VFG54+ LCD

Contact temperature sensor

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

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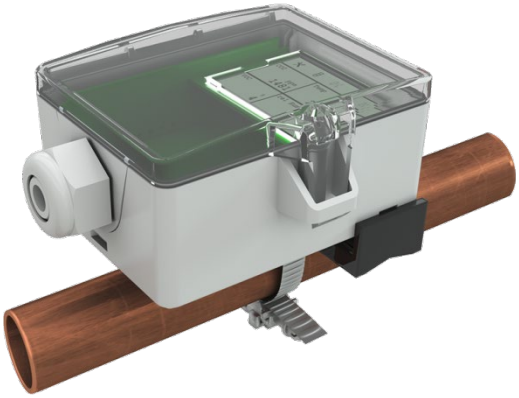


» APPLICATION

Sensor with hinged lid enclosure USE for temperature measurement of pipes and round surfaces. Spring loaded brass contact sensor.

» TYPES AVAILABLE

Contact sensors with display temperature – active 0..10 V | 4..20 mA | relay

- VFG54+ LCD TRV MultiRange
- VFG54+ LCD TRA MultiRange
- VFG54+ LCD TRV MultiRange Relay

» 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 can be found on our website
https://www.thermokon.de/direct/en-gb/categories/vfg54plus

» 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.

»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	
Output voltage	0..10 V or 0..5 V, min. load 10kΩ (live-zero configuration via Thermokon USEapp)	
Output Amp	4..20 mA, max. load 500Ω	
Output switch contact	2 floating contacts for 24 V ~ or 24 V = / 3 A	
Power supply	**TRV** 15..35 V = or 19..29 V ~ SELV	**TRA** 15..35 V = SELV
Power consumption	max. 2,5 W (24 V =) | 4,3 VA (24 V ~)	
Output signal range temp. **Scaling analogue output*	**TRV | TRA** default setting: -20..+80 °C, selectable from 8 temperature ranges -50..+50 | -20..+80 | -15..+35 | -10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250 °C, optionally configurable via Thermokon USEapp	
Operating temperature range ** Max. permissible operating temperature*	**sensor pocket | holder** -35..+120 °C	**enclosure | electronic** -20..+70 °C
Accuracy temperature	±0,5 K (typ. at 21 °C)	
Display	LCD 29x35 mm 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	**TRV | TRA** Flextherm M20, for wire Ø=4,5..9 mm, removable	**Relay** M25 with fourfold cable entry for wire with max. Ø=7 mm, removable
Connection electrical	removable plug-in terminal, max. 2,5 mm²	
Pocket	stainless steel V2A, Ø=6 mm, L=25 mm	
Ambient condition	max. 85% rH short term condensation	
Mounting	installation possible in or across the direction of the pipe	

»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.

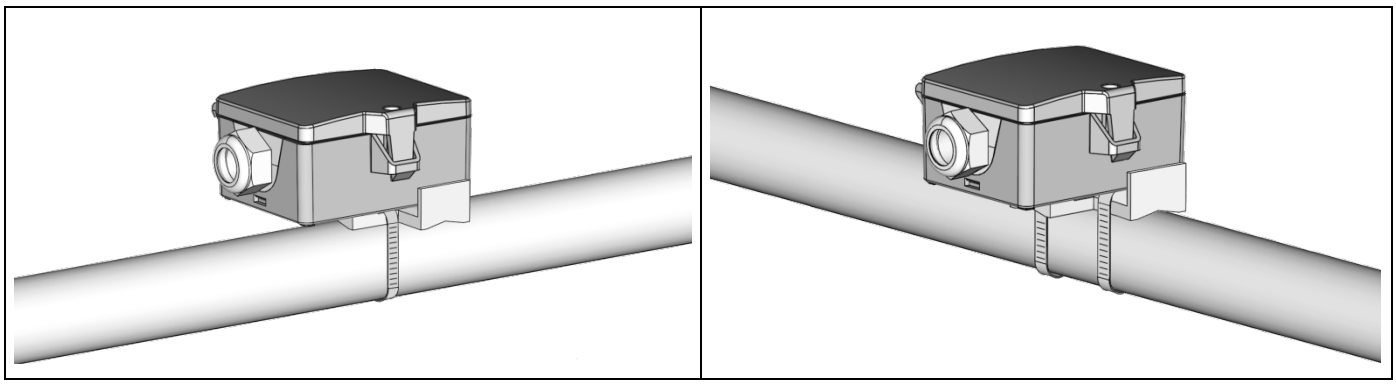
The configuration-app and the app description can be found in the Google Play Store or in the Apple App Store.

»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.

»MOUNTING ADVICES

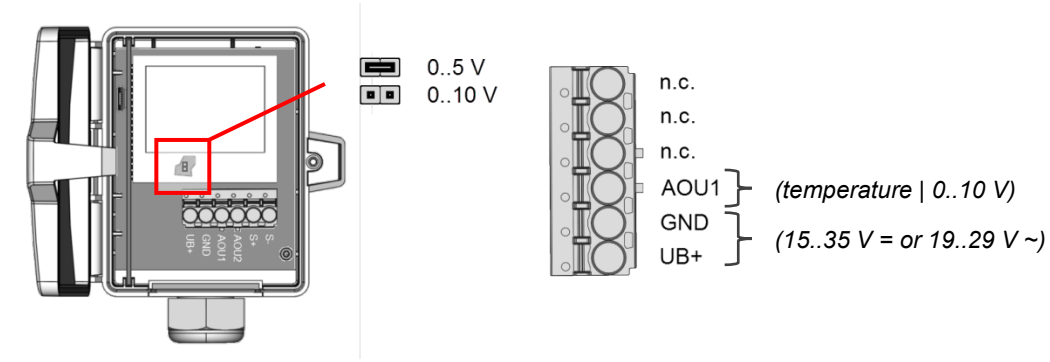
The device is fixed using the tightening strap. Use contact fluid for better heat transfer between sensor and measuring medium. To avoid permeation of condensate, mount the sensor on top of the tube, if possible. The installation is possible in or across the direction of the pipe.



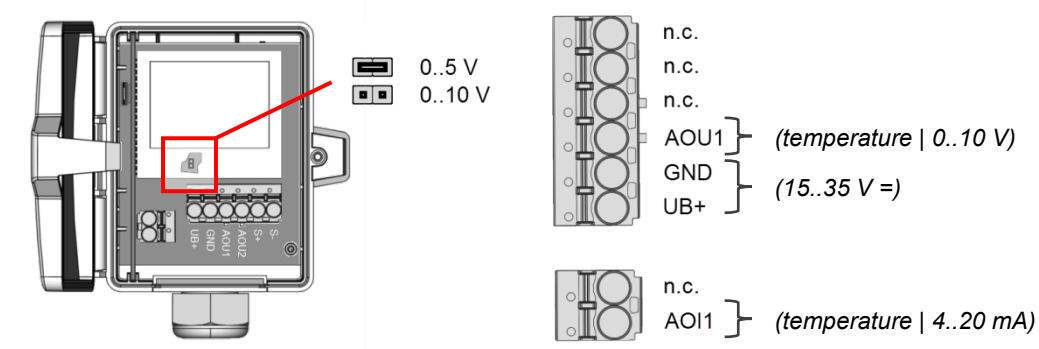
»CONNECTION PLAN

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.

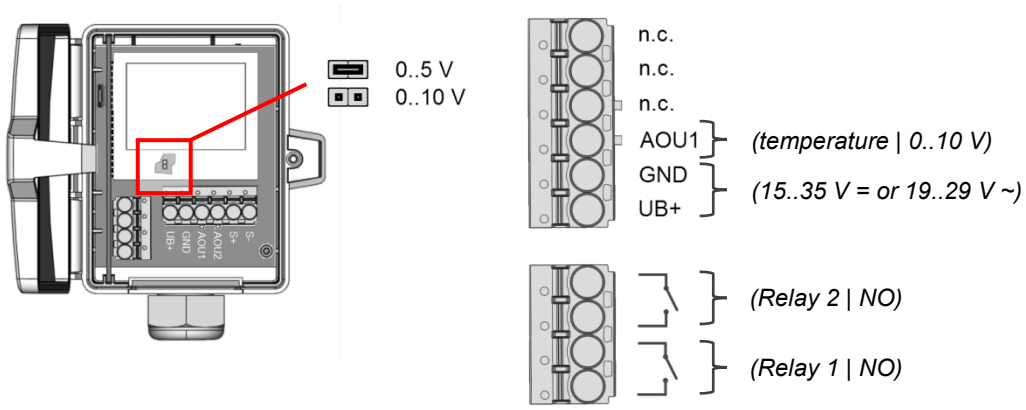
VFG54+ **LCD TRV MultiRange**



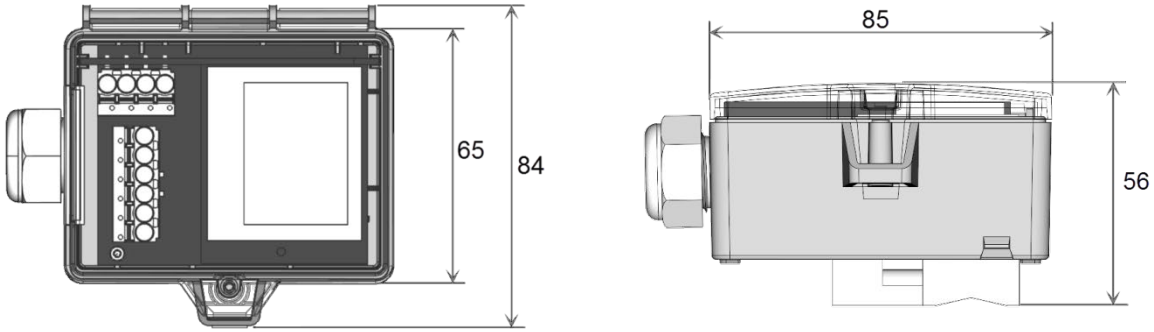
VFG54+ **LCD TRA MultiRange**



VFG54+ **LCD TRV MultiRange Relay**



»DIMENSIONS (MM)



»ACCESSORIES (INCLUDED IN DELIVERY)

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
Tension clamp for pipes Ø up to 110 mm with contact fluid	Item No. 658911
Tension clamp for pipes Ø up to 250 mm with contact fluid	Item No. 648103
Tightening strap PA for pipes Ø up to 100 mm with contact fluid	Item No. 668071
Cable entry M25 USE white, sealing insert 4x Ø=7 mm (4 pcs)	Item No. 641364
Sealing insert M20 USE white, 2x Ø=7 mm (for 2 wire; PU 10 pieces)	Item No. 641333