Thermal Reset Limit Thermostats

RAK-TW.1..H
RAK-TW.1..H..

Electromechanical TW according to DIN EN 14597

- **2-position thermal reset limit thermostat with single-pole changeover microswitch**
- **Switching capacity contact connection 1-2: 16 (2.5) A, AC 250 V**
  contact connection 1-3: 6 (2.5) A, AC 250 V
- **Time constant conforming to DIN EN 14597**
- **3 mounting choices: pipe, pocket or wall mounting**
- **Adjusted switch-off temperature can be checked through the viewing window in the housing**
- **IP43 and IP65 protection class available**
- **Push-in terminals for fast installation**

Use

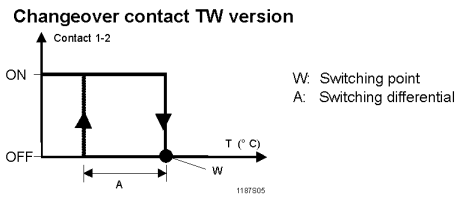
Typical applications:

- Heat generation plant
  (supervision of the boiler temperature; mandatory in open heating systems)
- For general use in heating, ventilation and air conditioning plant

Function

Changeover switch (S.P.D.T.)

When the adjusted switch-off temperature is reached on rising temperature, contact connection 1-2 changes over to contact connection 1-3. When the temperature of the medium falls by the value of the switching differential, the thermal reset limit thermostat (TW) reverts to contact connection 1-2.



If the probe has cooled down to a temperature below approx. -20°C, the control current circuit opens, however, automatically closes again, when the temperature rises.

Type summary

Product No.	Stock number	Degree of protection	Temperature setting range	Capillary tube length	Scope of delivery	Pocket length[1)]
RAK-TW.1000HB	S55700-P115	IP65	15...95 °C	700 mm	Pocket (for RAK….B and P) / Clamping band for max. pipe dia. 100 mm (for RAK…B) / Cable gland M16x1.5 mm / Mounting instructions	100 mm
RAK-TW.1200HP	S55700-P118	IP65	40...120 °C			100 mm
RAK-TW.1200B-H	S55700-P117	IP43	40...120 °C			100 mm
RAK-TW.1000S-H	S55700-P116	IP43	15...95 °C			----
RAK-TW.1200S-H	S55700-P119	IP43	40...120 °C			----

1) Pocket ALT-SB100, brass, PN10

Accessories

Refer to Data Sheets N1193 and N1194.

Ordering

When ordering, please give type reference according to “Type summary“ (standard set).

If the accessories required are not those included in the standard set, they can be ordered separately according to the type references given in Data Sheets N1193 and N1194.

Mechanical design

Housing

- The base of the thermostat is made of PC (reinforced) and is designed for pipe, pocket or wall mounting; the electromechanical thermal reset limit thermostat uses a capillary type sensing element.
- The cover is made of PC and has a viewing window.
- The cable gland is M16x1.5 mm.
- The PC plastic is especially designed to be flame resistant, UV protected and flexible against high temperatures and tough against chemical and biological impacts.

Notes

Mounting aid

Installation Instructions are enclosed in the package.

Mounting location

It must be ensured that there is sufficient clearance above the thermostat for seeing through the viewing window, for adjusting the limit temperature and for removing and replacing the thermostat, if required.

Pipe mounting

The clamping band should be properly tightened to ensure the entire length of the sensing element is in close contact with the pipe’s surface.

Pocket mounting

Mount the pocket and adjust the hexagon as required. Immerse the capillary sensing element in the pocket and secure the base to the pocket by means of the screw.

Wall mounting with sensing element in the pocket

To prepare for wall mounting, knock out the fixing holes in the housing and pull out the capillary tube until the required length is reached. After immersing the capillary sensing element in the pocket, secure it with a clamp (mounting accessories).

⚠ Temperature setting

The limit temperature must be adjusted only by qualified personnel.

⚠ Wiring

The appliance must be wired by the installer only.
The cables used must meet the insulation requirements for mains voltage.
Wire the thermostat according to the connection diagram and in compliance with local regulations.

⚠ Max. AC 250 V

Caution: prior to opening the housing, disconnect the thermostat from the mains supply.

⚠ ⏚

Earth connections must be made in compliance with the regulations.

Disposal

The devices are considered electronics devices for disposal in terms of European Directive 2012/19/EU and may not be disposed of as domestic waste.

- Dispose of the device via the channels provided for this purpose.
- Comply with all local and currently applicable laws and regulations.

Technical data

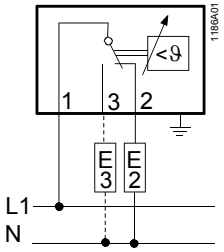
Switching mechanism	Switching capacity	
	Nominal voltage	AC 24…250 V
	Nominal current I (I_M) contact connection 1-2	0.1...16 (2.5) A
	contact connection 1-3	0.1… 6 (2.5) A
	External fuse	16 A
	Life expectancy at nominal rating	min. 100'000 switching cycles
	Safety class	I to EN 60 730
	Degree of protection:	IP43 and IP65 to EN 60 529
	Temperature setting range (with tool)	
	RAK-TW.1000HB	15...95 °C
	RAK-TW.1200HP	40...120 °C
	RAK-TW.1200B-H	40...120 °C
	RAK-TW.1000S-H	15...95 °C
	RAK-TW.1200S-H	40...120 °C
	Thermal switching differential	6 K (range dependent)
Directives and Standards	Product standard	EN 60730-x
		DIN EN 14597 (TW1197) [1)]
	EU Conformity (CE)	CE1T1206xx [1)]
	Radio interference protection	click rate N ≤5 to EN 55 014
Environmental conditions	Operation	class 3K5 to IEC 60 721-3-3
	Max. temperature on bulb	switch-off temperature + 25 K
	Ambient temperature at the housing	max. 80 °C (T80)
	Humidity	< 95 % r.h.
	Mechanism	class 3M2 to IEC 60 721-3-3
	Storage and transport	class 2K3 to IEC 60 721-3-2
	Ambient temperature	-25…+70 °C
	Humidity	< 95 % r.h.
	Max. temperature socket	125 °C
	Degree of pollution	2 to EN 60 730
	Controlled medium	Water, oil, air
	Influence of the ambient temperature	-0.25 °C/°C
Calibration	Calibration temperature	80 °C
	Manufacturing deviation	±3 °C
	Drift after life expectancy	< ±5 %
	Calibrated for ambient temperature at the switching mechanism and capillary tube	22 °C to DIN EN 14597
	Time constant in: water	<45 s to DIN EN 14597
	oil	<60 s to DIN EN 14597
	air	<120 s to DIN EN 14597

Connections	Electrical connections	Push In [2] terminals for wires 6 x 0.75...2.5 mm²
	Earth connection	Push In [2] terminals for wires 2 x 0.75...2.5 mm²
	Cable gland	M16 x 1.5 mm
	External wiring flexible cord	designed to be connected with unprepared conductors or prepared conductors, e.g. ferrules
General data	Housing colors	base RAL 7001 (dark-grey) cover RAL 7035 (light-grey)
	Dimensions of sensing element	6.5 mm dia. x 65 mm
	Capillary length	700 mm
	Min. bending radius of capillary	R min. = 5 mm
	Construction	
	Carrier of switching mechanism	plastic
	Capillary tube and sensing element	copper
	Diaphragm	stainless steel
	Weight of standard set: RAK...B	0.33 kg
	RAK...S	0.27 kg

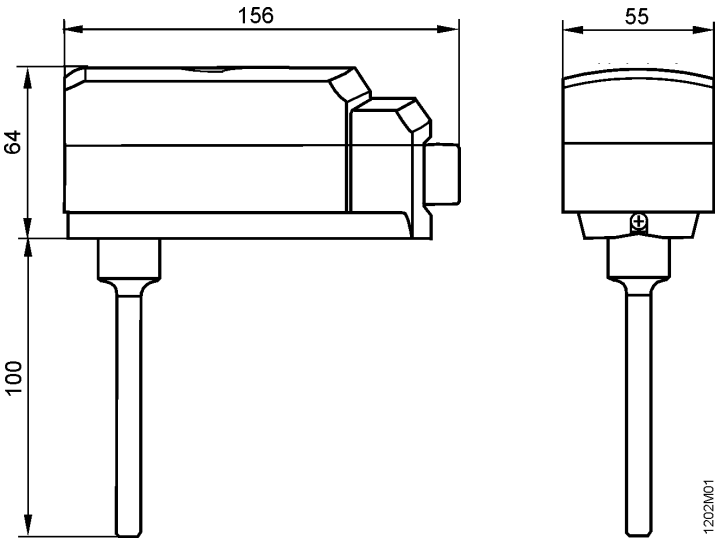
1) The documents can be downloaded from http://siemens.com/bt/download.

2) Push In is a patented connection technology designed by Weidmüller, Germany's leading manufacturer of electrical connection technologies.

Connection diagram



Dimensions



Published by:
Siemens Switzerland Ltd.
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