



## 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:

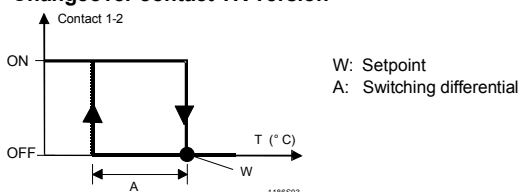
- Heat generation plant
- For general use in heating, ventilation and air conditioning plant

### 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

- 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.
- 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 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

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 device is a waste electronic equipment in terms of the European Directive 2002/96/EC (WEEE) and should not be disposed as part of unsorted municipal waste. The relevant national legal rules are to be paid attention. Use for disposal the systems set up to collect electronic waste. Observe all local and applicable laws.

## Technical data

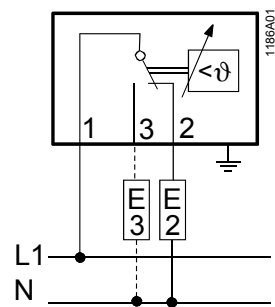
Switching mechanism	Switching capacity		
	Nominal voltage	AC 24...250 V	
	Nominal current $I_M$	contact connection 1-2	0.1... 16 (2.5) A
		contact connection 1-3	0.1... 6 (2.5) A
	External fuse	16 A	
	Life expectancy at nominal rating: Contact 1-2	min. 250'000 switching cycles	
	Safety class	I to EN 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		
Standards	 conformity		
	Electromagnetic compatibility directive	89/336/EEC	
	Low voltage directive	73/23/EEC	
	C-tick	 N474	
	EN 14597	TR 119 808	
	Product standards		
Automatic electrical controls for household and similar use	EN 60 730-1		
Special requirements placed on temperature-dependent controls	EN 60 730-2-9		
Type 1 action	BL		
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	
Controlled medium	Water, oil		
Calibration	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>1)</sup> terminals for wires 6 x 0.75...2.5 mm <sup>2</sup>	
	Earth connection	Push In <sup>1)</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

<sup>1)</sup> Push In is a patented connection technology designed by Weidmüller, Germany's leading manufacturer of electrical connection technologies.

## Connection diagram



## Dimensions

