Remote Control Technology
Simple Wireless Solutions

Phone: (866) 701-1146
Fax: (425) 216-7558
www.remotecontroltech.com

Applications Include: **Pumps, Valves, Relays, Conveyors, Center Pivots, Lights, Alarm Systems, PLC Activation, Engine Controls, Wireless Automation.**

Short Range Wireless Switch System Installation Guide

Check all wiring connections before applying power!

Operation

Phone: (800) 275-8558

The Short Range Wireless Switch System (SRWSS) uses a single input transmitter and a single output receiver to provide wireless control of one device. A dry contact closure connected to the transmitter terminal block is used to trigger the transmitter sending a coded set of instructions to the receiver activating the relay output. Multiple transmitters can be programmed to one receiver and a single transmitter can operate multiple receivers. A Micro-controller in the receiver randomly generates one of over 4 billion security code combinations. This code is then programmed into the transmitter via a link cable, which is also used for programming multiple receivers to operate from one transmitter. A 4 position DIP switch on the receiver is used to select the mode of the receiver relay output. The receiver has eight modes that control how the relay output functions. The relay is a SPDT Class C relay rated for 5 amps @ 250VAC with Normally Open (NO), Normally Closed (NC), and a Common (C) contacts.

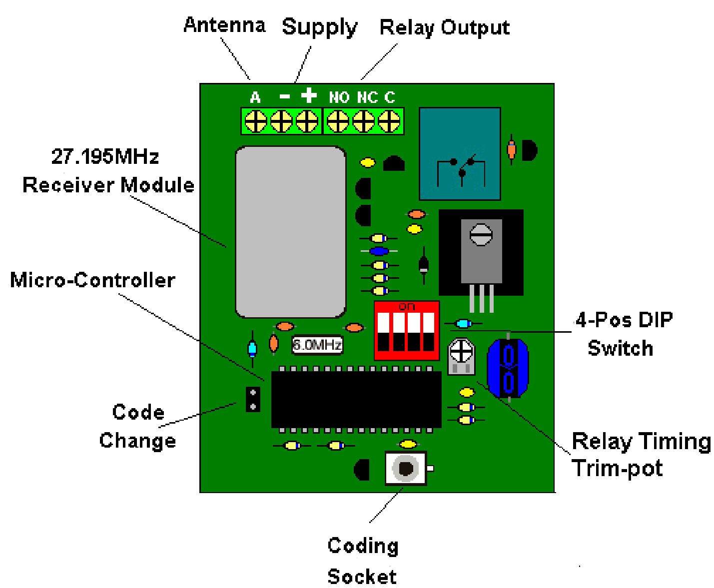
Receiver Installation

The Receiver is designed to be mounted to a wall or in a larger enclosure. As with any RF receiver, care must be taken in choosing the installation location. Installing the receiver in a location with variable frequency drives, large power transformers, other radio equipment, or any unshielded electrical device may cause interference with the operation of the receiver. A good location would be 10-40 feet from any device that would cause interference. While it may be optimal to locate the receiver 10-40 feet from any device that would cause interference, this is not always possible. For those situations, further steps must be taken to shield the receiver from external interference. Here are a few suggestions to provide some additional shielding:

- Wire AC and DC wiring in separate bundles
- Use a multi-conductor shielded cable to connect devices to the output relay
- Provide a good earth ground to receiver power supply
- Relocate the receiver antenna away from any device that would cause interference
- Install the receiver in a metal enclosure and ground the enclosure to a good earth ground

Key components of the receiver are:

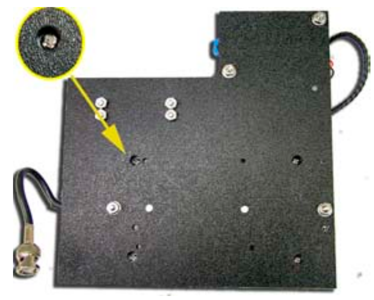
1. Supply Connections
2. Antenna Connections
3. 4 Position DIP Switch
4. Relay Timing Trim-pot
5. Coding Socket
6. Code Change Pins
7. Relay Connections



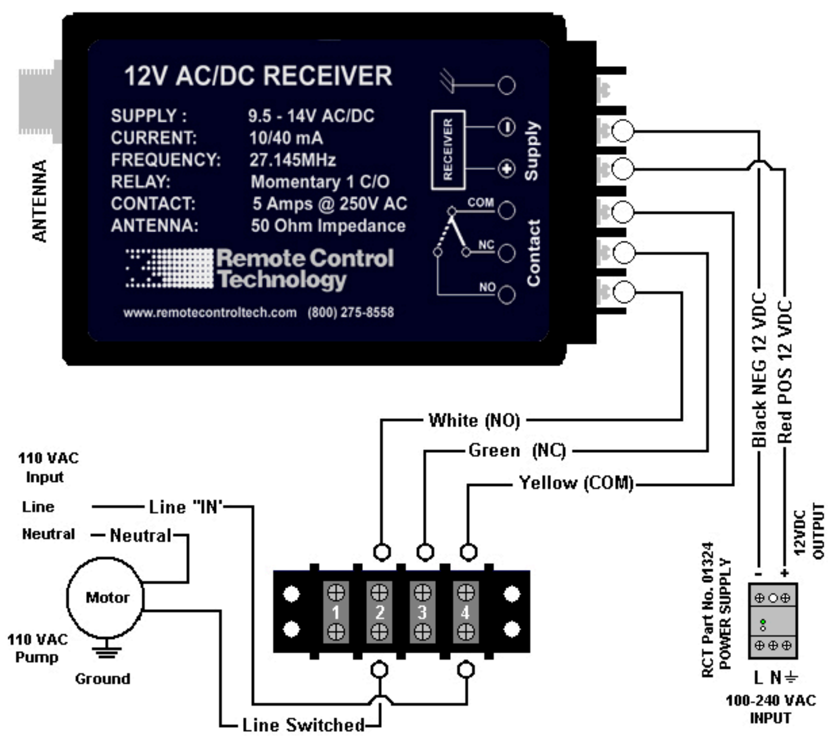
Receiver Installation Continued

SRWSS Receiver Installation Instructions:

By default the SRWSS receivers random code is preset and the relay output mode is set to Delay Off 1 mode. This must be taken into consideration when setting up the receiver. *Note: Bench test the system prior to the final installation to ease setup and to gain a better understanding of how the system functions.*



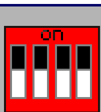
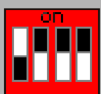
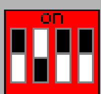
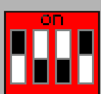
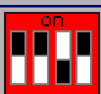
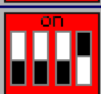
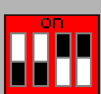
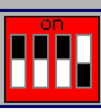
1. Skip steps 2 thru 7 for default operational settings.
2. Disconnect the antenna cable from the receiver.
3. Remove the 2 screws from base plate assembly of the enclosure.
4. Lift the base plate assembly out of the enclosure.
5. Remove the 4 screws from the bottom of the receiver and lift receiver's cover to reveal the relay and coding socket. These screws are accessible through the bottom of the receiver base panel. (See photo to the right)
6. Connect the 110-220 VAC power to the IDEC 12VDC power supply
7. Using a flat bladed screwdriver, short the code change pins marked by the "CC" symbol. This will randomly change the receiver security code.
8. Attach the link cable to the coding socket.
9. Remove the four screws from the top of the transmitter enclosure.
10. Connect the link cable to the coding socket of the transmitter.
11. Observe the Red LED of the transmitter. It should illuminate solid.
12. Using the 8 Position DIP switch momentary close any two switches simultaneously. The red LED should blink twice indicating a successful code transfer.
13. Remove the link cable from the receiver and the transmitter.
14. Select the relay mode and receiver security code. (See Relay Operation Modes)
15. Disconnect the 110-220VAC source power from the Idec Power Supply.
16. Remove the link cable and reinstall the screws on the transmitter enclosure.
17. Reverse steps 5 thru 2
18. Connect your device to the 4 position terminal block. Position 2 is a Normally Open (NO) contact. Position 3 is a Normally Closed (NC) contact. Position 4 is a Common (C) contact. *Note: In Flip/Flop mode, the relay will activate on initial power up and reverse the position of the contacts. Position 3 becomes a Normally Open (NO) contact and Position 2 becomes a Normally Closed (NC) contact.*
19. Connect your 110-220 VAC power to the IDEC 12VDC power supply.
20. Attach antenna or coax cable to the BNC connector on the top of receiver enclosure



Receiver Relay Operation Modes

Relay Operation Modes:

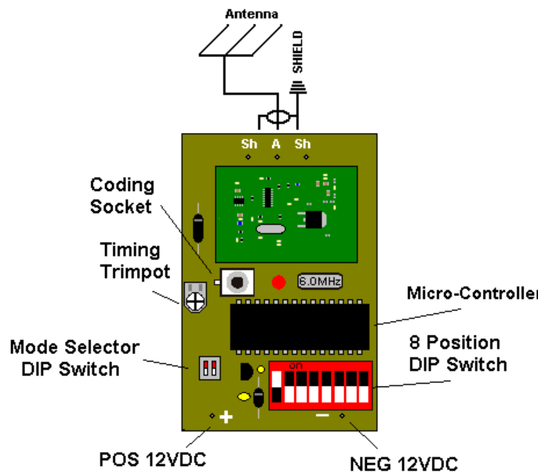
The relay is a SPDT Class C relay rated for 5 amps @ 250VAC with Normally Open (NO), Normally Closed (NC), and a Common (C) contacts. The receiver has eight modes that control how the relay outputs function. These modes are user selectable using the 4 Position DIP switch on the receiver. *Note: To increase the relay time duration turn the trim pot in a clockwise direction. To decrease the relay time duration turn the trim pot in a counterclockwise direction.* The eight modes function as follows:

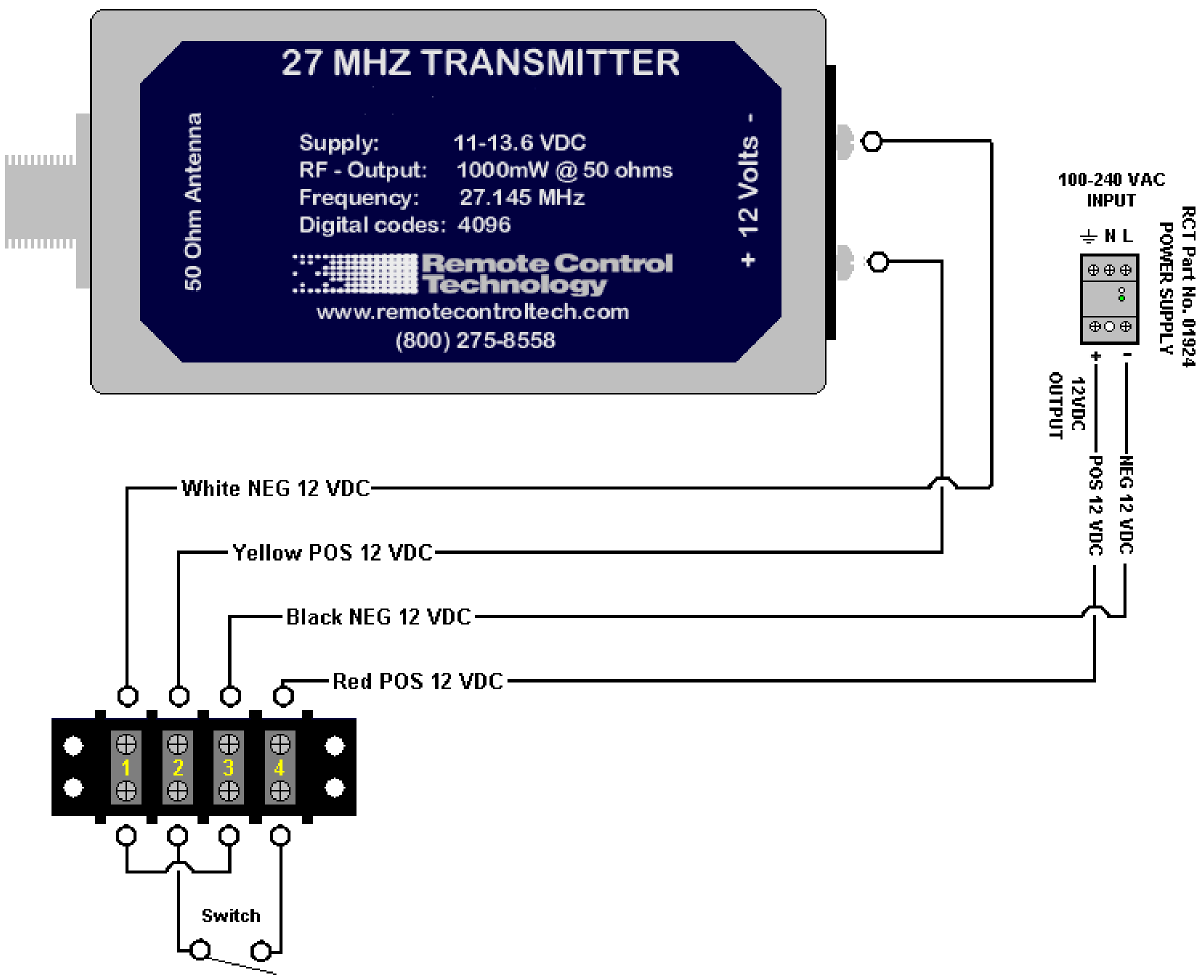
	**Momentary:** Move all the switches to the “OFF” position. This will set the relay in momentary mode. In momentary mode, the relay will change its state and maintain it for the duration of the transmission received. Once the transmission is terminated, the relay will change back to its original state.
	**Flip-Flop:** Move switch “1” to the “ON” position. This will set the relay in Flip-Flop mode. In Flip-Flop mode, the relay will change its state and maintain it until a matching transmission is received. Every time a transmission is received, the relay will change its state and maintain it until another transmission is received.
	**Delayed OFF 1:** Move switch “2” to the “ON” position. This will set the relay in Delayed OFF 1 mode. In Delayed OFF 1 mode, the relay will change its state and maintain it for 1-10 seconds. This is adjustable using the relay timing trim-pot
	**Delayed OFF 2:** Move switches “2” & "3" to the “ON” position. This will set the relay in Delayed OFF 2 mode. In Delayed OFF 1 mode, the relay will change its state and maintain it for 10-300 seconds. This is adjustable using the relay timing trim-pot
	**Pulsing:** Move switch “3” to the “ON” position. This will set the relay in Pulsing mode. In Pulsing mode, the relay will change its state repeatedly for 10-300 seconds. This is adjustable using the relay timing trim-pot
	**Latching:** Move switches "1- 3” to the “ON” position. This will set the relay in Latching mode. In Latching mode, the relay will change its state and maintain it until power to the receiver is removed or interrupted.
	**ON - OFF:** Move switches “1” & "2” to the “ON” position. This will set the relay in ON - OFF mode. This Mode requires a two push button transmitter. Push Button "1" changes the state of the relay. Push Button "2" returns the relay to it's original state.
	**Test:** Move switch “4” to the “ON” position. This will set the relay in Test mode. In Test mode, the relay will change its state and maintain it until switch "4" is in the "off" position.

SRWSS Transmitter Installation:

By default the SRWSS transmitter programmed to match the receiver programming and the transmit mode is set for Mode 1 with a 2 Second repeat transmission. This must be taken into consideration when setting up the transmitter.

1. Remove the 4 screws of the transmitter enclosure to reveal the 8 position DIP switch and the coding socket.
2. See receiver installation for programming details.
3. Move switch one of the 8 position dip switch to the on position.
4. Select the desired transmit mode. *NOTE: Fine the tune transmit time using the trim pot in transmitter.*
5. Replace the cover and 4 screws of the transmitter.
6. Connect a 22AWG jumper from position 1 to position 3 of the terminal block.
7. Connect a dry contact closure on position 2 and position 4 of the terminal block.
8. Connect a 110-220 VAC power to the IDEC 12VDC power supply.
9. Install antenna or coax cable with BNC connector to the BNC connector on the top of transmitter enclosure.

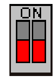




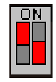
Transmitter Modes of Operation

Modes of Operation:
All mode changes are made using the 2 position DIP switch.

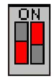
Transmission Selector DIP Switch Settings



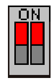
Mode 1:
2 - 62 Sec. Transmission Repeat



Mode 2:
1 - 10 Min. Transmission Repeat



Mode 3:
Continuous 5 Min. Transmission



Mode 4:
1.5 Sec. Burst Transmission

Mode 1: 2 to 62 second Repeat Transmission.
Transmitter will transmit a 1.5 second transmission burst and then repeat the burst transmission every 2 – 62 seconds, if at least one code switch from the 8-position DIP switch is ON and supply is connected. Adjust the time duration using the trim pot.

Mode 2: 1 to 10 Minute Repeat Transmission.
Same as mode 1 except the repeat burst transmission is 1 to 10 minutes.

Mode 3: Continuous Five Minute Transmission.
Transmitter will transmit continuously for 5 minutes. The maximum transmit time of the transmitter is 5 minutes.

Mode 4: One Burst Transmission. 1.5 to 10 Seconds
Transmitter will transmit for approximately 1.5 seconds to 10 seconds and then go to standby or sleep mode. Adjust the time duration using the trim pot.

Sleep mode: (10 uA): is activated when all 8 DIP switches are OFF. This applies to all four modes.

Note: To increase the transmit time duration turn the trim pot in a clockwise direction. To decrease the transmit time duration turn the trim pot in a counterclockwise direction.

Antenna Directions

Antenna Directions:
Successful wireless communication range is achievable in most locations as long as these installation practices are observed. Remote Control Technology can supply connectors and RG58 Coaxial Cable in lengths of 3, 10, 25, 50, and 100 feet (specify when ordering). Range can be maximized by following these guidelines:

- Mount the antennas at least 40 feet away from electric motors, large power transformers, power lines, VFD’s, or any equipment that produces ambient electrical noise. Otherwise, the receiver may have trouble distinguishing the FM transmitter signal from this noise.
- Mount all antennas outdoors. The Short Range Wireless Switch System (both FM transmitter and receiver) communicates in the RF (radio frequency) spectrum at 27 MHz. This frequency has great characteristics for long range but the signals will not go through walls. 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.
- Use only high-quality antenna and cable connectors, which are available from Remote Control Technology.
- Do not loop excess coax cable into a coil. This will cause a RF (radio frequency) choke and reduce your signal range. If possible, loosely route it back and forth in an "S" configuration.