Rako RD Series Dimmer Modules – Installation, Programming and Operating Instructions.

General

The Rako RD series of dimmer modules are digital, hard-fired, leading edge dimmer modules suitable for use with mains voltage tungsten lighting, low voltage tungsten with appropriate transformers and cold cathode lamps.

Rako RD dimmer modules are designed to be installed in a lighting circuit and are controlled from Rako scene-sender panels transmitting Rakom encoded radio signals.

Modules are either supplied with external aerials, denoted by the suffix C after the part no. or with an internal aerial, denoted by the suffix L. Units with external aerials offer a better reception range and are designed to be remotely mounted. Modules with internal aerials are designed for in-line mounting, particularly for use with free-standing and table lamps.
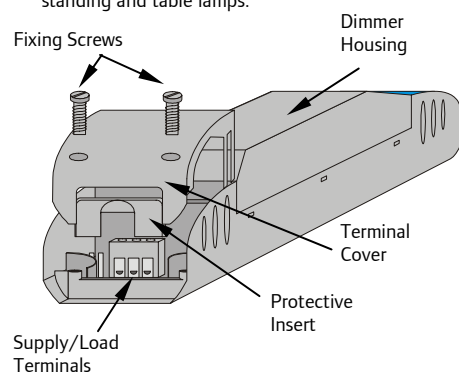
Fig 1.
Front View of Components

(Fixing Screws, Dimmer Housing, Terminal Cover, Protective Insert, Supply/Load Terminals)

Installation

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

Installation should only be carried out by a competent electrician.

Never attempt to connect a Rako dimmer or remove the terminal covers without first isolating the circuit at the fuse/MCB board.

The circuit supplying a Rako dimmer should always be protected by either a 5A fuse or 6A MCB. Under no circumstances should any protection devices with higher ratings be used.
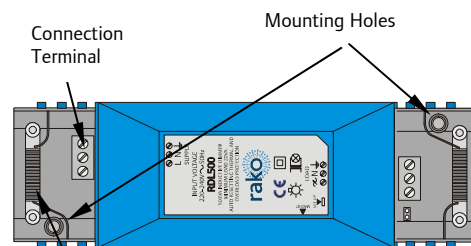

Rako RD dimmer modules should be mounted in areas that are adequately ventilated, dry and outside of any enclosed metal casings. Wherever possible the modules should be securely fixed using the mounting holes provided. The mounting holes are blanked off when supplied but are designed so that a woodscrew will easily cut through without the need for drilling. Whilst the Rako dimmer modules are designed to be completely maintenance free the units should be mounted in a position where access can be gained should there be a fault or re-addressing of the unit be necessary (see 'Set-up and Addressing').
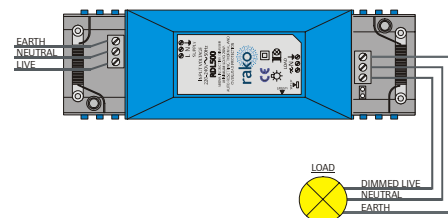
Permissible loadings.

Mains voltage tungsten – full rating i.e. 250w for RD250 modules and 500w for RD500w modules. Transformer fed loads, allow 10% de-rating, i.e. 225w of nominal lamp load for a RD250 modules and 450w of nominal lamp load for RD500w modules.

Note:

In the case of transformer fed loads only transformers suitable for use with leading edge dimmers should be used. If in doubt contact the Rako customer help-line on 0870 043 3905.

Fig 2.
Termination Area

(Connection Terminal, Mounting Holes, Clamping bar)

Fig 3.
Connection Detail

(EARTH, NEUTRAL, LIVE, LOAD, DIMMED LIVE, NEUTRAL, EARTH)

Note:

To ensure that the cable clamping operates satisfactorily the cabling both supplying the dimmer and to the load should be a minimum of 0.5mm2 with double safety insulation and the wires should be stripped to ensure that the cable bar within the terminal cover clamps firmly on both sets of insulation.

To install a Rako dimmer module isolate the supply then remove the Terminal Covers (see Fig.1) giving access to the supply/load terminals. The necessary connections are indicated on the label on the dimmer housing. The notation is as follows:

L – Live wire from the supply (normally coloured Brown)
N – Neutral (normally coloured Blue)
⏚ - Earth (normally coloured Green/Yellow)
∝ - Dimmed output to load

Once the supply and load cables are connected ensure that the terminal covers are replaced and securely fastened, clamping the cable correctly as detailed above, before powering the unit.

Rako dimmer modules are not designed for loop in/loop out connections. Should it be necessary to loop the supply on to further fittings then a junction box should be connected in circuit to facilitate this.

With the supply and load connected and prior to switching on the supply ensure that the terminal covers are fitted and that they are securely clamping the cables. It is important to ensure that the protective inserts (see Fig.1) are fitted and located securely, both in the terminal cover and over the supply and load cables. The protective inserts provide important protection against the risk of electric shock from conductive objects forced down the side of the cables.

When power is connected the Rako unit will fade to a full-on setting. In this way it is possible to leave a conventional lighting switch in circuit to simply fade between full-on and off settings without the use of a Rako control panel. Such a lighting switch can also be used as an override in the event that the batteries in a Rako control panel are not replaced when the low-battery warning signals indicate that this should be done.

Set-up and Addressing

Setting an address is the way in which interference between other Rako systems, either with other rooms within your house or neighbouring houses is avoided. It should be remembered that with a booster unit a Rako transmitter may have a range of over 100m.

A Rako dimmer module comes from the factory set with a default address of House 1, Room 4, Channel 1 and as such will work with Rako control panels still with the default address. It is however, strongly recommended to change the House and Room addresses. Additionally to gain the true benefit of a Rako system each dimmer in any one room should be given one of the 15 possible channel addresses.

To set the address of a dimmer module see 'Initial Addressing of a Rako Reciever Module'.

To set the address switches on a transmitter, see that transmitter's instruction manual.

Notes on addressing.

A dimmer will not receive an address of House 0 (All switches set to off)

A dimmer will respond to, but not receive an address of Room 0 (All switches set to off)

A dimmer cannot be set to channel 0.

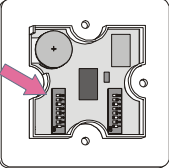To program a lighting scene see 'Programming a Lighting Scene'

Care and maintenance

A Rako dimmer module contains no user serviceable parts.

Rako thanks you for having purchased a Rako product and hopes that you are pleased with your system. Should for any reason you need to contact us please contact us via our website www.rakocontrols.com or by phoning our customer help line on 0870-043-3905.
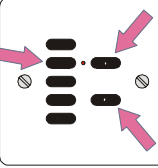
Initial Addressing of a Rako Receiver Module

Step 1
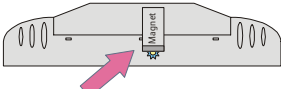Set address switches on controller

Pick House address from 1-255 (keep same address for all panels in house)
Select Room addresses from 1-255 for each room (Room 0 is master house control)

Step 2

Put controller into programming mode by pressing and holding a scene button _and_ both raise and lower buttons together
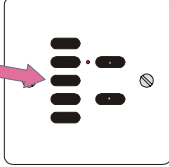
Step 4
When available channel is found, hold magnet against casing at point indicated on the label until LED illuminates.
Hold until LED starts flashing and then remove magnet. Module is now in set-up mode.
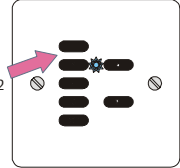
Step 5
Press button 3 to send the ident of the channel selected in step 3. Receiver automatically returns to normal mode
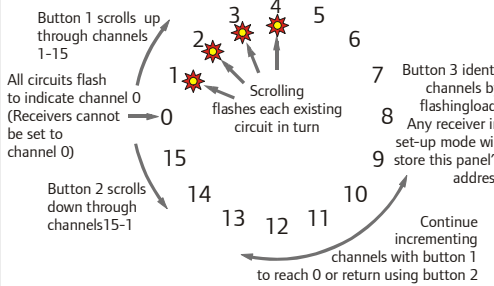
Step 3
LED starts to flash after 5 seconds, panel is now inprogramming mode. Use buttons 1 & 2 to scroll to an available channel

When in _programming mode_ buttons have the following functions for addressing

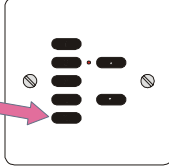| Button	Action
1	Scroll up and ident
2	Scroll down and ident
3	Ident
4	No action
Off	Exit programming

See details for scrolling

Button 1 scrolls up through channels 1-15

All circuits flash to indicate channel 0 (Receivers cannot be set to channel 0)

Scrolling flashes each existing circuit in turn

Button 2 scrolls down through channels 15-1

Button 3 idents channels by flashingload. Any receiver in set-up mode will store this panel's address

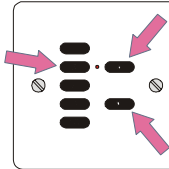Continue incrementing channels with button 1 to reach 0 or return using button 2

3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2

Step 6
Press Off button to exit controller from programming mode

Programming a Scene

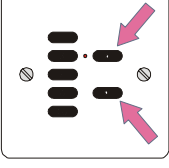### Step 1

Chose the scene to be re-programmed. Put controller into programming mode by pressing and holding the selected scene button _and_ both raise and lower buttons together
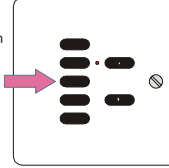
Step 3
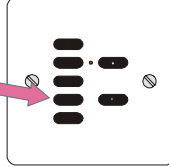As each circuit flahes in turn, use the raise and lower buttons to adjust lighting to the desired levels

Tip
If at any point it is not clear which is the current circuit address button 3 will flash that circuit without scrolling on.
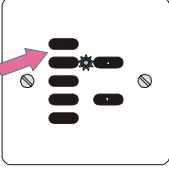
Step 4
Once levels are set correctly for the chosen scene. Save any changes by pressing button 4. Circuits will all flash to confirm.
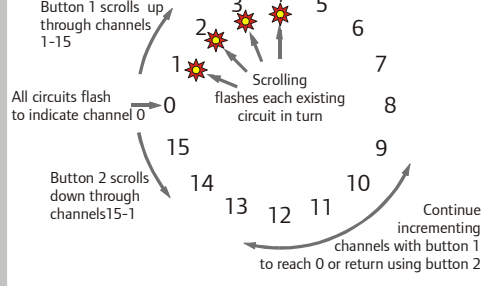
Step 2
LED starts to flash after 5 seconds, panel is now in programming mode. Use buttons 1 & 2 to scroll through channels one at a time.

When in _programming mode_ buttons have the following functions

Button	Action
1	Scroll up and ident
2	Scroll down and ident
3	Ident only
4	Save changes
Off	Exit programming

See details for scrolling

Button 1 scrolls up through channels 1-15

All circuits flash to indicate channel 0

Button 2 scrolls down through channels 15-1

Scrolling flashes each existing circuit in turn

Continue incrementing channels with button 1 to reach 0 or return using button 2

3 4 5 6 7 8 9 10 11 12 13 14 15 0 1 2

Step 5
Press Off button to exit controller from programming mode.
To re-program another scene repeat process from Step 1