



DTM-RU

0..10Vdc ROOM THERMOSTATS

- Room thermostat with or without display
- Heating + cooling output : 2x 0..10 Vdc, 3P or PWM
- Optionally with external T° sensor input (NTC 10kΩ)
- Dead zone adjustable (0 .. 3°C)
- Digital input for cooling mode disable

Room



0..10Vdc

DESCRIPTION

The DTM-RU is made for individual room and zone control applications. Temperature is measured by the internal (or external) NTC 10kΩ sensor. The room temperature is maintained at the set point by modulating the position of the actuator to meet the cooling (green light) or heating (red light) demand.

The dead zone (no red or green light) between heating and cooling is adjustable (0 .. 3°C).

The thermostat supports 0...10Vdc as well as 3-point controlled and thermic actuators (selection via jumper S4). Output for thermic actuators provides pulse width modulation.

The function of the thermostat outputs can be changed reversed by S1 and S2 coding. The thermal output signal is time proportional and uses 20 second (PWM) pulses.

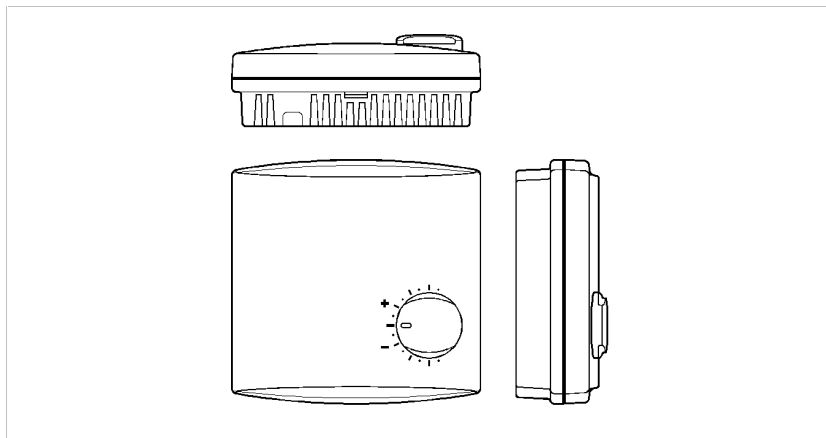
The cooling mode can be disabled by connecting Z1=G_o using an external switch.

DTM-RU-LCD has built-in display which indicates the room temperature. During commissioning the display indicates the settings of the thermostat. When any of the settings is adjusted, the display automatically switches to display that value, and returns to normal operation after 2 seconds delay.

TECHNICAL DATA		TYPE
		DTM-RU
Power supply	AC 24 Volt (20...26V) / 2 VA	
Setpoint	+21°C ±3°C	(factory default: +21°C)
Accuracy	±0.5°C	
Dead Zone	D _z = 0 .. 3°C	(factory default : 1.5°C)
Proportional Band	X _p = 0 .. 8°C	(factory default = 4°C)
Integration time T _n	50 .. 500 s	(factory default = 300°C)
Running time Mt ¹⁾	30 .. 300 s	(factory default = 180 s)
Outputs Y ₁ and Y ₂	0 .. 10 Vdc / 10 .. 0 Vdc, 2 mA	
Outputs A ₁ and A ₂	3-point actuator	AC 24 Volt / 2 A
	thermic actuator	AC 24 Volt / 2 A
Protection Class	IP20	
Operating Humidity	0..85% rH, non-condensing	
Wiring Terminals	1.5 mm ²	
Housing	ABS plastics, neutral white	
Dimensions	85 x 85 x 32 mm	

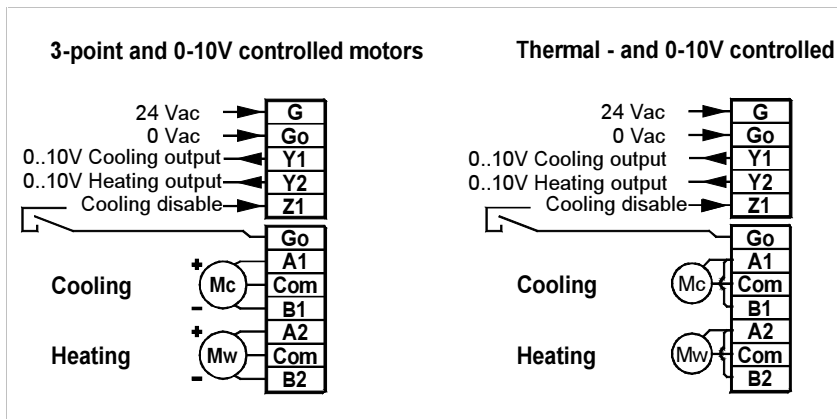
¹⁾ running time for 3-point control actuators

DIMENSIONS

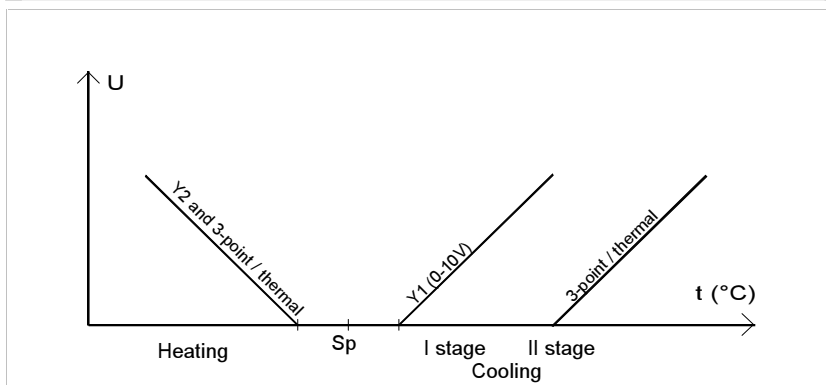


85 x 85 x 32 mm

WIRING DIAGRAM



FUNCTIONAL DIAGRAM



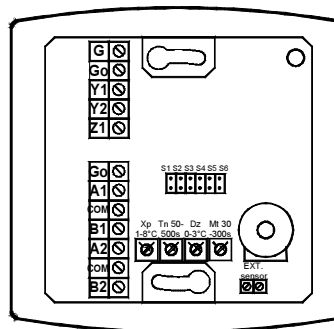
ORDERING INFORMATION

TYPE	AC 24 VOLT	OUTPUT	EXT. SENSOR	LCD DISPLAY
DTM-RU	◆	heating/cooling		
DTM-RU-LCD	◆	heating/cooling		◆
DTM-RU-X	◆	heating/cooling	◆	
DTM-RU-X-LCD	◆	heating/cooling	◆	◆

BEHAVIOUR CODING BY JUMPERS (ON/OFF)

		Operation	Description
S1	off*	0... 10V	Direct output for cooling actuator
	on	10... 0V	Reverse output for cooling actuator
S2	off*	0... 10V	Direct output for heating actuator
	on	10... 0V	Reverse output for heating actuator
S3	off*	PI	Control mode
	on	P	
S4	off	3-point motor	Actuator selection
	on*	thermal motor	
S5	off	1-stage cooling	Number of
	on*	2-stage cooling	cooling stages
S6	off	Stage I first	Sequence of the cooling stages;
	on*	Stage II first	stage I = 0-10V, stage II = 3-point motor / thermal motor

* factory setting



Caution

1. When the trimmers (or setpoint) are adjusted, the corresponding reading can be read from the display (DTM-RU-LCD and DTM-RU-X-LCD models). The display is a plug-in module and it can be temporarily added also to DTM-RU and DTM-RU-X.
2. When the 24VAC 3-point control has reached the minimum or maximum output value, the output is overridden for 5s every 5 minutes.
3. After switching power on (or after power failure), the 24VAC 3-point control is driven to a close position for 1.5 x actuator run-time setting.
4. When the cooling action is disabled and there is cooling demand, the green LED flashes every 30s to indicate cooling demand.