

# WM291

## Digital Relative Humidity/Temperature Transmitter for Wall-Mounting



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

- Third output optional
- Analog and digital output standard
- Based on the interchangeable Hygrosmart module
- Analog output signals selectable through software
- Metric or imperial measurement units selectable through software
- Available with calculated absolute humidity, dew-point, frost point, mixing ratio or specific enthalpy output

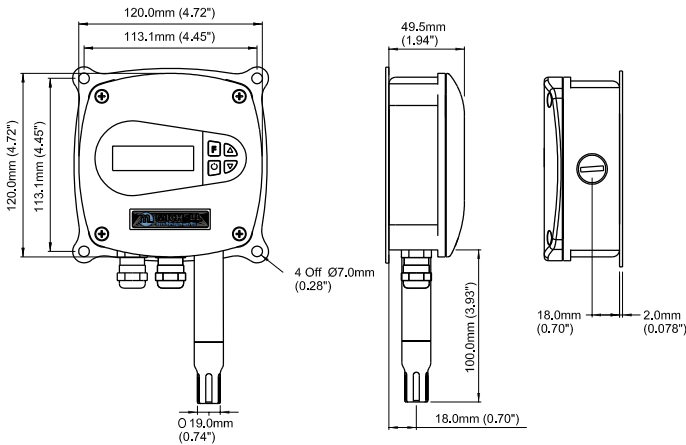
### Technical Specifications

Performance	
<b>Measurement range (RH)</b>	0–100% RH
<b>Measurement range (T)</b>	-30 to +70°C / -22 to +158°F
<b>Accuracy at 23°C / 73°F Humidity</b>	<±2% RH (5-95% RH)
<b>Accuracy at 23°C / 73°F Temperature</b>	±0.4°C (-10 to +50°C) ±0.72°F (14 to +122°F)
<b>Stability – RH Sensor</b>	<±1% RH/year
<b>Response time – RH Sensor</b>	<10 sec typical (for 90% of the step change)
Electrical output/input	
<b>Output signal</b>	0–1 VDC, 0–5 VDC, 0–10 VDC 0–20 mA, 4–20 mA, RS485
<b>Supply voltage</b>	15 ≤ VAC ≤ 27 / 18 ≤ VDC ≤ 38
<b>Load resistance</b>	Current output: R ≤ 500 Ω
<b>Power consumption</b>	1.7 W
Operating conditions	
<b>Operating humidity</b> Probe, Housing, Storage	0–100% RH
<b>Operating temperature</b> 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	
<b>Ingress protection</b>	IP65
<b>Material</b> Housing Probe	Aluminum die casting Delrin
<b>Dimensions</b> Housing Probe	120 x 120 x 49.5mm / 4.72 x 4.72 x 1.94" L=100mm, ø19mm / L=3.93", ø 0.74"
<b>Weight</b>	450g / 15.87oz
<b>Electrical connections</b>	Screw terminals
<b>Display resolution</b>	LCD, 2 lines x 16 characters

### Accessories and spare parts

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	<b>Control Kit HKC</b>
Cable USB for configuration "DIGICOR" (USB/TTL)	<b>F035263</b>
RS422/485 to PC (RS232) converter	<b>330185</b>
Hygrosmart with Pt100	<b>I7000.1</b>
Delrin slotted cap, with stainless steel mesh filter	<b>K7</b>
Stainless steel sintered filter	<b>H2</b>
Stainless steel sintered filter with teflon coating	<b>J2</b>
Delrin slotted cap, with polyester filter/PTFE	<b>Z7</b>

**Dimensions**



**Electrical Connections**

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

**Do not connect pin 2 (V-) to pin 4 (Ground)**

**Order codes**

Relative humidity and temperature transmitter

WM291 A 0 K7 N030 P070

Temperature and humidity output	
4-20 mA	A
0-10 V	B
0-5 V	C
0-1 V	D
0-20 mA	E

Optional output	
Dew point: -40 to 100°C / -40 to 148°F Td	0
Mix ratio: 0-500 gr/Kg / 0-8oz/lb	1
Absolute humidity: 0-600 g/m <sup>3</sup> / 0-262.197gr/ft <sup>3</sup>	2
Specific enthalpy: -40 to 1500 KJ/Kg / 17.21 to 645.32 Btu/lb	3
Frost point: -50 to +10°C / -58 to +50°F	4

Protections and filters	
Delrin slotted cap, with stainless steel mesh filter	K7
Stainless Steel sintered filter	H2
Stainless steel sintered filter with teflon coating	J2
Delrin slotted cap, with polyester filter/PTFE	Z7

Maximum temperature
See table A

Minimum temperature
See table A

Table A	
-30°C / -22°F	N030
-20°C / -4°F	N020
0°C / 32°F	0000
+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	TX

**Example: WM291 A 0 K7 N030 P070**

Relative humidity and temperature transmitter WM291, for wall-mounting, with display, dew point calculated, -30° to +70°C / -22° to +158°F temperature range, with 4-20 mA temperature and humidity output signal, and Delrin cap and stainless steel mesh filter.

**Please note: Michell Instruments adopts a continuous development program which sometimes necessitates specification changes without notice. Please contact us for latest version. Ref: WM291\_97186\_V1\_UK\_1009**