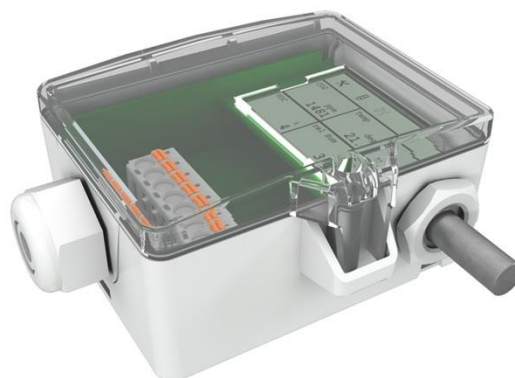# AGS55+ LCD

Outdoor temperature sensor

Thermokon®

Datasheet

Subject to technical alteration
Issue date: 04.07.2017

USEapp ✓

Application

Sensor for outdoor temperature measurement: cold rooms, greenhouses, production plants and warehouses. Stainless Steel external probe for faster response. LCD models with RGB background light have a transparent cover. Display configuration and threshold values for color changes can be parameterized via Thermokon USEapp. With the option board relay two-point controllers or a 2-stage 2-point controller for temperature can be realized.

Types Available

Outdoor sensor with display and temperature – active 0..10 V | 4..20 mA | relay

AGS55+ LCD TRV MultiRange
AGS55+ LCD TRA MultiRange
AGS55+ LCD TRV MultiRange Relay

MultiRange: Measuring ranges adjustable at the transducer

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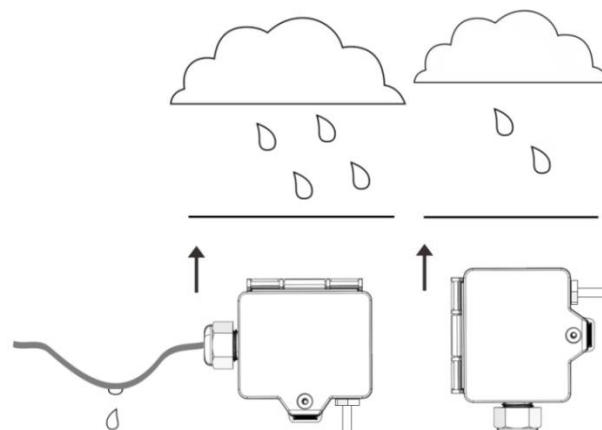
Remark: Occurring draft leads to a better carrying-off of dissipative power at the sensor. Thus temporally limited fluctuations might occur upon temperature measurement.

Technical Data

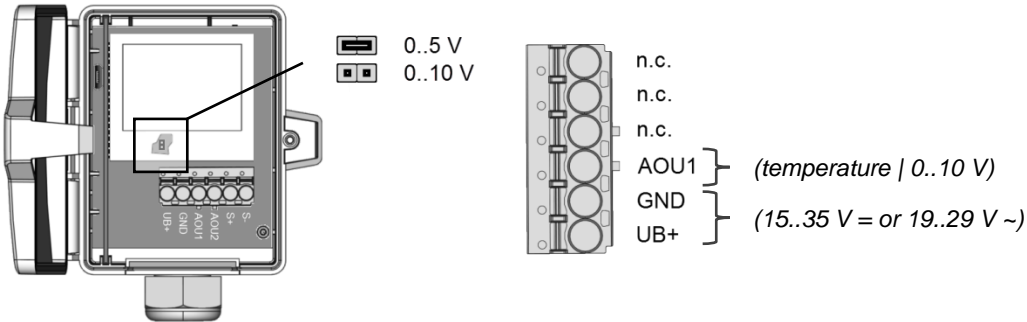| Measuring values		temperature
Output voltage		0..10 V or 0..5 V, min load 10kΩ
		(live-zero configuration via Thermokon USEapp)
Output Amp	TRA	4..20 mA, max load 500Ω
Output switch contact	Relay	2 floating contacts for 24 V ~ or 24 V = / 3 A
Power supply		15..35 V = or 19..29 V ~,
	TRA	15..35 V =
Power consumption		max. 2,5 W (24 V =) | max. 4,3 VA (24 V ~)
Measuring range temp.		-20..+80 °C (default setting), optionally configured via Thermokon USEapp
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 | TA	M16, for wire max. Ø=8 mm
	Relay	M20, for wire max. Ø=10 mm, seal insert for double cable entry for wire max. Ø=6 mm
Connection electrical		removeable plug-in terminal, max. 2,5 mm²
Pocket		stainless steel V2A, Ø=6 mm, L=25 mm
Ambient condition		-20..+70 °C, max. 85% rH short term condensation

Mounting Advices

In case of outdoor installation avoid direct rain and sun contact. Probably use sun respectively rain protection. Cable entry from bottom or side. For side cable routing set loop so that precipitation can drain defined. Observe permissible ambient condition.
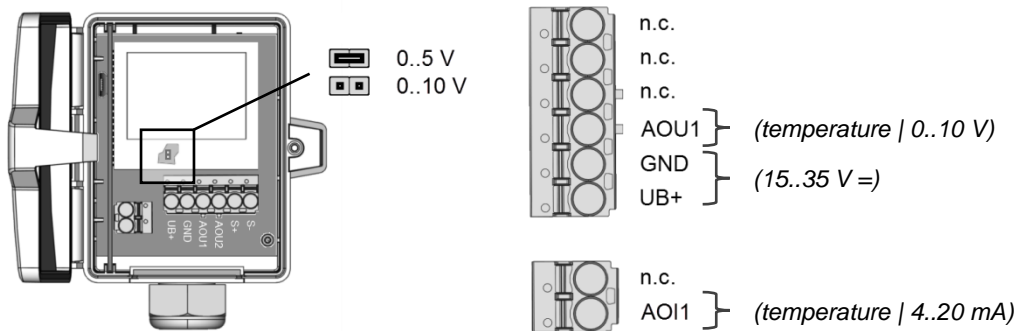
Connection Plan

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.
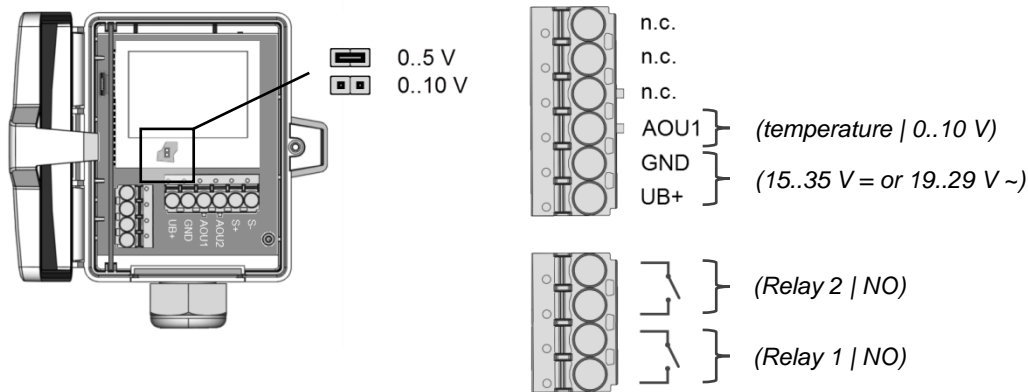
AGS55+ **LCD TRV MultiRange**

0..5 V
0..10 V

n.c.
n.c.
n.c.
AOU1 *(temperature | 0..10 V)*
GND
UB+ *(15..35 V = or 19..29 V ~)*

AGS55+ **LCD TRA MultiRange**

0..5 V
0..10 V

n.c.
n.c.
n.c.
AOU1 *(temperature | 0..10 V)*
GND
UB+ *(15..35 V =)*

n.c.
AOI1 *(temperature | 4..20 mA)*

AGS55+ **LCD TRV MultiRange Relay**

0..5 V
0..10 V

n.c.
n.c.
n.c.
AOU1 *(temperature | 0..10 V)*
GND
UB+ *(15..35 V = or 19..29 V ~)*

(Relay 2 | NO)

(Relay 1 | NO)

Configuration

The Thermokon bluetooth dongle with micro-USB is required for communication between USEapp and USE-M / USE L (Item No..: 668262). Commercial bluetooth dongles are not compatible.
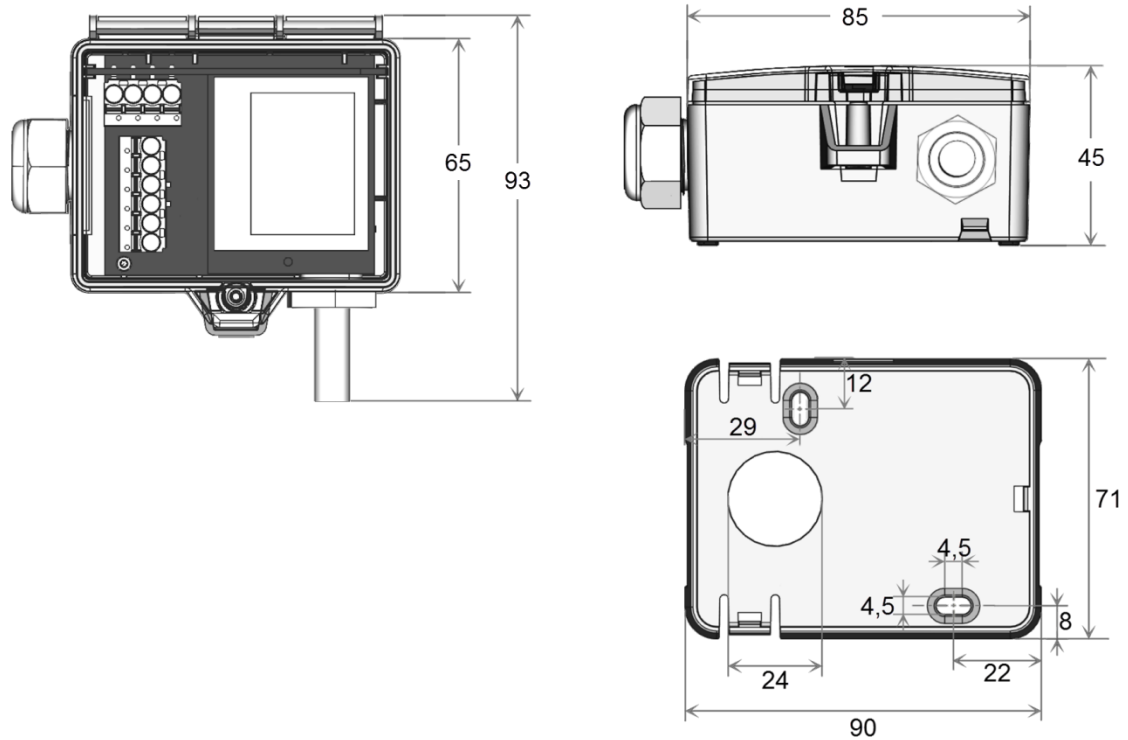
Application-specific reconfiguration of the devices can be carried out using the Thermokon USEapp. The configuration is carried out in the voltage-supplied state.

The configuration-app and the app description can be found in the download area of our webpage.

→ **Download (APK-file for Android)**

Dimensions (mm)

Accessories (included in delivery)

Mounting base	Item No. 631228
Mounting kit 5 **(only version TRV & TRA)**	Item No. 640558

• Cable entry M16 • Cover screw • 2 Rawlplugs • 2 Screws (countersunk head)

Mounting kit 6 **(only version Relay)**	Item No. 674157

• Cable entry M20 • seal insert for double cable entry 2x 6 mm • Cover screw • 2 Rawlplugs • 2 Screws (countersunk head)

Accessories (optional)

Bluetooth dongle   Item No. 668262

M16 Sealing inserts cable entry (packaging unit 10 pcs.)

for wire with Ø	3 mm	5 mm	7 mm	8 mm
Item No	641036	641012	639248	641340

M20 Sealing inserts cable entry (packaging unit 10 pcs.)

for wire with Ø	2x6 mm	2x7 mm	6 mm	8 mm
Item No	641319	641333	641074	641081