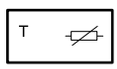
EGT 353...356, 456, 554, 654: Cable temperature sensor

EGT*5*F***



How energy efficiency is improved

Precise measurement of temperature for energy-efficient control of HVAC installations and monitoring energy consumption

Features

- Passive measuring element
- Particularly suitable for direct connection in installations with short distances between the controllers and the sensors
- Sensor with a wide range of applications and high type of protection (IP67) and fast time characteristic
- Used in air, used in liquid media with thermowells, or as a clamp-on temperature sensor with an accessory
- Large temperature measuring range

Technical data

Parameters		
	Recommended measurement current	Typ. < 1 mA
Time characteristic in water	Time constant with thermowell (LW 7) in still water	9 seconds (t_{63})
Time characteristic in air	Time constant in still air	155 seconds (t_{63})
	Time constant in moving air (3 m/s)	35 seconds (t_{63})

Construction		
	Sensor sleeve	Ø 6 × L (mm) - see table, up to 16 bar
	Material	Sensor sleeve: Stainless steel 1.4571 Cable: see table
	Power cable	Ø 5 mm with wire ferrules
	Cable cross-section	2 x 0.25 mm^2
	Active length	10 mm

Standards and directives		
	Type of protection	IP67 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN 50581

Resistance values / characteristics

i *The tolerance listed below applies only to the corresponding measuring element. The accuracy of the sensor depends on the cable length and the measuring element used.*

Measuring element	Standards	Nominal value	Tolerance at 0 °C
Ni1000	DIN 43760	1000 Ω at 0 °C	±0.4 K
Ni1000 TK5000		1000 Ω at 0 °C	±0.4 K
Pt100	DIN EN 60751	100 Ω at 0 °C	±0.3 K
Pt1000	DIN EN 60751	1000 Ω at 0 °C	±0.3 K
NTC 10k	-	10 kΩ at 25 °C	±0.3 K
NTC 22k	-	22 kΩ at 25 °C	±0.3 K

Overview of types

Type	Measuring element	Sleeve length LH	Total length Lg	Material	Measuring range	Weight
EGT353F101	NTC 10k	50 mm	1.5 m	PVC	-35...100 °C	40 g
EGT353F103	NTC 10k	50 mm	3 m	PVC	-35...100 °C	85 g
EGT353F110	NTC 10k	50 mm	10 m	PVC	-35...100 °C	280 g
EGT353F120	NTC 10k	50 mm	20 m	PVC	-35...100 °C	550 g
EGT554F103	NTC 22k	50 mm	3 m	PVC	-35...100 °C	85 g
EGT354F102	Ni1000	50 mm	1 m	PVC	-35...100 °C	30 g

Type	Measuring element	Sleeve length LH	Total length Lg	Material	Measuring range	Weight
EGT354F104	Ni1000	50 mm	3 m	PVC	-35...100 °C	85 g
EGT354F111	Ni1000	50 mm	10 m	PVC	-35...100 °C	280 g
EGT354F121	Ni1000	50 mm	20 m	PVC	-35...100 °C	550 g
EGT654F102	Ni1000 TK5000	50 mm	1 m	PVC	-35…100 °C	30 g
EGT355F902	Ni1000	100 mm	2 m	Silicone	-50...180 °C	60 g
EGT355F903	Ni1000	150 mm	2 m	Silicone	-50...180 °C	60 g
EGT356F102	Ni1000	50 mm	1 m	Silicone	-50...180 °C	30 g
EGT356F104	Ni1000	50 mm	3 m	Silicone	-50...180 °C	90 g
EGT356F111	Ni1000	50 mm	10 m	Silicone	-50...180 °C	300 g
EGT356F304	Ni200	50 mm	3 m	Silicone	-50...180 °C	90 g
EGT456F012	Pt100	50 mm	1 m	Silicone	-50...180 °C	30 g
EGT456F102	Pt1000	50 mm	1 m	Silicone	-50...180 °C	30 g

Accessories

Type	Description
0300360000	Compression fitting G¼"; stainless steel, up to 16 bar
0300360003	Mounting flange; plastic (max. 140 °C)
0300360004	Heat-conducting paste incl. gun with 2 g content
0300360008	Retaining holder for cable temperature sensor or capillary tube with 0392022*** (LW 7) or LW 15 (10 pcs)
0300360012	Sensor support spiral for fitting in ventilation duct
0313214001	Fixing kit (holder, heat-conducting paste, retaining strap)

*039*******: Thermowells (LW 7 and LW 15) made of brass or stainless steel (see product data sheet)*

Description of operation

The resistance of the measuring element changes according to the temperature. The temperature coefficient is positive (Pt, Ni) or negative (NTC). The sensors can be exchanged within the specified tolerance ranges.

Areas of use

Sensors for measuring the temperature of air in heating, ventilation and air conditioning systems (e.g. in supply air / return air ducts). In combination with a thermowell also suitable for measuring in liquid media (e.g. pipe systems).
Designed for connection to control and display systems.
The connecting cable of the EGT *56 is made of dry vulcanised silicone and therefore has low emissions, which means the sensors can be used in paint shops.

Intended use

This product is only suitable for the purpose intended by the manufacturer, as described in the “Description of operation” section.
All related product regulations must also be adhered to. Changing or converting the product is not admissible.

Engineering and fitting notes

CAUTION!
Electrical devices may only be installed and fitted by a qualified electrician.

Fitting

The listed resistances and tolerances only refer to the measuring elements. For longer lines, the line resistance must be taken into account. We generally recommend using heat-conducting paste.

As an immersion sensor in ventilation ducts

Depending on the application, the sensor is fastened to the ventilation duct via a mounting flange or a sensor support spiral. When they are fitted directly, the cable temperature sensors have a fast response time and thus achieve very good measuring results. The immersion length of the two EGT 355 types can be varied depending on the fitting situation.

As an immersion sensor in pipes

The pressure screw concept enables fast commissioning with the thermowell (LW 7). For redundant measuring, the cable temperature sensor must be fitted with a thermowell (LW 15) and a retaining holder (0300360008). The cable temperature sensor can be installed with a TUC thermostat or with a second cable sensor.
With compression fitting 0300360000, the cable temperature sensor can be directly screwed into pipes up to 16 bar.

As a clamp-on sensor

The cable temperature sensor can be fitted on pipes up to 50 mm in diameter with the holder and retaining strap (fixing kit 0313214001). For larger pipes, rod or cable temperature sensors with thermowells should be used due to the possibility of thermal stratification.

As a surface sensor

The cable temperature sensor can be fastened to surfaces using the holder (fixing kit 0313214) and suitable screws. The time constant depends on the surface below.

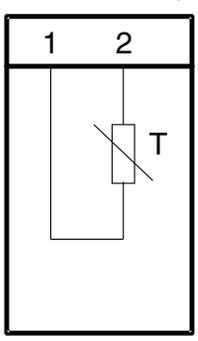
Electric connection

The devices are designed for operation with safety extra low voltage (SELV). The technical data for the devices applies when connecting them to the power supply.
In particular for passive sensors (e.g. Pt100), the cable resistance of the connecting cables must be considered. If necessary, this must be compensated in the downstream electronic devices.
Due to self-heating, the measurement current affects the accuracy of the measuring. Therefore this should not be greater than 1 mA.

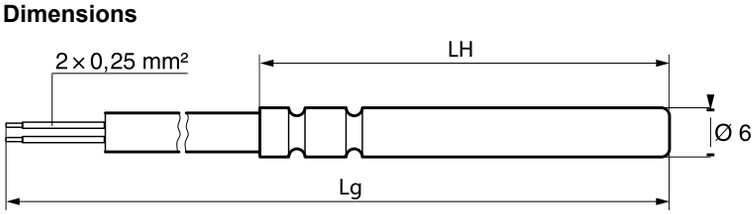
Disposal

When disposing of the product, observe the currently applicable local laws.
More information on materials can be found in the Declaration on materials and the environment for this product.

Connection diagram



Dimensions



Accessories

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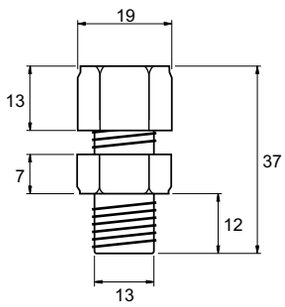

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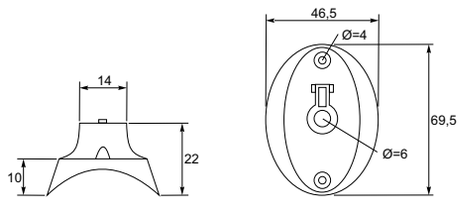

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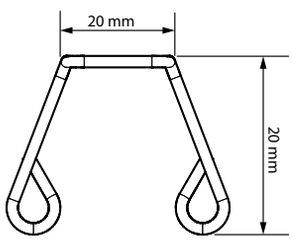

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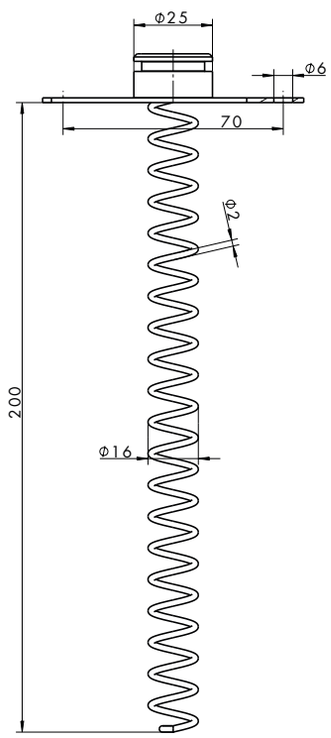

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