T105 RF
Selectable Volt Free

Warning - Please read this manual prior to installation or use.

Shock Hazard

This unit must be installed by a competent person, in accordance with BS 7671 (the IEE Wiring Regulations), or other relevant national regulations and codes of good practice.

Always isolate the AC Mains supply before removing the unit from the Industry Standard Back Plate.

$C\epsilon$

INTRODUCTION

This thermostat can replace most common residential thermostat and is designed to be used with electric, gas or oil heating control system or cooling system.

Unlike ordinary single unit design thermostat, This unit is a new type of thermostat separating the thermostat function into two units. The Receiver serves for wiring connections and heat/cool on/off control. The Control Centre serves as user interface and temperature sensing/control. The two units are linked by RF.
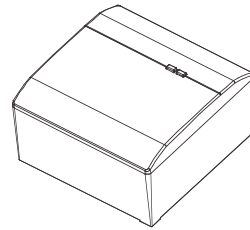
The advantage is that user can put the Control Centre nearby and can read/control the temperature of really the living area.
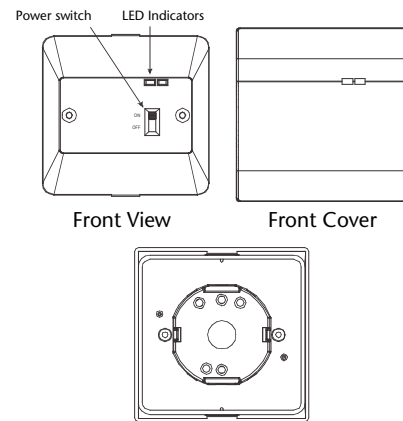
Outlook of Control Centre:
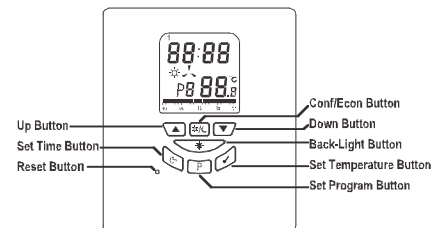
LCD :
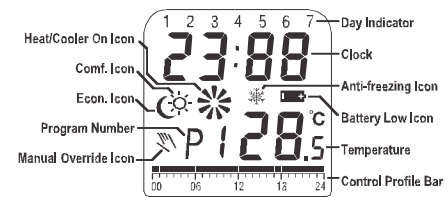
Receiver installed on wall box

Power switch   LED Indicators

Front View   Front Cover

Features :

Several useful function and operating modes have been incorporated to suit a variety of customer needs besides all the features associated with the state of the art programmable thermostat.

Control Centre:
- Can be placed anywhere in the home to detect and control the temperature of an area of the user's choice. Not limited by power control wiring locations.
- Link with the Receiver via RF. Control distance 100M open site
- LCD shows the "need to know" information only, which is more easy to understand.
- Real time clock with day of the week display
- Room temperature display
- Control profile display
- Simplified temperature adjustment - Simplified programming procedure
- 6 pre-defined control profiles, 3 user programmable control profile
- A protection against freezing
- Temporary override set-temperature
- User selectable temperature span
- User selectable heater/cooler operation mode
- Battery level detection

- 2 AA size alkaline batteries (not included)
- Slim housing design
- EL backlight

Receiver:

- Linked with Control Centre via RF.
- Power control rating up to 230VAC 16A resistive.
- Powered by line voltage only. No battery required.
- Two LED indicators for power and output status.

INSTALLATION OF RECEIVER

Caution :

1. The appliance can only be mounted indoors and in areas free from any water or moisture
2. A suitable fuse with a rating not exceeding 13A, should be in the power line.
3. Observe the nation regulator for the wiring.
4. A qualified electrician is recommended for installation and servicing.

This thermostat has been designed for simple and quick installation requiring only a few tools. Only the Power Control Unit needs to be installed.

Required Tools

• Hammer • Masking tape • Screwdriver

• Drill and 3/16" drill bit (if not installed on a junction box)

RF Address Code Setting

If there is another user nearby, e.g. in the next house, your receiver may be fault triggered by their transmitter. You may select a different RF address code to prevent this. Receiver can only response to RF coding with the same address code setting as its own address code.

1. To adjust address code of Receiver, simply push up one or more of the 5 dip switch levers.

2. To adjust address code of Control Centre, open the housing of the transmitter unit. See battery replacement section on how to open the housing.

3. Remove one or more of the jumper caps as shown in the diagram below.

Caution :

1. Address code of Control Centre must be the same as address code of Receiver. For any jumper cap removal of address code # in Control Centre, the same address code # of Receiver must be put to the UP position.

2. Disconnect AC power and remove batteries prior to adjusting address code.

Remove one or more of the jumper cap to adjust RF address code.

Address code # 1 - 5, from left to right
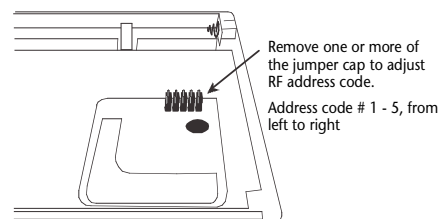
Push up one or more of the white levers to adjust Receiver address code. Address code # 1 - 5, from left to right.
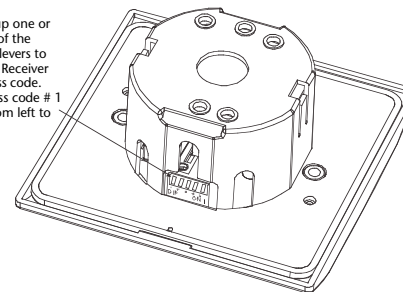
Removing your old thermostat

CAUTION : to avoid electric shock, isolate the power of the heating/cooling system at the main power box in your home. Read the following instructions carefully before disconnecting the wires.

1. Turn off your old thermostat.

2. Remove the cover from the old thermostat.

3. Unscrew the old thermostat from the wall plate.

4. Now find the screws attaching the wall plate to the wall, and remove them. You should now be able to pull the wall plate a small distance from the wall. Do not disconnect any wire yet, simply locate the wires.

WARNING: After removing the wall plate, if you find that it is mounted on a junction box (e.g. a box similar to one behind a light switch or electric outlet), high voltage circuit may be present and there is a danger of electric shock. Please consult a qualified electrician.

Choosing a Location

Note: for a new installation, choose a mounting location about five feet (1.5 metre) above the floor in an area with good air circulation and away from.

1. Drafts.

2. Air ducts.

3. Radiant heat from the sun or appliances.

4. Concealed pipes and chimneys.

Mounting the Receiver onto the wall/junction box:

1. Remove the front cover of the Receiver. (go to step 4 if installed on a junction box)

2. Mark the holes position.

3. Drill two holes and insert the plastic anchors carefully into the holes until they are flush with the wall.
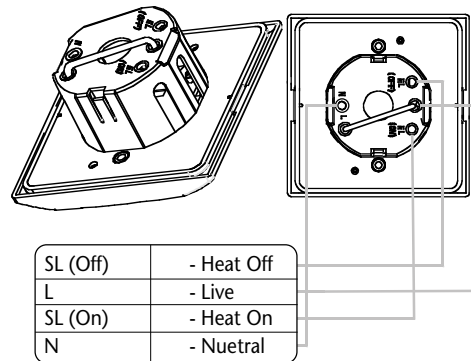
4. Connect the wires - see wiring diagram.

5. Push on the wires in the wall.

6. Securely fasten the Receiver to the wall with the two screws.

7. Replace the front cover and installation is completed.

Mounting the Receiver onto the optional wall box :

1. Remove the front cover of the Receiver.

2. Mark the holes position for the wall box.

3. Drill two holes and insert the plastic anchors care fully into the holes until they are flush with the wall.

4. Pull the wires into the wall box and fasten the wall box onto the wall.

5. Connect the wires - see wiring diagram.

6. Push on the wires in the wall box.

7. Securely fasten the Receiver to the wall box with the two screws.

8. Replace the front cover and installation is completed.

WIRING DIAGRAM
FOR 230V APPLICATION

The unit is default 230V, if volt free application is required you must remove link & follow diagram below.

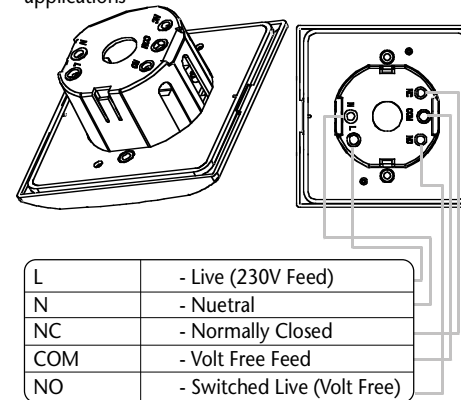|	
SL (Off)	- Heat Off
L	- Live
SL (On)	- Heat On
N	- Nuetral

It is vital to connect the live into this terminal to avoid overloading of the jump wire.

WIRING DIAGRAM
## FOR VOLT FREE APPLICATION
(Remove Link!!!)

The unit still requires a 230V feed for V.F. applications

|	
L	- Live (230V Feed)
N	- Nuetral
NC	- Normally Closed
COM	- Volt Free Feed
NO	- Switched Live (Volt Free)

SETTING OF CONTROL CENTRE

Heater/Cooler Selection

Before making any selection in the control centre, its back housing must be removed as follows :

Push and hold internal lock by a screw driver

Remove the front housing
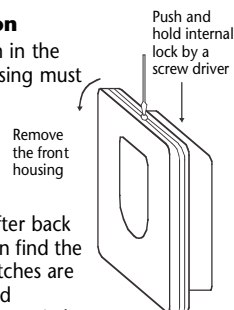
Inside the Control Centre after back housing is removed, you can find the DIP switch. These three switches are used to control the span and heat/cool system. Set the DIP switch (position 3) according to your selection of heater system or cooler system as the following diagram.

ON

On: Heater

Off: Cooler

| 1 | 2 | 3 |

Set the DIP switch (position 3)
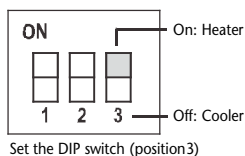
Temperature Span Selection

Span is the temperature difference between the turn on temperature and turn off temperature. For example, in heating systems, if you set temperature to 20°C and span to 1°C, the heater will operate when the room temperature drops to 19.5°C and turns off when the temperature rises to 20.5°C. Set the DIP switch (position 1 & 2) according to your selection of temperature span as the following diagram.

1	2	Span
ON	ON	1 °C
OFF	ON	2 °C
ON	OFF	3 °C
OFF	OFF	4 °C

ON

| 1 | 2 | 3 |

Battery Installation

Your thermostat uses two (2) "AA" size batteries to operate. To power-up the unit, insert two "AA" batteries into the battery compartment of the front housing. When power is applied for the first time, the display must show time and the day as well as the room temperature (for example 28.5°C).

If the display is different, press the RESET button. Use a fine probe such as straightened paper clip to gently push the RESET button.

front housing   back housing

Align the hinge
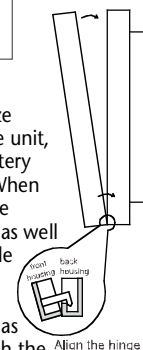
After installation of the batteries, push back the rear housing to the control centre and then the stand. Before turning on the main switch of the system, press the reset button once. The thermostat is ready for use.

Setting Clock

1. Press the SET TIME button to clear all digits except the day indicator and the time display. The day indicator is flashing.
2. While day indicator is flashing, press UP or DOWN button to adjust.
3. Press the SET TIME button again, hour digits are flashing instead of day indicator. Press UP or DOWN button to adjust. Press and hold the UP or DOWN button to speed up the adjustment rate.
4. Press the SET TIME button again, minute digits are flashing instead of hour digit. Press UP or DOWN button to adjust. Press and hold the UP or DOWN button to speed up the adjustment rate.
5. Press the SET TIME button again to return to normal operation mode.
6. The unit will return to normal operation mode if no key is pressed for 10 seconds.

Setting Control Temperature

1. Press the SET TEMPERATURE button to display the pre-defined set temperature.
2. Press the CONF/ECON button to toggle between the setting of economic mode and comfortable mode.
3. Press the UP or DOWN button to increase/decrease the set temperature by 0.5°C.
4. Press the SET TEMPERATURE button again to save the set temperature.
5. The unit will return to normal operation mode if no button is pressed for 10 seconds.
6. The default setting of comfortable mode is 21°C for heater mode and 23°C for cooler mode. And the economic mode is 18°C for heater mode and 26°C for cooler mode.

Setting Program

i) Select Week-Day

1. Press the SET PROGRAM button, the day indicator shows the program day and is flashing. Program number indicator shows the current program for the selected day.
2. Press the UP or DOWN button to select the day needed to program. You can select the whole week, working day, weekend,or individual day to program.

ii) Select Control profile pre-defined

1. Press the SET PROGRAM button again, the day indicator stop flashing and the program number starts flash.

2. Press the UP or DOWN button to select the program profile. P1-P6 are predefined program, their profile are shown as follows.
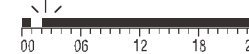
Program number	Program profile
Program 1 : Factory Preset "Whole day Comfort"	00 06 12 18 24
Program 2 : Factory Preset "Whole day Econ"	00 06 12 18 24
Program 3 : Factory Preset "Holiday"	00 06 12 18 24
Program 4 : Factory Preset "Whole day (A)"	00 06 12 18 24
Program 5 : Factory Preset "Whole day (B)"	00 06 12 18 24
Program 6 : Factory Preset "Half-day work"	00 06 12 18 24

3. If any of these programs is selected, press the SET PROGRAM button again to confirm this program for the specified day and return to normal operation mode.

4. Press the ⟨※␑⟩ button to toggle the control temperature setting and advance the setting hour digit by one.
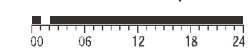
Example:
⟨※␑⟩ button is pressed. Hour Digit (Clock) is 2 and the 02 hour bar is flashing. ☼ icon is on and the operation mode for hour 01 is set to economic mode.

00 06 12 18 24

5. Press the ⟨P⟩ button to terminate the setting procedure and to return to normal operation mode.

Example:
⟨P⟩ button is pressed.Terminate the setting procedure and the new control profile is :

00 06 12 18 24

6. The setting procedure will terminate automatically when no button is pressed for 10 seconds.

TESTING THE RF TRANSMISSION RANGE

1. Press UP button until the setpoint temperature is higher than room temperature by a few degrees.
2. Wait for a few seconds.
3. Check the green LED. It should be On.
4. If the LED is not On, try to place the Control Centre closer to the Receiver. Press Down button to adjust the setpoint temperature to be lower than room temperature to "turn off" the receiver.
5. Repeat steps 1 to 3.
6. The receiving range between Control Centre and Receiver is 100M in open area. When placed indoors, this distance may be shorter because of blocking by concrete walls etc, but is enough for most household applications.
7. Press RESET button after receiving range testing.

TEMPORARY OVERRIDE

Override the Operation Mode

At the normal operation mode, press the CONF/ECON button to toggle the current set temperature to comfortable mode or economic mode. If the operation mode is being overriden, the HAND icon will be turned on with the current operation mode icon.

Override the Setting Temperature

1. In the normal operation mode, the current set temperature can be overriden by pressing the UP or DOWN button. When in override, the new set temperature will be displayed with turning the HAND icon on and both the CONF and ECON icons off.
2. Press any button (except the UP or DOWN button), this will terminate the setting procedure and will revert back to normal mode with the new setting.
3. The unit will revert to normal operation mode automatically when no button is pressed for 10 seconds.

ANTI-FREEZING MODE

1. Pressing the UP and DOWN buttons simultaneously will activate the anti-freezing mode (for heater mode only). The ANTI-FREEZING icon and the HAND icon will be turned on while both the COMF and ECON icon will be turned off.
2. Pressing any button will terminate the anti-freezing mode and revert to normal operation mode.
3. The default set temperature for the anti-freezing mode is 7°C.

BACK- LIGHT

Press the BACK-LIGHT button to turn on the back-light. The back-light will switch off when no button is pressed for 10 seconds.

BATTERY REPLACEMENT

It is recommended to replace the batteries when the display is showing the battery-low icon. To replace the battery,
1. Turn off the power of the Receiver first.
2. Remove the back housing and stand of the Desktop Unit.
3. Replace the old batteries with 2 new AA alkaline batteries.
4. Replace the back housing and stand.
5. Press the reset button once and then turn on the power switch of the Receiver.

POWER SWITCH

There is a power switch on the Receiver. When there is no demand to turn on the heating/cooling device, e.g. when you go on holiday, it is recommended to turn the power switch to the Off position.

LED INDICATOR

There are two LEDs on the Power Control Unit as status indicators:
1. Red LED turns on as long as there is power to the unit. When there is no power to the unit or when power switch underneath the front cover is put at the Off position, the red LED is Off.
2. Green LED turns on as long as the heating/ cooling device is energised.

SPECIFICATION

Physical Characteristic

Size	: Control Centre 116 x 100 x 23.5 mm
	Receiver 91.5 x 91.5 x 42 mm
Weight	: Control Centre 126g
	Receiver 176g

Electrical Characteristic

Power Source	: Control Centre 2 AA (LR6) batteries
	Receiver 230VAC 50Hz
Clock accuracy	: +/ - 60 seconds/month
Temp. measurement	: 0°C to 40°C in 0.5°C resolution
Temp. accuracy	: +/ - 1°C at 20°C
Temperature Control	: 7°C to 30°C in step of 0.5°C
Span	: 1,2,3 or 4°C
Air conditioner cycle time	: 3 minutes
Operation temperature	: 0°C to 40°C
Storage temperature	: - 10°C to 60°C