

CLIMATIC CONTROL UNITS

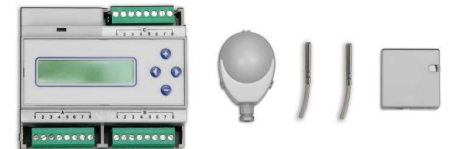
26C20

Climate control unit for heating systems with radiant panels, complete with external probe, delivery probe and temperature limit probe. Mounting on DIN rail Omega. Power supply 230V-50hz. Absorption 4VA. Degree of protection IP40. Servomotor control 3-point floating mixer valve 24VAC or 230VAC.



26C30

Climate control unit for heating and cooling systems with radiant panels, complete with external probe, delivery probe, temperature limit probe and ambient humidistat. Mounting on DIN rail Omega. Power supply 230V-50hz. Absorption 4VA. Degree of protection IP40. Servomotor control 3-point floating mixer valve 24VAC or 230VAC.



Application

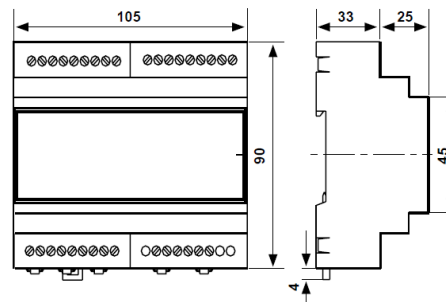
The Electronic Control Units **26C20** and **26C30** allow to automatically regulate the temperature of the supply water, according to the variations of the external temperature, by controlling the mixing valve and its circulation pump, if it is present in the system to be maneuvered.

The **26C30** version is intended for heating and cooling systems, being equipped with an ambient humidistat sensor that allows safe operation, avoiding the formation of condensation on the cooling floor.

The **26C20** version is mainly intended for heating systems but can also be used in cooling systems where the control of ambient humidity is managed by another control system.

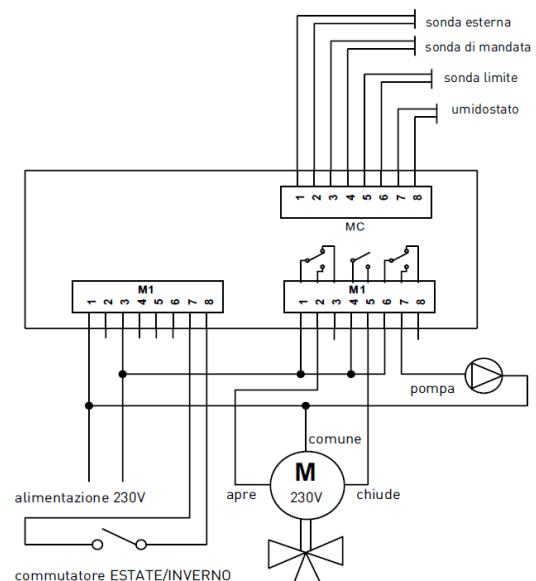
Technical data

- Power supply 230VAC-50Hz
- Contacts range 5(3) A – 250VAC
- Operating temperature 0 ÷ 50°C
- Auxiliary inlet for humidistat
- Protection grade IP40 rear panel
- Mounting on rail DIN (6 modules)
- Extractable clamps for easy wiring and possible replacement



Electrical specifications

- Consumption 4VA.
- 3 output relays:
 - 1 for circulation pump control
 - 1 for valve opening control
 - 1 for the valve closure control
- 3 analogue inputs for control:
 - external temperature
 - the limit temperature
 - the supply temperature
- 1 humidistat inlet
- 1 input for **SUMMER/WINTER** switching
- Alphanumeric display and 4 function keys for an easy parameter setting
- Digital watch with 5-year power reserve.
- Optimization of the operation times
- Compliant with EN60730-2-9 EN60730-2-7



Mode of operation

The purpose of the units is to maintain constant the the supply water's temperature, according to the external temperature. As the program is selected, the device calculates the SUPPLY TEMPERATURE to be adjusted; this is calculated through an interpolation using the set values of the supply temperature for four external temperature values:

Winter: TextMin, 0°, 10°, TextMax

Summer: TextMin, 27°, 30°, TextMax

ADJUSTMENT CURVE

The regulator has a summer curve and a winter curve that are used to calculate the supply temperature to be adjusted on the system. The selection of the curve is carried out by the **SUMMER/WINTER** manual control, consisting of a clean contact on the terminals 7 and 8 of the terminal block "A". The winter and summer curve represents the supply temperature values according to the outside temperature. The calibration of the curves is done by setting the four values of the supply temperature in relation to four values of external temperature.

HOURLY SCHEDULE

It's possible to have an hourly schedule with an ON and an OFF schedule for every day of the week. A buffer battery allows to have a power reserve greater than five years.

OPERATIONAL PROGRAMMES

The climate control is able to work with different programs selectable by the user:

- **Open valve** activates the circulation pump and the opening of the mixing valve manually.
- **Close valve** deactivates the circulating pump and activates the closing of the valve manually.
- **Always day**, the supply temperature to be adjusted is the calculated by the control unit from the regulation break.
- **Always night (Winter Curve)**, the supply temperature to be adjusted is that of the always day program – 3° C. The required supply temperature is however limited to 20° C.
- **Always night (Summer curve)**, the supply temperature to be adjusted is that of the always day program + 3° C. The required supply temperature is however limited to 25° C.
- **Automatic** if the current time is between the ON time and the OFF time, it is executed as stated in the ALWAYS DAY program otherwise is executed as said in the ALWAYS NIGHT program.
- **Fixed point** the supply temperature to be adjusted is the one set in the CONFIGURATION menu as Fixed Point Temperature. This value, which by default is set as 25° C, can be varied from a minimum of 10° C to a maximum of 45° C. This program can be used as an antifreeze function.

OPERATING REGIMES

The operating regimes are automatically selected by the control unit according to the selected program and determine the operation of the pump and the mixing valve.

They are indicated by:

- **DAY** is obtained by setting the program ALWAYS DAY or the program AUTOMATIC and the current time is between the ON and OFF hours.
- **NIGHT** is obtained by setting the program ALWAYS NIGHT or the program AUTOMATIC and the current time is outside the of ON and OFF hours.
- **FIXED POINT** is obtained by setting the FIXED POINT programme.
- **FORCED** the forced regime indicates that the unit has decided to turn on the system before the time set according to the optimization data. This regime ends at ON time.
- **PROBES FAILURE** This regime occurs when a probe is damaged and the resulting reading is incorrect.
- **LIMIT THRESHOLD** this regime occurs when the limit threshold is exceeded as described above.
- **HIGH HUMIDITY** if summer operation is set and the inlet of the humidistat switch is closed in c.c. for at least 5 consecutive minutes, this kind of regime activates: the valve is closed and the pump shuts off until the inlet of the humidistat switch does not change state. If the humidistat is not connected, this regime shall never occur. *(continues)*

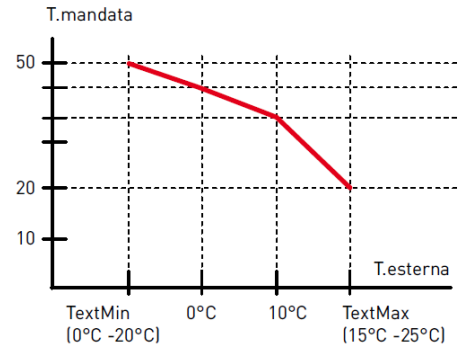
WINTER CURVE

The two ends of the break (TextMin TextMax), can be customized for any plant operation's optimization.

Adjustable supply temperature limit values:

T.Supply: Max. 50°C

T. Supply: Min. 20°C



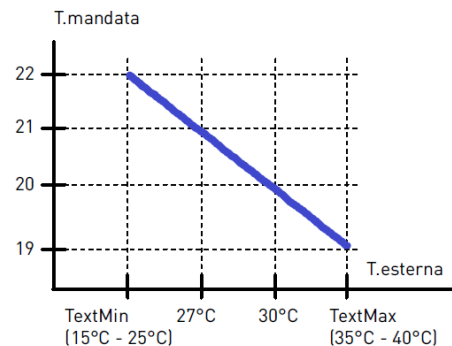
SUMMER CURVE

The two ends of the break (TextMin TextMax), can be customized for any plant operation's optimization.

Adjustable supply temperature limit values:

T. Supply: Max. 25°C

T. Supply: Min. 15°C



CIRCULATION PUMP (if available)

It is controlled to allow the water circulation in the heating system and is turned off only in the following cases:

- if the supply and/or external probe is damaged
- if the selected programme is “manual valve closes”
- if the supply temperature falls below a temperature set for the winter mode of operation
- if the supply temperature rises above a set value for the summer mode of operation

PROBES INPUT

- 1 input for external temperature probe with housing in thermoplastic material with type NTC1K sensor
- 1 input for supply contact or immersion probe with NTC10K type sensor.
- 1 inlet per limit probe (see supply probe)
- 1 inlet per humidistat
- 1 inlet per supply probe for wells.

LIMIT PROBE

- winter operation

When the temperature detected by the limit probe exceeds the winter limit threshold, set in the “Limit Probe” menu, the control unit controls the closing of the valve and turns off the circulation pump.

Winter threshold values: 15°C ÷ 60°C Adjustable values - ----- ° Excludes function

- summer operation

When the temperature detected by the limit probe goes below the summer limit threshold, set in the “Limit Probe” menu, the control unit controls the closing of the valve and turns off the circulation pump.

Summer limit threshold values: 5°C ÷ 30°C Adjustable values - ----- ° Excludes the function.

In order to overcome any adjustment transients, a delay time between 0 and 5 min. can be inserted between the exceedance of the threshold and the intervention of the limit function.

Normal operation of the control unit shall resume only when the temperature reaches:

Val. Resumption = Val. threshold - Diff. Resumption (winter)

Val. Resumption = Val. threshold + Diff. Resumption (summer)

The recovery differential is set between 1°C and 10°C.

The exceedance of the threshold is indicated on display by the words EXCEEDANCE LIMIT THRESHOLD

PROBES' FAILURE

During normal operation, the control unit is able to detect any connected probes' malfunctions and to properly control the valve and the pump:

- **SUPPLY PROBE FAILURE** the pump is shut off and the mixing valve is controlled during closing. The message FAILURE PROBE OF DELIVERY appears on the display.
- **EXTERNAL PROBE FAILURE** The pump is shut off and the mixing valve is controlled during closing. On the display appears the message EXTERNAL PROBE FAILURE.
- **LIMIT PROBE FAILURE** (only if the threshold is set) the control unit continues to function correctly but the message FAILURE LIMIT PROBE appears on the display.

SUMMER WINTER SWITCH

The change from heating to cooling and vice versa is obtained manually by inserting a switch between the contacts 7 and 8 of terminal block “A”. In particular, if the contact is opened the control unit will set the **WINTER** adjustment, while if the contact is closed the control unit will set the **SUMMER** adjustment. During the winter season, the mixing valve is controlled during opening when the supply temperature is lower than the required temperature; on the opposite, during the SUMMER season the valve is controlled in opening when the supply temperature is higher than the required temperature.

The **26C20** and **26C30** control units can control three-point floating mixing valves' servomotors powered by 24VAC and 230VAC. Their combination with the 735N and 735NM motorized heating power plant regulation units is particularly simple and allows the supply temperature to radiant panels to be controlled with high precision.

