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Product info sheet no. C 4.7 - Series -ME
Humidity / temperature sensors
IP65 - for wall mounting

Description
MELA®-humidity/-temperature sensors in this series are supplied with a robust aluminium die cast housing with an aluminium sensor part to measure relative humidity and temperature in air and other non-aggressive gases. The sensor is suitable for outdoor use.

The advantages of the series .../9 are its improved dynamics, in particular at low air speeds and also its increased service life, even under more challenging operating conditions (pollutant impact or permanent humidity > 95 %rh).

When air speeds are extremely high combined with a high number of particles, using the series .../9 is not recommended. For extreme applications (near the sea, desert, mountains, areas with high air speed etc.) we recommend our stainless steel sinter filter **types ZE 21** resp. **ZE 22** (not recommended for the series .../9, see product info sheet F 5.1).

Type Versions

Measured variable	Analogue output	Order designation
F rel. humidity	0...10 V	FGC2/x-ME
	4...20 mA	FGC3/x-ME
C r.h. + temp. (passive)	0...10 V, Pt100	CGC2/x-ME
	4...20 mA, Pt100	CGC3/x-ME
K r.h. + temp. (active)	2 x 0...10 V	KGC2/x-ME
	2 x 4...20 mA	KGC3/x-ME
T temperature	Pt100	TGC5/x-ME
	0...10 V	TGC2/x-ME
	4...20 mA	TGC3/x-ME
weight		

for x=5: membrane filter ZE20
x=6: sintered filter made of stainless steel ZE21
x=9: integrated element filter made of PTFE and protective plastic basket ZE16

Technical data

Humidity
measuring range ..... 0...100% rh
accuracy (10...40°C; 5...95% rh) ..... ±2% rh
influence of temperature <10°C, >40°C ..... <0.1%/K

Temperature
measuring element ..... Pt 100 class 1/3-DIN
measuring range ..... -30...+70 °C

accuracy output: 0...10 V .....3/4-wire ..... ±0.2 K
output: 4...20 mA ...2-wire ..... ±0.3 K
influence of temperature <10°C, >40°C ..... ±0.007 K/K

Other data
ambient temperature ..... -40...+80 °C
operating voltage
current output ..... 12...30V DC
voltage output ..... 24V±10% AC
or .....15...30 V DC
degree of protection ..... IP 65
housing material
sensor part ..... aluminium
transformer part ..... pressure die casting of alu
external load (voltage output) ..... ≥10kΩ
external load (current output) ..... acc. diagramm
power consumption (voltage output) ..... < 5mA
minimum air speed across the sensor
output: 0 ... 10V, 2x 0 ... 1V ..... ≥ 0.5 m/s
4 ... 20mA, 2x 0 ... 10V ..... ≥ 1.0 m/s
2x 4 ... 20mA ..... ≥ 1.5 m/s
self-heating coefficient Pt100 (v=2m/s in air) 0.2K/mW
Directive about electromagnetic compatibility **2014/30/EU**
DIN EN 61326-1 ..... issue 07/13
DIN EN 61326-2-3 ..... issue 07/13

User instructions

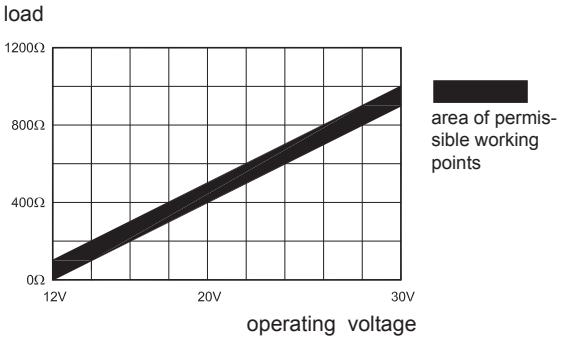
Install the Mela®-humidity/temperature sensors at a place in the room, plant or equipment where characteristic levels of humidity occur. Avoid installing them close to heaters or windows or against outside walls.
The specified minimum air speeds and - with current output - the load according to the operating voltage (diagram) should be complied with. Deviations may lead to additional measuring faults resulting of the self-heating of the sensor.
When installing the sensor, do avoid positions where water ingress can occur. 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 61326-2-3 when it is in use, we recommend that you use a screened cable (type recommended: **8x AWG 26 C UL order no. 5339**) for connecting the sensors and have this fitted into the sensor's EMC heavy-gauge conduit thread by a qualified electrician.

Dust does not cause any harm to the humidity sensor, however, it does affect dynamic performance. If there is an excessive build-up of dust on the sensor element, you can blow it off or rinse it carefully with distilled water. It is important not to touch the highly sensitive sensor element in the process.
For suitable mounting supports and other accessories please refer to our product info sheet no. F 5.1.

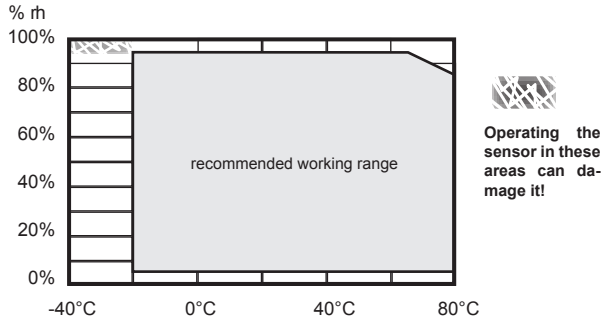
Please consult the ***application instructions for the sensing elements*** (product info sheet no. A 1) or check with the manufacturer for further information which you need to bear in mind when using humidity sensors with capacitive sensing elements.

Sensors with voltage output have no galvanic separation between output and operating voltage at the negative pole!

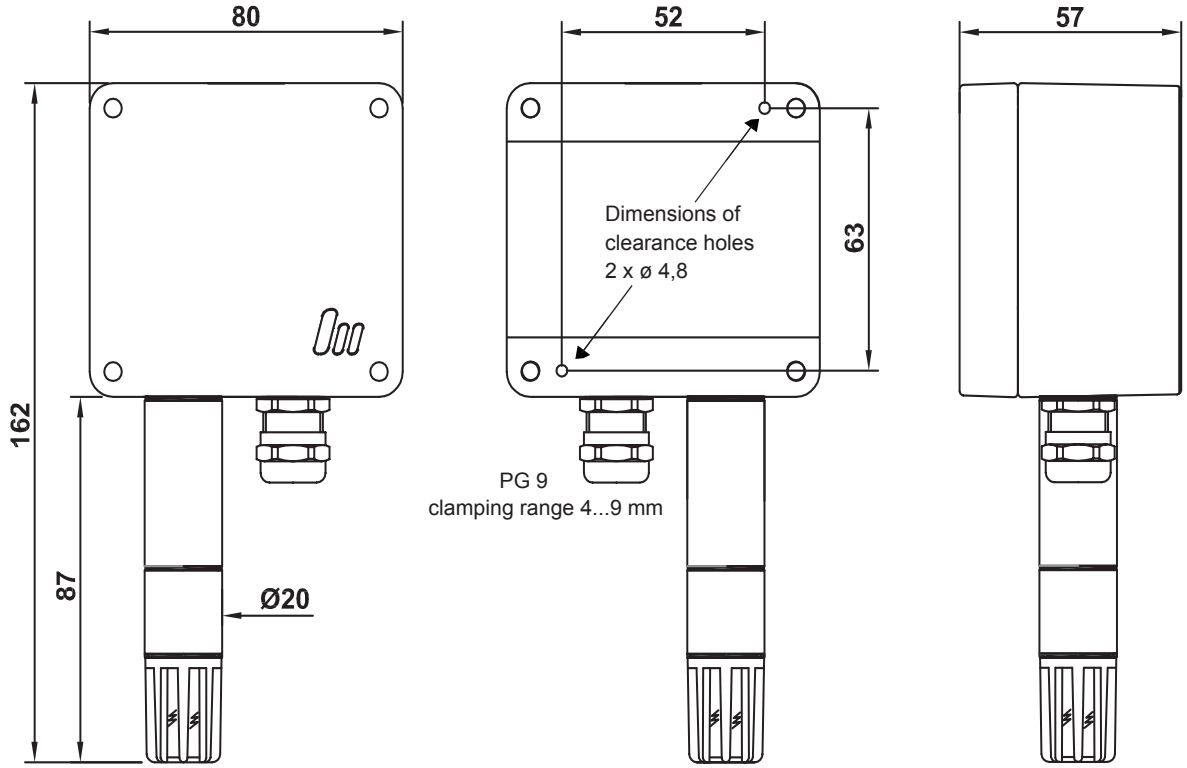
Load at current output



Working range for humidity and temperature



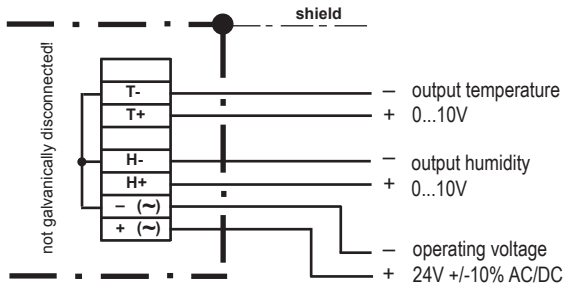
Dimensions



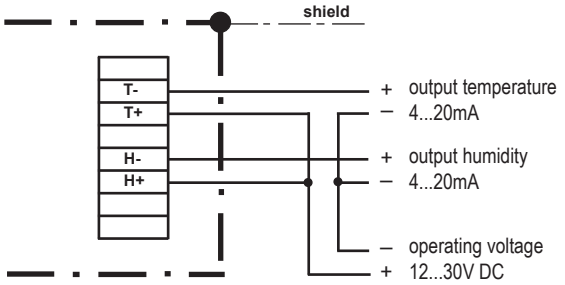
Connection diagrams

Humidity/- temperature sensors
Meteorological design

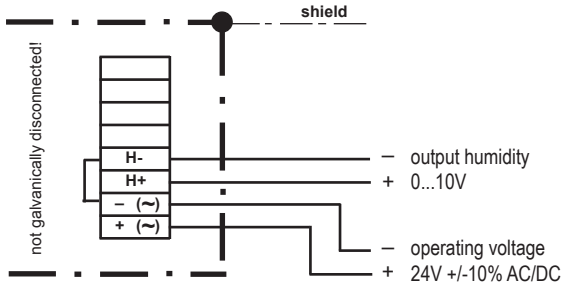
Humidity/- temperature sensor
Output: 2 x 0...10V
(KGC2/...-ME)



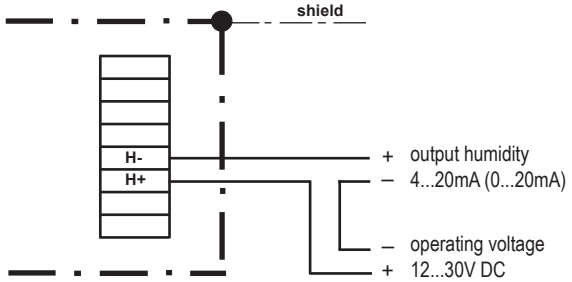
Humidity/- temperature sensor
Output: 2 x 4...20mA
(KGC3/...-ME)



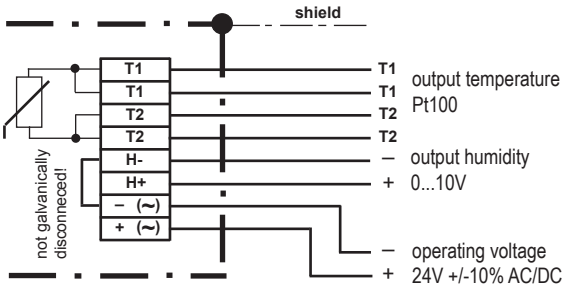
Humidity sensor
Output: 0...10V
(FGC2/...-ME)



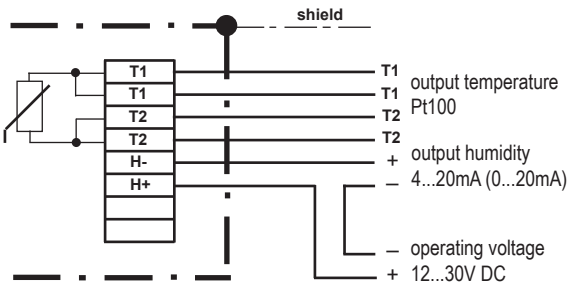
Humidity sensor
Output: 4...20mA (0...20mA)
(FGC3/...-ME , FGC4/...-ME)



Humidity/- temperature sensor
Output: 0...10V, Pt100
(CGC2/...-ME)



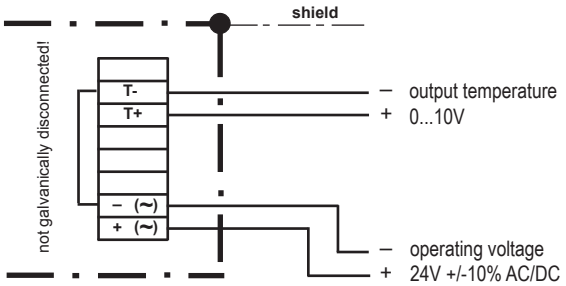
Humidity/- temperature sensor
Output: 4...20mA (0...20mA), Pt100
(CGC3/...-ME , CGC4/...-ME)



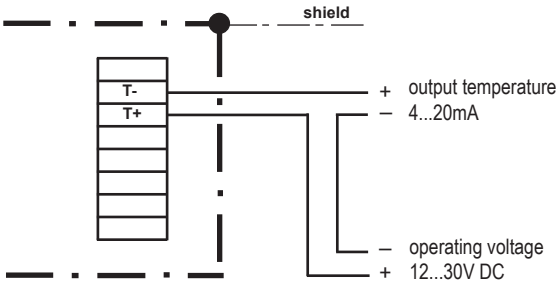
Connecting diagram

Humidity/- temperature sensors
Meteorological design

Temperature sensor
Output: 0...10V
(TGC 2/...-ME)



Temperature sensor
Output: 4...20mA
(TGC3/...-ME)



Temperatursensor
Output: Pt100
(TGC 5/...-ME)