

EGS 100: Radiation temperature sensor

How energy efficiency is improved

Measurement of radiation temperature and room temperature in a room, e.g. for radiant ceiling heating.

Features

- Mean value measuring of radiation temperature and room temperature
- Ni or NTC characteristic
- Passive measuring element
- Measuring range: -35...70 °C
- Measuring element: Thin-film sensor



EGS100F70*

Technical data

Parameters		
	Measuring range	-35...70 °C
Time characteristic	Time constant in still air	15 min
Construction		
	Weight	0.1 kg
	Dimensions	84.5 × 84.5 mm
	Housing	Pure white, similar to RAL 9010
	Housing material	Thermoplastic with black hemisphere
	Connection terminals	2 × 1.5 mm ²
Standards and directives		
	Type of protection	IP30 (EN 60529)
	RoHS Directive 2011/65/EU	EN 50581
CE conformity	EMC Directive 2014/30/EU	EN60730-1 (mode of operation 1, residential premises)

Overview of types			
Type	Resistance values	Tolerance	Measuring elements
EGS100F705	1 kΩ (at 0 °C)	±0.4 K (at 0 °C)	2x Ni500 as per DIN 43760 in series
EGS100F706	10 kΩ (at 25 °C)	±1% (at 25 °C)	2x NTC 5 kΩ in series
EGS100F707	22 kΩ (at 25 °C)	±1% (at 25 °C)	2x NTC 11 kΩ in series

Description of operation

The resistance of the sensors changes depending on the temperature. There is a sensor in the hemisphere which measures the radiation temperature; the second sensor in the housing measures the room temperature. From both sensors connected in series, an average value of both temperatures is defined.

The temperature coefficient of the EGS100F705 is positive, which means the resistance increases along with the temperature. The temperature coefficient of the EGS100F706 and EGS100F707 is negative, which means the resistance decreases as the temperature increases. The elements can be exchanged within the specified tolerance ranges.

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.

Disposal

The local, currently valid laws must be observed when disposing of the device.

Engineering and fitting notes

Electrical connection

The devices are designed for operation with safety extra low voltage (SELV/PELV). The technical data for the devices applies when connecting them to the power supply. In particular for passive sen-

sors, the cable resistance of the connecting cables must be considered. If necessary, this must be corrected 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.

Fitting

The EGS 100 is suitable for surface mounting. For further information, see the fitting instructions. Incorrect fitting can result in incorrect measuring results. Therefore, always observe the fitting instructions. The place of installation must also be chosen carefully to ensure reliable measurement. Cold outer walls and fitting above heat sources (e.g. radiators) and right next to doors with draughts must be avoided, as well as direct sunlight. Furnishings, such as curtains, cabinets or shelves, can hinder the flow of room air to the sensor and thereby cause discrepancies in the measurements. Heating pipes inside the walls can also affect the measurement.



Safety instructions – Caution

The fitting and assembly of electrical devices (modules) may only be performed by an authorised electrical expert.

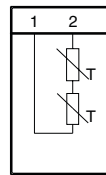


Important

Also valid:

- Laws, standards and directives
- The current state of the technology at the time of installation
- The technical data and the operating instructions of the device

Connection diagram



Dimension drawing

