



ROOM CONTROLLER

HCBA-HLS33 | HCBA-HLS33-N



ROOM CONTROLLER HCBA-HLS33 & HCBA-HLS33-N

HCBA-HLS-33 is designed for two or three stage room control applications. The controller has one stage for heating and two stages for cooling.

The controller controls the heating (indicator light is red) or cooling (indicator light is green) actuators according to the measured temperature and the set point. The dead zone (indicator light is off) between heating and cooling stages is adjustable (0...3 °C). The controller function (outputs) can be changed reverse.

The actuators can be 0...10 V controlled motors and either 3-point or thermal actuators. The thermal output signal is time proportional and uses 20 second (PWM) pulses.

One cooling stage is controlled with 0...10 V signal and the other stage is controlled either with 3-point or thermal actuator control.

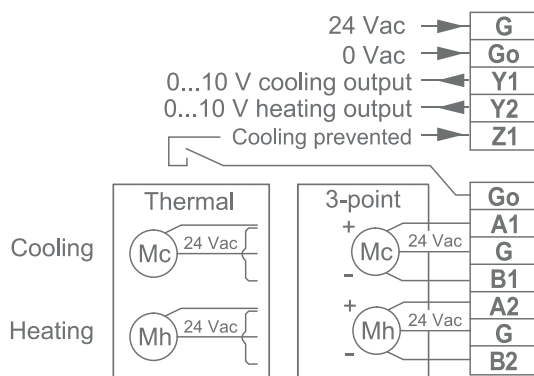
The cooling can be prevented by connecting Z1=Go with an external switch.

NOTE: The jumper settings must only be changed when the controller is disconnected from the power supply.

Codings

S1	Cooling output	Direct
S2	Heating output	Direct
S3	Control method	PI
S4	Actuator type (outputs A1 and A2)	Thermal actuator
S5	Number of cooling stages	1
S6	2-stage cooling	1st stage first

Wiring



HCBA-HLS33



HCBA-HLS33-N

Technical data

Supply	24 Vac (20...26 V) / 2 VA
Set point	18...26 °C, *21 °C, ±3 °C
Accuracy	±0.5 °C
Dead zone	Dz 0...3 °C, *1,5 °C
Proportional band	Xp 1...8 °C, *4 °C
Integration time	Tn 50...500 s, *300 s
3-point actuator running time	Mt 30...300 s, *180 s
Outputs Y1 and Y2	0...10 V / 10...0 V, 2 mA
Outputs A1 and A2	3-point motor, 24 Vac 1 A thermal actuator, 24 Vac 1 A
Allowed ambient humidity	0...85 % RH (non cond.)
Wiring terminals	1,5 mm ²
Housing	ABS plastic, IP20
Mounting	on the wall or on the standard flush mounting box (60 mm hole distance)
LED indicator	Green when in cooling mode Red when in heating mode

* = Factory setting

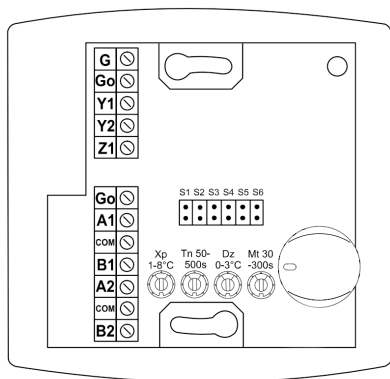
Ordering guide:

Model	Description
HCBA-HLS33	room temperature controller; internal sensor
HCBA-HLS33-N	room temperature controller with display; internal sensor

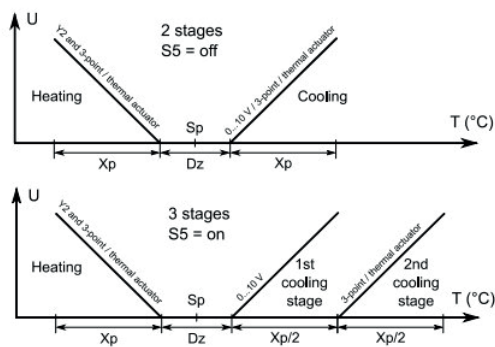
S1	■	0...10 V *	direct output to the cooling actuator
	□	10...0 V	reverse output to the cooling actuator
S2	■	0...10 V *	direct output to the heating actuator
	□	10...0 V	reverse output to the heating actuator
S3	■	PI *	control mode (PI controller)
	□	P	control mode (P controller)
S4	□	3-point motor	actuator type selection
	■	thermal actuator *	
S5	■	1-stage cooling	number of cooling stages
	□	2-stage cooling *	
S6	■	I first	Y1 (0...10 V) cooling output works first
	□	II first *	3-speed/thermal actuator cooling output works first

*= Factory setting

Wiring terminals, trimmers, coding

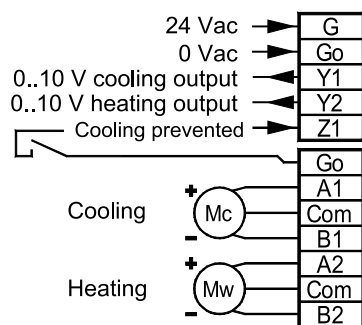


Stages

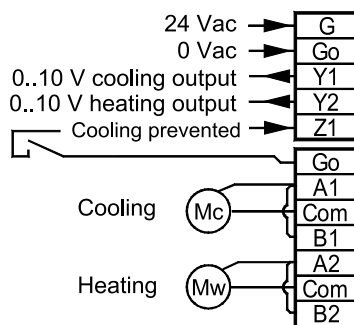


Connecting actuators

3-speed and 0...10 V motors



Thermal actuators and 0...10 V motors



Things to be taken into account during commissioning

1. while changing trimmer positions or other settings, the setting values are shown on the HCBA-HLS33-N display (a display can be connected also temporarily for the commissioning procedure)
2. When the 3-speed output is in the control area edge, the output is driven against the edge for 5 seconds every 5 minutes
3. after a power failure, the 3-speed output is driven for 1,5 x running time to close the valve and to determine the position
4. if the cooling is prevented but the cooling is still needed, the green indicator light flashes every 30 seconds

NOTE: Block the air flow coming through the cable protection tubes.

Changing the set point potentiometer midpoint

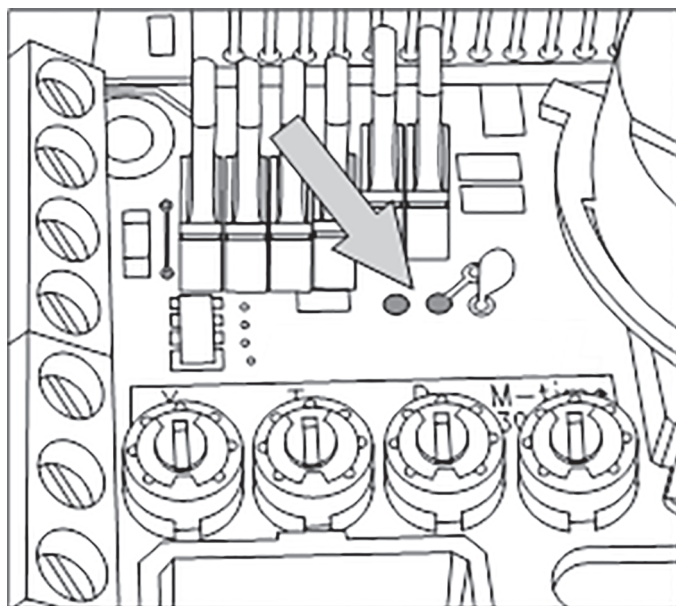
The potentiometer midpoint range is 18...24 °C.

NOTE: It is useful to fit a display to HCBA-HLS33 models during the potentiometer midpoint setting. The display can be removed after the setting is done.

1. Make sure the device is connected to supply voltage.
2. Remove the device cover.
3. Turn the potentiometer to the position where the 21 °C set point is wanted to be.
4. Connect the soldering points shown on the figure for a while. Use e.g. a screw driver for connecting.



Do not touch any other components



The midpoint changing is successful when 21.0 °C starts flashing on the display.



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