ENGINEERING
TOMORROW



TP7001 Range

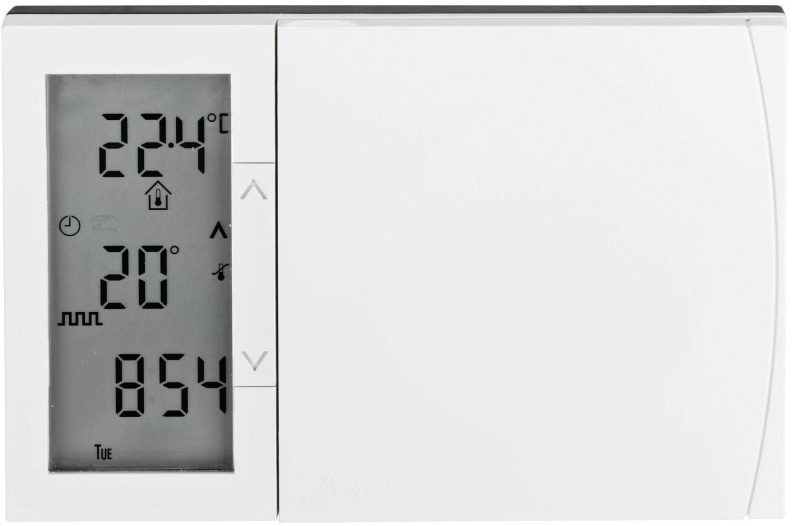
Electronic 7 Day Programmable Room Thermostat

User Guide

Danfoss Heating

TP7001

Electronic 7 Day Programmable Room Thermostat



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energy saving recommended

Certification Mark

This product complies with the following EC Directives:
Electro-Magnetic Compatibility Directive.
(EMC) (2004/108/EC)
Low Voltage Directive.
(LVD) (2006/95/EC)

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User Instructions

TP7001 Range

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Electronic Programmable Room Thermostat

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What is a programmable room thermostat?

... an explanation for householders

A programmable room thermostat is both a programmer and a room thermostat. A programmer allows you to set 'On' and 'Off' time periods to suit your own lifestyle. A room thermostat works by sensing the air temperature, switching on the heating when the air temperature falls below the thermostat setting, and switching it off once this set temperature has been reached.

So, a programmable room thermostat lets you choose what times you want the heating to be on, and what temperature it should reach while it is on. It will allow you to select different temperatures in your home at different times of the day (and days of the week) to meet your particular needs.

Turning a programmable room thermostat to a higher setting will not make the room heat up any faster. How quickly the room heats up depends on the design of the heating system, for example, the size of boiler and radiators.

Neither does the setting affect how quickly the room cools down. Turning a programmable room thermostat to a lower setting will result in the room being controlled at a lower temperature, and saves energy.

The way to set and use your programmable room thermostat is to find the lowest temperature settings that you are comfortable with at the different times you have chosen, and then leave it alone to do its job. The best way to do this is to set low temperatures first, say 18°C, and then turn them up by one degree each day until you are comfortable with the temperatures. You won't have to adjust the thermostat further. Any adjustments above these settings will waste energy and cost you more money.

If your heating system is a boiler with radiators, there will usually be only one programmable room thermostat to control the whole house. But you can have different temperatures in individual rooms by installing thermostatic radiator valves (TRVs) on individual radiators. If you don't have TRVs, you should choose a temperature that is reasonable for the whole house. If you do have TRVs, you can choose a slightly higher setting to make sure that even the coldest room is comfortable, then prevent any overheating in other rooms by adjusting the TRVs.

The time on the programmer must be correct. Some types have to be adjusted in spring and autumn at the changes between Greenwich Mean Time and British Summer Time.

You may be able to temporarily adjust the heating programme, for example, 'Override', 'Advance' or 'Boost'. These are explained in the manufacturer's instructions.

Programmable room thermostats need a free flow of air to sense the temperature, so they must not be covered by curtains or blocked by furniture. Nearby electric fires, televisions, wall or table lamps may prevent the thermostat from working properly.

1.0 User Instructions
1.1 Your programmable room thermostat

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Your programmable room thermostat allows you to programme different temperatures at different time periods. You can programme one set of times and temperatures for week days with a different set of temperatures for weekend days, this is referred to as 5/2 day operation.

You can also programme different times and temperatures for each day of the week individually – this is called 7 day operation.

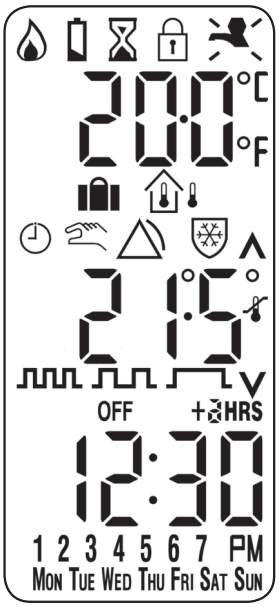
The thermostat can also be set to provide one set of times and temperatures that are repeated each day of the week. This is referred to as 24 hour operation.

The thermostat can also be set by you to provide two different programming blocks which can then be assigned to any day of the week, this is referred to as A/B programme operation.

The TP7001 can be set by your installer to provide up 2, 4 or 6 time and temperature settings each day. The TP7001 features useful overrides, including a programmable frost setting.

Your thermostat has some advanced features which the installer will set-up if they are required. There are also a number of advanced features which can be set up by you. These advanced settings alter the way that your thermostat operates, some also affect the programming functions and the user overrides. Please read the User Advanced Programming instructions before programming the unit (see page 23).

1.2 Display



CURRENT TEMPERATURE

PROGRAMMED TEMPERATURE

TIME

Days of Week (Numbers or Text)

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KEY TO SYMBOLS

	Flame: shows when heating output is on
	Battery: flashes when battery voltage is low
	Hourglass: shows during programming delays or when Delayed Start is active
	Padlock: indicates keyboard lock
	Suitcase: Holiday Mode
	House and Thermometers: Indoor and Outdoor Temperature
	Clock and Hand: Timed and Manual Modes
	Alarm: Alarm active
	Frost Shield: Frost Mode
	Λ Up Arrow: Temperature override up
	Auto Mode (6 events per day)
	Auto Mode (4 events per day)
	Auto Mode (2 events per day) or All Day Mode
	V Down Arrow: Temperature override down
OFF	OFF: Thermostat (Off) Mode
+ HRS	+ HRS: Extend function

1.3 Preset Programmes

Your TP7001 comes ready programmed with a set of operating times and temperatures which often suit most people.

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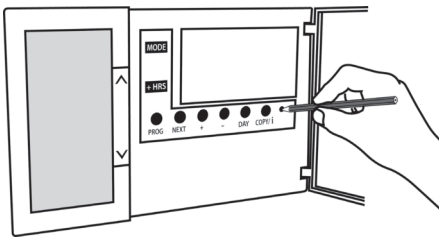
Weekdays (Mon-Fri)		
Event	*Time*	*Temp °C*
1	06:30	20
2	08:30	15
3	11:30	20
4	13:30	15
5	16:30	21
6	22:30	15

Weekend (Sat-Sun)		
Event	*Time*	*Temp °C*
1	07:30	20
2	09:30	20
3	11:30	20
4	13:30	20
5	16:30	21
6	22:30	15

If you want, you can change any of these settings by following the instructions on pages 11 to 17. First follow the steps on page 9 to set your display preferences.

1.4 Before you start

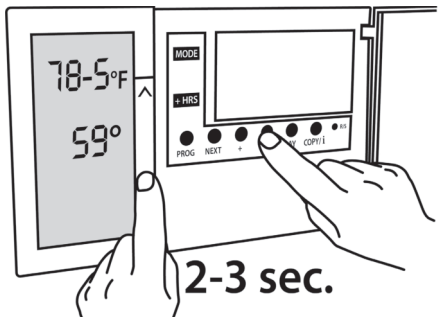
Open the flap on the front of your TP7001. Using a non-metallic object, press and release the recessed **RESET** button.



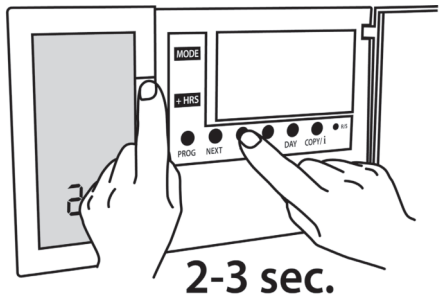
NOTE: Your TP7001 features a backlight on it's display. Unless this has been disabled or set to be on all the time (mains version only), the first press of any button will cause the backlight to come on. In order to action a function, a repeat press of the button will be required. All buttons will then operate as normal until the unit is left untouched for 2 minutes and then the next button press will activate the backlight again.

1.5 Display Preferences

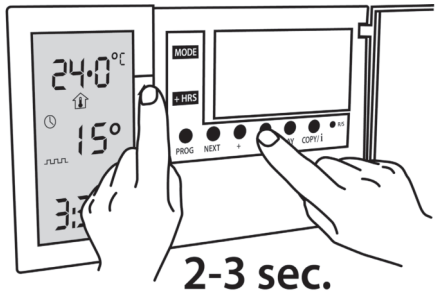
Temperature display (°C or °F)
Press and hold **V** and **-** buttons for 2-3 seconds until display changes.



Clock display (12 or 24 hr)
Press and hold **Λ** and **+** buttons for 2-3 seconds until display changes.
(AM or PM will appear in 12 hr mode)



Days of the week (numbers or text)
Press **Λ** and **–** to toggle between day numbers and text



1.6 Setting the Time and Date

Setting the correct date and time
Your TP7001 incorporates a real time clock with calendar function that automatically changes time in both Spring and Autumn. The time and date is set in the factory for the relevant time zone (GMT, CET or CET+1), and does not normally require adjustment. If you live in another time zone refer to "Time zone offset" on page 24. However, should it be found necessary to adjust time or date for any other reason refer to the following instructions.

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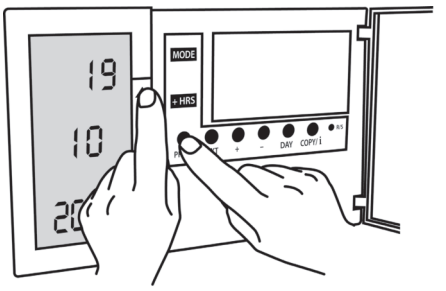
Setting the date

Press and hold **Λ** and ***PROG*** buttons for 3 seconds, to display date.



The **YEAR** number will flash, use **Λ** or **V** to correct the year ***(Fig 1)***.

Use **-** or **+** to move to **MONTH**, then use **Λ** or **V** to correct month ***(Fig 2)***.

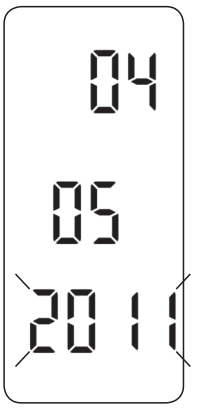


Fig. 1



Fig. 2

Use **-** or **+** to move to **DATE** in month, then use **Λ** or **V** to correct day in month ***(Fig 3)***.

If you attempt to select an invalid date the unit will reject it and apply the nearest valid date. It is recommended that date is set in the order, yy/mm/dd.

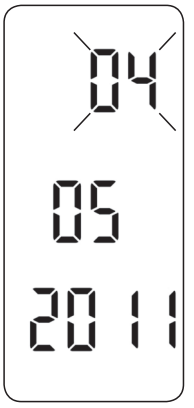


Fig. 3

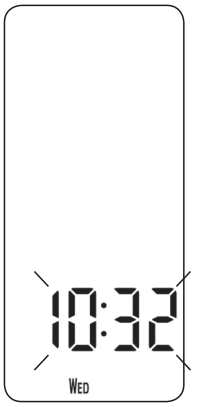


Fig. 4

Setting the correct time

After setting the date press **PROG** to display the time. The time display will flash on and off. Use the **+** and **-** buttons to set the correct time (press and hold to change in 10 minute increments). ***(Fig. 4)***

Setting the correct day
The day of the week is set automatically from the date. Press **PROG** button to return to normal operation (**RUN**).
(Fig. 5)



Fig. 5



Fig. 6

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1.7 Accepting the preset programmes

If you are happy to use the preset programmes on page 8, you do not need to do anything else. To accept these settings just close the front cover.

The unit is now in **RUN mode** (colon flashes in display) and the heating will operate according to the preset programmes. ***(Fig. 6)***

1.8 Before you change the preset programmes

Your installer will have set your unit to operate in either **7-day mode**, **5/2 day mode** or **24 hour mode**. To tell which mode your unit is set press **PROG** until Event 1 flashes in the display.

In **7-day** mode ***(Fig. 7)*** you can programme different settings for each day of the week **(see page 12)**.
Note: Only one day of the week is shown in the display.

In **5/2 day** mode ***(Fig. 8)*** you can enter one set of programmes for weekdays and another set for weekends (**see page 14**).
Note: Either weekdays or weekend days are shown in the display.



Fig. 7



Fig. 8

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In **24 hour** mode ***(Fig. 9)*** you can enter one set of programmes which repeats every day (**see page 15**).
Note: No days of the week are shown in the display.

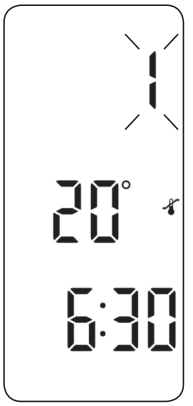

Fig. 9

Note:
Event times cannot be set out of sequence.
To return to **RUN** mode at any time, press and hold **PROG**. Alternatively, do not press any buttons and the unit will automatically return to **RUN** after 2 minutes.
Your installer will have set your unit to operate with either 2, 4 or 6 events per day. This will determine the number of events per day that you are able to programme.

1.81 Programming in 7-day mode

(Separate programmes for each day of the week)

a) Press **PROG** until Event 1 flashes ***(Fig. 10)***.
b) Change the time and temperature as follows:
   i) Use the **+ or –** buttons to alter the time (press and hold to change in 10 minute increments).
   ii) Use the ▲ **or** ▼ buttons to alter temperature in 0.5°C (1°F) steps.
   iii) Press **NEXT** to advance to next Event for that day.
   iv) Repeat steps i, ii and iii above for the remaining events ***(Fig. 11)***.

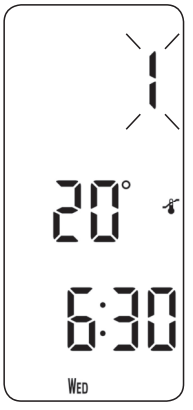

Fig. 10

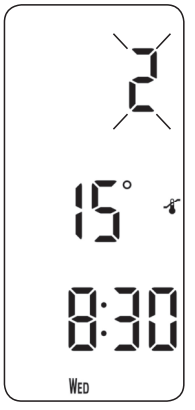

Fig. 11

c) When all events are correct, press **DAY** to programme events for the next day. (If a day's event times and temperatures are to be repeated in another day of the week then the **COPY** function can be used - see below).

d) Repeat steps b and c to programme (or **COPY**) events for the rest of the week.

To return to **RUN** mode, press and release the **PROG** button. The display will change to show the current time, set temperature and actual temperature ***(Fig. 12)***.

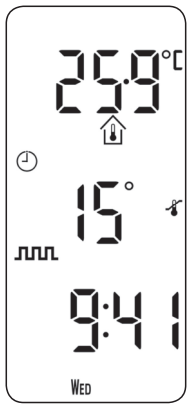

Fig. 12

Normal Copy Function

1. At step d press the **COPY** button and the previous day's events will be copied into the currently displayed day.

Advanced Copy Function

1. When all 6 events are correct, press the **COPY** button.
2. Press the **DAY** button to select which day to copy to.
3. When day is selected press the **COPY** button.
4. Continue steps 2 and 3 until all the days you would like to copy to have been copied.
5. To exit advanced copy mode press the **DAY** button until the day copied from is selected and press the **COPY** button.
   Note: Advanced Copy can only be used if the Advanced Copy Function has been enabled in option 2 in **User Advanced Programming** (see page 23).

1.82 Programming in 5/2 day mode

(One set of programmes for weekdays, another for weekends)

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a) Press **PROG** button until Event 1 flashes, then press the **DAY** button until display shows weekdays ***(Fig. 13)***.

b) Follow steps b and c on page 12 to programme times and temperatures for weekdays ***(Fig. 14)***.

c) Press the **DAY** button to programme events for weekend (Day 6-7) or press the **COPY** button to repeat weekday programme.

To return to **RUN** mode, press and release the **PROG** button. The display will change to show the current time, set temperature and actual temperature ***(Fig. 15)***.

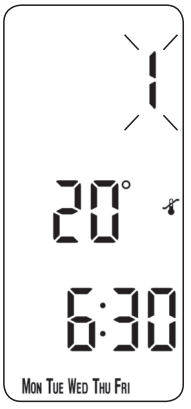

Fig. 13

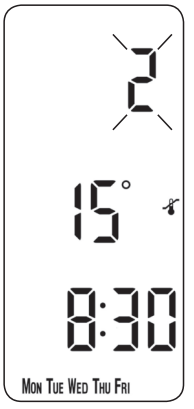

Fig. 14

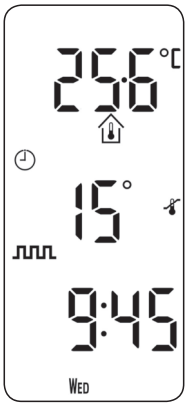

Fig. 15

1.8.3 Programming in 24 hour mode

(Every day of the week uses the same programme)

a) Press the **PROG** button until event 1 flashes ***(Fig. 16)***.

b) Amend the time and temperature as follows:
   i) Press the **+** and **–** buttons to alter the time (press and hold to move in 10 minute increments).
   ii) Use the **V** or **Λ** buttons to alter the temperature in 0.5°C (1°F) steps.
   iii) Press the **NEXT** button to advance to the next event ***(Fig. 17)***.
   iv) Repeat the steps above for the remaining events.

c) When all events are programmed press the **PROG** button to return to **RUN** mode ***(Fig. 18)***.



Fig. 16

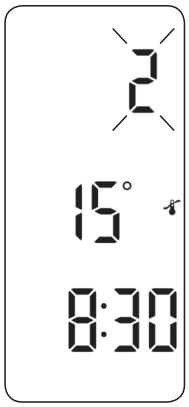

Fig. 17

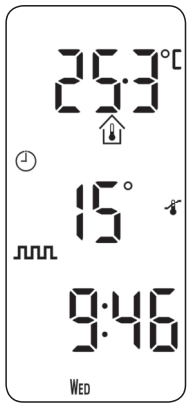

Fig. 18

1.8.4 Programming in A+B mode (Installer setting 41 must be in 5+2 mode)

Press and hold the **PROG** and **V** buttons for 3 seconds. The display will change to that shown in ***Fig. 19***. This will take you into **User Advanced Programming Mode** option 1.

Use the **Λ** or **V** buttons to enable or disable the function (1=enabled, 0=disabled).

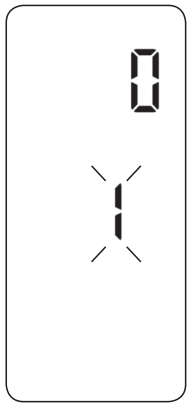

Fig. 19

Press and hold the **PROG** button for 5 seconds until the display returns to previous **RUN** mode ***(Fig. 20)***.

Press the **PROG** button, the display will change to show the default days assigned to programme "A" (MON, TUE, WED, THU, FRI) ***(Fig. 21)***.

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Use the **+** or **-** buttons to scroll forwards or backwards through the days of the week.

To deselect a day press the **V** button, (for example TUE). To select a day press the **Λ** button (for example SUN).

Any deselected days are automatically assigned to programme "B".

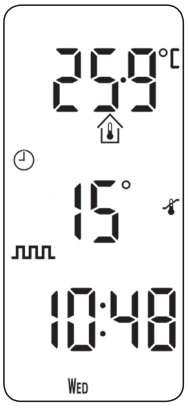

Fig. 20

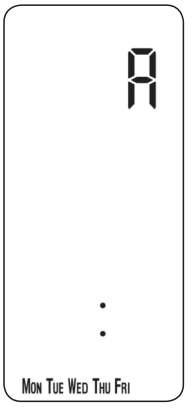

Fig. 21

Programming "A" programme days and events

a) Press the **PROG** button, the first preset time and temperature (Event 1 for Programme A) appears in display ***(Fig. 22)***.

b) Use the **+** or **-** buttons to adjust the **TIME** (press and hold to change in 10 minute increments).

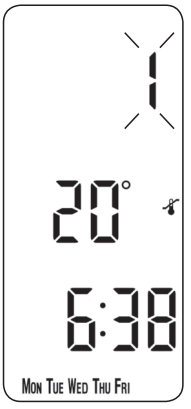

Fig. 22

c) Use the **Λ** or **V** buttons to adjust the required **TEMPERATURE** in 0.5°C (1°F) steps.

d) Press the **NEXT** button to move to the next preset time and temperature (Event 2) ***(Fig. 23)***.

e) Repeat steps b, c, and d to programme the remaining events.

Programming "B" days and events

a) Press and hold the **DAY** button until the first preset time and temperature (Event 1 for Programme B) appears in display ***(Fig. 24)***.

b) Use the **+** or **-** buttons to adjust the **TIME** (press and hold to change in 10 minute increments).

c) Use the **Λ** or **V** buttons to adjust the required **TEMPERATURE**.

d) Press the **PROG** button to move to the next preset time and temperature (Event 2) ***(Fig. 25)***.

e) Repeat steps b, c, and d to programme the remaining events.

Running the programme

Press the **PROG** button to return to previous **RUN** mode. The heating will now follow the times and temperatures programmed ***(Fig. 26)***.

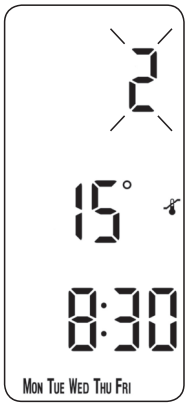

Fig. 23



Fig. 24

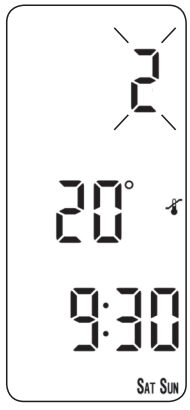

Fig. 25

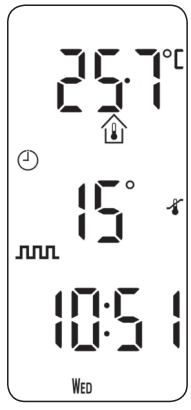

Fig. 26

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2.0 Advanced Functions

2.1 Mode

The MODE button allows the operation of the programmed events to be altered between:

1. ***Auto mode***
   a. 6 events
   b. 4 events
   c. 2 events

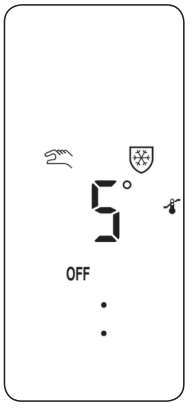
2. ***Allday mode***
   a. Only the first and last programmed events run

3. ***Thermostat mode***
   a. Thermostat mode means that all time profiles are ignored and the temperature is controlled at whatever temperature is manually set by the user.

Note: If set for two events per day, then Auto and Allday are effectively the same and so the **MODE** button will only change between Auto and Thermostat (Off) modes.
When in Auto or Allday modes, the clock symbol is displayed to indicate the programmed events will be followed.

2.2 Thermostat mode

The TP7001 can be converted to control at a constant user selected temperature, instead of following the set programme.



Press and hold the ▲ **and** ▼ buttons together until the display changes to the colon flashing and default frost temperature (5°C).

Press the ▲ **or** ▼ buttons to alter temperature as required.

NOTE: The unit will remain in thermostat mode until ▲ **and** ▼ are pressed and held together again.

Alternatively, Thermostat Mode can be selected and deselected via the **MODE** button.
Thermostat/Auto modes can also be toggled remotely via the Remote Override, see page 22.
When in Thermostat mode, the hand symbol is shown to indicate this is a manual setting mode.

GB

NOTE: The frost protection shield symbol will also be displayed when the selected temperature is equal to or less than the programmed frost protection setting.

2.3 Holiday Mode

The TP7001 can control at a constant low temperature while you are away on holiday, returning to your programmed settings at a specified date.

Press and hold the **DAY** button for at least 3 seconds (the display will show a suitcase and a date with the year flashing - ***Fig 27***). Now you can set the date of your return.

The **YEAR** number will flash, use the **Λ** or **V** buttons to set the year of your return.

Use the **-** or **+** buttons to move to **MONTH**. The **MONTH** number will flash (***Fig 28***). Then use **Λ** or **V** to set the month of your return.

Use the **-** or **+** buttons to move to **DAY** in month of your return. The **DAY** number will flash (***Fig 29***). Then use the **Λ** or **V** button to set on which day in month you will return.

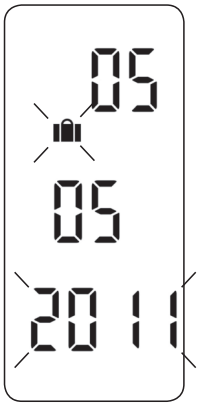


Fig. 27

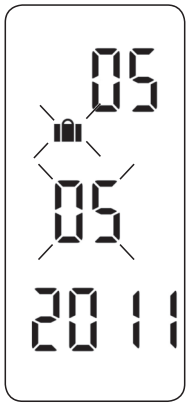


Fig. 28

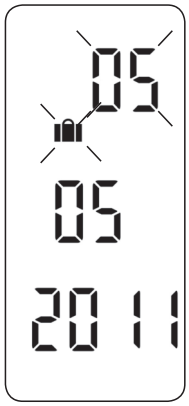


Fig. 29

Once the date of return is set correctly, press the **DAY** button to start holiday mode – the display will change to show a flashing suitcase and set temperature – this can be altered if required but it is recommended to leave it set as the default 5 degrees frost protection setting.

The mode (auto, all day, or thermostat) of operation to return to can be selected using the **MODE** button.

To cancel Holiday Mode, or if returning early from holiday, simply press the **DAY** button to resume normal operation.
Holiday mode can also be cancelled remotely via the Remote Override, see page 22.
When in Holiday Mode, a hand symbol is shown to indicate this is a manual setting mode.

2.4 User Overrides

Sometimes you may need to change the way you use your heating temporarily, e.g. due to unusually cold or warm weather. The TP7001 has several user overrides, which can be selected without affecting the set programmes. When user overrides are active, the hand symbol will be additionally shown flashing to indicate a manual change is active.

2.4.1 Temporarily increase or decrease the programmed temperature (Fig. 30).

Press the **V** or **Λ** buttons to select the desired temperature.
This override stays active until the next timed event.
Or if the installer has set for timed overrides, for a set period of 1, 2, 3 or 4 hours. If set for a timed override, the override arrow will start flashing once the next event time is encountered.



Fig. 30

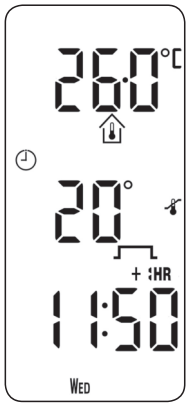


Fig. 31

2.4.2 Extend the current set temperature by 1, 2 or 3 hours (Fig. 31).

Press the +Hrs button once for 1 extra hour, twice for 2 extra hours, 3 times for 3 extra hours, and press 4 times to remove override.

The display will indicate the number of extended hours have been set. A fourth press will cancel the override (Fig. 31)

2.4.3 Changing the clock forwards and backwards

This is handled automatically, however, if the manual changeover has been selected (User Advanced Programming option 3 on page 24) follow the instructions below.

To change from Summer to Winter (turn clocks back)
With clock display showing, press and hold - button until time moves back.
To change from Winter to Summer (move clocks forward)
With clock display showing, press and hold + button until time moves forward.

2.4.4 Delay start feature (Economy Setting)

Your thermostat includes an optional delay start feature to hold off the heating for a time on mild days when the room temperature at the start of an event is close to the programmed value. If you have enabled this function it can be overridden by pressing either **Λ** or **V** buttons. A full description of this and how to enable it and set it up is given in **User Advanced Programming**, options 11, 12 & 13, (pages 25-27)

Note: When this function is active, the set temperature will flash on the display and an hourglass symbol will be displayed.

2.4.5 Optimum start control (OSC) (Comfort Setting)

Your thermostat includes an optional optimum start control. This feature allows you to set the time at which you require a room temperature by. The thermostat then calculates how soon before the event time the system must be turned up to ensure that the room is at the temperature by the required time. A full description of this and how to enable it and set it up is given in **User Advanced Programming**, options 11, 12 & 13, (pages 25-27).

Note: When this function is active, the set temperature will flash on the display. The function can be overridden by pressing the **▲ or ▼** buttons.

2.4.6 Remote override in and out of thermostat mode

If the installer has fitted a telephone activated switch or window contacts, then it is possible to step the unit into or out of thermostat mode.

The required temperature to be maintained when the building is unoccupied, or when windows are open, must first be set up in **User Advanced Programming**, option 10, (page 25).

To locally override this feature press and hold both **Λ** and **V** together. The remote override function will also allow for exit from Holiday Mode.

3.0 User Advanced Programming

Important: The thermostat has been set in the factory to suit most situations, however, there are additional optional settings which can improve the comfort, convenience and energy effectiveness of your thermostat. These are set in the **User Advanced Programming** and **Installer Advanced Programming** modes.

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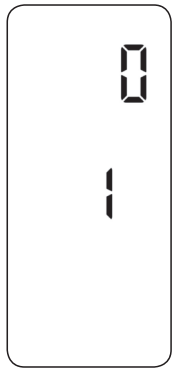
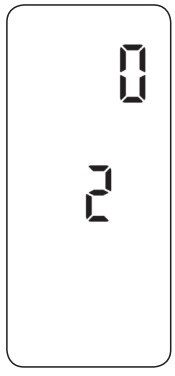
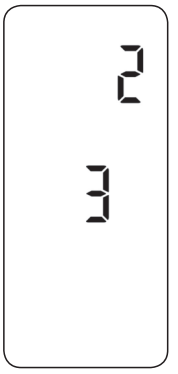
To access User Advanced Programming

Press and hold the **V** and **PROG** buttons for 3 seconds. This will put the unit into **User Advanced Programming**. Use **+** and **-** buttons to scroll backwards and forwards between options then **Λ** or **V** buttons to change option settings. The flashing digit on the right hand side of the display indicates the number of the selected option.

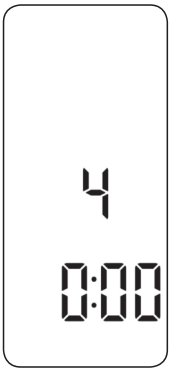
Option 1 - Enable or Disable A/B Programming	
This enables or disables the A/B programming option. Press **+** until Option 1 is displayed, use **Λ** or **V** to select required setting. This option will only be possible if Option 41 under advanced installation is set to 5+2.	
0 = Disabled. Operates as 5/2 day (Factory Setting)	
1 = Enabled. Activates A+B programming	

Option 2 - Enable/Disable Advanced Copy	
This option enables or disables the Advanced Copy Functionality. Press **+** until Option 2 is selected, use **Λ** or **V** to select required setting.	
0 = Copy function copies yesterday's events into today (Factory Setting)	
1 = Copy function can copy any day into any other day	

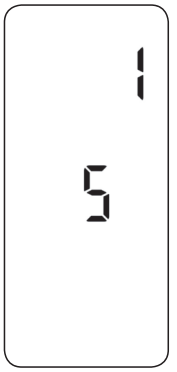
Option 3-Automatic Summer/Winter Time Change
This establishes the rules that the automatic calendar clock follows to calculate changes between summer and winter time. Press **+** until Option 3 is displayed, use **Λ** or **V** to select required setting.
0 = Disabled
1 = Manual
2 = European (Factory Setting)
3 = US New (After 2007)
4 = US Old (Before 2007)



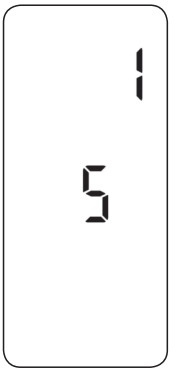
Option 4 - Time Zone Offset
This feature allows the time zone to be established and corrects time display. Press **+** until Option 4 is displayed, use **Λ** or **V** to select required setting.
0:00 = No time offset. UK models (Factory setting)
+1:00 = +1 Hour time offset, Central European models (Factory Setting)
+2:00 = +2 Hour time offset, Eastern European models (Factory setting)
-12:00 to 14:00 = -12 Hrs to 14 Hrs, in 0:15 hour steps

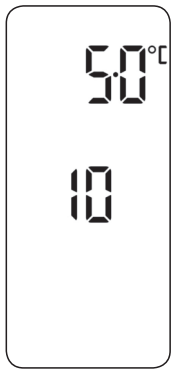


Option 5 - Backlight (Battery Version)
This feature allows the activation or deactivation of the display backlight. Press + until Option 5 is displayed, use **Λ** or **V** to select required setting.
0 = Backlight Disabled
1 = Backlight On for 6 seconds after a button press (Factory Setting)



Option 5 - Backlight (Mains Version)
This feature allows the activation or deactivation of the display backlight. Press **+** until Option 5 is displayed, use **Λ** or **V** to select required setting.
0 = Backlight Disabled
1 = Backlight On for 6 seconds after a button press (Factory default)
2 = Backlight Always On



Option 10 - Frost / Thermostat Mode Setting	
This feature allows the default frost/thermostat mode temperature to be set. Press **+** until Option 10 is displayed, use **Λ** or **V** to select required setting.	
Any value between 5.0°C to 40.0°C in 0.5°C steps	
Factory Setting is 5.0°C	

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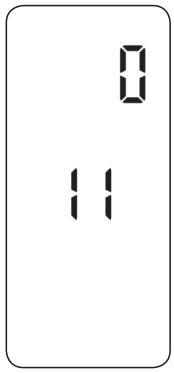
Option 11 - Start Up Method	
This feature allows the thermostat to start up the system in three different ways. Press **+** until Option 11 is displayed, use **Λ** or **V** to select required setting.	
0 = Normal: Heating is turned up or down at the programmed times. (Factory Setting)	
1 = Optimum Start Control (OSC) (or Comfort Setting): This allows you to programme the time at which you would like to be up to the required temperature. The thermostat then calculates how soon before the required time the heating is turned up. This will vary with weather conditions ranging from a maximum of 120 minutes to 0 minutes before the programmed event time. This setting must be used together with option 12 to match the optimiser setting to the building in which it is installed.	
2 = Delayed start (or Economy Setting): This is an alternative to OSC. Set the event times in the normal way taking into account the time that the building takes to heat on an average day. The thermostat monitors switch on time, actual temperature and wanted temperature and delays the start of the heating if the actual temperature is close to the programmed temperature. This setting must be used together with Option 12 to match the delayed setting to the building in which it is installed.	

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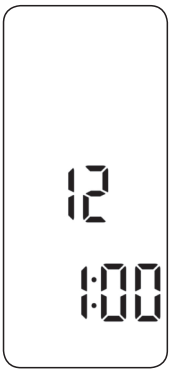
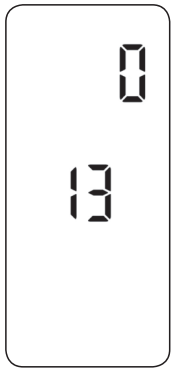
Option 12 **Optimum Start Control / Delayed Start Maximum Activation Time Setting (Option 11 set to 1 or 2)**	
This feature allows the maximum optimum or delayed start time to be set. Press the **+** button until Option 12 is displayed, use the **Λ** or **V** buttons to select required setting (only active if Option 11 is set to 1 or 2). The maximum time must be adjusted to match the building energy characteristics. Use the **Λ** or **V** buttons to select the required period.	
Optimum Start	
If the building fails to reach temperature on time, increase the setting by 15 minute steps each day until the correct setting is found. If the building reaches temperature ahead of time, decrease the setting by 15 minute steps each day until the correct setting is found.	
15 mins, warm air systems, well insulated building.	
30 mins, warm air systems, well insulated building.	
45 mins, warm air system poorly insulated building.	
60 mins, radiator system, light weight well insulated building. (Factory setting)	
75 mins, radiator system, light weight medium insulation.	
90 mins, radiator system, medium weight poorly insulation.	
105 mins, radiator system, heavy weight building, well insulated.	
120 mins, radiator system, heavy weight building, poorly insulated.	
Delayed Start	
For Delayed Start, if the building fails to reach temperature quickly enough, decrease the setting by 15 minutes, if the building reaches temperature too quickly, increase the setting by 15 minutes.	
120 mins, warm air systems, well insulated building.	
105 mins, warm air systems, well insulated building.	
90 mins, warm air system poorly insulated building.	
75 mins, radiator system, light weight well insulated building.	
60 mins, radiator system, light weight medium insulation. (Factory Setting)	
45 mins, radiator system, medium weight poorly insulation.	
30 mins, radiator system, heavy weight building, well insulated.	
15 mins, radiator system, heavy weight building, poorly insulated.	

Option 13 - Optimum Start Control/ Delayed Start Event Setting (Option 11 set to 1 or 2)	
The Optimum start or delayed start control can be applied to event 1 only or to each event of the day which requires a higher temperature than the previous event. Press **+** until Option 13 is displayed, use **Λ** or **V** to select required setting (only active if Option 11 is set to 1 or 2).	
0 = Applies to Event 1 only (Factory Setting)	
1 = Applies to all Events and will activate on those events which require a higher temperature compared to the previous event.	

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3.1 Overview of installer selectable features which may affect the operation of your thermostat

3.1.1 Temperature range limitation

This allows the installer to programme both upper and lower temperature limits. It may limit the upper and lower temperature that you are able to set on the thermostat.

3.1.2 Temperature override limitation

This allows the installer to limit the number of degrees that you can override the programmed temperature by, it also allows the installer to set rules regarding how long a temperature override will remain in place.

3.1.3 Keyboard lock

This allows the installer to limit or lock the keyboard to prevent unauthorised changes to programme values and limits overrides.

Note:
Partial keyboard - Padlock symbol will flash
Full keyboard - Steady Padlock symbol

3.2 In case of Low Battery (Battery versions only)

If the batteries are not changed within 15 days of a low battery warning (battery symbol flashing on the display), the unit shuts down. In normal circumstances the thermostat turns off the valve or the boiler it is controlling. In extreme climates turning off the heating is likely to result in the building freezing up. To prevent this, the installer can set up the unit to turn the heating **ON** rather than turn **OFF** on battery failure. This will consume more fuel but will prevent damage occurring to the building. If appropriate please check that the installer has set this function correctly.

Please note: If you replace the batteries and the LCD does not come on immediately please check battery orientation. Do not leave batteries in the product if the display is not active.

If, after changing the batteries, the screen remains blank it is necessary to carry out a partial reset. See page 29 for details.

4.0 Service Interval Timer

- If the property is owned by a landlord he may, for gas safety reasons, have instructed the installer to set the service interval timer.
- If set, 28 days prior to the service due date, a visual and audible warning will start each day at noon. The audible warning will last for 10 seconds and will be repeated every hour. The display will show SEr and the service due date. The visual and audible warnings will remain until a button is pressed to cancel them. If cancelled the alarm will recommence the following day at noon. The alarm symbol will flash as a constant reminder.
- If the boiler is not serviced before the due date, a visual and audible warning will start each day at noon. The audible warning will last for 1 minute and will be repeated every hour. The display will show SEr and the service due date. The visual and audible warnings will remain until a button is pressed to cancel them. If cancelled the alarm will recommence the following day at noon. The alarm symbol will flash as a constant reminder.

- In addition, all overrides and programming buttons will be disabled and the heating may operate for a limited amount of time each hour or not come on at all depending on the installer settings.
- The installer may cancel or reset the service interval timer as part of the boiler service.
- This is a gas safety feature that can only be accessed by an installer.

5.0 Resetting the unit

Partial reset: Press **RESET** (used to restart micro-computer) if display freezes for any reason. This does not reset any programme, clock or date. It is recommended that this is done at time of installation.

User full reset: Press and release **RESET** whilst holding down the **PROG** button. This resets event times and any User Advanced Programming settings, but does not reset time or date.

Installer full reset: This is only available to the installer. In addition to the above all of the Installer Advanced Programming settings are returned to factory settings, however, time, date and service due date are not reset.

6.0 INFO Button

The **INFO** button will allow various information to be accessed and displayed, although the information available will depend on how the unit is set up. The information that can be shown is as follows:

Next Event Time / Temperature
If set in Auto or Allday mode, then pressing the **INFO** button will show the time and temperature of the next event. The time shown for this event will include any +HRS overrides that may be active. If the time and temperature for the next event is shown flashing, then this is showing an approximate time as an Optimised Start or Delayed Start is active, or a timed override is currently being run.

Outdoor Temperature

If an Outdoor Temperature Sensor has been fitted, then pressing the **INFO** button will allow the current outdoor temperature to be displayed, with subsequent presses then showing the lowest (indicated by Lo) and highest (indicated by Hi) recorded outdoor temperatures from the last 24 hours.

Floor Temperature

If a Limit Floor Sensor has been fitted, then the current floor temperature can be displayed with the **INFO** button, indicated by just a thermometer symbol and no house symbol.

Service Due Date

If the Installer / Service Engineer has set a Service Due Date, then this can be displayed via the **INFO** button**.**

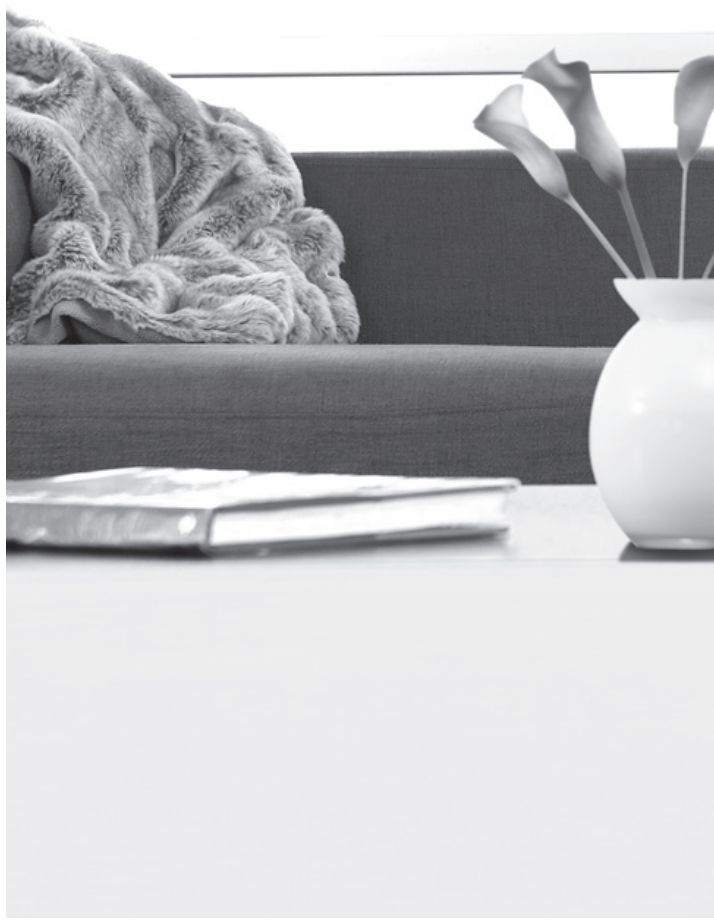
7.0 Settings Reference

User Settings		
Option	***Description***	***Installer Set Value***
1	Enable or Disable A/B Programming	
2	Enable/Disable Advanced Copy	
3	Calendar Clock Rules	
4	Time Zone Offset	
5	LCD Backlight	
10	Frost/Thermostat Mode Setting	
11	Start-up Method	
12	Optimum Start Control / Delayed Start Maximum Activation Time Setting	
13	Optimum Start Control/Delayed Start Event Setting	

Note to installers: Please use this table to record changes to default settings.

Installer Settings		
Option	***Description***	***Installer Set Value***
30	Set upper limit of temperature range	
31	Set lower limit of temperature range	
32	Enable Off at lower limit	
33	Enable On at upper limit	
34	Select On/Off or Chrono-proportional	
35	Set Integration Time	
36	Set temperature override rule	
37	Set time duration of override rule	
38	Relay state on low battery detect (Battery products only)	
40	Number of events per day	
41	Operating Mode (7 day, 5/2 day or 24 hour)	
70	Keyboard disable rules	
71	Random start rules (24V/230V only)	
72	Owner site reference number	
73	Owner thermostat reference number	
74	Date format for calendar clock	
75	LCD Switch Off	
80	+HRS Enable/Disable	
81	Thermostat calibration bias	
90	Define remote sensor 1 type (Connection b)	
92	Define remote sensor 2 type (Connection C)	
93	Define remote sensor 3 type (Connection d)	
93	Set limit sensor set-point	
94	Configure digital input switch	

ENGINEERING
TOMORROW



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