TF25+

Cable temperature sensor

thermokon®
HOME OF SENSOR TECHNOLOGY

Datasheet

Subject to technical alteration
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»APPLICATION

Cable sensor for temperature measurement in HVAC applications. In conjunction with a Thermowell pocket suitable for temperature measurement in duct applications. Designed for control and monitoring applications.

»TYPES AVAILABLE

Cable sensors -50..+180 °C – active TRV 0..10 V

- TF25+ TRV MultiRange T180 050.06 L1000
- TF25+ TRV MultiRange T180 100.06 L1000
- TF25+ TRV MultiRange T180 150.06 L1000

Cable sensors -50..+180 °C – active TRA 4..20 mA

- TF25+ TRA MultiRange T180 050.06 L1000
- TF25+ TRA MultiRange T180 100.06 L1000
- TF25+ TRA MultiRange T180 150.06 L1000

TF25+ TRV:
Product designation

MultiRange:
Measuring range adjustable via USEapp

T160:
max. temperature, default 160 °C, optional up to 250 °C (T250)

050.06:
Pocket length.Diameter, optional mounting length 50 | 100 | 150 | 200 | 250 mm

L1000:
standard cable length 1000 mm, additional cable lengths on request

TF25+ TRV MultiRange T160 050.06 L1000

»PRODUCT TESTING AND CERTIFICATION

CE

Declaration of conformity
The declaration of conformity of the products can be found on our website
https://www.thermokon.de/direct/en-gb/categories/tf25plus

»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

»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

»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.

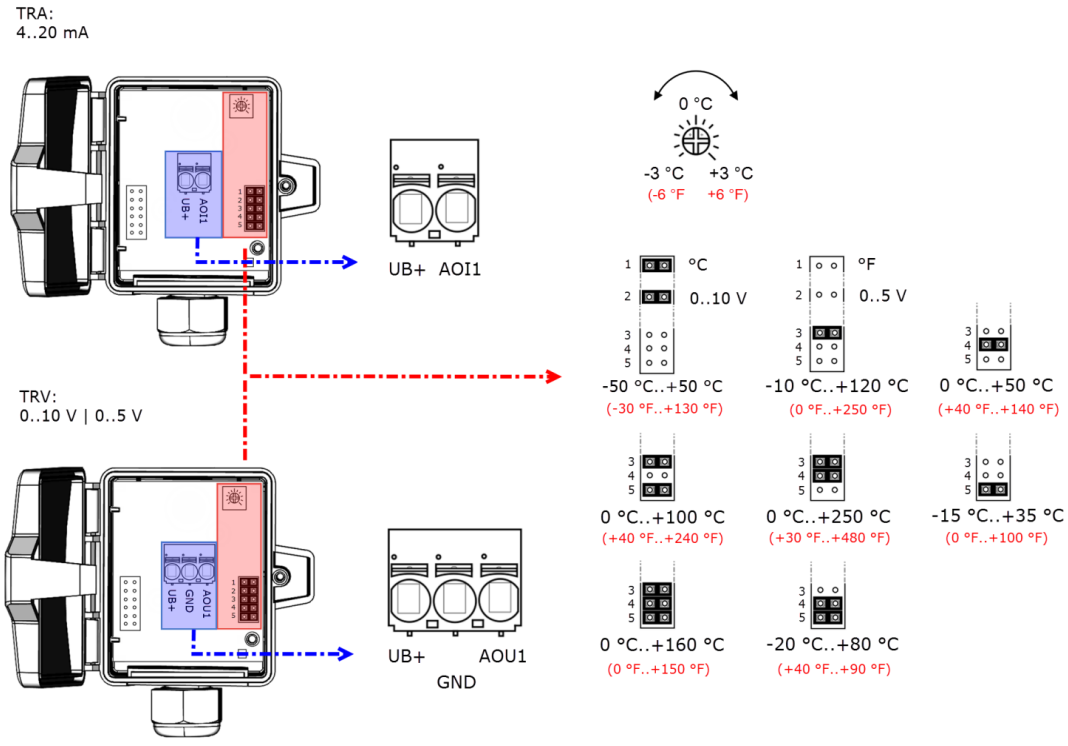
»TECHNICAL DATA

Measuring values	temperature		
Output voltage *(type-dependent)*	**TRV** 1x 0..10 V or 0..5 V, configurable via jumper, min. load 5 kΩ		
Output ampere *(type-dependent)*	**TRA** 1x 4..20 mA, max. load 500 Ω		
Power supply *(type-dependent)*	**TRV** 15..24 V = (±10%) or 24 V ~ (±10%) SELV	**TRA** 15..24 V = (±10%) SELV	
Power consumption *(type-dependent)*	**TRV** typ. 0,4 W (24 V =) | 0,8 VA (24 V ~)	**TRA** typ. 0,5 W (24 V =)	
Output signal range temp. **Scaling analogue output*	**TRV | TRA** default setting: 0..+160 °C selectable from 8 temperature ranges -50..+50 | -20..+80 | -15..+35 | -10..+120 | 0..+50 | 0..+100 | 0..+160 | 0..+250 °C, adjustable at the transducer		
Operating temperature range ** Max. permissible operating temperature*	**sensor pocket** -50..+180 °C optional -50..+250 °C (T250)	**enclosure** -35..+70 °C	**mounting base** -35..+90 °C
Accuracy temperature	±0,5 K (typ. at 21 °C for measuring range 0..50 °C)*		
Enclosure	enclosure USE-S, PC, pure white		
Protection	**enclosure** IP65 according to EN 60529	**sensor pocket** IP65 according to EN 60529, SI-Protection, 16-point pressed, optional, Rolled: IP67 according to EN 60529 with SI-Protection	
Cable entry	Flextherm M20, for wire Ø=4,5..9 mm, removable		
Connection electrical	removable plug-in terminal, max. 2,5 mm²		
Pocket	stainless steel V4A, Ø=6 mm, mounting length: 50 | 100 | 150 | 200 | 250 mm, tension spring (optional)		
Ambient condition	max. 85% rH short term condensation		
Notes	other cable lengths on request		

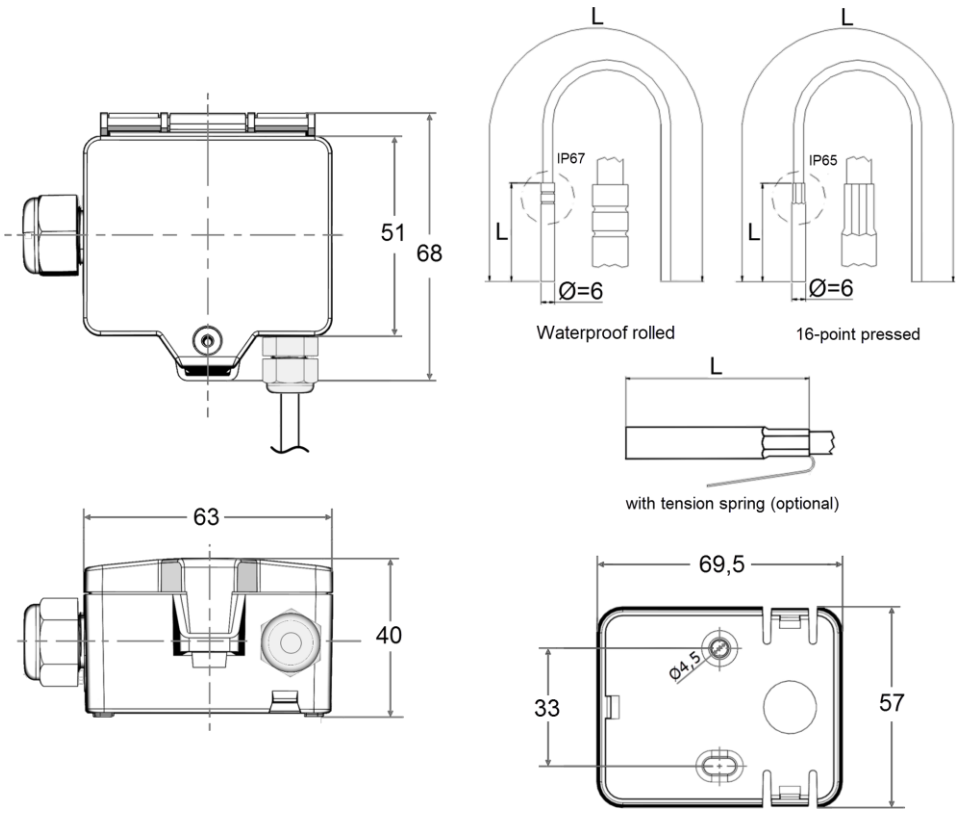
**other measuring ranges: ±1% of the measuring range*

»CONNECTION PLAN AND CONFIGURATION

The adjustment of the measuring ranges is made by changing the jumpers in a de-energized state. The output value of the new measuring range is available after 2 seconds. *fig. (Measuring range and offset adjustment, default settings: 0 °C..+160 °C | 0 K)*



»DIMENSIONS (MM)



»ACCESSORIES (INCLUDED IN DELIVERY)

Mounting base enclosure USE pure white	Item No. 667722
Mounting kit universal	Item No. 698511

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

»ACCESSORIES (OPTIONAL)

Mounting clip enclosure USE pure white	Item No. 667739
VA-Compression fitting type KL6VA	Item No. 103213
Mounting flange MF6 flexible (suitable for Ø=4 | 6 | 7 mm)	Item No. 399098
Mounting flange MF6 (brass)	Item No. 003407
Syringe thermal contact fluid	Item No. 102308
Sealing insert M20 USE white, 2x Ø=7 mm (for 2 wire; PU 10 pieces)	Item No. 641333

Thermowell pockets stainless steel / brass for sensors with pocket Ø=6 mm

length	50 mm	100 mm	150 mm
THMSDS	610995	611008	611015
THVADS	611152	611817	611824

MS-thermowell pocket (brass, suitable up to 16 bar) type THMSDS <xx>.
VA-thermowell pocket (stainless steel, suitable up to 40 bar) type THVADS <xx>.