

FTA54+ (LCD) LON

Outdoor sensor for relative humidity and temperature

thermokon[®]
HOME OF SENSOR TECHNOLOGY

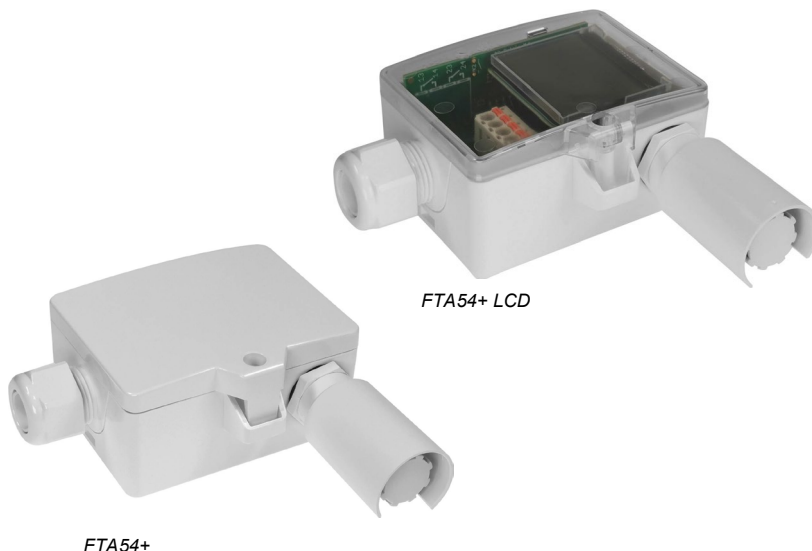
Datasheet

Subject to technical alteration
Issue date: 05/12/2026 • A160



LON

LOCAL OPERATING NETWORK



The following illustrations show the version with LCD

» APPLICATION

Duct sensor for measuring humidity and temperature in gaseous media of heating, ventilation and air-conditioning systems. 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 (changeable 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. A mounting flange and fixing material are included in delivery.

» TYPES AVAILABLE

Outdoor sensor optional with display temperature + humidity – BUS

- FTA54+ (LCD) LON

» 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 wheeled 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.

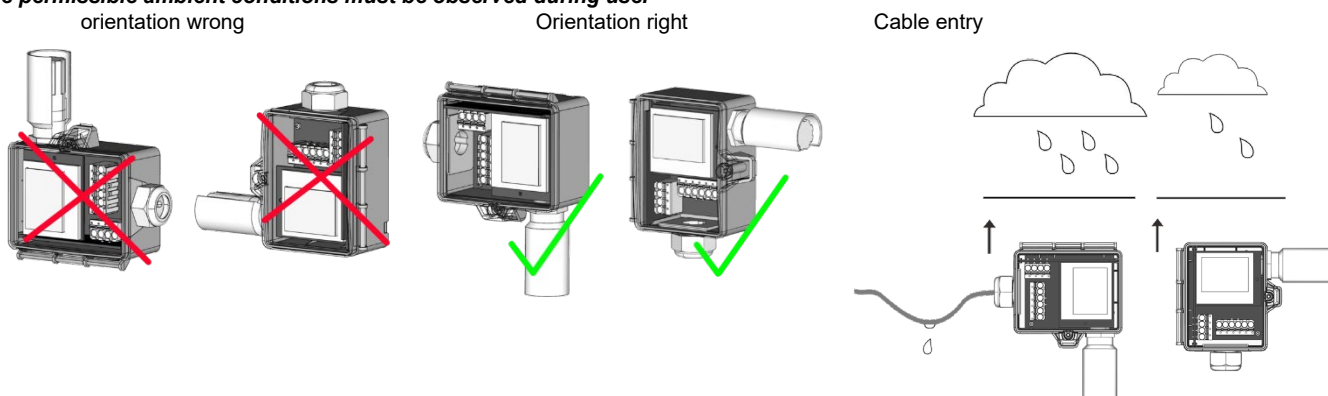
» TECHNICAL DATA

Measuring values	temperature, humidity (humidity output configurable)	
Output voltage	2x 0..10 V or 0..5 V, min. load 10 k Ω (live-zero configuration via Thermokon USEapp)	
Network technology	LON FT	
Power supply	15..35 V = or 19..29 V ~ SELV	
Power consumption	max. 2,5 W (24 V =) 4,3 VA (24 V ~)	
Measuring range temp.	+40..+240 °F (default setting), optionally configurable via Thermokon USEapp	
Measuring range humidity	0..100% rH non-condensing, optionally configurable via Thermokon USEapp (enthalpy, absolute humidity, dew point)	
Accuracy temperature	$\pm 0,3$ K (typ. at 70 °F)	
Accuracy humidity	$\pm 2\%$ between 10..90% rH (typ. at 70 °F)	
Display (optional)	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	M25 for cable max. $\varnothing=0.24$ in., seal insert for fourfold cable entry	
Connection electrical	Mainboard removable plug-in terminal, max. 14 AWG	Plug-in card removable plug-in terminal, max. 16 AWG
Pipe	PC, pure white	
Filter	stainless steel wire mesh	
Ambient condition	-4..+158 °F, short term condensation	

» 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.



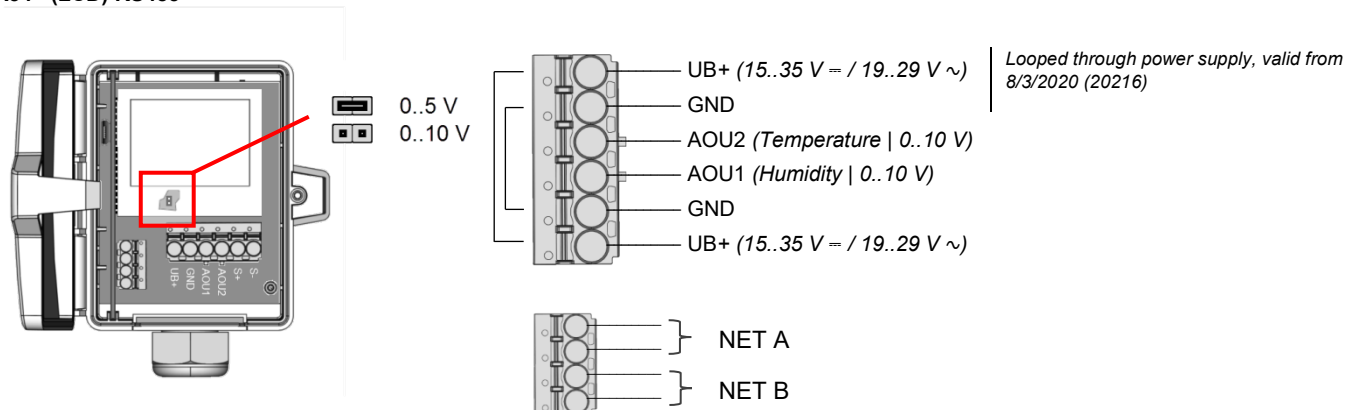
Regardless of the direction of the compass, the outdoor sensor should not be installed in the following locations:

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

» CONNECTION PLAN

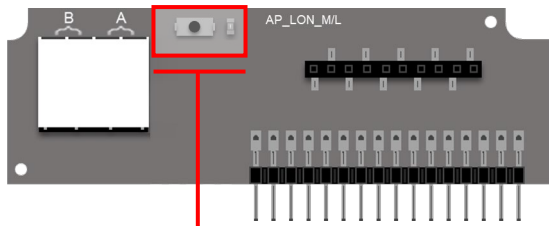
To change the output voltage range (default 0..10 V to 0..5 V) via jumper, the display must be removed from the board first. If the RS485 cable is looped through, connect both cable shields using the enclosed 2-pol. Connect terminal as shown.

FTA54+ (LCD) RS485



Service-Pin-Telegramm

When the service pin is activated, the service pin telegram is transmitted with the LON device identification - the Neuron Chip ID.

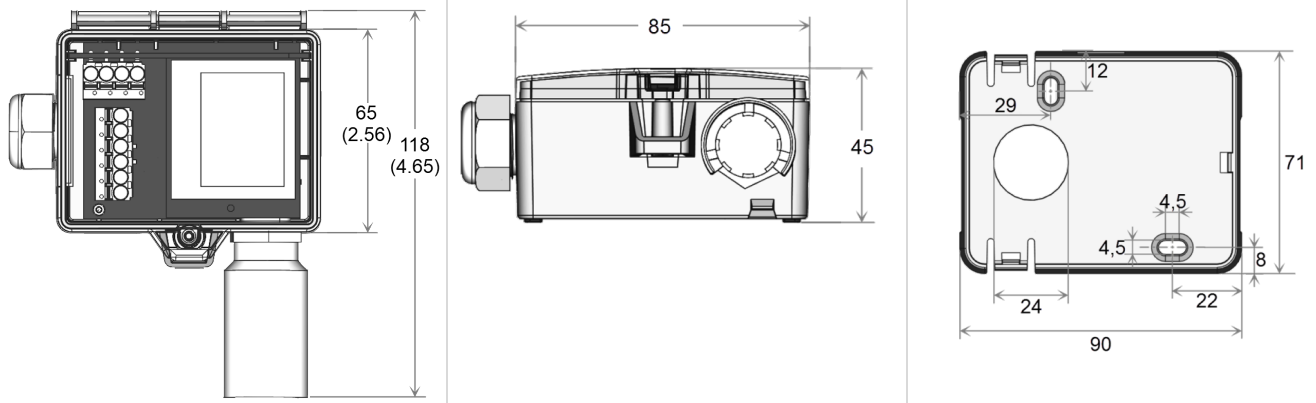


Service PIN / Service LED

**Specification LON: USE-LON Interface**

A detailed description of the LON variables can be found in our downloadcenter:

<https://www.thermokon.de/direct/files/use-lon-plugin.zip>

» DIMENSIONS (IN.)**» ACCESSORIES (INCLUDED IN DELIVERY)**

Rain protection
 Mounting base
 Mounting kit universal
 • Cover screw + screw cover • 2 Rawlplugs • 2 Screws (countersunk head) • 2 Screws (rounded head)

Item No. 850687
 Item No. 631228
 Item No. 698511

» ACCESSORIES (OPTIONAL)

Filter stainless steel, wire mesh

Item No. 231169