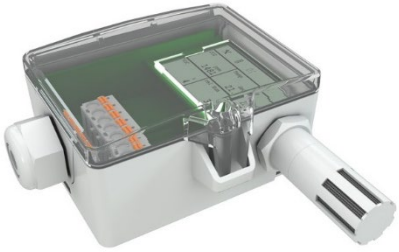
FTA54+ LCD (Relay)

Outdoor sensor for relative humidity and temperature

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
Issue date: 03/28/2024 • A140



FTA54+ LCD (VV | AA | Relais)



FTA54+ VV 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 wheelie 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 (±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 therm 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.

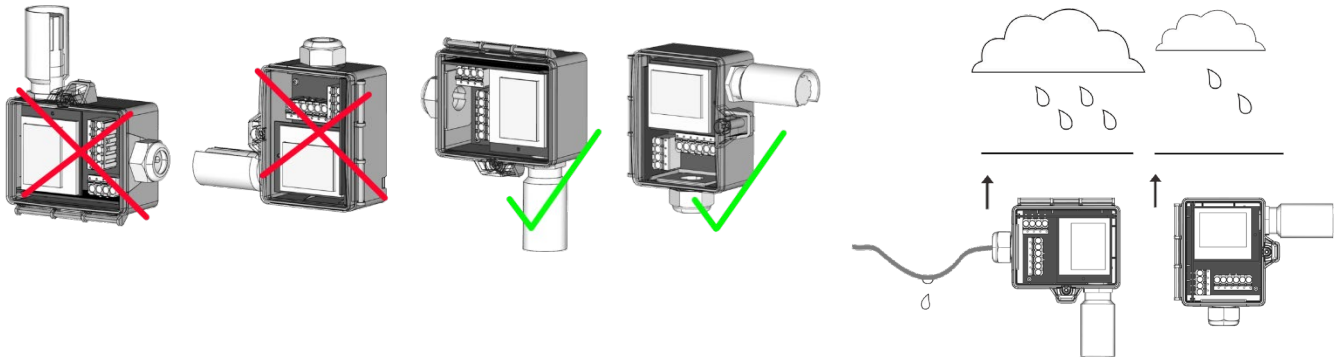
» TECHNICAL DATA

Measuring values	temperature, humidity (humidity output configurable)	
Output voltage	**VV** 2x 0..10 V or 0..5 V, min. load 10 kΩ (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. Ø=0.18..0.35 in., removable	**Relay** M25 with fourfold cable entry for wire with max. Ø=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



»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

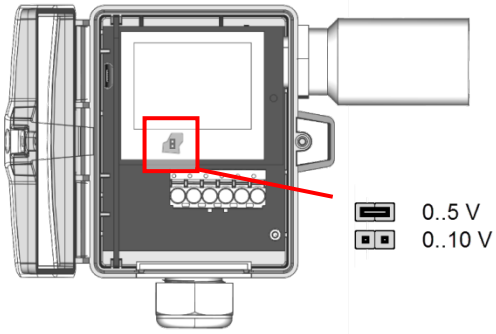
The Bluetooth dongle snaps into the socket easily. When removing, please fix the plug-in card (option PCB) so that it is not unintentionally pulled out.

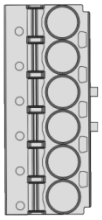
After a certain time, dirt in the air can collect on the filter and then adversely affect the operation of the sensor. Under normal ambient condition an annual maintenance is recommended. Rinse the filter after cleaning with distilled water and dry it using clean oil-free air or nitrogen. Extremely contaminated filters should be replaced. At extreme ambient conditions, e.g. corrosive gases, the humidity sensor may have to be changed.

»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.

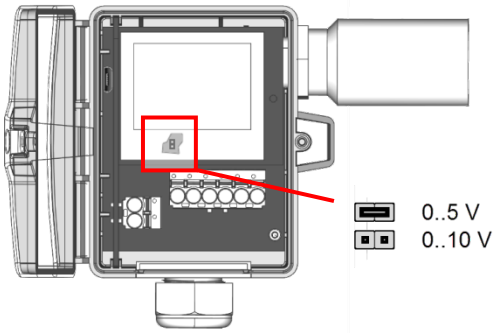
FTA54+ LCD VV

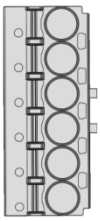




n.c. *(ST-, optional passive sensor)*
n.c. *(ST+, optional passive sensor)*
AOU2 *(temperature | 0..10 V)*
AOU1 *(humidity | 0..10 V)*
GND
UB+ *(15..35 V = or 19..29 V ~)*

FTA54+ LCD AA



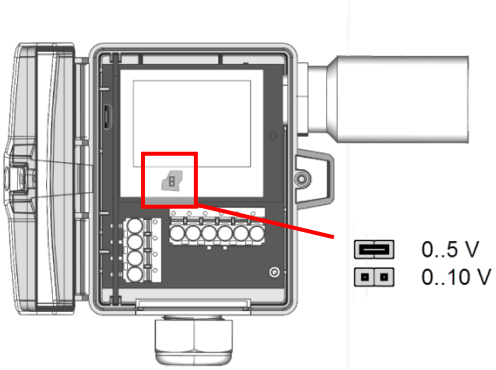


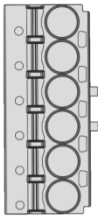
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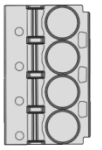
AOI2 *(temperature | 4..20 mA)*
AOI1 *(humidity | 4..20 mA)*

FTA54+ (LCD) VV Relay



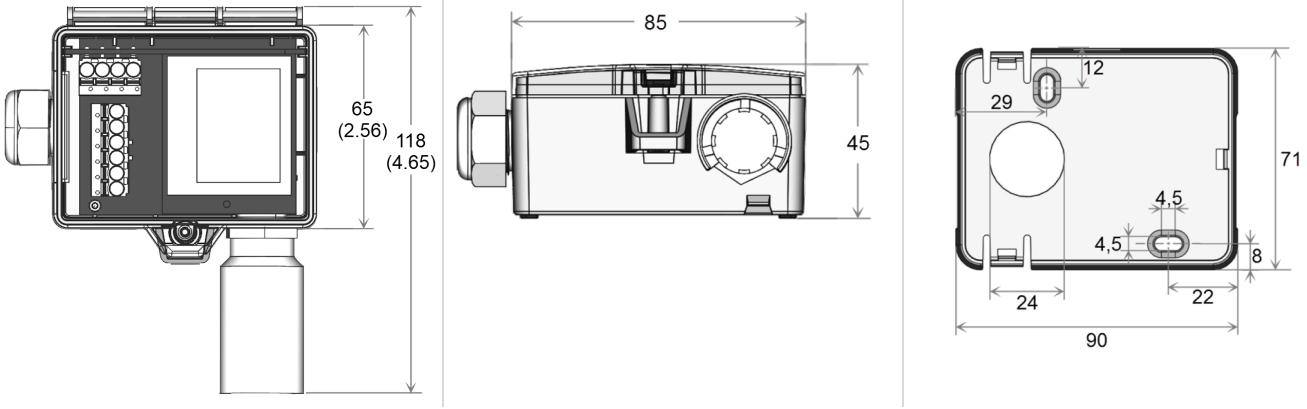


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n.c. *(ST+, optional passive sensor)*
AOU2 *(temperature) | 0..10 V)*
AOU1 *(humidity | 0..10 V)*
GND
UB+ *(15..35 V = or 19..29 V ~)*



(Relay 2 | NO)
(Relay 1 | NO)

» 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