

USER'S MANUAL

RCR/KTXWxxx Remote Control System

INTRODUCTION

This product is used in miscellaneous applications requiring short-range remote control of on/off functions.

INSTRUCTION TO THE USER

FCC ID: QY4KTXW303

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This unit has been tested and found to be in comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate the equipment.

OPERATION

Transmission Range

The transmission range of this unit depends upon the environment of the signal path, the type of receiver used and the type of receive antenna used. Using Applied Wireless RCR receiver and a quarter wave vertical antenna, line-of-sight range of 350 feet is normal. By using a dipole antenna (DP300 or DPA300A) will extend the range even further. **Non line-of-site applications may have significantly shorter transmission range, depending upon the nature of the obstruction.**

Addressing

For security purposes, this transmitter is programmed to one of over 16 million different addresses. The receiver must be programmed to the same address code as the transmitter. The receiver may come programmed to your transmitter from the factory. If not, you will need to have the receiver "learn" the transmitter ID.

To program the receiver, remove the receiver antenna (to prevent the receiver from inadvertently learning an undesired transmitter), press and hold (for at least 5 seconds) the learn button on the receiver (until the learn LED lights), and then press and hold any button on the transmitter until the LEARN light goes out. The transmitter must be within two to 3 feet of the receiver. When the learn button goes out, the receiver has finished the programming.

The receiver may learn up to 4 different transmitter codes. If a fifth transmitter is programmed, the first transmitter ID code that was programmed will be deleted and replaced with the new ID. If more than 4 transmitters need to be used with the receiver, please request the factory to set up the KTXW transmitters with the same ID codes.

Modes of Operation

Momentary, Latched or Toggle

The RCR receiver comes from the factory in the MOMENTARY mode. In this mode, the relay output is activated for only as long as the keyfob button is pressed. The other two modes work as follows:

Latched Mode

A relay activates when its associated button on the remote is depressed, and remains active after the button is released. When a different button (also set up for latch mode) on the remote is pressed, the currently active relay (or output) will de-activate, and the

relay corresponding to the button just pressed will activate. A typical application of buttons used in latch mode are to have separate ON and OFF buttons.

Toggle Mode

A relay activates when its associated button on the remote is depressed, and remains active after the button is released. A subsequent press of the same button on the remote will deactivate the relay. In this mode, each of the relays is completely independent of the others, thus any combination of one or more relays, or no relays, may be active at any given time.

Mode Combinations

Each relay may have different modes of operation. For instance, buttons one and two may be set up as latched for an on button and off button application, while buttons 3 and 4 may be set up as momentary. The 8 position DIP switch sets the mode for each relay as outlined in the table.

8 Position Mode Switch				
Relay/Button	Switch	-	Center	+
1	1	Toggle	Momentary	Latched
2	2	Toggle	Momentary	Latched
3	3	Toggle	Momentary	Latched
4	4	Toggle	Momentary	Latched
5	5	Toggle	Momentary	Latched
6	6	Toggle	Momentary	Latched
	7	not used	not used	not used
	8	not used	not used	not used

If LATCHED operation is used, it will be necessary to specify which buttons will be used in a Latch Group. Latch groups are used so that buttons set up as momentary or toggle don't affect the operation of those buttons set up as latched. It also allows the setup of multiple latched pairs, for instance if you wanted to have on and off buttons for 3 sets of equipment independently. Only one relay within a Latch Group can be energized at any given time. Latched groups are set up using the 4-position DIP switch (see table).

Latch Group Switch						
Switch	ON	OFF	LATCH MODE	Button Groups	Button Groups	Button Groups
1		√	Horiz x3	1, 2	2, 3	3, 4
1	√		Vert x2	1, 3, 5	2, 4, 6	
2	√		Dual	1, 2, 3	3, 4, 5	
3	√		Global Unlatch	1, 2, 3, 4, 5, 6		
4	√		Master Off	Button 6 turns off all relays, regardless of mode		

- **Switch 1** shall provide the selection between horizontally-related button pairs or vertically-related buttons.
 - **Off:** horizontal pairs of buttons (and their corresponding relays) that are configured for Latched Mode shall latch and un-latch with respect to each other. For example, if Relays 1 and 2 are set for Latched Mode (with SW2-1 and SW2-2), and switch 1 is set to OFF, Relay 1 turns on when Button 1 is pressed (causing Relay 2, if already latched on, to turn off). By the same logic, pressing Button 2 will activate Relay 2 (and turn Relay 1 off). All other buttons will have no effect on the states of Relays 1 and 2 (even if those other buttons' corresponding relays are configured for Latched Mode).
 - **ON:** transmitter buttons that are vertically-oriented with respect to each other constitute a Latch Group (and their corresponding relays that are configured for Latched Mode shall latch and un-latch with respect to each other). For example, if Relays 1, 3, and 5 are all set for Latched Mode (with SW2-1, SW2-3, and SW2-5 respectively), and S7-1 is set to ON, Relay 1 turns on when Button 1 is pressed (causing Relay 3 or Relay 5, if either is already latched on, to turn off). By the same logic, pressing Button 5 will activate Relay 5 (and turn off Relay 1 or Relay 3). All other buttons will have no effect on the states of Relays 1, 3, and 5 (even if those other buttons' corresponding relays are configured for Latched Mode). In the example above, if Relay 3 is configured for other than Latched Mode (i.e. Momentary or Toggle Mode, with SW2-3), Button 3 will NOT unlatch either of the other two relays in the Latch Group, yet Buttons 1 and 5 will continue to latch and unlatch Relay 1 and Relay 5 with respect to each other.
- **Switch 2** (if set to ON) enables two three-button groups to function as Latch Groups. Each three-button group is independent of the other. The first three-button group includes Buttons 1, 2, and 3. The second three-button group includes Buttons 4, 5, and 6. Within a three-button group, only one relay may be latched on at a time, since pressing either of the other two buttons within that group will activate and latch the corresponding relay, and in the process un-latch whichever relay is currently latched within the group. (NOTE: One of the relays within a three-button group may be set (with SW2) for other than Latched Mode. If so, it will respond accordingly, either Momentary or Toggle, however it will not unlatch either of the other two relays in the group). Whenever S7-2 is set to ON, the receiver disregards the setting of S7-1 (Horizontal/Vertical).

- **Switch 3** (if set to ON) enables Global Unlatch. Any relay that is configured for Latched Mode (with SW2) will be unlatched by any other Latched Mode relay's corresponding button on the transmitter. For example, setting Relays 1 and 5 for Latched Mode (with SW2), and setting S7-3 to ON, will enable transmitter buttons 1 and 5 to latch and unlatch Relays 1 and 5 with respect to each other. Whenever S7-3 is set to ON, the receiver shall disregard the setting of S7-1 and S7-2.
- **Switch 4** (if set to ON) shall enable the Master Off function for all relays, regardless of how the relay mode is set up. This causes transmitter Button 6 to un-latch any relay(s) that is(are) on at the time Button 6 is pressed. When S7-4 is set to ON, Relay 6 is non-functional, regardless of the setting of SW2-6. This setting can act as an "emergency" off for all relays.

TROUBLESHOOTING

Symptom	Possible Problem	Notes
Poor Range	Antenna	Receiver Antenna connected, vertically oriented and placed preferably at least 7' high?
	EMI Interference	Receivers located very close to some computers or certain motors may cause reception problems.
	RF Interference	Check equipment operation at a different location
	Battery	If the remote has an indicator LED, does it light when button is pressed?
Doesn't Work	Power	Check power to receiver (power LED lights?)
	Data Reception	Check that Data LED on receiver flashes when remote button is pressed.
		If Data LED flashes without pressing a remote button, it may be an interference issue (see above)
		If Data LED flashes only when remote button is pressed, continue down this list.
	Relay Connection	Verify connected to the correct Relay-For 1-button remotes, Relay 2 is used; for 2-button remotes, relays 1 and 3 are used.
	ID Code Match	Re-"Learn" remote to receiver.