S S REGELTECHNIK FSTF Room Temperature Sensors In Wall Panel Switch Instruction Manual

Contents

S S REGELTECHNIK FSTF Room Temperature Sensors In Wall Panel Switch

Product Information

The product is a room temperature sensor that is designed to be installed in-wall as part of a panel switch program. It is compatible with the GIRA System 55 Standard switch program, but can also work with other switch manufacturers and programs upon request. The sensor has various measuring ranges and outputs, as well as different options for potentiometers, switches, and buttons. It is classified as Schutzklasse III (according to EN 60 730) and has an IP 20 protection rating (according to EN 60 529).

Technical Specifications

- **Measuring ranges:** See table
- **Sensor/output:** Assembled on board, passive
- **Range suppression:** In the button
- **Testing current:** See page 8
- **Potentiometer:** Standard 1k, max. 0.1 W (Other values available upon request)
- **Drehschalter:** Max. 24 V AC/DC, max. 130 mA, up to 5 switching stages (0, Auto, I, II, III)
- **Wippschalter:** Max. 24 V AC/DC, max. 130 mA
- **Taster:** LED: Max. 24 V DC (Optional max. 24 V AC)
- **Montage:** Schutzklasse III (according to EN 60 730)
- **Schutzart:** IP 20 (according to EN 60 529)

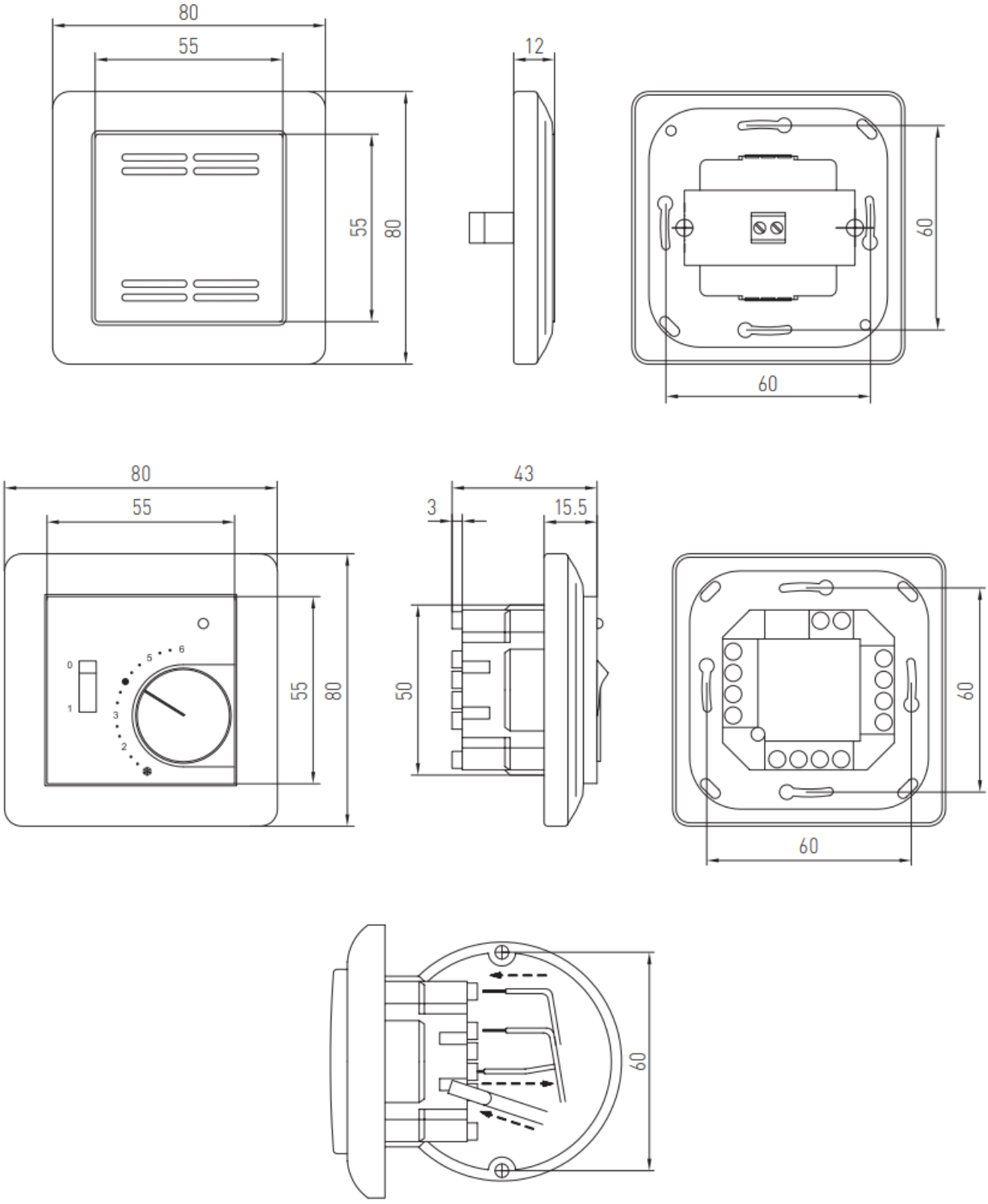
Product Usage Instructions

1. Choose the appropriate measuring range for your application based on the table provided in the manual.
2. Install the room temperature sensor in-wall according to the mounting instructions provided by the switch program manufacturer.
3. Connect the sensor/output to the designated points on the circuit board.
4. Adjust the potentiometer to the desired value, taking into consideration the maximum power rating.
5. If using a Drehschalter or Wippschalter, ensure that the maximum voltage and current ratings are not

exceeded.

6. If using a Taster with LED, make sure to use the appropriate voltage (DC or AC).
7. Ensure that the device is properly grounded and connected to a power source according to the regulations in your region.
8. Refer to the general information and important notes sections in the manual for additional guidance and safety precautions.

Dimensional drawing

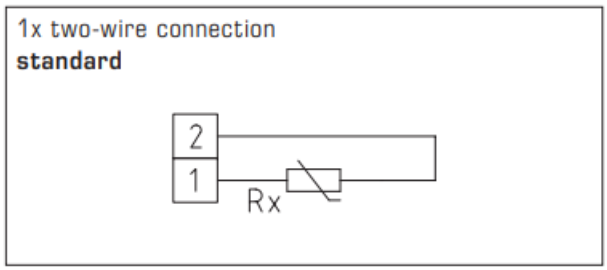


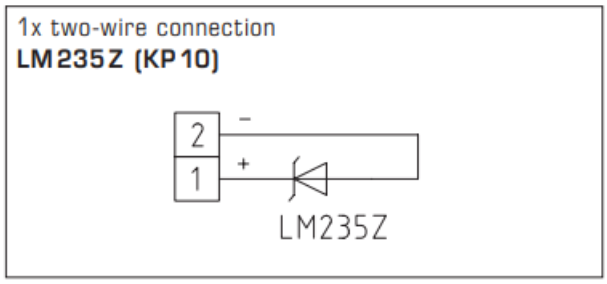
A room temperature sensor THERMASGARD® FSTF is used for air temperature measurement or setpoint adjustment, for presence detection or as room control and operating panel with temperature sensor, push-buttons, potentiometers, status indicators (LEDs). The in-wall sensor is mounted in high-quality panel switch programmes, ideally of the brands Gira, Berker, Merten, Jung, Siemens or Busch-Jaeger (using in-wall adapters) either individually or in combination with light switches, socket outlets, etc.It is used in non-aggressive, dust-free environments, in refrigeration, air conditioning and clean room technology, and in interior rooms, such as living rooms, offices, hotels, etc.

TECHNICAL DATA

Measuring ranges:	–30...+60 °C
Sensor / output:	see table, assembled on board, passive
Range suppression:	in the button
Testing current:	see page 15
Potentiometers:	standard 1 kΩ, max. 0.1 W (other ratings optional on request, e.g. 100 Ω, 2.5 kΩ, 5 kΩ, 10 kΩ optional 0-10 V linear)
Turn switches:	max. 24 V AC / DC, max. 130 mA, max. 5 steps (0, Auto, I, II, III)
Rocker switch:	max. 24 V AC / DC, max. 130 mA
Push-buttons:	normally open contact, max. 24 V DC / 10 mA
LEDs:	max. 24 V DC (optional max. 24 V AC), standard green (red, yellow or two-colour optional)
Installation:	in in-wall flush box Ø 55 mm
Electrical connection:	**FSTF-1** via screw terminals 0.14 - 1.5 mm², **FSTFxx** via plug terminals 1.0 - 2.5 mm², on safety extra-low voltage only, max. 42 V AC, 60 V DC
Humidity:	max. 90 % r.H., non-precipitating air
Protection class:	III (according to EN 60 730)
Protection type:	IP 20 (according to EN 60 529)
SWITCH PROGRAMMES	
Manufacturer:	GIRA System 55 (other switch programmes, manufacturers, colours and prices upon request
Housing:	plastic, standard colour pure white, glossy (similar to RAL 9010) (other colours are possible on request with colour variants depending on the respective light switch programme)

WIRE CONNECTION

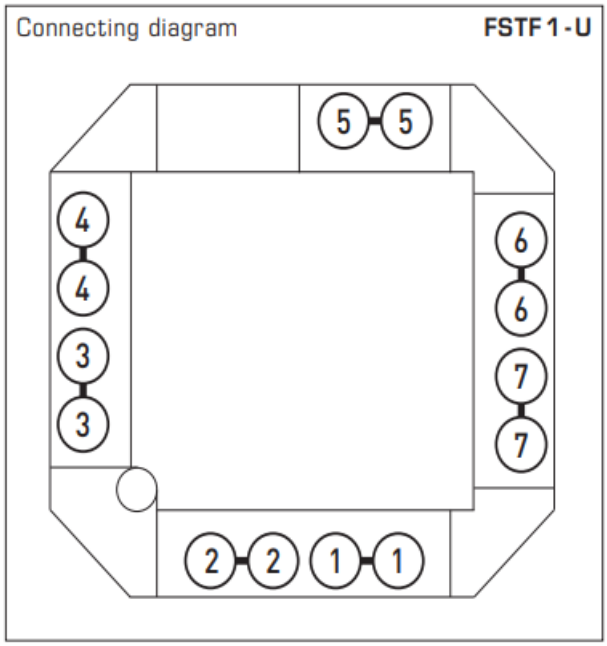




THERMASGARD® FSTF 1

Standard version with sensor

Connecting diagram



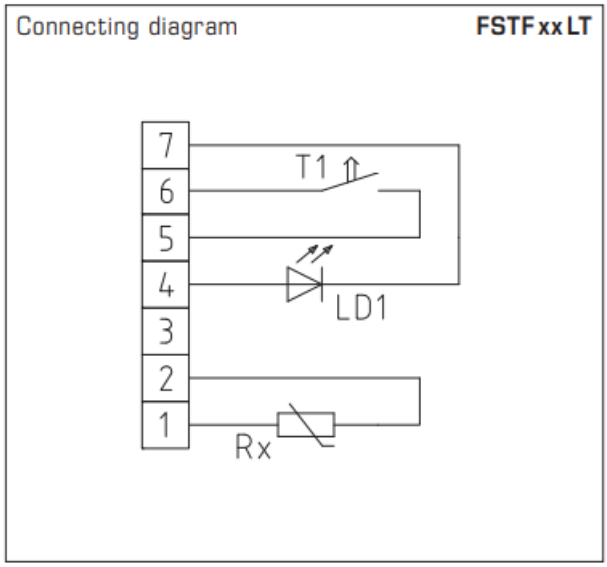
THERMASGARD® FSTF 1 Room temperature sensors

THERMASGARD® **FSTF 1**	Room temperature sensors	
Type / WG01	**Sensor / Output**	**Item No.**
FSTF1	**passive**	**IP 20** (–30…+60 °C)
FS T F1 P t100	Pt100 (according to DIN EN 60 751, class B)	1101-5020-1000-162
FS T F1 P t1000	Pt1000 (according to DIN EN 60 751, class B)	1101-5020-5000-162
FS T F1 Ni1000	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-5020-9000-162
FS TF1 Ni TK	Ni1000 TK5000 (TCR = 5000 ppm / K), LG – Ni1000	1101-5021-0000-162
FS T F1 LM 235 Z	LM235Z (TCR = 10 mV / K; 2.73 V at O °C), KP10	1101-5022-1000-162
FST F1 NT C 1,8 K	NTC 1.8 K	1101-5021-2000-162
FST F1 NT C 10 K	NTC 10K	1101-5021-5000-162
FST F1 NT C 20 K	NTC 20K	1101-5021-6000-162

THERMASGARD® FSTF xx LT

Version with sensor, LED (green), and push-button (max. 24 V DC, max. 10 mA)

Connecting diagram



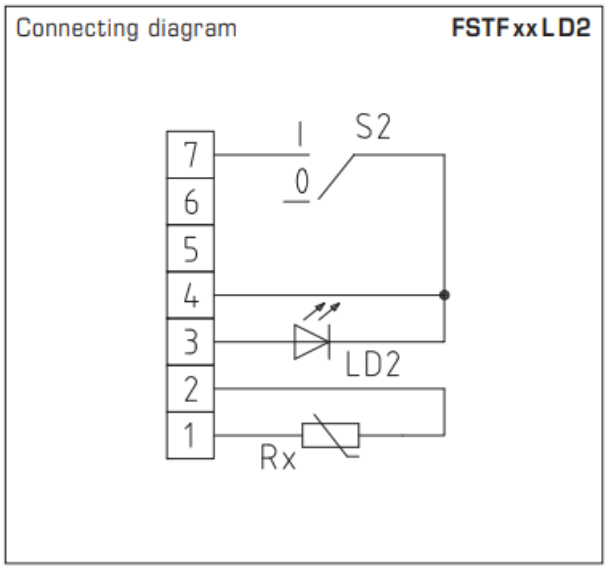
THERMASGARD® FSTF xx LT Room temperature sensors

Type / WG01	Sensor / Output	Item No.
FSTF xx LT	**passive**	**IP 20** (–30…+60 °C)
FS T F P t100 L T	Pt100 (according to DIN EN 60 751, class B)	1101-5020-1593-350
FS T F P t1000 L T	Pt1000 (according to DIN EN 60 751, class B)	1101-5020-5593-350
FS T F Ni1000 L T	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-5020-9593-350
FS T F Ni T K L T	Ni1000 TK5000 (TCR = 5000 ppm / K), LG – Ni1000	1101-5021-0593-350
FS T F LM 235 Z L T	LM235Z (TCR = 10 mV / K; 2.73 V at O °C), KP10	1101-5022-1593-350
FS T F N T C 1,8 K L T	NTC 1.8 K	1101-5021-2593-350
FS T F N T C 10 K L T	NTC 10K	1101-5021-5593-350
FS T F N T C 20 K L T	NTC 20K	1101-5021-6593-350

THERMASGARD® FSTF xx L D2

Version with sensor, LED (green), and turn switch (2-step) (max. 24 V AC / DC, max. 130 mA)

Connecting diagram



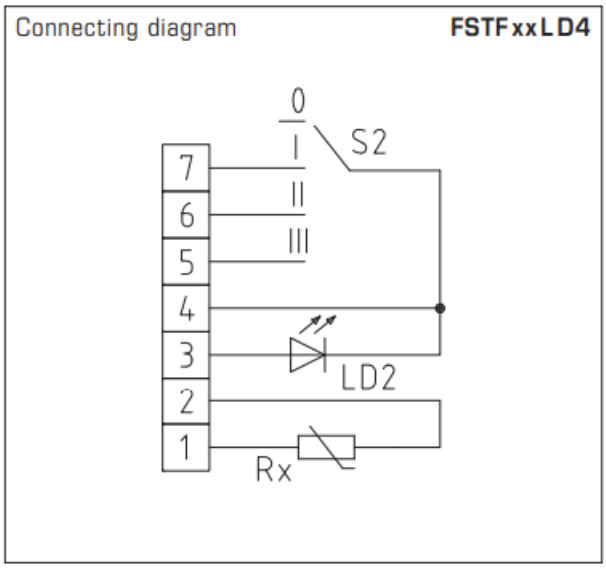
THERMASGARD® FSTF xx LD2 Room temperature sensors

Type / WG01	**Sensor / Output**	**Item No.**
FSTF xx LD2	**passive**	**IP 20** (–30…+60 °C)
FS T F P t100 D 2 L	Pt100 (according to DIN EN 60 751, class B)	1101-5020-1631-351
FS T F P t1000 D 2 L	Pt1000 (according to DIN EN 60 751, class B)	1101-5020-5631-351
FS T F Ni1000 D 2 L	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-5020-9631-351
FS T F Ni T K D 2 L	Ni1000 TK5000 (TCR = 5000 ppm / K), LG – Ni1000	1101-5021-0631-351
FS T F LM 235 Z D 2 L	LM235Z (TCR = 10 mV / K; 2.73 V at O °C), KP10	1101-5022-1631-351
FS T F N T C 1,8 K D 2 L	NTC 1.8 K	1101-5021-2631-351
FS T F N T C 10 K D 2 L	NTC 10K	1101-5021-5631-351
FS T F N T C 20 K D 2 L	NTC 20K	1101-5021-6631-351

THERMASGARD® FSTF xx L D4

Version with sensor, LED (green) and turn switch (4-step) (max. 24 V AC ⁄ DC, max. 130 mA)

Connecting diagram



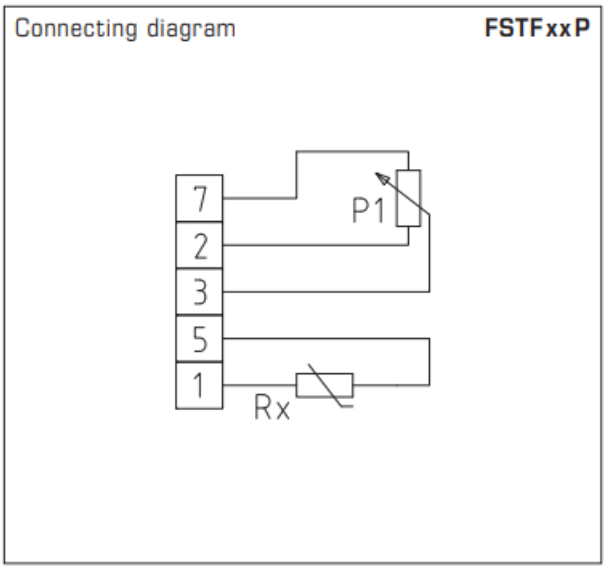
THERMASGARD® FSTF xx LD4 Room temperature sensors

Type / WG01	Sensor / Output	Item No.
FSTF xx LD4	**passive**	**IP 20** (–30…+60 °C)
FS T F P t100 D 4 L	Pt100 (according to DIN EN 60 751, class B)	1101-5020-1643-352
FS T F P t1000 D 4 L	Pt1000 (according to DIN EN 60 751, class B)	1101-5020-5643-352
FS T F Ni1000 D 4 L	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-5020-9643-352
FS T F Ni T K D 4 L	Ni1000 TK5000 (TCR = 5000 ppm / K), LG – Ni1000	1101-5021-0643-352
FS T F LM 235 Z D 4 L	LM235Z (TCR = 10 mV / K; 2.73 V at O °C), KP10	1101-5022-1643-352
FS T F N T C 1,8 K D 4 L	NTC 1.8 K	1101-5021-2643-352
FS T F N T C 10 K D 4 L	NTC 10K	1101-5021-5643-352
FS T F N T C 20 K D 4 L	NTC 20K	1101-5021-6643-352

THERMASGARD® FSTF xx P

Version with sensor and potentiometer (1 kOhm, max. 0.1 W)

Connecting diagram



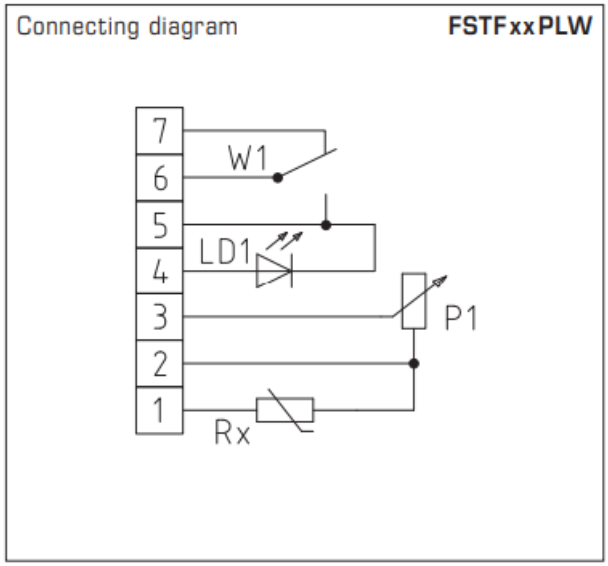
THERMASGARD® FSTF xx P Room temperature sensors

Type / WG01	**Sensor / Output**	**Item No.**
FSTF xx P	**passive**	**IP 20** (–30…+60 °C)
FS T F P t100 P	Pt100 (according to DIN EN 60 751, class B)	1101-5020-1001-282
FS T F P t1000 P	Pt1000 (according to DIN EN 60 751, class B)	1101-5020-5001-162
FS T F Ni1000 P	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-5020-9001-162
FS T F Ni T K P	Ni1000 TK5000 (TCR = 5000 ppm / K), LG – Ni1000	1101-5021-0001-162
FS T F LM 235 Z P	LM235Z (TCR = 10 mV / K; 2.73 V at O °C), KP10	1101-5022-1001-162
FS T F N T C 1,8 K P	NTC 1.8 K	1101-5021-2001-162
FS T F N T C 10 K P	NTC 10K	1101-5021-5001-162
FS T F N T C 20 K P	NTC 20K	1101-5021-6001-162

THERMASGARD® FSTF xx PLW

Version with sensor, potentiometer (1 kOhm, max. 0.1 W), LED (green), and rocker switch (max. 24 V AC ⁄ DC, max. 130 mA)

Connecting diagram



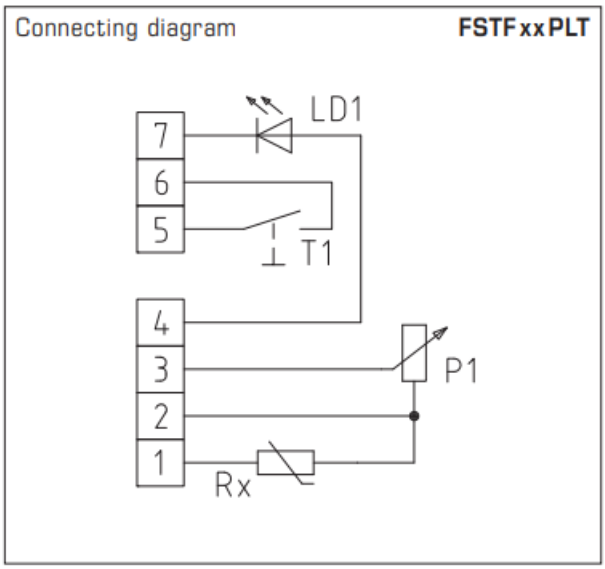
THERMASGARD® FSTF xx PLW Room temperature sensors

Type / WG01	Sensor / Output	Item No.
FSTF xx PLW	**passive**	**IP 20** (–30…+60 °C)
FS T F P t100 P L W	Pt100 (according to DIN EN 60 751, class B)	1101-5020-1655-353
FS T F P t1000 P L W	Pt1000 (according to DIN EN 60 751, class B)	1101-5020-5655-353
FS T F Ni1000 P L W	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-5020-9655-353
FS T F Ni T K P L W	Ni1000 TK5000 (TCR = 5000 ppm / K), LG – Ni1000	1101-5021-0655-353
FS T F LM 235 Z P L W	LM235Z (TCR = 10 mV / K; 2.73 V at O °C), KP10	1101-5022-1655-353
FS T F N T C 1,8 K P L W	NTC 1.8 K	1101-5021-2655-353
FS T F N T C 10 K P L W	NTC 10K	1101-5021-5655-353
FS T F N T C 20 K P L W	NTC 20K	1101-5021-6655-353

THERMASGARD® FSTF xx PLT

Version with sensor, potentiometer (1 kOhm, max. 0.1 W), LED (green), and push-button (max. 24 V DC, max. 10 mA)

Connecting diagram



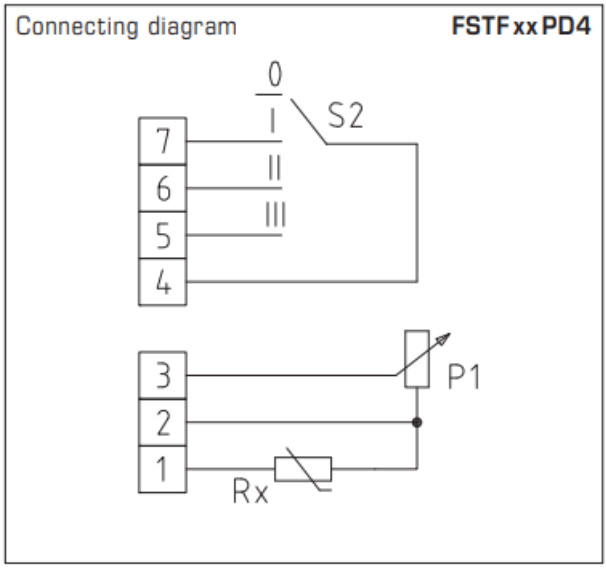
THERMASGARD® FSTF xx PLT Room temperature sensors

Type / WG01	**Sensor / Output**	**Item No.**
FSTF xx PLT	**passive**	**IP 20** (–30…+60 °C)
FS T F P t100 P L T	Pt100 (according to DIN EN 60 751, class B)	1101-5020-1663-162
FS T F P t1000 P L T	Pt1000 (according to DIN EN 60 751, class B)	1101-5020-5663-162
FS T F Ni1000 P L T	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-5020-9663-350
FS T F Ni T K P L T	Ni1000 TK5000 (TCR = 5000 ppm / K), LG – Ni1000	1101-5021-0663-350
FS T F LM 235 Z P L T	LM235Z (TCR = 10 mV / K; 2.73 V at O °C), KP10	1101-5022-1663-350
FS T F N T C 1,8 K P L T	NTC 1.8 K	1101-5021-2663-350
FS T F N T C 10 K P L T	NTC 10K	1101-5021-5663-350
FS T F N T C 20 K P L T	NTC 20K	1101-5021-6663-350

THERMASGARD® FSTF xx PD4

Version with sensor, potentiometer (1 kOhm, max. 0.1 W) and turn switch (max. 24 V AC / DC, max. 130 mA)

Connecting diagram



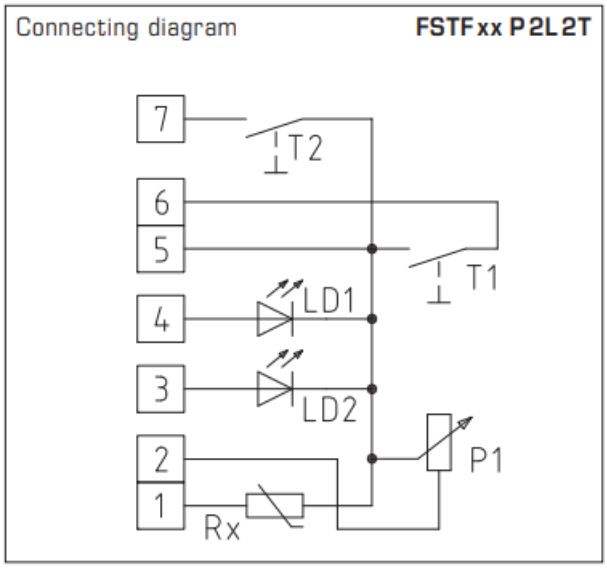
THERMASGARD® FSTF xx PD4 Room temperature sensors

Type / WG01	Sensor / Output	Item No.
FSTF xx PD4	**passive**	**IP 20** (–30…+60 °C)
FS T F P t100 P D 4	Pt100 (according to DIN EN 60 751, class B)	1101-5020-1007-354
FS T F P t1000 P D 4	Pt1000 (according to DIN EN 60 751, class B)	1101-5020-5007-354
FS T F Ni1000 P D 4	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-5020-9007-354
FS T F Ni T K P D 4	Ni1000 TK5000 (TCR = 5000 ppm / K), LG – Ni1000	1101-5021-0007-354
FS T F LM 235 Z P D 4	LM235Z (TCR = 10 mV / K; 2.73 V at O °C), KP10	1101-5022-1007-354
FS T F N T C 1,8 K P D 4	NTC 1.8 K	1101-5021-2007-354
FS T F N T C 10 K P D 4	NTC 10K	1101-5021-5007-354
FS T F N T C 20 K P D 4	NTC 20K	1101-5021-6007-354

THERMASGARD® FSTF xx P 2L 2T

Version with sensor, potentiometer (1 kOhm, max. 0.1 W), 2 LEDs (green, red), and 2 push-buttons (max. 24 V DC, max. 10 mA)

Connecting diagram



THERMASGARD® FSTF xx P 2L 2T Room temperature sensors

Type / WG01	**Sensor / Output**	**Item No.**
FSTF xx P 2L 2T	**passive**	**IP 20** (–30…+60 °C)
FS T F P t100 P 2 L 2 T	Pt100 (according to DIN EN 60 751, class B)	1101-5020-1672-256
FS T F P t1000 P 2 L 2 T	Pt1000 (according to DIN EN 60 751, class B)	1101-5020-5672-256
FS T F Ni1000 P 2 L 2 T	Ni1000 (according to DIN EN 43 760, class B, TCR = 6180 ppm / K)	1101-5020-9672-256
FS T F Ni T K P 2 L 2 T	Ni1000 TK5000 (TCR = 5000 ppm / K), LG – Ni1000	1101-5021-0672-256
FS T F LM 235 Z P 2 L 2 T	LM235Z (TCR = 10 mV / K; 2.73 V at O °C), KP10	1101-5022-1672-256
FS T F N T C 1,8 K P 2 L 2 T	NTC 1.8 K	1101-5021-2672-256
FS T F N T C 10 K P 2 L 2 T	NTC 10K	1101-5021-5672-256
FS T F N T C 20 K P 2 L 2 T	NTC 20K	1101-5021-6672-256

General notes

Measuring principle of HVAC temperature sensors in general:
The measuring principle of temperature sensors is based on an internal sensor that outputs a temperature-dependent resistance signal. The type of the internal sensor determines the output signal. The following active / passive temperature sensors are distinguished:

- Pt 100 measuring resistor (according to DIN EN 60 751)
- Pt 1000 measuring resistor (according to DIN EN 60751)
- Ni 1000 measuring resistor (according to DIN EN 43 760, TCR = 6180 ppm / K)
- Ni 1000_TK 5000 measuring resistor (TCR = 5000 ppm / K)

- LM235Z, semiconductor IC (10 mV / K, 2.73 V / °C). Ensure correct polarity + / – when connecting!
- NTC (according to DIN 44070)
- PTC
- KTY silicon temperature sensors

  The most important resistance characteristics are shown on the last page of these operating instructions. According to their characteristics, i ndividual temperature sensors exhibit different slopes in the range between 0 °C and +100 °C (TK value). Maximum-possible measuring ranges also vary from sensor to sensor (for some examples to this see under technical data).

Resistance characteristics of passive temperature sensors

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.
- **Pt1000 (thin-layer):** < 0,6 mA
- **Pt100 (thin-layer):** < 1,0 mA
- **Ni1000 (DIN), Ni1000 TK5000 :** < 0,3 mA
- **NTC xx :** < 2 mW
- **LM235Z:** 400 µ A … 5 mA
- **KTY 81** – 210 : < 2 mA

General notes

- Our “General Terms and Conditions for Business“ together with the “General Conditions for the Supply of

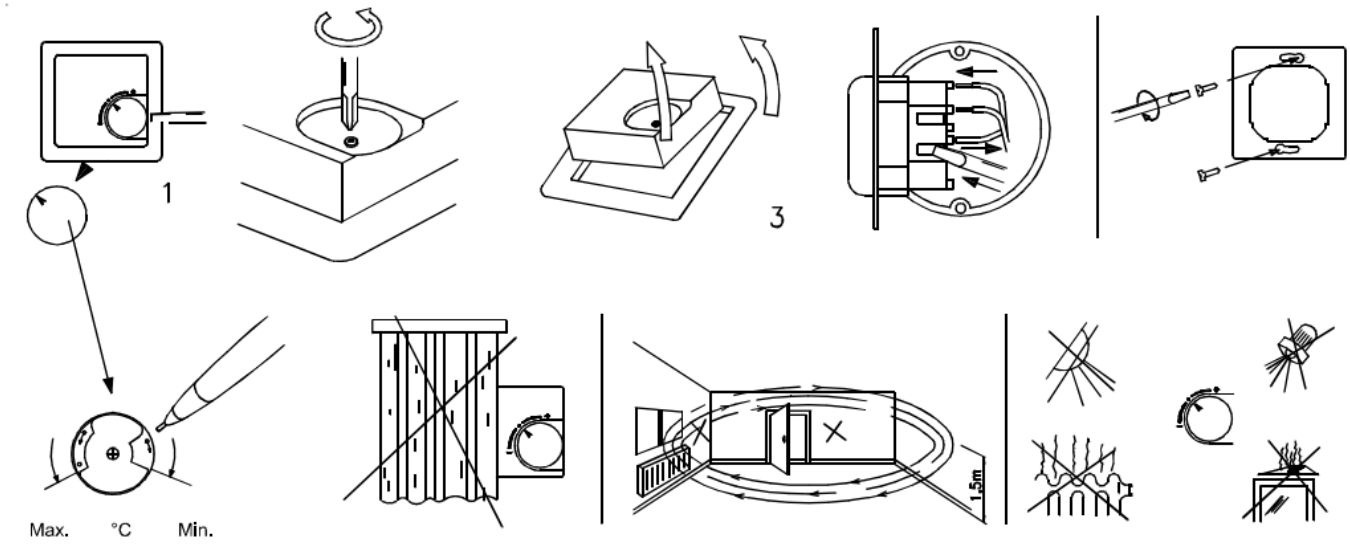
Products and Services of the Electrical and

- Electronics Industry“ (ZVEI conditions) including supplementary clause “Extended Retention of Title“ apply as the exclusive terms and conditions.
- In addition, the following points are to be observed:
    - These instructions must be read before installation and putting in operation and all notes provided therein are to be regarded!
    - In order to prevent measuring errors, ensure during installation on an in-wall flush box that the end of the installation pipe is sealed against draught.
    - Devices must only be connected to safety extra-low voltage and under dead-voltage condition. To avoid damages and errors at the device (e.g. by voltage induction) shielded cables are to be used, laying parallel with current-carrying lines is to be avoided, and EMC directives are to be observed.
    - This device shall only be used for its intended purpose. Respective safety regulations issued by the VDE, the states, their control authorities, the TÜV and the local energy supply company must be observed. The purchaser has to adhere to the building and safety regulations and has to prevent perils of any kind.
    - No warranties or liabilities will be assumed for defects and damages arising from improper use of this device.
    - Consequential damages caused by a fault in this device are excluded from warranty or liability.
    - These devices must be installed and commissioned by authorised specialists.
    - The technical data and connecting conditions of 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.
    - This device must not be installed close to heat sources (e.g. radiators) or be exposed to their heat flow. Direct sun irradiation or heat irradiation by similar sources (powerful lamps, halogen spotlights) must absolutely be avoided.
    - 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 housing 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 on commissioning:
This device was calibrated, adjusted and tested under standardised conditions. When operating under deviating conditions, we recommend performing an initial manual adjustment on-site during commissioning and subsequently at regular intervals.

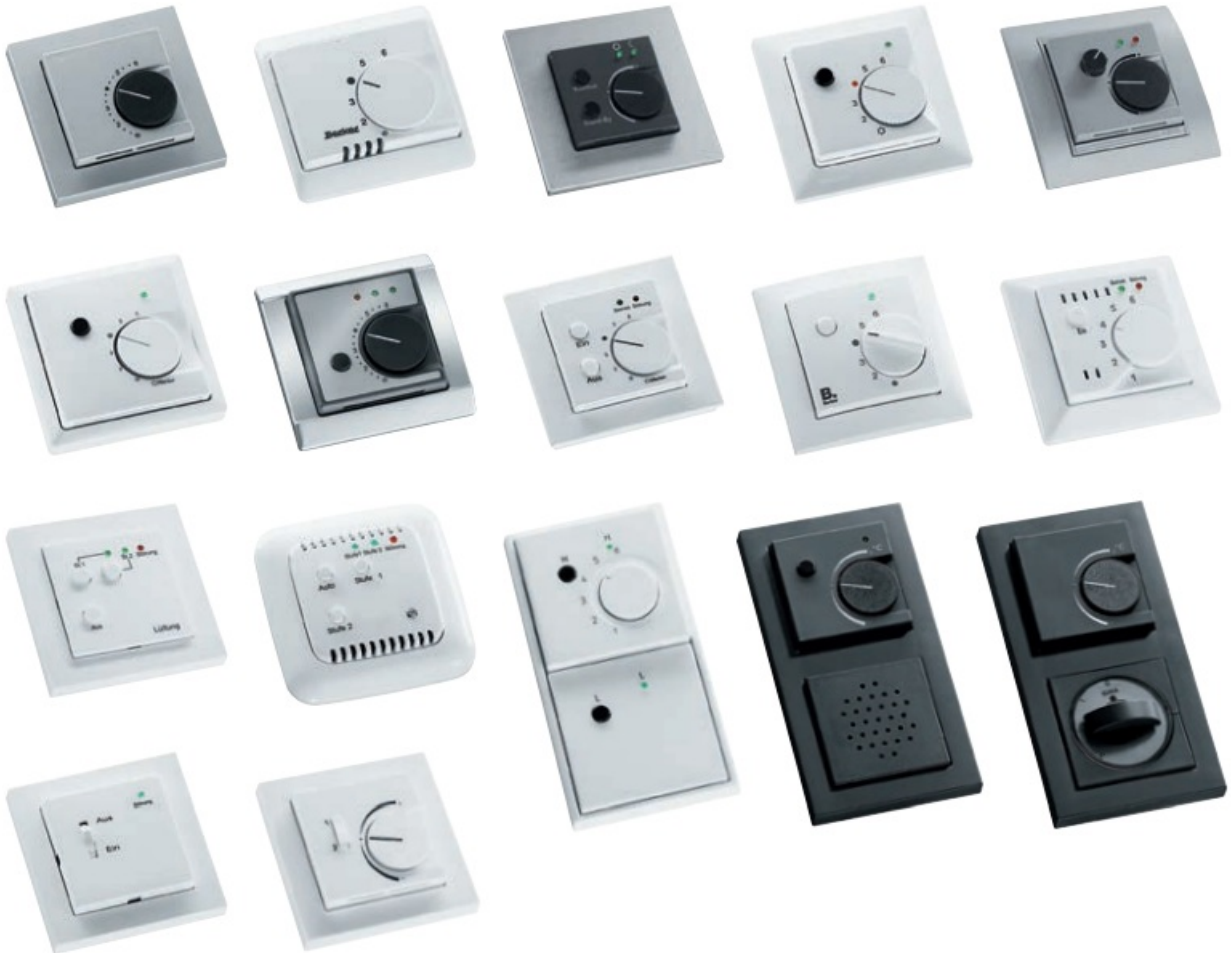
Commissioning is mandatory and may only be performed by qualified personnel!
These instructions must be read before installation and commissioning and all notes provided therein are to be regarded

Caution
You must ensure that the potentiometer is connected up correctly. Polarity reversal can cause a short circuit. Depending on the switching program, there are two quick release axles enclosed with the potentiometer to compensate different installation heights of the covers. This ensures that the min. and max. stop of the set point adjustment function properly.



An overview of various versions

Resistance characteristics of passive temperature sensors



Resistance characteristics of passive temperature sensors

° C	PT 100 Ω	PT 1000 Ω	Ni 1000 Ω	Ni 1000 TK 5000 Ω	FeT (T1) Ω	KTY 81-210 Ω	LM235Z (KP10) 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	NTC	NTC	NTC	NTC	NTC	NTC	NTC	
	1.8 kOhm	2.2 kOhm	3 kOhm	5 kOhm	10 kOhm	10 kPRE	20 kOhm	50 kOhm	
° 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

Documents / Resources

	**S S REGELTECHNIK FSTF Room Temperature Sensors In Wall Panel Switch** [pdf] Instruction Manual WG01 FSTF1, WG01 FSTFxxLD2, WG01 FSTFxxLD4, WG01 FSTFxxP, WG01 FSTFxxPLW, FSTF Pt100, FSTF Pt1000, FSTF Ni1000, FSTF NiTK, FSTF LM235Z, FSTF NTC1.8K, FSTF NTC10K, FSTF NTC20K, FSTF, FSTF Room Temperature Sensors In Wall Panel Switch, Room Temperature Sensors In Wall Panel Switch, Temperature Sensors In Wall Panel Switch, Sensors In Wall Panel Switch, In Wall Panel Switch, Panel Switch, Switch

References

- S+S Regeltechnik | Ihr sensorik Partner