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Room Thermostat Type AMFRc-1333

- **IP54 protection**
- **4-stage room thermostat in surface-mounting housing, switching in sequence**
- **electrical wiring on pcb**
- **setpoint adjustment from outside by turning the knob**
- **contact spacing permanently set in factory to customer specification**

Brief description

The room thermostat Type AMFRc-1333 is a 4-stage temperature controller with a high response accuracy. The wiring has been laid out for fan control by different speed stages. The contact spacing of the individual switching stages in °C is permanently set in the factory to customer specification. Room thermostats operate on the principle of liquid expansion, with a microswitch serving as the electrical switching device.

Switching action

If the temperature at the temperatur probe exceeds the selected setpoint, the microswitch is operated through a mechanism and the circuit is opened or closed. When the temperature falls below the selected setpoint (by the amount of the switching differential), the microswitch returns to its initial position.

Technical data

Electrical data

Electrical connection	via terminal board, after removal of cover, temperature controller and terminal board are mounted on a pcb and electrically wired up in accordance with the connection diagram
Switching device	4 single-pole snap-action switches with changeover contact
Max. contact rating	10 (2) A, 230 V AC +10%, p.f. = 1 (0.6) 0.25 A, 230 V DC +10%, max. permissible starting current: break contact: 16 A make contact: 10 A

Operating data

Control ranges	-10 to +40°C or 0 to +50°C	
Switching point accuracy	setpoint: ± 0.75 °C at 20°C, contact spacing: ± 0.25 °C	
Contact spacing	The contact spacing is defined in °C relative to the setpoint (contact I). 10 °C max. / 0.5 °C min.	The switching stages are assigned to be below the setpoint. The contact spacing of the 3 switching stages is specified in °C relative to the setpoint. (For example, -1°C/-2°C/-3°C, i.e. with a setpoint selection +20°C and rising temperature, the first stage switches at +17°C, the second stage at +18°C, the third stage at +19°C and the fourth stage at the setpoint +20°C).
Switching differential	approx. 1.2 °C	
Permissible ambient temp.	in operation -20 to +60°C	
Permissible storage temp.	-50 to +50°C	
Nominal position (NL)	to DIN 16 257, NL 0 — NL 90 (other NL on request)	

Housing

Housing	plastic housing in impact-resistant polycarbonate color: cover pebble gray RAL 7032, base anthracite RAL 7016
Housing fixing	by 2 screws inside housing
Cable entry	standard: clamping gland M20 x 1.5, for 8 — 10 mm cable diameter
Enclosure protection	EN 60 529-IP54
Temperature probe	coiled probe, tinned copper
Weight	approx. 0.5 kg

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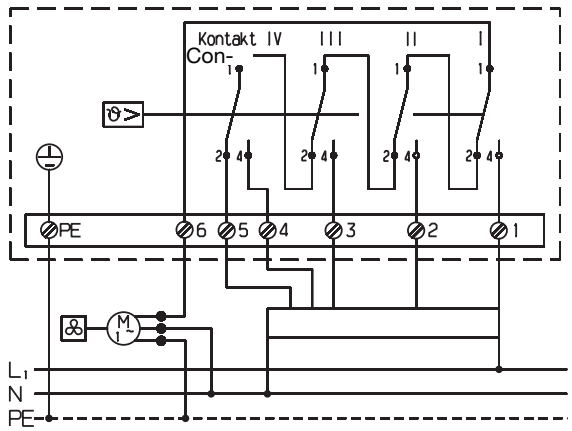
Note:
Physical and toxicological properties of the expansion fluid that may escape in the event of a system fracture.

Dangerous reactions	Fire / explosion hazard		Water contamination	Toxicological data		
	Ignition temperature °C	Explosion limit % v/v		irritant	danger to health	toxic
no	+ 355	0.6 — 8	yes	yes	[1]	no

[1] At present there is no restrictive statement from the health authorities concerning any danger to health over short periods and at low concentration, e.g. after a fracture of the measuring system.

Connection diagram



Switching action

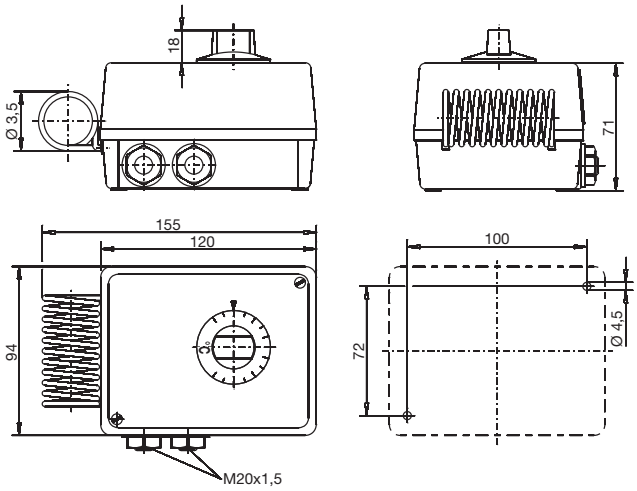
The setpoint is at contact **I**. If this setpoint is set to +28°C, for instance, and the room temperature is below +20°C, then the fan operates with the lowest transformer voltage. This lowest transformer voltage is on terminal 5. In this case, the current flows from terminal 5 via the contacts **IV**, **III**, **II** and **I** to terminal 6, or to the fan.

If the room temperature rises to +20°C, then stage **IV** switches over and the next-higher transformer voltage, terminal 4, is switched through to the fan. On reaching +23°C, the voltage from terminal 3 is switched through, at +25°C from terminal 2 and at +28°C from terminal 1 (mains supply voltage).

With falling temperature, the switchover takes place in reverse order, but lower than the corresponding setpoint by the amount of the switching differential of the thermostats (1.2°C).

Switching sequence with rising temperature			
Contact			
Follow-on contact			Setpoint
IV	III	II	I
e.g. ϑ-8°C	e.g. ϑ-5°C	e.g. ϑ-3°C	q

Dimensions



Order details

Available from stock

Sales No.	Type	Control range °C	Switching differential °C	Contact spacing
60/60000406	AMFRc-1333	0 to +50	1.2	-1°C, -2°C, -3°C

Not available from stock

Order code	(1)	Basic type	
604045		AMFRc-1333	4-stage room thermostat in surface-mounting housing, factory-set to switching in sequence
	(2)	**Control ranges**	
016		-10 to + 40°C	
021		0 to + 50°C	
	(3)	**Contact spacing**	
. . . . .		details in plain text (e.g. -2°C, -4°C, -6°C)	

Order code

(1)		(2)		(3)
604045	/			. . . . .

Order example

604045	/	021	-	-2°C, -4°C, -6°C