

## EGT 130, 330, 332, 335, 430: Room temperature sensor, surface-mounted

### How energy efficiency is improved

Measurement of room temperature for energy-efficient control of HVAC installations in buildings and for monitoring energy consumption

### Features


- Passive or active measuring element for room temperature
- Variants with setpoint adjuster, presence button and multicolour status LED
- Suitable for direct wall mounting and recessed junction boxes

### Technical data

Ambient conditions		
Ambient temperature		-35...70 °C
Ambient humidity		Max. 85% rh, non-condensing
Construction		
Colour		Traffic white (RAL9016)
Housing material		Polycarbonate (PC) UL94-V0
Cable inlet		Through the back
Connection terminals		Spring-type terminals, max. 1.5 mm <sup>2</sup>
Weight		50 g
Standards, directives		
Type of protection		IP20 (EN 60529) after fitting
CE/UKCA conformity <sup>1)</sup>	EMC-D 2014/30/EU (CE)	EGT130F032: EN 60730-1 (mode of operation 1, residential premises)
	EMC-2016 (UKCA)	See EMC Directive
	RoHS-D 2011/65/EU & 2015/863/EU (CE)	EN IEC 63000
	RoHS-2012 (UKCA)	EN IEC 63000

### Resistance values

Measuring element	Standard	Nominal value at 0 °C	Tolerance at 0 °C
Ni500	DIN 43760	500 Ω	±0.4 K
Ni1000	DIN 43760	1000 Ω	±0.4 K
Pt100	DIN EN 60751	100 Ω	±0.3 K
Pt1000	DIN EN 60751	1000 Ω	±0.3 K

 The tolerances only apply to the measuring elements. The accuracy of the sensor depends on the measuring element used and the cable length

Active type	Measuring range	Measuring accuracy at 21 °C	Output signal	Power supply	Power consumption
EGT130F032	0...50 °C Other ranges can be parametrised	Typically ±1% of measuring range <sup>2)3)</sup>	0...10 V, min. load impedance 5 kΩ	15...24 VDC (±10%) / 24 VAC (±10%)	Max. 0.3 W (24 VDC) 0.5 VA (24 VAC)

### Overview of types

Type	Description	Output signal	Measuring range	Setpoint adjuster
EGT330F053	Room temperature sensor	Passive, Ni500	-35...70 °C	-
EGT330F103	Room temperature sensor	Passive, Ni1000	-35...70 °C	-
EGT332F103	Room temperature sensor, setpoint adjuster	Passive, Ni1000	-35...70 °C	Pot. 2.5 kΩ

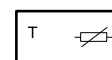
<sup>1)</sup> Explanation of abbreviations in the "Additional technical information" section of the product data sheet and in the appendix to SAUTER product catalogues

<sup>2)</sup> With offset adjustment ±3 K

<sup>3)</sup> The transducers must be operated at a constant operating voltage (±0.2 V). Current/voltage peaks when switching the supply voltage on/off must be prevented by the customer.



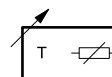
EGT\*30F\*\*\*



EGT332F103



EGT335F103



Type	Description	Output signal	Measuring range	Setpoint adjuster
EGT335F103	Room temperature sensor, setpoint adjuster, presence button, status LED (RGB)	Passive, Ni1000	-35...70 °C	Pot. 2.5 kΩ
EGT430F013	Room temperature sensor	Passive, Pt100	-35...70 °C	-
EGT430F103	Room temperature sensor	Passive, Pt1000	-35...70 °C	-
EGT130F032	Room temperature transducer	Active, 0...10 V	0...50 °C	-

#### Accessories

Type	Description
0300230010	USB Bluetooth® dongle

## Description of operation

The EGT \*3\* room temperature sensors measure the temperature in dry indoor spaces such as residential premises, offices, restaurants and conference rooms.

The passive types have either a platinum (Pt100/1000) or nickel measuring element (Ni500/1000). The resistance of these PTC thermistors increases in a linear manner as the temperature increases. The temperature coefficient is therefore always positive.

The EGT332F103 and EGT335F103 have a knob for adjusting the setpoint. The rotary position of the setpoint adjuster is transmitted directly to a three-pin potentiometer at 2.5 kΩ and can be recorded via connection P.

As well as the knob, the EGT335F103 has a presence button (connection T) with a status LED (connection D). The brightness of the status LED and presence button can be controlled with connection and input D. The device can be dimmed at night, for example. The colour of the status LED can be configured using jumpers, see "EGT332F103 and EGT335F103 configuration". One of 7 colours can be preset.

The active type EGT130F032 measures the room temperature with a sensor and converts this via a measuring amplifier into the standard signal 0...10 V. The EGT130F032 has a Micro-USB port via which the device can be configured, see "EGT130F032 configuration".

## 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.

The device is only intended for use inside buildings. Modifying or converting the product is not admissible.

## Improper use

The product is not suitable for:

- Safety applications
- Use outdoors and in areas where there is a risk of condensation

## Engineering and fitting notes



#### NOTICE!

Connection and fitting may only be carried out by an authorised electrician. The regulations and rules of electrical installation must be observed.



#### NOTICE!

Electronic components can be damaged by electrostatic discharge (ESD).  
▶ Do not touch the PCB, exposed sensor elements and connections.



#### NOTICE!

Damage to devices with rotary knob (EGT332F103, EGT335F103).  
▶ Do not pull the knob. The knob is secured in the housing against unauthorised removal and breaks off if violently pulled or twisted.

The device is not failsafe. In cases where a failure or malfunction of the room sensor could result in personal injury or damage to the controlled system or other property, additional protective and

warning devices must be incorporated into the system. Integrate monitoring or alarm systems, safety or limit controllers for this purpose.

### Electrical connection

The devices are designed for operation with safety extra low voltage (SELV/PELV). The electrical connection is made via spring-type terminals. Wire stripping length approx. 8 mm.

The device may only be connected when the power cable is disconnected from the electrical supply.

It is advisable to protect the room temperature sensor from electrical damage with a 2AT safety fuse.

No such fuse is integrated in the device.

EGT335F103:

The current consumption of the EGT335F103 depends on the LED voltage at input D. At 24 V, the current consumption of the status LED is approx. 3 mA. The presence button of the device has a maximum switch rating of 0.6 W at 24 VDC. If the presence button is connected to a reference voltage ( $U_{ref}$ ), the low signal of the button depends on the selected current of the status LED. If the presence button is connected to earth (MM), the low signal of the button depends on the cable cross-section.

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#### Note



For the EGT332F103, note that the rated load of the passive potentiometer is 0.25 W.

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### Cable-related measurement deviations

When routing the cables, remember that electromagnetic fields (EMC interference) can affect the measuring accuracy. This effect increases the longer the cable and the smaller the conductor cross-section. Therefore always use shielded connection and signal cables and/or avoid laying parallel with power cables.

Particularly with passive types, the cable resistance of the power cable must be taken into account. The cable resistance in the following electronics may also have to be corrected. Due to self-heating of the measuring element, the measurement current affects the accuracy of the measurement. Therefore, this should not be greater than 1 mA.

### Heat caused by dissipated electric power

Resistance temperature sensors always have an electrical power loss that affects the temperature measurement. In active temperature sensors, the higher the operating voltage, the greater the power loss. This dissipated power must be taken into account in the temperature measurement. At a fixed operating voltage ( $\pm 0.2$  V), this is normally done by adding or subtracting a constant offset value.

The room temperature sensors have a variable operating voltage, but due to the way they are manufactured, only one operating voltage can be taken into account. As standard, the transducers are set to an operating voltage of 24 VDC. This means that, at this voltage, the expected measurement error of the output signal is smallest. At other operating voltages, the offset error increases or diminishes due to the change in power loss of the sensor electronics. If recalibration is required later during operation, this is done by the system on the connected controller.

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#### Note



Heat generated by the power loss in the device is dissipated faster by draughts. This causes temporary measurement deviations.

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### Fitting

The EGT \*3\* is suitable for mounting in a 60 mm recessed junction box or directly on the wall. A fitting height of 140 to 150 cm is recommended.

The lower section of the housing can be premounted and wired separately from the upper section.

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#### Note

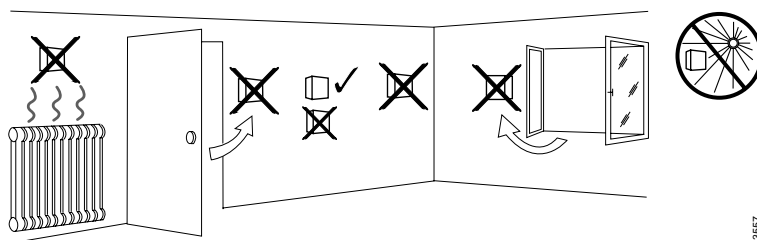


The following fitting instructions must be observed.

- Incorrect fitting can lead to incorrect measuring results. The place of installation must also be chosen carefully to ensure reliable measurement.
  - The air vents must not be covered or sealed.
  - The Micro-USB port (EGT130F032) and the fastening screw on the underside of the housing must not be obstructed by other devices.
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Avoid:

- Poorly insulated exterior walls
- Heat sources (e.g. radiators, lamps, heating pipes)
- Doors and windows with draughts
- Direct sunlight
- Corners of rooms and alcoves
- Proximity to wardrobes, cupboards, shelves and other furnishings. These can prevent the flow of room air around the sensor.
- Multiple devices directly above each other. A device's own heat can affect the one above it.



Also, air flowing from the ducts and pipes of the electrical installation can cause measuring errors. Empty pipes and installation pipes should therefore be well sealed.

### Removal

Remove the upper section of the housing as follows:

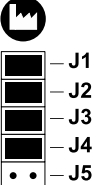
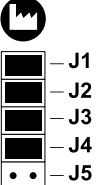
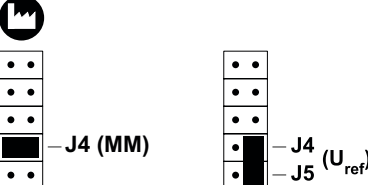
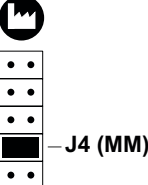
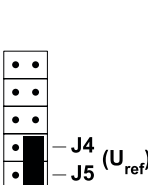
1. Undo the slotted-head screw on the underside.
2. Slightly tilt the housing from below.
3. Insert a flat-blade screwdriver into the notch at the top and carefully push down the latch until the upper section of the housing is released and can be taken off.

### EGT130F032 configuration

The device can be configured using a smartphone app. The app supports the following functions:

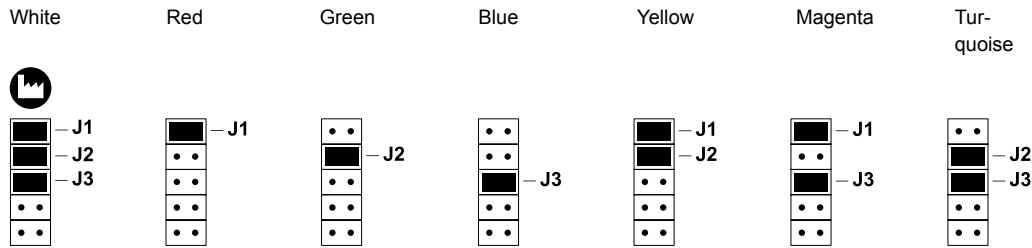
- Communication via USB Bluetooth® dongle (accessory 0300230010)
- Reading device information and live data
- Custom configuration of output signals
- Adjusting measuring ranges
- Readjustment of offset values
- Parameterisation of the live zero signal (1...10 V etc.)
- Adjustment of maintenance intervals
- Saving and loading configurations

### EGT332F103 and EGT335F103 configuration

Factory setting	Presence button The presence button can be connected to earth with jumper J4 or to a reference voltage with a jumper between J4 and J5.
 <p>              ■ — J1            ■ — J2            ■ — J3            ■ — J4            ●● — J5         </p>	 <p>              ■ — J4 (MM)         </p> <p>              ■ — J4 (<math>U_{ref}</math>)            ■ — J5         </p>

### Status LED

The colour of the status LED can be set with jumpers J1, J2 and J3.  
If no jumpers are fitted, the LED is switched off.



With brightness control by variable current, e.g. for day/night switching, the set colour may change slightly

### Additional technical information

Fitting instructions	P100019818
Declaration on materials and the environment	MD 31.141

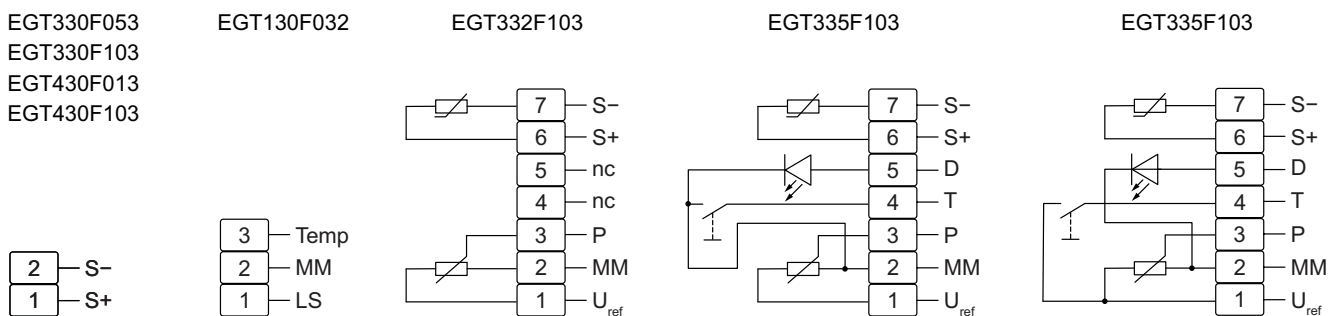
### Abbreviations used

CE	Manufacturer's Declaration of Conformity for the European Union (EU)
EMC-D	Electromagnetic Compatibility Directive 2014/30/EU
EMC-2016	Electromagnetic Compatibility Regulations 2016 (UK)
RoHS-D	Restriction of Hazardous Substances in Electrical and Electronic Equipment Directives 2011/65/EU & 2015/863/EU
RoHS-2012	Restriction of Hazardous Substances (RoHS) Regulations 2012 (UK)
UKCA	Manufacturer's Declaration of Conformity for the United Kingdom of Great Britain and Northern Ireland (UK)

### 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



EGT335F103: The connection of the presence button (MM or U<sub>ref</sub>) is set using jumper J4/J5, see "EGT332F103 and EGT335F103 configuration"

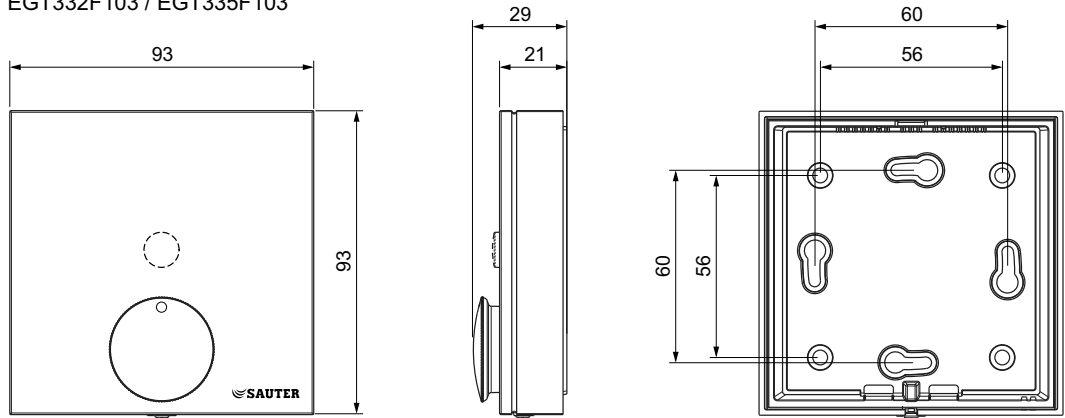
### Note

Because resistors have no polarity, the labels S- and S+ are only to differentiate the connections.

### Dimension drawings

All dimensions in mm.

EGT332F103 / EGT335F103



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