



## Room sensor

## QFA65

for relative humidity and temperature

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**Operating voltage AC 24 V**

**Signal outputs DC 0...10 V for relative humidity and temperature**

**Accuracy of  $\pm 3$  % r.h. within comfort range**

### Use

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In ventilating and air conditioning plants to acquire

- relative humidity and
  - temperature
- in rooms.

The QFA65 is used as a

- control sensor and
- measuring sensor for building automation systems or indicating units.

### Ordering

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When ordering, please give name and type reference.

### Equipment combinations

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All systems/units that are capable of acquiring and handling the sensor's DC 0...10 V output signal.

## Mode of operation

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### Relative humidity

The sensor acquires the relative humidity with the help of a capacitive humidity sensor whose electrical capacity changes in function of the relative humidity of the ambient air. An electronic circuit converts the sensor's signal into a continuous DC 0...10 V signal, which represents 0...100 % relative humidity.

### Temperature

The sensor acquires the temperature with a nickel sensing element (LG-Ni 1000) whose electrical resistance changes in function of the temperature of the ambient air. Similar to the acquisition of relative humidity, a measuring circuit converts the resistance value into a DC 0...10 V signal, corresponding to a temperature range of 0...50 °C.

## Mechanical design

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The room sensor has been designed for wall mounting. It is suitable for use with most commercially available recessed conduit boxes. The cables can be introduced from the rear (concealed wiring) or from below or above (surface-run wires) through knockout openings.

All terminals are protected against false wiring.

The unit consists of two major sections: Casing and baseplate. Both snap together but can be detached again. The casing accommodates the temperature and humidity sensing elements. The baseplate carries the connecting terminals.

## Engineering notes

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The transformer used must be suitable for safety extra low voltage (SELV). It must have separate windings and be suited for 100 % duty.

The transformer must be sized and fused in compliance with local safety regulations. When sizing the transformer, the power consumption of the QFA65 must be taken into account.

For the connection of the sensor, refer to the data sheets of the units with which the sensor is used. The maximum permissible line lengths should be observed.

- UNIGYR®/VISONIK®

Both the temperature and the humidity sensor must be connected to a measured value input (U...) of the measured value module (PTM1.2U10).

- POLYGYR®

If the signal of the QFA65 is fed to an RWF... or RZF... as a main controlled variable, the latter must be equipped with the following setting range insert:

- AZW61.292-a% (0...100 %) or AZW61.222-aH95 (20...95 %) for the measured value «relative humidity»
- AZW61.211-at 50 (0...50 °C) for the measured value «temperature»

## Fitting notes

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Location:

On an inner wall of the space to be air conditioned. Not in recessed, shelves, not behind curtains, not opposite or near heat sources.

The unit must not be exposed to spot lights or direct solar radiation.

The end of the conduit at the sensor must be sealed to prevent false measurements due to draughts through the conduit.

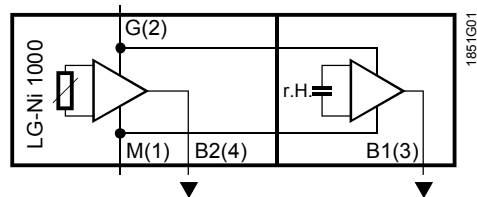
Installation instructions are printed on the packing.

## Technical data

<b>Humidity sensor</b>	Range of use	10...95 % r.h.
	Measuring accuracy at 20 °C	
	20...90 % r.h.	±5 % r.h.
	40...60 % r.h.	±3 % r.h., (typical)
	Time constant	≤2 min
	Output signal, linear	DC 1...9 V $\hat{=}$ 10...90 % r.h.
Output current	±1 mA max.	
<b>Temperature sensor</b>	Range of use	0...50 °C
	Sensing element	LG-Ni 1000
	Measuring accuracy at 20 °C	±0.8 K
	Time constant	8 min (depending on air movement and thermal coupling to the wall)
	Output signal, linear	DC 0...10 V $\hat{=}$ 0...50 °C
	Output current	±1 mA max.
<b>Allgemeine Fühlerdaten</b>	Operating voltage (SELV)	AC 24 V ±20 %
	Frequency	50 or 60 Hz
	Power consumption	0.35 VA
	Environmental conditions	
	Operation to	IEC 721-3-3
	Climatic conditions	class 3K3
	Temperature	0...50 °C
	Humidity <sup>1)</sup>	5...85 % r. h.
	Transport to	IEC 721-3-2
	Climatic conditions	class 2K3
	Temperature	-25...+70 °C
	Humidity	<95 % r. h.
	Mechanical conditions	class 2M2
	Protection standard of casing	IP 30 to IEC 529
	Insulation class	III to EN 60 730
	Electromagnetic compatibility	
	Immunity	EN 50 082-1
	Emissions	EN 50 081-1
	CE conformance to	EMC guideline 89/336/EEC
	C conformity as per	
	Australian EMC Framework	Radio communication act 1992
	Radio Interference Emmission Standard	AS/NZS 3548
	Connecting terminals for	2 x 1.5 mm <sup>2</sup> or 1 x 2.5 mm <sup>2</sup>
	Perm. line lengths	
	Copper cable 0.6 mm dia.	50 m
	Copper cable 1 mm <sup>2</sup>	150 m
Copper cable 1.5 mm <sup>2</sup>	300 m	
If the required line length exceeds 300 m, it needs to be shielded.		
Material		
Casing	ASA + PC	
Baseplate	PC	
Sensor (entirely)	silicon-free	
Colour		
Front of casing	RAL 9010 (white)	
Casing and baseplate	NCS 2801-Y43R (grey)	
Weight	0.1 kg	

1) The permissible ambient humidity may reach 95 % r.h. for short periods of time

## Internal diagram

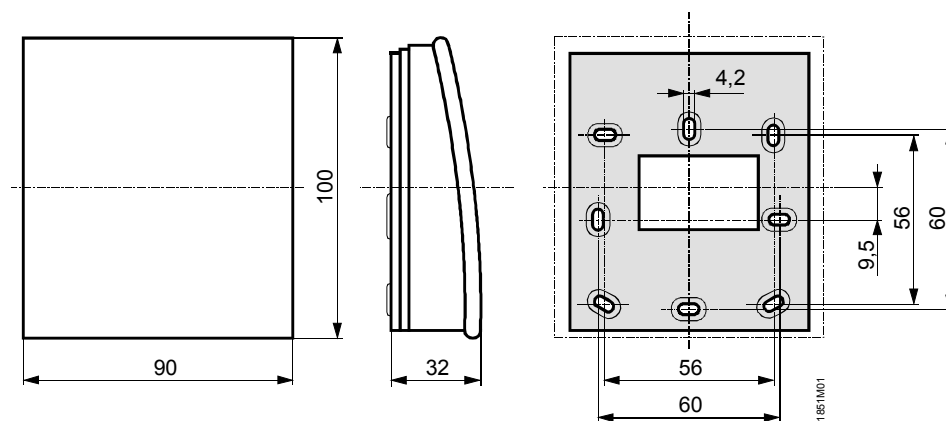


- G (2) System potential AC 24 V
- M (1) System and measuring neutral
- B1 (3) Measuring signal DC 1...9 V for 10...90 % r.h.
- B2 (4) Measuring signal DC 0...10 V for temperature measuring range 0...50 °C

### Notes:

The number in parentheses corresponds to the terminal label on the terminal block.

## Dimensions



Dimensions in mm