REC-14

4 Channel RF Receiver Controller

Overview

The REC-14 is a general purpose UHF receiver operating on 315MHz, 433MHz and 868MHz. Four single pole double throw (SPDT) outputs are available to control external devices. The receiver is designed for use with Microlatch 1,2 or 4 channel keyfobs or Microlatch BIO-XX fingerprint readers. This system uses code hopping technology for secure RF transmissions.

The REC-14IP65 version of the product is supplied in an IP65 rated ABS plastic enclosure which allows installation of the receiver in an external environment with water resistance. Cable entry is via a cable gland at the bottom of the case. The antenna is weatherproof and detachable.

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.

Standard Version
(Indoor) REC-14

IP65   Version
(Outdoor) REC-14 IP65

Specifications

Operating Voltage	9 to 24VDC, 9 to 24VAC
Current Consumption @ 12VDC	Standby 14mA, All relays 56mA
@ 24VDC	Standby 28mA, All relays 75mA
@ 16VAC	Standby 28mA, All relays 73mA
Physical Dimensions	IP65 Case 160mm x 90mm x 55mm
	Antenna tube130mm ,Bulkhead case 108x70x34
Case Material	ABS plastic
Output Channels	4
Output Ratings	SPDT relay 1 Amp switching maximum @ 24VDC
	Contacts are voltage free.
Reverse Polarity Protection	Yes (diode)
RF Operating Frequency	315MHz, 433MHz and 868MHz
RF Signal Type (Data Transfer)	AM ASK, Keeloq^{TM} Code Hopping
Coding Combinations	4.2 billion
Learning Capacity (RF Devices)	255 fobs
Country of Manufacture	China

Warranty
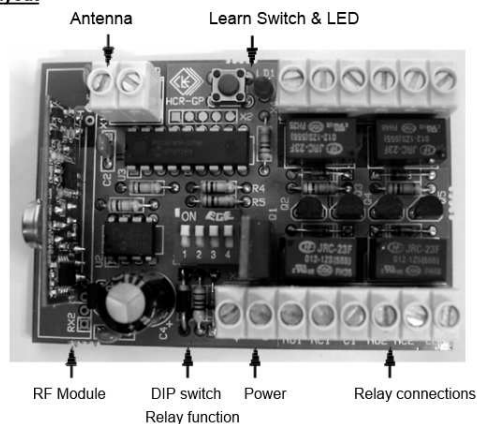
MicroLatch

Installation (Outdoor)

The REC-14 IP65 case should be wall mounted using the four (4) holes in the bottom of the case. These are outside the sealed area of the box so water ingress is minimised. The product is supplied with a seal for the lid of the case. This should be installed into the groove in the lid. Cut any excess off. Push the antenna wire into the tube, slide the antenna tube through the cable gland and tighten ensuring the rubber seal is in place.

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 REC-14 should be mounted as high as possible for best reception.

PCB Layout

Antenna   Learn Switch & LED

RF Module   DIP switch   Power   Relay connections
                Relay function

Learning Fobs

This receiver is code learning therefore making the addition of extra transmitters an easy task.
1. If the receiver is being set up for the first time it is advisable to clear the EEPROM memory. (read Deleting Fobs and Reset Timings)
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 then start flashing again once you have stopped pressing the button indicating a successful learning of the fob. NB the first learned fob will be marked as the Master Fob.
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 18 seconds of no activity.

Set Timing

The timings of each relay can be set by any learned fob. NB the relays are factory set at 1 second. Setting are as follows; Button 1 = 1 second, Button 2 = 5 seconds, Button 3 = 10 seconds, Button 4 = 15 seconds
1. Use only pre-learned Microlatch keyfobs
2. Press the LEARN/DELETE switch twice within 4 seconds. The LED will then remain steady on. (no flashing) meaning the receiver is now in Timing mode.
3. Press the learned fob twice to set timing of each relay: NB Button 1 corresponds to relay 1 Button 2 corresponds to relay 2, Button 3 corresponds to relay 3 & Button 4 corresponds to relay 4
   (1) The button pressed first designates the corresponding relay to be timed;
   (2) The button pressed second defines the timing to the selected relay. For example, if you want relay 2 set at 10seconds then on the first press select button 2 (relay 2) and on second press select button 3 (timing for 10 seconds)
   (3) Please do not press the buttons too quickly, and wait for about one second for next press between the two presses. The LED will flash once after pressing the button to indicate a successful learning.
4. Press the LEARN/DELETE switch once again to exit the timing setting mode. If you forget to exit timing setting mode (LED remains steady on) the receiver will do so automatically after 18 seconds of no activity.

Master Fob

The first learned fob will be defined as the Master Fob, This is a useful feature in that new fobs can be learnt without having to physically press the LEARN/DELETE on the REC14 circuit board.

To learn a new fob press buttons one(1) and two (2) of Master Fob together at the same time, Rec-14 LED will flash quickly for approximately 10 seconds indicating the device is in learning mode. To learn a new fob, simply press any button on the fob. The device will automatically exit learning mode after 10 seconds.

Deleting Fobs and Reset Timings

Press and Hold the Learn/Delete switch. The LED will come on. When the LED extinguishes (approx 5 seconds) all codes stored in the EEPROM memory will be erased, and all the timings will be reset to approximately1 second. The LED will give a flash to indicate the successful erasure.

Relay Setup

Each of the four relays can operate as either **momentary** (operates whilst a transmission is received) or **latching** (changes state with each transmission). 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.

Power

The REC-14 is designed to operate from 9 to 24VDC and 9 to 24VAC. The on board transistor regulator will get quite WARM when operating in latched mode at 24VAC/DC. This is normal. DO NOT REMOVE THE HEATSINK.