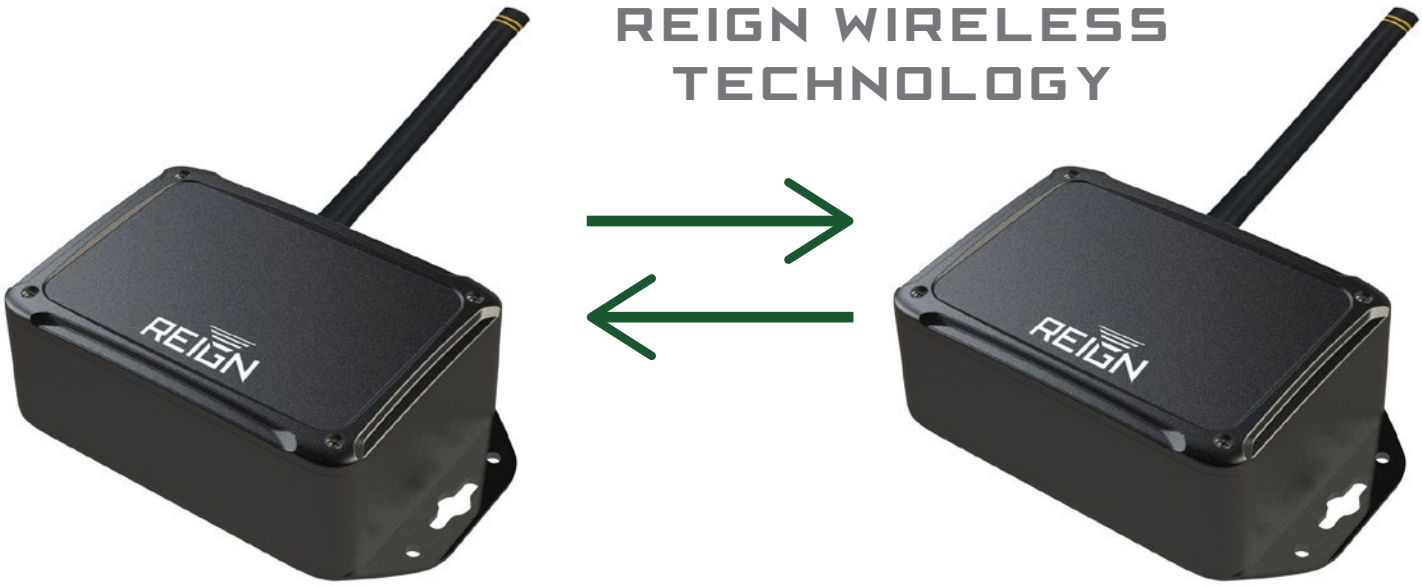
XRE-100
RELAY EXTENDER

v.8.29.18



The REIGN XRE-100 Relay Extender is a revolutionary product that will make any dry contact wireless with no programming or configuration whatsoever - it literally is a plug and play device.

WHAT'S INCLUDED

There are two pieces that complete the XRE-100.

The Reign XRE-100 - Relay Extender kit includes 2- XRE-100 units. These units are interchangeable and can be paired in the field.

Transmitter Solutions refers to the XRE-100 installed at the peripheral device as the Node and the XRE-100 installed at the primary unit the Hub. This is only important during technical support and the wiring diagram.

HOW IT WORKS...

Congratulations on your purchase of the Transmitter Solutions XRE-100 Relay Extender System. It has been designed with state-of-the-art radio technology to extend relay closures, switches, indicators, sensors, and any other simple ON/OFF status inputs and outputs up to 40 miles line-of-sight.

If you ordered your XRE-100s together, they are factory paired. All that is required to get up and running is 12-24 Volts AC/DC power and the DRY input closures you want to extend.

If you would like to survey the range capability before install, simply provide power to both units and press the PROG/TEST button alternately on each unit. Successful transmission and reception will be indicated on the transmit and receive LEDs on each unit as described below.

CONTENTS:

SPECIFICATIONS

Power Input: 12-24 Volt AC/DC

Relays: 10A 250 VAC/ 28VDC

12V: 50mA (idle)
1A (transmit)

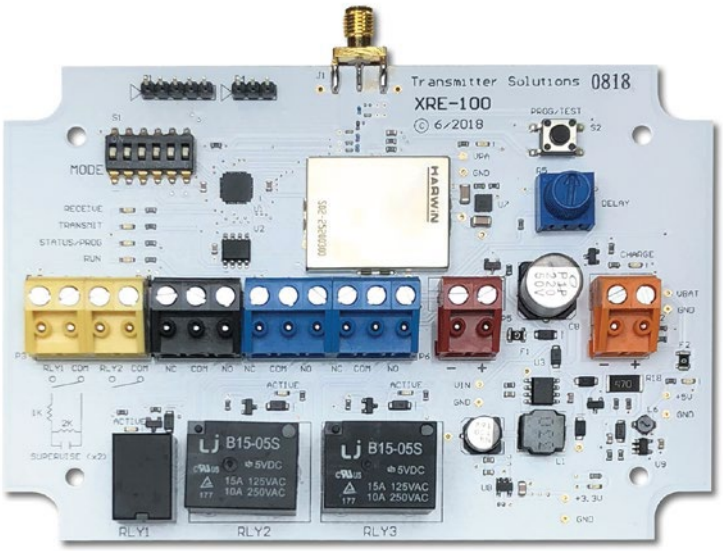
24V: 25mA (idle)
500ma (transmit)

Range: 1/2 mile (Through obstructions)

Relays: 10A 250 VAC/ 28VDC

Minimum / Maximum Temperature Range:
-40°F to 185°F (-40°C to 85°C)

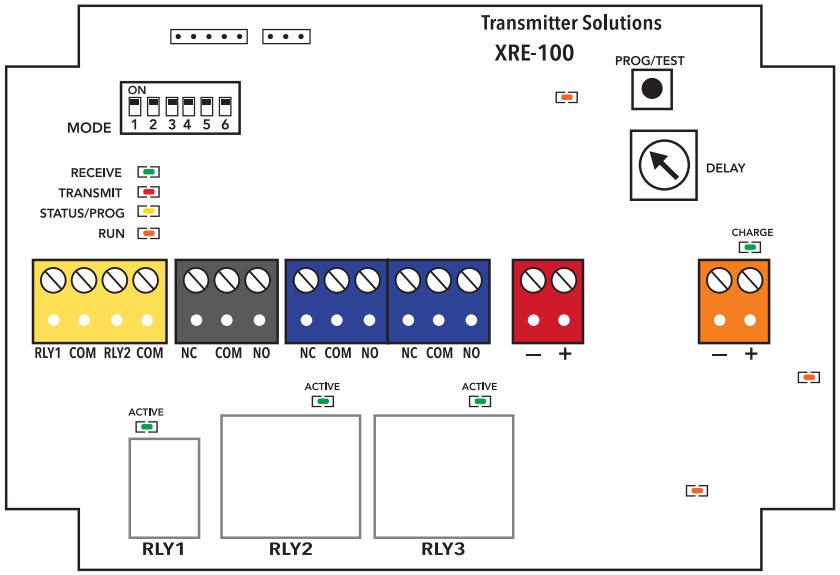
Security Encryption: AES



POWER INPUT: 12 to 24 VOLTS AC/DC. - 1 AMP Minimum
Always follow polarity when DC Power is used.

BATTERY INPUT: for 12 Volt Sealed Lead Acid (SLA) battery only.
Solid GREEN LED indicates battery charging. Momentarily flashing GREEN LED indicates battery is charged and a trickle/conditioning charge is occurring.

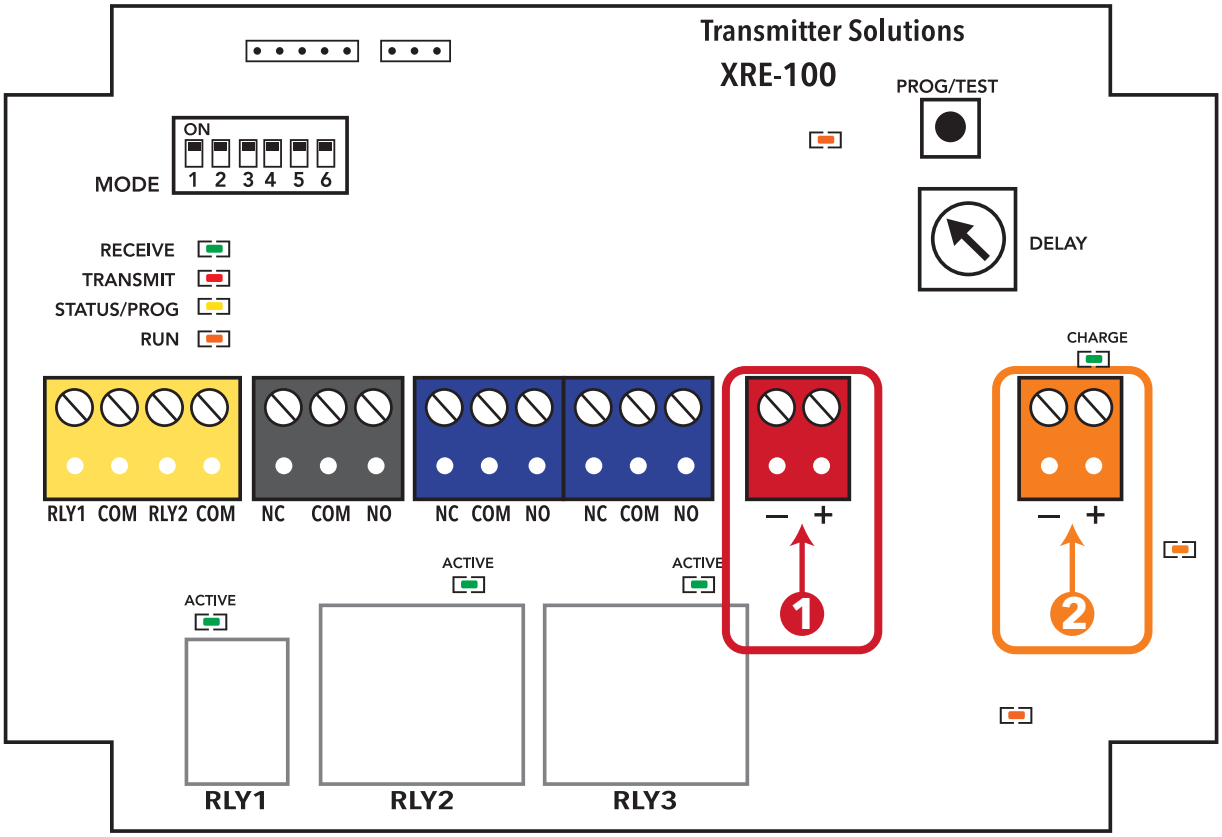
WIRING THE BOARD



1. POWER DETAILS

Each side of The XRE-100 (Hub and Node) need 1 amp of current draw to transmit at full power.

IMPORTANT - XRE REQUIRES AT LEAST 1AMP POWER SUPPLY



1 POWER INPUT:

Power Input: 12 to 24 VOLTS AC/DC. Always follow polarity when DC Power is used. ***1 AMP Minimum***

2 BATTERY INPUT:

Battery Input: for 12 Volt Sealed Lead Acid (SLA) battery only.

Solid Green LED = Battery charging

Momentary Flashing LED = Battery is fully charged and a trickle/conditioning charge is occurring

2. LED INDICATORS

STATUS LEDs:

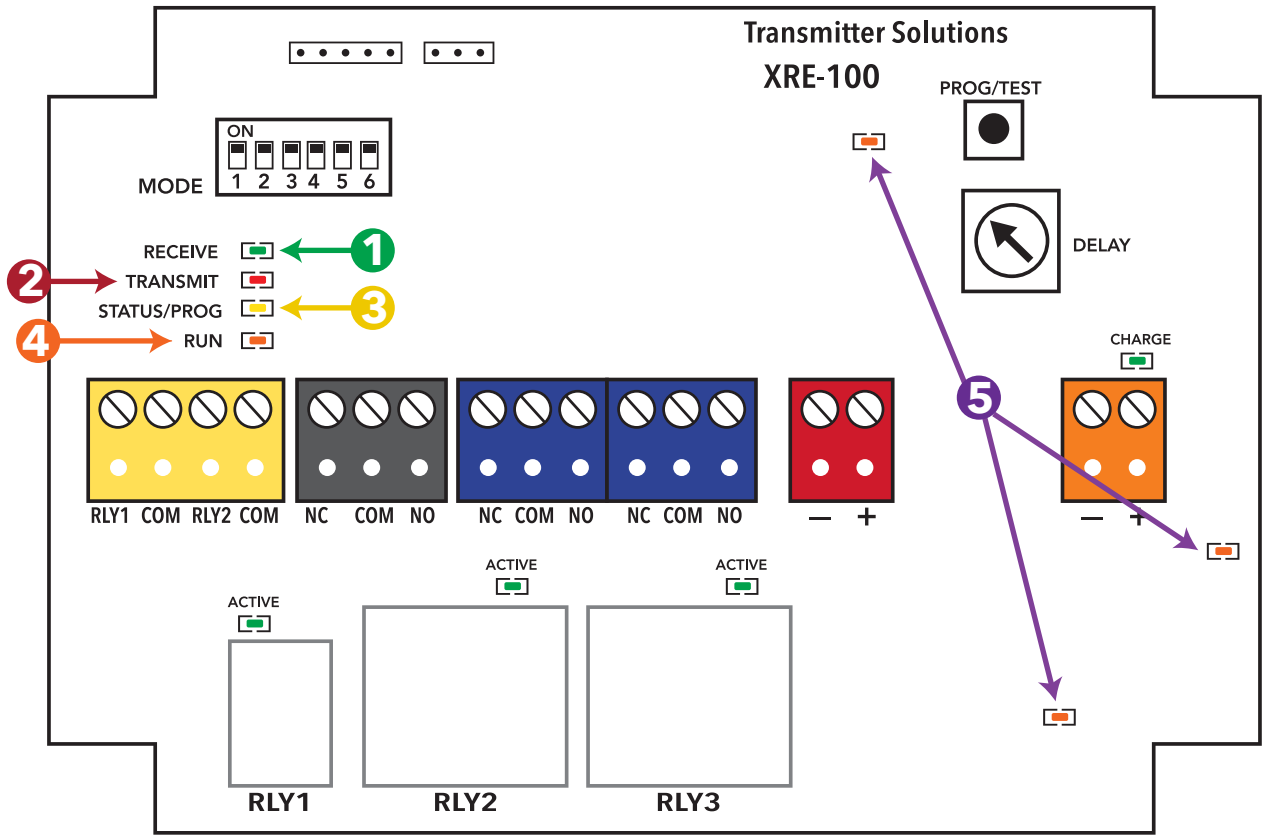
1. **RECEIVE** - flashes GREEN momentarily when a valid radio transmission is received.

2. **TRANSMIT** - flashes RED momentarily when the unit transmits a packet as a result of an Relay Input change event or handshake.

3. **STATUS/ PROG** - flashes yellow patterns indicating status of the unit: pairing, error, etc.

4. **RUN** - flashes ORANGE 1 second ON and 1 second OFF indicating the microprocessor is running.

5. **POWER LED** - Glows solid orange when power is present. 5 volt relay supply, 3.3 volt logic supply, and VPA 3.6 volt power amplifier supply.



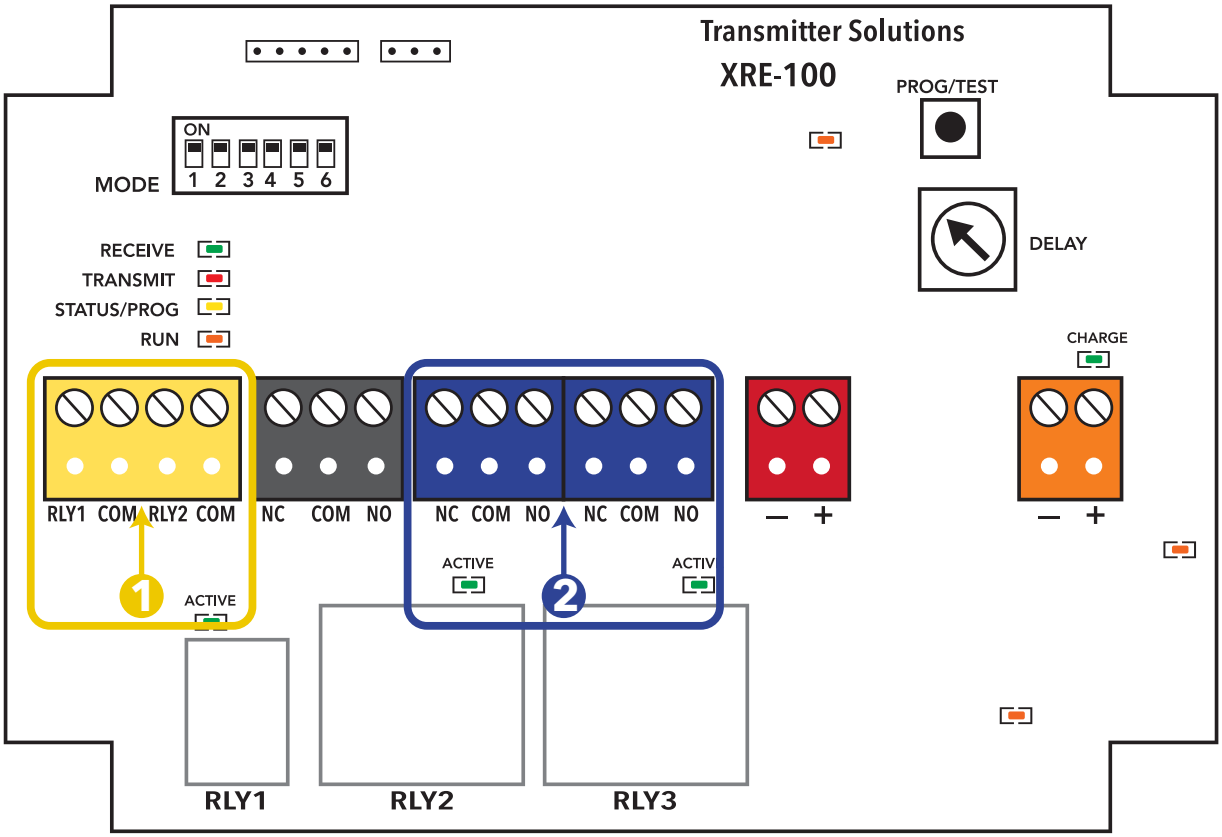
3. RELAY DIAGRAM AND WIRING

1 RELAY INPUTS

Relay Inputs - The Reign XRE-100 comes with 2 relay inputs. Connect DRY closure from devices relay to be extended. A closure on RLY1 input will result in a closure on RLY1 (NC/COM/NO) of the paired XRE-100. A closure on RLY2/COM input will result in a closure on RLY2 (NC/COM/NO output) of the paired XRE-100.

2 RELAY OUTPUTS

Relay Outputs - The Reign XRE-100 comes with 2-relay outputs. Each output follows RELAY INPUTS from remote paired XRE-100. When RLY1 or RLY2 INPUTS are closed RLY1 and RLY2 OUTPUTS are energized and connect NC/COM/NO respectively. This relay state is also indicated by the GREEN ACTIVE LED above each relay.



4. ALERT RELAYS

1 ALERT INPUT (when DIP switch 2 is on)

2 ALERT RELAY OUTPUT

Both RELAY 1 and RELAY 2 INPUTs are supervised when DIPSWITCH 2 in ON. Supervised inputs detect fault or tampering of inputs and send an ALERT RELAY activation to the opposite unit (Typically from the Node unit to the Base unit).

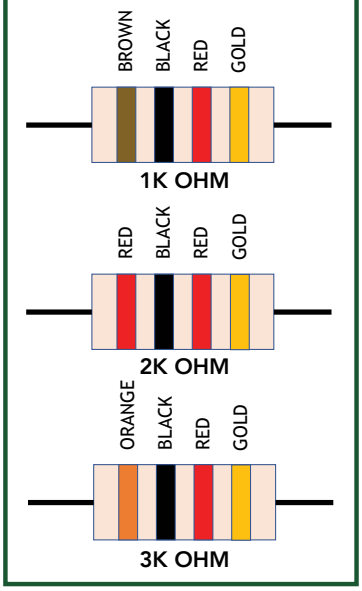
Supervised inputs will detect an input shorted to ground (or each other) or an open input (loose or cut wire). Connect the supplied 1K ohm and 2K ohm resistors across the device to be monitored as shown. IMPORTANT: resistors must be connected at the device to be monitored NOT AT THE XRE-100 RELAY INPUT.

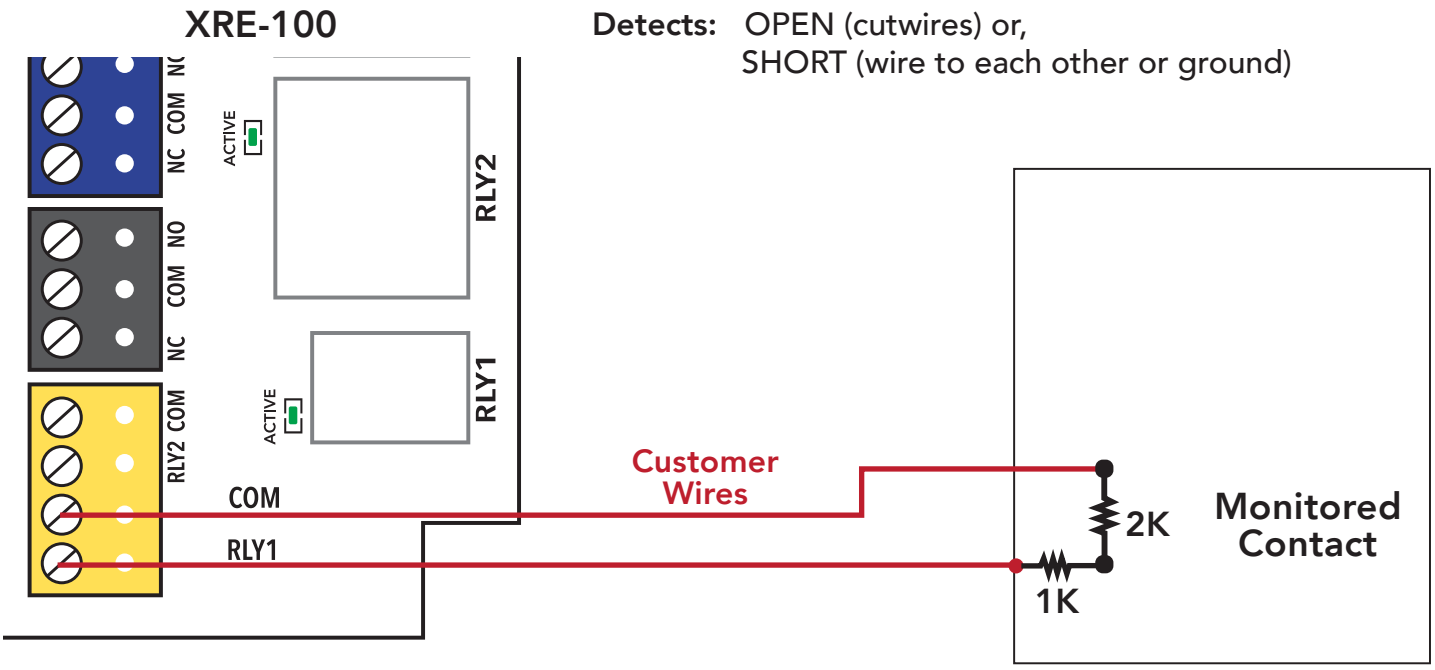
When in Supervise Mode, unused inputs must be terminated with the supplied 3K ohm resistor. Simply insert the resistor into the Rx and COM pins on the desired connector and tighten screw blocks.

If Supervised Inputs are not desired, simply leave DIPSWITCH 2 OFF and wire your contact directly across the Rx and COM pins.

NOTE: Communication Loss - If the XRE-100 units stop communicating the Alert Relay Output(Black relay) will trigger. Alerting on loss of communication between devices.

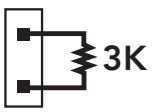
SUPERVISOR RESISTOR COLOR CODES





Detects: OPEN (cutwires) or,
SHORT (wire to each other or ground)

Unused Input



1. Supervise resistors (supplied) must be at contact.

2. Associated DIPSWITCH SW2 must be ON

3. Connect contact directly, without resistors for unsupervised inputs. SW5 and SW6 = OFF.

5. DIP SWITCHES

1 MODE SWITCHES

SWITCH 1 – PROG (PAIR) – Pairing mode when ON and Normal operating mode when OFF
SWITCH 2 – SUPERVISED INPUTS – Supervised inputs active when ON
SWITCH 3 – COMMS LOSS BEACON – Pulses Alert Relay if ON, otherwise Relay is steady on
SWITCH 4 – Not used
SWITCH 5 – Not used
SWITCH 6 – Not used

2 RELAY OUTPUT SWITCH:

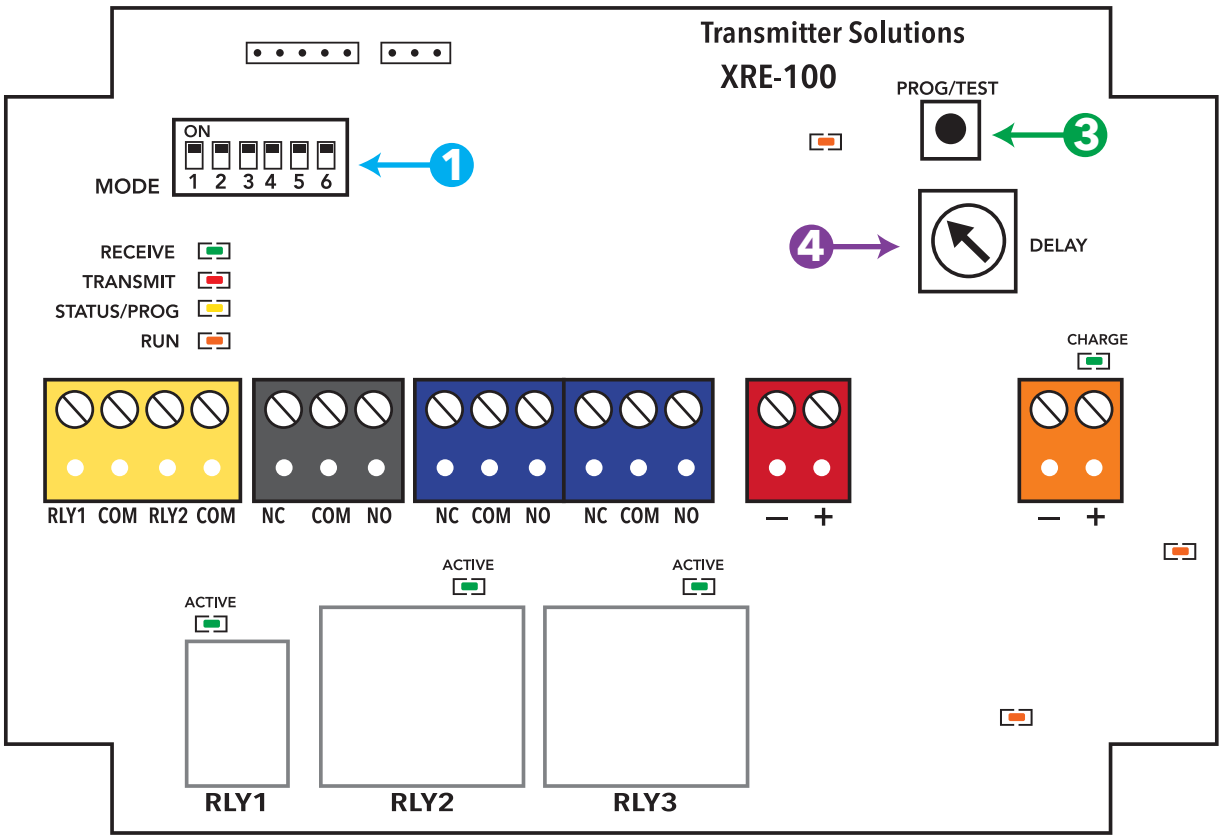
Relay Output Switch - not used in XRE-100 to XRE-100 Relay Extension operation.

3 PROGRAM/TEST BUTTON:

Program/Test Button - used with MODE SWITCH 1 to field pair units as described above. Functions as a TEST TRANSMIT button during normal operation. When pressed, the XRE-100 will send a radio test packet and the RED TRANSMIT LED will illuminate. If the paired XRE-100 is online, it will acknowledge with a radio test packet – indicated by a momentary GREEN RECEIVE LED.

4 RELAY DELAY POTENTIOMETER:

Relay Delay Potentiometer: not used in XRE-100 to XRE-100 Relay Extension operation.



6. BATTERY BACKUP

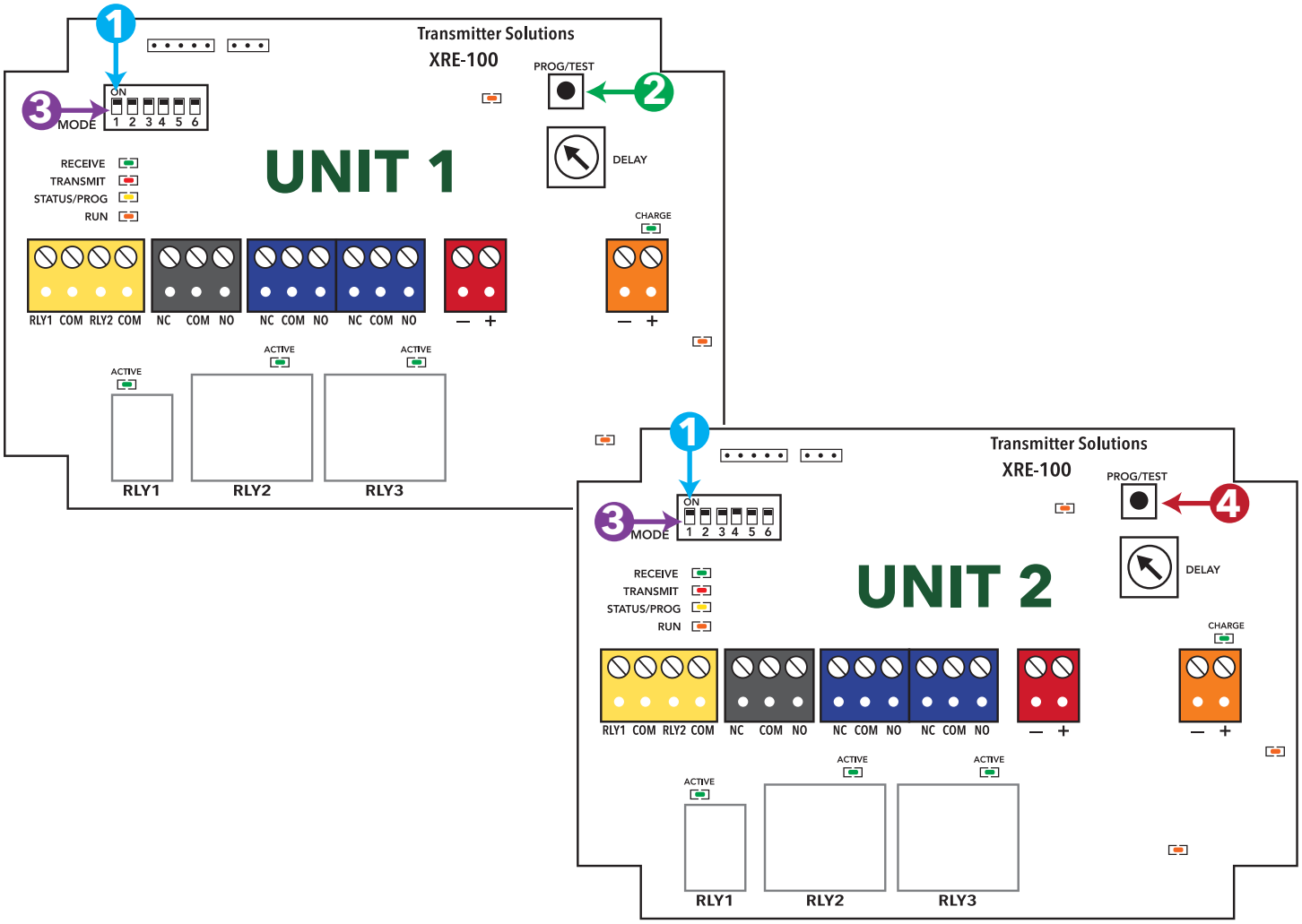
12 Volt Sealed Lead Acid (SLA) battery only. Solid GREEN LED indicates battery charging. Momentarily flashing GREEN LED indicates battery is charged and a trickle/conditioning charge is occurring.

7. PAIRING UNIT IN THE FIELD

PAIRING

1. Flip Dipswitch 1 to **ON** on both units.
2. Press the **PROG/TEST** button on either unit
   NOTE: Observe the STATUS/PROG LED flashing.
3. Flip Dipswitch 1 to **OFF** on both units
4. Press **PROG/TEST** and observe TRANSMIT and RECEIVE LEDs operating normally.

Pairing procedure overwrites any previous units. For example, if replacing a unit simply follow the above procedure with the existing and replacement unit.



TROUBLESHOOTING

XRE-100 units are not communicating:

1 - Check the Run LED. Normal operation will be orange LED flashing once a second.

2 - Press the red program button on the XRE-100. When pressed, the XRE-100 will send a radio test packet and the RED TRANSMIT LED will illuminate. If the paired XRE-100 is online, it will acknowledge with a radio test packet – indicated by a momentary on the green receive LED.

If you do not see the transmit and receive LED lights activate:

1 - Power cycle both the XRE units.

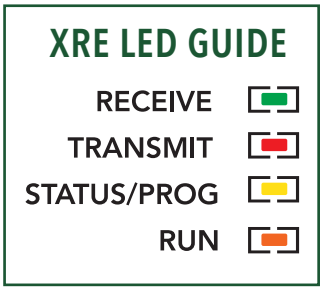
2 - Move the XRE-100 units to a higher location and avoid mounting on/in metal objects

If you are not getting the desired range between XRE-100 units:

1 - Ensure that the both devices are powered by their own dedicated power supply

2 - Ensure that 1 amp of power draw is available to each device during transmission

3 - Move the XRE-100 units to a higher location - and avoiding mounting in/on metal objects



WARRANTY

The warranty period of this product is 24 months, beginning from the manufacturing date. During this period, if the product does not operate correctly, due to a defective component, the product will be repaired or replaced at the sole discretion of Transmitter Solutions. This warranty does not extend to the product casing which can be damaged by conditions outside of the control of Transmitter Solutions.

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