

EGH 120, 130: Room transducer, relative humidity and temperature, surface-mounted

How energy efficiency is improved

Precise measurement of humidity and temperature for energy-efficient control of HVAC installations in buildings

Features

- Measurement of humidity via a fast, capacitive sensor
- Active measuring element
- Suitable for direct wall mounting and recessed junction boxes
- Converts the measured values into a continuous analogue signal (0...10 V / 4...20 mA)

Technical data

| Parameters | | |
|----------------------------------|--------------------------------------|--|
| Relative humidity | Measuring range | 0...100% rh, no condensation |
| | Measuring accuracy | ±2 % between 10...90 % rh (typ. at 21 °C) |
| Temperature | Measuring range | 0...50 °C |
| | Measuring accuracy | ±0.5 °C (typ. at 25 °C) |
| 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 rear wall |
| | Connection terminals | Spring-type terminals, max. 1.5 mm ² |
| | Weight | 80 g |
| Standards, directives | | |
| | Type of protection | IP20 (EN 60529) after fitting |
| CE/UKCA conformity ¹⁾ | EMC-D 2014/30/EU (CE) | 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 |

Overview of types

| Type | Description | Output signal | Power supply | Power consumption |
|------------|----------------------------|--|-----------------------------------|--|
| EGH120F042 | Room transducer, rh, temp. | Active, 2 × 4...20 mA Max. load 500 Ω | 15...24 VDC, ±10% | Max. 1 W |
| EGH130F032 | Room transducer, rh, temp. | Active, 2 × 0...10 V Min. load 20 kΩ | 15...24 VDC, ±10% 24 VAC, ±10% | Max. 0.3 W (24 VDC) 0.5 VA (24 VAC) |

Accessories

| Type | Description |
|------------|-----------------------|
| 0300230010 | USB Bluetooth® dongle |

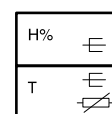
Description of operation

The EGH 120 and EGH 130 room transducers measure the relative humidity and temperature in indoor spaces such as residential premises, offices, museums or conference rooms.



EGH120F042

EGH130F032



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



Humidity measurement

A fast capacitive sensor measures the relative humidity and a measuring amplifier converts it to a 0...10 V or 4...20 mA standard signal.

Temperature measurement

A sensor measures the temperature and a measuring amplifier converts it to a 0...10 V or 4...20 mA standard signal.

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.

The device is not failsafe. In cases where a failure or malfunction of the room transducer 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 transducer from electrical damage with a 2AT safety fuse. No such fuse is integrated in the device.

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.

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 (± 0.2 V), this is normally done by adding or subtracting a constant offset value.

The room transducers 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.

**Note**

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

Fitting

The EGH 120, 130 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.

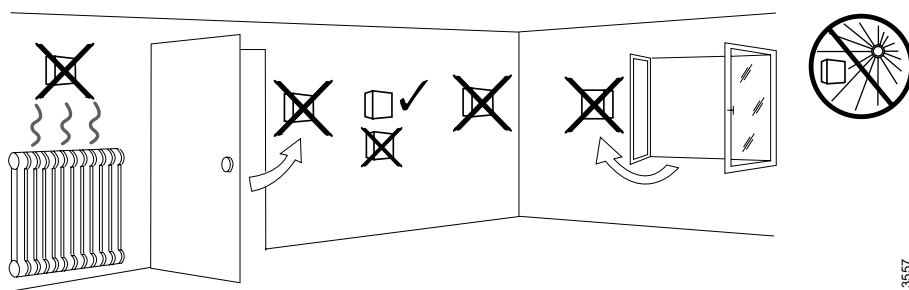
**Note**

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 and the fastening screw on the underside of the housing must not be obstructed by other devices.

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.

Commissioning

The output signal is not available until a few minutes after switching on. The signals generated while switching on may fluctuate and not correspond to the measured value.

The sensors are factory-calibrated and can be recalibrated via the USB interface if necessary.

Notes for users

In normal operating conditions, the devices are very slow to deteriorate through age. Humidity sensors age much more quickly if used in rooms with very contaminated air or aggressive gases. These factors depend on the concentration of the aggressive media and can cause the sensor to drift permanently.

In areas with very contaminated air, the warranty does not cover the premature replacement of the room transducer.

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

Additional technical information

| | |
|--|------------|
| Fitting instructions | P100019818 |
| Declaration on materials and the environment | MD 34.121 |

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

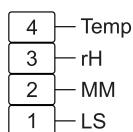
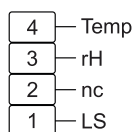
When disposing of the product, observe the currently applicable local laws.

More information on materials can be found in the Declaration on materials and the environment for this product.

Connection diagram

EGH120F042

EGH130F032



Dimension drawings

All dimensions in mm.

