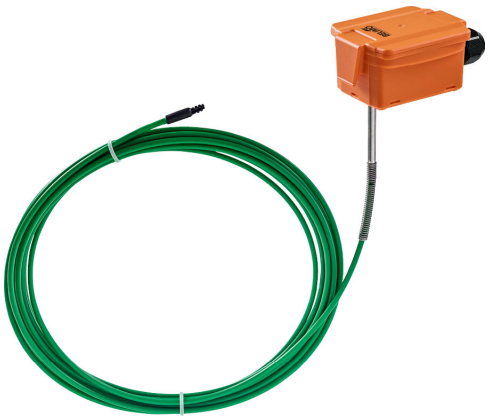
Technical data sheet 22MT-14..

Average Temperature Sensor

Active sensor (4...20 mA) for measuring the averaging temperature in duct applications. IP65 / NEMA 4X rated enclosure. Supplied with one continuous sensing element across the whole length of the probe to ensure optimum accuracy and eliminate air stratification problems.



5 YEAR WARRANTY

Type Overview

Type	Output signal active temperature	Probe length
22MT-144	4...20 mA	3 m
22MT-145	4...20 mA	6 m

Technical Data

Electrical data	Power supply DC	15...24 V, ±10%, 0.5 W
	Electrical connection	Removable spring loaded terminal block max. 2.5 mm²
	Cable entry	Cable gland with strain relief Ø6...8 mm
Functional data	Multirange	8 measuring ranges selectable
	Output signal active note	Current output: max. 500 Ω load
	Application	Air
Measuring data	Measuring values	Temperature
	Measuring range temperature	Active sensor: range selectable Attention: max. measuring temperature is restricted by max. fluid temperature (see Safety data)

Setting	range [°C]	range [°F]	Factory setting
S0	-50...50°C	-30...130°F	
S1	-10...120°C	0...250°F	
S2	0...50°C	40...140°F	
S3	0...250°C	30...480°F	
S4	-15...35°C	0...100°F	
S5	0...100°C	40...240°F	
S6	-20...80°C	40...90°F	✔
S7	0...160°C	0...150°F	

	Accuracy temperature active	±0.5°C @ 21°C [±0.9°F @ 70°F]
	Time constant t (63%) in the air duct	typical 100 s @ 0 m/s
Materials	Cable gland	PA6, black
	Housing	Cover: Lexan, orange Bottom: Lexan, orange Seal: 0467 NBR70, black UV resistant

Safety data		
	Ambient humidity	Max. 95% r.H., non-condensing
	Ambient temperature	-35...50°C [-30...120°F]
	Fluid temperature	-50...80°C [-60...175°F]
	Housing surface temperature	Max. 70°C [160°F]
	Protection class IEC/EN	III Protective extra-low voltage (PELV)
	Protection class UL	UL Class 2 Supply
	EU Conformity	CE Marking
	Certification IEC/EN	IEC/EN 60730-1
	Degree of protection IEC/EN	IP65
	Degree of protection NEMA/UL	NEMA 4X
	Quality Standard	ISO 9001

Safety notes

This device has been designed for use in stationary heating, ventilation and air-conditioning systems and must not be used outside the specified field of application. Unauthorised modifications are prohibited. The product must not be used in relation with any equipment that in case of a failure may threaten humans, animals or assets.
Ensure all power is disconnected before installing. Do not connect to live/operating equipment.

Only authorised specialists may carry out installation. All applicable legal or institutional installation regulations must be complied during installation.

The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

Remarks

General remarks concerning sensors

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 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.

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. The dissipative power should be taken into account 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 Belimo 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 DC 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.

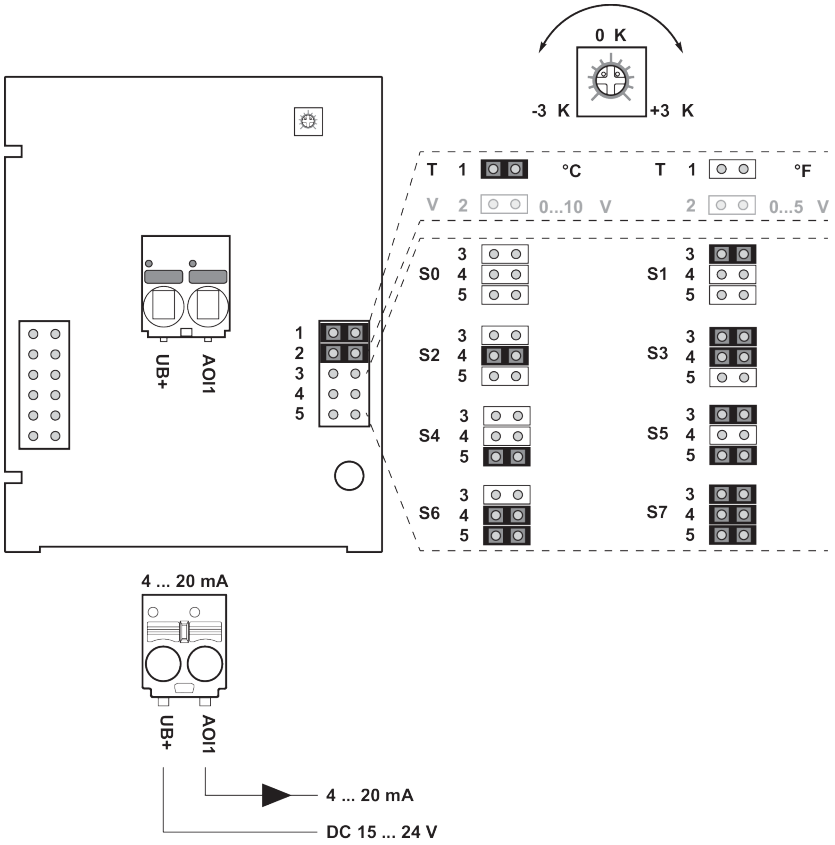
Scope of delivery

Scope of delivery	Description	Type
	Mounting plate S housing	A-22D-A09
	Mounting kit, with mounting brackets	A-22D-A08

Accessories

Optional accessories	Description	Type
	Connection adapter, M20, for cable 1 x 6 mm, Multipack 10 pcs.	A-22G-A01.1

Wiring diagram

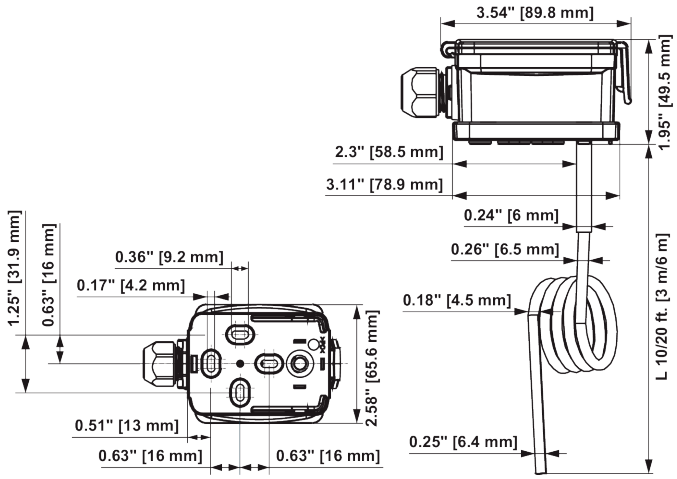


The adjustment of the measuring ranges is made by changing the bonding jumpers. The output value in the new measuring range is available after 2 seconds.

Setting	range [°C]	range [°F]	Factory setting
S0	-50...50°C	-30...130°F	
S1	-10...120°C	0...250°F	
S2	0...50°C	40...140°F	
S3	0...250°C	30...480°F	
S4	-15...35°C	0...100°F	
S5	0...100°C	40...240°F	
S6	-20...80°C	40...90°F	✔
S7	0...160°C	0...150°F	

Dimensions

Dimensions



L = Probe length

Type	Probe length	Weight
22MT-144	3 m	-
22MT-145	6 m	0.28 kg