Thermal Reset Limit Thermostats RAK-TW.1...

Electromechanical TW according to DIN3440

- **2-position thermal reset limit thermostat with single-pole changeover microswitch**
- **Switching capacity contact connection 1-2: 10 (2.5) A, AC 250 V**
  contact connection 1-3: 6 (2.5) A, AC 250 V
- **Time constant conforming to DIN 3440**
- **3 mounting choices: pipe, pocket or wall mounting**
- **Adjusted switch-off temperature can be checked through the viewing window in the housing**

Use

Typical applications:

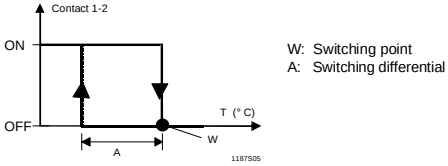
- Heat generation plant
  (supervision of the boiler temperature; mandatory in open heating systems)
- For general use in heating, ventilation and air conditioning plant

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.

Changeover contact TW version



W: Switching point
A: Switching differential

Type summary

Standard set	Temperature setting range	Capillary tube length	Scope of delivery	Pocket length [1)]
RAK-TW.1000B	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-TW.1200B	40...120 °C			100 mm
RAK-TW.1000S	15...95 °C			---
RAK-TW.1200S	40...120 °C			---

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 PA (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 ABS + PC and has a viewing window.

The cable gland is M16x1.5 mm.

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

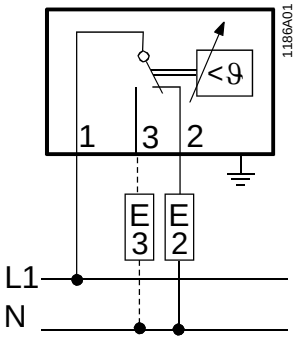
The device is a waste electronic equipment in terms of the European Directive 2002/96/EC (WEEE) and should not be disposed as part of unsorted municipal waste. The relevant national legal rules are to be paid attention. Use for disposal the systems set up to collect electronic waste. Observe all local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

Technical data

Switching mechanism	Switching capacity	
	Nominal voltage	AC 24…250 V
	Nominal current I (I_M) contact connection 1-2	0.1...10 (2.5) A
	contact connection 1-3	0.1… 6 (2.5) A
	External fuse	10 A
	Life expectancy at nominal rating	min. 100'000 switching cycles
	Safety class	I to EN 60 730
	Degree of protection:	IP 43 to EN 60 529
	Temperature setting range	(with tool)
	RAK-TW.1000	15...95 °C
	RAK-TW.1200	40...120 °C
	Thermal switching differential	6 K (range dependent)
Norms and Standards	CE conformity	
	Electromagnetic compatibility directive	89/336/EEC
	Low voltage directive	73/23/EEC
	Pressure equipment directive	97/23/EEC (CE 0497)
	C-tick	N474
	DIN3440	TW 114002
	ENEC (European Norms Electrical Certification)	
Product standards	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 2 action	BL
	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 max. 125 °C
	Ambient temperature at the housing	max. 50 °C (T50)
	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	135°C
	Degree of pollution	normal to EN 60 730
	Controlled medium	Water, oil
	Influence of the ambient temperature	-0.18 °C/°C
Calibration	Calibration temperature	max. limit temperature
	Manufacturing deviation	±3 °C
	Drift after life expectancy	< ±5 %
	Calibrated for ambient temperature at the switching mechanism and capillary tube	20 °C to DIN 3440
	Time constant in: water	<45 s to DIN 3440
	oil	<60 s to DIN 3440
	air	<120 s to DIN 3440

Connections	Electrical connections	screw terminals for wires 2 x 0.75...1.5 mm²
	Earth connection	screw terminal for wires 2 x 0.75...1.5 mm²
	Cable gland	M16 x 1.5 mm (for max. 4-core cable)
	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 87 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
	Contacts	Ag.1000‘/1000 (silver)
	Weight of standard set: RAK...B	0.33 kg
	RAK...S	0.27 kg

Connection diagram



Dimensions