



**RKU R2 & R4
H-SERIES
RECEIVERS**

RKU Remote Control, Transmitters and Receivers

GENERAL DESCRIPTION

- The RKU series of FM transmitters and receivers operate in an allocated UHF band, and are extensively used for remote control, signals and alarm monitoring, using limited transmission time.

Typical applications are as follows:

- Stop and Starting of pumps and motors, for use in the control of irrigation, reservoir water levels and fire control equipment. Control of floodlights, emergency evacuation and mining applications.
- The receiver features 15 programmable output relay functions such as on/off, flip/ flop, latching and timing. The relay contacts have voltage free change over contacts.

There are two types of transmitters:

✳ Hand held remote control (T.G.) +/- 1km.

✳ Fixed transmitter (HOG) = 1 - 6 km.

Note: Reliable operation between transmitter and receiver is affected by physical obstructions such as buildings, hills, trees / bush which may be between the transmitter and receiver arrangement. The type of antennas used and their location will also determine the range.

Technical Specifications of Compatible Transmitters

| | Hand held (T.G.) | Fixed transmitter (HOG) |
|--------------------|------------------------------|--------------------------------|
| FREQUENCY BAND | UHF 402 - 404 MHz | UHF 402 - 404 Mhz |
| POWER | NOMINAL 100 mW | NOMINAL 100mW |
| NUMBER OF CHANNELS | CH 1, CH 2, CH 4 | 4 CH |
| TRIGGERING | BY PUSHING BUTTON | BY APPLYING +12V TO ANY INPUT |
| CODE | 1023 ON 4CH | 1023 ON 4CH |
| CODE FORMAT | MAMI 10BIT | MAMI 10BIT |
| MODULATION | FM | FM |
| CHANNEL SPACING | 12.5 KHz | 12.5 KHz |
| WORKING TEMP | -10 TO + 60°C | -10 TO + 60°C |
| DIMENSIONS | 55 X 100 X 20mm | 145 X 135 X 45mm |
| ANTENNA | TELESCOPIC | BUILT IN DIPOLE OR EXT ANTENNA |
| POWER SUPPLY | INTERNAL 9v ALKALINE BATTERY | EXT 12V dc SUPPLY |
| HOUSING | ABS PLASTIC | ABS PLASTIC AND METAL HOUSING |

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RKU R2 & R4 RECEIVER

Dipswitch programming (Read carefully):

NOTE: The transmitter must be programmed first (see transmitter's instructions).

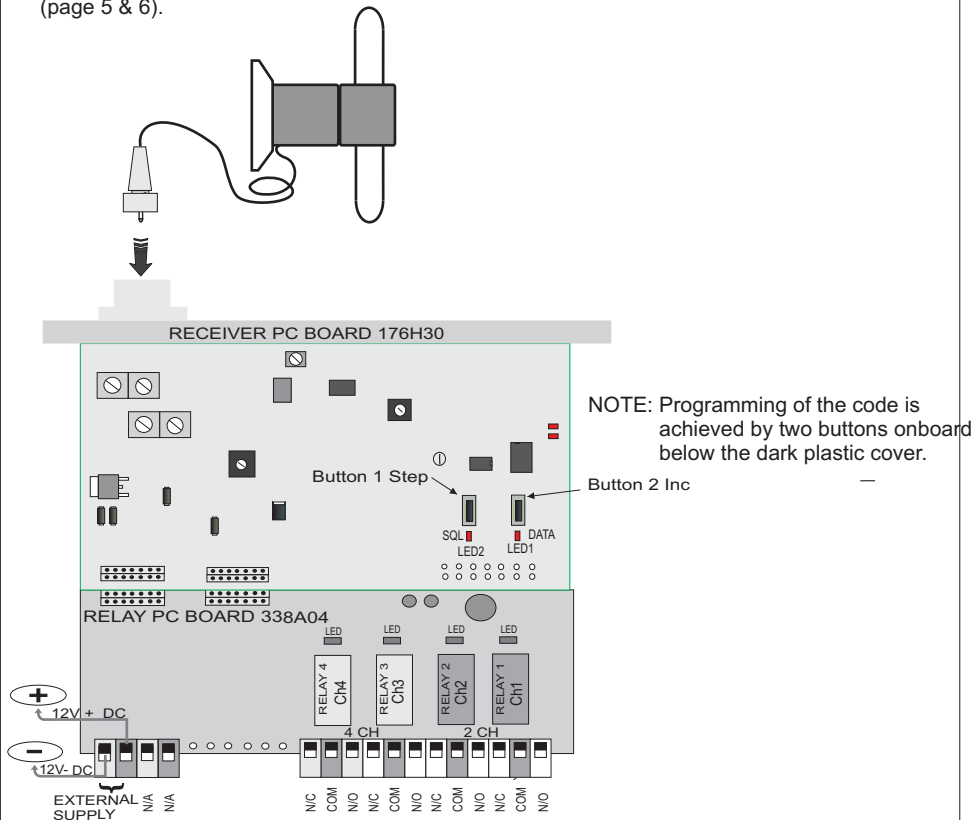
1. With power off remove the screws next to the connector.
2. Slide down the dark plastic plate to open.
3. The correct polarity must be observed before attempting to apply power on the receiver. Apply 12Vdc supply and the LED1 will start flashing at about 1sec intervals.
4. As the receiver is capable of "Learning" the code from the transmitter proceed as follows:
 - (a) While transmitting with a pre-programmed transmitter, press and hold the step or increment button on the receiver, observe that LED1 on the receiver stops flashing for a short period of time.
 - (b) Release the step button on the receiver and observe that a relay corresponding to transmitter's channel on the receiver PC board (Any Channel) pulls in .

NOTE: It is possible to operate multiple receivers in a collective, individual or group mode.

5. Remove power from the RKU receiver.

The receiver is now configured to respond only to the correct code or codes.

6. Now proceed to program relay options (page 5 & 6).



RKU Receiver - Programming

Programming the output relay options (Read instructions carefully):

NB.: THIS OPERATION WILL OVERWRITE THE OPTIONS ON PAGE 6

1. With power off remove the screws next to the connector.
2. Slide down the dark plastic plate to access the two programming buttons (**Step/Increment**).
3. Press and hold down the **step** button, while holding down the **step** button apply power, **LED 1 will flash once**, then release **step** button and notice that **LED 1 flashes once** indicating programming mode.
4. With reference to the relay table below select the desired option by entering the TWO digit value of the desired option. (E.g programming option 07: Press 1 x 'STEP', 7 x 'INC' and 1 x 'STEP').

NOTE: For option 00 (default) only press Step button 2 times to select 2 zero's and exit programming, the LED 1 will flash 4 times.

5. The RKU R2/R4 receiver is now ready for installation and use. :

| | Transmitter - Receiver - | Button 1 CHANNEL 1 | Button 2 CHANNEL 2 | Button 3 CHANNEL 3 | Button 4 CHANNEL 4 |
|--------------------------------|-----------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| ● RELAY OPTION 00 (DEFAULT) | | ON/OFF | ON/OFF | ON/OFF | ON/OFF |
| RELAY OPTION 01 | | ON/OFF | FLIP-FLOP | ON/OFF | FLIP-FLOP |
| RELAY OPTION 02 | | FLIP-FLOP | FLIP-FLOP | FLIP-FLOP | FLIP-FLOP |
| RELAY OPTION 03 | | ON/OFF | FLIP-FLOP | TIMER 30SEC | TIMER 1 MIN |
| RELAY OPTION 04 | | FLIP-FLOP | TIMER 1 MIN | FLIP-FLOP | TIMER 4 MIN |
| RELAY OPTION 05 | | TIMER 30 SEC | TIMER 1 MIN | TIMER 2 MIN | TIMER 3 MIN |
| RELAY OPTION 06 | | TIMER 1 MIN | TIMER 5 MIN | TIMER 10 MIN | TIMER 20 MIN |
| RELAY OPTION 07 | | TIMER 1 MIN | TIMER 10 MIN | TIMER 20 MIN | TIMER 40 MIN |
| RELAY OPTION 08 | | TIMER 1 MIN | TIMER 30 MIN | TIMER 60 MIN | TIMER 90 MIN |
| RELAY OPTION 09 | | ACTIVATE 1+2 | DEACTIVATE 1+2 | ON/OFF | ON/OFF |
| RELAY OPTION 10 | | ACTIVATE 1+2 | DEACTIVATE 1+2 | TIMER 1 MIN | TIMER 3 MIN |
| RELAY OPTION 11 | | ACTIVATE 1+2 | DEACTIVATE 1+2 | ACTIVATE 3+4 | DEACTIVATE 3+4 |
| RELAY OPTION 12 | | LATCH | LATCH | ACTIVATE 3+4 | DEACTIVATE 3+4 |
| RELAY OPTION 13 | | LATCH | LATCH | ON/OFF | ON/OFF |
| RELAY OPTION 14 | | LATCH | LATCH | TIMER 1 MIN | TIMER 5 MIN |
| RELAY OPTION 15 | | LATCH | LATCH | LATCH | LATCH |
| RELAY OPTION 16 (PUMP CONTROL) | | TIMER 1 MIN | TIMER 5 SEC | TIMER 1 MIN | TIMER 5 SEC |
| RELAY OPTION 17 (PUMP CONTROL) | | TIMER 2 MIN | TIMER 5 SEC | TIMER 2 MIN | TIMER 5 SEC |
| RELAY OPTION 18 (PUMP CONTROL) | | TIMER 5 MIN | TIMER 5 SEC | TIMER 5 MIN | TIMER 5 SEC |
| RELAY OPTION 19 (PUMP CONTROL) | | TIMER 10 MIN | TIMER 5 SEC | TIMER 10 MIN | TIMER 5 SEC |

Note:

TIME = Holding time since last transmission

ON/OFF = Momentary

FLIP/FLOP = Set/Reset. (Note: There is a delay between activations.)

LATCH = Permanent Latch. To reset, switch off the receiver.

RKU Receiver - Programming

Programming the Specific Relay Timer Options (Read instructions carefully):
NB.: THIS OPERATION WILL OVERWRITE THE OPTIONS ON PAGE 5

1. With power off remove the screws next to the connector.
2. Slide down the dark plastic plate to access the two programming buttons (**Step/Increment**).
3. Press and hold down **Increment** button. Apply power to the receiver while holding the **Increment** button.
 Notice that **LED 1** flashes once with the **Increment** button still held in indicating programming mode. Release the **Increment** button.
4. Select a relay from 1 to 4 into which the options are to be programmed by pressing the **Increment** button as many times as the relay number followed by the **Step** button. **LED1** should flash twice.
5. With reference table below enter 2 digits to select the desired option by pressing the **Increment** button as many times as the first digit followed by the **Step** button and do the same for the second digit. 1 flash will acknowledge the first digit and 3 flashes will acknowledge the second digit.
 The receiver will reset to normal running mode.

NOTE: Program option 01 to reset any of the relays to default values into the selected relay number.

| | | | | | | |
|---|--------------|--------------|------------|--------------|----------|------------------|
| ● | TIMER OPTION | 01 (DEFAULT) | MOMENTARY | TIMER OPTION | 17 | 3 MINUTES |
| | TIMER OPTION | 02 | 5 SECONDS | TIMER OPTION | 18 | 4 MINUTES |
| | TIMER OPTION | 03 | 6 SECONDS | TIMER OPTION | 19 | 5 MINUTES |
| | TIMER OPTION | 04 | 7 SECONDS | TIMER OPTION | 20 | 10 MINUTES |
| | TIMER OPTION | 05 | 8 SECONDS | TIMER OPTION | 21 | 15 MINUTES |
| | TIMER OPTION | 06 | 9 SECONDS | TIMER OPTION | 22 | 20 MINUTES |
| | TIMER OPTION | 07 | 10 SECONDS | TIMER OPTION | 23 | 25 MINUTES |
| | TIMER OPTION | 08 | 12 SECONDS | TIMER OPTION | 24 | 30 MINUTES |
| | TIMER OPTION | 09 | 15 SECONDS | TIMER OPTION | 25 | 40 MINUTES |
| | TIMER OPTION | 10 | 20 SECONDS | TIMER OPTION | 26 | 50 MINUTES |
| | TIMER OPTION | 11 | 25 SECONDS | TIMER OPTION | 27 | 60 MINUTES |
| | TIMER OPTION | 12 | 30 SECONDS | TIMER OPTION | 28 | 75 MINUTES |
| | TIMER OPTION | 13 | 40 SECONDS | TIMER OPTION | 29 | 90 MINUTES |
| | TIMER OPTION | 14 | 50 SECONDS | TIMER OPTION | 30 | 105 MINUTES |
| | TIMER OPTION | 15 | 1 MINUTE | TIMER OPTION | 31 | PERSONAL |
| | TIMER OPTION | 16 | 2 MINUTES | TIMER OPTION | 32 TO 80 | FUTURE |
| | OPTION | 81 | FLIP/FLOP | OPTION | 83 | LINK RLY1 & RLY2 |
| | OPTION | 82 | LATCH | OPTION | 83 | LINK RLY3 & RLY4 |

Note:

Anything above option 80 is not time related as indicated in the table above.
 When linking Ch1 to Ch2 or Ch3 to Ch4, option 83 must be programmed to all channels that are to be linked.
 LATCH operation can only be reset by removing and reapplying power.

Technical Specifications of Receiver

| | |
|----------------------------|---|
| FREQUENCY BAND | UHF 402 - 404 MHz |
| NUMBER OF CHANNELS | 2ch (RKU - R2) / 4ch (RKU - R4) |
| SUPPLY VOLTAGE | +12VDC (13.8VDC) |
| RECEIVER TYPE | FM DOUBLE CONVERSION SUPER HETERODYNE |
| SENSITIVITY | ≤ 0.3uV at 12 dB SINAD |
| FREQUENCY CONTROL | SYNTHESIZED |
| WORKING TEMPERATURE | -10 to + 60°C |
| ANTENNA CONNECTION | S0239 UHF FEMALE SOCKET |
| RELAY CONTACTS | SINGLE POLE CHANGE - OVER (VOLTAGE FREE) |
| RELAY CONTACT RATING | 6A, 30Vdc / 6A, 220Vac |
| PROGRAMMABLE RELAY OPTIONS | 15 |
| DIMENSIONS | 145 X 135 X 45 mm |
| HOUSING | ALUMINIUM |