

# WR293

## Digital Relative Humidity and Temperature Transmitter - Remote

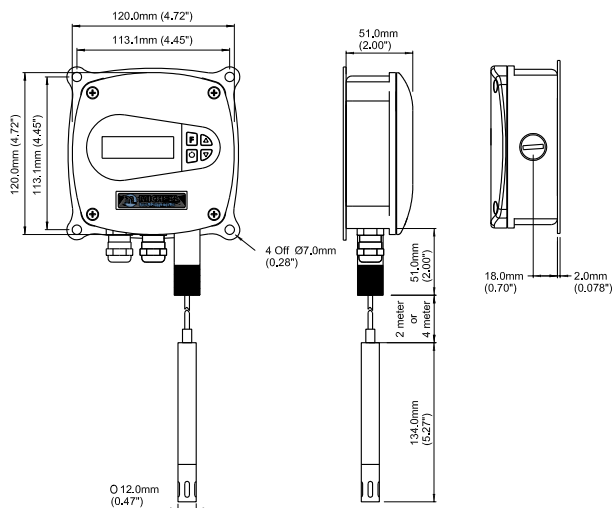


The WR293 relative humidity sensor uses the HYGROSMART module, integrated in the interchangeable probe and cable. This device can be used in high-temperature applications due to the remote measurement element and its small overall size. The interchangeable probe allows for simple recalibration and lower maintenance costs.

### Highlights

- Third output optional
- Analog and digital output standard
- Interchangeable probe
- 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

### Dimensions



### Technical Specifications

Performance	
<b>Measurement range (RH)</b>	0–100% RH
<b>Measurement range (T)</b>	-30 to +200°C / -22 to +392°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 / ±0.72°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	-30 to +200°C / -22 to +392°F
Housing	-30 to +70°C / -22 to +158°F
Storage	-40 to +70°C / -40 to +158°F
Mechanical specification	
<b>Ingress protection</b>	IP65
<b>Material</b> Housing	Aluminum die casting
Probe	Stainless steel
<b>Dimensions</b> Housing	120 x 120 x 51mm / 4.72 x 4.72 x 2.00"
Probe	L=134mm, ø12mm / L=5.27", ø 0.47"
<b>Weight</b>	450g / 15.87oz
<b>Electrical connections</b>	Screw terminals
<b>Display resolution</b>	LCD, 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>
Aluminum mounting flange for fixing probe	<b>FLA012</b>
Cable USB for configuration "DIGICOR" (USB/TTL)	<b>F035263</b>
RS422/485 to PC (RD232) converter	<b>330185</b>
Stainless steel mesh filter	<b>K8</b>
PEEK protection cap with stainless steel mesh filter	<b>K9</b>
Stainless steel sintered filter	<b>H3</b>
Stainless steel filter with Teflon coating	<b>J3</b>
SS probe with 2m cable, SS cover and SS mesh filter	<b>USTE002</b>
SS probe with 4m cable, SS cover and SS mesh filter	<b>USTE005</b>
SS probe with 2m cable and SS sintered filter	<b>USTE006</b>
SS probe with 4m cable and SS sintered filter	<b>USTE007</b>
Victrex PEEK probe cover with 2m cable & SS mesh filter	<b>USTE008</b>
Victrex PEEK probe cover with 4m cable & SS mesh filter	<b>USTE009</b>

## Electrical Connections

Pin	
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

WR293	A	0	6	N030	P180
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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 + 212°F	0
Mix ratio: 0–500g/Kg / 0-8oz/lb	1
Absolute humidity: 0–600 g/m <sup>3</sup> / 262.197 gr/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

Interchangeable probe and cable	
Stainless steel probe with 2m / 6.5' cable output, stainless steel cover with stainless steel mesh filter (standard)	2
Stainless steel probe with 4m / 13.1' cable output, stainless steel cover with stainless steel mesh filter	5
Stainless steel probe with 2m / 6.5' cable output and stainless steel sintered filter	6
Stainless steel probe with 4m / 13.1' cable output and stainless steel sintered filter	7
Victrex PEEK probe cover with 2m / 6.5' cable output and stainless steel mesh filter	8
Victrex PEEK probe cover with 4m / 13.1' cable output and stainless steel mesh filter	9

Maximum temperature
See table A

Minimum temperature
See table A

Table A	
Temperature value	Code
-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
+100°C / +212°F	P100
+140°C / +284°F	P140
+150°C / +302°F	P150
+180°C / +356°F	P180
+200°C / +392°F	P200
Other output scaling available on request TX	

### Example: WR293 A 0 06 N030 P180

Relative humidity and temperature transmitter WR 293 with 4–20 mA 2-wire humidity output, dew point calculated, stainless steel probe with 2m / 6.5' cable, and stainless steel sintered filter. -30°C to 180°C / -22°F to +356°F temperature range.

**Please note: Michell Instruments adopts a continuous development program which sometimes necessitates specification changes without notice. Please contact us for latest version. Ref: WR293\_97194\_V1\_UK\_1009**