



RE3 and RE6 RF System Instruction Manual

The RE3 and RE6 radio units are designed to provide highly dependable, consistent wireless performance. The unit is virtually maintenance free, and is built with quality components geared towards durability, reliability, and a prolonged operational lifespan.

Operation:

The systems provide a simple, cost effective solution to the inherent weaknesses associated with wired control systems. The table on the following pages details your system's exact operational behavior. The system can be used to drive actuators, open/close gates, drive hydraulic cylinders, open/close valves, etc. Virtually any application that requires an electrical input can be controlled by the RE3/RE6 unit, and our application specific firmware programming capabilities can yield countless variants of system behavior such as delayed on/of, system time-out auto off, momentary or latched output configurations, combined outputs, RF system on/off, etc. First, mount the unit in an area that offers as much protection as possible. (away from sources of high heat, moisture, vibration, electromagnetic, etc.) The unit is designed to perform effectively in harsh environments, but protecting the unit further guarantees proper performance and a lengthy operational lifespan. DO NOT mount the receiver unit with the plug facing upward. Mount the receiver with the plug facing downward where possible. The receiver's connector is IP rated, and offers a high level of ingress protection, but mounting the receiver with the plug facing downward further protects against corrosion, water damage, and electrical shorts. To operate the unit, connect the ground wire (black) to a ground source; be sure to connect to an effective ground source or your system will not operate properly. Next, connect the receiver to a main power source (either switched or direct) via its red power wire (pin 1). Where possible, you should incorporate a switch into the receiver's main power wire as it draws small amounts of current when it is stand-by mode, and may discharge your battery if left unattended for long periods of time. You may also use a trickle charger or battery tender on the battery to avoid potential battery drain. There is a 7.5 Amp fuse incorporated into the power lead. **DO NOT REPLACE WITH A HIGHER AMPERAGE FUSE – USE 7.5 AMP FUSE ONLY.** Next, connect the appropriate harness output wires to your device\devices. (IMPORTANT: see power management notes below) Finally, connect the wire harness plug into the receiver unit plug. - Apply power to the unit, (the red LED will flash four times on power-up) and you're ready to operate. Using the provided transmitter, the LED on the transmitter, and the LED on the receiver should illuminate each time an active button on the transmitter is depressed. Subsequently, via the transmitter, you should generate the desired output. For difficulties, first check the fuse in the main power wire. Check the device wiring, especially the power & ground connections, and also check the batteries in the transmitter. If all items are getting power, try the system "learn" & "memory clear" procedures. If all those efforts fail, feel free to contact our customer support center at 515-264-1808.

Battery Replacement:

During standard operation of the wireless unit, when you depress a button on the keyfob transmitter (any button assigned a function) the LED indicator on the keyfob will illuminate. Should the LED not illuminate, this is an indicator that battery voltage has dropped below 2.0 volts, and it is time to replace the battery. It is suggested that you change the battery (coin cell battery #CR2032) in the key fob

transmitter at least once annually, prior to each operational season. The key fob battery can be changed by simply removing the small screw on the back of the unit, and splitting the transmitter case. Once the case is open, slide the battery out of the battery holder, and replace. It is important to be delicate during battery replacement so no damage to the unit occurs; especially with regard to the solder points where the metal battery holder connects to the transmitter board. Electrostatic discharge and/or contacting internal electronic circuitry with metal tools can cause damage to components as well. For this reason, no screwdrivers or other hand tools should be used inside of the transmitter case. Upon reassembly, make certain that the gray keypad is seated securely in the sealing channel. If this is not done properly with care, the unit may be susceptible to water damage. To seat the pad properly, once the battery is changed, position the keypad over the transmitter board, and ensure proper alignment. Place the top half of the transmitter casing (the side with four button holes) down over the entire assembly. VERY IMPORTANT: DO NOT PLACE THE RUBBER KEYPAD IN THE TOP HALF OF THE CASING BEFORE REJOINING THE TWO HALVES; PLACE THE RUBBER KEYPAD OVER THE BOARD, THEN PLACE THE TOP HALF DOWN OVER THE ENTIRE ASSEMBLY. Following the above procedure will result in a proper seal and ensure quality protection against environmental forces

Rx/Tx Communication/Learning:

When purchased, the communication between the transmitter and the receiver unit will already be established. Once powered up, the unit should function properly with no further action required. (see the table below for the exact operational characteristics of your configuration) Occasionally during your period of ownership, there may be times when it is necessary to reestablish the wireless communication between the transmitter and the receiver unit. This process is accomplished by “learning” the transmitter into the receiver unit. It may be necessary to perform this action after extended periods of storage, long periods of inactivity, or after transmitter replacement. This action can also be used as a troubleshooting measure whenever communication between the transmitter and receiver unit has been lost. (Do this procedure only after the initial troubleshooting measure of transmitter battery replacement has been completed) Each transmitter generates a unique signal, and your receiver unit needs to be able to identify and respond to that signal in order to operate. The use of a unique signal for each transmitter prevents your receiver from being susceptible to outside interference, and protects against stray signals causing potentially undesirable operation. Some customers prefer to have multiple transmitter controls for their units. Each RE3 is capable of handling and responding to multiple (up to five) transmitters; you simply have to “learn” in each transmitter to your receiver unit. (Additional transmitters are available through your provider, or through Rowe Electronics - 515-264-1808) To complete the learn procedure, simply do the following. Power up the unit. When you do so, the LED on the receiver unit will flash RED four times. This indicates that the unit has received power. There is magnetically controlled switching circuitry embedded into the receiver unit, and this magnetic circuitry switches the receiver into its “learn” mode. To operate, place a fairly powerful magnet over the receiver “learn” area (see the diagram below for the learn location) for a brief moment (3 seconds), and then remove it. **YOU MUST USE A FAIRLY POWERFUL MAGNET.** Upon detecting the magnetic field, the LED will go to a constant RED state. If the LED does not go to a solid red state, try again. If that fails, chances are your magnet is not powerful enough. Due to the position of the magnetic switch inside of the receiver case (it’s closest to the side and bottom of the case), you may also try waving the magnet on the side or on the back of the receiver case (at the learn area shown below). Doing so will get your magnet as close as possible to the magnetic switch. Once the red light goes to a solid state, immediately press any button on the transmitter you are attempting to learn in. The LED will respond to your button press. (should go to a GREEN\YELLOW color). This confirms that the receiver has picked up a signal from the transmitter, and has subsequently decoded and memorized that signal. Communication has been established between the transmitter and receiver, and it is now ready to function properly. Should the above procedure not complete successfully, wait until the LED light goes out, and repeat the procedure. If for any reason you experience a second failure of

the learn procedure, do the following. Place the magnet on the learn area and the LED will go to a constant RED state. Leave\hold the magnet in place on the receiver learn area until the red LED light goes out. (Approximately 12 seconds) This action completely clears the receiver's memory. It's akin to reformatting, or freeing up all of the space on a computer hard drive. Once you have cleared the memory, proceed with the standard learn procedure detailed above for each of the transmitters you wish to use with the device. If, after all of the procedures detailed above are completed, the unit is still not functioning, check the batteries in the transmitter once again. (Occasionally, even new batteries fail, or are defective from the factory – If you have a voltage meter, confirm that battery voltage, from both AAA batteries combined, is at least 2.7 volts) If that still does not solve the problem, contact our wireless control customer service at (515) 264-1808 for assistance.

During standard operation, to confirm the receiver is picking up a signal from the transmitter, the RE3 receiver unit will respond to keypad inputs through illumination of the receiver LED (see diagram for location below)

Power Management/Restrictions:

The RE3 and RE6 may be used to directly control/provide power to applications. The systems have maximum current ratings which need to be observed. The total maximum allowable current handling capability for each system, at any given instance, is as follows: RE3 System- 5.5Amps / RE6 System 7.5Amps Exceeding these limits will result in damage to the unit. For applications needing higher amperage, the RF systems can easily be used in conjunction with a relay/contacter that is suitably rated to the higher amperage load. You simply drive the relay/contacter inputs, with the low amperage outputs of the wireless receiver. In this type of configuration, the high amperage load flows through the relay/solenoid, instead of flowing through the wireless unit, so it protects the RF unit against overloading and potential damage. Should you have any questions regarding this type of application, feel free to contact the Rowe Electronics customer service department at 515-264-1808. **Additionally, you should always be sure to keep the main battery on your implement fully charged and in good operating condition. Operating the wireless control system with the main battery disconnected, or severely discharged, can result in damage to the RF system. You should disconnect the RF unit when charging your battery to avoid any potential over-current issues. Incorporated into the system is a thermal fuse that will, in most cases, shut the unit down if it encounters overvoltage situations or potentially harmful electrical conditions. It is a self protective feature of the RF system, but there are some conditions that it cannot protect against. If the thermal fuse activates, once the unit cools down, the RF system will reset itself, and continue to operate normally. Should this occur frequently, inspect the electrical system that is powering the RF unit.**

It is also imperative that no electrical “feedback” is allowed to enter the inactive outputs of the RF unit. The use of protective diodes is recommended in such applications where voltage may be sent through the same circuit that the RF unit outputs are connected to. This situation can occur when a manual control switch is also connected to the circuit that contains the RF system. **Do not allow back-feed current to flow into any inactive output leads\circuits. Damage will result.**

The RE3 wireless control system is crafted using high quality components, with long term service life and superior performance being the ultimate goal. It is our commitment to provide products that not merely meet your needs and expectations, but exceed them. Thank you for choosing our product.



RE3/RE6 Wireless Control Systems

