

## Product overview

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

Type code	Type	Description
EXT-TN-1069747	AKF10.062.07 TRA MultiRange	4...20mA, Pocket L 62mm, Φ7
EXT-TN-1069815	AKF10.062.07 TRV MultiRange	0...10V, Pocket L 62mm, Φ7
EXT-TN-1069525	AKF10.135.07 Ni1000	Ni1000, Pocket L 135mm, Φ7
EXT-TN-1066623	AKF10.135.07 PT1000	PT1000, Pocket L 135mm, Φ7
EXT-TN-1069532	AKF10.135.07 NTC10k	NTC10k, Pocket L 135mm, Φ7
EXT-TN-1069549	AKF10.135.07 NTC20k	NTC20k, Pocket L 135mm, Φ7
EXT-TN-1069884	AKF10.135.07 TRA MultiRange	4...20mA, Pocket L 135mm, Φ7
EXT-TN-1069952	AKF10.135.07 TRV MultiRange	0...10V, Pocket L 135mm, Φ7
EXT-TN-1069600	AKF10.192.07 Ni1000	Ni1000, Pocket L 192mm, Φ7
EXT-TN-1066616	AKF10.192.07 PT1000	PT1000, Pocket L 192mm, Φ7
EXT-TN-1069617	AKF10.192.07 NTC10k	NTC10k, Pocket L 192mm, Φ7
EXT-TN-1072099	AKF10.192.07 NTC10kPRE	NTC10k Precon, Pocket L 192mm, Φ7
EXT-TN-1072082	AKF10.192.07 NTC10kPRE11k	NTC10k Precon 11k, Pocket L 192mm, Φ7
EXT-TN-1069624	AKF10.192.07 NTC20k	NTC20k, Pocket L 192mm, Φ7
EXT-TN-1070040	AKF10.192.07 TRA2	4...20mA, Pocket L 192mm, Φ7
EXT-TN-1070026	AKF10.192.07 TRA MultiRange	4...20mA, Pocket L 192mm, Φ7
EXT-TN-1070118	AKF10.192.07 TRV2	0...10V, Pocket L 192mm, Φ7
EXT-TN-1070095	AKF10.192.07 TRV MultiRange	0...10V, Pocket L 192mm, Φ7
EXT-TN-1069716	AKF10.320.07 PT100	PT100, Pocket L 320mm, Φ7
EXT-TN-1069679	AKF10.320.07 Ni1000	Ni1000, Pocket L 320mm, Φ7
EXT-TN-1069723	AKF10.320.07 PT1000	PT1000, Pocket L 320mm, Φ7
EXT-TN-1069709	AKF10.320.07 NTC1.8k	NTC1.8k, Pocket L 320mm, Φ7
EXT-TN-1069686	AKF10.320.07 NTC10k	NTC10k, Pocket L 320mm, Φ7
EXT-TN-1069693	AKF10.320.07 NTC20k	NTC20k, Pocket L 320mm, Φ7
EXT-TN-1070163	AKF10.320.07 TRA MultiRange	4...20mA, Pocket L 320mm, Φ7
EXT-TN-1070231	AKF10.320.07 TRV MultiRange	0...10V, Pocket L 320mm, Φ7

## Technical data

<b>Standards</b>	CE conformity	- 2004/108/EG Electromagnetic compatibility - 2001/95/EG Product safety
	EN conformity	- EN607301:2002 EMC - EN607301:2002 Product safety
<b>General data</b>	Mounting lengths L	62mm/135mm/192mm/320mm
	Operating temperature	-50...160°C
	Sensor bushing	Stainless steel, material 1.4571
	Connection head	Polyamide, colour white
	Protection	IP65 according to EN60529

## Technical data (Cont.)

<b>Type sensor</b>	Measuring element	Sensor according to customer's request	
	Measuring range	Depending on sensor used	
	Accuracy	Depending on sensor used	
	Measuring current	Typical <1mA	
	Clamps	- 2 pole (two wire) - 3 pole (three wire) - 4 pole (four wire) Terminal screw max 1.5mm <sup>2</sup>	
	Cable entry	Single entry, M16 for cable max. D=8mm	
	Ambient temperature	Connection head -35...90°C	
	<b>Type TRA</b>	Weight	100g
		Power supply	DC 15-24V(±10%)
		Power consumption	Max. 20mA / DC 24V
Measuring range		Adjustable at the transducer - TRA1: -50°C...+50°C - TRA2: -10°C...+120°C - TRA3: 0°C...+50°C - TRA4: 0°C...+160°C - TRA5: 0°C...+250°C - TRA8: -15°C...+35°C	
Output		4...20mA, max. load 500Ω / DC 24V	
Accuracy@21°C		Typical 1% of measuring range	
Clamps		2 pole (two wire) Terminal screw max. 1.5mm <sup>2</sup>	
Cable entry		Single entry, M20 for cable max. D=8mm	
Ambient temperature		Connection head -35...70°C	
<b>Type TRV</b>		Transport	-35...70°C / max 85% RH, non-condensing
	Weight	115g	
	Power supply	DC 15-24V(±10%) or AC 24V(±10%)	
	Power consumption	Typical 0.35W / 0.82VA	
	Measuring range	Adjustable at the transducer - TRV1: -50°C...+50°C - TRV2: -10°C...+120°C - TRV3: 0°C...+50°C - TRV4: 0°C...+160°C - TRV5: 0°C...+250°C - TRV8: -15°C...+35°C	
	Output	0...10V, min. load 5kΩ	
	Accuracy@21°C	Typical 1% of measuring range	
	Clamps	3 pole (three wire) Terminal screw max. 1.5mm <sup>2</sup>	
	Cable entry	Single entry, M20 for cable max. D=8mm	
	Ambient temperature	Connection head -35...70°C	
Transport	-35...70°C / max 85% RH, non-condensing		
Weight	115g		

## Security advice

The installation and assembly of electrical equipment may only be performed by a skilled electrician. The modules must not be used with equipment that supports, directly or indirectly, human health or life or with applications that can result in danger for people or animals.

## Mounting advice

The model AKF10 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 so that occurred condensate can run off.

## 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 is valid.

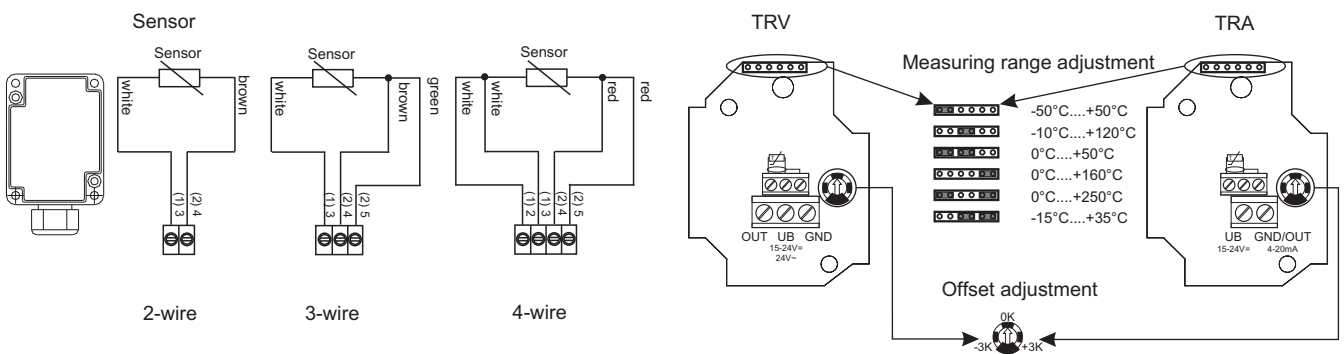
With regard to passive sensors (e.g. PT100 etc.) in 2 wire conductor versions, the wire resistance of the supply wire has to be considered. It is likely that the same has to be compensated by the following electronics.

Due to the self heating, the wire current affects the accuracy of the measurement. Therefore it should not exceed 1mA.

Sensing devices with transducers should in principle 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.

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 approximately 2 seconds.

## Terminal connection plan



### ⚠ Caution

With electronic sensors such as AD592, SMT160, LM235, DS1820 the following applies : brown = plus (+), white = minus (-), green = out

## Dimensions (mm)

