



# GAMA Electronics, Inc.

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## RF Receiver Model # RF340-4PR-ASL Instruction Manual

The RF340-4PR-ASL is a RF Transmitter and Receiver operating at a fixed frequency of 340 MHz. The Receiver operates from 12VDC and provides four polarity reversing outputs. Up to 30 Transmitters can be programmed to activate the Receiver. The Receiver has terminal blocks for connecting the input power and output to the 4 polarity reversing relay outputs. 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 small, mounting tray. The operating range is at least 100 feet.

The Transmitter has two buttons assigned to each of the four outputs. The up (^) button runs the motor in one direction and down (v) button runs the motor in the opposite direction. The outputs are energized for as long as the buttons are depressed.

**Adjustable Automatic Time-Out.** There is an adjustable timeout feature incorporated into the Receiver. To turn the Receiver on, first press and release the "A" button on the Transmitter. Within two seconds, press and release the "B" button on the Transmitter. The LED on the Receiver will illuminate and the Receiver will now respond to transmitter commands and will automatically turn off after the time set by the switch. The time out adjustment range is from 0-minutes (no time out always active) to 1-hour. When the Receiver is configured for no time-out, the transmitter is always active and does not require the 2-button turn-on sequence.

**Manual Switch Input Control.** The receiver contains a 10-position terminal block for connection to manual switch inputs to control the 4 polarity reversing outputs. The manual switch inputs are logic level inputs and only require small gauge wires between the switches and terminal block.

**Current Detection/Over-Current System Shutdown.** The RFR340-4PR-ASL incorporates output current detection that will disconnect an output when the output exceeds the current setting of the DIP switch for that output. When multiple outputs are activated, the total current of all active outputs are monitored. The sum of the current for all outputs will trip the current shutdown when 80- amperes is exceeded. When the current shutdown activates, all outputs are shutdown for 5 seconds. After the 5 second reset time the output can be activated by the pressing the corresponding switch on the transmitter.

The system will monitor the current trip circuit and will allow the outputs to be activated 3 separate times when a current trip threshold occurs. After the third consecutive current trip occurs within a one-minute time period the receiver will turn off all outputs and the program LED will start to flash. The input power to the receiver must be turned off and then back on to re-activate the system. This is a safety feature to protect the receiver and connected loads, and alerts the user there is an over-current condition that should be resolved.

**Momentary/Latching Outputs.** Each of the 4-polarity reversing outputs can be configured for momentary or latching. For momentary operation the output will be present for as long as the transmitter switch is pushed, releasing the switch will stop the output. For latching operation the output will turn on once the transmitter switch is pushed and released; pushing and releasing the same switch will turn off the output. Switch SW7 on the Receiver is a 4-position DIP switch and is used to select the mode of the 4-outputs. Placing each switch in the "UP" position sets the output for latching; the "DOWN" position configures the output for momentary operation. Each output can be configured independently.

**Long-Range Antenna.** The Transmitter and Receiver have an operating range between 50 and 100-feet depending on the receiver mounting location as well as the operating environment. To increase the operating range the Long-Range Antenna (Part Number LRA-340) can be added to the Receiver. To configure the Receiver for the long range antenna, remove the 2-position connector next to the long range antenna connector on the Receiver, next plug in the connector on the long range antenna to the mating connector on the Receiver. For the best possible range the antenna should be mounted vertically above the receiver.

**Latching Light Output.** There is a 2-position terminal block on the Receiver that provides an output to a 12-volts DC light. The Transmitter "LIGHT" switch is used to control the light output. The output is rated at 10-amperes.

**Maximum Ratings.** Power for the receiver can be in the range of 10 to 15Vdc. The receiver is reverse polarity protected. The relay contacts are rated at 30 Amps @ 13.8Vdc.

**Power Consumption.** 10mA when the relays are de-energized, 45mA when one relay is energized.

**Dimensions.** Receiver dimensions are approximately 5" L x 5" W x 2" H.

**Operating temperature range.** - 0° F to 160° F.



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**Programming Instructions.** Each Transmitter has its own unique internal address that is transmitted whenever a switch is pressed. The Receiver needs to be programmed to respond only to Transmitters it is intended to operate with. The following steps configure the Receiver to operate with a particular Transmitter(s). Up to twelve Transmitters can be programmed to one Receiver. Please read the entire programming procedure before starting. Prior to programming the Receiver, verify that the Receiver is connected to the input power. 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 2 seconds). The Receiver is now in the transmitter program mode. Release the pushbutton. At this point all previously programmed transmitter addresses are erased from the Receiver's memory.
2. Press and release any button on the Transmitter and verify that the red LED on the Receiver extinguishes and then illuminates (blinks once). Release the button.
3. Repeat previous step for additional Transmitters that will operate with this particular Receiver. The red LED on the Receiver will extinguish and illuminate one time for the first Transmitter being programmed, twice for the second, three times for the third, four times for the fourth etc. The Receiver will not respond to Transmitters that have already been programmed.
4. After 5-seconds of no switch being pressed on the transmitter(s) the Receiver will return to normal operation. 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.

**Automatic Time-Out Adjustment.** The automatic time out of the Receiver after last switch activation is adjustable from no time-out, up to 1-hour time-out. The switch used to adjust the time-out set point is located on the Receiver and can be set for the time shown in the table below.

## Switch for Time-Out Set Point



The switch located on the Receiver is used to adjust the time-out set point and can be set for the following set points:

- DIP Switch Position 0: No Time Out, Always Active
- DIP Switch Position 1: 1 Minutes
- DIP Switch Position 2: 2 Minutes
- DIP Switch Position 3: 3 Minutes
- DIP Switch Position 4: 4 Minutes
- DIP Switch Position 5: 5 Minutes
- DIP Switch Position 6: 10 Minutes
- DIP Switch Position 7: 15 Minutes
- DIP Switch Position 8: 20 Minutes
- DIP Switch Position 9: 25 Minutes
- DIP Switch Position A: 30 Minutes
- DIP Switch Position B: 35 Minutes
- DIP Switch Position C: 40-Minutes
- DIP Switch Position D: 45-Minutes
- DIP Switch Position E: 50-Minutes
- DIP Switch Position F: 55-Minutes



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**Current Sensing Adjustment.** Each of the 4 polarity reversing outputs has adjustable current sensing control. The output current trip setting can be adjusted from 1.0 ampere (DIP switch position "0") to 30-amperes (DIP switch position F). There is a 0.5-second delay in the current sensing to allow for motor inrush.

## Switch for Current Trip Set Point



The 4-switches used to adjust the current trip set point are located on the Receiver and can be set for the following current trip set points:

- DIP Switch Position 0: 1.0-Amperes
- DIP Switch Position 1: 2.0-Amperes
- DIP Switch Position 2: 4.0-Amperes
- DIP Switch Position 3: 6.0-Amperes
- DIP Switch Position 4: 8.0-Amperes
- DIP Switch Position 5: 10.0-Amperes
- DIP Switch Position 6: 12.0-Amperes
- DIP Switch Position 7: 14.0-Amperes
- DIP Switch Position 8: 16.0-Amperes
- DIP Switch Position 9: 18.0-Amperes
- DIP Switch Position A: 20.0-Amperes
- DIP Switch Position B: 22.0-Amperes
- DIP Switch Position C: 24.0-Amperes
- DIP Switch Position D: 26.0-Amperes
- DIP Switch Position E: 28.0-Amperes
- DIP Switch Position F: 30.0-Amperes