

AKF10 LCD

Duct-/Immersion temperature sensor with display

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Data Sheet

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Application

Duct-/Immersion temperature sensor for measuring temperature in gaseous media of heating, cooling and air-conditioning systems (e.g. fresh air/exhaust air ducts).

Designed for locking on to control and display systems.

In conjunction with an immersion pocket also suitable for temperature measurement in liquid fluids (e.g. pipeline systems).

Types available

AKF10.xxx.07 LCD TRA m AKF10, mounting length xxx**, $\varnothing=7$ mm, active, 4..20 mA, measuring range m*

AKF10.xxx.07 LCD TRV m AKF10, mounting length xxx**, $\varnothing=7$ mm, active, 0..10 V, measuring range m*

AKF10.yyy.04 LCD TRA m AKF10, mounting length yyy***, $\varnothing=4$ mm, active, 4..20 mA, measuring range m*

AKF10.yyy.04 LCD TRV m AKF10, mounting length yyy***, $\varnothing=4$ mm, active, 0..10 V, measuring range m*

* Measuring ranges (TRA/TRV) 1: -50..+50 °C, 2: -10..+120 °C, 3: 0..+50 °C, 4: 0..+160 °C, 5: 0..+250 °C, 8: -15..+35 °C

** Mounting lengths $\varnothing=7$ mm: 62 mm, 135 mm, 192 mm, 240 mm, 320 mm, 392 mm, 465 mm

*** Mounting lengths $\varnothing=4$ mm: 40 mm, 90 mm, 140 mm, 190 mm



Security Advice – Caution

The installation and assembly of electrical equipment must be performed by a skilled electrician.

The modules must not be used in any relation with equipment that supports, directly or indirectly, human health or life or with applications that can result in danger for people, animals or real value.

Before connecting devices with electrical power supply the installation must be isolated from power source!

Notes on Disposal

For disposal, the product is considered waste from electrical and electronic equipment (electronic waste) and must not be disposed of as household waste. Special treatment for specific components may be legally binding or ecologically sensible. The local and currently applicable legislation must be observed.

Electrical Connection

The devices are constructed for the operation of protective low voltage (SELV). For the electrical connection, the technical data of the corresponding device are valid.

Especially with regard to passive sensors in 2-wire conductor versions, the wire resistance of the supply wire has to be considered. If necessary the wire resistance has to be compensated by the follow-up electronics. Due to self-heating, the wire current affects the measurement accuracy. So it should not exceed 1 mA.

Sensing devices with transducer should always be operated in the middle of the measuring range to avoid deviations at the measuring end points. The ambient temperature of the transducer electronics should be kept constant. The transducers must be operated at a constant supply voltage ($\pm 0,2$ V). When switching the supply voltage on/off, onsite power surges must be avoided.

When using lengthy connection wires (depending on the cross section used) the measuring result might be falsified due to a voltage drop at the common GND-wire (caused by the voltage current and the line resistance). In this case, 2 GND-wires must be wired to the sensor - one for supply voltage and one for the measuring current.

Technical Data

Mounting lengths:	$\varnothing=7$ mm: 62 mm, 135 mm, 192 mm, 240 mm, 320 mm, 392 mm, 465 mm $\varnothing=4$ mm: 40 mm, 90 mm, 140 mm, 190 mm
Operating temperature sensor bushing:	Standard: -50..160 °C 260 °C version: -80..260 °C
Sensor bushing:	Stainless steel mat. 1.4571
Connection head:	Polyamide, Colour white
LCD display:	34mm x 21mm, colour black/white with backlight white
Functions displayed:	Temperature, „OL“ if an overload occurred, „Check Sensor“ if the Sensor is defective or not connected
Clamps:	3pole (three-wire) Terminal screw max. 1,5 mm ²
Cable entry:	Single entry, M20 for cable max. $\varnothing=8$ mm
Protection:	IP65 according to EN 60529
Ambient temperature connection head:	-35..+70 °C
Transport:	-35..+70 °C / max. 85% rH, no condensation
Weight:	approx. 150 g

Type TRA	
Power supply:	15..24 V = ($\pm 10\%$)
Power consumption:	0,8 W / 2 VA
Measuring range:	adjustable at the transducer TRA1: -50.. +50 °C TRA2: -10..+120 °C TRA3: 0.. +50 °C TRA4: 0..+160 °C TRA5: 0..+250 °C TRA8: -15.. +35 °C
Output:	4..20 mA, max. load 500 Ω / 24 V =
Accuracy@21°C:	Typ. $\pm 1\%$ of measuring range
Type TRV	
Power supply:	15..24 V = ($\pm 10\%$) or 24 V ~ ($\pm 10\%$)
Power consumption:	0,4 W / 1 VA
Measuring range:	adjustable at the transducer TRV1: -50.. +50 °C TRV2: -10..+120 °C TRV3: 0.. +50 °C TRV4: 0..+160 °C TRV5: 0..+250 °C TRV8: -15.. +35 °C
Output:	0..10 V, min. load 5 k Ω
Accuracy@21°C:	Typ. $\pm 1\%$ of measuring range

Mounting Advices

The sensor can be mounted on the ventilation duct either by means of a mounting flange or by screws.

For risk of condensate permeation in the sensor tube respectively in the immersion pocket the bushing must be installed in a position that occurred condensate can run off.

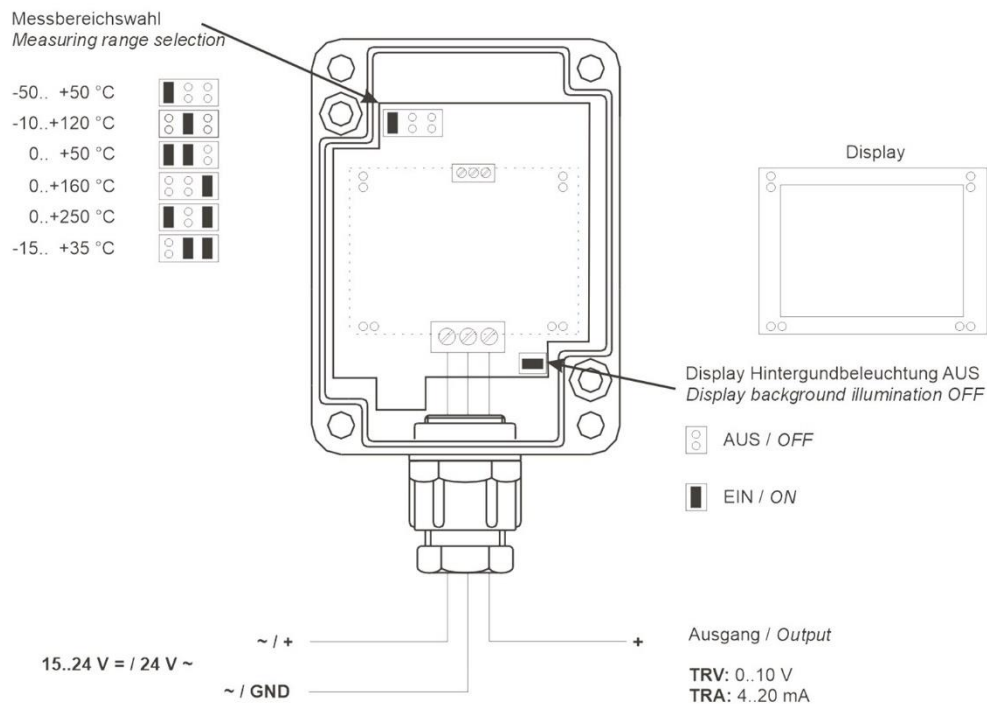
Please also note the general remarks in our INFOBLATT THK.

Commissioning

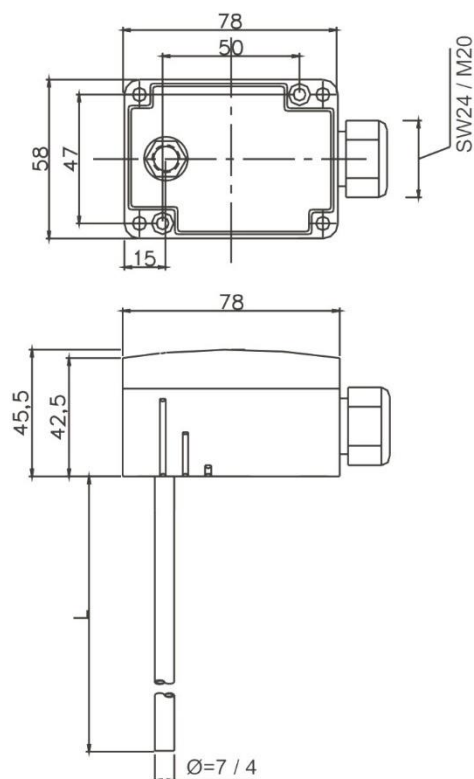
The adjustment of the measuring ranges is made by changing the bonding jumpers (see terminal connection diagram). The output value in the new measuring range is available after approx. 2 seconds.

Terminal connection plan

Remark: Remove the display from the basic-board before to start with the connection.



Dimensions (mm)



Accessories (optional)

(THMS)	Immersion pocket for $\varnothing=7$ mm, material brass nickel-plated, safe up to 16 bar
(THVA)	Immersion pocket for $\varnothing=7$ mm, material stainless steel, safe up to 40 bar
(MF7)	Mounting flange for $\varnothing=7$ mm
(MF4)	Mounting flange for $\varnothing=4$ mm
(MF7/TPO)	Mounting flange for $\varnothing=4/7$ mm