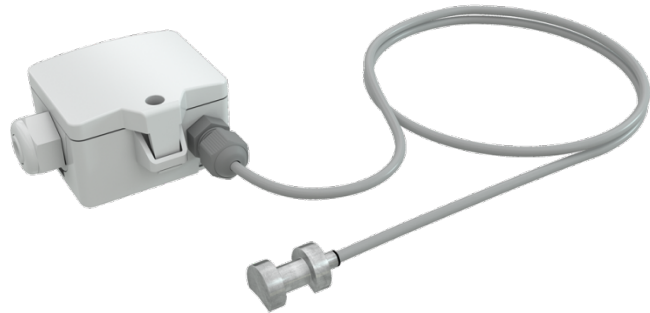


Datasheet

Subject to technical alteration
Issue date: 19.08.2020 • A110



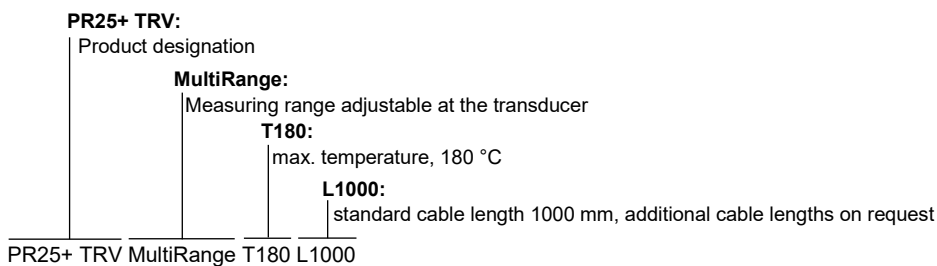
» APPLICATION

Sensor for temperature measurement of pipes and round surfaces. Designed for control and monitoring applications.

» TYPES AVAILABLE

Contact sensors -50..+180 °C – active 0..10 V | 4..20 mA

PR25+ TRV MultiRange T180 L1000
PR25+ TRA MultiRange T180 L1000



» 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

» NOTES ON DISPOSAL



As a component of a large-scale fixed installation, Thermokon products are intended to be used permanently as part of a building or a structure at a pre-defined and dedicated location, hence the Waste Electrical and Electronic Act (WEEE) is not applicable. However, most of the products may contain valuable materials that should be recycled and not disposed of as domestic waste. Please note the relevant regulations for local disposal.

» BUILD-UP OF SELF-HEATING BY ELECTRICAL DISSIPATIVE POWER

Temperature 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. As Thermokon transducers work with a variable operating voltage, only one operating voltage can be taken into consideration, for reasons of production engineering. Transducers 0..10 V / 4..20 mA have a standard setting at an operating voltage of 24 V =. That means, that at this voltage, the expected measuring error of the output signal will be the least. For other operating voltages, the offset error will be increased by a changing power loss of the sensor electronics. If a re-calibration should become necessary later directly on the sensor, this can be done by means of a trimming potentiometer on the sensor board.

Remark: Occurring draft leads to a better carrying-off of dissipative power at the sensor. Thus temporally limited fluctuations might occur upon temperature measurement.

» TECHNICAL DATA

Measuring values	temperature		
Output voltage	TRV 1x 0..10 V or 0..5 V, configurable via jumper, min. load 5 k Ω		
Output ampere	TRA 1x 4..20 mA, max. load 500 Ω		
Power supply	TRV 15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$) SELV	TRA 15..24 V = ($\pm 10\%$) SELV	
Power consumption	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	enclosure -35..+70 °C	mounting base -35..+90 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C within default measuring range)		
Enclosure	enclosure USE-S, PC, pure white, UV resistant		
Protection	IP65 according to EN 60529		
Cable entry	Flextherm M20, for wire $\varnothing=4,5..9$ mm, removable		
Connection electrical	removable plug-in terminal, max. 2,5 mm ² , sensor wire active silicone, 1 m (default), 2 m, 4 m, 6 m		
Pocket	aluminium, $\varnothing=11$ mm, mounting length 28 mm		
Ambient condition	max. 85% rH short term condensation		
Notes	other cable lengths on request		

» 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.

» **PRODUCT TESTING AND CERTIFICATION**

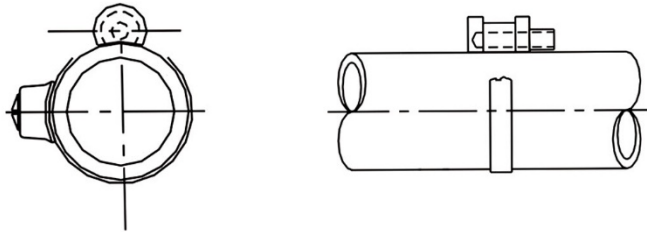


Declaration of conformity

The declaration of conformity of the products can be found on our website <https://www.thermokon.de/>.

» **MOUNTING ADVICE**

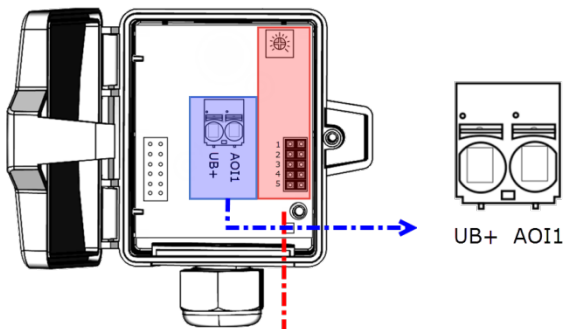
Fixing is done by tightening strap. Use contact fluid for better heat transfer between sensor and measuring medium.



» **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.

TRA:
4..20 mA



TRV:
0..10 V | 0..5 V

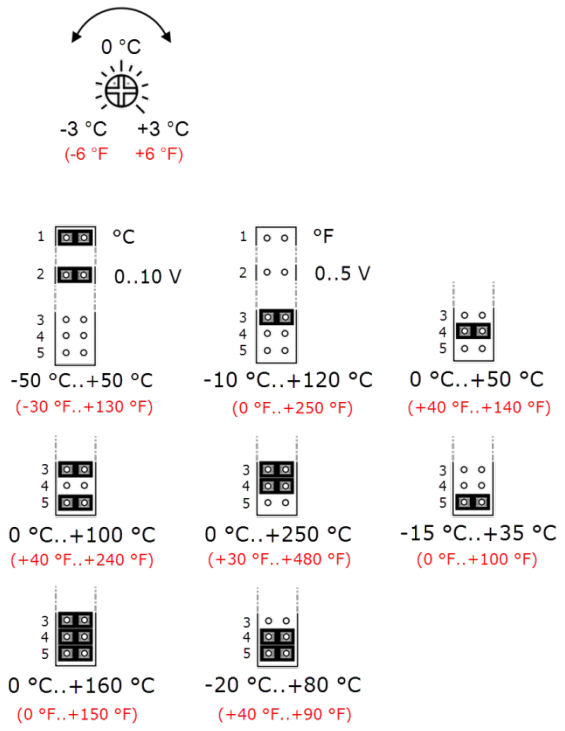
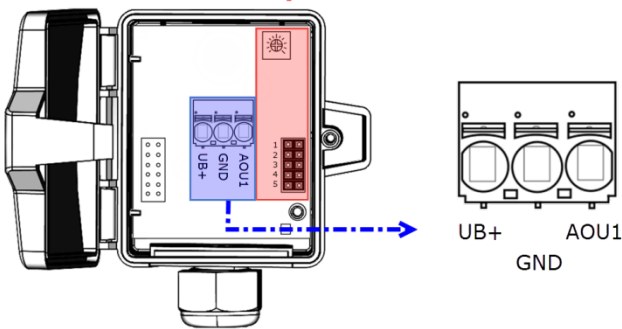
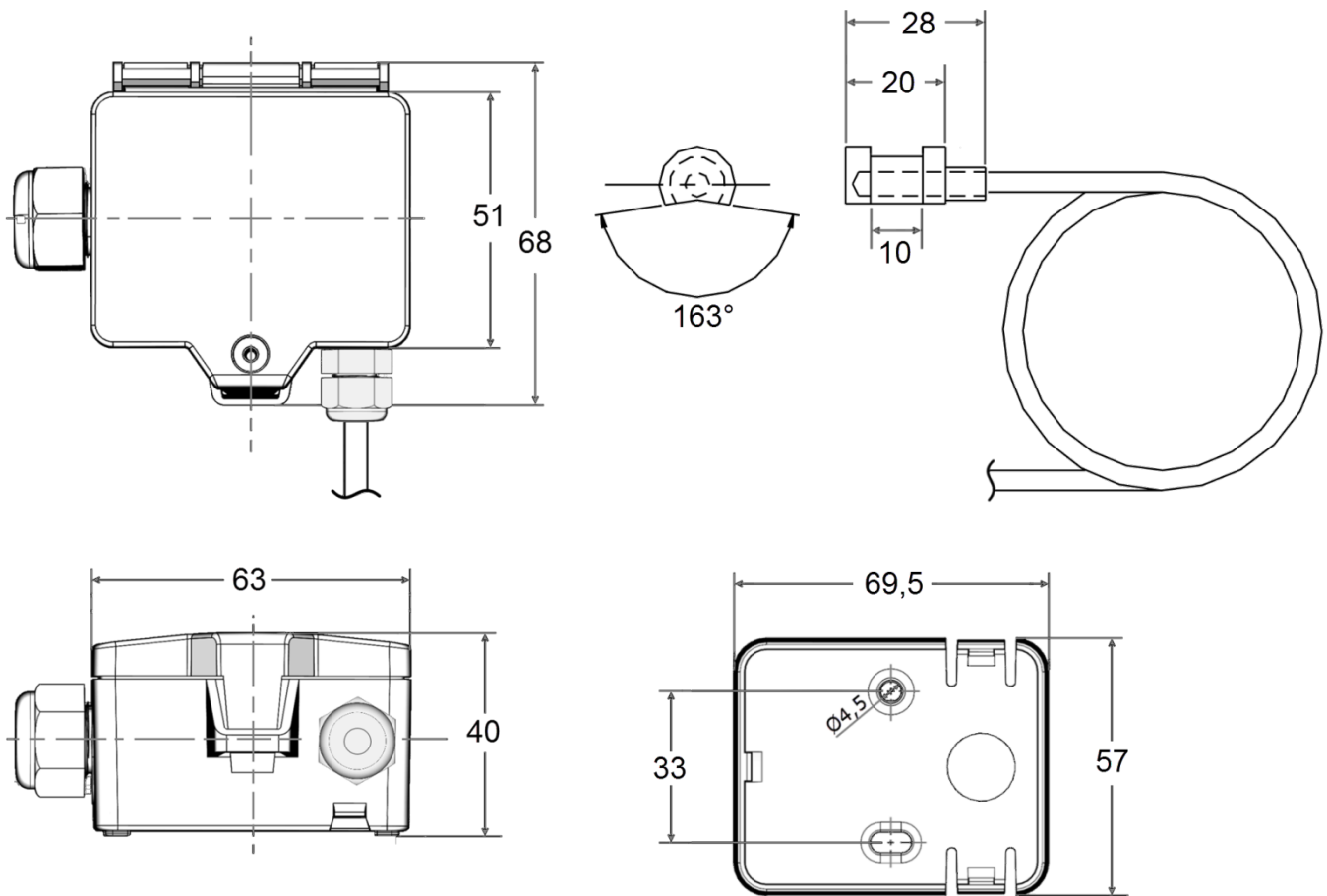


fig. (Measuring range and offset adjustment, default settings: 0 °C..+160 °C | 0 K)

» DIMENSIONS (MM)



» ACCESSORIES (INCLUDED IN DELIVERY)

Mounting base enclosure USE pure white

Montageset Universal

• Deckelschraube + Schraubenabdeckung • 2 Dübel • 2 Bohrschrauben (Senkkopf) • 2 Bohrschrauben (Linsenkopf)

Item No. 667722

Art.-Nr.: 698511

» ACCESSORIES (OPTIONAL)

Mounting clip enclosure USE-S pure white

Tension clamp for pipes \varnothing up to 110 mm with contact fluid

Tension clamp for pipes \varnothing up to 250 mm with contact fluid

Tightening strap PA for pipes \varnothing up to 100 mm with contact fluid

Syringe thermal contact fluid

Sealing insert M20 USE white, 2x $\varnothing=7$ mm (for 2 wire; PU 10 pieces)

Item No. 667739

Item No. 658911

Item No. 648103

Item No. 668071

Item No. 102308

Item No. 641333