Precision Manufacturing

WM291
Digital Relative Humidity & Temperature Transmitter, Wall Mount

HYGROSMART ®
INTERCHANGEABLE
MODULE

The WM291 relative humidity transmitter includes the interchangeable Hygrosmart module. The interchangeable module lets you recalibrate the transmitter simply by replacing the sensor head with the Hygrosmart module. As a result, maintenance costs are greatly reduced and down-time is minimized.
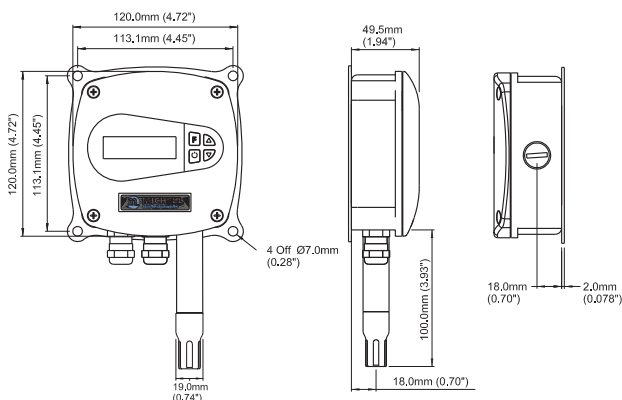
Highlights

- Three outputs

- Analog and digital output standard

- Based on the interchangeable Hygrosmart module

- Analog output signals selectable through software

- Metric or US measurement units selectable through software

- Available with calculated absolute humidity, dew-point, frost point, mixing ratio or specific enthalpy output

Technical Specifications

Performance

Measurement range (RH)	0–100% RH
Measurement range (T)	-30 to +70°C (-22 to +158°F)
Accuracy at 23°C (73°F) Humidity	<±2% RH (5-95% RH)
Accuracy at 23°C (73°F) Temperature	±0.4°C (±0.72°F)
Stability – RH Sensor	<±1% RH/year
Response time – RH Sensor	<10 sec typical (for 90% of the step change)

Electrical output/input

Output signal	0–1, 0–5, 0–10 V 0–20 mA, 4–20 mA, RS485
Supply voltage	15 - 27 V AC / 18 - 38 V DC
Load resistance	Current output: R ≤ 500 Ω
Power consumption	1.7 W

Operating conditions

Operating temperature Probe Housing Storage	 -30 to +85°C (-22 to +185°F) -20 to +70°C (-4 to +158°F) -30 to +70°C (-22 to +158°F)

Mechanical specification

Ingress protection	IP65 (NEMA 4 level)
Material Housing Probe	 Aluminum die casting Delrin
Dimensions Housing Probe	 120 x 120 x 49.5mm (4.72 x 4.72 x 1.94") L=100mm, ø19mm (L=3.93", ø0.74")
Weight	450g (15.87oz)
Electrical connections	Screw terminals
Display resolution	LCD, 2 lines x 16 characters

Dimensions

120.0mm (4.72")
113.1mm (4.45")
120.0mm (4.72")
113.1mm (4.45")
49.5mm (1.94")
4 Off Ø7.0mm (0.28")
19.0mm (0.74")
100.0mm (3.93")
18.0mm (0.70")
18.0mm (0.70")
2.0mm (0.078")

Accessories and Spare Parts

RS422/485 to PC (RS232) converter	**330185**
USB cable/software for configuration	**F035263**
SS sintered filter	**H2**
SS sintered filter with teflon coating	**J2**
Delrin cap slotted with SS mesh filter	**K7**
Delrin cap slotted with PTFE filter, white	**Z7**
Hygrosmart with Pt100 output (RH = 0-1 V)	**I7-0-00-1**
You can check your hygrometer with the Control Kit HKC which is based on the principle of non-saturated salt solutions. Refer to technical data sheet CONTROL KIT	**HKC**

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Electrical Connections

Pin		Pin	
1	Power Supply V +	8	Output Channel 2 Ground
2	Power Supply V -	9	RS485 Data +
3	Output RS485 Ground	10	RS485 Data -
4	Ground	11	Not connected
5	Output Channel 1 Temperature +	12	Not connected
6	Output Channel 1 Ground	13	Output Channel 3 (optional)
7	Output Channel 2 RH +	14	Output Channel 3 Ground (optional)
Do not connect pin 2 (V -) to pin 4 (Ground)			

Ordering Codes

To construct the order code, select the relevant feature from the tables below, starting with the base model, which is {Feature A} and then add on options to create a string: {Feature A}+{Feature B}+{Feature C}+{Feature D}+{Feature E}+{Feature F}

Order example: WM291+A+0+K7+N030+P070
Digital RH and temperature transmitter WM291 for wall-mounting, 4-20 mA output, dp display -40 to +100ºC, Delrin cap slotted, with stainless steel mesh filter, temp range -30 to +70ºC (-22 to +158ºF)

WM291	A	0	K7	N030	P070

Base Model {Feature A}	
Digital RH and temperature transmitter	WM291

Signal Output {Feature B}	
4–20 mA	A
0–10 V	B
0–5 V	C
0–1 V	D
0–20 mA	E

3rd Output {Feature C}	
Dew point: -40 to +100ºC	0
Mixing ratio: 0-500 gr/Kg	1
Absolute Humidity: 0 - 600 g/m^3	2
Specific enthalpy: -40 to 1500 KJ/Kg	3
Frost point: -50 to +10ºC	4

Temp High {Feature F}	
+20°C (+68°F)	P020
+30°C (+86°F))	P030
+50°C (+122°F)	P050
+70°C (+158°F)	P070
Other output scaling available on request	XXXX

Temp Low {Feature E}	
0°C (+32°F)	0000
-20°C (-4°F)	N020
-30°C (-22°F)	N030

Filter {Feature D}	
SS sintered filter	H2
SS sintered filter with teflon coating	J2
Delrin cap slotted, with SS mesh filter	K7
Delrin cap slotted, with PTFE filter, white	Z7

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