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Product info sheet no. C 4.7 - Series -ME
Humidity / temperature sensors
Outdoor use

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 for outdoor use.

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

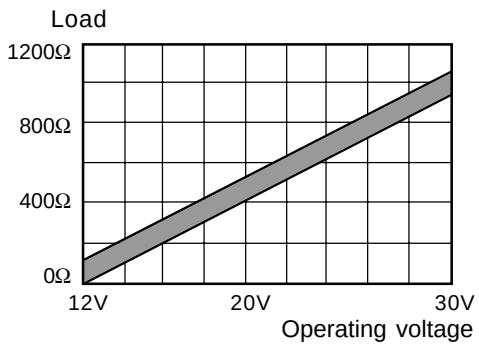
- high long-term stability
- almost linear characteristic curve
- resistance to dew formation
- small hysteresis
- good dynamic performance

The **ZE 20-type** membrane filter, which is fitted as standard, provides the element with reliable protection outdoors.

Type Versions (Order designation)

Measured variable	Analogue output		wall-mounted	
F rel. humidity	0...10 V		FGC2/5-ME	
	4...20 mA		FGC3/5-ME	
C r.h. + temp.				
	0...10 V , Pt100		CGC2/5-ME	
	4...20 mA, Pt 100		CGC3/5-ME	
K r.h. + temp.	2 x 0...10 V		KGC2/5-ME	
	2 x 4...20 mA		KGC3/5-ME	
T temperature	Pt 100		TGC5/5-ME	
	0...10 V		TGC2/5-ME	
	4...20 mA		TGC3/5-ME	
Weight approx.			470 g	

Special versions available on request.



Technical data

Humidity
measuring range ..... 0...100% rh
accuracy (@23°C) ..... ±1,5% 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

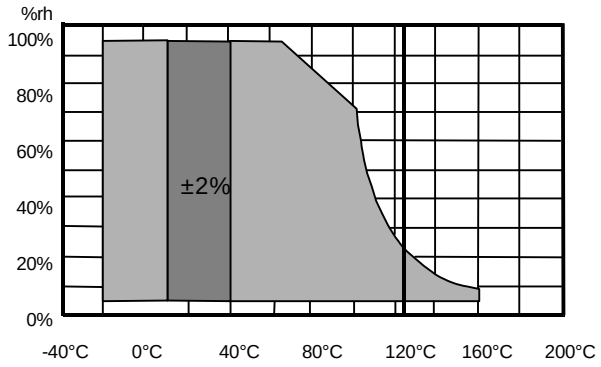
Other data
ambient temperature ..... -40...+80 °C
operating voltage
current output ..... 12...30V DC
voltage output ..... 24V±10% AC
or .....15...30 V DC
degree of protection ..... IP 65
housing material
sensor part..... aluminium
transformer part ..... pressure die casting of alu
load resistance (voltage output) ..... ≥10kΩ
load resistance (current output).....acc. diagramm
power consumption (voltage output) ..... approx. 5mA
electromagnetic compatibility
emitted interference ..... EN 55011 Kl.B
noise immunity ..... EN 50082-2
„subject to technical modifications“

User instructions

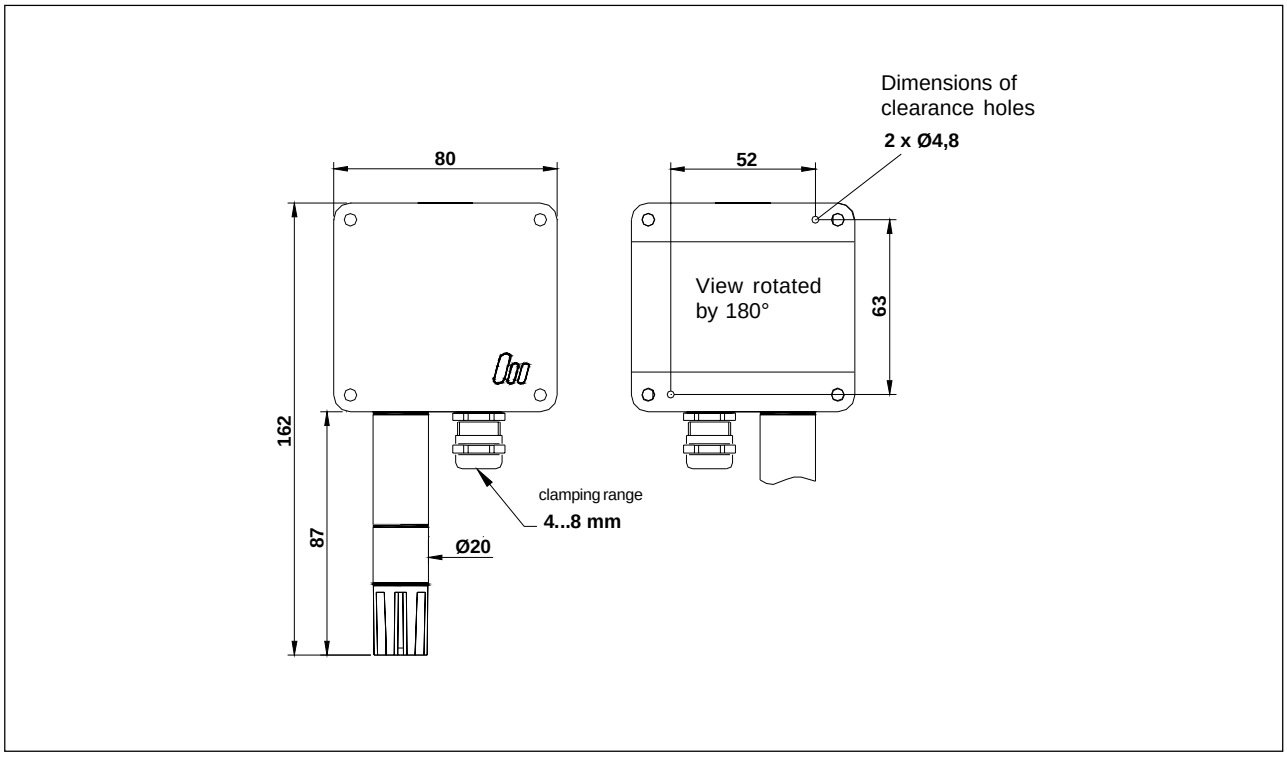
Install the MELA- humidity/temperature sensors in a place where characteristic climatic conditions can be measured. We recommend to use the MELA-***ZA 24-type mounting plate*** (product info sheet no. F 5.1) for wall or duct-mounting.
The sensor can be installed in any position. However, do not position it in a position 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 80082-2 when it is in use, we recommend to 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.
In order to check functioning in the place of installation, we recommend that you use the ***ZE 31/1-type humidity standard*** with a ***ZE 33-type auxiliary adapter*** (product info sheet no. F 5.2).
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, carefully unscrew the sintered protective basket and rinse it out.
Loose dirt can also be removed from the measuring element by blowing it off or by rinsing it carefully with distilled water. In order to avoid corrupted measurement readings, only screw the sintered protective basket back on when it is completely dry. Do not touch the highly sensitive sensor 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 sensingelements.

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

Tolerance validity range for humidity



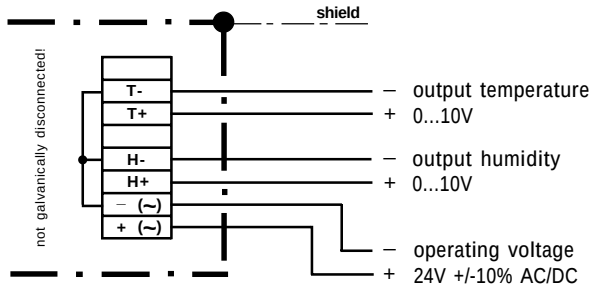
Dimensions and Fitting Instructions



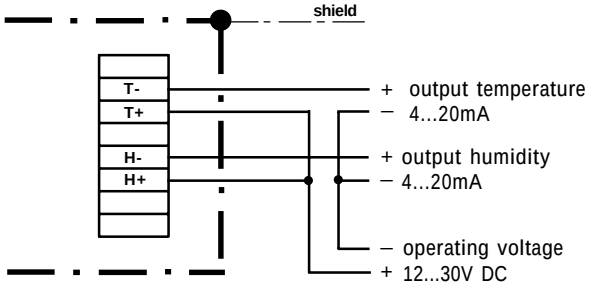
Connection diagram

Humidity/-temperature sensors
for industrial applications up to 200°C, up to 25 bar

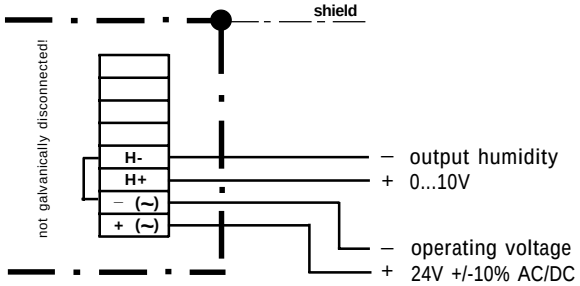
Humidity/-temperature sensor
Output: 2 x 0...10V
(KGC2/5-ME)



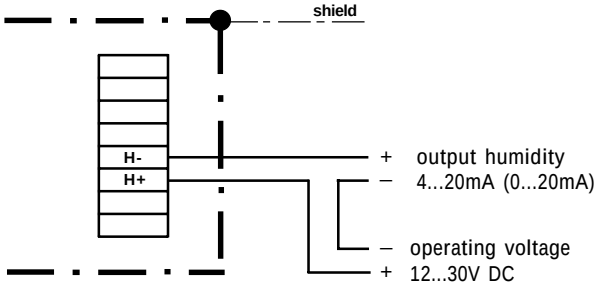
Humidity/-temperature sensor
Output: 2 x 4...20mA
(KGC3/5-ME)



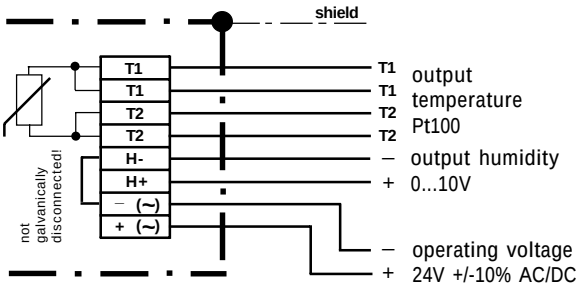
Humidity sensor
Output: 0...10V
(FGC2/5-ME)



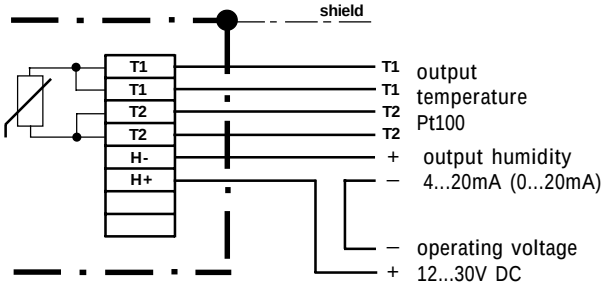
Humidity sensor
Output: 4...20mA (0...20mA)
(FGC3/5-ME , FGC4/5-ME)



Humidity/-temperature sensor
Output: 0...10V, Pt100
(CGC2/5-ME)



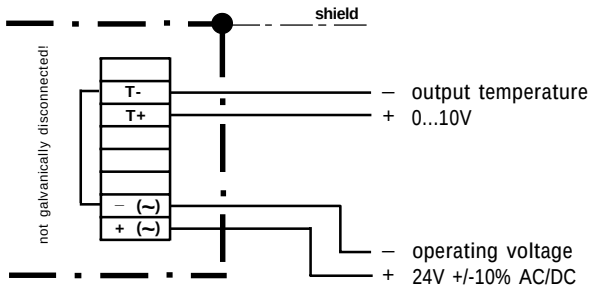
Humidity/-temperature sensor
Output: 4...20mA (0...20mA), Pt100
(CGC3/5-ME , CGC4/5-ME)



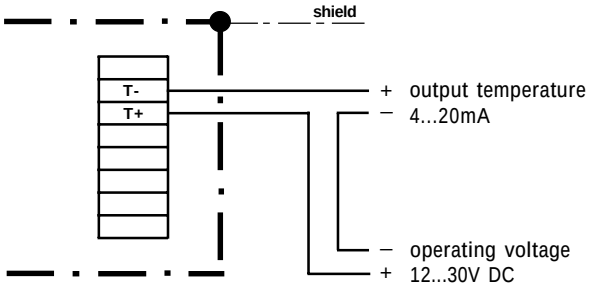
Connection diagram

Humidity/-temperature sensors

Temperature sensor
Output: 0...10V
(TGC 2/5-ME)



Temperature sensor
Output: 4...20mA
(TGC3/5-ME)



Temperature sensor
Output: Pt100
(TGC 5/5-ME)