

# Rako RSRDMX Installation, Programming and Operating Instructions

## General

Rako RSRDMX modules are 15 Channel DMX controllers for use with DMX drivers, typically controlling 3/4 colour light fittings.

RSRDMX modules can be controlled by any Rako device that transmits wireless RAKOM messages.

Before commencing installation of a Rako module please read this instruction manual carefully. Rako Controls Ltd accepts no responsibility for damage or injury caused by incorrect installation of a Rako product.

## Mounting

Rako modules should be mounted in areas that are adequately ventilated, dry and outside of any enclosed metal casings that may interfere with the wireless signal.

Modules should be mounted vertically, with the terminals at the bottom, ensuring the ventilation slots are not covered.

Whilst Rako modules are designed to be completely maintenance free the units should be mounted in an accessible location should there be a fault or re-addressing of the unit be necessary (see 'Set-up and Addressing')

## Connections

Remove the bottom two fixing screws and remove the main lid.

## Power

Connect the 12V dc supply using the jack socket.

## Data

Connect the DMX data to the DMX device using either the terminal connections or the RJ45 socket provided (see Fig. 2 overleaf).

## Note

There is no formal standard for the connection of the Data + and Data – lines for DMX. The most commonly found connection type is supported by having the header connectors (see Fig. 2) in the NORMAL position. If this does not work they can be placed in the INVERTED position, this reverses the Data + and Data – connections.

## DMX Addressing

When giving the RSRDMX a Rako channel address the next 14 channels are automatically assigned, sequentially from this point. For example, a module controlling an RGB fitting and addressed as channel 3 will control Red on channel 3, Green on channel 4 and Blue on channel 5.

## Initial Checks

When power is initially connected to the module the unit should switch the load ON. The load can then be manually switched using the Set-up button under the top cover (see Fig.2 overleaf).

The factory set address for both modules and transmitters is House 1 Room 4 (See Fig 1 for further information). A Rako wireless wallpanel set as address House 1 Room 4 will control the module.

Should the module not respond as above then further investigation should be made before proceeding further.

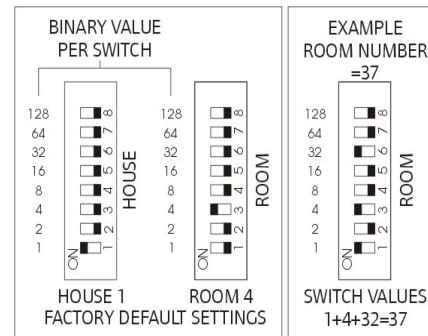


Fig.1

## Set-Up and Addressing

RSRDMX modules can be programmed manually or by using RASOFT programming software. For software programming refer to the appropriate programming guide supplied as a PDF with the programming interface (RA or RTC-Bridge etc.) or download from our website:

[www.rakocontrols.com](http://www.rakocontrols.com).

To access the Set-up button necessary for both software and manual addressing remove the top screw and top cover (see Fig.2 overleaf)

## Manual Addressing from Wallplate or Handheld

Before any lighting scenes can be programmed (see the wall-panel or hand-held manual) the RSRDMX module needs to be addressed.

To avoid interference between neighbouring installations choose a House address other than the factory default of House 1 and set this on the transmitters using the House address switches. Keep the House address the same throughout the project (for master functions).

Choose a Room address for each separate room or area to be controlled independently and set this on the appropriate transmitters using the Room address switches. **Note:** Any control panels set with the same address will act as two or multi-way controls for the same Room.

The module now needs to be sent its new House and Room address from the appropriate keypad. For rooms with multiple modules each module needs to be also assigned a separate Channel number from 1-15 within each Room.

The House and Room addresses are set using the switches on the back of a Rako transmitter (see Fig 1) and the Channel addresses are selected by putting a transmitter in programming mode and 'stepping' through the channel numbers (see Step 3 overleaf). This number is then 'sent' (along with the House and Room address) to a receiver (Step 5).

## Notes on address switches

The address numbers are set using the switches on the back of a Rako transmitter. Binary coding is used and a diagrammatic explanation is given in Fig 1. It is not however necessary to understand binary just set the House switches to a different setting than the factory default and use a different combination of Room switch settings for each room or area to be controlled separately.

## Notes on Addressing

A module cannot be set to an address of House 0 (All switches set to off)  
A module will respond to, but not receive an address of Room 0 (All switches set to off). This Room 0 address is used for 'Master House' control  
A module cannot be set to channel 0.  
To program a lighting scene see Wall panel or Hand held manual.

## Power-Up Mode

With the factory address setting of House 1 an RSRDMX will turn ON when power is applied. When the House address is changed the Power-Up mode becomes 'OFF' which is generally preferred, for instance if there is a power cut during a holiday.

## Manual Operation

The set-up button can be used as a manual On/Off switch.

## Multiple Control Panels

If the module is to be controlled by two wall or hand-held transmitters it is only necessary to address the module to one of these transmitters. Set the other transmitters to the same House and Room address and they will transmit exactly the same message as the first transmitter and the module will respond accordingly.

## LED functions

The internal LED will flicker when the module receives ANY Rako wireless message and is a useful diagnostic indicator.

If an RSRDMX module has already been addressed to a wall-panel the internal LED will start to pulse as soon as that transmitter (or any other transmitter with the same address) is put into programming mode. The module can still be re-addressed in the normal way, for example when changing its Channel address within the same Room.

## Colour Cycling

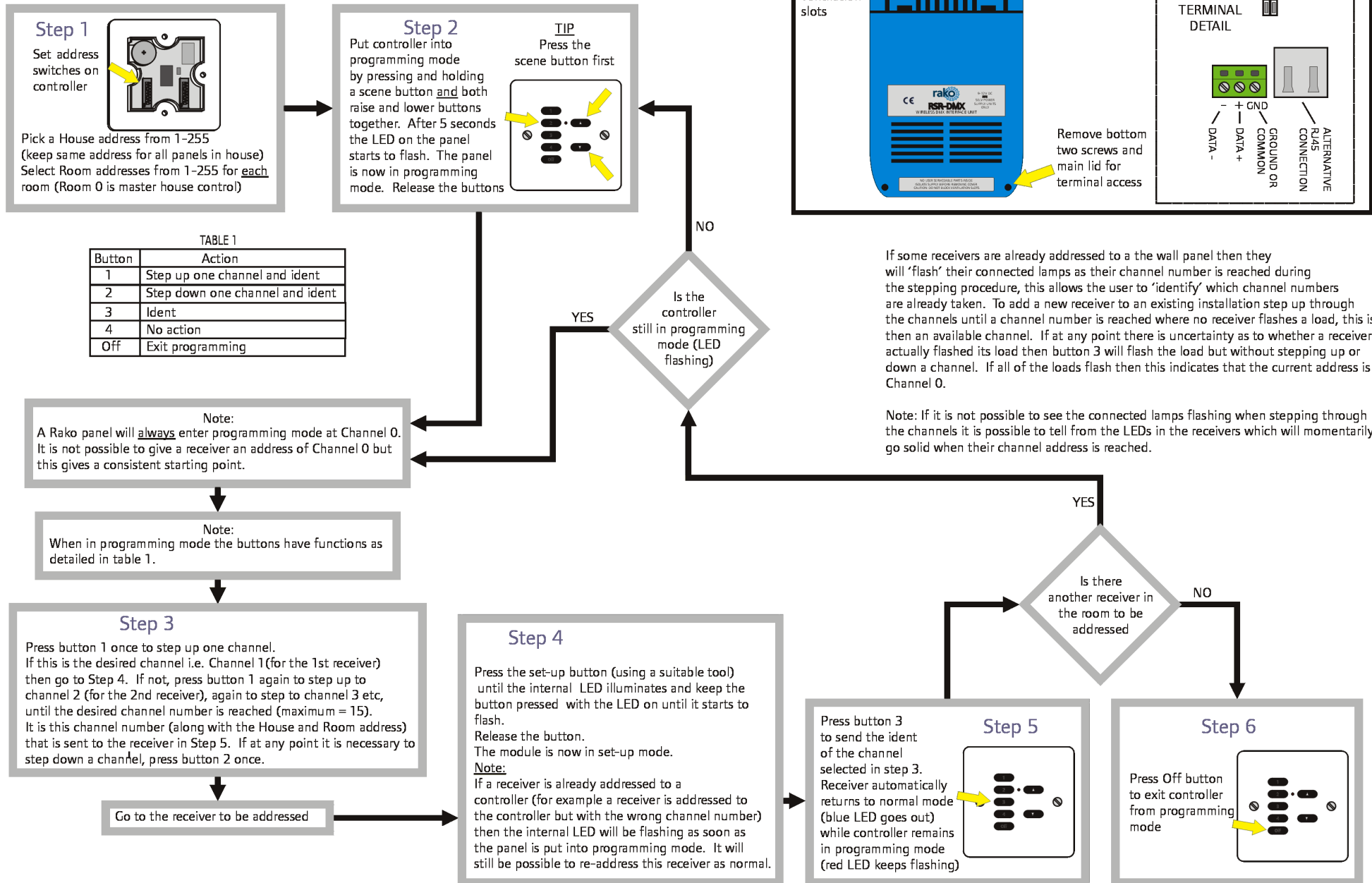
As a default setting the RSRDMX module will not dim from Fade Up/Down commands from a Rako transmitter but instead will start a colour cycle through the colours programmed for Scenes 1–4 when it receives a Fade Up command. A Fade Down command will stop the cycling

## Care and Maintenance

A Rako module contains no user serviceable parts. Should for any reason you need to contact us please contact us via our website [www.rakocontrols.com](http://www.rakocontrols.com) or by phoning our customer help line on 01634 226666.

## Initial Addressing of a Rako Receiver Module

In the following procedure both the controllers (wallpanels and hand held remotes) and the receivers have an automatic time out after approximately 3 minutes when in programming or set-up mode. This feature avoids the possibility of either being left permanently in programming or set-up mode. This may cause confusion if either the controller or receiver times out before the procedure is complete. It is worth becoming familiar with the procedures before starting the addressing procedure. If at any time it is necessary to start again the controllers can be returned to normal mode by pressing the 'Off' button and the receivers by resetting the electrical supply.



**Flowchart Logic:**

- After Step 2, a decision diamond asks: "Is the controller still in programming mode (LED flashing)?"
  - If **NO**, it proceeds to Step 3.
  - If **YES**, it goes to a note box: "A Rako panel will always enter programming mode at Channel 0. It is not possible to give a receiver an address of Channel 0 but this gives a consistent starting point." Then it proceeds to Step 3.
- After Step 4, a decision diamond asks: "Is there another receiver in the room to be addressed?"
  - If **NO**, it proceeds to Step 6.
  - If **YES**, it proceeds to Step 5.

**FIG. 2 MODULE LAYOUT AND TERMINAL DETAIL**



Remove top screw and top cover for Set-Up button access

Set-Up button

Internal LED visible through ventilation slots

Remove bottom two screws and main lid for terminal access

**FIG. 2 MODULE LAYOUT AND TERMINAL DETAIL**

HEADER CONNECTORS FOR ALTERNATIVE INVERTED DATA CONNECTION

TERMINAL DETAIL

ALTERNATIVE CONNECTION

COMMON OR GROUND

DATA +

DATA -

If some receivers are already addressed to a the wall panel then they will 'flash' their channel numbers as their channel number is reached during the stepping procedure, this allows the user to 'identify' which channel numbers are already taken. To add a new receiver to an existing installation step up through the channels until a channel number is reached where no receiver flashes a load, this is then an available channel. If at any point there is uncertainty as to whether a receiver actually flashed its load then button 3 will flash the load but without stepping up or down a channel. If all of the loads flash then this indicates that the current address is Channel 0.

**Note:** If it is not possible to see the connected lamps flashing when stepping through the channels it is possible to tell from the LEDs in the receivers which will momentarily go solid when their channel address is reached.