

# AF25+

Contact temperature sensor

**thermokon**<sup>®</sup>  
HOME OF SENSOR TECHNOLOGY

## Datasheet

Subject to technical alteration  
Issue date: 06.02.2024 • A122



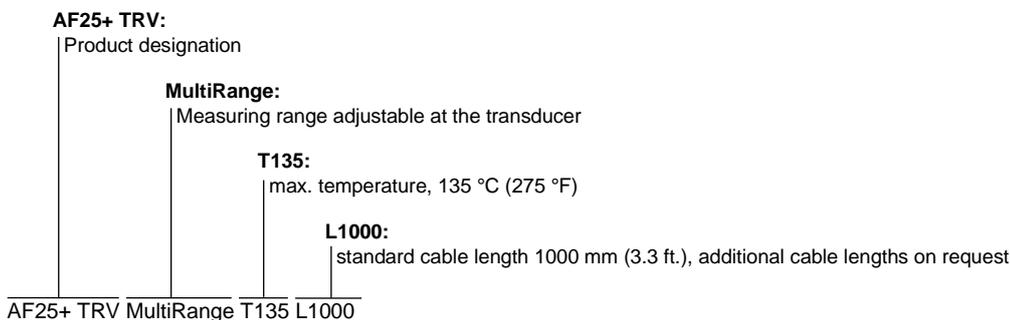
### » APPLICATION

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

### » TYPES AVAILABLE

Contact sensors -50..+135 °C – active 0..10 V | 4..20 mA

- AF25+ TRV MultiRange T135 L1000
- AF25+ TRA MultiRange T135 L1000



### » 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/af25plus>

### » NOTES ON DISPOSAL



The crossed-out wheellie 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](http://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 ( $\pm 0,2$  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.**

## » TECHNICAL DATA

Measuring values	temperature		
Output voltage	<b>TRV</b> 1x 0..10 V or 0..5 V, configurable via jumper, min. load 5 k $\Omega$		
Output ampere	<b>TRA</b> 1x 4..20 mA, max. load 500 $\Omega$		
Power supply	<b>TRV</b> 15..24 V = ( $\pm 10\%$ ) or 24 V ~ ( $\pm 10\%$ ) SELV	<b>TRA</b> 15..24 V = ( $\pm 10\%$ ) SELV	
Power consumption	<b>TRV</b> typ. 0,4 W (24 V =)   0,8 VA (24 V ~)	<b>TRA</b> typ. 0,5 W (24 V =)	
Output signal range temp. *Scaling analogue output	<b>TRV   TRA</b> 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	<b>sensor pocket</b> -50..+135 °C	<b>enclosure</b> -35..+70 °C	<b>mounting base</b> -35..+90 °C
Accuracy temperature	$\pm 0,5$ K (typ. at 21 °C for measuring range 0..50 °C)*		
Enclosure	enclosure USE-S, PC, pure white		
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 <sup>2</sup>		
Pocket	brass, $\varnothing=6$ mm, mounting length 35 mm		
Ambient condition	max. 85% rH short term condensation		
Notes	other cable lengths on request		

\*other measuring ranges:  $\pm 1\%$  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.

**Active**

**TRV**  
0..10V | 0..5V

UB+    AOU1  
GND

**TRA**  
4..20mA

UB+    AOI1

Temperature  
Offset

0 K  
-3 K    +3 K

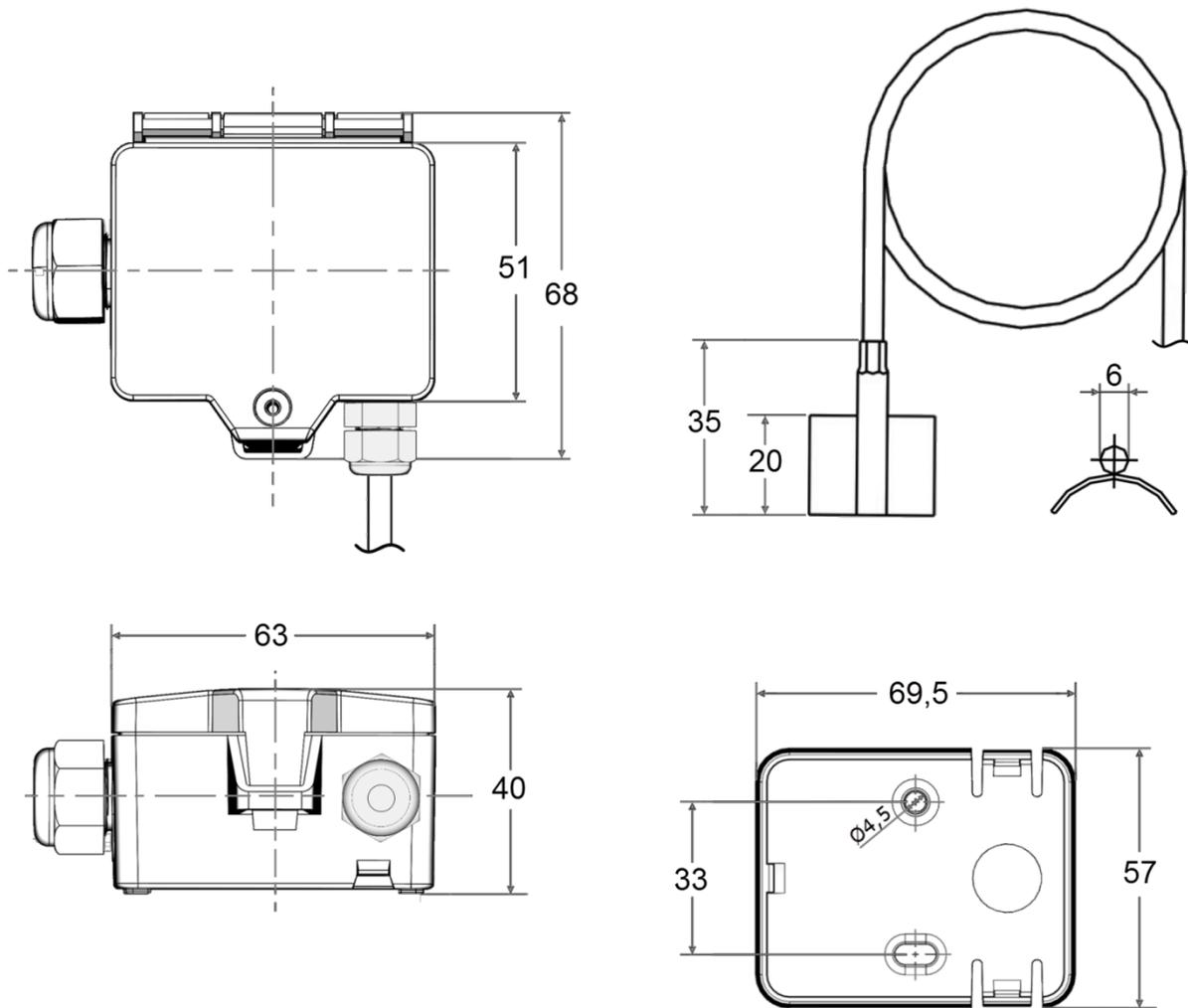
Jumper  
1-5

1		°C		°F (additional. Informationen below)
2		0..10V		0..5 V <i>TRV only</i>
3		-50 °C..+50°C	3	0°C..+100°C
4			4	
5		-10°C..+120°C	3	-20°C..+80°C
3			4	
4		0°C..+50°C	3	0°C..+250°C
5			4	
3		-15°C..+35°C	3	0°C..+160°C
4			4	
5			5	

EN-US Datasheet with  
additional Informationen  
about °F

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 Rawplugs • 2 Screws (countersunk head) • 2 Screws (rounded head)

## » ACCESSORIES (OPTIONAL)

Mounting clip enclosure USE-S pure white

Item No. 667739

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

Item No. 658911

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

Item No. 648103

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

Item No. 668071

Syringe thermal contact fluid

Item No. 102308

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

Item No. 641333