

## Operational / Product Description / Technical Description

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RE: Product Information for *RFTek-210* 2-Function Wireless Control System

The *RFTek-210* 2-Function Wireless Control System was designed primarily for Tow Truck or Wrecker Truck vehicles. The basic purpose for this control system is to control the winch that pulls vehicles up and down on the Tow Truck flat bed. There are two parts to the *RFTek-210* control system: The Hand Held Remote Transmitter, and the Vehicle Mounted Receiver.

The Hand Held Remote Transmitter has two functions, both functions are momentary and only one button is used at a time. Each time a button is pressed the Remote will transmit a data packet that contains an address, current mode, switch status, and error detection. The data packet is continuously transmitted as long as a button is held down<sup>1</sup>. Once the button is released the Remote will transmit several times the off status of the switches. When a button is pressed a green backlight will turn on behind the switch. This backlight will turn off the first time after a few seconds and then every time a switch is released.

The Remote has a power saver feature to help conserve battery life. If the Remote is not actively used for 5 seconds it will power itself down and turn off completely. If any button is pressed at any time after, the Remote will power up and latch on the power supply. The 5-second power down delay will start again after no activity. The Remote also includes a low battery LED that will illuminate when the 9V battery reaches 5V.

A third function of the Remote is called E-Stop Mode. E-Stop mode is entered by pressing and holding any one of the buttons for  $\frac{3}{4}$  of a second and then pressing the other button. E-Stop mode is an emergency mode that will instruct the receiver to turn off all outputs and turn on the E-Stop relay output. E-Stop mode is indicated by the Red LEDs blinking back and forth on the Remote. Once E-Stop mode is entered the Remote will remember and stay in E-Stop Mode until the mode is canceled. E-Stop Mode is canceled by holding down both buttons for 7 seconds.

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<sup>1</sup> Instructions on how to make the test unit permanently transmit.

The Vehicle Mount Receiver contains three +12VDC output relays that are capable of 15Amps max of output current. Relay number 1 and number 2 are outputs for each button on the Remote Transmitter. The third relay output is for E-Stop Mode. All outputs are protected by an in-line ATO style fuse. The entire unit is enclosed in a sealed electronic enclosure for protection from various environments.

The receiver is capable of learning and responding to four or less different transmitters. Transmitter learning is done by pressing and holding the Tx Learn button inside the receiver enclosure and then pressing and holding a button on the transmitter. While the Receiver is learning the new transmitter the Red LED will be on solid. Once the Receiver has learned the new transmitter the Red LED will blink fast. The learning process is now finished.

There are various diagnostic LEDs around the Receiver PCB to aid in troubleshooting. There is also an audible aid for RF communication problems. The main microprocessor has a system OK green LED. This tells that the system has power and the microprocessor is running OK. Each relay output has a green LED, when the relay output is on, the green LED should be on. The audible tones are generated for two cases. First, a single tone is generated when a function is activated and/or deactivated. The second case is for a loss of signal. If an output was on and the receiver has not heard from the transmitter for 1 second the output that was on is turned off and two beeps are generated.