

Cable Temperature Sensor

Active sensor (0...10 V) for measuring the temperature in pipe and air applications. Incorporates a stainless steel probe and plenum rated cable.



Type Overview

Type	Output signal active temperature	Cable length	Probe length	Probe diameter
22CT-12H	DC 0...5 V, DC 0...10 V	2 m	50 mm	6 mm

Technical Data

Electrical data	Power Supply DC	15...24 V, ±10%, 0.45 W			
	Power Supply AC	24 V, ±10%, 0.8 VA			
	Electrical connection	Removable spring loaded terminal block max. 2.5 mm ²			
	Cable entry	cable gland PG11 Ø6...10 mm, with strain relief Ø6...8 mm			
Functional data	Multirange	YES			
	Output signal active note	Output DC 0...5/10 V with Jumper adjustable Voltage output: min. 5 kΩ load			
Measuring data	Media	Air			
	Measured values	Temperature			
	Measuring range temperature	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	±1% of measuring range @ 21 °C, with cable max. 2 m				
Materials	Cable gland	PA6, black			
	Mounting plate	Lexan, silvergray RAL7001			
	Housing	Cover: Lexan, Belimo orange NCS S0580-Y6OR Bottom: Lexan, Belimo orange NCS S0580-Y6OR Seal: 0467 NBR70, black			

Safety data	Ambient humidity	85% r.h., non-condensing
	Ambient Temperature	-35...50 °C [-30...122 °F]
	Medium temperature	-50...180 °C [-60...355 °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 and IEC/EN 60730-2-9
	Certification UL	pending
	Degree of protection IEC/EN	IP65
	Degree of protection NEMA/UL	NEMA 4X
	Quality Standard	ISO 9001
	Weight	0.145 kg

Safety notes


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

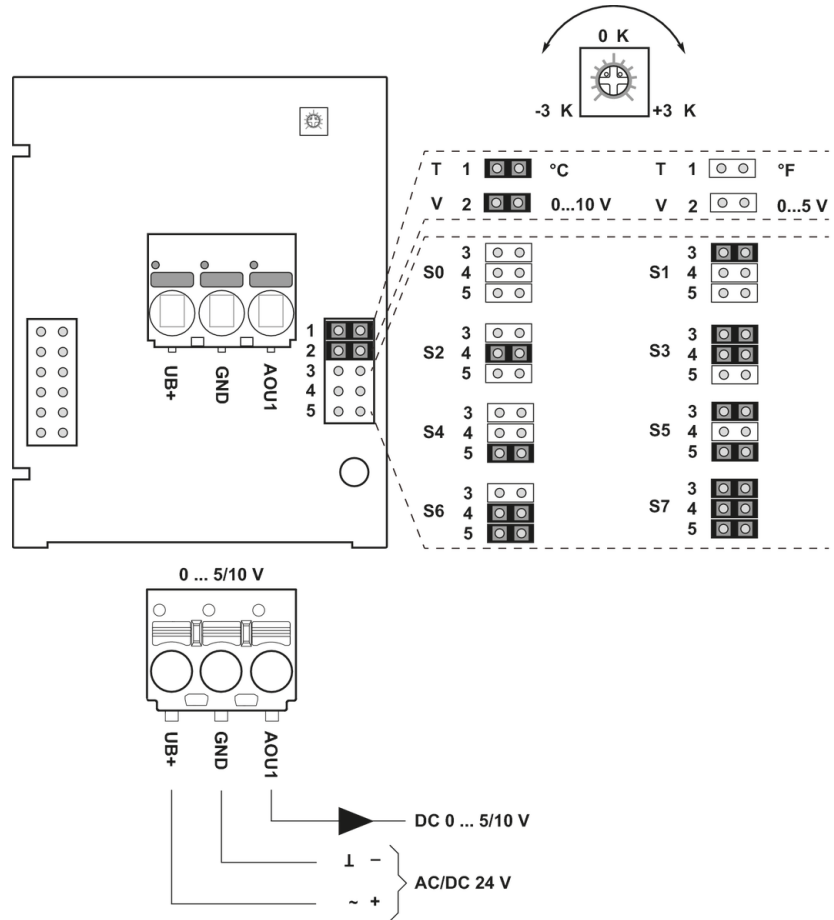
Remarks

General remarks concerning sensors	Due to self-heating with 2 wire passive sensors, the supply 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.
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 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.

Accessories

Optional accessories	Description	Type
	Mounting flange 6 mm, Plastic (adjustable), up to max. 120 °C	A-22D-A03
	Mounting flange 6 mm, Brass, up to max. 260 °C	A-22D-A05
	For Immersion Application a Thermowell pocket A-22P-A.. is recommended.	
Scope of delivery	Mounting plate	
	Dowel	
	Screws	

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

