Humidity & Temperature Transmitter with replaceable "Humi-chip" module

H1 LINE

User Manual
15.03 • ISTR_M_H1_E_03_--

The "H1" transmitter uses a high accuracy capacitive sensor integrated in a silicon microchip.

This technology allows for accurate and reliable process measurements, and offers excellent long-term stability. The sensor is very durable and moisture resistant; not to be used in presence of chemical contaminants or aggressive compounds.

The "Humi-chip" module that incorporates the sensor can be easily replaced without the need for re-calibration.

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

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INSTALLATION
Recommendations

Humi-Chip measurement module incorporates an integrated temperature sensor.
The measured values are correct when the Humi-Chip Humidity and Temperature are both in equilibrium with the surrounding ambient conditions.
For optimum performance,the following recommendations must be observed:

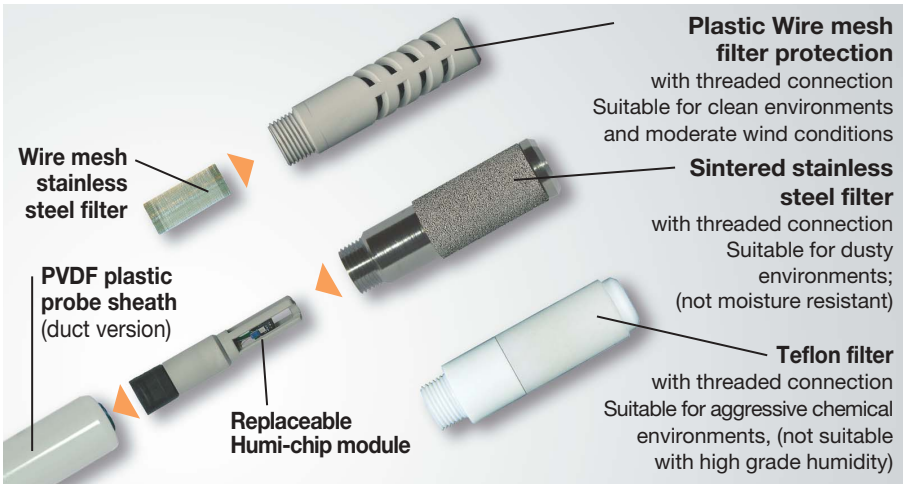
1) Install the sensor in the most representative location of the ambient to be controlled;
2) Avoid direct exposure to sun and atmospheric agents;
3) Avoid installing the sensor next to heaters, coolers, steam vents and humidifiers;
4) Avoid turbulences which can generate unstable pressures.

Cleaning/replacing the dust filter

The dust filter should be cleaned from time to time depending on the working conditions. Cleaning should be done:
1) Removing the filter from the probe as decribed in the "Replacing the Humi-chip module " paragraph ((points 1,2 and 3);
2) Then clean it by washing with water or by blowing with compressed air (the filter must be far from the Humi-chip);

If this is not sufficient,the filter should be replaced.

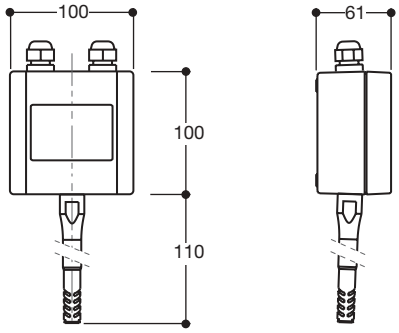
Replacement of the Humi-chip module (no calibration is necessary)



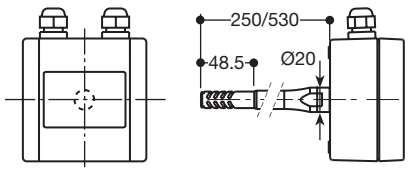
The sensor of the Humi-Chip module does not need any periodic calibration.
The replacement sensor is delivered factory calibrated. Calibration is not required after replacement.
If the replacement of the Humi-Chip module is necessary, proceed as follows:
1) Switch off the power supply;
2) Verify that the Humi-Chip module is at a safe temperature;
3) Unscrew the protection filter;
4) Gently withdraw the module;
5) Insert the new module;
6) Re-install the protection filter.

MOUNTING

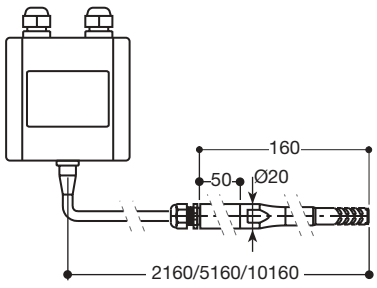
Wall model: H1-P...



Duct model: H1-C...

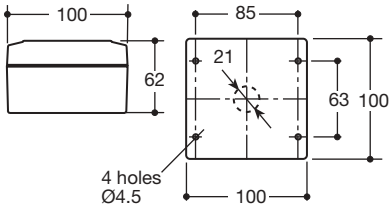


Remote sensor model: H1-R...



Wall mounting: H1-P... and H1-R...

4 internal holes (standard)

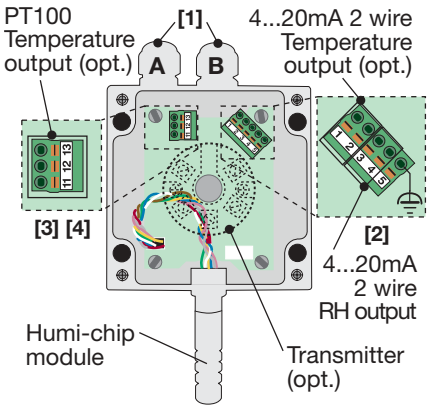


Outputs

Conduit M16

WIRING OF 2 WIRE, 4...20 mA CURRENT OUTPUT MODELS

Version with internal removable spring terminals and M16 conduits



Notes:

[1] Two M16 conduit for output cables up to Ø8.5 mm.

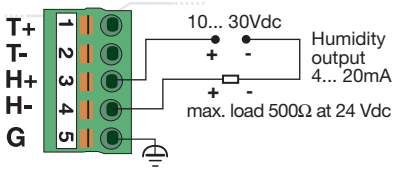
[2] - Spring terminal strip for cable sections of 0.14...1.5mm² (AWG28...AWG16).
- The 4...20 mA RH output is isolated from the optional 4...20 mA temperature output

[3] Spring terminal strip for cable sections of 0.14...1.5mm² (AWG28...AWG16).

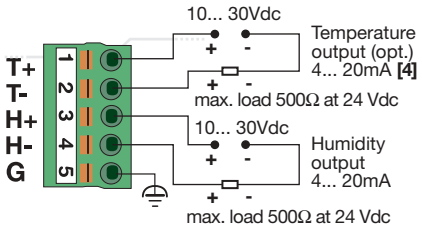
[4] The optional PT100 temperature output is alternative to the 4...20 mA temperature output.

[5] The type of connector (Male/Female) is referred to the connector present on product, not to the one at the end of the cable.

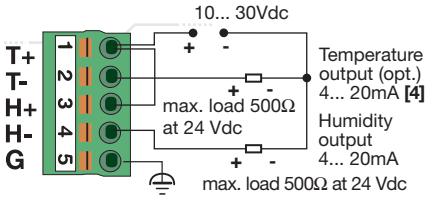
Humidity only (2 wire connection)



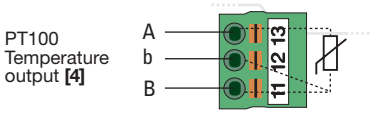
Humidity and Temperature connection with 2 different dc power supplies



Humidity and Temperature connection with only 1 dc power supply

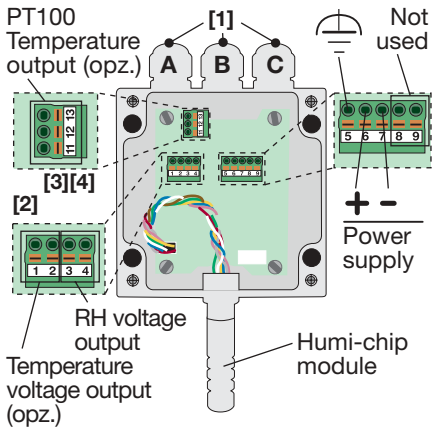


Optional PT100 Temperature



WIRING OF 0...10 V VOLTAGE OUTPUT MODELS

Version with internal removable spring terminals and M16 conduits



Notes:

[1] Three M16 conduit for output cables up to Ø8.5 mm.

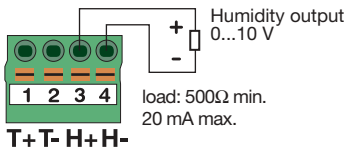
[2] - Spring terminal strip for cable sections of 0.14...1.5mm² (AWG28...AWG16).
- The RH voltage output is isolated from the optional voltage temperature output.

[3] Spring terminal strip for cable sections of 0.14...1.5mm² (AWG28...AWG16).

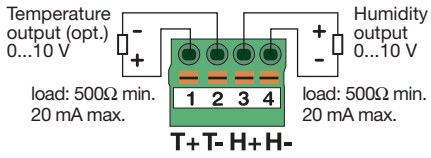
[4] The optional PT100 temperature output is alternative to the voltage temperature output.

[5] The type of connector (Male/Female) is referred to the connector present on product, not to the one at the end of the cable.

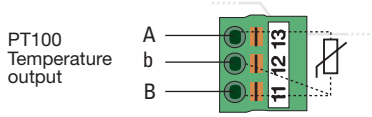
Humidity only



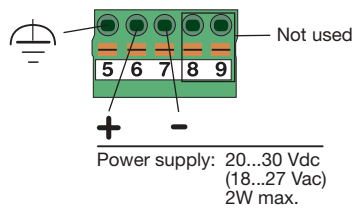
Humidity and Temperature (opt.)



Optional PT100 Temperature



Power supply



Technical specifications (at 25°C environmental temperature)

1st output Humidity	Range	0…100% RH	
	Output	4…20mA 2 wire; 500Ω max. or 0…10V; 500Ω min.	
	Accuracy	1.8% between 10... 90% RH	
		Non-linearity, hysteresis and repeatability included	
	Working conditions Normal (limit)	RH: 0... 100%; Temperature: -20 (-30)... +60 (+90)°C (see Working conditions on Techical bulletin for further information)	
2nd output Temperature (option)	Output	4… 20mA 2 wire, 500Ω max. or 0… 10V, 500Ω min.	
		Isolated vs. Humidity output	
	Accuracy	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	
3rd output	RTD output (optional)	PT100 IEC 751 Tolerance: Class B (1/2 DIN) - 3 wire direct connection	
Power supply	4... 20mA output	10... 30Vdc	Power consumption 2W max.
	0… 10V output	18... 27Vac **or** 20... 30Vdc	
General characteristics	Housing material	Polycarbonate (colour: RAL 7038)	
		Protection: IP66	
	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	
	Housing environmental temperature	-25... +70°C standard	
		-20... +60°C with 2nd temperature output and/or display	
	Electrical connections	Spring terminal strip, AWG28-16 wire (0.14...1.5 mm2)	

Ordering codes

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

- **A** **B**: Mounting - Dimensions
- **D**: Filter
- **E**: Humidity output
- **F**: Temperature output (option)
- **G**: Temperature range
- **I**: LCD Display (option)
- **M**: 3rd output

Mounting	Dimensions	A	B
Wall	Ø20 x L110	P	0
Duct	Ø20 x L250	C	2
	Ø20 x L530	C	5
Remote	Ø20 x L160, cable 2 m	R	2
	Ø20 x L160, cable 5 m	R	5
	Ø20 x L160, cable 10 m	R	1

Filter	D
Stainless steel wire mesh	R
Sintered	S
Teflon	T

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

2nd output - Temperature (option)	F
Not fitted	0
4...20 mA (2 wire) when 1st output = 4...20 mA	1
0...10 V when 1st 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

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

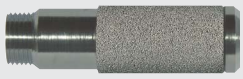
3rd Output (option)	M
Not fitted	0
Pt100	1

Accessories and spares

Pre-calibrated Humi-Chip module
Ordering code: **Mod.: H-HUMICHIP**

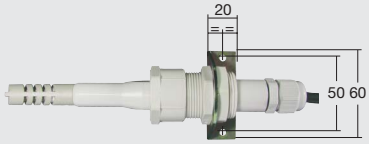
Wire mesh filter + PVDF plastic protection
Ordering code: **Mod.: AH-FRI25**

Stainless steel sintered filter
Ordering code: **Mod.: AH-FSI05**



Teflon filter
Ordering code: **Mod.: AH-FT10**

Wall mounting bracket for remote sensor
Plated steel bracket, 2 x Ø4 screws holes



Ordering code: **Mod.: AH-SMP01**

Adj. flange Ø100 self-locking for Ø20 probe
Material: aluminum, No. 4 holes Ø11, distance between centers Ø75

Ordering code: **Mod.: AH-FLA20**