

TAP-D01 Electronic Room Thermostat with 3 Levels

TAP-D01 are electronic battery powered room thermostats with selectable heating/cooling mode. Thermostats have three temperature setpoints, timer for the relay and LCD display for settings, temperature and time. External override contacts are available for remote night set-back. Thermostats has built-in temperature sensor with an option for remote NTC sensor.

Features

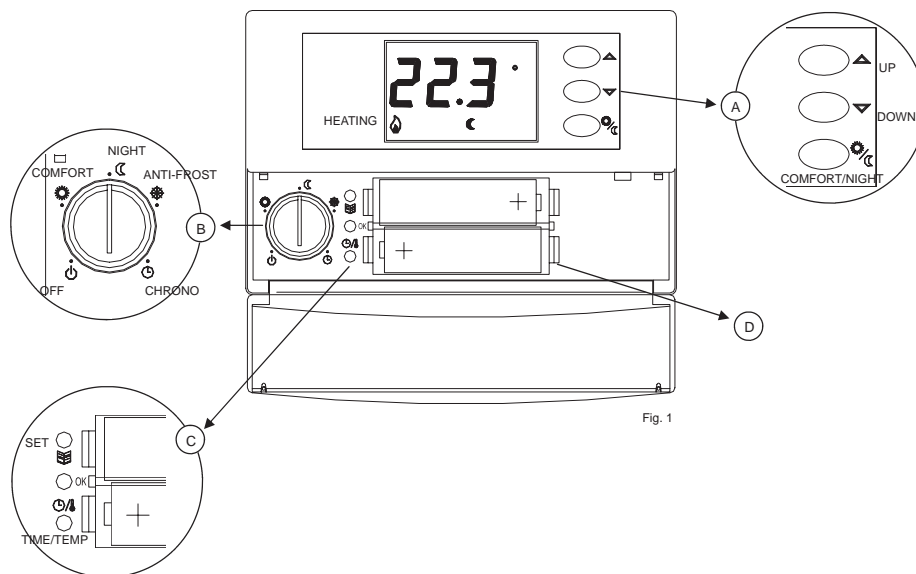
- Power supply 2AA type batteries
- Room temperature adjustment on three levels: comfort, reduced and anti-frost
- Main parameter configuration
- 'Heating' or 'cooling' mode programmable
- External override (telephone or mobile phone) capability
- Display of room temperature or time



Model Types	Model	Description
	TAP-D01-BC	Electronic Room Thermostat with Display, 3 Setpoint Levels and Heating/Cooling
Technical Data		
	Power Supply	2 x 1.5V AA Batteries
	Battery Life	2 years
	Contact Rating	5(1)A @ 250Vac SPDT
	Accuracy:	+/- 1.0°C
	Resolution:	0.1°C (0.0°C to 50.0°C) 0.2°C (-0.1°C to -9.9°C)
	Control Range	Comfort: 5.0 to 40.0°C Economy: Off/ Anti-Frost/ 5.0 to 40.0°C Anti-Frost: 2.0°C to 25.0°C
	Hysteresis	0.0 to 5.0°C
	Temperature Offset	+/-3.0°C
	Comfort/Eco Timer	10 min to 23 hrs and 50 mins
	Hour Format	HH: M - Format 24h
	Reading Saturation	Temp < -9.9°C (- - -) Temp > 50.0°C (E E E)
	Sensor type	NTC 4k7 ohm @ 25°C internal
	Remote sensor (optional)	Code STL NTS A150
	Protection class	IP30
	Operating temperature	0°C...40°C
	Storage temperature	-10°C...+50°C
	Humidity limits	20%...80% rH (non condensing)

Technical Data Cont...

Enclosure	Material: ABS V0 self-extinguishing Cover Colour: Signal white (RAL 9003) Backplate Colour: Anthracite grey (RAL 7016)
Size	133W x 87H x 32D mm
Weight	~222 gr.



OPERATION MODE

The 5 operation modes may be chosen by means of the rotating selector switch inside the cover. Select the mode wanted, then press the button 'OK' to enable it. If not, the thermostat will detect the variation after approx. 3 minutes.

OFF MODE

If the selector switch is put on the symbol 'OFF', the thermostat will be off. The symbol 'OFF' will appear on the display and the time or the current temperature are visualised. The only active button is the 'TIME/TEMP', which allows the user to alternatively display the time, the indoor and outdoor temperature as well as to adjust the time.

COMFORT MODE

Rotating the selector switch on the symbol 'COMFORT' the device will adjust room temperature in the comfort mode. The symbol 'COMFORT' as well as the time and the current indoor or outdoor temperature will appear on the display. If the relay is operating in this mode, the symbol 'COOLING' (cooling) or 'HEATING' (heating) will be displayed. Parameters may be modified and the clock adjusted in this state.

ECONOMY MODE

Put the selector switch on the symbol 'NIGHT' to get into the economy mode. The symbol 'NIGHT' as well as the time or the current indoor or outdoor temperature are displayed.

In this mode room temperature is adjusted according to the parameter no. 1 configured. If off level is active, the symbol 'OFF'; will flash in the display; if anti-frost level is active, the symbol 'ANTI-FROST'; will flash; if the economy level 'ECO' is active, only the icon 'NIGHT' will appear on the display.

What has been said before is to be applied to the economy mode as well: temporary economy, economy Chrono, temporary economy chrono, with the only exception of the icon 'NIGHT' which flashes in the temporary states.

In case of relay activation the symbol 'COOLING' (cooling) or 'HEATING' (heating) appears on the display also in this mode. Configuration parameters and clock adjustment may be modified in this mode.

ANTI-FROST MODE

Put the selector on the symbol 'ANTI-FROST' to get into the antifreeze mode; the time or the indoor or outdoor temperature as well as the symbol 'ANTI-FROST' are displayed.

In this mode the thermostat adjusts room temperature according to the antifreeze setting: if the relay being activated, the symbol 'I' will appear on the display. Configuration parameters and clock adjustment may be modified in this mode.

CHRONO MODE

Put the selector on the symbol '**CHRONO**' to get into the 'Chrono' mode. The thermostat adjusts room temperature by means of an external timer equipped with voltage free make contact: if open, the thermostat operates in the Comfort mode and the symbol '**COMFORT**', is displayed, if closed, the economy mode runs and the symbol '**NIGHT**' is displayed. The symbol '**CHRONO**' will be in any case displayed together with the indoor or outdoor temperature in °C or the time. If the relay is activated the corresponding icon '**COOLING**' (cooling), or '**HEATING**' (heating) will light up. In this mode configuration parameters may be modified and the clock adjusted. Outdoor contact state is checked and read every 60 seconds.

START-UP

On the first start-up:

Open the cover and insert batteries into the battery compartment by respecting the direction shown (D fig. 1). The rotating selector (B fig. 1) under the lower cover is for selecting the thermostat operating mode:

- OFF
- COMFORT MODE
- ECONOMY MODE
- ANTI-FROST MODE
- CHRONO MODE

Three more buttons are available (C fig. 1):

'**SET**' = PROGRAMMING

'**OK**' = CONFIRMATION

'**TIME/TEMP**' = HOUR/MINUTE ADJUSTMENT AND TIME/TEMPERATURE DISPLAY

When the cover is closed 3 buttons are available on the front panel (A fig. 1): '**UP**' (increasing), '**DOWN**' (decreasing), '**COMFORT/NIGHT**' (temporary switching to comfort/reduced).

SETTING THE TIME

To set the time in the thermostat proceed as follows:

- Hold down the button '**TIME/TEMP**'; for approx. 3 seconds; the hour numbers will flash.
- Set the hour by pressing the buttons '**UP**' or '**DOWN**'.
- Confirm by pressing the button '**OK**'; the numbers for setting the minutes will flash.
- Set the minutes by pressing the buttons '**UP**' or '**DOWN**'.
- Confirm and exit by pressing the button '**OK**'.

If no adjust button is pressed for approx. 6 seconds, this mode is exited saving the data modified so far.

PARAMETER CONFIGURATION

Hold down the button '**SET**' for at least 3 seconds to get into the parameter configuration mode shown by the letter '**P**'. A first pressure of the button '**SET**' automatically enables the setting of the first parameter. A further pressure of the button '**SET**' is for accessing the modification of the next parameter.

Press the buttons '**UP**' or '**DOWN**', to modify parameters, i.e. increase and decrease respectively. To exit the parameter programming, no pressure on the buttons must be detected by the thermostat for at least 8 seconds.

At the parameter configuration exit the device automatically saves all the modifications carried out. The access to the programming may not be enabled if the operating selector is set to '**OFF**'. The 7 configurable parameters are described hereafter:

P1: ECONOMY LEVEL SEETTING

By entering the parameter configuration mode, the first configurable parameter is indicated by the number 1 flashing. The economy level range, also called economy, may be set here by pressing the buttons '**UP**' or '**DOWN**' and choosing from one of the following options:

'**OFF**': the relay is always held in OFF position.

'**AnF**': the temperature is adjusted within the anti-frost range.

'**ECO**': the temperature is adjusted within the economy range.

P2: HEATING/COOLING MODE SELECTION

Get into the second configurable parameter by pressing the button '**SET**' from the parameter '**P1**': the number 2 starts flashing. In this parameter you can select the operating mode by pressing the buttons '**UP**' or '**DOWN**':

'**Coo**': cooling mode;

'**HEA**': heating mode.

P3: TIMER: TEMPORARY ECONOMY/COMFORT

From the 'heating/cooling' parameter press the button '**SET**' to get into the third configurable parameter: the number 3 starts flashing.

Set the duration of temporary mode change: comfort/economy. By pressing the buttons '**UP**' or '**DOWN**' it is possible to set the timer duration in the format: hour: minutes with 10-minute-step increasing/decreasing. The parameter can be adjusted within the range: 10 minutes ('00:1') to 23 hours and 50 minutes ('23:5'). If for example you set a 06:0 hour duration and press the button '**COMFORT/NIGHT**' in the comfort mode, the thermostat will switch to the economy mode for 6 hours: the comfort mode will be restored soon afterwards.

P4: INTERNAL/EXTERNAL SENSOR

This parameter is for selecting the indoor or outdoor sensor on which to adjust temperature: '**In**' (indoor), or '**Out**' (outdoor) can be selected by pressing the buttons '**UP**' or '**DOWN**'. Outdoor sensor is to be selected only if connected to the device.

P5: OFFSET

The offset parameter, indicated by the number 5 flashing, corrects the room temperature value displayed. Offset level can be changed within the range: -3°C to +3°C.

P6: HYSTERESIS

Select this parameter to set the hysteresis level within the range: 0.0°C to +5.0°C. Press the buttons '**UP**' or '**DOWN**' to respectively increase or decrease the value in 0.1°C steps.

P7: HOURS OF RELAY ACTIVATION

This parameter, which is indicated by the number 7 flashing, is for displaying the relay activation time. The time is expressed in hours up to a maximum of 984 hours (41 days); beyond this limit the time will be displayed in days up to a maximum of 99 days. This parameter being selected, the counter may be zeroed by pressing the button '**UP**'.

**TEMPERATURE
ADJUSTMENT:
ECONOMY/COMFORT/ANTI-
FROST**

Room temperature may be adjusted at every time whatever mode is operating. Press the buttons '**UP**' or '**DOWN**' to respectively increase or decrease the set point temperature. The access to this menu is indicated by the flashing of temperature numbers. To exit this mode either save the new setting by pressing the button '**TIME/TEMP**' or do not press the buttons '**UP**' or '**DOWN**' for at least 3 seconds. In the comfort as well as in the economy mode temperature may be adjusted within the range 5°C .. 40°C, in the antifreeze mode instead within the range 2°C .. 25°C.

**TEMPERATURE/TIME
DISPLAY**

Press the button '**TIME/TEMP**' to alternatively display the time and the indoor temperature. If the outdoor probe is available, the outdoor temperature will be shown. If there is no outdoor probe only the first two parameters are displayed.

**TEMPORARY SWITCHING
TO COMFORT / ECONOMY**

This function allows to invert temporarily the operation mode in progress. Press the button '**COMFORT/NIGHT**' to switch from the comfort to the economy mode and vice versa. Timer duration is pre-set in the configuration step and may be modified by selecting and modifying the parameter no. 3 'Timer: temporary economy/Comfort'.

When a temporary state is operating, the icon corresponding to this state flashes.

The hyphens of the upper bar will light, and after the time is elapsed they will be off. A time interval of about 4 hours corresponds to each hyphen. 6 hyphens will light if you set the max. time, i.e. 23:5 (23 hours and 50 minutes).

Less than one hour before the 4 current hours have elapsed the respective hyphen will begin to flash. One minute before the temporary state ends the hyphen will turn off, whereas the icon will continue to flash until the preceding state is enabled. If a temporary state is active (flashing icon) and the state setting is changed via a rotating selector, the new setting will prevail over the active temporary state.

**SERVICE / ERROR
MESSAGES**

The device is designed to communicate the following basic information to the user.

ERROR 1

The error message '**Err1**' appearing on the display shows that the cooling mode (P2 on 'Coo') was selected while the parameter no. 1 was enabled in anti-frost position. The thermostat will continue to operate, while excluding the relay intervention (no. 1 parameter in 'off' position as a reference for the thermostat). To exit the error state perform one of the following operations:

- If the operating selector is in the ANTIFROST mode, set the **no. 2** parameter to the heating mode '**Heat**'.
- If the operating selector is not in the ANTIFROST mode, set the **no. 1** parameter to a different value from the Antifrost one, then press '**OFF**' or '**Eco**'.

ERROR 2

The second error message '**Err2**' shows sensor faults. If the error message '**Err2**' is displayed together with the flashing symbol 'R' one of the sensors is faulty. If the indication '**In**' is enabled, the fault refers to the internal sensor, if, instead, the indication '**Out**' is enabled, to the external sensor.

Besides, the type of problem is shown by the writings: '**OPEn**' (the sensor is open), or '**Shrt**' (the sensor is in short circuit). In the same moment when the error message regarding a faulty sensor is shown, the relay will be set to '**OFF**', until the fault cause has been removed.

To exit the error state perform one of the following operations:

- if adjustment is selected on the external sensor and the external probe is not available, select adjustment on the internal sensor, by modifying the no. 4 parameter.
- if adjustment is selected on the external sensor and the external sensor is not available, check the probe electrical parts, i.e. verify if it is in short circuit or disconnected.
- if adjustment on the internal sensor is selected, the message shows that the sensor is faulty. Contact the Customer Service.

SENSOR READING LIMITATIONS AND SATURATIONS

If the sensor detects a temperature which is higher or lower than the ranges shown hereafter, the following messages will be displayed, not the temperature or the current time:

'**Shrt**': Temperature sensor presence minimum limit = 'Sensor in short circuit'.

'- - -': Temperature -9.9°C = 'Underflow'.

'**EEE**': Temperature $> +50^{\circ}\text{C}$ = 'Overflow'.

'**OPEn**': Temperature $>$ sensor presence maximum limit = 'Open sensor'.

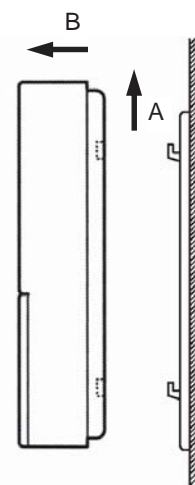
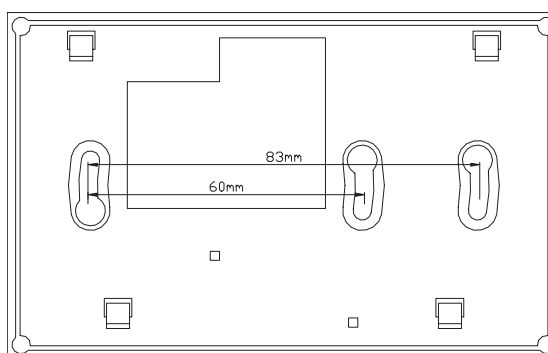
INSTALLATION

Wall-mounted.

Figure on the right shows how to unhook the wall fixing plate of the thermostat. Fasten the fixing plate (fig. below) using the screws and dowels delivered, either directly on the wall or on 3 module connector blocks; hook the thermostat body on the base.

Terminal boards for the electrical connection are mounted inside the thermostat, protected by a plastic base plate. To guarantee electrical safety, it is obligatory to fasten the thermostat body to the wall with the two screws placed in the battery compartment.

Position the thermostat at about 1.5 m from the floor, far from heat sources, doors and windows.



LOW BATTERY

When the symbol '**LOW BATT**' (Battery with Crossed Line) appears on the display the batteries are almost exhausted. Batteries are checked every 3 minutes.

To replace batteries proceed as follows:

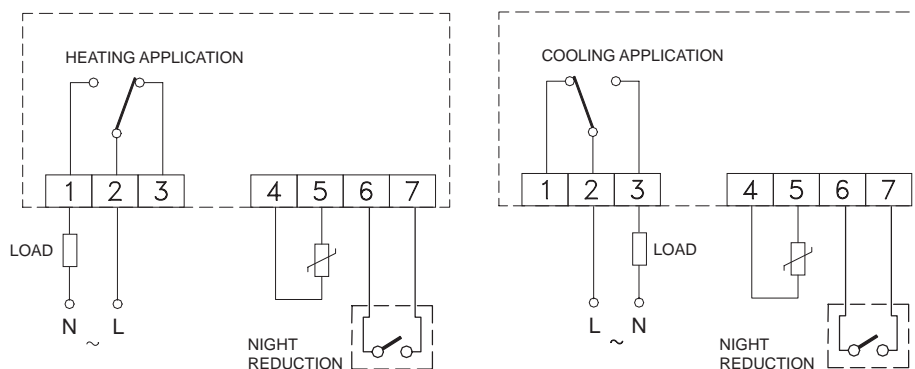
- Open the battery compartment cover.
- Take out the batteries levering eventually with a tool.
- Insert new batteries (AA size, 1.5V alkaline).

Adjust the clock at every battery replacement.

ELECTRICAL WIRING

Figures below illustrate the thermostat connection diagram. Connect to the terminals:

- 1 and 3: boiler or cooling device according to the drawing (terminals 1-2 close when heating demand and parameter P2 set to 'HEA', terminals 2-3 close when cooling demand and P2 set to 'Coo')
- 4 and 5: external sensor (optional).
- 6 and 7: external clock / override interface (optional) if the "CHRONO" mode is preferred.

**WARNING:**

Neutral must NOT be connected directly to the thermostat but through a LOAD such as pump or heating valve.

For the correct reading of the room temperature, install the thermostat far from heat sources, airstreams or particularly cold walls (thermal bridges) and in horizontal position. When the remote sensor is used in conjunction with the thermostat, then this note is to be applied to the remote sensor itself.

Use cables with a min cross-section of 1.5mm² and a max. length of 25m for the sensor connections. Do not pass the sensor cables next to the mains cables.

The appliance must be wired to the electric mains through a switch capable of disconnecting all poles compliant to the current safety standards and with a contact separation of at least 3mm in all poles.

Installation and electrical wirings of this appliance must be made by qualified technicians and in compliance with the current standards.

Before wiring the appliance be sure to turn the mains power off.

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.