

EGH 681: Room transducer, relative humidity and temperature, recessed

How energy efficiency is improved

Precise measuring of relative humidity and temperature for energy-efficient room climate control

Features

- Measures the relative humidity and temperature in rooms
- Regulation of the room climate in combination with room automation systems
- Fast response time and high precision
- Including frame

Technical data

Power supply		
Power supply		15...24 V= (±10%) or 24 V~ (±10%)
Power consumption		Typ.0.3 W / 0.5 VA
Output signal		
Output signal		0...10 V, load resistance at least 10 kΩ
Parameters		
Measuring range, temperature		0...50 °C
Measuring range, humidity		0...100% rh
Ambient conditions		
Ambient temperature		-20...70 °C
Construction		
Housing		Pure white
Housing material		Lower section: ABS Front plate: PC
Frame design		Gira E2
Weight		80 g
Standards and directives		
Type of protection		IP30 (EN 60529)
CE conformity according to	RoHS Directive 2011/65/EU	EN 50581
	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)

Overview of types

Type	Description
EGH681F031	Room transducer, relative humidity and temperature, recessed

Description of operation

The sensor allows the exact measurement of relative humidity and temperature in the room for the energy-efficient monitoring and controlling of the room climate. A fast capacitive measuring element measures the relative humidity and a measuring amplifier converts it to a 0...10 V 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. Changing or converting the product is not admissible.

Engineering and fitting notes



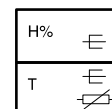
CAUTION!

Damage to device!

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



EGH681F031



Heat caused by dissipated electric power

Temperature sensors with electronic components are always subject to a certain amount of power loss, which affects the temperature measurement of the ambient air. In active temperature sensors, the higher the operating voltage, the greater the power loss. This power loss 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 V=. 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 directly on the sensor becomes necessary during later operation, this can be done using the trimmer potentiometer on the sensor circuit board.

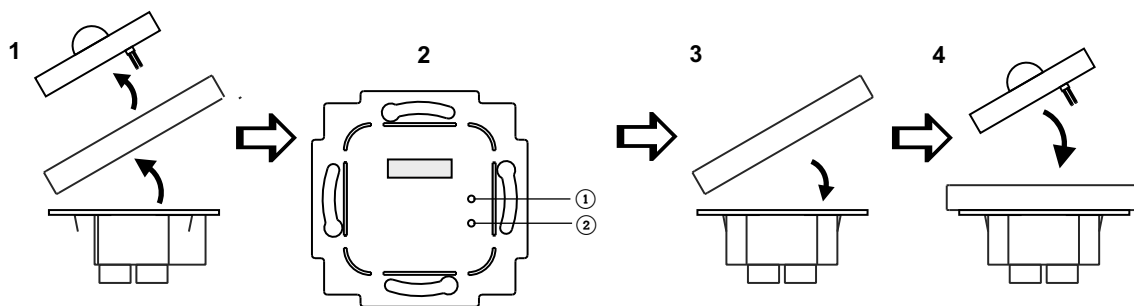


Draughts that occur can dissipate the heat resulting from the power loss more effectively. This means there can be temporary variations in the measurements.

Offset adjustment

Offset adjustment procedure

1. Remove the measuring element - the most recently measured temperature/humidity values are transmitted via the two outputs.
2. Use the "Offset rF / rH" and "Offset Temp" potentiometers to adjust the offset.
3. Install the measuring element again. After a few seconds, the currently measured temperature/humidity values are transmitted via the two outputs.



① rh offset

② Temperature offset

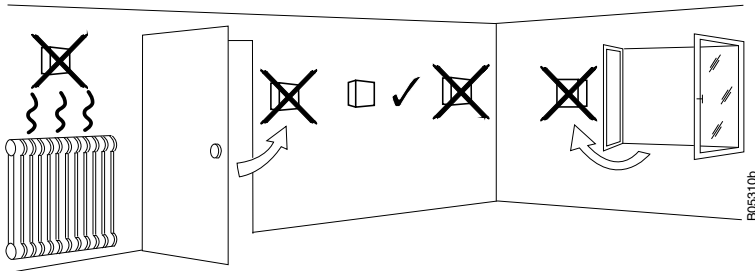
Electrical connection

The sensor is connected to the electricity supply by means of a pluggable screw terminal. This is suitable for conductor cross-sections (braided or solid) up to 1.5 mm². We recommend using a conductor cross-section up to 0.75 mm². When you are running the cables, note that electrical interference can affect the measurements. These effects increase the longer the cable and the smaller the conductor cross-section. In high-interference environments, we recommend using shielded cables.

Fitting

The EGH 681 is suitable for recessed mounting. For further information, see the fitting instructions. Incorrect fitting can result in incorrect measuring results. Therefore, always observe the fitting instructions. Cold outer walls and fitting above heat sources (radiators, for example) 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 thus cause discrepancies in the measurements. Heating pipes inside the walls can also affect the measurement.

The end of the installation pipe in the recessed junction box must be sealed so that no draughts occur in the pipe to falsify the measurement.



The cable is connected to the device by a screw terminal. The screw terminal can be pulled off the device for preliminary wiring. It is advisable to use deep mounting boxes to allow more space for the wiring.

Notes for users

Under normal operating conditions, the devices age very gradually. Humidity sensors are subject to increased ageing if they are used in very contaminated air or aggressive gases. The factors affecting the device depend on the concentration of the aggressive media and can increase the drift of the sensor. In applications with very contaminated air, the warranty does not cover the premature replacement of the entire sensor.

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

1	2	3	4	5	6	7	8	9	10	11	12
			GND	Uv 15-24 V=/ 24 V~	rF / pH 0...10 V	Temp 0...10 V					

Dimension drawing

