

# Humidity & Temperature Electronic Transmitter with replaceable “Humi-chip” module H1 line

The “H1” transmitter operates by using the value made by a highly accurate capacitive sensor that is integrated in a silicon microchip.

This new technology allows for accurate process measurements, is extremely reliable, and offers excellent long-term stability. The sensor is very durable and moisture resistant.

The “Humi-chip” module that incorporates the sensor can be easily interchanged without the need for re-calibration.

For further operator ease of use, relative humidity values can be displayed on the optional integrated LCD display, or sent via analogue outputs to other display devices.

- **Humidity and Temperature outputs:**

4...20mA 2 wire or 0...10V  
Both analogue outputs are isolated.

Temperature output is also available in RTD (Pt100 3 wire) version.

- **Accuracy:**

RH% 1.8 between 10 and 90%  
Temperature 0.5°C max.

- **Stability:**

Long-term drift < 0.5 RH%/year.

- **“Humi-Chip” environmental limits:**

-30...+90°C

- **Housing:**

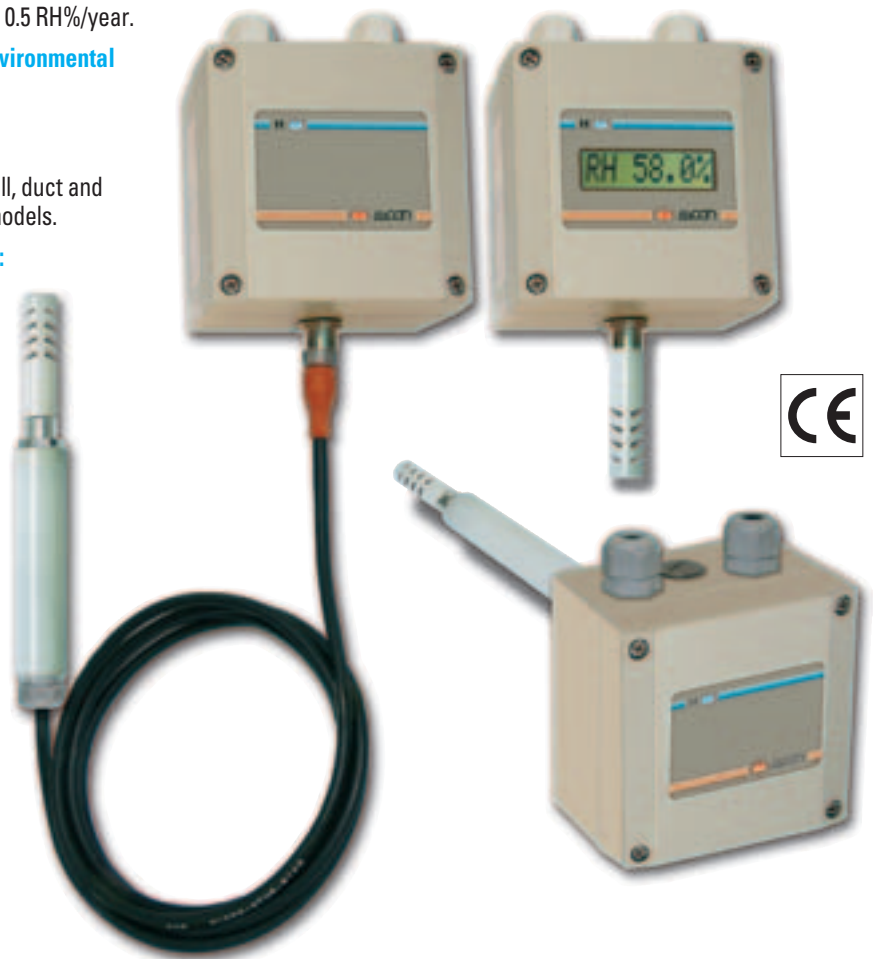
IP66, for both wall, duct and remote sensor models.

- **Protection filter:**

Wire mesh/sintered stainless steel or teflon, protects against dust and other atmospheric contaminants.

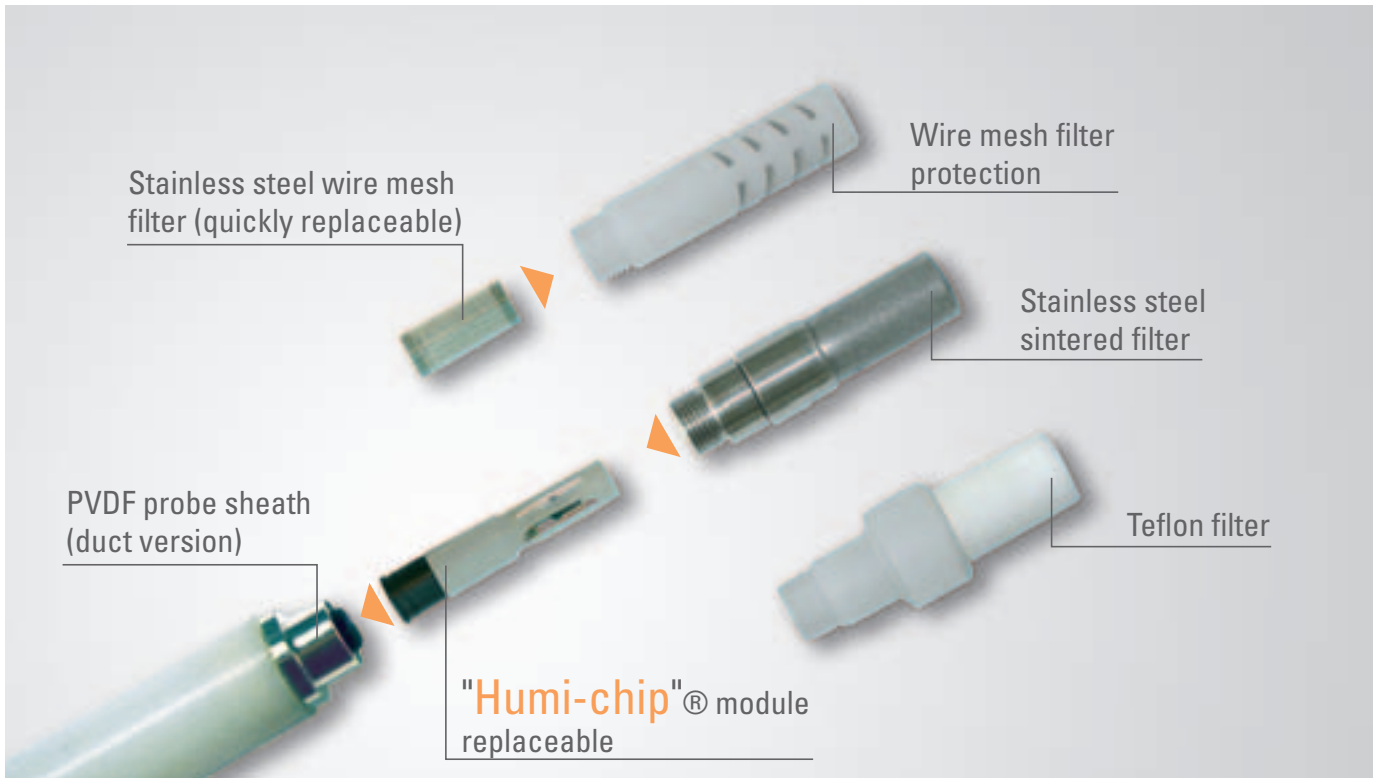
- **Electrical connections:**

Terminal strip or 5 pole M12 connectors



# Humi-chip<sup>®</sup> Module - Accurate, condensation

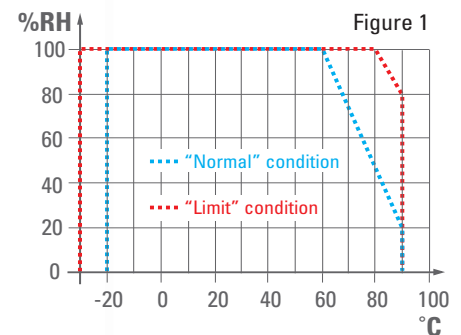
## General description



## Characteristics at 25°C environmental temperature

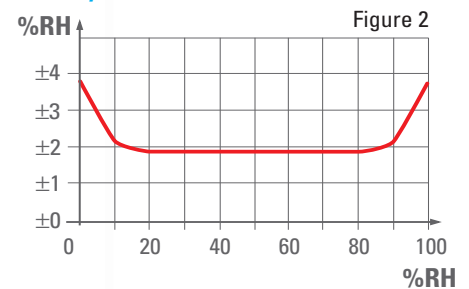
1 <sup>st</sup> output Humidity	Range	0... 100% RH	
	Output	4... 20mA 2 wire; 500Ω max. or 0... 10V; 500Ω min.	
	Accuracy (figure 2)	1.8% between 10... 90% RH Non-linearity, hysteresis and repeatability included see figure 1	
	Working limits	see figure 1	
	Typical long-term drift	< 0.5 RH%/year	
2 <sup>nd</sup> output Temperature (option)	Available ranges	-30... +70°C (-22... 158°F) -20... +30°C (-4... 86°F) 0... +50°C (32... 122°F) 0... +100°C (32... 212°F)	
	Output	4... 20mA 2 wire; 500Ω max. or 0... 10V; 500Ω min. Isolated vs. Humidity output	
	Accuracy (figure 3)	Output 4... 20mA <0.5°C between -20... 80°C (-4... 176°F) Output 0... 10V <0.5°C between 0... 50°C (32... 122°F)	
	RTD output - as alternative to mA or V output	(PT100 IEC 751) Tolerance: Class B (1/2 DIN) - 3 wire connection	
LCD display (option)	Digital display dimensions	10.5mm	
Power supply	Display range	0.0... 100.0% RH	
	4..20mA output	10... 30Vdc	Power consumption 2W max.
General characteristics	0... 10V output	18... 27Vac or 20... 30Vdc	
	Housing material	Epoxy painted aluminum (RAL 7038) Protection: IP66	
	Probe material	SS AISI316 for remote sensor version PVDF - probe for duct mounting version	
	Safety	Compliance to EN 61010-1, double isolation, pollution class 2, installation class II	
	Electromagnetic compatibility	Compliance to CE standards EN 50081-2, EN 50082-2	
	Environmental temperature housing	-25... +70°C standard -20... +60°C with 2nd temperature output and/or display	
	Electrical connection	Spring terminal strip, AWG28-16 wire or 5 pole M12 threaded connector, AWG20 wires	
Overall dimensions	see page 3		

## Working limits of "Humi-chip" module

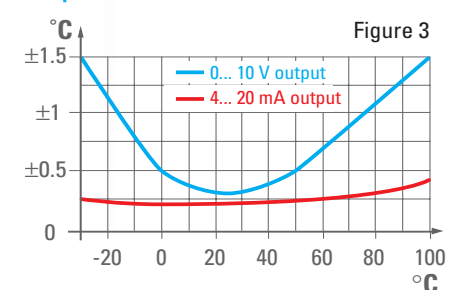


The measured reading tolerance is guaranteed through the "Normal" working conditions. A long-time period, at "Limit" conditions may generate a permanent drift up to +2 RH %.

## Humidity Tolerance



## Temperature Tolerance

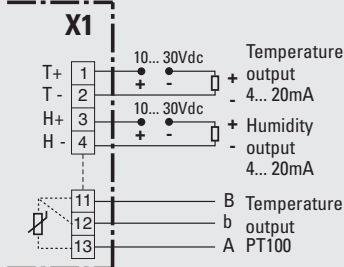


# resistant, pre-calibrated and easily replaceable

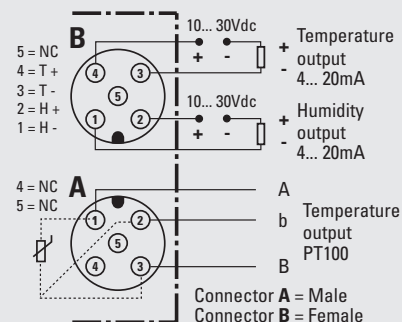
## Electrical wiring

### 4...20 mA models with 2 wire output

#### Version with internal removeable spring terminal strip

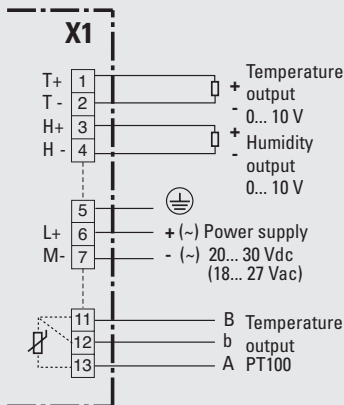


#### Version with 5 pole M12 connector

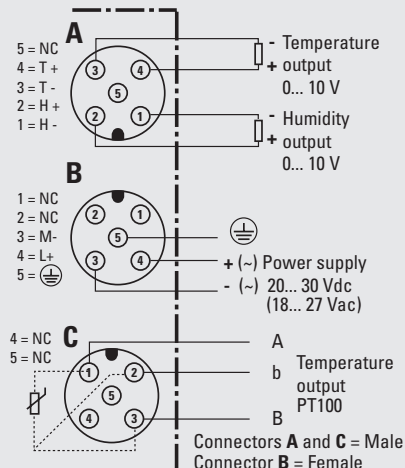


### 0...10V output models

#### Version with internal removeable spring terminal strip



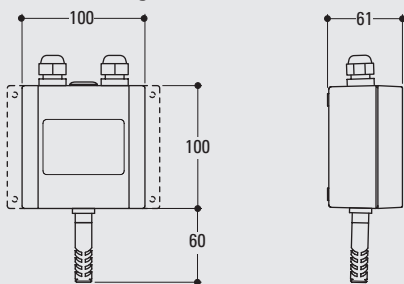
#### Version with 5 pole M12 connector



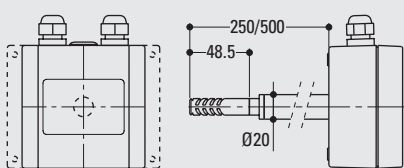
## Dimensions

### Mounting

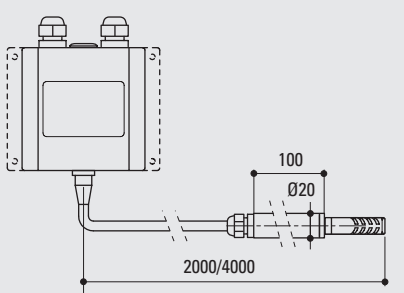
#### Wall mounting



#### Duct mounting

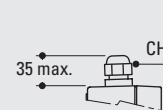


#### Remote sensor mounting

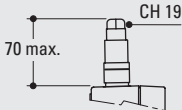


### Output

#### Conduit M16

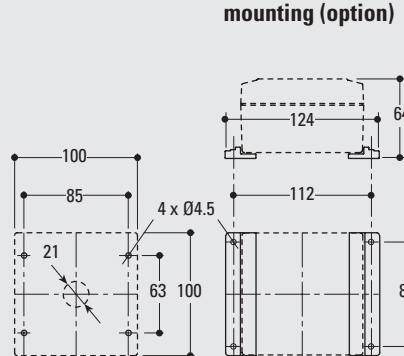


#### M12 Connector

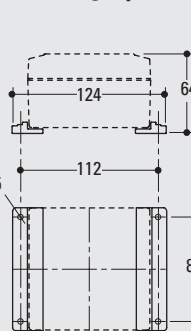


### Mounting holes

#### Standard



#### Brackets for wall mounting (option)



## Applications

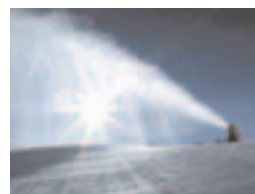
Storerooms to ripen and preserve fruit and vegetables ...



Storerooms for seasoning meat and cheese ...



Artificial snow making



Air conditioning and ventilation of industrial buildings (HVAC) ...



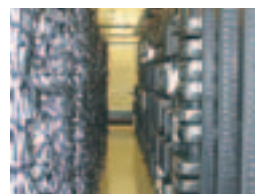
Commercial buildings, airports ...



Environmental conditions in libraries and museums ...



Data processing centers and computer laboratories ...



Green-house and incubator ...



## Ordering codes

Model: **H1** - **A B C D** - **E F G** - **H I 0 0**

Mounting - Dimensions

Probe material

Filter

LCD Display (option)  
Electrical connections  
Temperature output (option)  
Humidity output

Mounting	Dimensions	A	B
Wall	Ø13 x L52	P	0
Duct	Ø20 x L250	C	2
	Ø20 x L500	C	5
Remote	Ø20 x L100, cable 2m	R	2
	Ø20 x L100, cable 4 m	R	4

Probe material	C
PVDF plastic	0

Filter	D
Stainless steel wire mesh	R
Sintered	S
Teflon	T

1 <sup>st</sup> output - Humidity	E
4... 20 mA (2 wire) / 0... 100% RH	1
0... 10 V / 0... 100% RH	2

2 <sup>nd</sup> output - Temperature (option)	F
Not fitted	0
4...20 mA (2 wire) when 1 <sup>st</sup> output = 4...20 mA	1
0...10 V when 1 <sup>st</sup> output = 0...10 V	2
PT100 - Compliance with IEC751	P

Temperature range	G
(if F = 0 or F = P)	0
-30... +70°C	1
-20... +30°C	2
0... 50°C	3
0... 100°C	4

Electrical connections	H
Terminals, with M16 conduit	M
2 connectors (M + F) M12, IP66	C

LCD Display (option)	I
Not fitted	0
Internal LCD Display	D

Ordering code example:

model **H1-C20R-111-MD00**

Humidity and temperature transmitter, duct mounting  
PVDF probe Ø20 x L250, stainless steel wire mesh.

Humidity output: 4... 20 mA/0...100%RH. Temperature  
output: 4... 20 mA. Range: -30... +70°C. Terminal  
electrical connections and internal LCD display

## Accessories and spares

### "Humi-Chip ®" module

Easy and fast replacement  
(no calibration needed)

Ordering code:

Model: **H-HUMICHIP**



### Wire mesh stainless steel filter

with threaded filter protection  
Porosity: 25 µm  
Sampling time: 5 s (0...63%)  
Suitable for clean environments; (no  
dust and moderate wind conditions)

Ordering code:

Model: **H-FRI25**



### Mounting brackets

for wall mounting  
Material: epoxy painted  
aluminum (RAL 7038)  
Distance between  
centers: 112 x 85 (page 3)

Ordering code:

Model: **H-SFE2**



### Stainless steel sintered filter

with threaded connection  
Porosity: 5 µm  
Sampling time: 10 s (0...63%)  
Suitable for dusty environments; not  
moisure resistant

Ordering code:

Model: **H-FSI05**

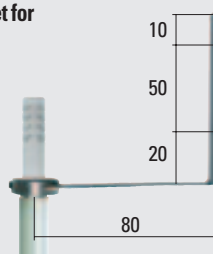


### Wall mounting bracket for remote sensor

Material: SS DIN 1.4401  
2 x Ø4 screws holes

Ordering code:

Model: **H-SMP01**



### Teflon filter

with threaded connection  
Porosity: 10 µm  
Sampling time: 120 s (0...63%)  
Suitable for aggressive chemical  
environments, not suitable with high  
grade humidity

Ordering code:

Model: **H-FT10**

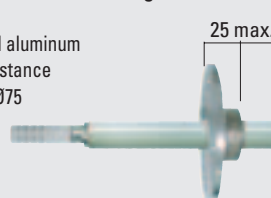


### Adjustable flange Ø100 self-locking

for Ø20 probe  
Material: anodized aluminum  
No. 4 holes Ø11, distance  
between centers Ø75

Ordering code:

Model: **H-FLA20**



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