



Double thermostat

Control Thermostat / Thermal Reset Limit Thermostat

RAZ-TW....

Combination of electromechanical TR and TW

- 2-position control thermostat and thermal reset limit thermostat with single-pole changeover microswitches
- Switching capacity of microswitches:

contact connection 1-2	10 (2.5) A, AC 250 V (DIN3440)
contact connection 1-3	6 (2.5) A, AC 250 V
- Time constant conforming to DIN 3440
- 2 mounting choices: pocket or wall mounting
- External setting knob for setpoint adjustment
- Internal adjustment of the switch-off temperature

Use

Typical applications:

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

Function

When the adjustable setpoint of the control thermostat (TR) 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.

When the internally adjusted switch-off temperature of the thermal reset limit thermostat (TW) is reached, 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.

Type summary

Standard-set	Control and temperature range	Capillary tube length	Scope of delivery
RAZ-TW.1000P	(TR) 15...95 °C (TW) 15...95 °C	700 mm	Double pocket for 2 sensing elements, 100mm length (ALT-DB100, brass nickel-plated, PN10),
RAZ-TW.1200P	(TR) 40...120 °C (TW) 40...120 °C	700 mm	cable gland M16x1.5 mm Mounting instructions

Accessories

Refer to Data Sheets N1193 and for protection pockets 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 reference given in Data Sheets N1193 and N1194.

Mechanical design

Double housing

The base of the thermostat is made of PA (reinforced) and is designed for pocket or wall mounting; the electromechanical control thermostat (TR) and the thermal reset limit thermostat (TW) use 2 separate capillary type sensing elements.

The cover is made of ABS + PC and accommodates the setpoint setting knob plus the 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 adjusting the setpoint and for removing or replacing the thermostat, if required.

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 elements in the pocket, secure it with a clamp (mounting accessories).

Temperature setting

The internal 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

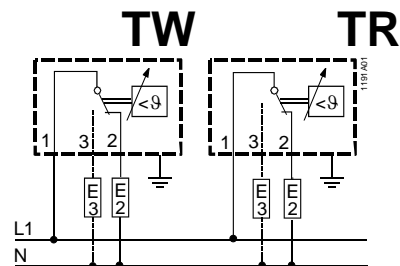
The device is a waste electronic equipment in terms of the European Directive 2002/96/EC (WEEE) and should not be disposed as part of unsorted municipal waste. The relevant national legal rules are to be paid attention. Use for disposal the systems set up to collect electronic waste. Observe all local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

Technical data

Switching mechanism of TR and TW	Switching capacity	
	Nominal voltage	AC 24...250 V
	Nominal current $I_{(M)}$ contact connection	1-2
		1-3
		0.1... 10 (2.5) A
		0.1... 6 (2.5) A
	External fuse	10 A
	Life expectancy at nominal rating	
	TR contact 1-2	min. 250 000 switching cycles
	TR contact 1-3 and TW contacts 1-2, 1-3	min. 100 000 switching cycles
	Safety class	I to EN 60 730
	Degree of protection:	IP 43 to EN 60 529
	Temperature range RAZ-TW.1000P	
	Externally adjustable control temperature (TR)	15...95 °C
	Internally adjustable switch-off temperature(TW)	15...95 °C (with tool)
	Temperature range RAZ-TW.1200P	
	Externally adjustable control temperature (TR)	40...120 °C
	Internally adjustable switch-off temperature(TW)	40...120 °C (with tool)
	Externally adjustable temperature TR	15...95 °C
	Internally adjustable switch-off temperature TW	15...95 °C (with tool)
	Thermal switching differential TR and TW	6 K (range dependent)
Norms and Standards	 conformity, directives	
	Electromagnetic compatibility in accordance	89/336/EEC
	Low voltage directive	73/23/EEC
	Pressure equipment directive	97/23/EEC (CE 0497)
	ENEC (European Norms Electrical Certification)	
	C-tick	 N474
	DIN3440	TR/TW 114102
	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 TR action	BL
	Type 2 TW 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	
	RAZ-TW.1000P	120 °C
	RAZ-TW.1200P	135 °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 TR and TW	Max setpoint / limit temperature
	Manufacturing deviation TR and TW	± 3 °C
	Drift after life expectancy TR and TW	$< \pm 5$ %
	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 mm ²
	Earth connection	screw terminals for wires 2 x 0.75...1.5 mm ²
	Cable entry 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 elements TR and TW	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 elements	copper	
Diaphragms	stainless steel	
Contacts	Ag.1000/1000 (silver)	
	Weight of standard set	0.53 kg

Connection diagram



Dimensions

