

Product info sheet no. C 2.5
Humidity-/temperature sensors
 Compact sensors with plug-in connection



Technical data

Humidity

Measuring range 0...100%rh
 Accuracy (MR 5...95%rh at 10...40°C) ±2%rh
 at <10°C, >40°C <0.1%/K additional
 Response time (at calm air) < 20 s

Temperature

Measuring element (DIN EN 60751) Pt 100 class B
 (class 1/3 DIN for -ME design)
 Measuring range -30...+70°C
 Accuracy
 Output: 0...1V (-27...80°C) ±0.2 K
 0...10V (-29...80°C) ±0.2 K
 4...20mA ±0.3 K
 at <10°C, >40°C) ±0.007K/K additional

Other data

Ambient temperature -40...+80°C
 Degree of protection sensor/electronic IP 30/IP 65
 Degree of protection coupling IP40
 Degree of protection coupling in -ME design IP 67
 Operating voltage:
 I-output 12...30V DC
 U-output 0...10V 15...30V DC
 U-output 0...1V 6...30V DC
 Load resistance 0...10V/0...1V ≥10kΩ/≥2 kΩ
 Load (current-output) acc. diagramm
 Power consumption
 0...10V, 2x 0...1V approx. 5 mA
 0...1V <1 mA
 Minimum air speed (across the sensor)
 Output: 0...10V, 2x 0...1V ≥0.5 m/s
 4...20 mA, 2x 0...10 V ≥1 m/s
 2x 4...20mA ≥1.5 m/s
 Self-heating Pt 100 (1 m/s, 2mA, 20°C) 0.1 K
 Electromagnetic compatibility
 Emitted interference EN 55011 cl. B
 Noise immunity EN 50082-2
 „subject to technical modifications“

Description

Mela®-**humidity-/temperature sensors** in the PCx.S series are compact, versatile sensors in a rod-type design with plug-in connection to measure relative humidity, relative humidity and temperature or temperature in air and other non-aggressive gases.

The scope of delivery includes the coupling plug without a cable.

All sensors in this series come with a **ZE 17-type** gauze filter, resp. ZE 20 for -ME design (filters acc. sheet no. F 5.1).

Use of capacitive MELA-humidity sensor elements is a guarantee of:

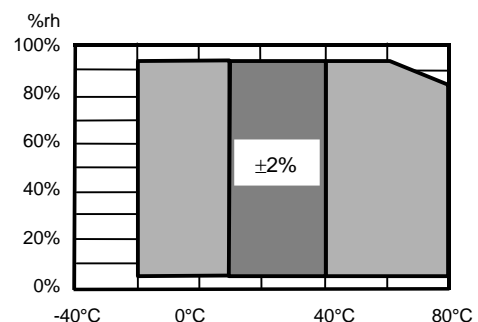
- high long-term stability
- almost linear characteristic curve
- good dynamic performance
- resistance to dew formation
- small hysteresis.

Type versions

Measured variable	Analogue output	Type	Type for Meteorology
F rel. Feuchte	4...20mA	FPC 3.S/5	FPC 3.S/5-ME
	0...10V	FPC 2.S/5	FPC 2.S/5-ME
	0...1V	FPC 1.S/5	FPC 1.S/5 ME
C r.F. + Temp.	4...20mA, Pt100	CPC 3.S/5	CPC 3.S/5-ME
	0...10V, Pt100	CPC 2.S/5	CPC 2.S/5-ME
	0...1V, Pt100	CPC 1.S/5	CPC 1.S/5-ME
K r.F. + Temp.	2 x 4...20mA	KPC 3.S/5	KPC 3.S/5-ME
	2 x 0...10V	KPC 2.S/5	KPC 2.S/5-ME
	2 x 0...1V	KPC 1.S/5	KPC 1.S/5-ME
T Temperatur	Pt100	TPC 5.S/5	TPC 5.S/5-ME
	4...20mA	TPC 3.S/5	TPC 3.S/5-ME
	0...10V	TPC 2.S/5	TPC 2.S/5-ME
	0...1V	TPC 1.S/5	TPC 1.S/5-ME
Masse		ca. 80 g	

Special versions available on request

Tolerance validity range for humidity



This information is based on current knowledge and is intended to provide details of our products and their possible applications. It does not, therefore, act as a guarantee of specific properties of the products described or of their suitability for a particular application. It is our experience that the equipment may be used across a broad spectrum of applications under the most varied conditions and loads. We cannot appraise every individual case. Purchasers and/or users are responsible for checking the equipment for suitability for any particular application. Any existing industrial rights of protection must be observed. The perfect quality of our products is guaranteed under our General Conditions of Sale. Issue : March 2004 valid until 31.12.2008 C25_E. Subject to modifications, current version available at www.galltec.de. This issue supersedes all previous technical leaflets.

Application recommendations

Install the Mela® sensors in a place where characteristic climatic conditions can be measured. Mounting close to heaters, windows, at outside wall or in direct sunlight should be avoided.

The specified minimum air speeds and the operating voltage-adapted current at current-output (diagram) should be complied with. Deviations may lead to additional corrupted measurement readings because the sensor self-heats.

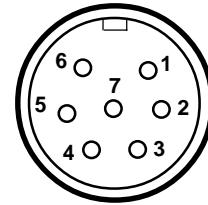
Install the sensor horizontally or with the sensor element pointing downwards. Avoid water ingress. Dew formation and splashes do not damage the sensor, although corrupted measurement readings are recorded until all the moisture on and directly around the sensor element has dried up.

In order to maintain interference immunity in accordance with EN 80082-2 when it is in use, we recommend that you use a screened cable (**type recommended: 8x AWG 26 C UL, order no. 5339**), and have this fitted to the sensor's attachment plug by a qualified electrician.

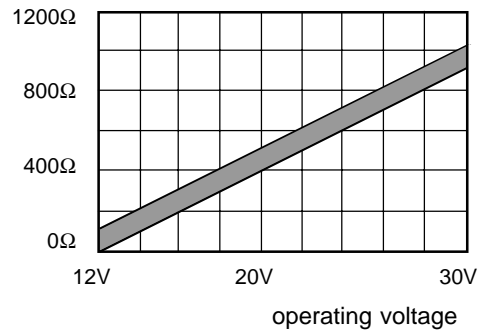
Dust does not cause any harm to the humidity sensor, however, it does affect dynamic performance. We advise you to use a **ZE 21-type sintered high-grade steel filter** if there is an excessive build-up of dust (product info sheet no. 5.1). This filter can be rinsed clean if necessary. Loose dirt can also be removed from the measuring element by blowing or carefully flushing with distilled water. Do not touch the highly sensitive sensor element. For mounting supports we recommend a **console type 20.009** and an **attachment plate type ZA 20** (Product info sheet No. F5.1). Please find the weather guard and other accessories on the product info sheet No. F 5.1 as well. In order to check functioning in the place of installation, we recommend that you use the **ZE 31/1-type humidity standard** (product info sheet no. F 5.2).

Please consult the **application instructions for the sensing elements** (product info sheet no. A 1) or check with the manufacturer for further information which you need to bear in mind when using humidity sensors with capacitive sensing elements.

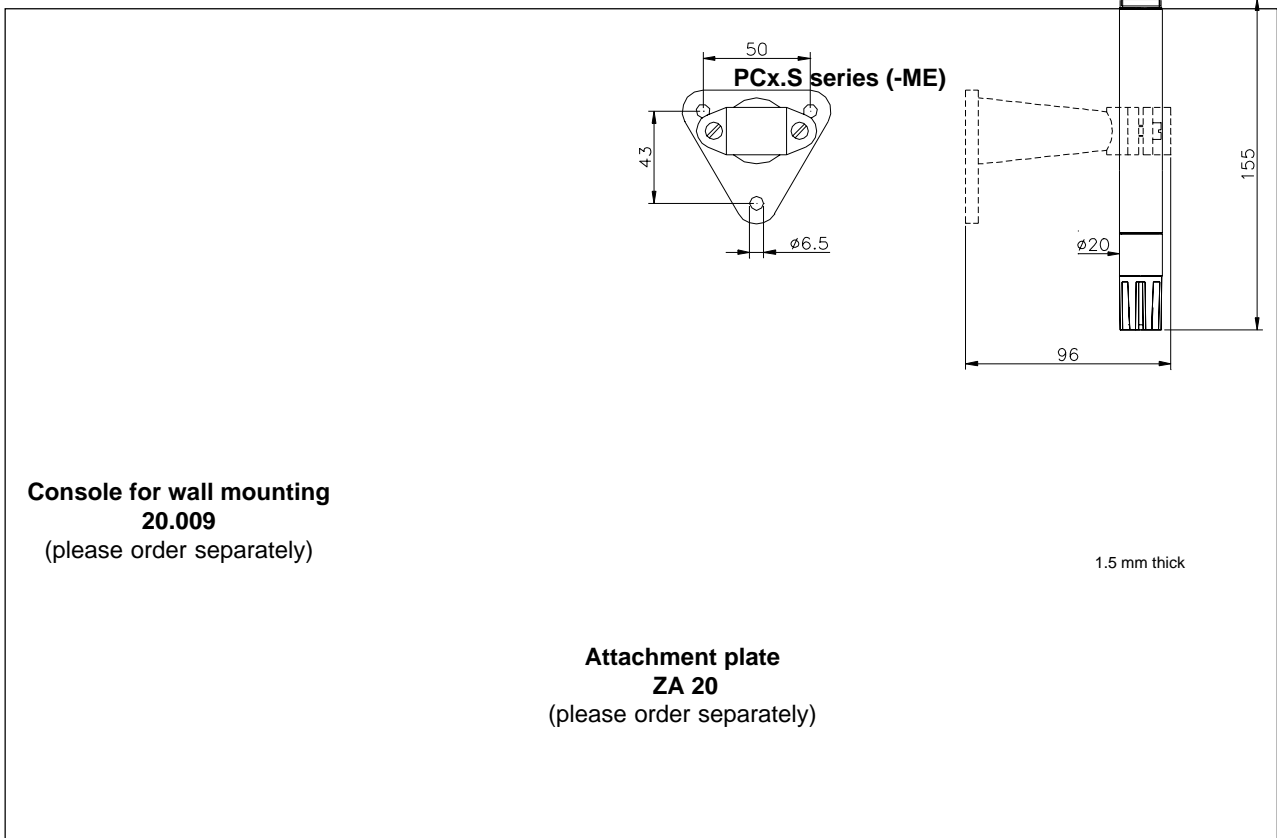
Position of the sensor connections:



Load at current output:



Dimensions

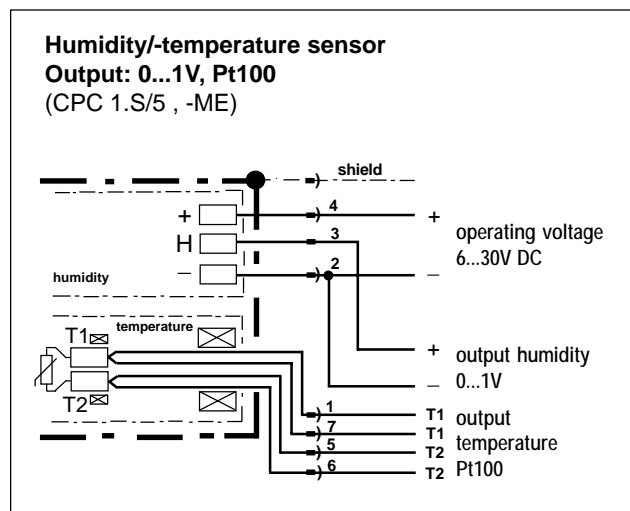
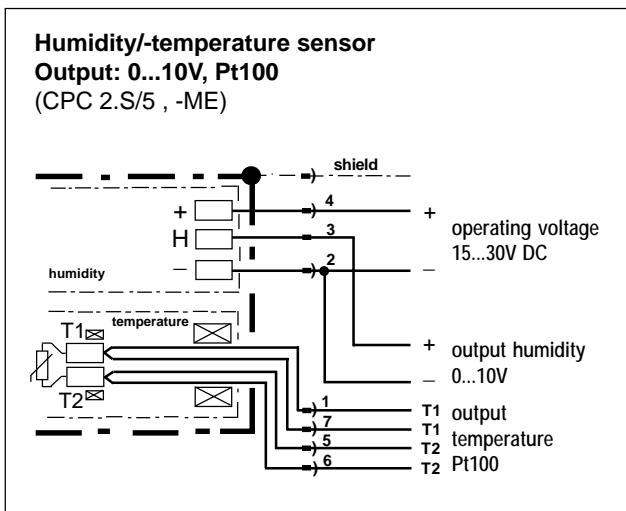
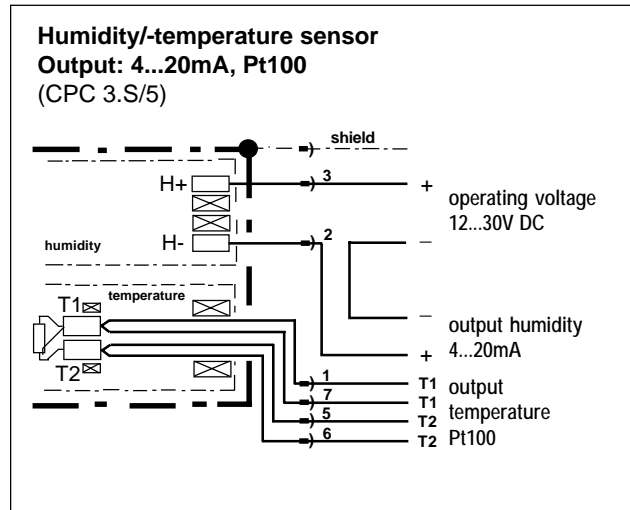
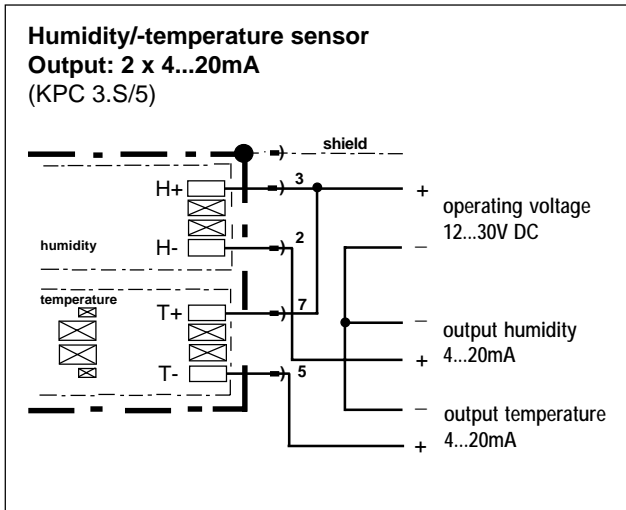
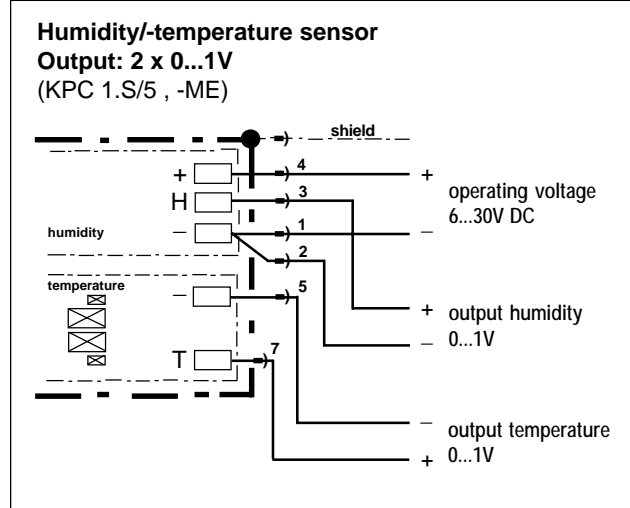
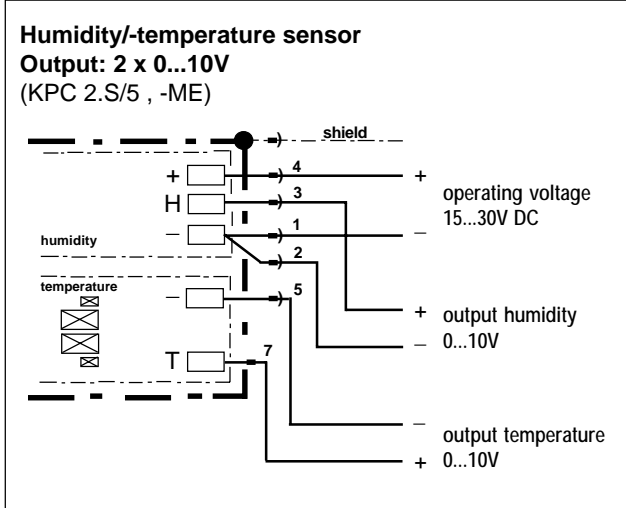


Connection diagram

Humidity/temperature sensors

Compact sensors with plug-in connection

series .S, .S-ME



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