



Features

- Standard sensing elements
 - Thermistor NTC 10K
 - Platinum PT1000
- Tolerances at 25°C
 - NTC 10K: +/- 0.22°C
 - PT1000: +/- 0.42°C
- Other sensing elements on request
 - NTC 1.8K, NTC 5K, NTC 20K,
 - Precon, KTY81-110, KTY81-210, LM235Z
 - NI1000, NI1000/5000, PT1000.
- Housing material plastic with IP65 protection
- Housing dimensions 75x69x44 mm
excluding cable entry gland
- Cable entry gland M16x1.5 for cable diameter 4 to 10 mm
- 4 quick locking screws in the cover of the enclosure
- Screw clamp connection max 1.5 mm
- Simple 2-wire connection
3-wire and 4-wire on request
- Economical way to measure temperature
- Directive 2014/30/EU
DIN EN 61326-2-1:2013

Ordering

Type no.	Description
TOC NTC 10K	Outdoor Temperature Sensor NTC 10K
TOC PT1000	Outdoor Temperature Sensor PT1000

Examples ordering codes for TOC with other sensing elements than NTC 10K and PT1000.

Ordering code for TOC with NTC 1.8K sensing will be TOC NTC 1.8K.

Ordering code for TOC with NI1000 sensing will be TOC NI1000

Description

Outdoor temperature sensor TOC is used for sensing temperature outside and indoors where IP65 is required.

The outdoor temperature sensor TOC is used in heating, ventilation and air conditioning systems as reference sensor for weather-compensated control, measuring sensor, e.g. for optimization, or for measured value display, or for connection to a building management system.

The outdoor temperature sensor TOC is a direct output temperature sensor thermistor sensing element NTC 10K or platina sensing element PT1000, other sensing elements on request.

Tolerances at 25°C for the outdoor temperature sensor TOC is +/- 0.22°C for NTC 10K and +/- 0.42°C for PT1000.

TOC outdoor temperature sensor have simple 2-wire connection, 3-wire and 4-wire on request.

Outdoor temperature sensor TOC have IP65 enclosure.

TOC outdoor temperature sensor have 4 quick locking screws in the cover of the enclosure.

Wiring connection for outdoor temperature sensor TOC is inside the ABS plastic enclosure on a screw clamp connection max 1.5 mm

The enclosure of outdoor temperature sensor TOC is supplied with a plastic cable entry gland M 16 x 1.5, including strain relief for cable diameter 4 to 10 mm

The sensing element for outdoor temperature sensor TOC is inside the housing (internal), on request outdoor temperature sensor also available with sensing element placed in a probe outside housing (external).

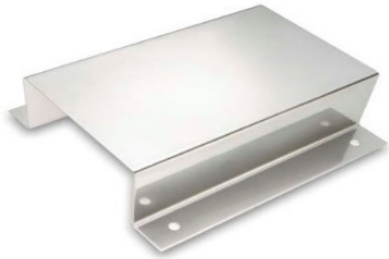
Always install the outdoor temperature sensor TOC on north facing wall and at least 2.5 meters above ground.

Avoid to expose the outdoor temperature sensor TOC for direct sunlight, if mounting the outdoor temperature sensor TOC in sunlight it is recommended to use the sensor shield SGD SS1.

Do not mount the outdoor temperature sensor TOC close to heat sources such windows, doors etc.

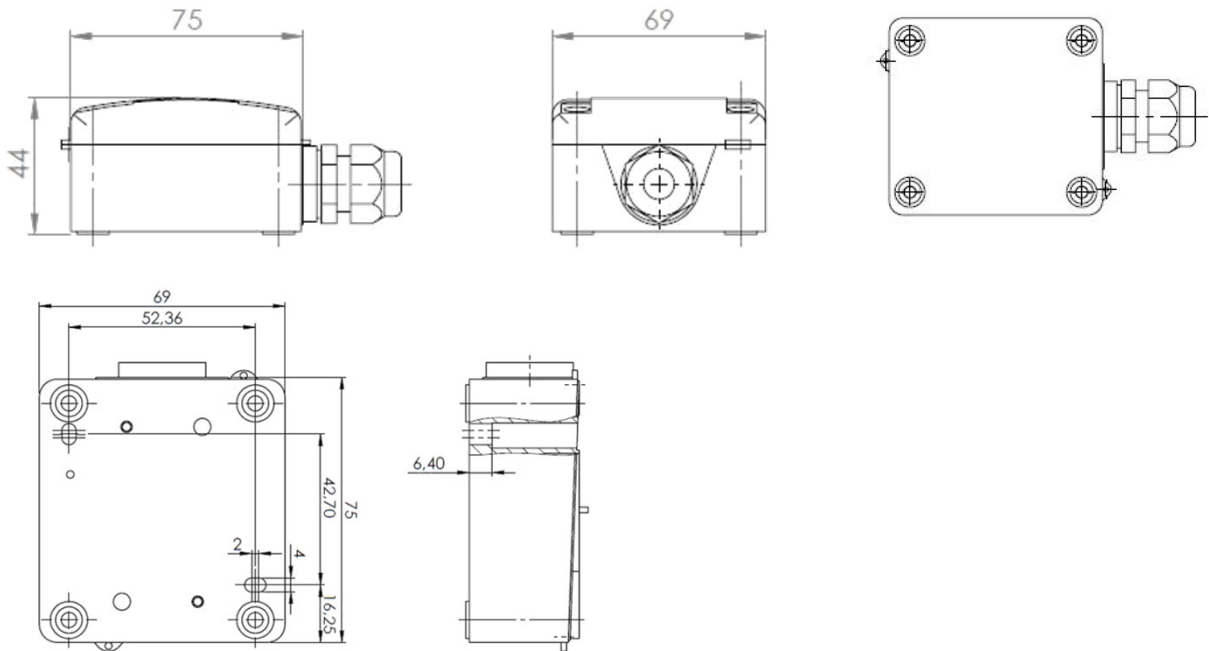
Cable entry for outdoor temperature sensor TOC should be pointing downwards.

Accessorie



sensor shield in stainless steel, SGD SS1

Dimensions TOC



Temperature vs resistance schedule

Temp.	PT100	PT1000	Ni1000	Ni1000 TK5000	NTC 1kOhm	NTC 1,8kOhm	NTC 3kOhm	NTC 5kOhm
°C	Ohm	Ohm	Ohm	Ohm	Ohm	Ohm	Ohm	Ohm
-50	80,31	803,1	743	790,88	32886		200338	
-40	84,27	842,7	791	830,83	18641	35658	100701	166555
-30	88,22	882,2	842	871,69	10961	21131	53005	87897
-20	92,16	921,6	893	913,48	6662	12838	29092	48322
-10	96,06	960,9	946	956,24	4175	7992	16589	27584
0	100	1000	1000	1000	2961	5095	9795,2	16300
10	103,9	1039	1056	1044,79	1781	3221	5971,12	9942
20	107,79	1077,9	1112	1090,65	1205	2212	3748,1	6244
25	109,74	1097,4	1141	1113,99	1000	1820	3000	5000
30	111,67	1116,7	1171	1137,61	834,2	1504	2416,8	4029
40	115,54	1155,4	1230	1185,71	589,2	1042	1597,5	2664
50	119,4	1194	1291	1234,97	424	735	1080,3	1803
60	123,24	1232,4	1353	1285,44	310,4	528	746,12	1246
70	127,07	1270	1417	1337,14	231	384	525,49	878
80	130,89	1308,9	1483	1390,12	174,5	284	376,85	630
90	134,7	1347	1549	1444,39	133,6	213	274,83	459
100	138,5	1385	1618	1500	103,7	162	203,59	340
110	142,29	1422	1688	1556,98	81,4	125	153,03	256
120	146,06	1460,6	1760	1615,36	64,7	97	116,58	195
130	149,82	1498,2	1883	1675,18	51,9		89,95	150
140	153,58	1535,8	1909	1736,47	42,1		70,22	117
150	157,31	1573,1	1987	1799,26	34,4		55,44	93

Temp.	NTC 10kOhm	NTC 20kOhm	KTY 81-210	KTY 11-6	KTY 81-110	KTY 81-121	NTC 10kPRECON	LM235Z
°C	Ohm	Ohm	Ohm	Ohm	Ohm	Ohm	Ohm	m Volt
-50			1068,65	1035,91	515	510	454910	2232
-40	333282	804170	1158,95	1139,27	567	562	245089	2332
-30	175846	412798	1269,25	1250,39	624	617	137307	2432
-20	96659	220734	1385,15	1396,25	684	677	79729	2532
-10	55171	122439	1508,65	1495,86	747	740	47843	2632
0	32600	70440	1639,6	1630,21	815	807	29588	2732
10	19885	41544	1778,1	1772,32	886	877	18813	2832
20	12489	25341	1924,15	1922,17	961	951	12272	2932
25	10000	20000	2000	2000	1000	990	10000	2982
30	8058	15888	2077,8	2079,77	1040	1029	8195	3032
40	5329	10214	2238,9	2245,17	1122	1111	5593	3132
50	3606	6718	2407,6	2418,21	1209	1196	3894	3232
60	2492	4517	2583,8	2599,06	1299	1286	2763	3332
70	1756	3110	2767,5	2787,65	1392	1378	1994	3432
80	1260	2167	2958,8	2983,99	1490	1475	1462	3532
90	920	1541	3152,5	3188,08	1591	1575	1088	3632
100	682	1114	3363,9	3399,91	1696	1679	821	3732
110	513	818	3577,75	3619,5	1805	1786	628	3832
120	391	608	3799,1	3846,83	1915	1896	486	3932
130		457	4028,05	4081,91	2023	2003	380	4032
140		347	4188,1	4324,74	2124	2103	301	4132
150		266	4397,7	4575,31	2211	2189	240	4232