



S+S REGELTECHNIK

THERMASGARD® RSTF

RSTF

Ⓓ Bedienungs- und Montageanleitung

Raumstrahlungstemperaturfühler,
mit passivem Ausgang

ⒼⒷ Operating Instructions, Mounting & Installation

Room radiation temperature sensors
with passive output

Ⓕ Notice d'instruction

Sonde d'ambiance de rayonnement thermique,
avec sortie passive

ⓇⓊ Руководство по монтажу и обслуживанию

Датчик температуры излучения для внутренних помещений,
с пассивным выходом



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Herzlichen Glückwunsch!

Sie haben ein deutsches Qualitätsprodukt erworben.

Congratulations!

You have bought a German quality product.

Félicitations!

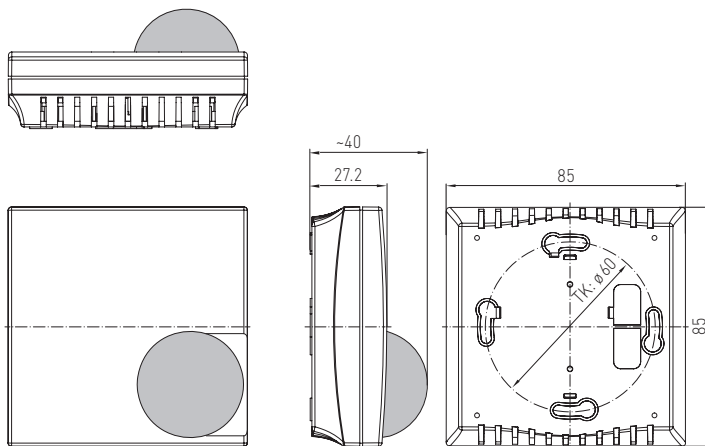
Vous avez fait l'acquisition d'un produit allemand de qualité.

Примите наши поздравления!

Вы приобрели качественный продукт, изготовленный в Германии.

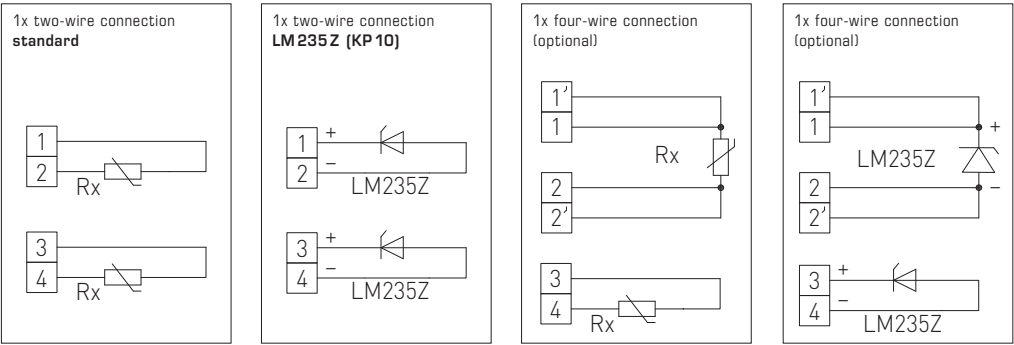
Maßzeichnung
Dimensional drawing
Plan coté
Габаритный чертеж

RSTF



Resistance thermometer **THERMASGARD® RSTF** with passive output in an elegant enclosure made of plastic, with snap-on lid, base with 4-hole attachment for installation on vertically or horizontally installed in-wall flush boxes, with predetermined breaking point for on-wall cable entry, specifically used for temperature detection in larger rooms. The room radiation temperature sensor RSTF determines the effective portion of active radiation or the effective radiant heat at the measured location. Due to the measuring method employed by the dark radiation temperature sensor, an excellent and room-representative measuring result is achieved. In addition there is an independent passive output available to determinate the reference temperature.

TECHNICAL DATA	
Measuring range:	−30...+75 °C
Sensors / output:	see table, passive (optional also with two sensors)
Connection type:	2-wire connection (4-wire connection on PT100/PT1000A, optional on other sensors)
Testing current:	approx. 1 mA
Insulating resistance:	≥ 100 MΩ, at +20 °C (500 V DC)
Process connection:	by screws
Enclosure:	plastic, material ABS Enclosure: pure white (similar to RAL 9010), Semi-globe: black
Dimensions:	85 x 85 x 27 (40) mm (Baldur 1)
Electrical connection:	0.14 - 1.5 mm², via terminal screws on circuit board
Humidity:	< 95 % r. H.
Protection class:	III (according to EN 60 730)
Protection type:	IP 30 (according to EN 60 529)



THERMASGARD® RSTF – Room radiation temperature sensors

Type /WG03	Sensor /Output	Item No.
RSTF	Pt, Ni, LM235Z	IP30
RSTF PT100	Pt100 (according to DIN EN 60 751, B)	1101-40C0-1003-000
RSTF PT1000	Pt1000 (according to DIN EN 60 751, class B)	1101-40C0-5001-000
RSTF Ni1000	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-40C0-9001-000
RSTF NiTK	Ni1000 TK5000 (TCR = 5000 ppm / K), LG -Ni1000	1101-40C1-0001-000
RSTF LM235Z	LM235Z (TCR = 10mV / K; 2.73 V at 0 °C), KP10	1101-40C2-1001-000
RSTF	NTC	IP30
RSTF NTC1.8K	NTC 1.8K	1101-40C1-2001-000
RSTF NTC10K	NTC 10K	1101-40C1-5001-000
RSTF PRECON	NTC 10K Precon	1101-40C1-9001-000
RSTF NTC20K	NTC 20K	1101-40C1-6001-000

GB Mounting and Installation

Devices are to be connected under dead-voltage condition. Devices must only be connected to safety extra-low voltage. Consequential damages caused by a fault in this device are excluded from warranty or liability. Installation of these devices must only be realized by authorized qualified personnel. The technical data and connecting conditions shown on the device labels and in the mounting and operating instructions delivered together with the device are exclusively valid. Deviations from the catalogue representation are not explicitly mentioned and are possible in terms of technical progress and continuous improvement of our products. In case of any modifications made by the user, all warranty claims are forfeited. Operating this device close to other devices that do not comply with EMC directives may influence functionality. This device must not be used for monitoring applications, which serve the purpose of protecting persons against hazards or injury, or as an EMERGENCY STOP switch for systems or machinery, or for any other similar safety-relevant purposes.

Dimensions of enclosures or enclosure accessories may show slight tolerances on the specifications provided in these instructions.

Modifications of these records are not permitted.

In case of a complaint, only complete devices returned in original packing will be accepted.

Notes regarding mechanical mounting and attachment:

Mounting shall take place while observing all relevant regulations and standards applicable for the place of measurement (e.g. such as welding instructions, etc.). Particularly the following shall be regarded:

- VDE/VDI directive technical temperature measurements, measurement set-up for temperature measurements.
- The EMC directives must be adhered to.
- It is imperative to avoid parallel laying of current-carrying lines.
- We recommend to use shielded cables with the shielding being attached at one side to the DDC/PLC.

Before mounting, make sure that the existing thermometer's technical parameters comply with the actual conditions at the place of utilization, in particular in respect of:

- Measuring range
- Permissible maximum pressure, flow velocity
- Installation length, tube dimensions
- Oscillations, vibrations, shocks are to be avoided (< 0.5 g)

Attention! In any case, please observe the mechanical and thermal load limits of protective tubes according to DIN 43763 respectively according to specific S+S standards!

GB Resistance characteristics of passive temperature sensors (see last page)

In order to avoid damages/errors, preferably shielded cables are to be used.
Laying measuring cables parallel with current-carrying cables must in any case be avoided. EMC directives shall be observed!
These instruments must be installed by authorised specialists only!

Limiting deviation according to classes:

Tolerances at 0 °C:

Platinum sensors (Pt100, Pt1000):

DIN EN 60751, class B	± 0.3 K
1/3 DIN EN 60751, class B.....	± 0.1 K

Nickel sensors:

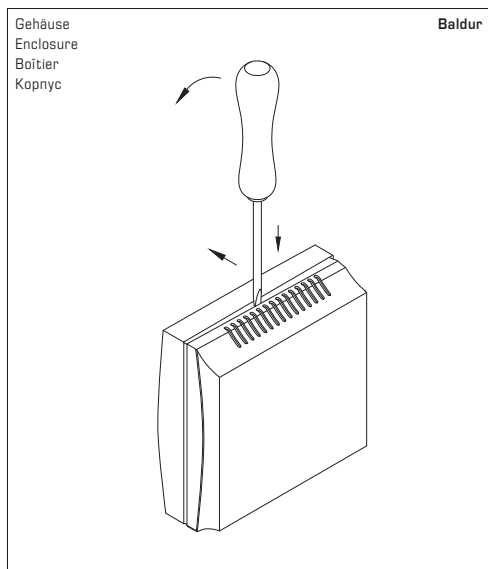
NI1000 DIN EN 43760, class B.....	± 0.4 K
NI1000 1/2 DIN EN 43760, class B.....	± 0.2 K
NI1000 TK5000.....	± 0.4 K

ATTENTION, NOTE!

Testing current influences the thermometer's measuring accuracy due to intrinsic heating and therefore, should never be greater than as specified below:

Standard values for testing current:

Sensor current, maximum	I_{max}
Pt100, Pt1000 (thin-layer)	< 0.1 - 0.3 mA
Ni1000 (DIN), Ni1000 TK5000	< 2 mA
NTC's	< 1 mA
LM235	400 µA... 5 mA



Zum Öffnen des Gehäuses einen Schraubendreher (2,0) in die Nut mittig ansetzen, nach unten drücken und den Bodenrahmen etwas anheben. Den Deckel nach vorne ziehen und halten.

To open the enclosure, set a screwdriver (2,0) in the groove at centre, press down, and lift up the bottom frame slightly. Pull top cover forward and hold it.

Pour ouvrir le boîtier placer le tournevis (2,0) au centre de l'encoche, pousser vers le bas et soulever légèrement le cadre inférieur. Tirer le couvercle vers l'avant et le maintenir.

Чтобы открыть корпус, вставьте жало отвертки (2,0) в паз по центру, надавите вниз и слегка приподнимите основание корпуса. Крышку сдвигайте вперед, аккуратно удерживая ее.

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Irrtümer und technische Änderungen vorbehalten.

Errors and technical changes excepted.

Sous réserve d'erreurs et de modifications techniques.

Возможны ошибки и технические изменения.

	PT 100	PT 1000	Ni 1000	Ni 1000 TK 5000	FeT (T1)	KTY 81-210	LM235Z (KP10)	
°C	Ω	Ω	Ω	Ω	Ω	Ω	mV	°C
- 50	80.3	803	743	790.8	-	1030	-	- 50
- 40	84.3	843	791	826.8	-	1135	2330	- 40
- 30	88.2	882	842	871.7	1935	1247	2430	- 30
- 20	92.2	922	893	913.4	2031	1367	2530	- 20
- 10	96.1	961	946	956.2	2128	1495	2630	- 10
0	100.0	1000	1000	1000.0	2227	1630	2730	0
+ 10	103.9	1039	1056	1044.8	2328	1772	2830	+ 10
+ 20	107.8	1078	1112	1090.7	2429	1922	2930	+ 20
+ 30	111.7	1117	1171	1137.6	2534	2080	3030	+ 30
+ 40	115.5	1155	1230	1185.7	2639	2245	3130	+ 40
+ 50	119.4	1194	1291	1235.0	2746	2417	3230	+ 50
+ 60	123.2	1232	1353	1285.4	2856	2597	3330	+ 60
+ 70	127.1	1271	1417	1337.1	2967	2785	3430	+ 70
+ 80	130.9	1309	1483	1390.1	3079	2980	3530	+ 80
+ 90	134.7	1347	1549	1444.4	3195	3182	3630	+ 90
+ 100	138.5	1385	1618	1500.0	3312	3392	3730	+ 100
+ 110	142.3	1423	1688	1557.0	3431	3607	3830	+ 110
+ 120	146.1	1461	1760	1625.4	3552	3817	3930	+ 120
+ 130	149.8	1498	1833	-	3676	4008	-	+ 130
+ 140	153.6	1536	1909	-	3802	4166	-	+ 140
+ 150	157.3	1573	1987	-	3929	4280	-	+ 150

	NTC 1.8 kΩhm	NTC 2.2 kΩhm	NTC 3 kΩhm	NTC 5 kΩhm	NTC 10 kΩhm	NTC 10 kΩPRE	NTC 20 kΩhm	NTC 50 kΩhm	
°C	Ω	Ω	Ω	Ω	Ω	Ω	Ω	Ω	°C
- 50	-	-	-	-	-	-	-	-	- 50
- 40	39073	-	-	-	-	-	806800	2017000	- 40
- 30	22301	27886	53093	88488	175785	135200	413400	1033500	- 30
- 20	13196	16502	29125	48541	96597	78910	220600	551500	- 20
- 10	8069	10070	16599	27664	55142	47540	122260	305650	- 10
0	5085	6452	9795	16325	32590	29490	70140	175350	0
+ 10	3294	4138	5971	9951	19880	18790	41540	103850	+ 10
+ 20	2189	2719	3747	6246	12491	12270	25340	63350	+ 20
+ 30	1489	1812	2417	4028	8058	8196	15886	39715	+ 30
+ 40	1034	1248	1597	2662	5329	5594	10212	25530	+ 40
+ 50	733	876	1081	1801	3605	3893	6718	16795	+ 50
+ 60	529	626	746	1244	2489	2760	4518	11295	+ 60
+ 70	389	454	526	876	1753	1900	3098	7745	+ 70
+ 80	290	335	346	627	1256	1457	2166	5415	+ 80
+ 90	220	251	275	458	915	1084	1541	3852	+ 90
+ 100	169	190	204	339	678	817	1114	2785	+ 100
+ 110	131	146	138	255	509	624	818	2045	+ 110
+ 120	103	-	105	195	389	482	609	1523	+ 120
+ 130	-	-	81	151	300	377	460	1149	+ 130
+ 140	-	-	64	118	234	298	351	878	+ 140
+ 150	-	-	50	93	185	238	272	679	+ 150