

Humidity sensors

SAUTER humidity sensors are used for the energy-efficient control and monitoring of ventilation systems. Sensors are available for measuring the relative humidity and enthalpy of the air. They can be used in residential or business premises and can also be fitted in air ducts.

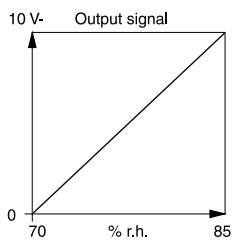
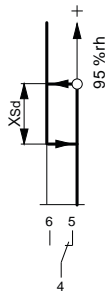
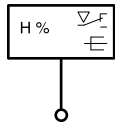
Overview of humidity sensors



Type designation	EGH 120, 130	EGH 681	EGH 110...112	EGE 112	EGH 102
Application					
Room, surface-mounted	•	–	–	–	–
Room, recessed	–	•	–	–	–
Duct	–	–	•	•	–
Clamp-on sensor	–	–	–	–	•
Measurement					
Temperature	•	•	•	•	–
Relative humidity	•	•	•	–	–
Enthalpy	–	–	–	•	–
Dew point	–	–	–	–	•
Further information	Page 78	Page 79	Page 77	Page 76	Page 74



EGH102F*01



EGH 102: Dew point monitor and transducer

Features

- Protects against dew formation on chilled ceilings
- Controls a regulating unit via a holding relay that interrupts the cooling water flow or increases the cooling water temperature
- Best solution for monitoring chilled-ceiling systems
- Measurement taken by a spring-mounted dew point sensor
- Active measuring element
- Variant with external sensor (EGH102F101)
- Holding relay with changeover contacts
- Includes retaining strap for pipes of \varnothing 10...100 mm and heat-conducting paste

Technical data

Power supply

Power supply	24 V~/=, $\pm 20\%$
Power consumption	Max. 1 VA

Parameters

Measuring range	70...85% rh
Changeover contact ¹⁾	1 A, 24 V~/=
Response time in still air	80 to 99% rh, 99 to 80% rh, max. 3 minutes
Exposure to dew	Max. 30 min
Switching difference	Fixed, approx. 5% rh
Switching point	95 \pm 4% rh

Ambient conditions

Ambient temperature	5...60 °C
---------------------	-----------

Inputs/outputs

Output signal	Approx. 70...85% rh, 0...10 V, load > 10 k Ω
---------------	--

Construction

Screw terminals	For electrical cables of up to 1.5 mm ²
Housing	Pure white (RAL 9010)
Housing material	Fire-retardant thermoplastic
Weight	0.1 kg
Cable inlet	For Pg 11

Standards and directives

Type of protection	IP40 (EN 60529)
Mode of operation	Type 1 C (EN 60730)

Overview of types

Type	Clamp-on sensor
EGH102F001	Integrated in housing
EGH102F101	Cable 1 m long, sensor integrated in the cable end

¹⁾ When activating relays, gates etc. with $\cos \phi < 0.3$, it is recommended to use RC circuitry in parallel to the coil. This reduces contact pitting and prevents high-frequency interference



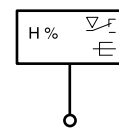
EGH 103: Dew point monitor

Features

- Protects against dew formation on chilled ceilings, etc.
- Controls a regulating unit via a holding relay that interrupts the cooling water flow or increases the cooling water temperature.
- Measurement is performed by a dew point sensor
- Potential-free output contact for 24 V and 230 V
- Holding relay with changeover contacts
- LED indicator for power supply and dew formation
- Plug-in connectors for electrical cables up to 1.5 mm²
- Cable inlet M20
- Fitted onto pipes using the provided cable tie for pipes Ø 10...40 mm



EGH103F001



Technical data

Power supply		
Power supply		230 V~ ±10%
Power consumption		Max. 3.5 VA
Parameters		
Changeover contact ¹⁾		5 A, 230 V~
Switching point		95 ±4% rh
Switching difference		Fixed, approx. 5% rh
Ambient conditions		
Ambient temperature		-20...60 °C (non-condensing)
Construction		
Housing		Pure white, PA6
Weight		0.19 kg
Standards and directives		
Type of protection		IP 65 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	Low-Voltage Directive 2014/35/EU	EN 61000-6-1, EN 61000-6-3

Overview of types

Type	Description
EGH103F001	Dew point monitor 230 V~

Accessories

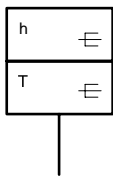
Type	Description
0300360004	Heat-conducting paste incl. gun with 2 g content

¹⁾ When activating relays, gates, etc. with $\cos \phi < 0.3$, it is recommended to use RC circuitry in parallel to the coil. This reduces contact pitting and prevents high-frequency interference





EGE112F031



EGE 112: Duct transducer, enthalpy

Features

- Measures the enthalpy and temperature in air ducts
- Measurement by means of fast capacitive measuring element
- Active measuring element
- Unaffected by flow speeds and normal contamination
- Mounting flange supplied

Technical data

Power supply		
Power supply		15...24 V= (±10%) or 24 V~ (±10%)
Power consumption		Max. 0.4 W (24 V=) 0.8 VA (24 V~)
Outputs		
Output signal		2 x 0...10 V (min. load 10 kΩ)
Parameters		
Flow speed		Min. 3 m/s Max. 10 m/s
Time characteristic	Time constant in moving air (3 m/s)	3 minutes
Enthalpy	Measuring range	0...100 kJ/kg
	Measuring accuracy	3.5 kJ/kg (typ. at 21 °C)
Temperature	Measuring range	-20...80 °C
	Measuring accuracy	±0.5 °C (typ. at 25 °C)
Ambient conditions		
Ambient temperature		-20...70 °C
Construction		
Connection terminals		Screw terminal, max. 1.5 mm ²
Cable inlet		M20 for cable Ø min. 5.8 mm, max. 10 mm
Housing		Yellow/black
Housing material		PA6
Filter unit material		Stainless steel, wire mesh
Sensor tube diameter		19.5 mm
Sensor tube length		140 mm
Weight		120 g
Standards and directives		
Type of protection		Instrument head: IP65 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

Type	Description
EGE112F031	Duct transducer, enthalpy and temperature, 2 x 0-10 V



EGH 110...112: Duct transducer, relative humidity and temperature

Features

- Measures the relative humidity and temperature in air ducts
- Measurement by means of fast capacitive measuring element
- Active and passive measuring element
- Immersion depth 140 mm
- Mounting flange supplied

Technical data

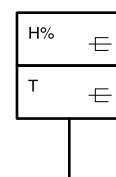
Power supply		
	Power supply	15...24 V= ($\pm 10\%$) or 24 V~ ($\pm 10\%$)
	Peak inrush current	1.5 A, 4 ms
Parameters		
Humidity	Measuring range, humidity	0...100% rh, no condensation
	Measuring accuracy, humidity	Typ. $\pm 2\%$ (10...90% rh)
	Repeat accuracy	Typ. $\pm 0.1\%$ rh
	Gradual drift	Typ. $< 0.5\%$ rh/year
Temperature	Measuring range, temperature	-20...80 °C
	Measuring accuracy, temperature	± 0.5 °C (typ. at 25 °C)
	Repeat accuracy	Typ. ± 0.1 °C
	Gradual drift	Typ. < 0.04 °C/year
Time characteristic	In moving air (3 m/s)	2 minutes (t63)
	Readiness for operation	10 seconds (operational), 5 minutes (max. precision)
	Flow speed	Min: 0 m/s Max: 10 m/s
	Hysteresis	$\pm 1\%$
Ambient conditions		
	Ambient temperature	-20...70 C
Construction		
	Connection terminals	Screw terminals, max. 1.5 mm ²
	Cable inlet	M20 for cable with min. \varnothing 5 mm, max. \varnothing 10 mm
	Housing	Yellow/black
	Housing material	PA6
	Filter unit material	Stainless steel, wire mesh
	Sensor tube diameter	19.5 mm
	Sensor tube length	140 mm
	Weight	120 g
Standards and directives		
CE conformity according to	Type of protection	Instrument head: IP65 (EN 60529)
	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

Type	Power consumption	Output signal
EGH110F041	Max. 1 W (24 V=)	2 × 4...20 mA (max. load 500 Ω)
EGH111F031	Max. 0.4 W (24 V=) 0.8 VA (24 V~)	2 × 0...10 V (min. load 10 k Ω) + Ni1000
EGH112F031	Max. 0.4 W (24 V=) 0.8 VA (24 V~)	2 × 0...10 V (min. load 10 k Ω)



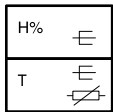
EGH11*F0*1



EGH 120, 130: Room transducer, relative humidity and temperature



EGH1*0F0*1



Features

- Measurement by means of fast capacitive sensor
- Active measuring element
- Suitable for fitting directly to walls
- Converts the measured values into a continuous analogue signal (0...10 V or 4...20 mA)

Technical data

Power supply		
	Power supply	15...24 V= (±10%) or 24 V~ (±10%)
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	-20...70 °C
Construction		
	Housing material	ASA
	Housing	Pure white
	Connection terminals	Screw terminals, max. 1.5 mm ²
	Weight	80 g
Standards and directives		
	Type of protection	IP30 (EN 60529)
CE conformity according to	EMC Directive 2014/30/EU	EN 60730-1 (mode of operation 1, residential premises)
	RoHS Directive 2011/65/EU	EN 50581

Overview of types

Type	Output signal	Power consumption
EGH120F041	2 x 4...20 mA	Max. 1 W (24 V=)
EGH130F031	2 x 0...10 V	Max. 0.3 W (24 V=) 0.5 VA (24 V~)



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

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= ($\pm 10\%$) or 24 V~ ($\pm 10\%$)
Power consumption		Typ.0.3 W / 0.5 VA
Output signal		
Output signal		0...10 V, load resistance at least 10 k Ω
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



EGH681F031

