

DCPA80BC Wireless Digital Chronostat

This electronic chronostat is suitable for a reliable and accurate temperature regulation in commercial and industrial premises as well as in home installations. Its main feature is the capability of operation without any wire connection: the commands are issued to the receiving unit via radio signals, making this product extremely easy and economical to install especially where no existing electrical wires are available. The chronostat has built in comprehensive 7 day programming capability that assures flexibility to both heating and cooling applications.

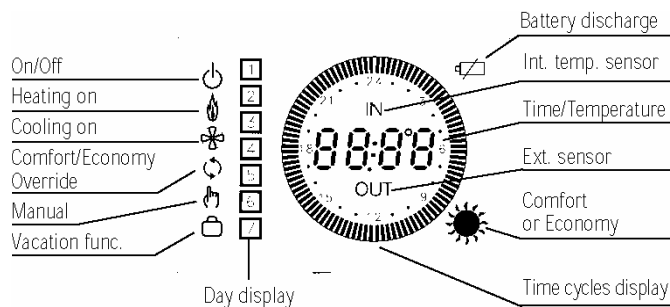


FEATURES

- Completely wireless chronostat 868.35 MHz band
- Unique version: both Daily and Weekly
- Two batteries AA type power supply
- Two levels room temperature regulation: Comfort and Economy
- Guided programming
- 'Heating' or 'Cooling' mode with front panel selection
- Off position with adjustable antifreeze function
- Room temperature or current time readout
- Fixing with distance between holes 60 mm or 83 mm (3 mod. junction boxes)

| Model Types | Model | Description |
|-----------------------|--|---|
| | DCPA80BC | DCPA80BC Wireless Digital Chronostat |
| Technical Data | Power supply | 2 x 1.5V= alkaline batteries AAA type |
| | Batteries duration | ~ 1 year |
| | Regulation range | Comfort: 10°C .. 30°C Economy: 10°C .. 30°C |
| | Temperature Sampling | Approx. every 3 minutes |
| | Differential | 0.2°C (asymmetric.: example. 20.0°C off 19.8°C on - heating mode - 20.0°C off 20.2°C on - cooling mode -) |
| | Sensor type | NTC 100k @ 25°C internal |
| | Accuracy | ± 1°C |
| | Resolution | Readout: 0.1°C; Set-point: 0.2°C |
| | Output power (ERP) | 10dBm max |
| | Modulation type | AM (ASK) |
| | Antenna type: | Internal |
| | Max. distance from receiver | 30 m indoor (depending on the environment) |
| | Storage Temperature | -10°C .. +50°C |
| | Operating Temperature | 0°C .. 40°C |
| | Protection Class | IP30 |
| | Humidity Limits | 20% .. 80% rH (non condensing) |
| Enclosure | Material: ABS V0 self-extinguishing | |
| Colour | Cover: Signal white (RAL 9003) Base color: Anthracite grey (RAL 7016) | |
| Agency Compliance | EEC 89/336, 73/23, 93/68, 99/05 | |
| Size | 133W x 87H x 32D mm | |

Display Operation



At first operation insert the batteries respecting the polarity and perform a reset of the chronostat with a small tip through the hole (7) Fig. 2.

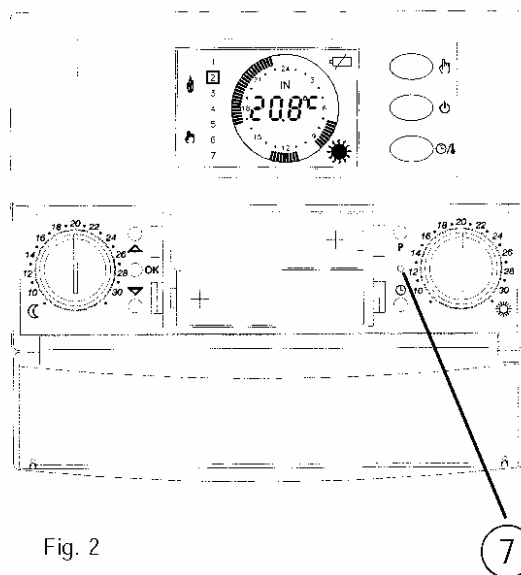


Fig. 2

Six buttons are present under the plastic door covering the batteries:

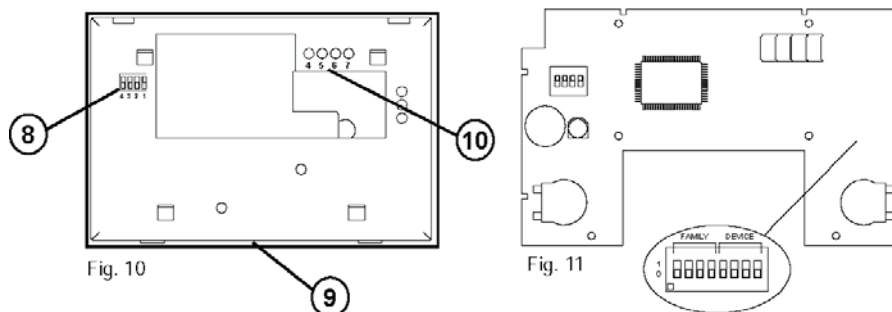
- 'P' programming
- ☰ day, hour & minutes regulation
- 'OK' confirmation (5)
- ▲ forward (4)
- ▼ back (6)
- 'reset' accessible through hole (7) for internal circuit and program test

Three buttons are on the front, close to the display:

- ☰ Manual
- ☰ Temperature/Time
- ⏻ O/Off

Radio System Set-Up

The chronostat turns-on or turns-off a relay in the receiving unit (receiver) by a radio link. Before installing the chronostat in the desired position, it is necessary to test if the receiving unit correctly receives its radio signals. To do this the chronostat must be turned-on in the "Test" mode. The operation is described in the following.



Open the thermostat box removing the plastic back, use a small screwdriver, place it between the back panel and the chronostat's body as shown in (9) Fig. 10 then apply a slight pressure.

In Fig. 11 is visible the appliance's internal layout. Set the appropriate address in the dip-switches (11), the address is split in two parts, "family" and "device". The family address must match the family address set in the receiver unit, the device address must match one device address of one output channel of the receiver. Take into account that different thermostats used with the same receiving unit must operate with different device addresses to avoid data collision and malfunction. See receiver's documentation for further explanations.

If you are using a one-channel receiver, the address can be set randomly, but attention must be paid if more than one wireless thermostat are installed in the same building or in the close area, the address must be different.

Turn-on the receiving unit and position it close to the desired final place. In the chronostat push down the microswitch N.1, it is located in the group of the additional functions microswitch in the back side (8) Fig. 10, this enables the "Test mode" operation. Make sure that the batteries are correctly inserted, do not use old or non-alkaline batteries.

Now the chronostat is operating in 'Test' mode it continuously transmits On and Off signals to the receiver every about 3 seconds. In the receiving unit the relevant relay output should continuously toggle between On and Off state, every 3 seconds. This output state in the receiver is also displayed by its led. If this happens the chronostat is correctly communicating with the receiver.

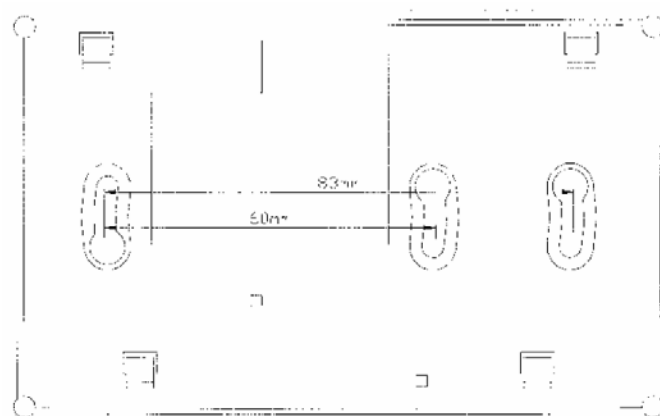
When positioning the chronostat in the desired room, ensure that they still communicate well, checking the relevant output which should be continuously toggled. If the thermostat is placed too far from the receiver, the relevant relay output will not toggle and remain stuck in the On or Off state. In this case the chronostat should be positioned in another place, closer to the receiver or as far as possible from metal sheets or reinforced cement walls which could weaken the radio signals. The signal power can be monitored in the receiver unit, please see the receiver instruction for more information.

Once the optimal position is found, push up the microswitch N.1, (8) Fig. 10 to stop the test and to enable the normal operation. Note that in the normal operation the relay status in the receiver will be updated every about 3 minutes, so it is normal not to get an immediate response when changing the Comfort or Economy temperature setpoint, by moving the relevant knobs. Close the chronostat by placing the plastic back and pushing it. Proceed with the mechanical installation.

**Installation –
Wall Mounting**

The adapting plate (Fig. 3 below), can be fixed using the screws and relevant shells included in the box or, alternatively, directly on the wall or on 3 modules junction boxes; on the plate will then be hooked the chronostat body, by placing it from the plastic back side and sliding it down.

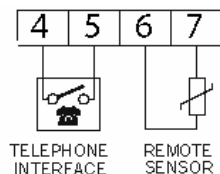
In any case, in order to grant the electrical safety, it is mandatory to screw the chronostat body to the wall through the two screws supplied which must be mounted in the battery holder. The chronostat must be located about 1.5 m. above the floor level, far from heat sources, doors and windows.



Electrical Wiring

The chronostat does not need electric wirings, because it was developed to be a wireless chronostat. However some terminals are available (10) Fig. 10 to connect in addition an external remote sensor input and a telephone interface.

- 4 and 5: telephone interface (optional) for remote control of the chronostat.
- 6 and 7: remote sensor (optional).



Clock Adjustment

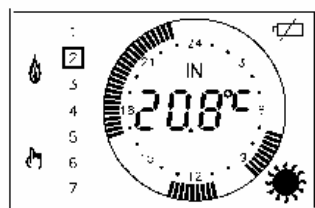


Fig. 7

In order to set the clock of MAGICTIME RADIO (Fig. 7), follow these steps:

1. Open the plastic door covering batteries.
2. Press the button '><' for at least 2 seconds.
3. Set the day with buttons '▲' or '▼'.
4. Confirm with button 'OK'.
5. Adjust current hour with buttons '▲' or '▼'.
6. Confirm with button 'OK'.
7. Adjust current minutes with buttons '▲' or '▼'.
8. Confirm with button 'OK'.

After 1 minute of inactivity on buttons, the chronostat will automatically exit the clock adjustment mode.

Heating/Cooling Selection

Pressing for at least 3 seconds the button '▲' (back) the Heating mode is selected and the symbol '🔥' appears.
Pressing for 3 seconds the button '▼' (forward), the Cooling mode is selected and the symbol '❄️' is displayed.

When batteries are replaced, the heating or cooling mode must be reprogrammed.

Programming mode

The selection of the programming mode is made through the buttons '▼' (forward), '▲' (back), 'OK' (confirmation) and 'P' (programming).

To enter the programming mode the button 'P' must be pressed for at least 2 seconds: the display will show one of the following day combination:

- a) 1 2 3 4 5 Monday .. Friday +
6 7 Saturday .. Sunday
 - b) 1 2 3 4 5 6 Monday .. Saturday +
7 Sunday
 - c) 1 2 3 4 5 6 7 Monday .. Sunday
 - d) Luggage (vacation function)
 - e) 1 Monday
2 Tuesday
3 Wednesday
4 Thursday
5 Friday
6 Saturday
7 Sunday
- day by day program ←

Press '▼' (forward) or '▲' (back) to change and 'OK' to confirm.

Pressing the 'P' button, will exit the programming mode.

After the confirmation of the day combination (with 'OK' button), a time cycles combination will flash on the display.

Through the 4 buttons '▼' (forward), '▲' (back), 'OK' (confirmation) and 'P' (programming), combinations can be selected: (from 1 per day minimum, to 4 per day maximum):

- a) 1 time cycle: 06:00 23:00
- b) 2 time cycles: 06:00 08:00
17:00 23:00
- c) 3 time cycles: 06:00 08:00
11:00 13:00
17:00 23:00
- d) 4 time cycles: 06:00 08:00
11:00 13:00
17:00 19:00
21:00 23:00

After confirming with 'OK' button the selected time cycle, it is possible to modify through buttons '▼' (forward), '▲' (back) and 'OK' (confirmation), its start and end time with a minimum step of 15 minutes. After the programming of the first combination of days and time cycles, it is possible to program the next combination (if present).

Temperature Setting

Through the two knobs (Fig. 3 and 4) '☾' (moon) and '☀' (sun) it is possible to adjust the 'Economy' and the 'Comfort' temperatures as set by the program.

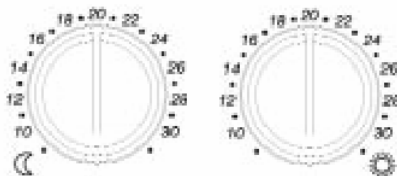


Fig. 3

Fig. 4

Vacation Program

If the 'Vacation' combination is selected, the symbol '☐' (luggage) will flash: pressing the 'OK' button (confirmation) it will be possible to set with buttons '▼' (forward) and '▲' (back) the number of hours (h. 00..95). Once reached the max hours number the display will automatically switch to days indication (d. 04..99). During this period the heating or cooling will be off (only the antifreeze function will remain active). When the antifreeze program is activated, the current hour or day will be included: in this case (but only in heating mode), the antifreeze temperature is displayed and can be modified with the buttons '▼' (forward) or '▲' (back).

Manual Mode

Pressing the 'manual' button (1) the chronostat can be forced to operate in a different mode from the one set by the current program.

Pressing it once an 'override' function is activated: the temperature is regulated according to the opposite level (Comfort in place of Economy or vice versa) with respect to the one currently selected by the program, until the next action of the program occurs. In this way the next action is 'anticipated' by this 'override' function.

The chronostat, will return in normal mode on the next action, the symbols '☞' (manual) and '↻' (override) will be on and the time cycles are visible. In this mode the room temperature is still displayed.

Pressing twice the manual button, the chronostat will be forced in continuous 'Comfort' temperature mode, while pressing once again it will be forced in continuous 'Economy' temperature mode; symbols '☞' (manual), '☀' (sun) and '☾' (moon) will be on and the room temperature will be displayed. If the manual button is pressed once again, the chronostat returns in normal mode.

Time / Temperature Display

By pressing the '🕒' button (3) you can display the current time; in case an external sensor is wired to the relevant terminals by repeatedly pressing the same button you can even display the internal (the label 'IN' appears on the display) or external temperature (the label 'OUT' appears).

In case no external sensor is wired to the terminals, the regulation is made with respect to the internal one.

On the other hand when an external sensor is wired, you can choose the reference sensor (internal or external) for the regulation by moving the relevant microswitch located on the thermostat back. See section "Additional functions"

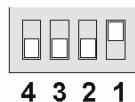
Turn-on / Turn-off

The chronostat can be turned off by pressing the '🔌' button (2) which (only for heating mode) will force the regulation at an adjustable temperature level between -5°C e 25°C through the '▼' (forward) and '▲' (back).

Additional Functions

The presence of 4 microswitches located on the chronostat back (Fig. 10) gives access to some additional functions.

The chronostat is factory set with the microswitches in the following configuration:



1. Normal working.
Test mode working.
2. Optimization enabled.
Optimization disabled.
3. Time proportional regulation enabled.
Time proportional regulation disabled.
4. Regulation through external sensor.
Regulation with internal sensor.

1. Test mode

This microswitch in the lower position enables the 'Test' mode. In this mode the chronostat issues radio commands continuously for testing the communication with the receiver. The commands toggle the relevant relay in the receiver every 3 seconds. Once the set-up and tests are finished, set the microswitch in the upper position.

2. Optimization

The optimization function gives the chance to turn the heating on with a time advance with respect to the programmed time so that the user will actually have the desired temperature (that is the set one) at the programmed time. Actually the chronostat measures the time the environment needs to get to the desired temperature and, consequently, anticipates the programmed turn on by the time needed to get to this goal. The optimization can be activated by moving a microswitch located on the thermostat back: the time advance is calculated with respect to the average temperature gradient in the last 24 hours, with a maximum of 60 minutes time advance.


3. Time proportional operation

By moving this microswitch located on the rear of the chronostat the user can switch between the standard operation (on-off with an asymmetrical 0.2°C differential) and a time proportional operation with a band and intervention times that fit the most of civil environments.

4. Internal - External sensor selection

By moving this microswitch located on the rear of the chronostat the user can select as a reference sensor for the regulation either the internal sensor or the external (remote) one.

**Batteries replacement**

When on the display shows the battery symbol '  ', batteries must be replaced. In order to perform this operation proceed as:

1. Open the plastic door covering the batteries.
2. Remove old batteries with the help of a small tool.
3. Insert the new batteries which must be 1.5V AA alkaline.
4. If the chronostat seems not to operate well, perform a reset through button (7).

WARNING !

- To determine the correct position one must ensure that the radio signals transmitted are correctly received by the receiving unit.
- To adjust properly room temperature, install the thermostat far from heat sources, airstreams or particularly cold walls (thermal bridges). When the remote sensor is used in conjunction with the thermostat, then this note is to be applied to the remote sensor itself.
- For remote version all wirings must be made using wires with 1,5 mm² minimum section and no longer than 3 m. Do not use same duct for signal wires and mains.
- Installation and electrical wirings of this appliance must be made by qualified technicians and in compliance with the current standards.

Notes: In the view of a constant development of their products, the manufacturer reserves the right for changing technical data and features without prior notice. The consumer is guaranteed against any lack of conformity for 24 months from the time of delivery, according to the European Directive 1999/44/EC. The full text of guarantee is available on request from the seller.