

OUTDOOR EURO HUMIDITY

Outside air sensor for relative humidity (RH) and temperature (T)

FEATURES

- Humidity or RH+T analog options available (0-10V or 4-20mA)
- Durable NEMA 4X/IP65 injection-molded watertight enclosure
- Quick Connect wire terminals for secure and tool-free wiring
- Dual element filters to protect from contamination
- 2% / 3% / 5% RH accuracies available
- Analog temperature output 0-10V or 4-20mA (multiple ranges)
- Additional passive NTC/RTD temperature elements available
- Coated circuit boards for moisture resistance
- AISI 316 SS probe
- CE & RoHS compliant
- 5 year limited warranty
- Made in the USA



*1/2" NPT conduit adapter included

GENERAL INFORMATION

High quality outdoor mounted Relative Humidity (RH) and Temperature (T) sensor in the NEMA 4X Euro enclosure, equipped with hinged cover and tool-free Quick Connect wire terminals.

Circuit boards are coated to resist moisture and offer fixed analog output for RH, either 0-10V or 4-20mA. Tasseron Euro humidity sensors are also equipped an active analog temperature signal, with the option of an additional passive NTC or RTD element.

Tasseron humidity sensors offer high accuracy and long term stability with minimal annual drift. Dual filters on the elements resist contamination and ensure reliability over time.

SPECIFICATIONS

General:

Supply Voltage:	24 VAC $\pm$ 20%; 15-35 VDC Max
Power Consumption:	3VA for 24VAC, 3W for 24VDC (peak);
Operating Range:	-40...+70°C / -40...+158°F ; 0...100%RH (non-condensing)
Enclosure Rating:	IP65; NEMA 4X
Enclosure Material:	PC/ABS UL 94 V-0, UV resistant injection-molded
Cover:	Removable Quick snap/hinged cover
Probe:	AISI 316L; 3in. Length (76mm), 12mm diameter
Mounting:	Direct

SPECIFICATIONS CONT.

Connection: AWG 22-16 / 0.35—1.5mm² spring-loaded, Quick Connect wire terminals
Output Signal: Analog 0-10V or 4-20mA
*Other outputs available on request

Relative Humidity Sensor:

RH Output 0-10V (0...100%RH) or 4-20mA (0...100%RH)
RH Range 10...90%RH (non-condensing)
RH Accuracy $\pm 2\%$ (30...70%), $\pm 3\%$ (30...70%), $\pm 5\%$ (0...100%)
RH Response Time $t_{63} < 180$ sec (@ 3 m/s)
RH Long Term Stability Less than 0.25% per year
RH Repeatability 0.8% RH @ average temp. 25°C / 77°F
RH Sensitivity 0.1% RH
RH Sensor Type Capacitive, non-condensing

Temperature Sensor Active:

T Output 0-10V or 4-20mA
T Range Range 1: (Default) -40...+70°C / -40...158°F
Range 2: 0...50°C / 32...122°F
Range 3: 0...+100°C / 32°F...212°F
Range 4: 20°F...120°F
Range 5: 0°F...100°F
T Accuracy $\pm 0.3^\circ\text{C}$ / $\pm 0.54^\circ\text{F}$
T Response Time $t_{63} < 120$ sec (3 m/s)

Temperature Sensor Passive:

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° $\pm 0.2^\circ\text{C}$ / 32...158°F $\pm 0.36^\circ\text{F}$
Pt1000 Class B IEC751, $\pm 0.3^\circ\text{C}$ / $\pm 0.5^\circ\text{F}$ @ 0°C / 32°F
Ni1000 DIN 43760, $\pm 0.5^\circ\text{C}$ / $\pm 0.9^\circ\text{F}$ @ 0°C / 32°F

Approval: CE & RoHS compliant

Warranty: 5 year limited warranty

Accessories: 1/2" NPT Conduit Adapter
M16 Cable Gland
Adjustable Depth Mounting Flange (not included)

MOUNTING AND DIMENSIONS

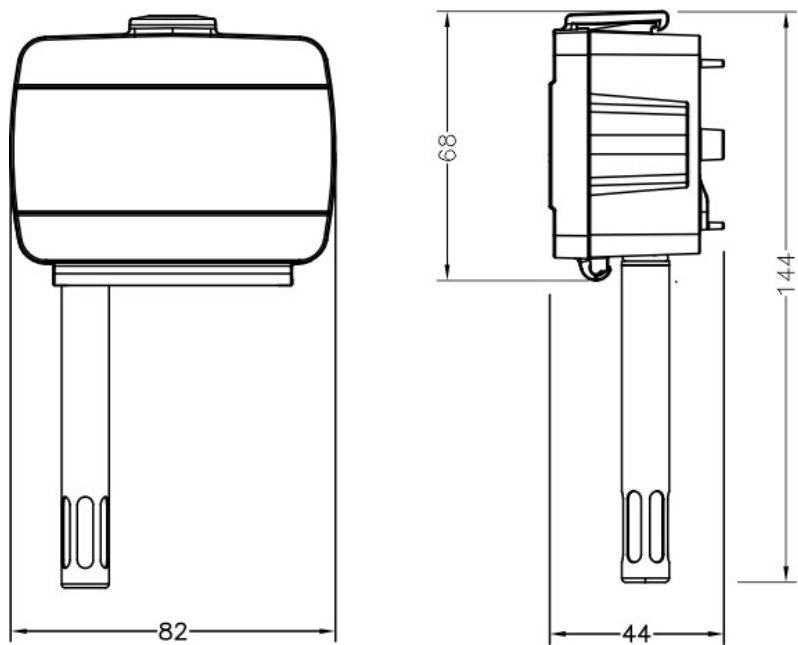


Fig. 1. Dimensions (mm / inch)
1/2" NPT conduit adapter & cable gland
not shown

TERMINAL ASSIGNMENT

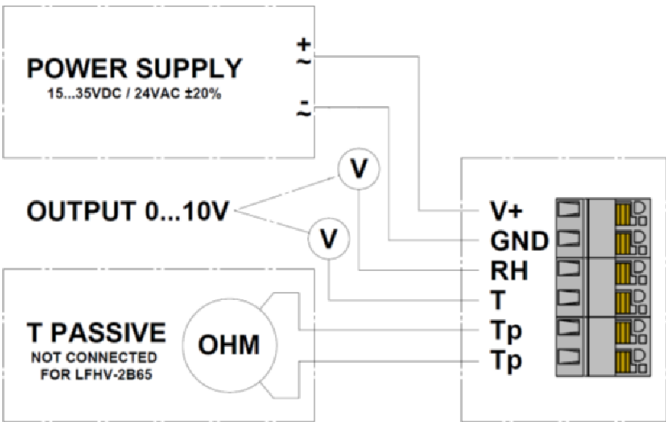


Fig. 2. Connection diagram, voltage output

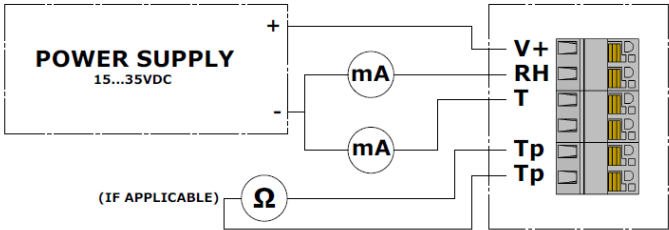


Fig. 3. Connection diagram, current output

HOW TO BUILD A TASSERON OUTDOOR EURO HUMIDITY PART NUMBER:

Sample Part Number (THHOEW2C) —Outdoor Euro Humidity sensor 2% accuracy and 0-10V humidity (0...100%) and temperature (0...50°C) outputs

T H H O E W 2C

Tasseron	HVAC	Humidity	Outdoor	Euro	Element	Details
					A—10K-2	2A—2%, 4-20 mA
					B—10K-3	2C—2%, 0-10V
					C—20K	3A—3%, 4-20mA
					D—3K	3C—3%, 0-10V
					E—Pt1000	5A—5%, 4-20mA
					F—Ni1000-891	5C —5%, 0-10V
					G—10K-4	
					H— Pt100	
					I—4.7K	
					J—10K-3 (11K)	
				*Other elements available on request	K— Ni1000-TC5	
					L—12K	
					M—100K	
					Transmitters:	
					W—Range 1	-40...+70°C
					X—Range 2	0...+50°C
					T—Range 3	0...+100°C (32°F...212°F)
					U—Range 4	20°F...120°F
					V—Range 5	0°F...100°F
					Y—DIGITAL	
					Z—NO TEMP	

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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