

Operating and fitting instructions for the 421 Clock Thermostat (A301XX0421)

1. Range of applications

The room thermostat is suitable for temperature in enclosed, dry rooms in residential homes, schools, halls, workshops etc..

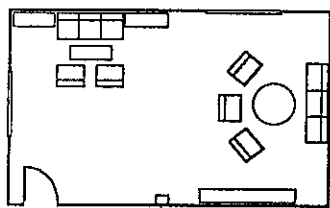
2. Symbols - Program Switch

☾ set back (7° lower than ☀)

☀ constant day temp.

☾ 7° set back can be slaved to day/night switch or clock

3. Installation location:



Best Location:
Opposite the high heat loss area on an internal wall

Room thermostat

- Mounting height: approximately 5 feet above floor level.
- Avoid external walls and drafts from windows and doors.
- Ensure that normal air circulation can reach the controller unhindered. Therefore the controller should not be mounted on the walls with shelves or behind curtains or other coverings.
- Heat from external sources has a detrimental effect on the accuracy of control.

Avoid the direct rays of the sun, the vicinity of television or radio equipment, heaters, lamps stoves, radiant floor manifolds and circulation tubing.

4. Installation:

- Install thermostat using 5 conductor wire.
- Protect from construction dust and paint, install after finish work complete.

a) Remove cover:

- Pull out adjusting knob
- Remove cover screw
- Remove cover

b) Securing to wall surface

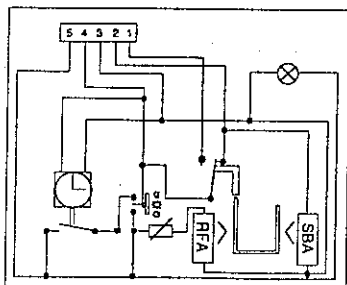
- Ensure that thermostat is level.
- Attach with 2 wood screws or self-tapping screws and anchors as applicable.

c) Replace cover:

As above, in reverse order.

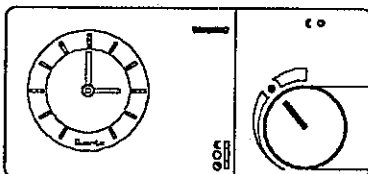
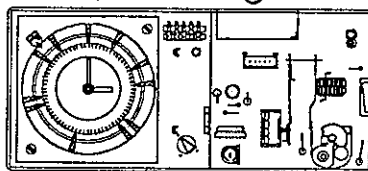
5. Circuit Diagram

Connect all leads as shown in circuit diagram in housing cover



Connection for:

- 1 - Call for cooling (make on rise)
- 2 - Call for heat (break on rise)
- 3 - Neutral (connect to transformer (C) terminal)
- 4 - Hot (connect to transformer (R) terminal)
- 5 - Set Back (Provides power (R) for the set back anticipator when the ☾ is selected)



6. Setting-up the temperature range

At the factory the limit stops are set to the maximum range of 5° to 30° C (41 to 86° F). See Fig. 1.

Located in the setting knob underside are two adjustment rings. with the aid of those, the temperature range can be reduced or locked as required, for example for the range 5° to 30° C (46 to 73° F).

Setting-up procedure:

1. Select the temperature limits:

Example:

Upper: 23° C (73° F)
Lower: 8° C (46° F)

2. First place the setting knob in approximately the center of the range.

Example:

Central region between 8° and 23° C (46 and 73° F) is approximately 15° C (59° F).

3. Only now, remove setting knob.

4. Set red adjustment ring to upper temperature range:

Example: 23° C (73° F)

Rotate counterclockwise. The outer figures on the scale are to be noted here.

Place point of ball-point pen in hole and rotate red ring counterclockwise 23° C (73° F) (max. scale). See Fig. 2.

5. Set blue adjustment ring to lower temperature range:

Example: 8° C (46° F)

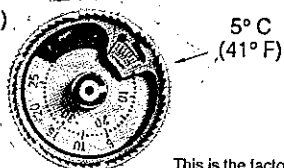
Rotate clockwise. The inner figures on the scale are to be noted here.

Place point of ball-point in hole and rotate blue ring clockwise to 8° C (46° F) (min. scale). See Fig. 3.

6. Replace setting knob:

Ensure that pointer indicates approximately the center of the new setting range.

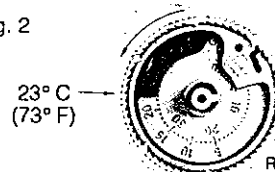
Fig 1 30° (86°)



This is the factory setting of the selector knob

Range: 5°-30° C (41-86° F)

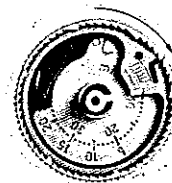
Fig. 2



23° C (73° F)

Red notched ring (max.) set in the direction of the arrow to 73° F

Fig. 3



8° C (46° F)

Blue notched ring (min.) set in the direction of the arrow to 46° F

7. Clock Thermostat Operation

The clock thermostat serves two separate functions. Its is a regular room thermostat with set back capability, and is capable of controlling a number of satellite thermostats.

As a room thermostat it picks up normal call for heat and corresponds by opening the zone thermostat. When the selector switch is in the sun position it operates normally. When it is in the moon position, it lowers the call for heat approximately 7 degrees fahrenheit. When it is in the clock position, the thermostat responds to a call for heat between 2 and 10 degrees celsius (4 and 18 degrees fahrenheit) as selected in the set back differential selector switch.

When the selector is in the clock position, the set back thermostat will reduce the call for heat in all of the satellite thermostats by approximately 7 degrees fahrenheit. All satellite thermostats not in the clock position will operate normally.

The 7 day clock has a 24 hour segment for each day. Each day is listed around the perimeter in both english and german abbreviations.

The blue and red pins are used to sets the switching action of the set back clock in motion. The blue pins are the set back pins. These pins are to be placed into the time slots in which you would like the system to operate in the set back mode. The red pins return the thermostats to normal. They should be placed into the time slots where you would like the system to operate at its set point temperature. When not used, the pins should be returned to their storage rack in the middle upper portion of the thermostat.

The clock is set by moving the minute hand in a clockwise direction.

There is a light above the temperature selector to indicate when the set back clock is in the set back mode. A diode stores electrical energy to provide 1 hour of backup to the clock.

8. Technical Data

Control Number	A301XX0421
Power input	24 VAC
Power output	24 VAC
Switching load	2 A
Temperature range	41...86° F
Set back capability	yes
Set back range	4-18° F
Height	2.75 in.
Width	5.50 in.
Depth	1 in.