

## DUCT SAFE HUMIDITY

Duct mount sensor for relative humidity (RH) and temperature in NEMA 4X weatherproof Safe Box enclosure



### FEATURES

- Humidity or temperature/humidity options
- Durable NEMA 4X / IP65 injection-molded watertight enclosure
- Quick Connect wire terminals for tool-free wiring
- Dual filters to protect from contamination
- 2% / 3% / 5% RH accuracies
- Long term stability and low annual drift
- Onboard DIP switches for field selectable outputs
- Coated circuit boards for moisture resistance
- NTC thermistors and RTD elements available
- Adjustable probe length
- Installed anti-vibration pad on flange
- Optional 1/2" NPT conduit adapter
- CE & RoHS compliant
- 5 year limited warranty
- Made in the USA

### GENERAL INFORMATION

High quality duct mount relative humidity transmitter in a NEMA 4X / IP65 watertight injection-molded Safe Box enclosure. Circuit boards are coated to resist moisture and dual filters on the sensing elements provide extra protection against environmental conditions. Sensing elements are accurate with long term stability.

The Tasseron Duct Safe humidity sensors have onboard DIP switches enable user to select proper analog output signal in the field. These are also offered in combination with temperature with passive thermistors or RTDs available.

The hinged cover of the Safe Box stays open during installation and the Quick Connect wire terminals make installation easy and reduce labor costs. The mounting flange equipped with each sensor is adjustable to allow optimum element location to suit a variety of applications.

### SPECIFICATIONS

Enclosure Rating:	Weatherproof NEMA 4X/IP 65
Enclosure Material:	UL 94 V-2, UV resistant injection-molded polycarbonate
Cover:	Quick snap with hinges and screw down ability
Mounting:	Quick mount bracket system with snap in place housing
Probe Length:	Adjustable up to 8"
Probe Material:	Glass filled nylon UL 94 HB

## SPECIFICATIONS CONT.

Wiring: AWG 22-16 / 0.35—1.5mm<sup>2</sup> spring-loaded, Quick Connect wire terminals

### 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% 10-90% RH, 5% 0-100% RH  
Wiring: 4-20mA 2 wire, 0-5V/0-10V 3 wire  
Range: -40 to 60°C / -40 to 140°F  
RH Sensor Type: Capacitive, non-condensing  
RH Measurement Range: 0-100% RH  
Filter: Polyethylene Filter, replaceable

### Temperature Sensor:

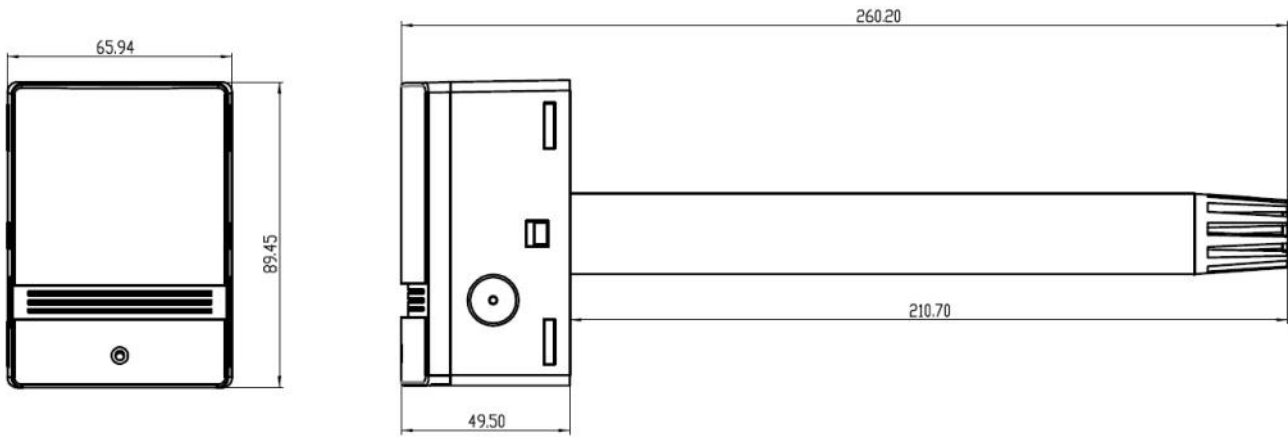
Temperature Element: Interchangeable NTC thermistor, 2-wire  
RTD Pt100, Pt1000, 2 wire  
RTD Ni1000-891, Ni1000-TC5, 2 wire  
Sensor Value: NTC 10K Ohm type 2 @ 25°C / 77°F  
NTC 10K Ohm type 3 @ 25°C / 77°F  
NTC 20K Ohm @ 25°C / 77°F  
NTC 3K Ohm @ 25°C / 77°F  
RTD Pt1000 1000 Ohm @ 0°C / 32°F  
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

Approval: CE & RoHS compliant

Warranty: 5 year limited warranty

Accessories: 1/2" NPT conduit adapter

**DIMENSIONS (in mm)**



**HOW TO BUILD A TASSERON DUCT SAFE HUMIDITY PART NUMBER:**

Sample Part Number (THHDSA2A) —Duct Safe Humidity sensor with 10k-2 temperature, 2% RH accuracy and 4-20mA output.

**T            H            H            D            S            A            2A**

<b>Tasseron</b>	<b>HVAC</b>	<b>Humidity</b>	<b>Duct</b>	<b>Safe</b>	<b>Element</b>	<b>Details</b>
					A—10K-2	2A—2%, 4-20 mA
					B—10K-3	2B—2%, 0-5V
					C—20K	2C—2%, 0-10V
					D—3K	3A—3%, 4-20mA
					E—Pt1000	3B—3%, 0-5V
					F—Ni1000-891	3C—3%, 0-10V
					G—10K-4	5A—5%, 4-20mA
					H— Pt100	5B—5%, 0-5V
					I—4.7K	5C—5%, 0-10V
					J—10K-3 (11K)	
					K— Ni1000-TC5	
					Z— Humidity only	
				*Other elements available on request		

# 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	765	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	29.65	27.40	69.40	9.856	1000	891	100.0	1000
5	41	25.52	23.57	22.14	53.33	7.653	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	1.465	1.653	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	1365	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	0.659	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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