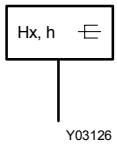
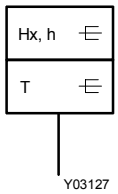
EGE: Duct transducer for absolute humidity and enthalpy





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 ø sensor tube made of black, glass-fibre-reinforced thermoplastic
- Screw terminals for wires up to 1,5 mm²
- Immersion depth: 40 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

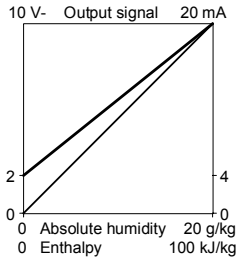
Type	Humidity range g/kg	Enthalpy range kJ/kg	Temperature range °C	Voltage	Weight kg
EGE 110 F002	0...20	0...100	–	24 V~	0,46
EGE 112 F002	0...20	0...100	–20...50	24 V~	0,44

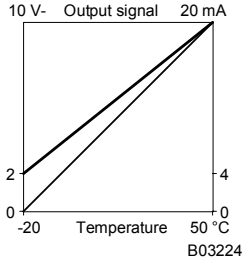
Power supply 24 V~	± 20%, 50...60 Hz	Permissible ambient temp.	–20...70 °C
		at meter tube	–20...80 °C
Power consumption	approx..1,5 VA	Permissible ambient humidity	5...100 %rh
Output signal [1]	0(2)...10 V, Load > 500 Ω	Degree of protection (head)	IP 40 (EN 60529)
		with Pg 11 screw fitting	IP 54
Temp. influence x	± 0,02 g/kg per K	Protection class	III (IEC 60730)
Temp. influence h	± 0,05 kJ/kg per K		
Time constant in air (3 m/s)	55 s	Wiring diagram EGE 110	A03129
		EGE 112	A02199
Max. flow speed	10 m/s	Dimension drawing	M02200
		Fitting instructions	MV 505330

Accessories
0370560 011 Cable screw fitting Pg 11, of plastic, for cable Ø 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 Ω.

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 ± 10%rh. The measurement system requires practically no maintenance and is unaffected by either flow speed or contamination. Calibrated at the factory.

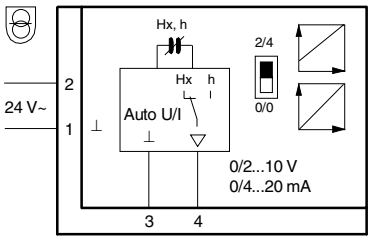
Further technical information

Absolute humidity/enthalpy	x	h
Accuracy at		
55 %rh, 23 °C	± 1 g/kg	± 3,5 kJ/kg
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	
Complies with:-		
EMC directive 89/336/EEC	EN 61000-6-1/ EN 61000-6-3	

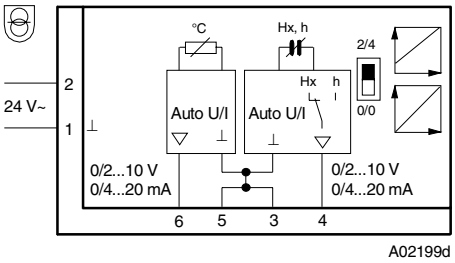
Temperature	
Accuracy at 20 °C	± 0,8 K
Output voltage	max. 13 V

Wiring diagram

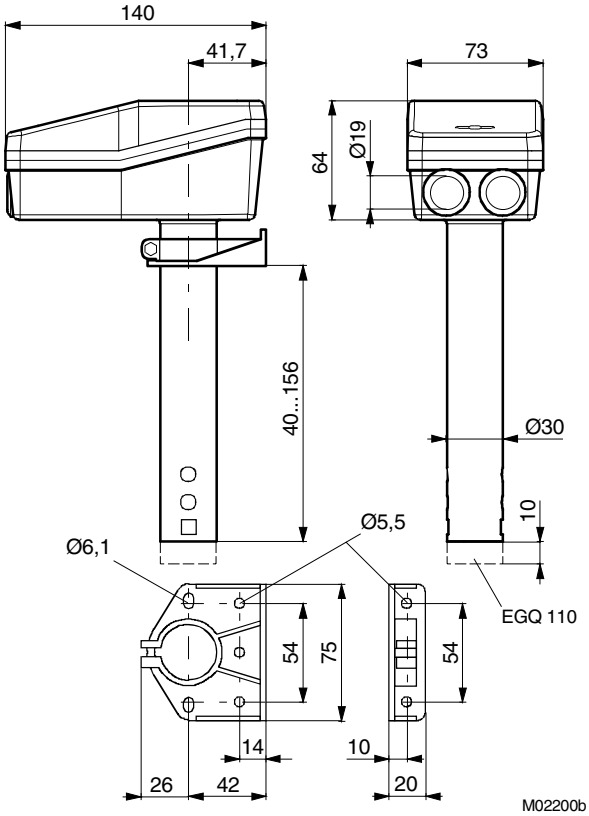
EGE 110



EGE 112



Dimension drawing



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N.B.: A comma between cardinal numbers denotes a decimal point

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