Datasheet

TP5001 Range
Programmable Room Thermostat

Features

The TP5001 is a microprocessor based programmable room thermostat with many advanced features. The range includes battery and 230 volt powered hard-wired models and battery powered wireless versions. All models in the range utilise an advanced PI algorithm to provide close and accurate temperature control to reduce energy waste and ensure comfort under all load conditions.

The TP5001 incorporates a factory set real time clock, both date and time are set in the factory to the appropriate time zone, eliminating the need to set the time at installation or to change the time in spring or autumn. This function is powered from a separate lithium battery which lasts for the lifetime of the product.

The calendar clock is also used to provide a service due timer function which can be enabled by the installer if required. If enabled, several operating options are available ranging from audible & visual service due warning to proportional reduction of heating until the boiler is serviced and the service due feature is reset by the installer.

The TP5001 is a 5-day / 2-day programmable thermostat which also includes a feature which allows two blocks of programmes to be set up (A/B Programming), either programme can then be assigned to any day of the week allowing the programming to closer match the lifestyle of the consumer, all without the need to go for a far more complex 7-day unit.

Unlike earlier models, the TP5001 can be configured by the installer to provide 2, 4 or 6 events per day, it can also be set up to provide constant temperature control if required, again this allows the thermostat to be matched with consumers lifestyle.

Versions with programmable remote inputs are also available. Remote inputs can be either remote temperature sensing, (control or limit), or digital inputs from window contacts, telephone operated switches, card readers or building automation systems.

For standard applications the product can be installed and will work straight out of the box, however there is a wide range of user and installer options which allow the product operation to be tuned to the specification requirements of the system. Some of these options are hardware settings made by DIL switches, but the majority are software settings made in one of two advanced programming modes.

Settings made by the installer or the end user are stored for the life of the product in a non-volatile memory chip which does not require power. This same storage technique allows customer specific programmes to be established as factory defaults, but is only available for larger projects.

Significant effort has been made to make the product as energy efficient as possible, this includes improving both on/off performance and chrono-proportional performance, charts on page 4 detail the relative performance of each mode.

Programming of the TP5001 is as simple as it has always been, just five buttons and an intuitive MMI ensure that the product is no more complicated to the user than previous models.

Installer Hardware Settings

(Switches show factory setting)

Sw. No.	OFF		ON
1	Keyboard disabled		Keyboard enabled
2	Reset disabled		Reset enabled

Installer Advanced Programming Settings

Option	Description	Factory Setting		Other Setting	
User Advanced Programming Options *Use + or - key to scroll between options, use Λ or V keys to select option setting*					
1	Enable/disable A/B block programming	0	Disabled	1	Enabled
3	Automatic summer/winter time change	2	European rules	0	Disabled
				1	Manual time change
				3	USA rules, post 2006
				4	USA rules. pre-2007
4	Time zone offset - UST models	00:00	Use UST clock setting	± 12	Hours offset from UST
	Time zone offset - CET models	00:00	Use CET clock setting	± 12	Hours offset from CET
10	Set frost protection default temperature		8°C		5-30°C
11	Start-up type	0	Fixed time start-up	1	Optimum start control
				2	Delayed start-up
12	Optimum start control setting, maximum pre-heat period based upon 2°C deviation from next event temperature. (Only accessible if option 11 is set to 2)	1:00	60 minutes	0:15	15 minutes
				0:30	30 minutes
				0:45	45 minutes
				1:15	75 minutes
				1:30	90 minutes
				1:45	105 minutes
				2:00	120 minutes
13	OSC or delay start function active (Only accessible if option 11 is set to 1 or 2)	0	First event of day only	1	All events

Option	Description	Factory Setting		Other Setting	
Installer Advanced Programming Options *Use + or - key to scroll between options, use Λ or V keys to select option setting*					
30	Set range upper limit		30°C		40-50°C
31	Set range lower limit		5°C		5-40°C
32	Enable/disable Off function at lower limit	0	Enabled	1	Disabled
33	Enable/disable On function at upper limit	0	Disabled	1	Enabled
34	Set chrono-proportional cycle rate	6	6 cycles per hour	3	3 cycles per hour
				9	9 cycles per hour
				12	12 cycles per hour
35	Set integration time	2.5	2.50%	5	5%
				10	10%
36	Set temperature override limit	0	No limit	1	Limited to ±2°C
				2	Disabled, no override
37	Set time duration of override	0	Next event	1	1 hour
				2	2 hours
				3	3 hours
				4	4 hours
38	Relay park status on battery low volt detect	0	Relay parked Off	1	Relay parked On
40	Number of Events	6	6 Switching events per day	1	Thermostat mode
				2	2 Switching events per day
				4	4 Switching events per day
41	Operating Mode	5-2	5/2 day programming	24	24 Hour programming
70	Keyboard lock type	0	Normal Lock	1	Full lock
71	Random time on start-up (not battery models)	0	Disabled	1	Enabled
72	Site ID number (user defined)		00		01 to 99
73	Thermostat ID number (user defined)		00		001 to 999
74	Date format for calendar clock	0	European (dd/mm/yy)	1	North American (mm/dd/yy)
81	Thermostat calibration bias		0		±1.5K
90	Remote sensor configuration (A models only)	0	0, Disabled	1	Room/duct
				2	Limit, (floor)
				3	Start-up (digital input)
93	Limit sensor set point adjustment (Only accessible if Option 90 is set to 2)		27°C		20-50°C
94	Start-up (digital input) NO or NC (Only accessible if Option 90 is set to 3)	0	NC, open circuit to change to thermostat mode	1	NO, close circuit to change to thermostat mode

Service Interval Timer

The Service interval timer allows the installer to select a service due date for the boiler, this can be set at between 28 days and 366 days from the current date.

Service due date is within 28 days

From 28 days prior to the service due date, a visual warning will appear in the display and a buzzer will sound for ten seconds each hour commencing at midday, this can be cancelled for the current day by pressing any button.

Service due date is reached or passed

When the service due date is reached the visual and audible warning are repeated each hour of the day commencing at midday, but the duration of the alarm is increased to 60 seconds, this can be cancelled for the current day by pressing any button. All override and programming buttons are disabled and depending upon service interval timer setting, heating can be restricted to 15, 30 or 45 minutes in each programmed hour.

Option	Service Interval Timer Function
Setting 0	Disabled, (factory default)
Setting 1	Active, visual and audible warning, no heat reduction
Setting 2	Active, visual and audible warning, heat reduced to 45 minutes per hour
Setting 3	Active, visual and audible warning, heat reduced to 30 minutes per hour
Setting 4	Active, visual and audible warning, heat reduced to 15 minutes per hour

Specification and Ordering

Thermostat Features		Battery Models		230V Models
		Hard-wired	Wireless	Hard-wired
Hard-wired, built-in sensor	Type Sales Code	**TP5001** 087N791001		**TP5001M** 087N791701
Hard-wired, remote sensor inputs [1] [2]	Type Sales Code	**TP5001A** 087N791101		**TP5001MA** 087N791801
Wireless, built-in sensor	Type Sales Code		**TP5001RF** 087N791201	
Wireless, built-in sensor complete with RX1 receiver [3]	Type Sales Code		**TP5001RF + RX1** 087N791401	
5/2 day or 24 hour programmable room thermostat		Yes, selectable by installer		
2, 4 or 6 events per day with optional A/B programming		Yes, selectable by installer		
Factory pre-set programmes		Yes, one for weekdays, another for weekends		
Factory set calendar clock		Automatic summer/wintertime change		
Time accuracy		± 1 minute per year		
Memory back-up, time and all user and installer settings		Retained for life of product		
Temperature range		5-30°C		
Programmable frost thermostat function		Yes		
Control output, derived from PI algorithm		On/Off or Chrono-proportional, 3, 6, 9 or 12 cycles per hour		
Switching differential in On/Off mode		±1°C		
Installer selectable advanced programming options		Yes, refer to installation instructions for list		
Installer selectable service interval timer		Yes, 28 to 366 days from current date		
Programmable range limitation		Yes, max and min		
Electronic keyboard lock		Yes, full or part		
Power Supply		2 x AA alkaline cells		230V, 50Hz
Switching action of output relay		SPDT (voltage free)		
Switch rating of output relay		3 (1) A, 10-230V	N/A	3(1)A, 10-230V
Transmission frequency (RF models)		N/A	433.92MHz	N/A
Transmission range (RF models)		N/A	30m max.	N/A
Dimensions, mm		110 wide x 88 high x 28 deep		
Design standard		EN60730-2-9, (EN300220 for RF)		

[1] Can be configured by installer for remote temperature sensor, limit sensor, window contact or telephone activated switch contact.
[2] Remote sensor is supplied as an accessory, if remote room sensor is required order TS2 sensor, code 087N681100
[3] RX receiver requires 230 volt power supply

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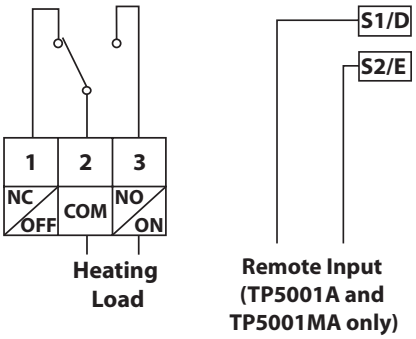
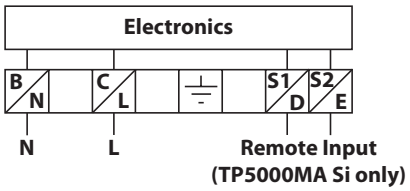
Wiring

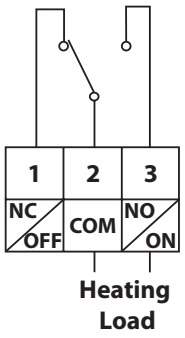
TP5001



TP5001M

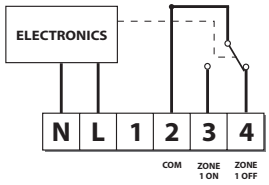


Please note:
On230V version the power supply is connected to L and N.

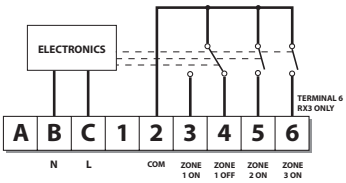


RX Receiver Wiring (RF Models)

RX1

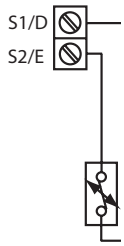


RX2 & RX3

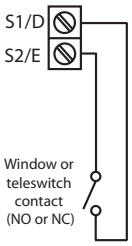


1) For mains voltage operated systems link terminal 2 to mains live supply.
2) Power supply to unit must not be switched by timeswitch.

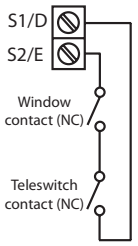
Remote Input Options



Configured for remote room sensor or limit sensor

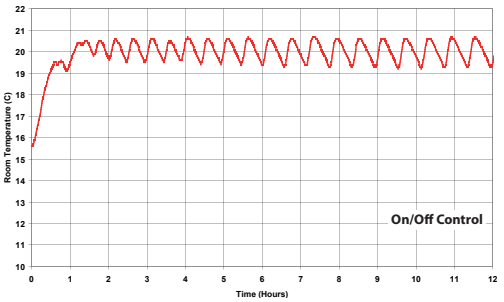


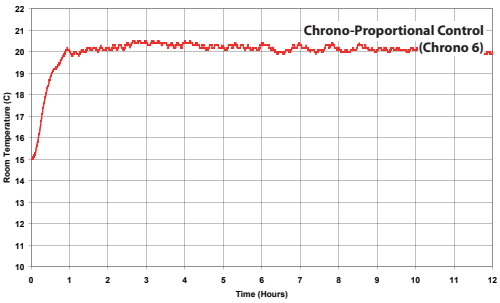
Configured for window contact or other contact such as teleswitch



Configured for window contact and other contact such as teleswitch

Thermal Performance





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