



## Control Thermostats

## RAK-TR.1..H

Electromechanical TR

- 2-position control thermostat with single-pole changeover microswitch
- **Switching capacity** contact connection 1-2: 16 (2.5) A, AC 250 V (DIN3440)  
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
- External setting knob for setpoint adjustment
- Push-in terminals for fast installation

### Use

Typical applications:

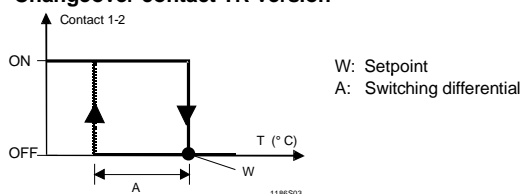
- Heat generation plant
- For general use in heating, ventilation and air conditioning plant

### Function

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

When the setpoint 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 control thermostat reverts to contact connection 1-2.

#### Changeover contact TR version



If the probe has cooled down to a temperature below approx.  $-20^{\circ}\text{C}$ , 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 <sup>1)</sup>
RAK-TR.1000B-H	S55700-P111	IP43	15...95 °C	700 mm	Pocket (for RAK...B) / Clamping band for max. pipe dia. 100 mm / Cable gland M16x1.5 mm / Mounting instructions	100 mm
RAK-TR.1000S-H	S55700-P112	IP43	15...95 °C			----
RAK-TR.1210B-H	S55700-P113	IP43	15...82 °C			100 mm

1) Pocket ALT-SB100, brass nickel-plated, 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	<ul style="list-style-type: none"> <li>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.</li> <li>The cover is made of PC.</li> <li>The cable gland is M16x1.5 mm.</li> <li>The PC plastic is especially designed to be flame resistant, UV protected and flexible against high temperatures and tough against chemical and biological impacts.</li> </ul>
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### 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 adjusting the setpoint 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.
Protection 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).
 Wiring	<p>The appliance must be wired by the installer only.</p> <p>The cables used must meet the insulation requirements for mains voltage.</p> <p>Wire the thermostat according to the connection diagram and in compliance with local regulations.</p>
 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 $I_M$	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: Contact 1-2	min. 250'000 switching cycles	
	Safety class	I to EN 60 730	
	Degree of protection:	IP 43 to EN 60 529	
	Externally adjustable		
	temperature range RAK-TR.1000B-H	15...95 °C	
	temperature range RAK-TR.1000S-H	15...95 °C	
	temperature range RAK-TR.1210B-H	15...82 °C	
	Thermal switching differential	6 K	
Directives and Standards	Product standard	EN 60730-x DIN EN 14597 (TR1198) <sup>1)</sup>	
	EU Conformity (CE)	CE1T1206xx <sup>1)</sup>	
	Radio interference protection	click rate $N \leq 5$ 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	normal to EN 60 730	
Calibration	Controlled medium	Water, oil	
	Calibration temperature	80 °C	
	Manufacturing deviation	$\pm 3$ °C	
	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 <sup>2)</sup> terminals for wires 6 x 0.75...2.5 mm <sup>2</sup>	
	Earth connection	Push In <sup>2)</sup> terminals for wires 2 x 0.75...2.5 mm <sup>2</sup>	
	Cable gland	M16 x 1.5 mm	
	External wiring flexible cord	Type M attachment (designed to be connected with prepared conductors, e.g. ferrules)	

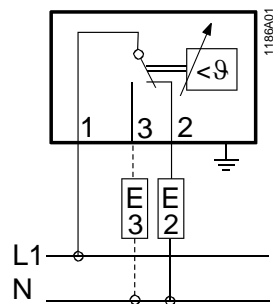
General data

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

