

## 225-HMP155x Humidity and Temperature Sensor

The **220-HMP155** uses a new generation HUMICAP®180R sensor with excellent stability to withstand harsh environments. With its fast response time, the temperature sensor is ideal for measurement in environments with changing temperatures.

- **Long-term stability**
- **Fast Measurements**
- **Weather-proof housing IP66**
- **High level analog outputs or RS485 digital output**
- **Applications: meteorology, aviation and road weather**



Humidity	Sensor	HUMICAP®R2, 180R and INTERCAP for typical applications HUMICAP®R2C, 180RC and INTERCAPC for applications with chemical purge and/or warmed probe
	Observation range	0 ... 100 %RH
	Response time at +20 °C (+68 °F) in still air with sintered Teflon filter	63 %: 20 s 90 %: 60 s
	Factory calibration uncertainty at +20 °C (+68 °F)*	±0.6 %RH (0 ... 40 %RH) ±1.0 %RH (40 ... 95 %RH)
	* Defined as ±2 standard deviation limits. Small variations possible (see also the calibration certificate).	
Temperature	Sensor	Pt100 RTD element, Class F 0.1 IEC 60751
	Observation range	-80 ... +60 °C (-112 ... +140 °F)
	Response time for additional temperature probe in 3 m/s (7 mph) air flow	63 %: < 20 s 90 %: < 35 s
	Accuracy with voltage output	
	At -80 ... +20 °C (-112 ... +68 °F)	±(0.226 - 0.0028 × temperature) °C
	At +20 ... +60 °C (+68 ... +140 °F)	±(0.055 + 0.0057 × temperature) °C
	Accuracy with RS485 output	
At -80 ... +20 °C (-112 ... +68 °F)	±(0.176 - 0.0028 × temperature) °C	
At +20 ... +60 °C (+68 ... +140 °F)	±(0.07 + 0.0025 × temperature) °C	
Inputs & Outputs	Minimum operating voltage	0 ... 1 V output or RS-485: 7 V 0 ... 5 V output, or warmed probe: 12 V 0 ... 10 V output, chemical purge, or XHEAT: 16 V
	Average power consumption (+15 V DC, load 100 kΩ)	0 ... 1 V output: < 3 mA 0 ... 10 V output: +0.5 mA RS-485: < 4 mA During chemical purge: Maximum 110 mA With warmed probe: Maximum 150 mA
	Output	225-HMP155A: Analog 0 ... 1 V, 0 ... 5 V, 0 ... 10 V 225-HMP155E: Digital RS-485
	Settling time at startup	Voltage output: 2 s RS-485: 3 s
Mechanical	Dimensions (H × W)	279 × 40 mm (10.9 × 1.6 in)
	Weight	93 g (3.25 oz)
	Connection	8-pin male M12 connector
	Connection cables	3.5 m (11 ft 6 in), 10 m (32 ft 10 in), 30 m (98 ft 5 in)
	Filter	Sintered Teflon or membrane
	Housing	Polycarbonate (PC)
	Additional temperature probe	Stainless steel AISI 316L
	Cable	PUR
	Rating	IP66

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15			
<b>225-HMP155x Humidity &amp; Temperature Probe</b>		<b>225-HMP155</b>											<b>1</b>			<b>A</b>			
1	Probe type	HMP155A: 2x voltage output HMP155E: RS485 serial output	A	E															
2	Signal output selection	HMP155E only: No analog output. RS485 serial output used. 0...1 V output 0...5 V output 0...10 V output	1	2	3	4													
3	Analog output signal for CH1	HMP155E only: No analog output. RS485 serial output used. T (-40...+60 °C) (-40...+140 °F) T (-80...+60 °C) (-112...+140 °F)	A	G	J														
4	Analog output signal for CH2	HMP155E only: No analog output. RS485 serial output used. RH (0... 100%RH) Td (-60...60°C) (-76...+140 °F) Tdf (-60...60°C) (-76...+140 °F) Tw (0...60°C) (+32...+140°F) x (0...200g/kg d.a) (0...1400gr/lb)	A	B	C	D	E	F											
5	Units	Metric Non-metric				1	2												
6	Humidity sensor type	General purpose HUMICAP 180R Composite sensor HUMICAP 180RC General purpose INTERCAP (replacing HUMICAP180) Composite sensor INTERCAPC (replacing HUMICAP180C) General purpose HUMICAP R2 Composite sensor HUMICAP R2C						1	2	3	4	5	6						
7	Heating options	None Warmed probe (only with composite sensor) RH&T outputs only with Additional Temperature probe Warmed probe with Xheat (only with composite sensor) RH&T outputs only with Additional Temperature probe						A	B	C									
8	Chemical purge	None Periodical (only with composite sensor) Start-up (only with composite sensor) Both periodical & start-up (only with composite sensor) Manual purge with MI70 (only with composite sensor)						0	1	2	3	4							
9	Sensor protection	Sintered Teflon filter item: 219452SP Membrane filter item: 230727SP							A	B									
10	Probe cable length	No cable (no counter connector) 3.5 m (with 8 pin M12 female connector) item: 220496 10 m (with 8 pin M12 female connector) item: 220497 30 m (with 8 pin M12 female connector) item: 220498 5 m (with 8 pin M12 female connector) item: 223283									0	1	2	3	4				
11	Additional Temperature probe	None Additional T-probe with 2m cable No Additional T-probe & data format for Vaisala AWS/RWS Use (HMP155-CFG08) Additional T-Probe with 2m Cable & data format for Vaisala AWS/RWS Use (HMP155-CFG09) Additional T-Probe with 2m Cable, Purge & data format or Vaisala AWS/RWS Use (HMP155-CFG10)										A	B	E	F	G			
12	Calibration	At room temperature											1						
13	PC-Accessories	None PC connection cable (USB) item: 221040 MI70 connection cable item: 221801 PC connection cable (USB) & MI70 connection cable items: 221040 + 221801														A	B	C	D
14	Installation accessories	None Installation kit to Stevenson screen item: 221321 Additional T-probe installation adapter to DTR502 item: 221072 Additional T-probe installation adapter to DTR13 item: 221069														0	1	2	3
15	(For production use only)																		A

## Ordering Information

- 225-HMP155A Humidity & Temperature Sensor, 0-1V outputs, 3.5m cable (11.5 feet) (A2GB11A0A1A1A0A)
- 225-HMP155E Humidity & Temperature Sensor, RS485 output, 3.5m cable (11.5 feet) (E1AA11A0A1A1A0A)
- 380-41005-5 14-Plate Solar Radiation Shield for the 225-HMP155

For additional options, see chart above.