

## Datasheet

Subject to technical alteration  
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## Application

Duct averaging Temperature measurement.

## Types Available

MWF	Pt1000	passive Pt1000, resistance
	Ni1000	passive Ni1000, resistance
	Ni1000TK5000	passive Ni1000TK5000, resistance
	TRA	active, 4..20 mA
	TRV	active, 0..10 V

## 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 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 the product 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 to 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 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.

## 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 ( $\pm 0,2$  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	TRV	0..10 V, min load 5 k $\Omega$
Output Amp	TRA	4..20 mA, max. load 500 $\Omega$
Power supply	TRV	15..24 V = ( $\pm 10\%$ ) or 24 V~ ( $\pm 10\%$ )
	TRA	15..24 V = ( $\pm 10\%$ )
Power consumption	TRV	typ. 0,4 W (24 V =)   0,8 VA (24 V ~)
	TRA	max. 0,5 W (24 V =)
Measuring range temp	TRV1   TRA1	-50 $^{\circ}$ C..+50 $^{\circ}$ C
	TRV3   TRA3	0 $^{\circ}$ C..+50 $^{\circ}$ C
	TRV8   TRA8	-15 $^{\circ}$ C..+35 $^{\circ}$ C
	passive	adjustable at the transducer -50..+80 $^{\circ}$ C
Accuracy temperature	TRV   TRA	typ. $\pm 3\%$ of measuring range
	passive	Pt1000: DIN class B Ni1000 / Ni1000TK5000: typ. $\pm 3$ K
Enclosure		PA6, pure white, with quick lock screws
Protection		IP65 according to EN60529
Cable entry	TRV   TRA	M20 for cable max. $\varnothing=8$ mm
	passive	M16 for cable max. $\varnothing=8$ mm
Connection electrical		terminal block, max 1,5 mm <sup>2</sup>
Sensor rod		Pt1000/Ni1000/TRA/TRV: 3000 mm, 6000 mm
		Ni1000TK5000: 2500 mm, 5000 mm
Ambient condition	TRV   TRA	-35..70 $^{\circ}$ C, max 85% rH, non condensing
	passive	-35..+90 $^{\circ}$ C
Weight	TRV   TRA	265 g
	passive	250 g

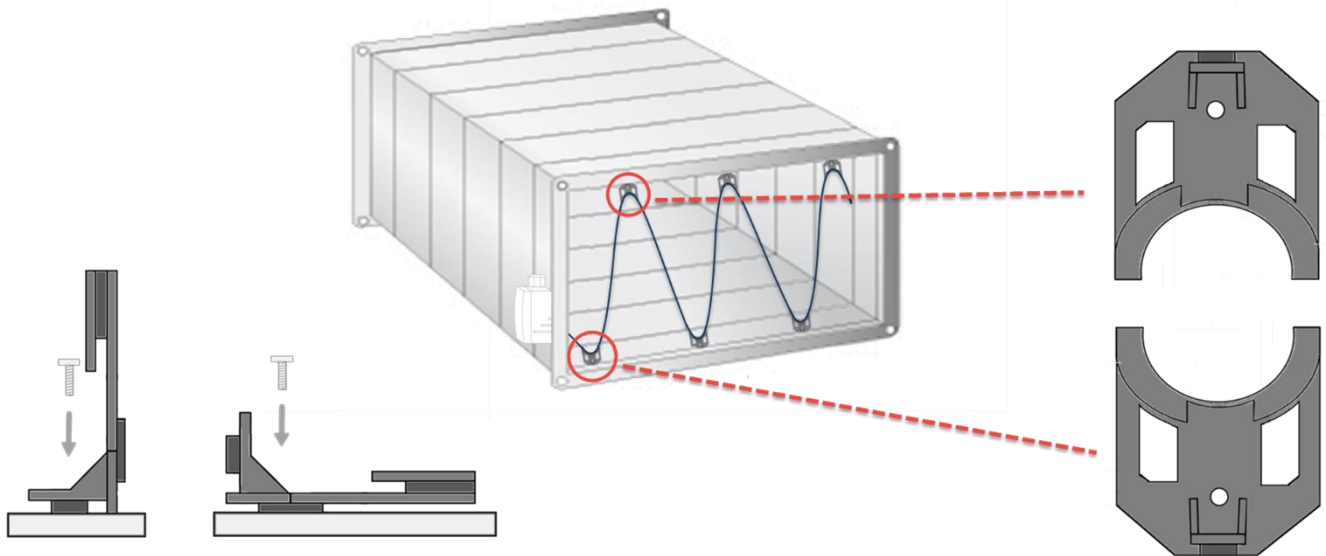
## Mounting Advices

Model MWF can either be mounted directly on the ventilation duct by means of a mounting flange or by screws.

By means of the mounting brackets included the sensor rod is braced to the ventilation duct.

**Note: Please pay attention to the sensor rod while mounting and protect it from mechanical damage!**

**Mounting angle:**

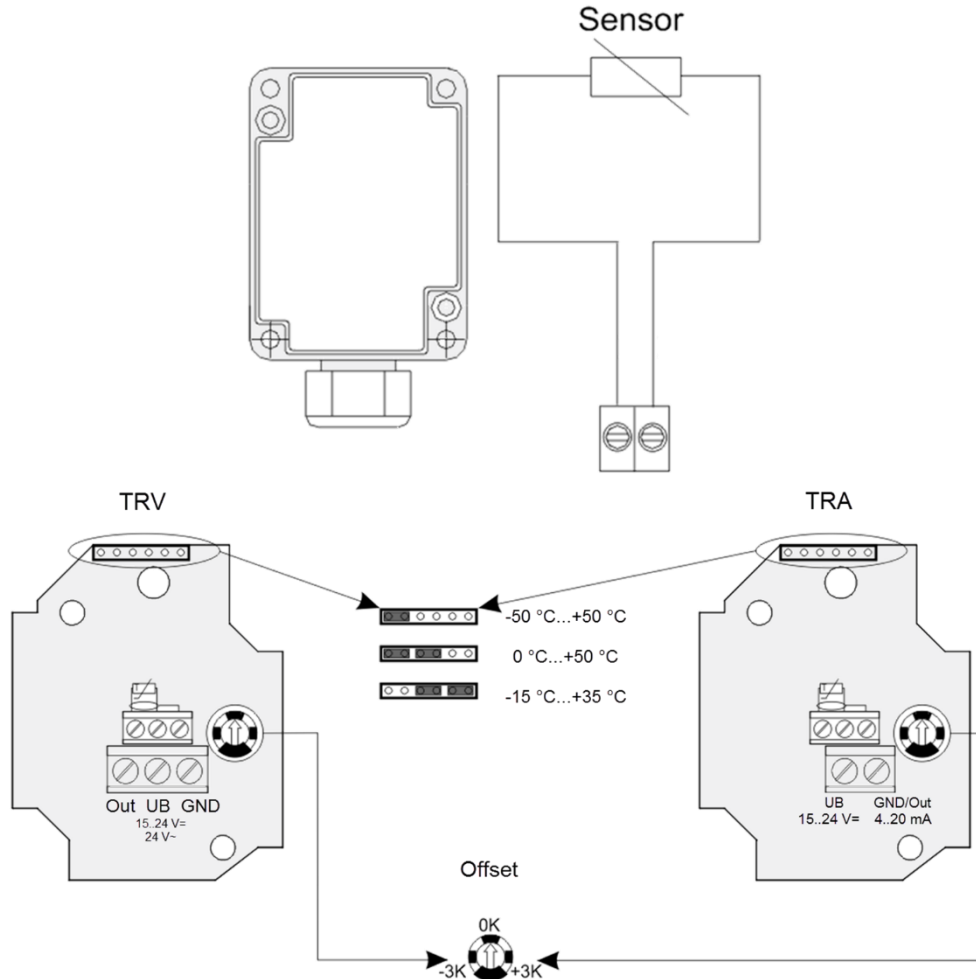


Vertical mounting

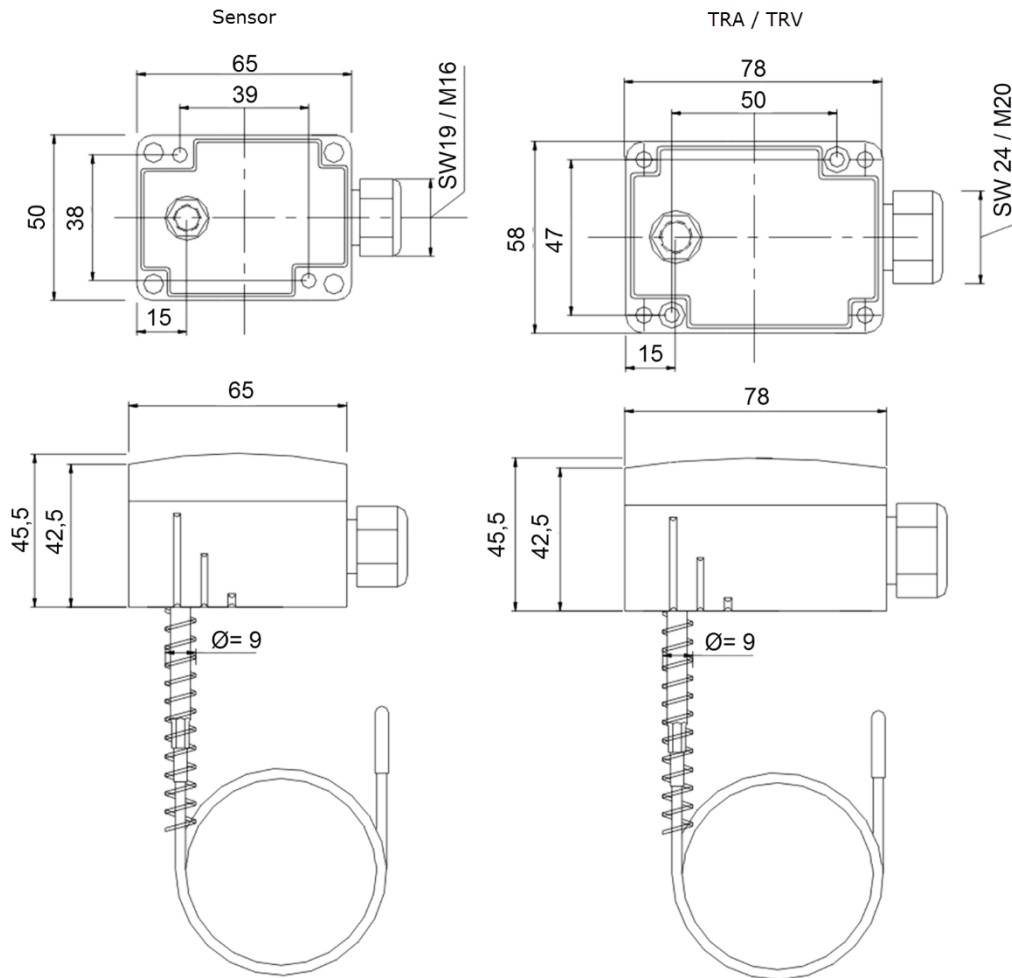
Horizontal mounting

## Connection Plan

Sensor (Pt1000/Ni1000/Ni1000TK50000)



## Dimensions (mm)



## Accessories (optional)

Mounting flange MF7 (brass)

Item No. 102360

Mounting flange MF7 flexible (incl. inserts for  $\varnothing=4$ mm / 6mm)

Item No. 399098

Mounting angle set

Item No. 458399