AKF10+

Duct-/Immersion temperature sensor

Datasheet

Subject to technical alteration
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»APPLICATION

Duct/Immersion sensor for measurement of air temperature and other gaseous mediums for HVAC applications (e.g. supply and exhaust ducts). Can be used as an immersion temperature sensor combined with a thermowell pocket.

»TYPES AVAILABLE

- AKF10+ NTC10k 050.06
- AKF10+ NTC10k 150.06
- AKF10+ NTC10k 200.06

»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

»PRODUCT TESTING AND CERTIFICATION

Declaration of conformity
The declaration of conformity of the products are available on our website https://www.abb.com .

»NOTES ON DISPOSAL

As a component of a large-scale fixed installation, ABB 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.

»GENERAL REMARKS CONCERNING SENSORS

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.

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.

Sensing devices with a 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 (±0,2 V). When switching the supply voltage on/off, onsite power surges must be avoided.

»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 passive	NTC10k	
Measuring range temp.	-50..+150 °C	
Operating temperature range ** Max. permissible operating temperature*	**sensor pocket** -50..+160 °C	**electronic – passive** -35..+90 °C
Accuracy temperature	typ. ±0,3 K (typ. at 21 °C)	
Enclosure	enclosure USE-S, PC, pure white, UV resistant	
Protection	IP65 according to EN 60529, 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 | 150 | 200 mm	
Ambient condition	max. 85% rH short term condensation	
Mounting	with duct temperature of +90..120 °C mounting flange MF6 flexible	

»CONNECTION PLAN

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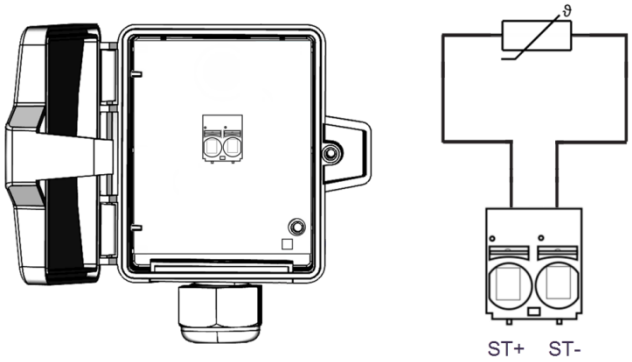
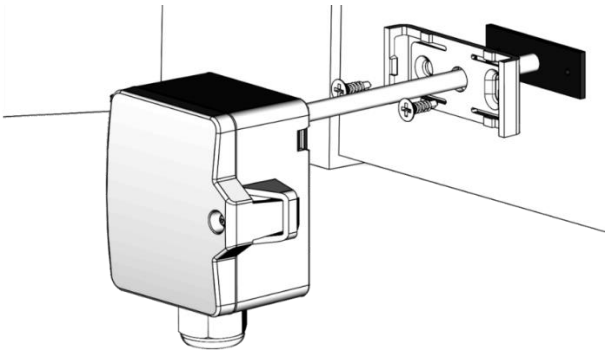
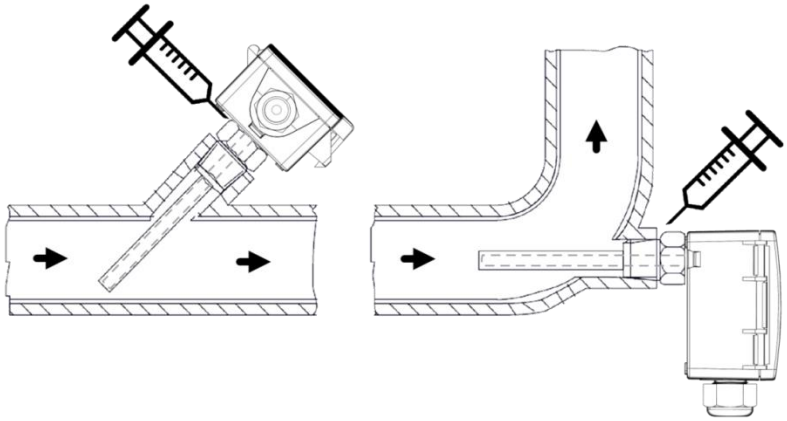


»MOUNTING ADVICES

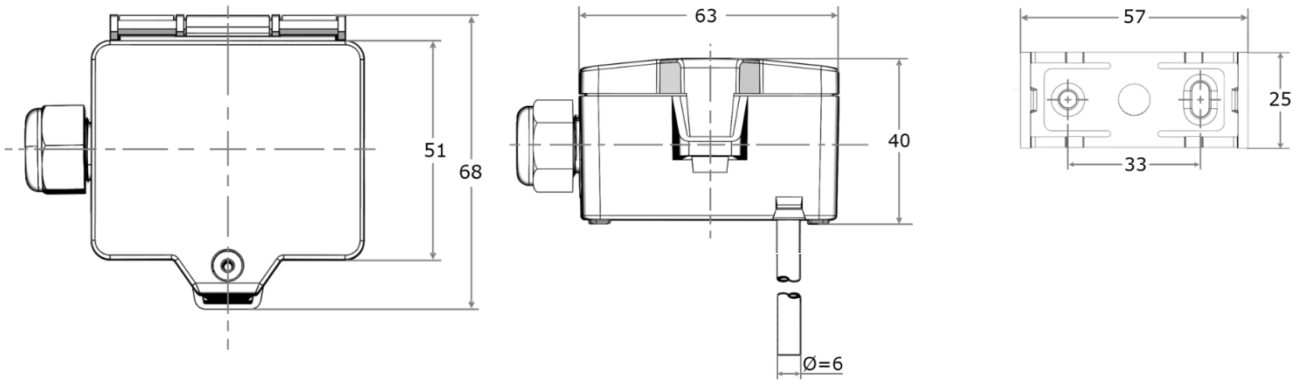


The sensor can be mounted on the ventilation duct by means of the mounting clip. For risk of condensate permeation in the sensor tube respectively in the immersion pocket the bushing must be installed in a position that occurred condensate can run off.



Mounting with immersion pocket or compression fitting for usage in liquid media. Use contact fluid for better heat transfer between sensor and measuring medium.

»DIMENSIONS (MM)



»ACCESSORIES (INCLUDED)

Mounting kit AKF10+
• Cover screw + screw cover • 2 Screws • mounting clip + self-adhesive seal

»ACCESSORIES (OPTIONAL)

Mounting flange MF6 flexible (suitable for Ø=4 | 6 | 7 mm)	Item No. 1S9SW126
Thermowell pocket (brass) THMSDS50 SHMS SW22 R1/2" LW7 + DS	Item No. 1S9SW132
Thermowell pocket (brass) THMSDS150 SHMS SW22 R1/2" LW7 + DS	Item No. 1S9SW148

Note: MS-thermowell pocket (brass, suitable up to 16 bar) type THMSDS <xx>.