

ROOM AERO CO₂, HUMIDITY & TEMPERATURE

Wall mount sensor for carbon dioxide (CO₂), humidity (RH) & temperature (T)



FEATURES

- CO₂/RH/Temp 3-in-1 combination options
- Attractive, low-profile ABS enclosure
- Quick Connect wire terminals
- NTC thermistors and RTD temperature elements available
- Dual beam infrared sensing technology (NDIR)
- CO₂ measurement in 0-5V, 0-10V or 4-20mA analog outputs (selectable)
- CO₂ ranges 0-2000ppm, 0-5000ppm or 0-10,000ppm measurement
- 2% RH measurement in 0-5V, 0-10V or 4-20mA analog output
- Insulated back included
- 5 year limited warranty
- Made in the USA

GENERAL INFORMATION

High quality wall mount CO₂ with Relative Humidity and Temperature sensor in the streamlined Aero enclosure. These room sensors are available as a CO₂ only or as a combination sensor with available CO₂/RH/temperature measurements.

Accurate CO₂ measurement from 400-10,000ppm CO₂ and 2% RH from 10-90%.

Available with preset onboard DIP switches that enable user to select analog output signal of 0-5V, 0-10V and 4-20mA for CO₂ and RH sensing. Digital or fixed analog outputs also available on request.

Dual channel technology and a solid state infrared source ensures long lifetime, excellent accuracy and repeatability with low drift and quick start up.

SPECIFICATIONS

General:

Supply Voltage:	24 VAC +/-20%; 18-35 VDC Max
Power Consumption:	3VA for 24VAC, 3W for 24VDC (peak);
Output Signal:	Analog: 0-5 VDC, 0-10 VDC, 4-20 mA Digital: (available on request)

SPECIFICATIONS CONT.

Mounting: Fits standard single gang box or directly to wall. Built in level.
Connection: AWG 22-16 / 0.35—1.5mm² spring-loaded, Quick Connect wire terminals
Enclosure: Injection-molded ABS
Cover: Quick snap, injection-molded ABS

CO2 Sensor:

Sensing Technology: Dual beam infrared sensing technology (NDIR)
Measurement Range: 0 to 2000 ppm, 0-5000ppm, 0-10,000ppm
Accuracy: ±30ppm +3%
Temperature Operating Range: 0 to 50°C / 32 to 122°F
Response Time: ≤ 2 minutes, diffusion
Warm Up Time: < 1 minute (@ full specs < 15 minutes)

Relative Humidity Sensor:

Accuracy: ±2% 10-90%; ±3% 0-100%
Long Term Stability: Less than 0.25% per year
Repeatability: 0.8% RH @ average temp. 25°C / 77°F
Sensitivity: 0.1% RH
Sensor Type: Capacitive, non-condensing

Temperature Sensor:

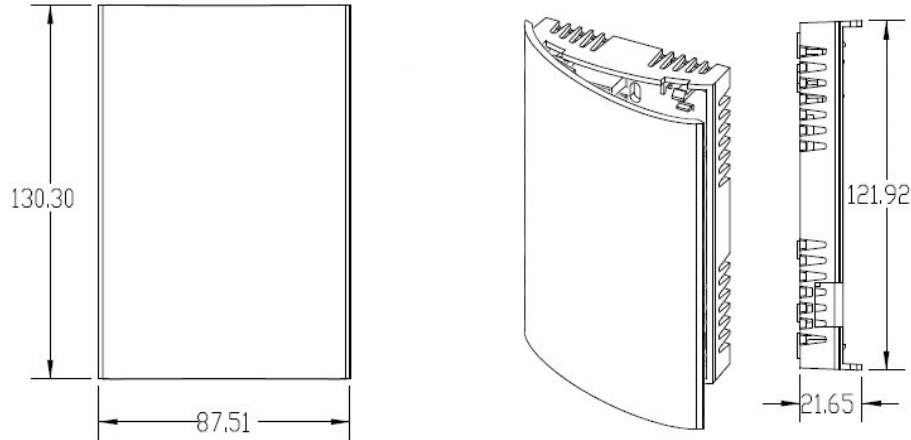
Temperature Element: Interchangeable NTC thermistor, 2-wire
RTD Pt1000, 2 wire
RTD Ni1000-891, 2 wire
Sensor Value: NTC 10K Ohm type 2 @ 25°C / 77°F
NTC 10K Ohm type 3 @ 25°C / 77°F
NTC 20K Ohm @ 25°C / 77°F
NTC 3K Ohm @ 25°C / 77°F
RTD Pt100 100 Ohm @ 0°C / 32°F
RTD Pt1000 1000 Ohm @ 0°C / 32°F
RTD Ni1000-891 891 Ohm @ 0°C / 77°F
Accuracy: NTC thermistor 0...70° ± 0.2°C / 32...158°F ± 0.36°F
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

Approval: CE & RoHS compliant
Warranty: 5 year limited warranty
Accessories: Optional customer logo printed on cover

Tasseron Sensors Inc.

140 Choate Circle
Montoursville, PA 17754
Tel: +1 (570) 601-1971
Fax: +1 (570) 601-1972
Email: sales@tasseronusa.com

DIMENSIONS (in mm)



HOW TO BUILD A TASSERON HVAC CARBON DIOXIDE PART NUMBER

Sample Part number (THCRAA2C) — CO2 Room sensor with 0-2000ppm range, 10K-2 temperature output, 2%RH, and 0-10V outputs for CO2 and RH

T H C R A A 2 C

TASSERON	HVAC	SENSOR TYPE	APPLICATION	CO2 RANGE	TEMP	RH ACCURACY	OUTPUT
		C—Carbon Dioxide	D—Duct R—Room	A—0-2000ppm B—0-5000ppm C— 0-10,000ppm	A—10K -2 B—10K -3 C—20K D—3K E—Pt1000 F—Ni1000-891 G—10K-4 H— Pt100 I—4.7K J—10K-3 (11K) K— Ni1000-TC5 Y—DIGITAL Z—NO TEMP	2—2% Z— NO HUMIDITY	A— 4-20mA B—0-5V C—0-10V D—Modbus E—BACnet F—I2C

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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