

Wireless Automation System 8 Installation and Operation Guide

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Introduction

Thank you for choosing Remote Control Technology's Wireless Automation System (WAS). This versatile device has numerous practical applications and will surely become a mainstay in your business and production structure. This guide will help you install your new wireless switch system and show you how to operate and customize it to fit your needs.

This system consists of:

- 1 wireless receiver
- 1 wireless transmitter
- 2 metal enclosures with built in power supplies
- 2 sets of wall mounting brackets for the enclosures
- 2 42" high-gain antennas
- 2 right angle mounting brackets
- 2 lightning arrestors

Before Installation

- Remote Control Technology recommends that you have your new wireless switch system installed by a professional electrician.
- Remember to keep AC and DC wiring in separate bundles.
- Use a multi-conductor shielded cable to connect any devices.
- Provide a good earth ground to the receiver and transmitter power supplies.
- Keep the receiver and transmitter antennas away from any device that would cause interference.
- Be sure to bench test the system before installation.

To Test: Separate the transmitter and receiver by at least 20ft. Do not install the antenna on the receiver while testing. Never transmit without attaching the antenna to the transmitter.

Receiver Installation

1. Connect the wiring terminations of the device(s) to be controlled to the terminal block(s). One side is connected to the common terminal (COM on the WAS 1, C on the WAS 2 and 8) and the other side is connected to either the normally open (NO) or normally closed (NC) contact.

Note: The receiver outputs are SPDT Class C relays rated for 5 A @ 250 VAC.

2. Attach the antenna to the antenna bracket assembly.
3. Attach the antenna assembly to the coaxial cable provided with the system and, connect the coaxial cable to the BNC connector at the top of the receiver enclosure.

Note: Do not loop excess coaxial cable into a coil. This will cause a radio frequency choke and reduce your signal range. Lay excess cable in a straight line or loosely route it back and forth in an "S" configuration.

4. Affix the wall mounting brackets included with the system to the back of the receiver enclosure and mount the enclosure to a wall, pole, or another enclosure.
5. Connect the 110-220 VAC power to the 12VDC power supply. Alternatively, connect a 12 VDC power source directly to the receiver.

Caution: Check all wiring connections before applying power. Failure to do so could result in serious damage to the product.

Transmitter Installation

1. Remove the inside cover of the receiver to reveal the relay and security DIP switch settings.
2. Match the settings of the 12-position security DIP switch with the settings on the receiver.
3. Connect one side of a dry contact closure(s) to the common contact (COM) of the terminal block and connect the other side to one of the input terminals.
4. Attach the antenna to the antenna bracket assembly.
5. Attach the antenna assembly to the coaxial cable provided with the system, and connect the coaxial cable to the BNC connector at the top of the transmitter enclosure.

Note: Do not loop excess coaxial cable into a coil. This will cause a radio frequency choke and reduce your signal range. Lay excess cable in a straight line or loosely route it back and forth in an "S" configuration.

6. Affix the wall mounting brackets included with the system to the back of the transmitter enclosure and mount the enclosure to a wall, pole, or another enclosure.
7. Connect the 110-220 VAC power to the 12VDC power supply. Alternatively, connect a 12 VDC power source directly to the receiver.

Caution: Check all wiring connections before applying power. Failure to do so could result in serious damage to the product.

WAS 8 Receiver Operation

The WAS 8 has eight operation modes that control its relay outputs. The DIP switch settings determine how the outputs behave as group; the outputs cannot be programmed individually. The operation modes of the WAS 8 are listed below in Table 1. The white boxes in the diagrams of Table 1 represent the DIP switch position.

Table 1. WAS 8 Receiver Operation Modes

DIP Switch Position	Operation Mode
	<p>All Momentary All outputs will change their state and maintain it for the duration of the transmission received. Once the transmission is terminated, the outputs will change back to their original state.</p>
	<p>All Flip-Flop In flip-flop mode, the outputs will change their state and maintain it until a matching transmission is received. Every time a transmission is received, the outputs will change their state and maintain it until another transmission is received.</p>
	<p>Momentary and Flip-Flop Outputs 1-4 are on momentary mode; 5-8 are flip-flop.</p>
	<p>Momentary and Flip-Flop 2 Outputs 1-6 are on momentary mode; 7-8 are flip-flop.</p>
	<p>Momentary and Flip-Flop 3 Outputs 1-2 are on momentary mode; 3-8 are flip-flop.</p>
	<p>Momentary and Flip-Flop 4 Outputs 1-3 are on momentary mode; 4-8 are flip-flop.</p>
	<p>Latching on Outputs will stay on until power to the receiver is interrupted.</p>

WAS 8 Transmitter Operation

The WAS 8 has one transmitter operation mode. The operation mode controls the way the transmitter will transmit when an input is closed. The transmitter will transmits continuously for up to five minutes as long as the input is active.

Optimizing Your Wireless Switch System

- Supply the antennas for the receiver and the transmitter with a good ground plane by either attaching a 10 AWG or larger wire from the lightning arrester to an earth ground or by mounting the antenna to a metal pole or conduit connected to an earth ground.
- Mount the antennas at least 40 feet away from electric motors, large power transformers, power lines, VFDs, or any equipment that produces ambient electrical noise.
- Mount all antennas outdoors. For equipment located indoors, run a length of RG-58 coaxial cable from the receiver to an antenna mounted outdoors.
- Mount antennas as high as possible, at least 3 feet away from vertical surfaces and not under roof awnings. If mounting the antenna on a building, mount it at the apex or the highest point of the building.
- When mounting the antenna to a metal pole, mount the antenna at the top of the pole or at least 3 feet away from the pole.
- Avoid mounting the antenna on the same pole as the power service.
- Avoid mounting the antenna on or near a chain link fence. If necessary, the antenna can be mounted at least 3 feet above the fence
- Use only high-quality antenna and cable connectors, which are available from Remote Control Technology.