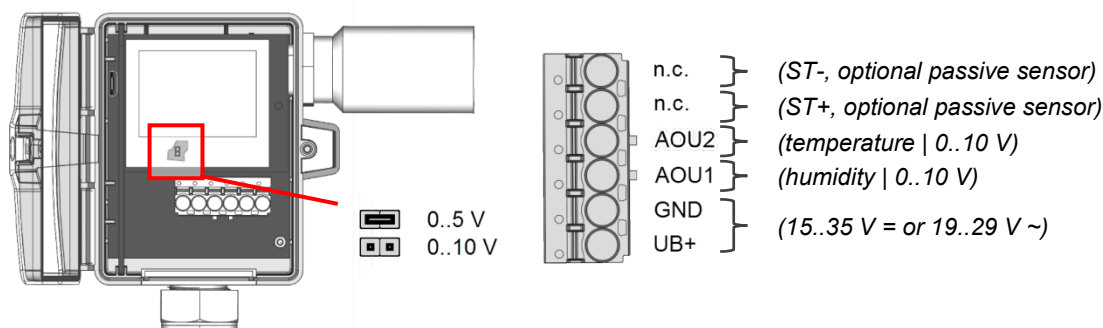


The Bluetooth dongle snaps into the socket easily. When removing, please fix the plug-in card (option PCB) so that it is not unintentionally pulled out.

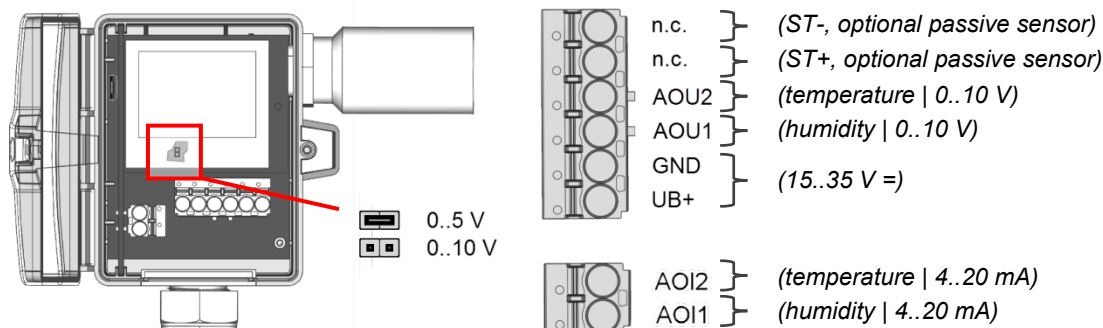
» CONNECTION PLAN

To change the output voltage range (default 0..10 V to 0..5 V) via jumper, the display must be removed from the board first.

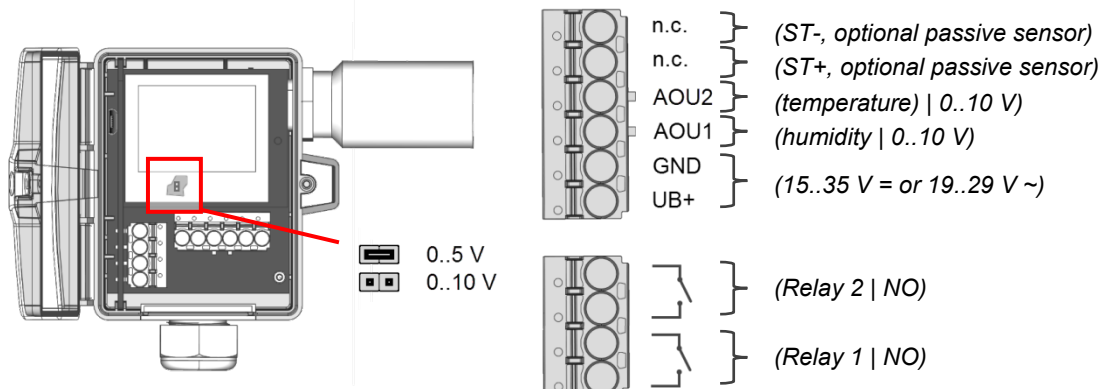
FTA54+ LCD VV



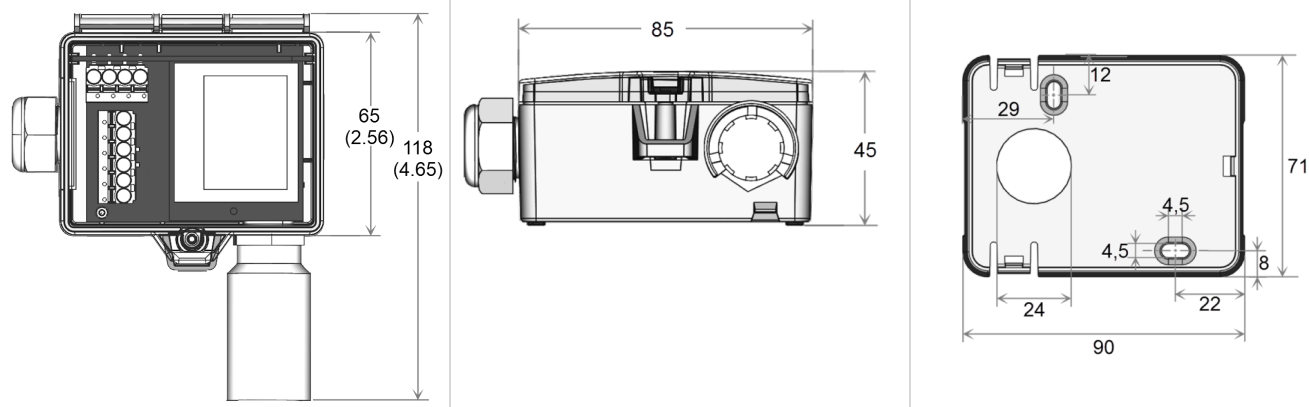
FTA54+ LCD AA



FTA54+ (LCD) VV Relay



» DIMENSIONS MM (IN.)



» ACCESSORIES (INCLUDED IN DELIVERY)

Rain protection

Item No. 670715

Mounting base

Item No. 631228

Mounting kit universal

Item No. 698511

• Cover screw + screw cover • 2 Rawlplugs • 2 Screws (countersunk head) • 2 Screws (rounded head)

» ACCESSORIES (OPTIONAL)

Bluetooth dongle

Item No. 668262

Cable entry M25 USE white, sealing insert 4x Ø=0.28 in. (4 pcs)

Item No. 641364

Filter stainless steel, wire mesh

Item No. 231169

Sealing insert M20 USE white, 2x Ø=0.28 in. (for 2 wire; PU 10 pieces)

Item No. 641333