

# EE22 Series

## Humidity / Temperature Transmitter with interchangeable probes

Specific for the EE22 series are the interchangeable sensing probes with connector. The calibration data is stored in the probes, which are interchangeable and therefore probe replacement does not affect the performance of EE22. The outstanding accuracy over the entire temperature range is based on very precise calibration methods and on the latest microprocessor technology. Well-proven E+E humidity sensor elements ensure excellent long-term stability.

For high temperature applications (up to +80 degC) or in case of limited space availability, the sensing probes can be connected to EE22 housing with cables (2, 5 or 10m) without any repercussions for the overall accuracy of the instrument.

Voltage 0 - 1 / 5 / 10V or current 4 - 20mA (2 wire) outputs are available, of which the temperature output can be scaled according to the application (see ordering code).

EE22 is suitable for direct wall mounting and for installation on rails according to DIN EN 50022. The optional display indicates the actual RH and T values.



Model A2

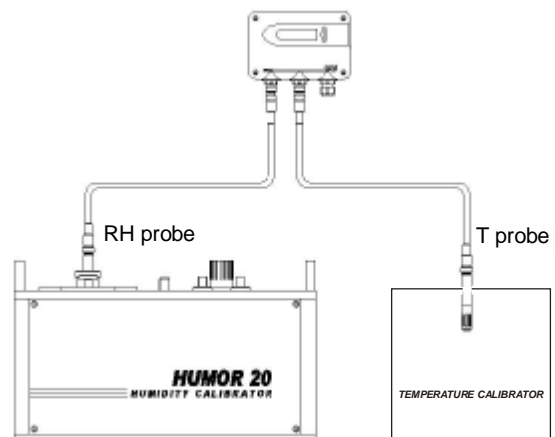


Model A1

### Field calibration of humidity and temperature

In the pharmaceutical and biotechnology industry a Loop-Calibration of the RH and T outputs, recommended by the FDA (Food and Drug Administration), can easily be performed utilizing separate RH and T probes (Type: EE22-FTx2x).

The RH and T outputs can be adjusted with push buttons on the printed circuit board.



### Typical Applications

- pharmaceutical industry
- clean rooms
- storage rooms
- green houses
- cooling chambers

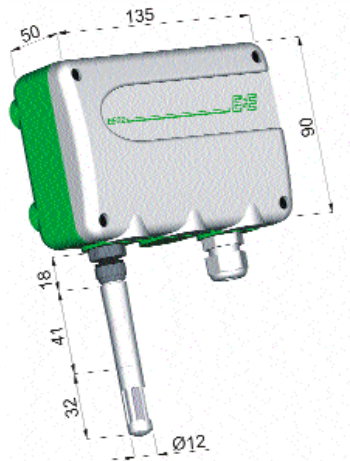
### Features

- interchangeable probes
- remote sensing probe up to 10m
- measuring range 0...100% RH / -40...+80 degC
- accuracy  $\pm 2\%$  RH /  $\pm 0.2$  degC
- cost saving, easy loop-calibration of RH and T probes

## Housing Dimensions (mm) / Models

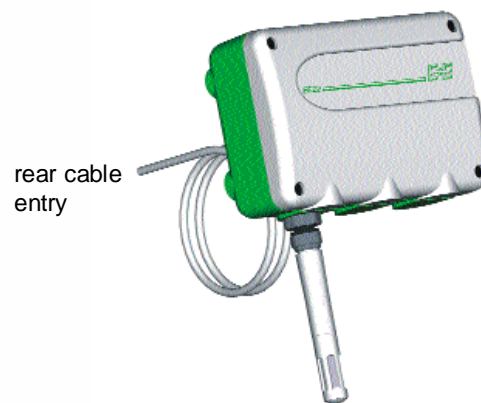
### Model A

Wall mounting - cable gland M16x1.5  
**EE22-FTAx**



### Model F

Wall mounting - rear cable outlet  
**EE22-FTFx**



## Versions

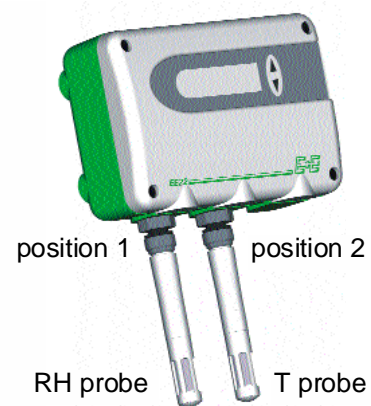
with one RH&T probe

Ordering code: **EE22-FTx1x**



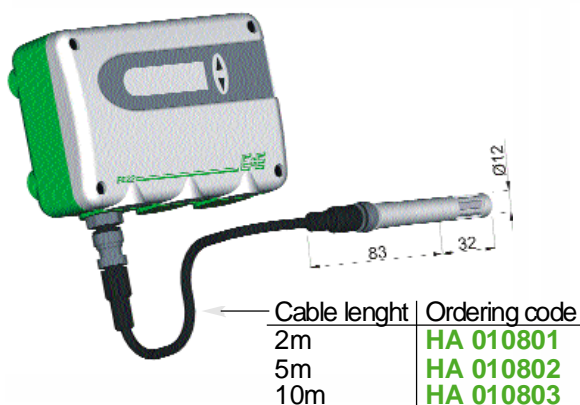
with two separate probes for RH and T

Ordering code: **EE22-FTx2x**



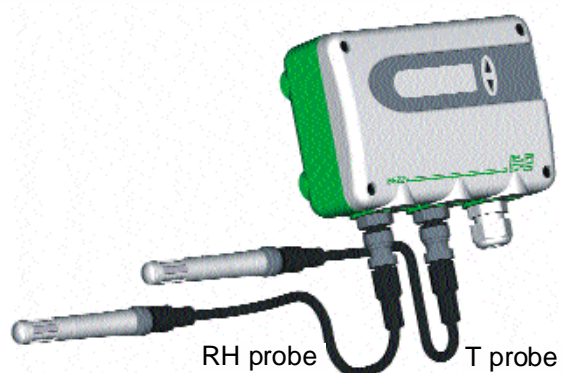
with one remote RH&T probe

Ordering code: **EE22-FTx1x**  
**+HA xxxx**



with two remote separate probes for RH and T

Ordering code: **EE22-FTx2x**  
**+2x HA xxxx**



## Technical Data

### Measuring values of sensing probe (based on 22 ±3 degC)

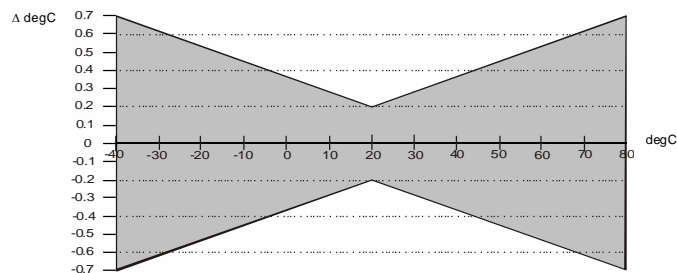
#### Relative Humidity

Sensor element <sup>1)</sup>	HC103	
Working range <sup>1)</sup>	0...100% RH	
Accuracy incl. hysteresis and nonlinearity	±2% RH (0...90%)	±3% RH (90...100%)
Temperature dependence of probe	$< (0.025 + 0.0003 \times \text{RH}) \left[ \frac{\% \text{RH}}{\text{degC}} \right]$	

#### Temperature

Sensor element	Pt1000 (Tolerance class A, DIN EN 60751)
Working range sensing probe	fixed sensing probe: -40...+60 degC (-40...140°F) remote sensing probe: -40...+80 degC (-40...176°F)

Accuracy (typ.)



### Outputs

0...100% RH/ xx...yy degC <sup>2)</sup>	0 - 1V	-0.5mA < I <sub>L</sub> < 0.5mA
(temperature output scale according to Txx ordering code)	0 - 5V / 0 - 10V	-1mA < I <sub>L</sub> < 1mA
Temperature dependence of analogue outputs	4 - 20mA (two wire)	R <sub>L</sub> < 500 Ohm
	max. 0.2 $\frac{\text{mV}}{\text{degC}}$ resp. 1 $\frac{\mu\text{A}}{\text{degC}}$	

### General

Supply voltage SELV	for 0 - 1V output: 10 - 35V DC or 9 - 29V AC	
	for 0 - 5V output: 12 - 35V DC or 15 - 29V AC	
	for 0 - 10V output: 15 - 35V DC or 15 - 29V AC	
	for 4 - 20mA output: 10 - 35V DC	
Load resistor for 4 - 20mA output	$R_L < \frac{U_v - 10V}{0.02 \text{ A}} [\Omega]$	
Current consumption	typ. 10mA for DC supply	typ. 20mA <sub>eff</sub> for AC supply
Electrical connection	screw terminals max. 2.5mm <sup>2</sup>	
Cable gland	M16x1.5 (optional connector; type: Lumberg, RSF 50/11)	
Sensor protection	membrane filter, PTFE filter, metal grid filter	
Material of housing and probe	PC	
Protection class of housing	IP65	
Electromagnetic compatibility	EN 61000-6-3 EN 61000-6-2	
Working temperature range of probe	-40...+60 degC (-40...140°F) / +80 degC (176°F) for remote sensing probe	
Working temperature range of electronics	-40...+60 degC (-40...140°F)	
Storage temperature range	-40...+60 degC (-40...140°F)	

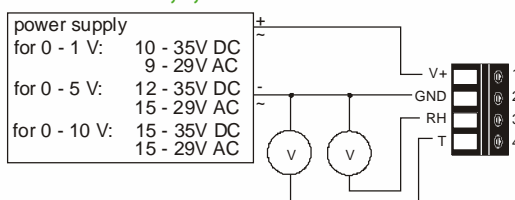
<sup>1)</sup> refer to the working range of the humidity sensor HC103!

<sup>2)</sup> refer to ordering code

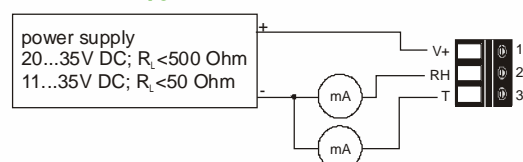


## Connection Diagram

### EE22-FTxx/1,2,3x



### EE22-FTxx/6x



## EE22

## Ordering Guide

### Position 1 - Transmitter

### EE22-FT

Hardware Configuration			
Output	0-1V	(1)	1
	0-5V	(2)	2
	0-10V	(3)	3
	4-20mA	(6)	6
Model	Wall mounting - cable gland M16x1.5	(A)	A
	Wall mounting - rear cable outlet	(F)	F
Probe	1 probe RH&T active	(1)	1
	2 separate probes for RH and T active	(2)	2
Filter	membrane filter	(1)	1
	PTFE filter	(5)	5
	metal grid filter	(6)	6
Display	without display	(no Code)	
	with display	(D07)	D07
Plug	without plug	(no Code)	
	with plug (type: Lumberg, RSF 50/11)	(C03)	C03
Software Configuration			
T-Unit	°C	(no Code)	
	°F	(E01)	E01
Temperature range	-40...60 degC (-40...140°F) (T02)	0...80 degC (32...176°F) (T21)	Select according to Ordering Guide (T02 - T48)
	-10...50 degC (14...122°F) (T03)	-40...80 degC (-40...176°F) (T22)	
	0...50 degC (32...122°F) (T04)	-20...80 degC (-4...176°F) (T24)	
	0...60 degC (32...140°F) (T07)	-20...60 degC (-4...140°F) (T25)	
	-30...70 degC (-22...158°F) (T08)	-30...50 degC (-22...122°F) (T45)	
	-10...70 degC (14...158°F) (T11)	-20...50 degC (-4...122°F) (T48)	
	-30...60 degC (-22...140°F) (T20)	others on request	
Position 2 - Probe cable			
Cable lenght	2m		HA 010801
	5m		HA 010802
	10m		HA 010803

## Accessories / Replacement Parts (For further information, see data sheet "Accessories")

- Replacement probe EE07-FTx
- Replacement probe EE07-Tx
- Display
- Filter caps
- probe cable 2m / 5m / 10m
- bracket for rail installation
- external supply unit
- RH calibration set

## Order Example

Position 1 - Transmitter: **EE22-FT2A26C03/T07**  
 Humidity/Temperature Transmitter EE22 Series  
 Output: 0-5V  
 Model: Wall mounting - cable gland M16x1.5  
 Probe: 2 separate probes for RH and T  
 Filter: metal grid filter  
 Display: without display  
 Plug: with plug  
 T-Unit: °C  
 Temperature range: 0...60 degC (32...140°F)

Position 2 - Probe cable: **2x HA 010802**  
 Cable lenght: 2x 5m

## Contact