RUST ELECTRONICS LTD

Remote Switching Unit RCU-O4

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MAINS REMOTE SWITCHING UNIT RCU-O4

The RCU-O4 is a radio remote controlled switching unit that will allow the remote operation of any appropriate electrical appliance that is required. The unit is constructed to industrial/commercial standards, giving the convenience of remote operation and in most cases the reduction in installation costs will exceed the cost of switching unit.

The output of the unit is in the form of a relay change over contact rated at 8 amps 240V AC.
On the reception of a valid signal the output can be programmed to be momentary, toggled or timed using the internal dip switches.

The remote control is achieved by using an encoded UHF radio signal produced by a key fob transmitter with a super-hetrodyne receiver validating the transmitted code and activating the output accordingly.

The receiver unit is IP65 rated (see INSTALLATION) allowing external positioning, with a self- contained power supply.

The electrical appliance can be operated remotely be simply connecting to a mains supply via the RCU-O4 remote receiver unit.

INSTALLATION

First remove the lid and carefully retain the 4 lid screws.

The DIP switches should be positioned in line with the table (overleaf), in order to establish the correct output control (Latched, momentary or timed).

The receiver unit must be securely mounted, using the mounting holes provided, vertically with the aerial pointing upwards. Avoid positioning in close proximity to electronic equipment as interference from such equipment in certain circumstances could reduce the operational range.

The wiring must be passed through the sealing gland, and connected appropriately (see diagram). Ensure that the supply to the unit is appropriately fused and if there is any doubt whatsoever regarding the electrical installation consult a competent qualified electrician. The cables must be clamped securely by tightening the sealing gland using a 19mm spanner ensuring that an adequate seal is formed against the outer sleeving of the cables (IP65 weather proof).

All connections to the unit must made via the screw blocks provided. Ensure that there are no loose strands of wire present and that all connections are secure. If the load requires an earth, this **MUST** be provided, the comm block can be used to connect the incoming earth to corresponding earth on the load.
Refer to 'Wiring diagram' for connection details.
See 'Typical application' of a load connected to a mains supply.

Prior to attaching the lid, check the integrity of the sealing gasket, using all 4 screws provided, tighten evenly until a weatherproof seal can be established.

Before applying power ensure that the installation is both complete and safe.

After the power is applied allow approximately 5 seconds for the electronics to stabilise. Activation of the remote transmitter will activate the receiver output, provided that it is within range.

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CODING RADIO KEYS INTO UNIT

Normally the unit is supplied with 1 dual button radio key coded into the unit.
In this situation, when the unit is first powered the unit will enter **AutoCoding** (see below), after a key has been added or ten seconds have elapsed the LED will illuminate green, indicating that power is applied to the unit and has been pre-programmed to respond to at least one radio key. If the LED is red this indicates that the unit has no radio keys programmed.
The unit is capable of responding to 9 radio keys of differing codes

Programming
1. Press and release the function button (see diagram), the LED will extinguish for a brief period, followed by a 10 second coding period. During this period the LED will flash green, the number of times the LED flashes correspond to the number of radio keys that are coded into the unit. (If the LED does not flash then no radio keys are programmed).
2. Press a button on the radio key that is required to be coded into the unit, the LED will flash yellow briefly to confirm that the unit has accepted the radio key.
3. The LED will illuminate green to show that normal operation has resumed, and the unit will respond to the newly coded key. If the unit does not respond to the key then this will probably due to the 10 seconds allowed for coding having elapsed before the key fob button has been pressed (in this case go back to step 1) or the unit already has the maximum 9 radio keys programmed.

Auto Coding
In some applications it is inconvenient to access the coding button. In this instant it is possible to add radio keys by following the procedure below:
1. Disconnect the power supply.
2. Re-connect the supply and immediately press the corresponding button on the radio key that you require to be added within range of the receiver. The unit will learn and store the code from the radio key and regard the code as valid.
NB. The unit will not 'learn' the radio key code if more than ten seconds have elapsed after applying power before the radio key button is pressed or if the unit has the maximum number of keys already stored. If the unit receives a code that is already programmed the unit will leave ' Auto-coding' and operate normally.
It not possible to delete keys without access to the 'coding button'

Deletion of radio keys
To delete the radio keys programmed into the unit, press the function button for 10 seconds, the LED will illuminate yellow to confirm that the radio keys have been erased. Release the function button, the LED will go red showing that receiver unit is blank and is NOT programmed to accept radio keys.
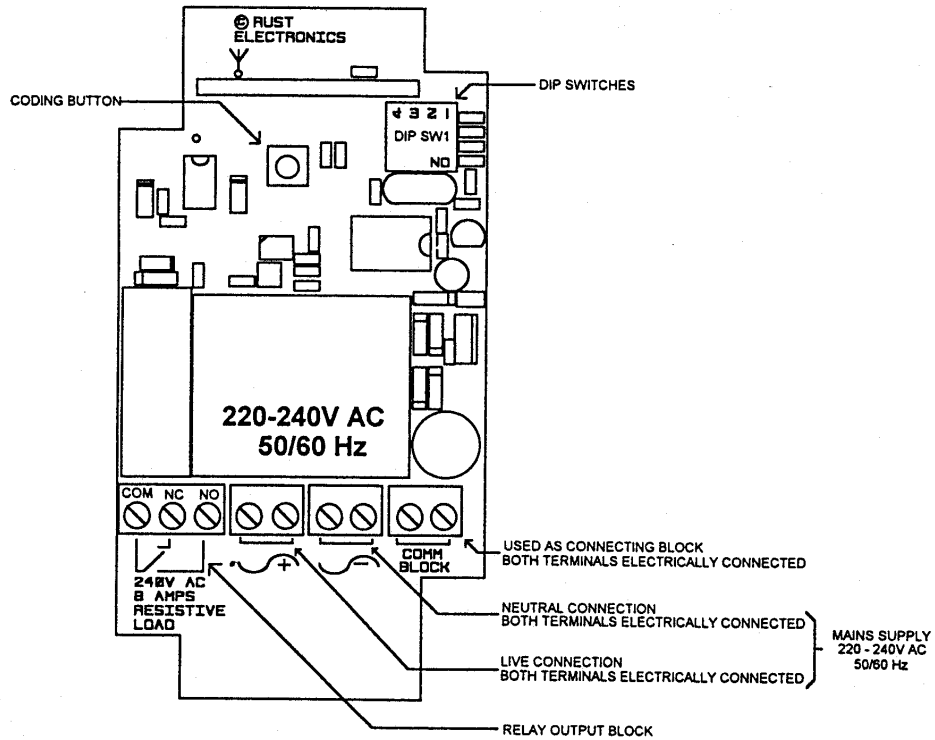To re-enter radio keys see "PROGRAMMING" section above
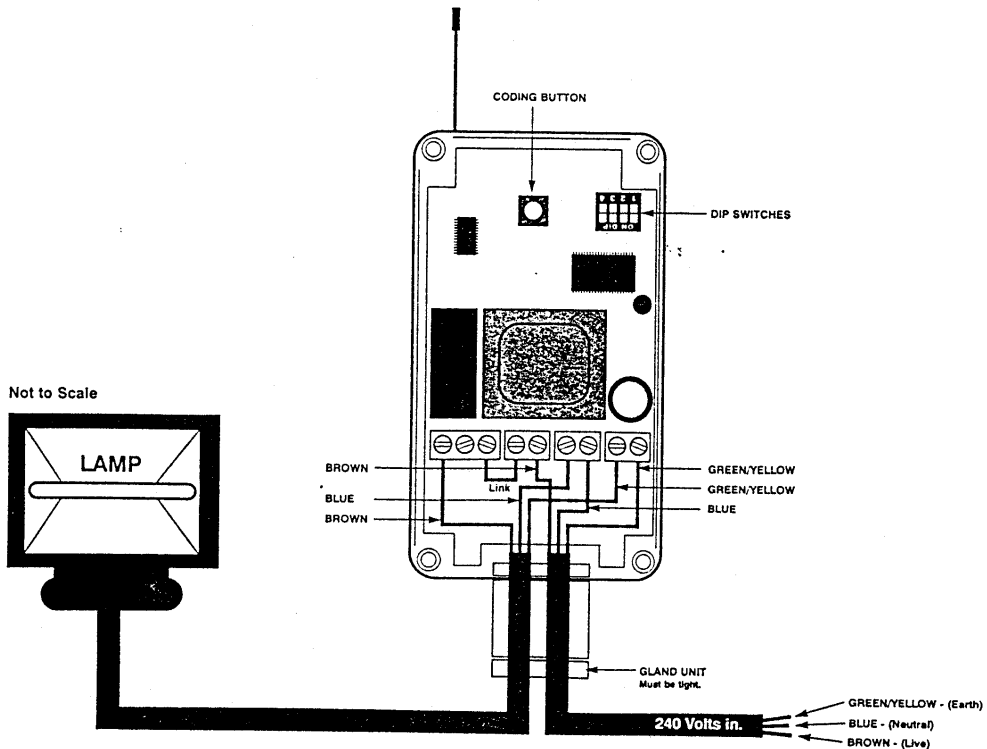
Output Set-up
NOTE: As viewed from the front with the aerial at the top, the dip switches are in I block of 4. These are numbered from **RIGHT** to **LEFT** with the **OFF** position **UPWARDS** and the **ON** position **DOWNWARDS**

DESIRED OUTPUT	SINGLE BUTTON CONTROL		SWITCH POSITION			
	ACTIVATION MODE		4	3	2	1
MOMENTARY	PROGRAMMED BUTTON		OFF	OFF	OFF	OFF
10 SECS TIMED	PROGRAMMED BUTTON		OFF	OFF	OFF	ON
25 SECS TIMED	PROGRAMMED BUTTON		OFF	OFF	ON	OFF
1 MIN TIMED	PROGRAMMED BUTTON		OFF	OFF	ON	ON
5 MINS TIMED	PROGRAMMED BUTTON		OFF	ON	OFF	OFF
20 MINS TIMED	PROGRAMMED BUTTON		OFF	ON	OFF	ON
1 HOUR TIMED	PROGRAMMED BUTTON		OFF	ON	ON	OFF
ALTERNATE	PROGRAMMED BUTTON		OFF	ON	ON	ON
DESIRED OUTPUT	SINGLE BUTTON CONTROL		SWITCH POSITION			
	ACTIVATION MODE		4	3	2	1
10 SECS TIMED	BUTTON 1 SETS	BUTTON 2 OFF	ON	OFF	OFF	OFF
25 SECS TIMED	BUTTON 1 SETS	BUTTON 2 OFF	ON	OFF	OFF	ON
1 MIN TIMED	BUTTON 1 SETS	BUTTON 2 OFF	ON	OFF	ON	OFF
5 MINS TIMED	BUTTON 1 SETS	BUTTON 2 OFF	ON	OFF	ON	ON
20 MINS TIMED	BUTTON 1 SETS	BUTTON 2 OFF	ON	ON	OFF	OFF
1 HOUR TIMED	BUTTON 1 SETS	BUTTON 2 OFF	ON	ON	OFF	ON
2 HOURS TIMED	BUTTON 1 SETS	BUTTON 2 OFF	ON	ON	ON	OFF
INDEFINITE	BUTTON 1 SETS	BUTTON 2 OFF	ON	ON	ON	ON

Mains Remote Switching Unit RCU-04

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WIRING DIAGRAM

TYPICAL APPLICATION

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SPECIFICATION

Standard system comprises of: -
1 Receiver unit
1 Transmitter (Radio key)
Pre-Coded

Receiver Switching Unit
SUPPLY   220- 240 V AC 50/60Hz (Mains)
RADIO FREQUENCY   433.92 MHz AM
OPERATING TEMP   -20°C to + 70°C
RELAY   8A @ 240V AC
CONNECTION   SCREW TERMINALS
IP RATING   IP65 (WEATHER PROOF)
DIMENSIONS   H 115mm, W 65mm, D 40mm (Excluding 155mm aerial and gland)

Transmitter
RF OUTPUT   433.92 MHz AM
SUPPLY   12V Battery
CODE   24 BIT
LICENCE   WT MPT 1340 LICENCE EXEMPT
DIMEMSIONS   H 57mm, W 36mm, D 15mm

As with all radio frequency based equipment, it is possible that external interference and environmental conditions can significantly effect the performance, therefore it is essential that this product is not used where failure of operation could be considered dangerous or result in damage or loss to property.

In the interest of continued development, Rust Electronics Ltd reserve the right to alter the specification of this product without prior notice.