

ROOM AERO HUMIDITY

Wall mount sensor for relative humidity (RH) & temperature (T)



FEATURES

- Humidity or temperature/humidity options
- Attractive, streamlined, low-profile ABS enclosure
- Quick Connect wire terminals for easy wiring
- High airflow and fast response
- NTC thermistors, RTD elements or temperature transmitters available
- 2% / 3% / 5% relative humidity accuracies
- Field selectable humidity analog (0-5V, 0-10V, 4-20mA) or digital (Modbus) outputs available
- Insulated back included
- CE & RoHS compliant
- 5 year limited warranty
- Made in the USA

GENERAL INFORMATION

High quality room relative humidity with optional temperature sensor in the attractive and low-profile plastic Aero enclosure. These room humidity sensors are also available with accurate thermistors or RTDs. The Humidity sensing elements have high accuracy and very low drift over 5 years.

For analog versions, the onboard DIP switches enable user to select proper relative humidity analog output signal in the field for 0-5V, 0-10V and 4-20mA. These products are also available with digital RH/T output.

The Quick Connect wire terminals make installation easy and eliminates screw terminals and wire nuts.

SPECIFICATIONS

General:

Enclosure:	Injection-molded ABS UL 94 HB
Cover:	Quick snap, injection-molded ABS
Mounting:	Direct mounting with quick snap faceplate. Fits standard single gang box or mounts directly to wall. Built in level for easy accurate installation.
Connection:	AWG 22-16 / 0.35—1.5mm ² spring-loaded, Quick Connect wire terminals
Humidity Transmitter:	±2% / ±3% / ±5%
	Analog: with selectable output of 0 to 5V, 0 to 10V or 4 to 20mA

Specifications continued on page 2

SPECIFICATIONS CONT.

Humidity Sensor:

RH Supply Voltage (4-20mA):	(100 Ohm Load): 10 to 35 VDC
RH Supply Voltage (4-20mA):	(250 Ohm Load): 13 to 35 VDC
RH Supply Voltage (0-5V DC):	8 to 35 VDC / 10 to 35 VAC
RH Supply Voltage (0-10V DC):	13 to 35 VDC / 13 to 35 VAC
Voltage Output Current:	0-5V/0-10V mode 10-12mA
Voltage Output Resistance:	0-5V/0-10V mode 1 kOhm
Supply Current:	Voltage mode 32-35mA, Current mode 4-20mA
Long Term Stability:	Less than 0.25% per year
Repeatability:	0.8% RH @ average temp. 25°C / 77°F
Sensitivity:	0.1% RH
Accuracy:	2% & 3% versions, 10...90% RH; 5% 0...100% RH
Wiring:	4-20mA 2-wire; 0-5V / 0-10V 3-wire
Range:	0...50°C / 32...122°F
RH Sensor Type:	Capacitive, non-condensing
RH Measurement Range:	0...100% RH

Temperature Sensor:

Passive Signal:	NTC thermistor, 2-wire RTD Pt100, Pt1000, 2-wire RTD Ni1000-891, Ni1000-TC5, 2 wire
Sensor Value:	NTC 10K Ohm type 2 @ 25°C / 77°F NTC 10K Ohm type 3 @ 25°C / 77°F NTC 20K Ohm @ 25°C / 77°F NTC 3K Ohm @ 25°C / 77°F RTD Pt1000 1000 Ohm @ 0°C / 32°F RTD Pt100 100 Ohm @ 0°C / 32°F RTD Ni1000-891 891 Ohm @ 0°C / 32°F RTD Ni1000-TC5 1000 Ohm @ 0°C / 32°F (Other elements on request)
Accuracy:	NTC thermistor 0...70°C ± 0.2°C / 32...158°F ± 0.36°F Pt100 / Pt1000 Class B IEC751, ± 0.3°C / ± 0.5°F @ 0°C / 32°F Ni1000 DIN 43760, ± 0.5°C / ± 0.9°F @ 0°C / 32°F

Digital Version:

Output Signal:	Modbus RS-485
Power Supply:	24V AC/DC
Transmission Mode:	RTU
Baud Rate:	38400 (other ranges ex. 19200 available on request)
Parity:	ODD
Data Bits:	8
Stop Bits:	1

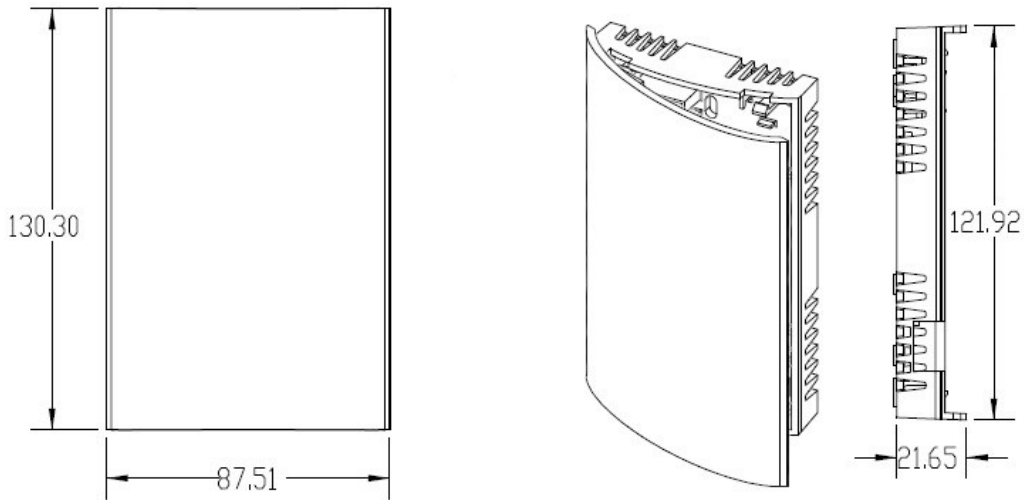
Additional programming information on request

Dimensions:	40mm X 19mm
Short Circuit Det.	< 840 Ohm
Open Circuit Det.	> 1500 Ohm
Fault Current:	>22.5 mA

Approvals:	CE & RoHS compliant
Warranty:	5 year limited warranty

Accessories: Optional customer logo printed on cover

DIMENSIONS (in mm)



HOW TO BUILD A TASSERON ROOM AERO HUMIDITY PART NUMBER

Sample Part Number (THHRAA2A) —Humidity room Aero sensor with NTC 10K Type 2 Temp, 2% RH accuracy and 4-20mA analog output.

T H H R A A 2 A

T	H	H	R	A	A	2	A
Tasseron	HVAC	Humidity	Room	Aero	Element	Accuracy	Output
					A—10K -2	2—2%	A— 4-20 mA
					B—10K -3	3—3%	B— 0-5V
					C—20K	5—5%	C—0-10V
					D—3K		D—Modbus
					E—Pt1000		
					F—Ni1000-891		
					G—10K-4		
					H— Pt100		
					I—4.7K		
				*Other elements available on request	J—10K-3 (11K)		
					K— Ni1000-TC5		
					Z— NO TEMP Humidity only		

HVAC temperature measuring elements

R/T TABLES

Temp		NTC thermistors					RTD elements			
		curve A	curve B	curve G	curve C	curve D	curve E	curve F	curve H	curve K
		NTC 10K type 2	NTC 10K type 3	NTC 10K type 4	NTC 20KOhm	NTC 3KOhm	Pt1000/B	Ni1000-891	Pt100/B	Ni1000-TC5
°C	°F	R (kOhm)	R (kOhm)	R (kOhm)	R (kOhm)	R (kOhm)	R (Ohm)	R (Ohm)	R (Ohm)	R (Ohm)
-40	-40	341.4	242.1	191.9	784.6	97.40	843	697	84.3	831
-35	-31	246.2	181.0	146.6	558.8	71.53	862	719	86.2	851
-30	-22	179.5	136.6	112.9	402.7	52.80	882	743	88.2	872
-25	-13	132.2	103.9	87.59	293.6	39.16	902	766	90.2	893
-20	-4	98.34	79.64	68.47	216.3	29.24	922	790	92.2	914
-15	5	73.73	61.54	53.91	160.7	22.04	941	815	94.1	935
-10	14	55.78	47.91	42.74	120.5	16.74	961	839	96.1	956
-5	23	42.59	37.57	34.11	91.07	12.79	980	864	98.0	978
0	32	32.82	29.66	27.40	69.40	9.856	1000	891	100.0	1000
5	41	25.52	23.57	22.14	53.33	7.663	1020	916	102.0	1022
10	50	19.97	18.85	17.99	41.28	5.999	1039	942	103.9	1045
15	59	15.75	15.17	14.72	32.18	4.729	1058	968	105.8	1068
20	68	12.51	12.28	12.09	25.28	3.754	1078	994	107.8	1091
25	77	10.00	10.00	10.00	20.00	3.000	1097	1021	109.7	1114
30	86	8.048	8.184	8.308	15.92	2.416	1117	1048	111.7	1138
35	95	6.516	6.735	6.936	12.75	1.957	1136	1075	113.6	1162
40	104	5.306	5.577	5.819	10.27	1.595	1155	1102	115.5	1186
45	113	4.345	4.641	4.904	8.320	1.307	1175	1130	117.5	1210
50	122	3.578	3.877	4.151	6.779	1.076	1194	1158	119.4	1235
55	131	2.962	3.261	3.529	5.556	0.888	1213	1187	121.3	1260
60	140	2.464	2.756	3.012	4.577	0.737	1232	1216	123.2	1285
65	149	2.060	2.340	2.582	3.788	0.616	1252	1245	125.2	1311
70	158	1.730	1.996	2.221	3.150	0.518	1271	1274	127.1	1337
75	167	1.460	1.707	1.918	2.630	0.441	1290	1304	129.0	1364
80	176	1.236	1.466	1.663	2.206	0.377	1309	1334	130.9	1390
85	185	1.051	1.264	1.446	1.857	0.324	1328	1365	132.8	1417
90	194	0.896	1.095	1.262	1.570	0.278	1347	1396	134.7	1444
95	203	0.767	0.952	1.105	1.333	0.239	1366	1427	136.6	1472
100	212	0.659	0.831	0.970	1.136	0.206	1385	1459	138.5	1500
105	221	0.569	0.728	0.855	0.972	0.179	1404	1491	140.4	1528
110	230	0.493	0.640	0.755	0.834	0.156	1423	1524	142.3	1557
115	239	0.428	0.564	0.669	0.719	0.136	1442	1556	144.2	1586
120	248	0.374	0.499	0.594	0.621	0.119	1461	1590	146.1	1615
125	257	0.327	0.443	0.529	0.539	0.105	1479	1623	147.9	1645

* Other elements on request

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