

Alpha-Thermostat Control AR 20.. C2 (230 V) | AR 40.. C2 (24 V)

The Alpha-Thermostat Control is a digital room thermostat for the control of surface heating systems with thermal valve-drives (e. g. Alpha-Actuator: AA 2004 / AA 4004).

This thermostat is equipped with microprocessor technology; it shows excellent PI controlling behaviour with increased regulating comfort for the user. Temperature pre-selection is in 1/4 degree steps. The operation switch (switch ball) allows the setting of the desired operating mode (DAY, NIGHT or AUTOMATIC). The plug-in digital clock can be removed for programming.

The thermostat must be mounted to the pre-installed Alpha Mounting Base AS 1000, onto which it can be plugged at any time and to which it must be electrically connected.

Microprocessor Technology



Features

- Precise control response
- Antifreeze function 5 °C
- Valve protection function
- Overcharge protection
- Designs "normally closed" (NC) and "normally open" (NO)
- Operating mode selector switch
- Adjustment of temperature setback 2-6 K
- Limitation of set room temperature
- Illuminated "Moon" symbol for temperature setback
- Just-in-time installation concept
- Simple screwed connection technology in the Alpha System Base
- Functional design
- 12 housing colours available

Control functions

- Digital timer "Control" for manual programming
- Day and week programming
- 7 days power reserve
- 1 channel with 42 memory locations (21 ON and 21 OFF switching times).
- Free block formation and summer time conversion

Application

- Individual room control, specially designed in connection with surface, radiator and convector heating systems.

General information

Type

AR 2010 C2: Version 230 V – normally closed (pure white)
AR 4010 C2: Version 24 V – normally closed (pure white)

Scope of delivery (Standard)

Version: Alpha-Thermostat Control 230 V / 24 V – normally closed:
1 x AR 2010 C2 or AR 4010 C2
1 x Installation instruction

Alternative design:

AR 2110 C2: Version 230 V – normally open (pure white)
AR 4110 C2: Version 24 V – normally open (pure white)
Housing colour on request

Accessories

Alpha Mounting Base AS 1000

Connection recommendations

- Alpha-Actuator AA 2004 NC / AA 4004 NC
AA 2104 NO / AA 4104 NO
- Alpha-Basis AB 2000-1 / AB 2000-6
AB 4001-1 / AB 4001-6

Ordering information

Place order with specialized wholesale trade.
For more detailed information see: www.moehlenhoff.com

Functions

The Alpha-Thermostat 20../40.. C2 is a PI thermostat for the control of thermoelectric actuators (e. g. Alpha-Actuator). The output voltage is switched on or off depending on the difference between the room temperature measured by the thermostat (actual value) and the desired temperature (set value). The bigger the difference is between set value and actual value, the longer are the switching cycles. When the room temperature approaches the set temperature, the switching cycles of the output voltage are reduced and find their balance at an almost constant value corresponding to the heating power for this room.

Selector switch

The desired operating mode can be selected with the selector switch. The operating modes "Normal" (sun symbol), "Economy" (moon symbol, e. g. for night operation) and "Timer" (clock symbol) are available.

Valve protection function (only NC)

If an actuator is not triggered during more than 24 hours of normal operation, the electronic system switches the actuator for 6 minutes once every 24 hours. This prevents the thermostat valves from clogging outside the heating season.

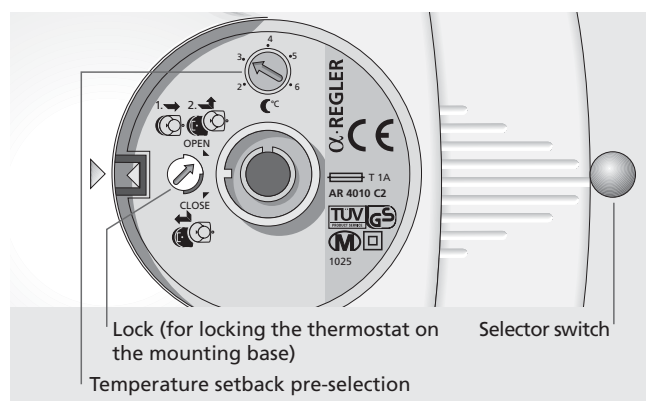
Antifreeze protection

If the set value element of the Alpha-Thermostat is set to the right stop (symbol *), a room temperature of 5 °C is set as target value in order to prevent the installation from freezing.

Overcharge protection

The switching output of all Alpha-Thermostats with microprocessor technology is protected by an internal temperature monitoring system in order to prevent the system from overcharge damage. In case of an internal temperature rise due to overcharge the electronic system automatically disconnects the output until the inside temperature has dropped again to normal values.

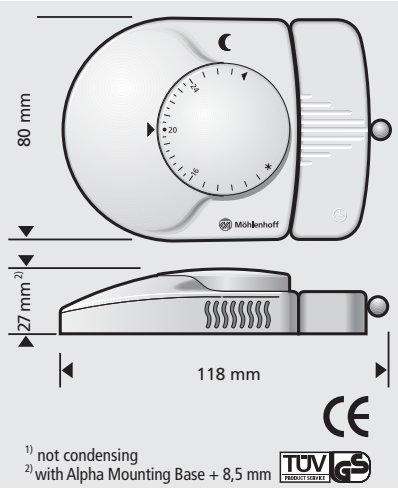
Control panel



Lock (for locking the thermostat on the mounting base) Selector switch
Temperature setback pre-selection

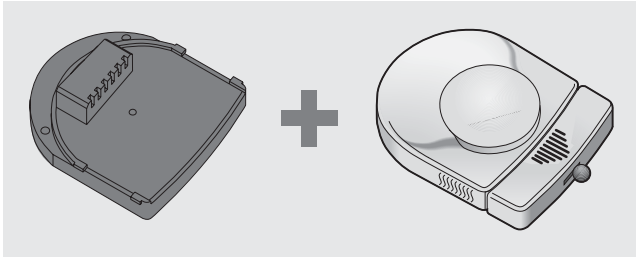
Technical data

Type	AR 20.. C2	AR 40.. C2
Version	Control	Control
Contact rating	max 5 Alpha-Actuators 230 V	max 5 Alpha-Actuators 24 V
Operating voltage	230 V +/- 10%, 50 Hz	24 V, (19,2 - 35 V) 50/60 Hz
Switched current	0,2 A (ohmic load)	1 A (ohmic load)
Control range (heating zone)	10 to 28°C	10 to 28°C
Temperature setback (heating zone)	2 - 6 K	2 - 6 K
Hunting	approx. 0,2 K	approx. 0,2 K
Valve interval switching if output is inactive for 24 h, once a day		
Antifreeze protection on position* 5°C		5°C
Storage temperature	-25 to +70 °C	-25 to +70 °C
Ambient temperature	0 to +50 °C	0 to +50 °C
Relative humidity	max. 80% ¹⁾	max. 80% ¹⁾
Degree / class of protection	IP 30 / II	IP 30 / III
CE conformity according to	EN 60730	EN 60730
Housing	ABS	ABS
Number of housing colours	12	12
Weight	74 g without Alpha Mounting Base	74 g without Alpha Mounting Base

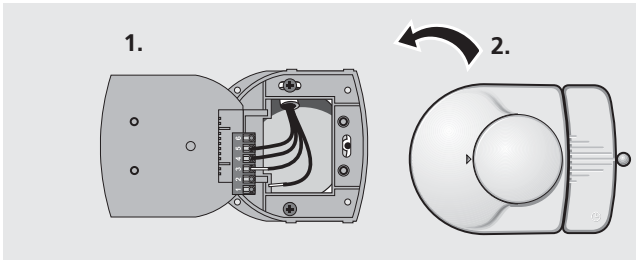


Note! The digital timer of the thermostats AR 20.. / 40.. C and AR 20.. / 40.. C2 are not electrically compatible. However, a confusion does not lead to any damage of the devices.

Installation note

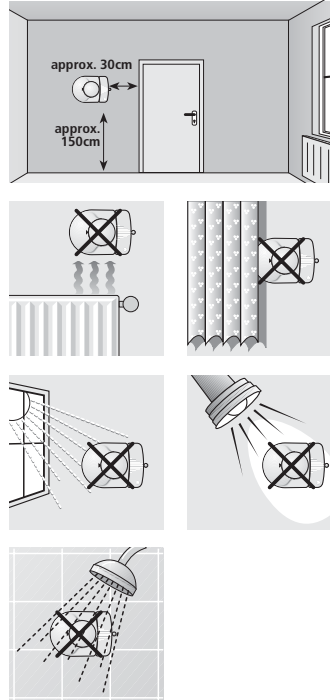


Installation and electric connection are only possible using the system base AS 1000. In order to avoid damage to this valuable thermostat during the construction phase, the system base is not included in the scope of delivery; it can be ordered already in advance for the necessary electric installation.



Installation can be performed directly to the wall or on a flush-type box. A 5-wire line (5 x 1.5 NYM) is recommended for the electric connection.

Recommended place of installation



Note!
In order to ensure a trouble-free and thus optimum control operation, a room thermostat should be installed behind the door in a quiet zone - free from environment influence as draught, humidity, direct sunlight exposure or other sources of heat; furthermore, it should not be covered by curtains. Otherwise it may occur that the set room temperature is exceeded or not achieved, depending on the respective environment influence.

Electric installation

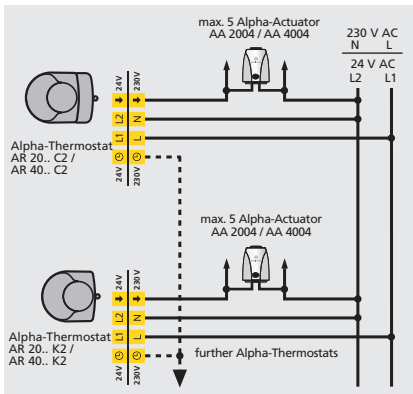


Diagram for automatic temperature setback with Alpha-Thermostat Control