

Alpha-Thermostat Standard AR 20.. S2 (230 V) | AR 40.. S2 (24 V)

The Alpha-Thermostat Standard is a digital room thermostat for the control of surface heating systems with thermal actuators (e. g. OEM actuator: A 2004 / A 4004).

This thermostat is equipped with microprocessor technology; it shows excellent PI controlling behaviour with increased regulating comfort for the user.

It 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. 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.

Mikrocontroller Technology



Features

- Precise control response
- Antifreeze function 5 °C
- Valve protection function
- Overcharge protection
- Designs "normally closed" (NC) and "normally open" (NO)
- Temperature setback 2 K (fixed)
- Limitation of set room temperature
- Just-in-time installation concept
- Simple screwed connection technology in the Alpha Mounting Base
- Functional design
- 12 housing colours available

Application

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

General information

Type

AR 2010 S2: Version 230 V – normally closed (pure white)
AR 4010 S2: Version 24 V – normally closed (pure white)

Scope of delivery (Standard)

Version: Alpha-Thermostat Standard 230 V / 24 V – normally closed:
1 x AR 2010 S2 or AR 4010 S2
1 x Installation instruction

Alternative design:

AR 2110 S2: Version 230 V – normally open (pure white)
AR 4110 S2: Version 24 V – normally open (pure white)
Housing colour on request

Accessories

Alpha Mounting Base AS 1000

Connection recommendations

-OEM actuator	NC A 2004 / NC A 4004	
	NO A 2104 / NO A 4104	
-OEM base	without pump control:	B 2012 / B 4012
	with pump control:	B 2022 / B4022

Customer-specific version:

Customer-specific versions are available on request

Ordering information

Our staff will be glad to assist you in finding the Alpha-Thermostat fitting your application.
Call us under: +49 (0) 53 41 - 84 75 - 0

Functions

The Alpha-Thermostat 20../40.. S2 is a PI thermostat for the control of thermoelectric actuators (e. g. OEM 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.

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.

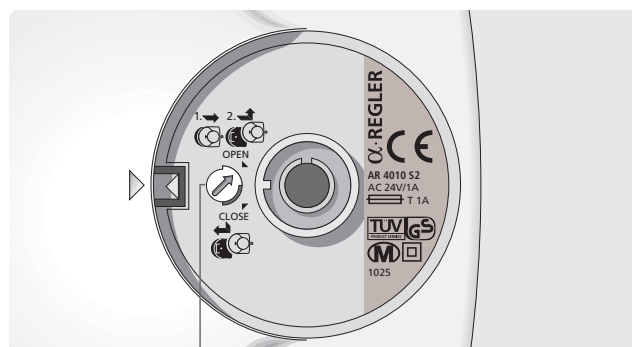
Antifreeze protection

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.

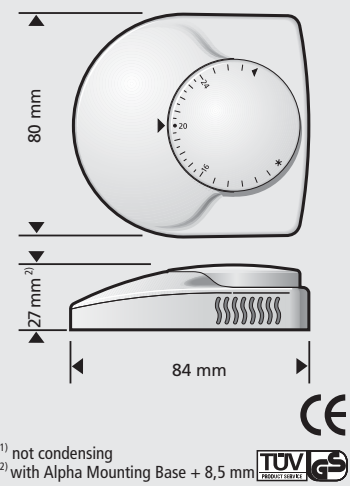
Control panel



Lock (for locking the thermostat on the mounting base)

Technical data

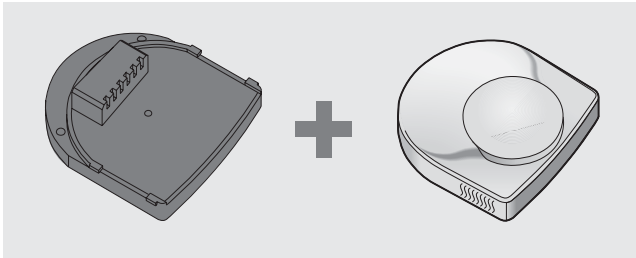
Type	AR 20.. S2	AR 40.. S2
Version	Standard	Standard
Contact rating	max 5 OEM actuators 230 V	max 5 OEM actuators 24 V
Operating voltage	230 V +/- 10%, 50 Hz	24 V, (19,2 - 35 V) 50/60 Hz
Switched current	0,2 A (ohmic load)	1 A (ohmic load)
Control range (heating zone)	10 to 28°C	10 to 28°C
Temperatur setback (heating zone)	2 K (fixed)	2 K (fixed)
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	49 g without Alpha Mounting Base	49 g without Alpha Mounting Base



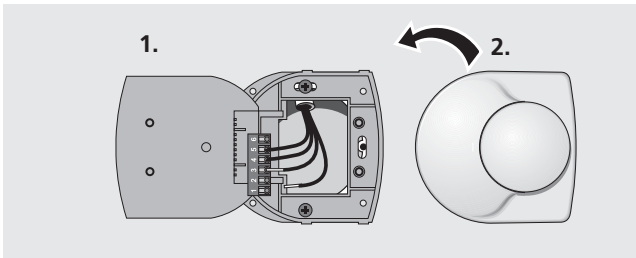
¹⁾ not condensing
²⁾ with Alpha Mounting Base + 8,5 mm

Planning and installation notes

Installation note

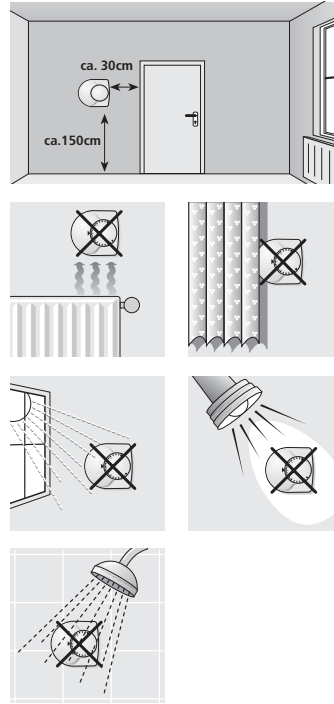


Installation and electric connection are only possible using the system base AS 1000. The system base is not included in the scope of supply and must be ordered separately; it fits all wired types of the Alpha-Thermostat scope.



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

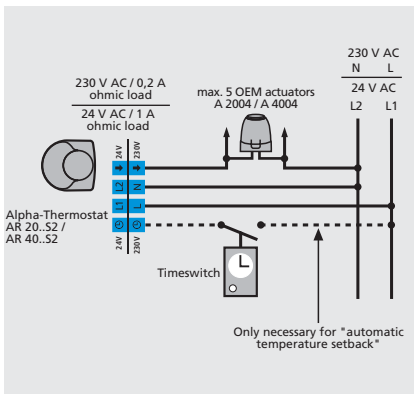


Diagram for automatic temperature setback with central time-switch

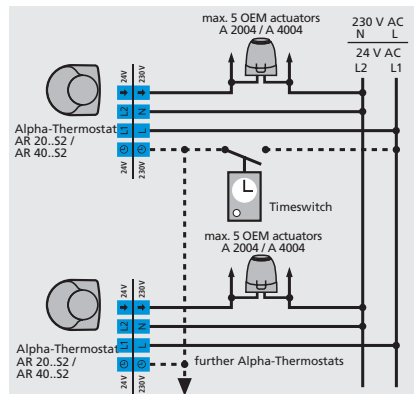


Diagram for automatic temperature setback with central time-switch

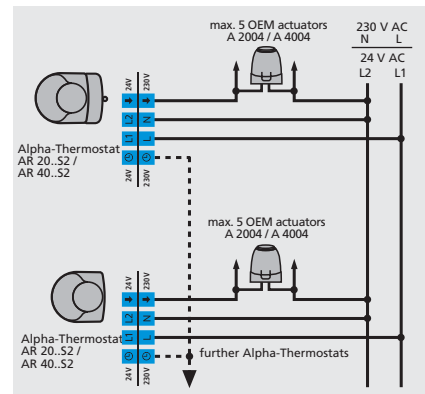


Diagram for automatic temperature setback with Alpha-Thermostat Control