IMI HEIMEIER

Thermostat P

Thermostats

Electronic room thermostat with clock for thermal actuators

IMI Hydronic Engineering

Breakthrough Engineering

Thermostat P

The Thermostat P room temperature controller is used in connection with the corresponding actuators in the fields of heating, ventilation and air-conditioning technology. For time-dependent individual room temperature control, the Thermostat P is used for e. g. residential and commercial buildings with radiators, floor heating systems, ceiling cooling systems or blower convectors etc..

Key features

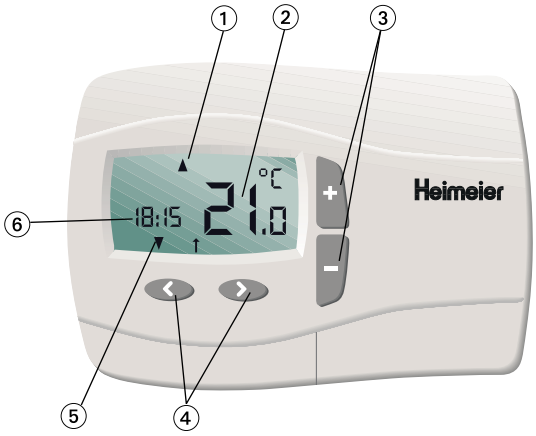
- **Time-dependent room temperature control**
- **Electronic two-point room thermostat with built-in sensor**
- **Pulsewidth modulation output signal (PWM)**
- **Models with analog or digital switch clock**

Technical description

The Thermostat P is an electronic two-point room thermostat with built-in sensor and is used in connection with e. g. thermal actuators for time-dependent room temperature control with operating modes “only heating” or “only cooling”. With its pulsewidth modulation output signal (PWM), it has an almost constant control behaviour, internally adjustable on two-point output signal.
The model with analog switch clock makes it possible to create a weekly program by positioning the switch tabs. Depending on the program, it switches between two operating modes, (day mode and night mode). The corresponding setting value can be set between 5 °C and 30 °C. An operating mode switch makes it possible to select between day, night or automatic mode. The model has control lamps for the heating, cooling or night mode operating state. With a separate switch clock output, additional room temperature controllers with temperature set-back inputs can be controlled.
The models with digital switch clock are menu-driven via four buttons. The display shows the current room temperature, time and operating modes. The internal real-time clock is equipped with an automatic daylight saving. Time programs with weekly or daily program. Three time programs are preset and changeable. The temperature is adjustable between 7 ° C and 32 ° C. The temperature is achieved due to the self-learning heating curve at the selected time. Models with 230 V operating voltage with potential-free changeover contact.
The Thermostat P is designed for installation on the wall or on recessed (concealed) switch boxes.

Construction

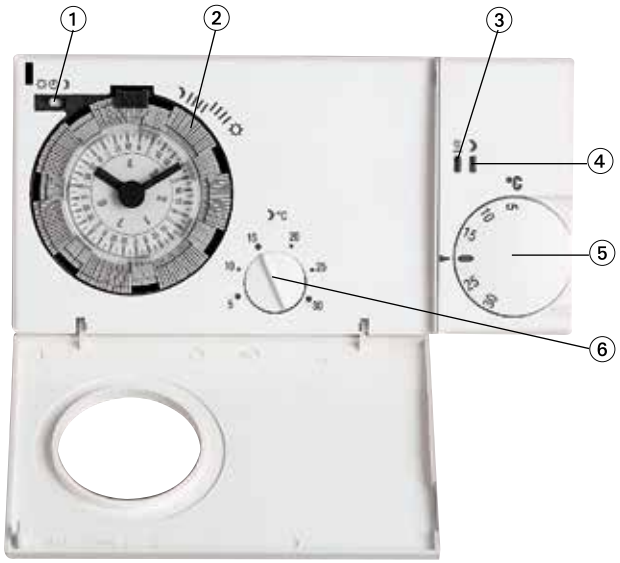
Thermostat P with digital switch clock



- **Daily / Weekly programs (changeable)**
- **Real-time clock, automatic summer/winter time changeover**
- **Self-learning heating curve**
- **Large display**
- **Operating voltage 230 V**

1. Selection / display of day
2. Temperature display
3. Button +/- to change the values
4. Button for operating modes, etc.
5. Selection / display operating modes, etc.
6. Display of time

Thermostat P with analog switch clock



- **Individual weekly program**
- **Very simple switching time setting with switch tabs**
- **Adjustable restriction of the setting range**
- **Operating voltage 230 V**
- **Switch clock output for additional room thermostats**

1. Operating mode switch
2. Time switch tabs
3. Heating mode control lamp
4. Night mode control lamp
5. Setting value adjuster for normal temperature (range constriction in the inside of the adjuster)
6. Setting value adjuster for nighttime reduction

Function

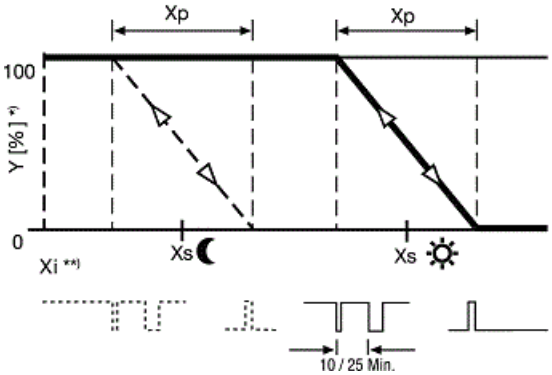
The measured room air temperature (xi) is compared to the set setting value (xs). The resulting deviations are converted into a two-point signal and, via electronic switches, control the potential-free relay with change-over contacts. The heating or cooling operating modes are triggered depending on the change-over contact configuration.

The pulse-width modulated (PWM) output signal of the controller, as adjusted in the works, switches with differently long pulses. The length of the pulses depends upon difference between the set and the actual room air temperature. The sum (duration) of the time and interval (pause) can be adjusted by a pluggable contact bridge (jumper) to operate with 10 min. for fast systems or with 25 min for slow systems (please see functional diagram). For large temperature differences, the controller switches permanently on or off, e. g. during the transition to temperature set-back.

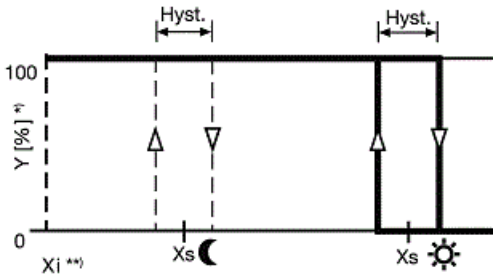
If the adjustment is made to a two-point output signal, the output causes switching-on if the temperature falls below the set value and if this set value is surpassed the output causes switching-off.

Functional diagrams
for the operating mode heating in conjunction with an actuator in the version currentless closed

PWM (pulse-width modulared) output signal



Two-point output signal (1932)



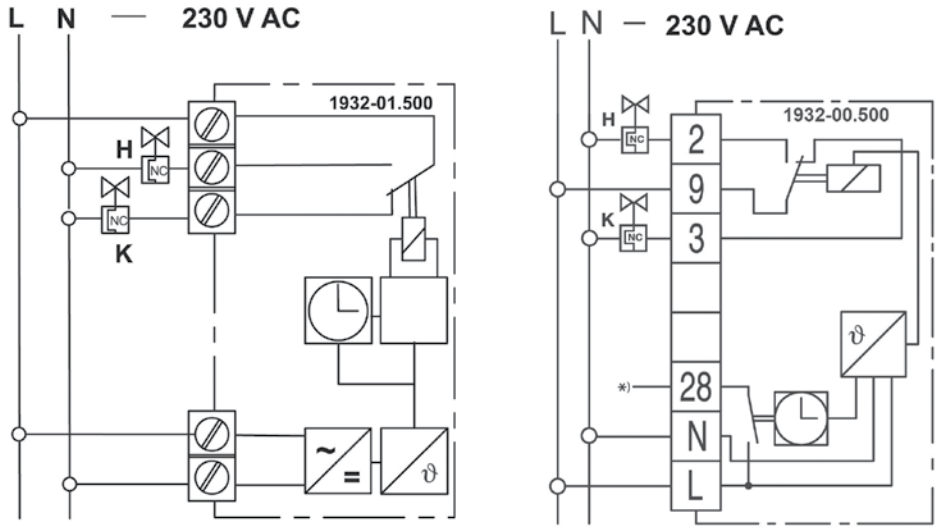
Progression of the switch-on duration (duty rate) depending upon the temperature.

*) Stroke
**) Room temperature

Application

The Thermostat P room temperature controller is used in connection with the corresponding actuators (e.g. EMO T or EMOtec) in the fields of heating, ventilation and air-conditioning technology. For time-dependent individual room temperature control, the Thermostat P is used for e. g. residential and commercial buildings with radiators, floor heating systems, ceiling cooling systems or blower convectors etc.. In case of a two-point output signal adjustment of the controller further fields of application can be served, e.g “on/off” switching operations for pumps or gas-fired circulation hot water boilers.

Connection diagrams



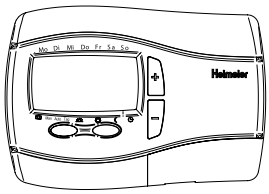
*) Note: Additional room thermostats with temperature set-back function can be connected to terminal 28.

Technical data

Thermostat P	**with analog switch clock**	**with digital switch clock**
Operating voltage:	230 V AC (+10 % / -15 %); 50/60 Hz	230 V AC (+10 % / -15 %); 50/60 Hz
Power consumption:	max. 1,5 VA.	max. 3 VA)
Switch relay /-connection	1 change-over relay, pot.-free *) / screw	1 change-over relay, pot.-free / screw
– Voltage / Current	AC 230 V / 10 mA – 16 (4) A	AC 230 V / 10 mA – 16 (2) A
– Max. number of EMO T / EMOtec	10 pieces (230 V)	10 pieces (230 V)
Clock function (default):	. / .	Real time with autom. S / W - time changeover
– Time program, grid / power reserve:	7 days (weekly program) , 1 h / approx. 100 h	7 days / 5:2 days / 24 h, 1 min / undetachably
– Number of switching programs, -times	24 mechanical switching segments / day (undetachably)	3 preset (changeable), 2, 4 or 6 / day
– Special Features	timing clock output (max. 20 x TA-inputs)	Optimum Start, holiday-/party-timer
Temperature range (day/night mode):	5 °C – 30 °C	7 °C - 32 °C (digital, in 0.1 K - steps)
Control behaviour:	PWM, adjustable to two-point behaviour	PWM
– PWM cycle duration, -proportional band	10 / 25 min (adjustable); approx. 1.5 K	10 / 25 min (adjustable); approx. 1.5 K
Hysteresis (2-point operating mode):	approx. 0.5 K to 10 A, approx. 2.5 K at 16 A	approx. 0.5 K to 10 A, approx. 2.5 K at 16 A
Operating modes:	heating or cooling	heating or cooling
– Operating mode switch, - display:	night / auto / day, LED heating-/set back mode	menu with keys, LCD
Temperature sensor / valve protection:	internal . / .	internal / switchable
Type of protection; - class	IP 30 (EN 60529); II (DIN EN 60730)	IP 30 (EN 60529); II (DIN EN 60730)
CE certification (EMC/L.T):	DIN EN 60730-1	DIN EN 60730-1
Storage-/ ambient temperature:	-25 °C – +65 °C / -10 °C – +40 °C	-20 °C – +85 °C / 0 °C – +40 °C
Body, color, dimensions (W x H x D [mm]):	ABS white RAL 9010, 160 x 80 x 36	ABS white RAL 9010, 137 x 97 x 32
Installation:	wall mounting or on recessed box (concealed)	wall mounting or on recessed box (concealed)

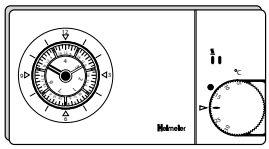
*) the above does not warrent or fullfil possible requirements of protective low tension (no secure disconnection).

Articles



With digital switch clock

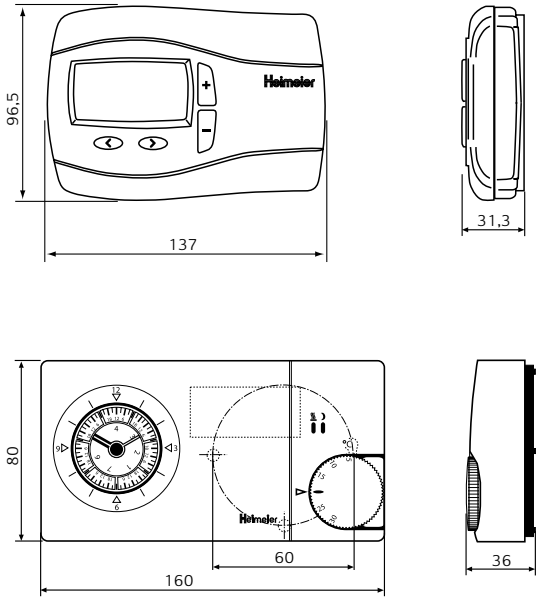
Model	EAN	Article No
230 V	4024052763610	1932-01.500



With analog switch clock

Model	EAN	Article No
230 V	4024052405718	1932-00.500

Dimensions



1 mm = 0,0394 inch