



Gate Keeper Remote System

Operating Instructions



For Rev2.0 Units

Receiver Model: RR-07
Remote Model : RT-07

Complies To:
AS/NZS4251.1.1999
FCCPart15(B)



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1. Remote Set-up

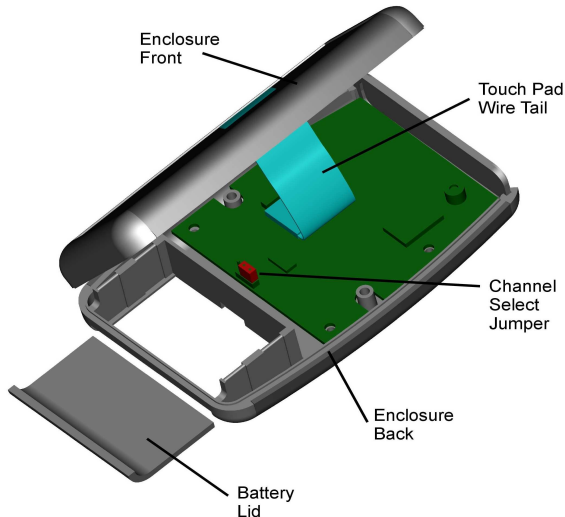
4 Or Less Controlled Devices

You only require one remote.
Leave it set on the factory default
Low Channel range.

5 to 8 Controlled Devices

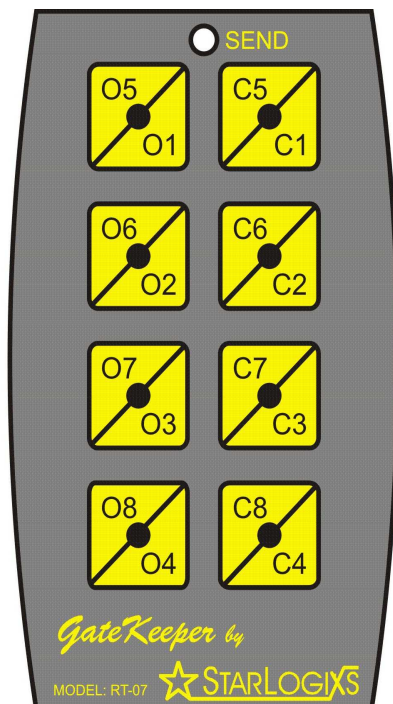
You will require two remotes with
one set on Low Channel and the
other on High Channel.

Changing to High Channel Mode



- A) Remove the battery lid and remove both batteries.
- B) Remove 2 screws from enclosure back. Rotate enclosure front up as shown. Take care not to damage or pull on the touch pad wire tail.
- C) Set jumper shunt to the two pins on the channel select jumper closest to the 'High Ch' label on the circuit board.
- D) Re-assemble the unit in reverse order to disassembly

Selecting a Channel



- 1) Select a channel you wish to associate with a controlled device. Note a channel is a horizontal pair of keys, one for open and the other for close.
- 2) The high channel number is on the upper left corner of the key, and the low channel number is on the lower right corner of the key. (See above for selecting high or low channel). This channel number is required in the receiver set-up.

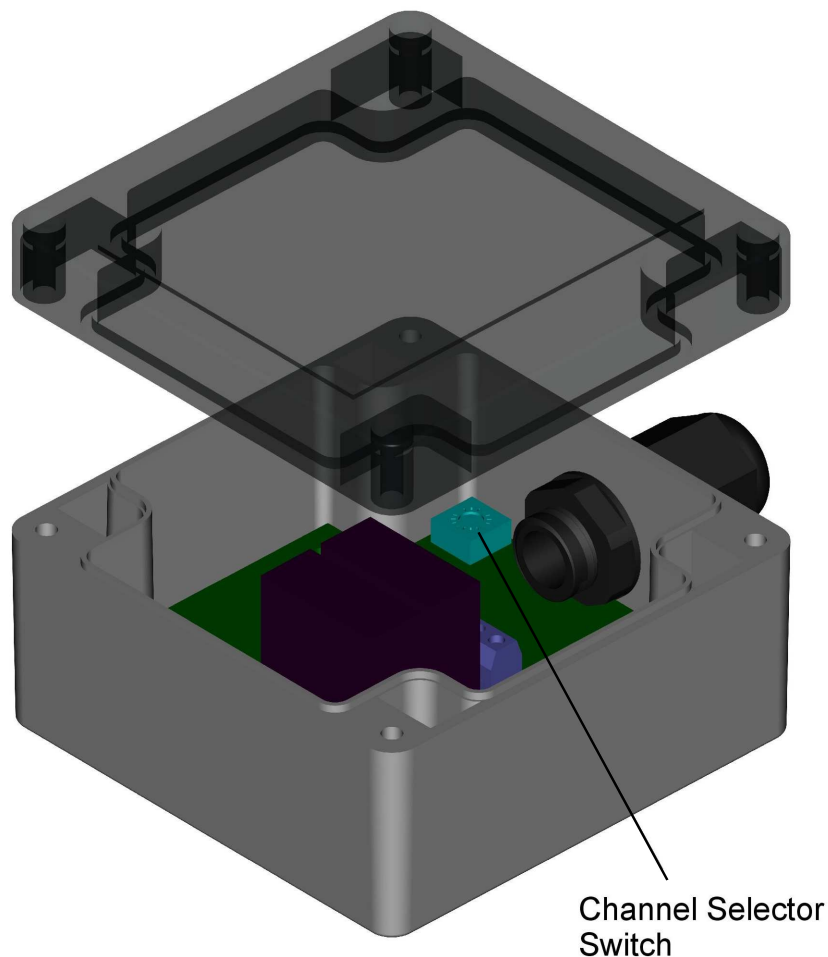
Note: the SEND light should illuminate when the Remote is transmitting.

Remember: after you have selected a pair of keys for a function, place supplied stickers on the keys to indicate their function.

If two remotes are being used and they are more than 50 meters apart it should be possible to operate them both in low channel mode. Only change one to high channel if they interfere with each other—that is intermittent or unpredictable response when both remotes are operated.

2. Receiver Set-up

Setting the Receiver Channel



- A) Remove 4 screws and remove case lid.
- B) Using a small flat blade screwdriver rotate the channel switch until the arrow points at the channel number selected in Step 2 of remote set-up.
- C) Refit the case lid. Take care to ensure lid seal is in place.

Note 1: Power must be off when adjusting the channel switch.

Note 2: When the case lid is removed four holes next to the case lid screw holes can be accessed for mounting the unit. Only use these holes—DO NOT drill any extra holes in the case.

3. Control Function

All functions on the remote unit are a 'dead-man' type operation. That is - the function only works while the key is held depressed. As soon as the key is released the device being controlled will stop.

The Close key on the remote will drive N/O 1 on the receiver.
The Open key on the remote will drive N/O 2 on the receiver.

4. Range and Interference

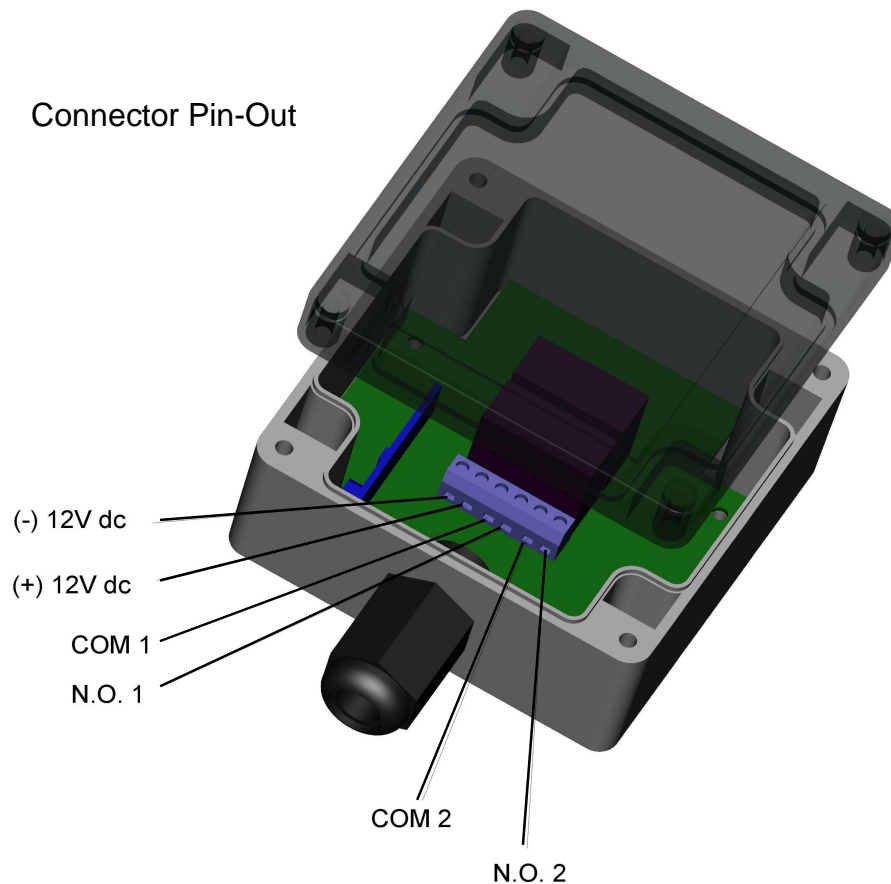
The system should work with the remote unit up to 15 meters from the receiver. In many cases it may be possible to obtain adequate function at greater distances. Obstacles like steel buildings and metal structures between the remote and receiver may adversely impact on reliable operation.

The system depends on a low power 433.92MHz radio link, and strong radio transmitters in this frequency region may block communication. UHF two way radios could be one such source of interference.

This system is NOT designed to be used in any safety critical application. The safety rating of the system would be Category I as specified by AS4024.1.

5. Receiver Connector Pin-outs

The receiver connectors are located on the receiver printed circuit board. The pin-out is shown below. The receiver must be powered by a stable 12V dc power source. The receiver has an internal self-resetting fuse, but it is also advisable to fit an in-line 1 amp fast blow fuse in the +ve power wire.



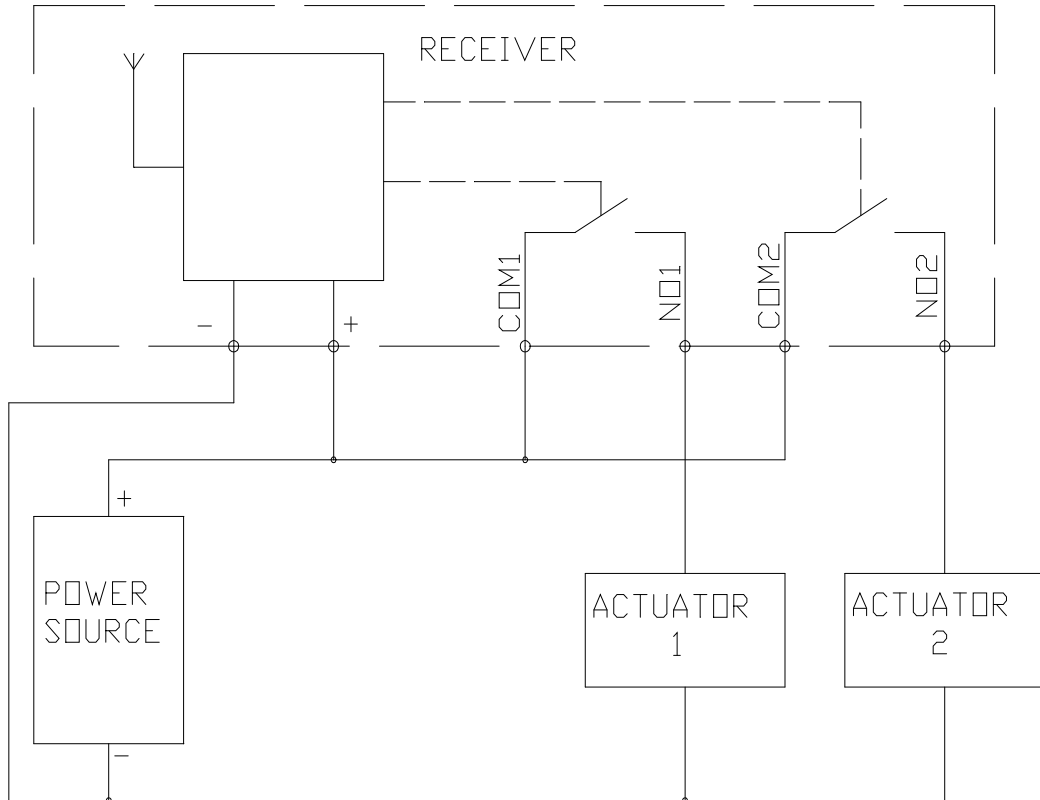
The GateKeeper System has been designed to be flexible and configurable thus enabling its use in many applications without modification. The receiver has simple connection options that should allow for all common actuator wiring configurations.

Note: the 'actuator' is whatever device the receiver has to drive to cause the controlled device to move. For example pneumatic or hydraulic solenoid coils, electric motors etc.

Wire entry is via a waterproof cable gland and it is recommended to use a circular cable, so as to allow a good environmental seal. Farnell 388-4650 seven core 0.75mm² or similar flex would be suitable. Also it is advised to crimp a bootlace ferrule (Farnell 997-2080 or similar) to each conductor before fitting to PCB connectors.

6. Standard Receiver Wiring Connections

Connection is as below:



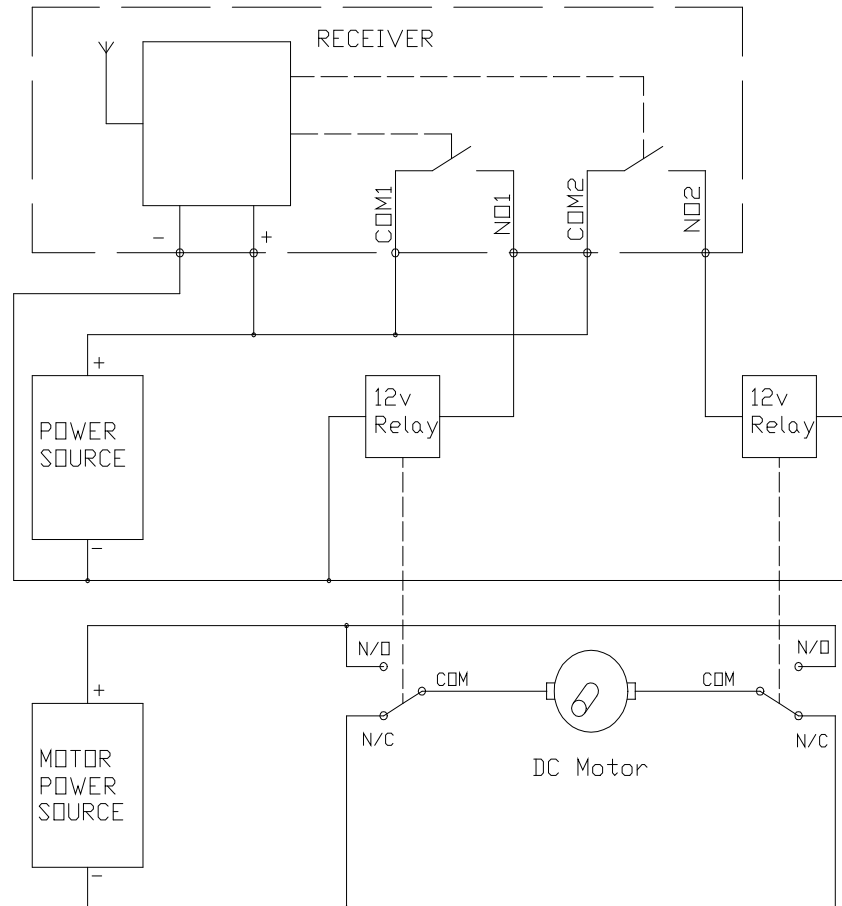
The above wiring scheme should work for most applications, however the normally open relay contacts in the Receiver can be wired in various other circuit layouts depending on specific electrical requirements. The exact design of specialised applications is beyond the scope of this document.

Note: it is not possible to switch voltages greater than 12v dc or ac. The relay contacts in the receiver have a protection circuit that will not work above 12v. If it is necessary to switch higher voltages then the receiver contacts must be wired to control external switching relays.

7. Switching Inductive Loads

No special precautions are necessary when switching inductive loads (that is things like solenoid coils). Protection circuitry is built into the receiver, and will work with AC or DC loads.

8. Driving an Electric Motor - Reversible Direction



If the motor is 12v then the motor power source and the receiver power source could be the same unit. Separate power sources allow for different motor voltages. To allow the motor to be reversed using this scheme the motor must be a DC type. Also note that this system requires two single pole double throw relays mounted externally to the receiver unit. The relay contacts and motor power source should have sufficient rated current capacity at full motor load. Also no protection fuses are shown, but must be fitted as deemed appropriate to protect the motor, motor power source, relay contacts and wiring.

Motors with large inertial loads will take some time to 'run-down' and in the process can generate considerable energy. When the motor is de-energised the relay contacts are as shown above and currents can circulate through the N/C contacts of the external relays during the 'run-down' time. The relay contacts and wiring must be rated for this condition, or some form of energy control and dissipation circuit fitted.

9. Trouble Shooting

No Function

- 1) Ensure the remote unit has fresh batteries. Only use quality AA alkaline type dry cell batteries.
- 2) Ensure the receiver unit is powered with a 12V dc supply, and that the supply is capable of supplying the current requirements of any actuators fitted. Check that the power LED is illuminated. Check polarity of supply voltage to receiver.
- 3) Double check the channel has been set correctly on the receiver.
- 4) Check that the correct channel range (high or low) is selected with the jumper in the remote unit.
- 5) Observe the receiver LED's while pressing the open or closed key of the associated channel on the remote. If the LED's light then the problem is most likely to be in the wiring between the receiver and the actuators (or in the actuator system it's-self).

Poor Control Range

- 1) Ensure the remote unit has fresh batteries. Only use quality AA alkaline type dry cell batteries.
- 2) Check that the path between the remote and the receiver is not obstructed by large metallic obstacles.
- 3) Check that no other high powered radio transmitters are operating nearby.

10. Specifications

Remote Unit

Transmission Frequency	433.92MHz
Transmission Bandwidth	100kHz
Transmission Power	3dBm
Power Supply	3 x AAA Batteries
Standby Current Draw	4uA
Transmit Current Draw	4mA
Low Band Channels	6
High Band Channels	6
Channel Encoding	Digital PWM
Dimensions	117x78x24mm
Weight (including batteries)	140g
Environmental Sealing	IP55

Receiver Unit

Receive Frequency	433.92MHz
Receive Sensitivity	-104dBm
Channels	12
Channel Decoding	Digital
Dimensions	100x100x55mm
Environmental Sealing	IP65

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