

## EGE: Duct transducer for absolute humidity and enthalpy

### How energy efficiency is improved

Accurate recording of air humidity for energy-efficient control of HVAC systems and monitoring energy consumption.

### Areas of application

Measurement of absolute humidity and enthalpy in air ducting.

### Features

- Measurement is effected using fast, capacitive sensor
- Active measured value acquisition
- Insensitive to flow speeds and normal contamination
- EGE 112 offers temperature measurement using an Ni1000 temperature detector

### Technical description

- Housing lid made of yellow thermoplastic
- 30 mm  $\varnothing$  sensor tube made of black, glass-fibre-reinforced thermoplastic
- Screw terminals for wires up to 1,5 mm<sup>2</sup>
- Immersion depth: 50 to 156 mm.
- Linear output signal 0(2)...10 V or 0(4)...20 mA
- Fixing bracket supplied with seal for duct and wall mounting

Type	Humidity range g/kg	Enthalpy range kJ/kg	Temperature range °C	Voltage	Weight kg
<b>EGE 110 F002</b>	0...20	0...100	–	24 V~	0.46
<b>EGE 112 F002</b>	0...20	0...100	-20...50	24 V~	0.44
Power supply 24 V~	$\pm 20\%$ , 50...60 Hz	Permissible ambient temp. at meter tube		-20...70 °C	
Power consumption	approx. 1.5 VA	Permissible ambient humidity		-20...80 °C	
Output signal <sup>1)</sup>	0(2)...10 V, Load > 500 $\Omega$	Degree of protection (head) with Pg 11 screw fitting		5...100% rh	
Temp. influence x	$\pm 0.02$ g/kg per K	Protection class		IP 40 (EN 60529)	
Temp. influence h	$\pm 0.05$ kJ/kg per K	Wiring diagram		IP 54	
Time constant in air (3 m/s)	55 s	EGE 110		III (IEC 60730)	<a href="#">A03129</a>
Max. flow speed	10 m/s	EGE 112			<a href="#">A02199</a>
		Dimension drawing			<a href="#">M02200</a>
		Fitting instructions			<a href="#">MV 505330</a>

### Accessories

**0370560 011** Cable screw fitting Pg 11, of plastic, for cable  $\varnothing$  9...11 mm

**0369585 001** Housing cover, complete, pure white

1) Switches over automatically to 0...20 mA (or 4...20 mA) when the load is < 500  $\Omega$ .

### Operation

#### Humidity measurement

The absolute humidity and the enthalpy are registered by a fast-acting, capacitive sensor and converted by the electronics unit into the linearised standard signal 0(2)...10 V and 0(4)...20 mA.

#### Temperature measurement

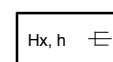
The EGE 112 has an Ni1000 temperature sensor; the temperature (-20...50 °C) is converted into the standard signal 0(2)...10 V and 0(4)...20 mA.

### Engineering and fitting notes

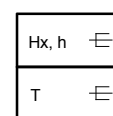
In installations which may be susceptible to dew formation, the transducer should not be fitted with the sensor tube facing upwards. The curve's good linearity and constance make it unnecessary to calibrate the measuring span. For test measurements, the zero point can be varied by  $\pm 10\%$ rh. The measurement system requires practically no maintenance and is unaffected by either flow speed or contamination. Calibrated at the factory.



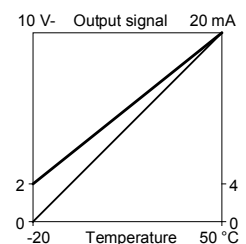
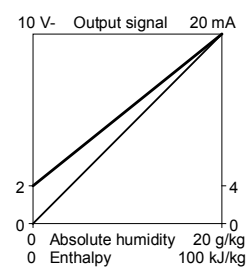
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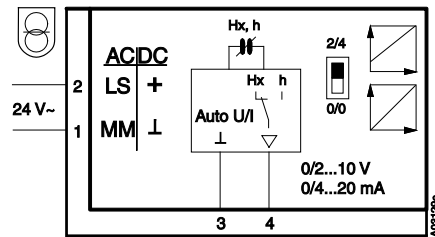
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**Further technical information**

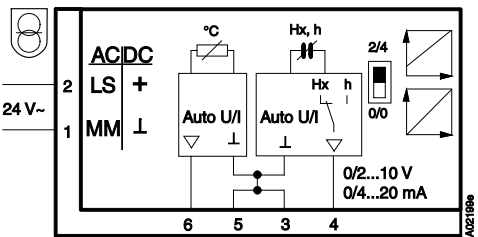
<b>Absolute humidity/enthalpy</b>	x	h	<b>Temperature</b>	
Accuracy at			Accuracy at 20 °C	± 0.8 K
55% rh, 23 °C	± 1 g/kg	± 3.5 kJ/kg	Output voltage	max. 13 V
Hysteresis (average)	< 0,4 g/kg	< 2 kJ/kg		
Reproducibility				
at Δ 30% rh, 23 °C	< ± 0.3 g/kg	< ± 1.5 kJ/kg		
Output voltage	max. 13 V			
CE conformity as per				
EMC directive 89/336/EEC EN 61000-6-1/ EN 61000-6-3				

**Wiring diagram**

EGE 110



EGE 112



**Dimension drawing**

