

Installation Tips for Best Performance

To ensure best performance from this product DO NOT install the receiver on or next to a metallic surface. If this is unavoidable then the antenna will need to be brought clear of the metal via a coaxial cable. The remote antenna BNC ANT-01 connector should be wrapped in self amalgamating tape or the internal pin coated with silicone grease if installed near SALT WATER. If range is poor and interference from another source has been eliminated try moving or re-orientating the receiver.

Specifications

Operating Voltage	11 to 30VDC, 11 to 24VAC
Current Consumption @ 12VDC	Standby 15mA, All relays 60mA
@ 24VDC	Standby 23mA, All relays 72mA
@ 24VAC	Standby 82mA, All relays 190mA

Physical Dimensions IP56 Case 100mm x 100mm x 50mm

Antenna tube 150mm

Output Channels 4

Output Ratings

SPDT relay 1 Amp switching
maximum @ 24VDC.
Contacts are voltage free.

Reverse Polarity Protection

Yes (diode)

RF Operating Frequency

433.92mhz

Receiver type

Superheterodyne narrow band

RF Signal Type (Data Transfer)

On Off Keying (OOK)

Keeloq™ Code Hopping

Coding Combinations

4.2 billion

Learning Capacity (RF Devices)

200 fobs

Country of Manufacture

Australia

Antennas

The HCR-100 receiver can be connected to an external 434Mhz antenna for improved performance in most circumstances. The use of another antenna may be necessary in situations where there is a lot of metal surrounding the receiver and relocation of the receiver is not feasible. Circuit Level manufactures a simple antenna kit which is suitable for these circumstances. Please enquire with your supplier.

Custom Firmware

The firmware contained in the HCR-100 receiver can be customised to suit an application. Should your customer or project require relay functions outside the standard features of this product then we may be able to help you. Please enquire with your supplier.

Warranty

Circuit Level Electronics (Aust) Pty Ltd warrants this product to be free from defects in materials and workmanship for a period of **2 Years** from date of purchase. We will in the event of failure repair or replace the product at our sole discretion. This warranty does not apply in the event of accidental damage, abuse, misuse, non approved purpose or act of God. This warranty is given in addition to any rights allowed by New South Wales law.

Made in Australia by
Circuit Level Electronics (Aust) Pty Ltd
ABN 51 074 517 570



Circuit Level Electronics reserves the right to change specifications without notice in the interest of product development.

HCR-100

4 Channel Receiver Controller



- 4 x SPDT 1 Amp (Mapped) Relay Outputs
- 12 or 24V AC/DC powered
- IP56 Rated plastic enclosure
- High Performance narrow band RF
- Momentary, Timed or Latching outputs
- Compatible with HCT-4 and FOB-4S (Bosch™ code)



© 2009 Circuit Level Electronics (Aust) Pty Ltd

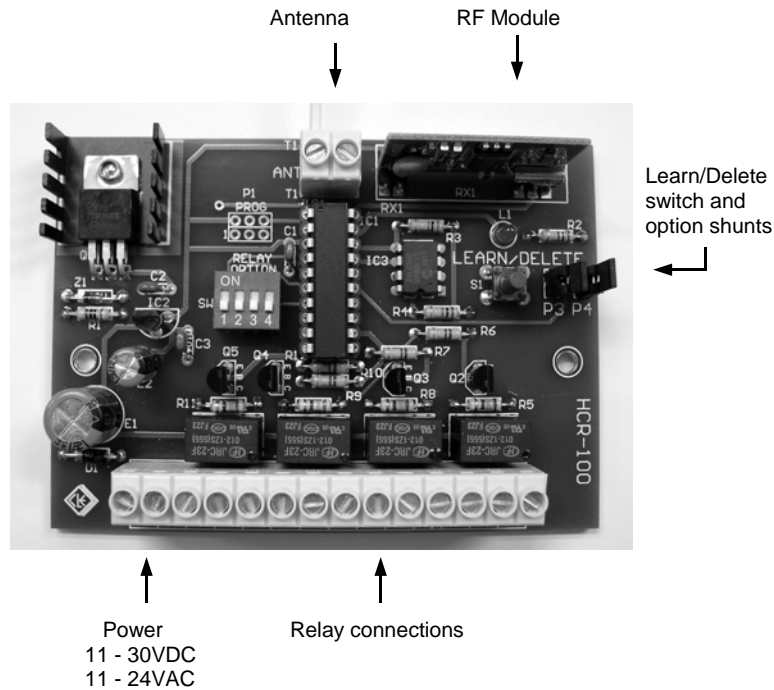


Overview

The HCR-100 is a general purpose UHF receiver operating on 433.92mhz. Four single pole double throw (SPDT) outputs are available to control external devices. The receiver is designed for use with 4 channel keyfobs. This system uses code hopping technology for secure RF transmissions.

The HCR-100 is an improvement on our popular HCR-15 receiver. The four (4) relay outputs can be programmed to work with different buttons on individual fobs. This allows full customisation to suit the customer. The HCR-100 also has a timing option for relays 1 and 2 making it suitable for use with door strikes.

PCB Layout



Installation (Outdoor)

The HCR-100 case should be wall mounted using the four (4) holes in the bottom of the case. The product is supplied with a seal in the lid of the case. The holes used for mounting the enclosure should be fitted with rubber washers or the screws sealed over with silicon after installation. The plastic tube for the antenna is simply slid over the antenna wire and pushed through the cable gland ensuring the rubber seal is in place and the cable gland tightened.

For installations such as electric gates the unit should be mounted next to or near the gate control box. If using a different antenna, this may be connected to the terminals on the receiver PCB via the cable gland in the top of the case. The HCR-100 should be mounted as high as possible for best reception. The PCB may be removed from the enclosure by undoing the two (2) screws on either side of the PCB. This will make wiring easy to terminate.

Antenna

In most circumstances the fitted wire antenna will produce good results, however should an antenna such as our ANT-01 be required then the wire is removed and an RG58 coaxial cable terminated at the terminal (T1) with the shield connected to the GND or unmarked terminal.

Learning Fobs (Default)

This receiver is code learning therefore making the addition of transmitters an easy task. The HCR-100 can learn up to 200 fobs. Fobs MUST be learned to the receiver before mapping.

1. If the receiver is being set up for the first time it is advisable to clear the EEPROM memory. To do this **hold down** the LEARN/DELETE switch on the PCB. The LED will light and then extinguish after **20 seconds**. The EEPROM is now empty.
2. Press the LEARN/DELETE switch briefly. The LED will flash rapidly.
3. LEARN a fob to the receiver by pressing a button on the fob. The LED will stop flashing whilst a signal is received and return to flashing after you let go the button .
4. Learn additional transmitters or exit by pressing the LEARN/DELETE switch once. LED off. If you forget to exit learn mode (flashing LED) the receiver will do so automatically after 10 seconds of no activity.

Deleting Fobs

Press and Hold the Learn/Delete switch. The LED will come on. When the LED extinguishes (approx 20 seconds) all codes stored in the EEPROM memory have been erased. It is not possible to delete individual fobs.

Mapping Fob Buttons to Outputs (Relays)

The HCR-100 default learn procedure maps button 1 on a fob to relay 1, button 2 to relay 2 etc. This map can be altered for each fob if required.

1. Learn fobs to the HCR-100 as above (Learning Fobs)
2. **Remove P4 shunt. If this is not done you will DELETE ALL FOBS at step 3.**
3. **Hold down** the LEARN/DELETE switch and using the fob press a button for the relay that will be activated. Now press a button that will activate that relay. Eg: 4 then 1 will mean that relay 4 will be activated by button 1.
4. Continue step 3 for each relay and button on the fob.
5. Each fob is mapped as above.
6. **Refit P4 shunt** when complete.

Relay Setup

Each of the four relays can operate as either **momentary** (operates while a transmission is received) or **latching** (changes state with each transmission). Relays 1 and 2 can also be set to be timed for 10 or 20 seconds. The P3 shunt controls the timed function. With **P3 in place** outputs are momentary or latching only. The 4 way DIP switch is used to set operation. With the switch corresponding to the relay set to the ON position the relay will LATCH. With the switch in the OFF position (default) the relay will operate in momentary mode. With **P3 removed** relays 1 and 2 become timed. With DIP switch 1 OFF relay 1 will time for 10 seconds. With DIP switch 1 ON relay 1 will time for 20 seconds. The same applies to relay 2 and DIP switch 2.

Note: If a relay output is "timing" ie: has already been activated, then a subsequent transmission will switch the output off. ie: end the time period.

Power

The HCR-100 is designed to operate from 11to 30VDC and 11 to 24VAC. The on board transistor regulator heatsink will get quite WARM when operating in latched mode at 24VAC/DC.

Note: It is not advised to operate the HCR-100 receiver from 24VAC or 30VDC with more than ONE latched output without increasing the size of the heatsink.