Smart BACnet Room Controller (RTC22b)

The RTC22b is designed to provide room tempearture control for heating and/or cooling circuits. There are two versions. The RTC22b/A for analogue control of two 0 to 10V outputs whilst the RTC22b/T is used for 24V AC outputs. The RTC power supply can be 24V AC or DC supply for the RTC22b/A (0-10V version) but only 24VAC for the RTC22b/T.

The required temperature (setpoint) is adjusted using the +/- buttons on the front of the controller. The display normally shows the measured temperature and when the buttons are pressed the setpoint is displayed for a timed period to allow adjustment to take place. Alternatively the display can be set up to show only the setpoint.

All control options and settings are programmed using the controller display

Power Supply:	24V AC +/- 15'C
Power Consumption:	60mA plus output loads
Outputs (0-10V version):	2 x 0-10V Control (5mA) 1 x 0-10V Monitoring (5mA) 1 x 0-10V Monitoring Setpoint (5mA)
Outputs (24V triac version):	4 x 24V triacs (rated at 400mA each) 1 x 0-10V Monitoring Temp (5mA) 1 x 0-10V Monitoring Setpoint (5mA)
Inputs:	10K3A1 Temperature sensor 1 x DI Voltfree remote On/Off 1 x 0-10V (Remote reset)
Settings & Options:	All via digital display
Enclosure:	White Flame Retardant Polycarbonate
Terminals:	Max cable size 1.0mm
Operating Condition:	-5'+40'C 0-70% RH non-condensing
Approvals:	CE / UKCA
Warranty Period:	24 months
Country of Origin:	UK
Dimensions:	121mm x 70mm x 25mm
Product Code:	See below

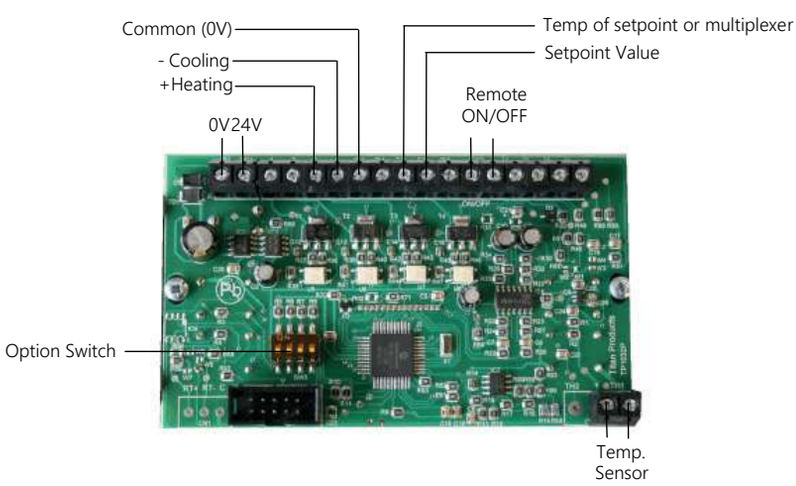
Features

- Display of Setpoint and Temperature
- 0-10V outputs for heating/cooling (P+I)
- Option for 24V Triac switched outputs
- Triac control TPC or On/Off
- Day, Night Off or ECO settings
- BMS interface optional
- 0-10V output for remote temperature monitor

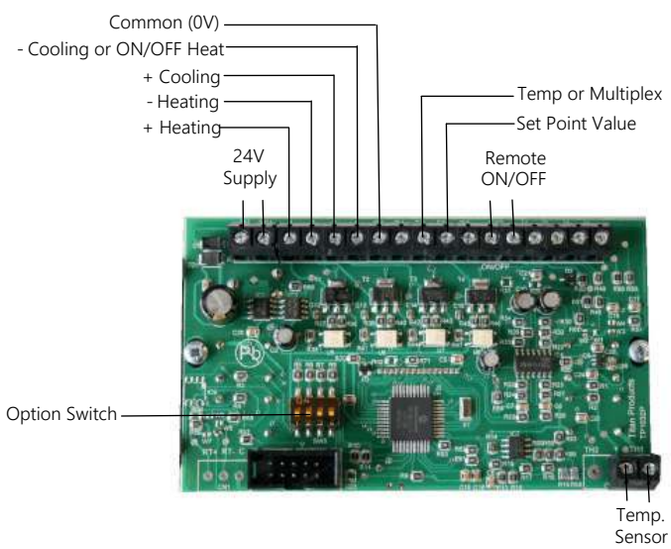
Part codes

Part Code	Control Type	Mounting Type
RTC22b/A/S	0-10V	Surface Mount
RTC22b/A/F	0-10V	Flush Mount
RTC22b/T/S	Triac	Surface Mount
RTC22b/T/F	Triac	Flush Mount

RTC/A 0-10V Control



RTC/T Triac Control



Setting and Control Options

All settings are accessed by switching option DIL switch 4 to ON. The display will then show the available options and these can be scrolled using the right hand button with the left hand button being used to make any adjustments. The available settings are shown below:

Dead Band - Range 0-4'C default 1'C . This is the dead band between the heating and cooling cycle.

Prop Band - Range 1-5'C default 2'C. The control output is proportional to the deviation from the setpoint over the Pb setting.

ECO - Range 1-12'C default 3'C . With DIL switch 1 On control setpoint is reduced by the ECO value in Off (night) conditions.

Max Setpoint - The maximum setpoint value can be limited to this set value. Default 30'C

Min Setpoint - The minimum setpoint value can limited to this set value. Default 15'C

Default Setpoint - Range Min to Max setpoint settings default 21'C.

Intg. Time - Range 10 to 100 seconds default 20 seconds. Setting defines the integration time of the control output used in conjunction with the
proportional band setting to stop hunting of the control cycle.

Display - Option to display Room Temp or Setpoint. If Setpoint is selected the actual temperature cannot be displayed.

Valve Time - Range 20 or 250 secs default 160. Triac controller only value must match the run time of the valve being used.

Anti Tamper - Yes/No default No When this is set to Yes the two push buttons are interlocked to prevent accidental modification or casual tampering,
when in this condition one button must be held down in order to carry out setpoint changes.

Menu 2 (Switch 2 to On condition before switch 4 is switched to On)

Offset value - Range +/- 2'C default 00. This allows an offset of the temperature reading to be entered.

Control Mode - Options are Single, Dual, None. Selections are shown below

Single (midpoint control point at 5V) RTC22b/A 0-10V control only - Output 1 provides heating/cooling control with the SP at 5 Volt output. Heating operates 5-10V and Cooling operates 5-0V. This is for applications such as hot/cold duct systems.

Dual (Heat & Cooling) RTC22b/A- Used for 2 stage heating/cooling control

None (BMS Interface) - Unit acts as a BMS interface giving analogue output signals from the following:

Actual Temp	connection TO	output 0-10V r	range 0-50'C (0.2V/'C)
Setpoint	connection FO	output 3-6V	range 15-30'C (0.2V/'C)

The signals are always active so they can be used for remote monitoring when the RTC22b is used as a controller

Remote setpoint. Yes/No Default N (BMS Interface applications only). Allows an input signal into I4 of 3 to 8V to modify the controller default setpoint from 15-25'C. This occurs after the input is taken to 0V for 5 seconds and returned to the setpoint value required.

SP Variation 1-4'C default 3'C (BMS Interface applications only). Restricts the user to +/- setpoint limits