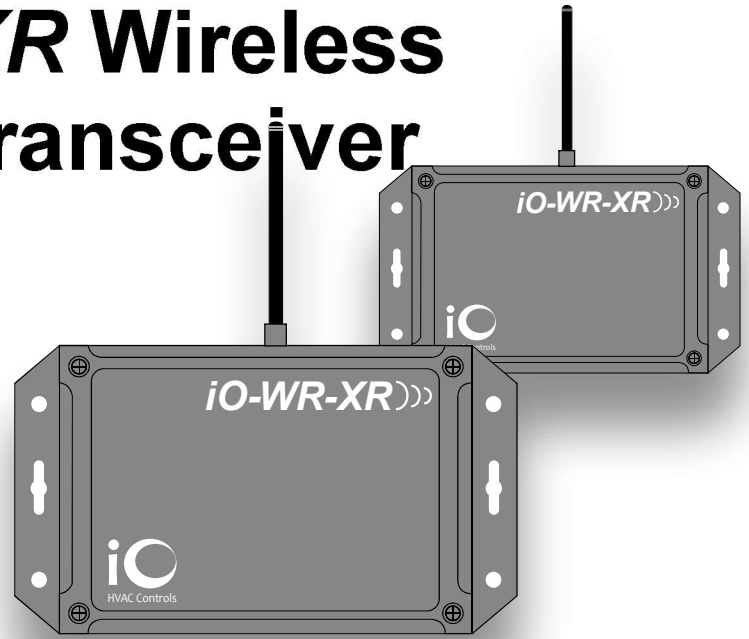




# iO-WR-XR Wireless Relay Transceiver

## INTRODUCTION:

The iO-WR-XR wireless relay transceiver uses state-of-the-art radio technology to transmit any dry contact on/off signal to another factory-paired transceiver up to 1/2 mile line of sight. Each transceiver can be powered by 12 or 24 Volts AC or DC. Range verification testing can also be accomplished by powering each transceiver using a 12 volt battery pack. Successful transmission and reception is indicated on transmit and receive LEDs located on each transceiver.



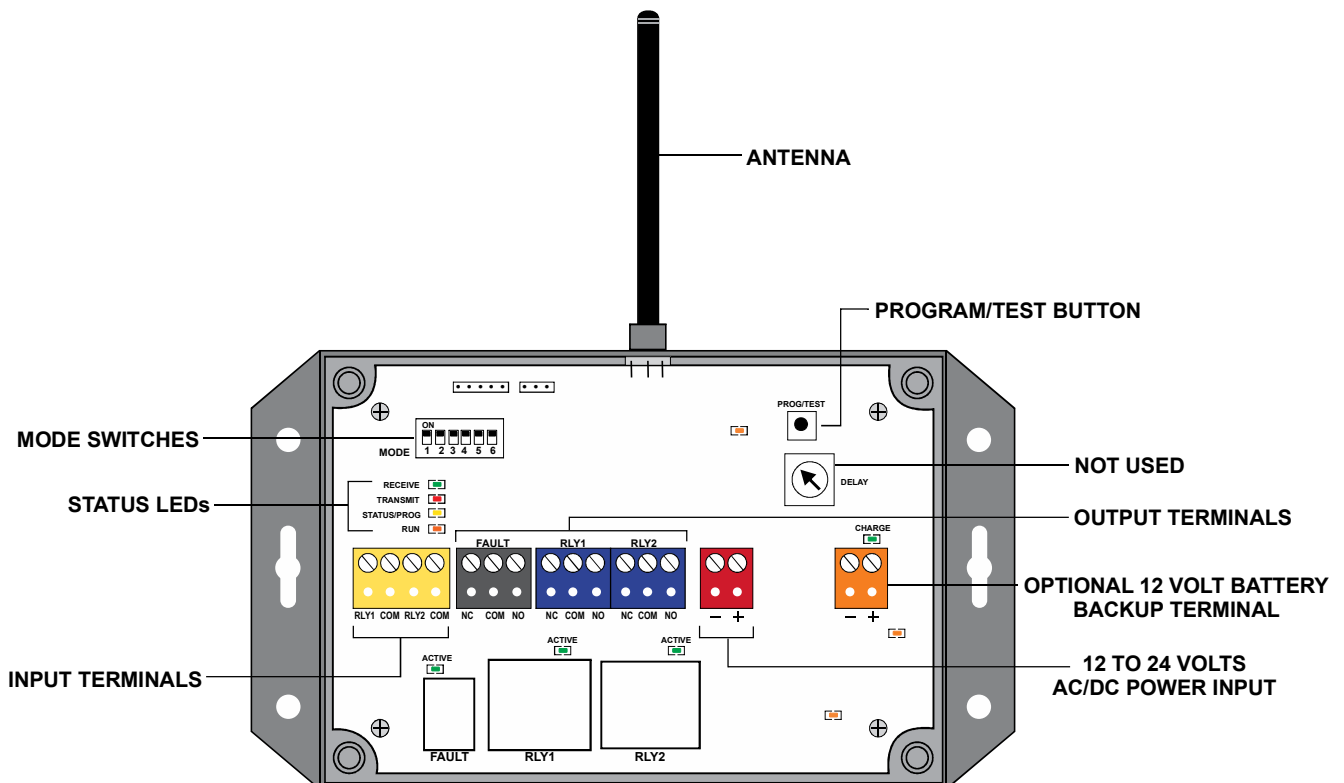
## APPLICATION USE:

The iO-WR-XR can be used in a wide range of applications where running wire is difficult, or existing wires have been cut or damaged. The iO-WR-XR can be used to control HVAC equipment, fans, pumps, lighting and industrial equipment.

## HOW IT WORKS:

Each iO-WR-XR transceiver has 2 switched input relays and 2 relay outputs. A closure on a relay input of one transceiver will result in a closure on a relay output of the other transceiver.

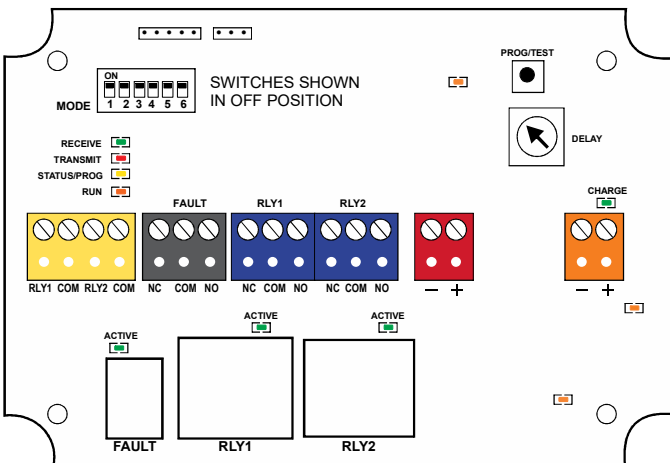
## iO-WR-XR OVERVIEW



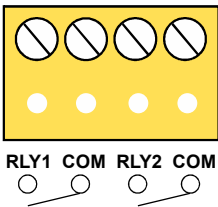
## INSTALLATION:

1. Both iO-WR-XR relay transceivers are identical and are already factory paired.
2. Each iO-WR-XR requires continuous 12 or 24 volts AC/DC power.
3. Mount each iO-WR-XR on a non-metallic surface in a location that allows access to wiring of device inputs and/or outputs.
4. Do not mount transceivers inside metal enclosures as this will greatly impede the transmission range.
5. It is recommended that 18-gauge solid (not stranded) thermostat wire be used. Only strip enough insulation off wires to insert into terminals and make sure no bare wires touch any components on the PC board. Do not over-tighten the mounting screws.
6. Depending on the application, not all transceiver inputs and outputs will be used.

## TERMINAL DESIGNATIONS:



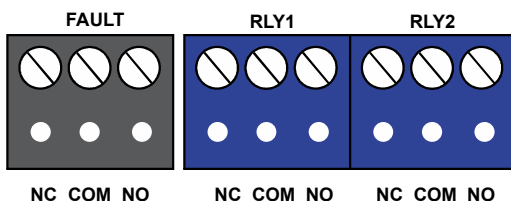
## Relay Inputs



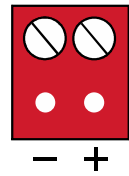
Each iO-WR-XR has 2 switched relay inputs. Example: A closure on RY1 will result in a closure on RY1 (NC/COM/NO) output of the paired transceiver.

## Relay Outputs

Each iO-WR-XR has 2 relay outputs plus a fault relay designed to open if there is a loss of communications between the transceiver pairs after 90 seconds.

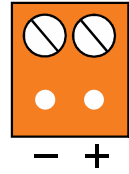


## Power Input



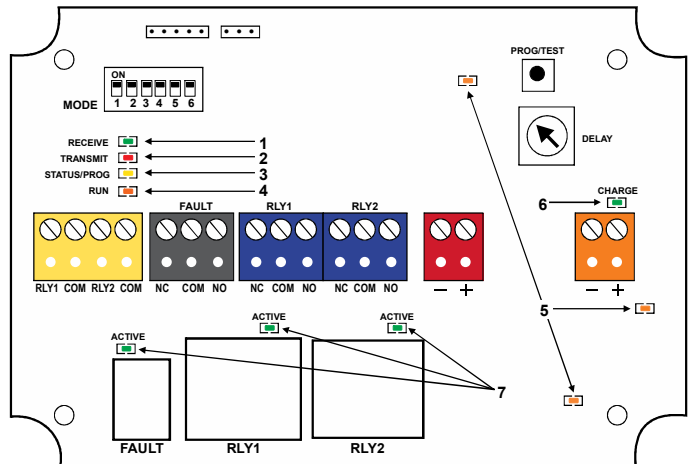
Power Input accepts 12 to 24 Volts AC or DC. Always follow polarity when DC power is used. Each transceiver requires a minimum of 1 Amp (20VA) power supply.

## Battery Input



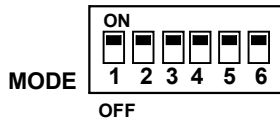
Each transceiver can be provided with an optional battery backup. The input is for a 12 Volt Sealed Lead Acid (SLA) battery only. Transceivers provide a 12 volt trickle charge.

## STATUS LEDs:



1. **RECEIVE** - Flashes GREEN momentarily when a valid radio transmission is received.
2. **TRANSMIT** - Flashes RED momentarily when the transceiver transmits as a result of a relay input change.
3. **STATUS/PROG** - Flashes YELLOW patterns indicating status of the unit: pairing, error, etc.
4. **RUN** - Flashes ORANGE for 1 second ON and 1 second OFF indicating the microprocessor is running.
5. **POWER LEDs** - Glow solid ORANGE when power is present for relay, logic and power amplifier supply.
6. **CHARGING** - Solid GREEN when optional battery is charging. Momentary flashing when battery is charged and a trickle charge is occurring.
7. **ACTIVE** - Solid GREEN when relay is energized.

## DIP SWITCHES:



SWITCH 1 - Pairing mode when ON and Normal operating mode when OFF.  
SWITCH 2 through 6 - Not used.

## PROGRAM/TEST BUTTON:



Used with MODE DIP SWITCH 1 to field-pair transceivers.  
Functions as a Test/Transmit button during normal operation. When pressed, transceiver sends a radio test packet and the RED TRANSMIT LED will illuminate. Paired transceiver will acknowledge the packet was received with a radio test packet indicated by a momentary GREEN RECEIVE LED.

## FIELD-PAIRING TRANSCEIVERS:

1. Put MODE DIP SWITCH 1 in the ON position for both transceivers.
2. Press the PROG/TEST button on either transceiver. Observe that the STATUS/PROG LED flashes.
3. Put MODE DIP SWITCH 1 in the OFF position for both transceivers.
4. Press PROG/TEST on either transceiver and observe that TRANSMIT and RECEIVE LEDs operate normally.

***Pairing procedure overwrites any previous pairing. For example, if replacing only one transceiver, simply follow the above procedure with both the existing and replacement transceiver.***

## COMPLIANCE:

The iO-WR-XR Wireless Transceiver has been tested and found to 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. 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.

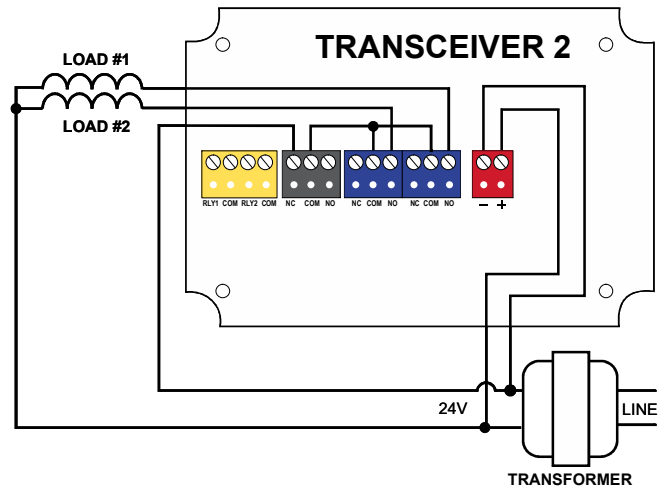
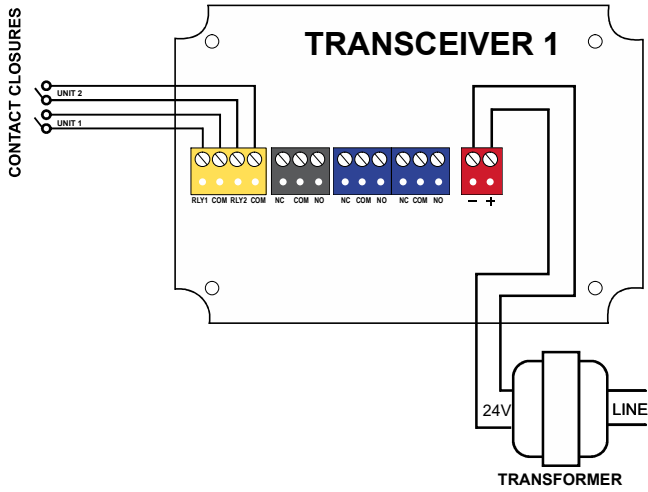
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet or circuit different from that to which the receiver is connected.

## SPECIFICATIONS:

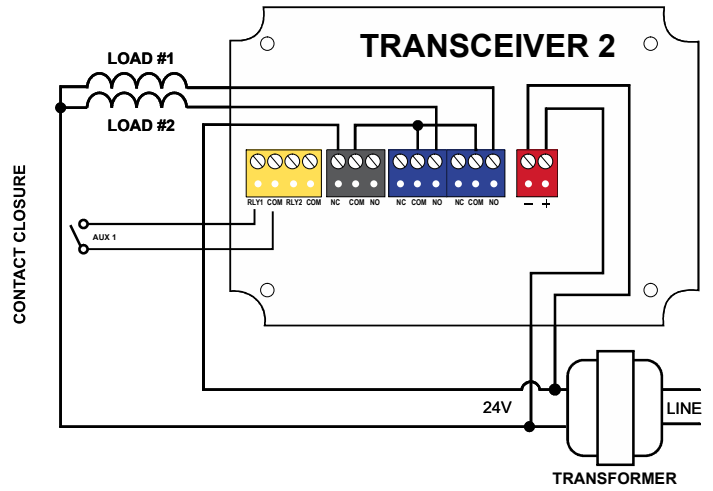
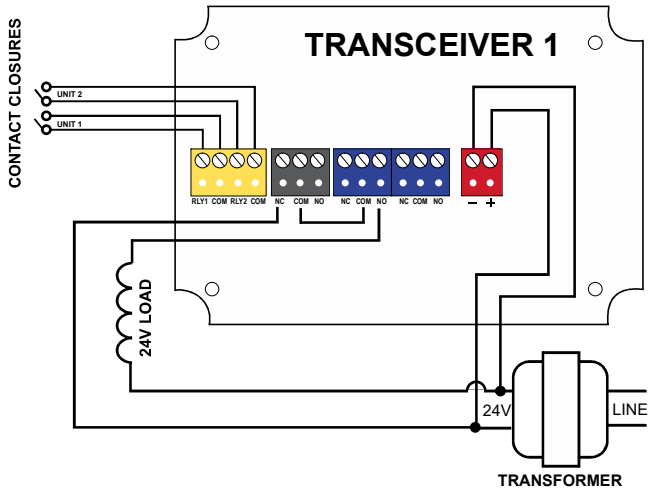
Dimensions:	3.75" H x 5.25" W x 2" D
Power Input:	12 or 24 Volts AC or DC
Channels:	2 Send, 2 Receive
Contact Rating:	10A per channel
Addresses:	Factory-paired Multiple units can be used in same location
Frequency:	902-928 MHz
Range:	1/2 mile line of sight
Operating Temp:	-40°F to 185°F
Operating RH:	0 to 95% (non-condensing)

# TYPICAL WIRING EXAMPLES

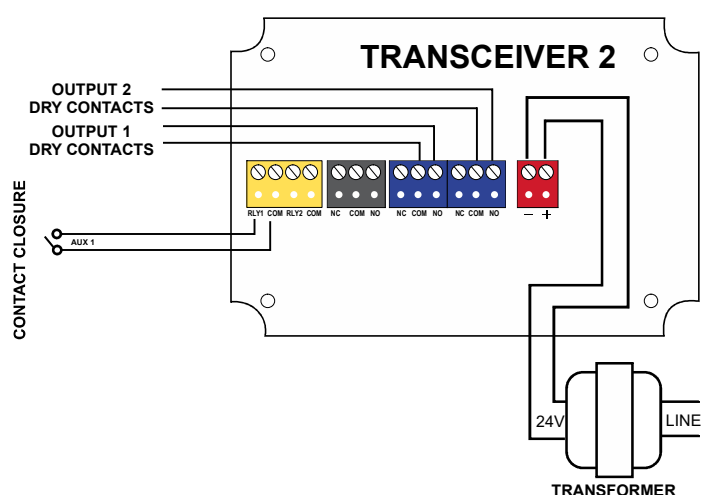
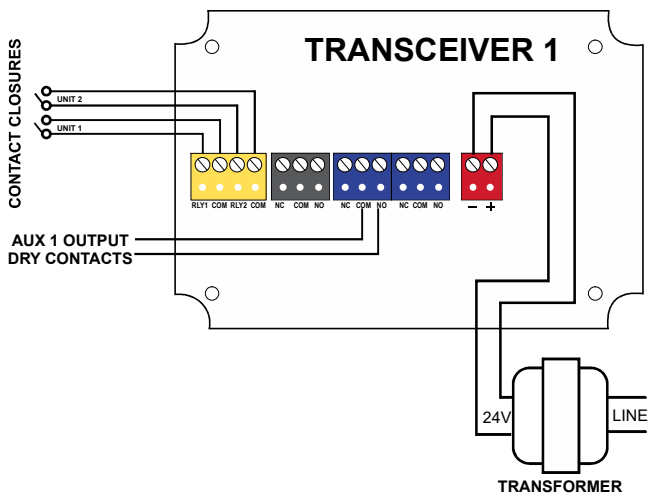
## ONE WAY TRANSMISSION (VOLTAGE OUTPUT)



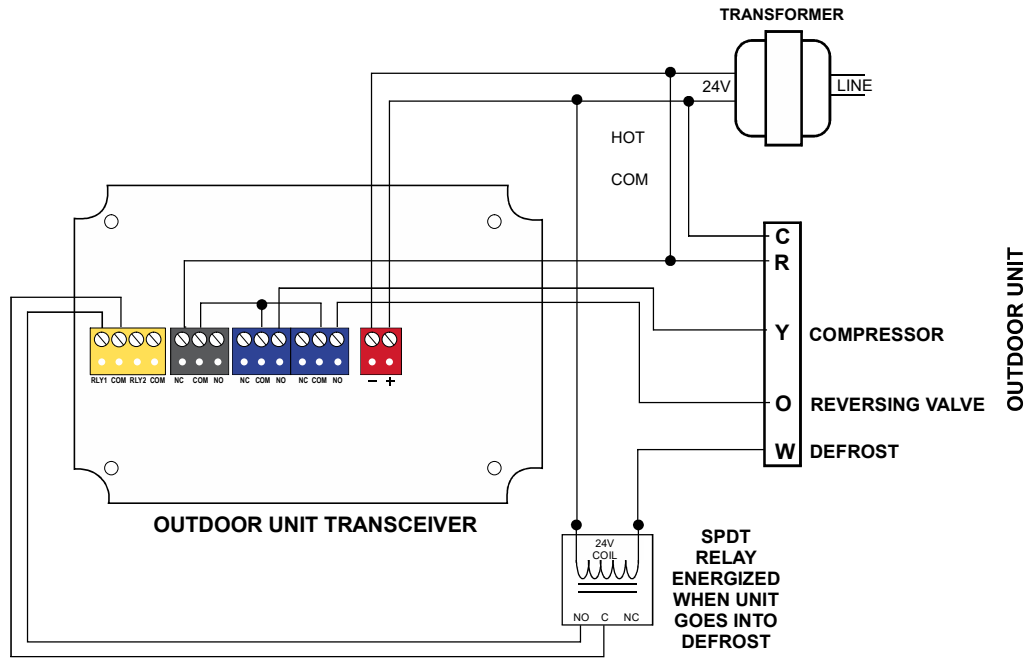
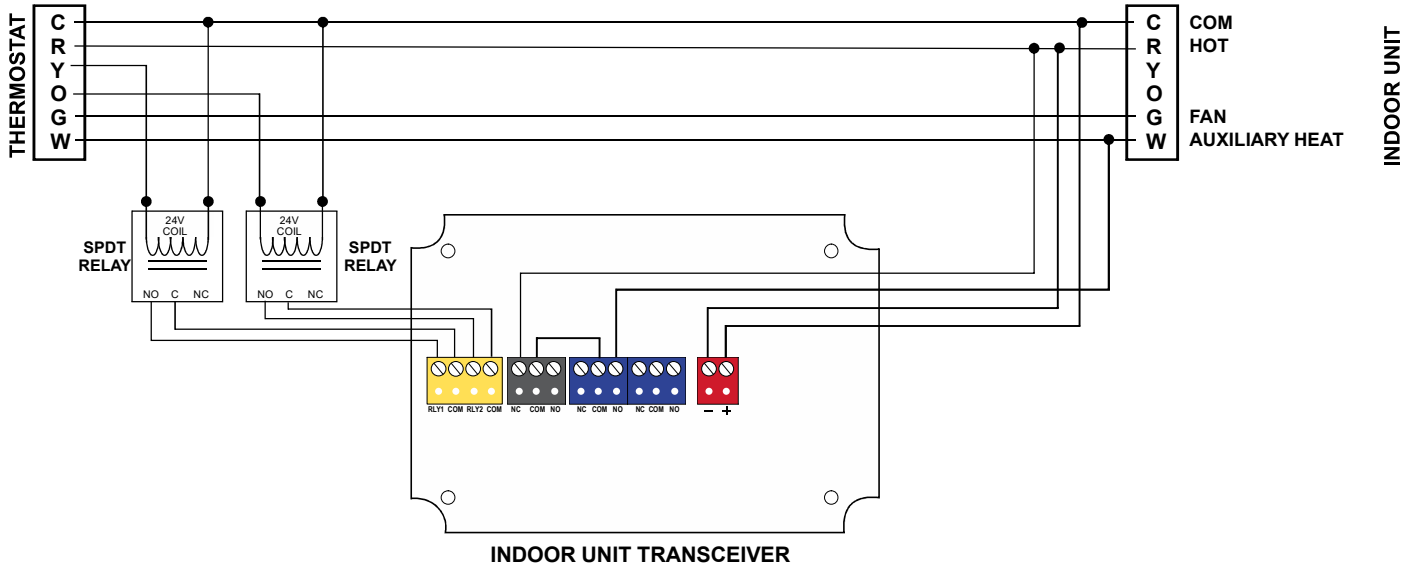
## TWO WAY TRANSMISSION (VOLTAGE OUTPUT)



## TWO WAY TRANSMISSION (DRY CONTACT OUTPUT)



# iO-WR-XR WIRELESS RELAY USED FOR SINGLE COMPRESSOR HEAT PUMP WITH DEFROST SIGNAL



# iO-WR-XR WIRELESS RELAY USED FOR TWO STAGE CONDENSING UNIT

