

HD4RX - 4 channel RF relay board



Description

This system is a 4 channel RF remote relay board, through jumper pin settings each relay can be set individually to be either latching or momentary. Relay contacts are rated 240VAC at 10Amps.

Specifications: (absolute maximum ratings)	Transmitter	RX Relay Board
Modulation Mode	ASK	
Frequency Range	433.92MHz	
Distance	>150 feet	
Operating Temperature	-20C~ to +60C	
Coding IC	Keeloq HCS301(normal)	
Operating Voltage	DC12V(27A 12V batteries)	DC12~20V(±0.5V)
Supply Current	10mA	5~10mA(all relays off) 120MA(all relays on)
Dimensions	52×40×14mm	90×73×22mm

FAQs and Instructions:

- 1) Power to board – this board requires 12VDC to 20VDC input. Power is connect to the screwdown terminal located next to the “learn” button on the receiver board. “GND” is the negative terminal (ground or black wire from your power source).
- 2) Latching or Momentary mode (Latching = relay stays activated until you press the transmitter button again, Momentary = relay is activated and then resets immediately when the transmitter button is pressed) – factory default is momentary for each relay. Each relay can be individually set to latching or momentary by moving the jumper that runs parallel to each relay (labeled on the PCB board as “MOM” and “LATCH”. The jumper for Relay # 1 is just above the “learn” button. The others should now be easily recognizable.
- 3) Learning process – this receiver board can handle up to 6 transmitters. Only the HD4TX can

be used with this receiver board. The learning process is simple – a) make sure that all relays are in “Momentary” mode (factory default), b) Make sure power to the board is hooked up correctly and is 12VDC to 20VDC. c) Apply power to the board. d) Press the “learn” button on the board (button next to the green LED) for just under a second and release. e) Within 8 seconds press the “1” button on the transmitter two times. f) Wait 30 seconds. Press the 1 button on the transmitter. You should see green LED (which is a data transmission light NOT a power light) and the #1 relay red LED light up. You should also hear the relay “switch”. The transmitter is now learned to the board and each button should activate the corresponding relay. Repeat this process if you want to learn additional transmitters to the board. To “delete” all learned transmitters simply press the “learn” button on the board for 15 seconds. This will cancel all transmitters that have been learned to the board.

- 4) The blue screw down terminals labeled P1, +5V...etc. are reset terminals that would be used when relays are set in “Latching” mode (a good example of when these would be used is a garage door or gate opener operation). These are available for the use of limit switches, etc. P1 is the reset terminal for Relay 1 and so on.
- 5) Each relay has 3 terminals labeled NC1, C1, NO1 and so on. This is where you wire the device you want to activate to the terminal. Below is some information on relays and basic wiring of relays. If you do not understand how relays work please consult an electrician.

Relay Contact Information:

Relay contacts on most of our kits and in the industrial world are labeled with NO (Normally Open), NC (Normally Closed), and C (Common). These labels and the function of the relays seems to cause a great deal of confusion among people, however once you understand the meaning it is quite simple and literal.

The first thing you need to know is that a relay contact is a switch, nothing more, nothing less. It does not provide power; it simply opens and closes an electrical circuit, just like the light switch on a wall. When the relay is de-energized or turned off there is an electrical connection between NC and Common, hence normally closed. In the off state there is not a connection between NO and common, hence normally open. When the relay is energized or turned on the NO and C make an electrical connection, and the electrical connection between NC and C is removed.

Here is a sample of connecting a simple 110 VAC light to a relay so that it will turn on when the relay is energized. Wire the hot 110VAC to the Common (C), Normally Open (NO) to hot side of the light bulb, Neutral from the light bulb to the neutral of the 110VAC wiring. Now when the relay is energized the NO will close connecting to the C and allowing power to flow through the bulb.

The last issue is voltage and current ratings. A typical relay rating will be 24VDC @ 5 Amps, 110VAC @ 10 Amps, 220 VAC @ 5 Amps. This is simply telling you the max amperage that the relay contacts can handle at the voltage you are using. For example a 100 Watt light bulb is going to

be about 100 VAC @ 1 Amp. This is 9 Amps below the rating, so the circuit can handle turning on and off the light bulb with no problem.