**Included in this Kit:**

**(1) RF120VPRDC Receiver**

**(1) 2-Button Transmitter** \*Image shown with standard transmitter\*

**Available accessories:**

- **Additional Transmitter KF340-2**
- **Waterproof Transmitter KF340-2WP**
- **Rechargeable Transmitter GKF-WPTX-2**
- **6-Pack of Replacement A-23 12V Batteries A23-6**
- **Long Range Antenna LRA340** \*\*SEE PAGE 3 FOR SETUP\*\*

The RF120VPRDC is an RF receiver operating at a fixed frequency of 340MHz. The receiver operates from 120VAC input power and provides a polarity reversing output for use with certain AC power winches. Winch suppliers such as Harbor Freight and Northern Tool offer winches that operate from a 120VAC power source which is rectified to operate a DC motor. Below is a list of the manufacturers and the corresponding winch model numbers that the RF120VPRDC remote control will operate with:

- Harbor Freight, Chicago Electric Winch Model 96127, 1,500 pounds.
- Northern Tool, WARN Winch Model 80010, 1,000 pounds.
- Northern Tool, WARN Winch Model 85330, 1,500 pounds.
- Northern Tool, Dutton Lainson Model 25046, 4,000 pounds.
- Northern Tool, Dutton Lainson Model SA5015AC, 1,200 pounds.
- Northern Tool, Dutton Lainson Model SA9015AC, 2,700 pounds.
- Northern Tool, Superwinch Model AC1500, 1,500 pounds.
- Northern Tool, Superwinch Model AC1000, 1,000 pounds.
- Keeper Winch, Model KAC1500, 1,500 pounds.
- Northern Tool, Model 54129, 1,500 pounds.

Each transmitter has a unique address that is transmitted when a button is pressed. A “program” button is provided on the receiver to program the transmitter(s) address into the receiver’s memory. An LED on the receiver indicates the receiver’s programming status and illuminates when the receiver is energized. The receiver is encased in a waterproof enclosure. The operating range is at least 100 feet,

**Polarity Reversing Output:** The transmitter has two buttons assigned to the motor output. The up (^) button runs the motor in one direction and the down (v) button runs the motor in the opposite direction. A toggle switch is mounted on the receiver and provides manual control of the output in case the transmitter is not available.

**Maximum ratings:** Power for the receiver can be in the range of 100 to 132VAC. The relay contacts are rated at 20 Amps, 1HP. Operating temperature range is 0°F to 160°F.

**Input/Output Wiring:** Refer to the RF receiver terminal block nameplate when installing the AC input voltage and DC output to the winch. The 120VAC Line is terminated to the “AC LINE IN”, the 120VAC input neutral is terminated to the “AC IN NEUT” terminal. Both green ground wires from the AC input to the receiver and winch should be connected with a wire nut. The switch pendent on the winch must be disconnected from the cable. There are 4-wires of the cable that are terminated to the switch pendent which are wired to the bridge rectifier, these wires must be removed from the switch and installed on the receiver. The red wire from the switch is terminated to the “DC IN POS” terminal. The black wire is terminated to the “DC IN NEG” terminal on the receiver. The other two wires from the switch pendent are terminated to the “MOTOR 1” and “MOTOR 2” terminals on the receiver. **Note** The wire colors from the bridge rectifier may be different referenced above. Locate the bridge rectifier and document the colors terminated to the rectifier so they are correctly connected to the receiver terminal block.

## Programming Instructions

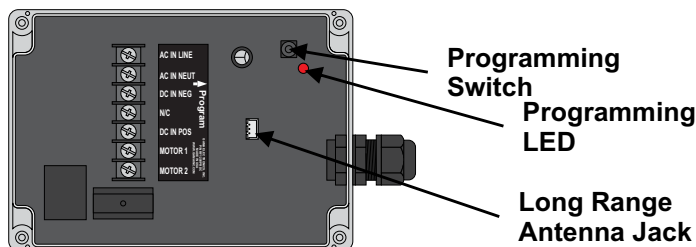
Each transmitter has its own unique internal address along with the data as to which button is pressed and transmitted. The receiver needs to be programmed to respond only to the specific transmitter it is intended to operate with. The following steps configure the receiver to operate with a particular transmitter. Up to 30 transmitters can be programmed to one receiver. Please read the entire programming procedure before starting. When the receiver enters program mode, all previous transmitter addresses that were programmed will be erased from the receiver's memory.

1. Locate the pushbutton labeled "PROGRAM" on the receiver. Press and hold this button until the red LED next to the program button illuminates (approximately 3 seconds). The receiver is now in the transmitter program mode. Release the button. At this point all previously programmed transmitter addresses are erased from the receiver's memory.
2. To configure the receiver for a latching output, go to Step 4.
3. To configure the receiver for momentary output, press and release the UP button on the transmitter and verify that the red program LED extinguishes and then illuminates (blinks once). Proceed to Step 5.
4. To configure the receiver for latching output, press and release the DOWN button on the transmitter and verify that the red program LED extinguishes and illuminates (blinks once).
5. Repeat previous step for additional transmitters that will operate with this particular receiver. The red LED on the receiver will extinguish and illuminate (blink) once each transmitter being programmed. The receiver will flash the LED rapidly to transmitters that have already been programmed. The last transmitter that is programmed determines the receiver's relay operating mode (momentary or latching).
6. The receiver will return to normal mode if no transmitter buttons are pressed for 5-seconds. The red LED on the receiver will blink rapidly, then extinguish. The receiver is now in the normal mode of operation. This completes the programming instructions. The receiver will retain all of its programming even when power is removed.

### To erase the receivers memory:

**\*\*WARNING: THIS WILL RESTORE THE CONTROL TO THE ORIGINAL FACTORY SETTINGS AND ALL REMOTES WILL NEED TO BE REPROGRAMMED\*\***

1. Press and hold the CLOSE switch until the LED at the top left of the OPEN switch illuminates.
2. Release the CLOSE switch and immediately press and hold the CLOSE switch a second time. The LED will start blinking and then blink very rapidly. Once the LED begins blinking rapidly, release the CLOSE switch. The door switch/receiver memory is now clear.



## To Add Long Range Functionality

The remote control system is equipped with an internal antenna. The expected range in normal conditions is approximately 100 feet. When additional range is needed, or if the control is placed locations adverse to RF signal reception, a long range antenna can be added to the system. GAMA Electronics long range antenna, part number LRA-340, replaces the internal antenna on the system. In normal operating conditions expected range is greater than 500 feet. If the long range option is purchased with the system, this modification will be made prior to shipment.

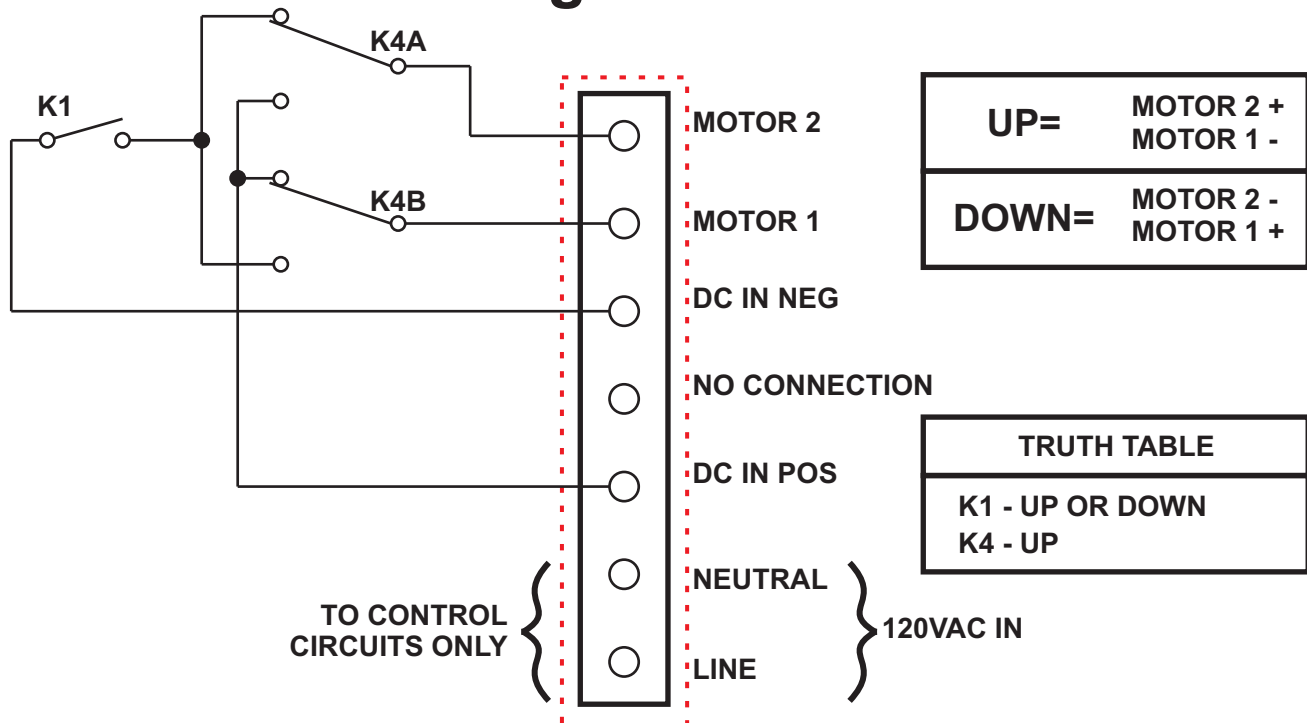
**NOTE: ONCE THE LONG RANGE MODIFICATIONS HAVE BEEN MADE TO THE SYSTEM THEY CANNOT BE REVERSED.**

### To add long range functionality:

1. Plug long range antenna (Part number LRA-340) into the long range antenna jack.
2. Clip the Long Range Antenna Bypass Wire (This will deactivate the internal antenna)

NOTE: It is recommended that you cover the exposed wires with RTV silicone sealant.

## Wiring Schematic



## **Troubleshooting**

All remote-control systems shipped by GAMA Electronics are 100% functionally tested just prior to shipment.

If your RF remote control system does not work out of the box, stops working or functions intermittently please take the following steps to resolve common issues. Please note that you must be 2-3 feet away from the receiver when operating the remote control. Operating within 2-3 feet may result in no operation or intermittent operation.

### **1. Replace the A23 12V Battery in the transmitter**

- The remote control can activate during shipping and drain the battery that is installed in the control. We send a replacement battery with the system if this occurs.

### **2. Check the voltage supply at the receiver**

- The receiver is designed to function at 100-132VAC. Voltage on the (+) and (-) terminals on the control should be within this range.

### **3. Reprogram the remote control**

- If the system is non-functional try to reprogram the remote control. The program may not have taken during the programming process or the program button may have been pressed. If the program button is pressed the memory of the remote controls programed to the receiver are erased.

### **4. Listen and look for functionality on the receiver.**

- The LED that is used for programming the system will illuminate when the receiver is activated. You will also hear a “click” when the internal relays engage. If you can see the LED illuminate and you hear the relay “click” the issue is most likely in the wiring or device being controlled.

### **5. Add a long-range antenna**

- If the receiver is in an area that is averse to the reception of an RF signal, such as near a motor or in a metal casing, a long-range antenna may solve the issue. Connect the antenna per the instructions on page 3 and mount the antenna in an exposed area away from any motor.