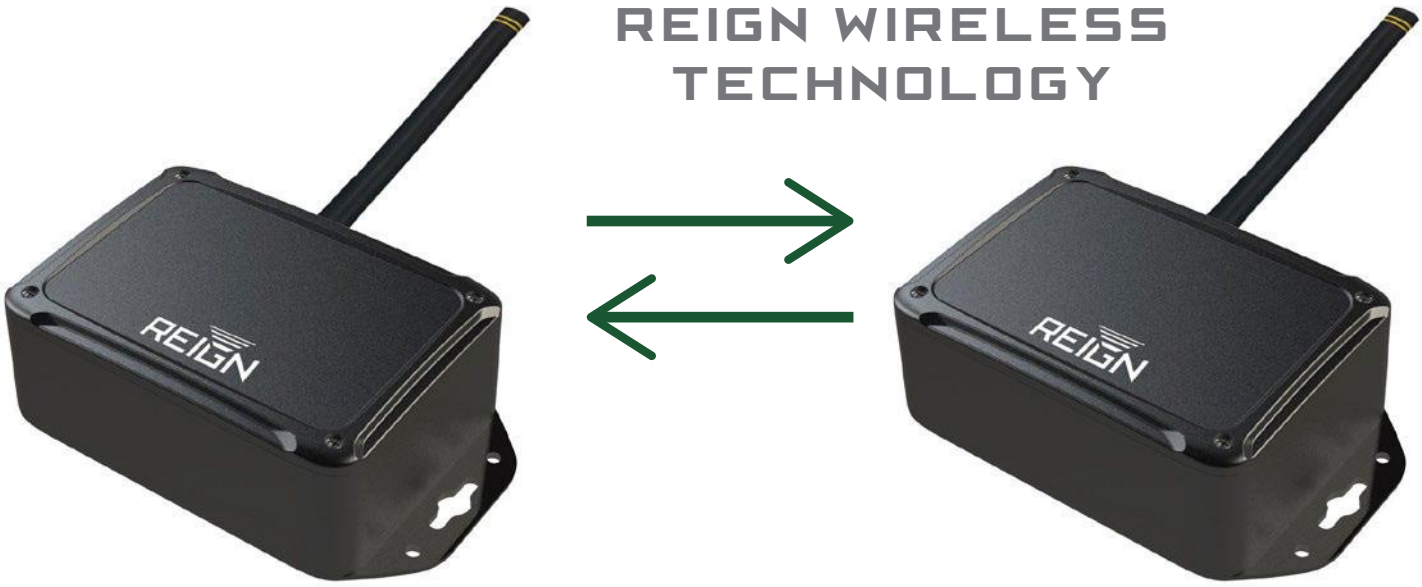
XRE-100
RELAY EXTENDER

v.1.24.23



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. Must purchase two units to complete the kit.

The Reign XRE-100 - Relay Extender kit includes 1- XRE-100 unit. 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 through extreme obstruction and interference.

If you ordered your XRE-100s together they will need to be paired as a unit. See pairing section.

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:

1. FCC REGULATORY STATEMENT..... 3

2. SPECIFICATIONS..... 3

3.BOARD CONECTIONS..... 4

4. POWER DETAILS..... 4

5. LED INDICATORS..... 5

6. RELAY DIAGRAM AND WIRING..... 6

7. ALERT RELAYS..... 7

8. DIP SWITCHES..... 8

9. BATTERY BACKUP..... 9

10. PAIRING IN THE FIELD..... 9

11. TROUBLESHOOTING..... 10

12. FACTORY RE-SETTING & ERASING..... 11

1. FCC REGULATORY STATEMENT

FCC ID: 2ASPOXRE100A: 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 interfer–ence received, including interference that may cause undesired operation.

IMPORTANT! Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

NOTE: This equipment 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. 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 receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

This transmitter must not be co–located or operating in conjunction with any other antenna or transmitter.
The antennas used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co–located or operating in conjunction with any other antenna or transmitter.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
(Example – use only shielded interface cables when connecting to computer or peripheral devices).

2. SPECIFICATIONS

Power Input: 12-24 Volt AC/DC

Relays: 10A 250 VAC/ 28VDC

12V: 50mA (idle)

1A (transmit)

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

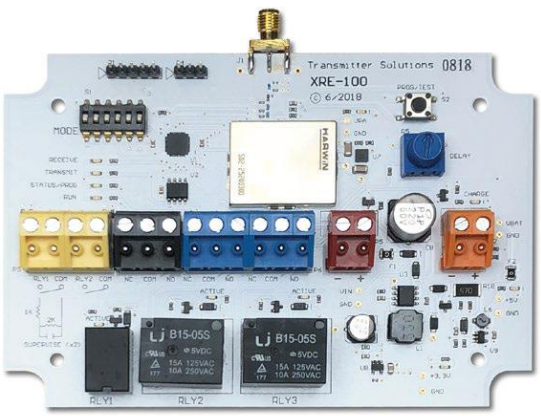
Range: 1/2 mile (Through obstructions)

Relays: 10A 250 VAC/ 28VDC

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

Security Encryption: AES

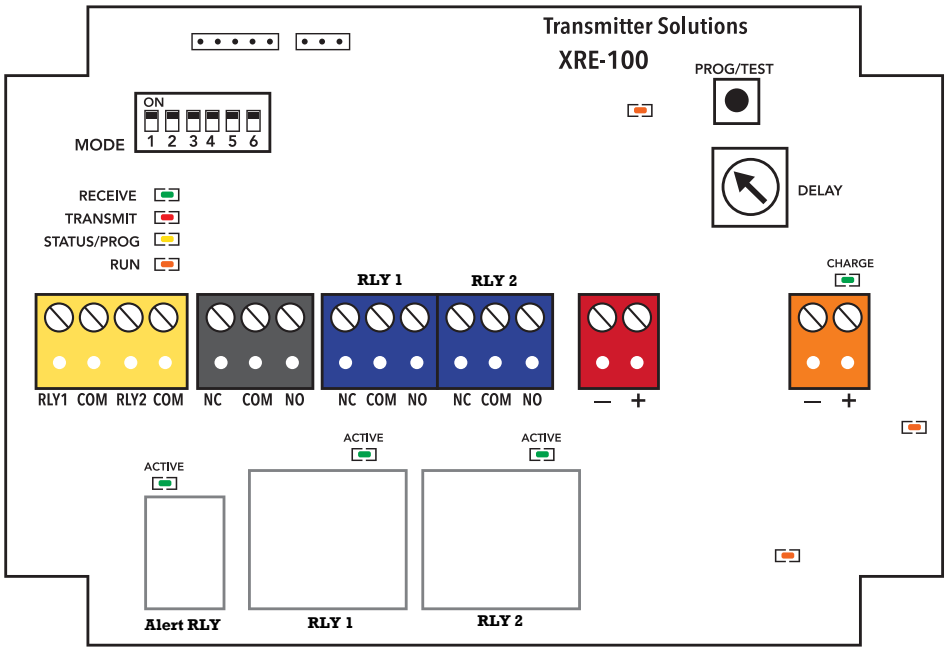
XRE-100 units do not come paired. Please follow pairing instruction on page 9.



POWER INPUT: 12 to 24 VOLTS AC/DC. - 1 AMP Minimum Always follow polarity when DC Power is used. Antenna Must Always be Used Regardless of Range.

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.

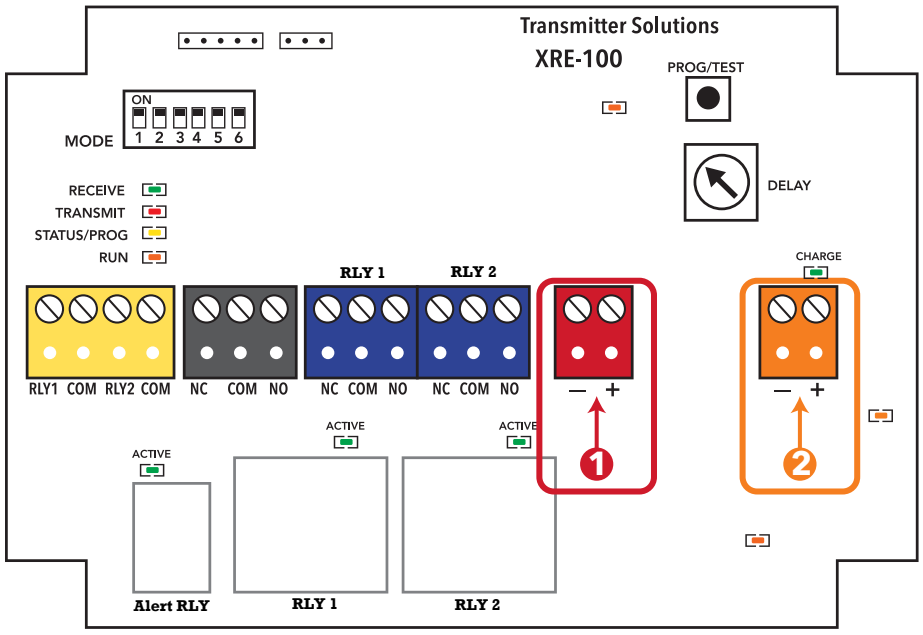
3. BOARD CONNECTIONS



4. 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.

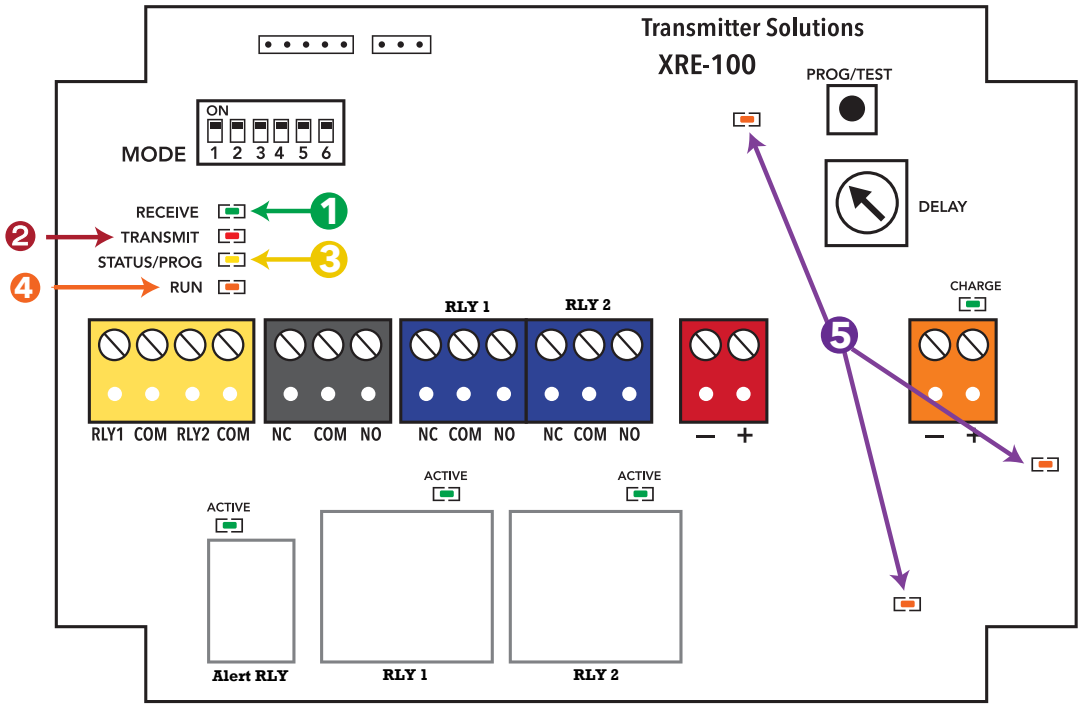
Solid Green LED = Battery charging

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

5. 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 volts supply, 3.3 volt logic supply and a VPA3.6 volt power amplifier supply.



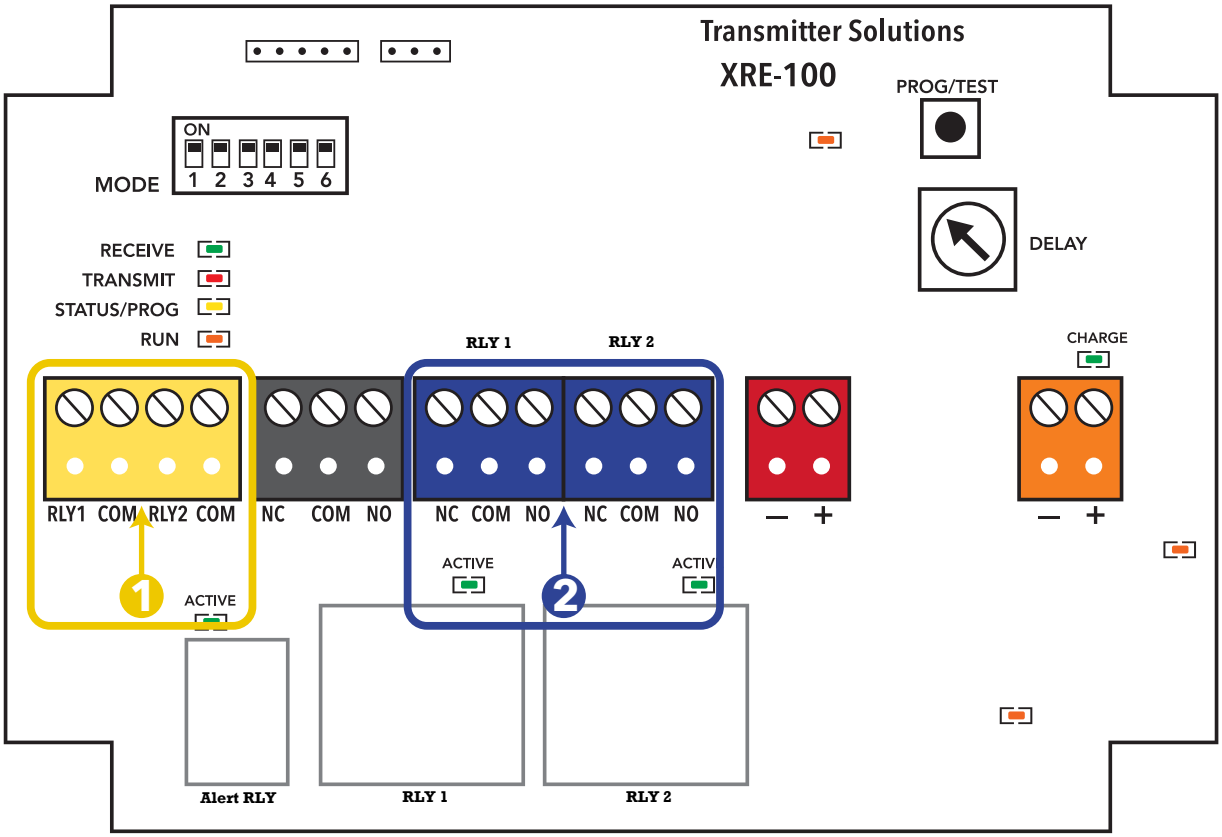
6. RELAY DIAGRAM AND WIRING

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.



7. ALERT RELAYS

1 ALERT INPUT (when DIP switch 3 is on)

2 ALERT RELAY OUTPUT

Both RELAY 1 and RELAY 2 INPUTs are supervised when DIPSWITCH 3 in ON.

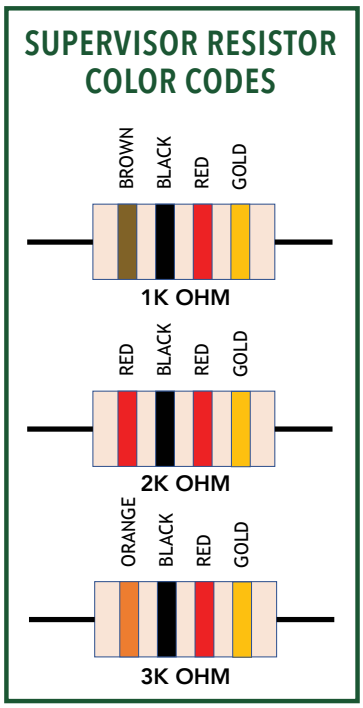
Supervised inputs detect fault or tampering of inputs and send an ALERT RELAY activation to the opposite unit (Typically from the Node unit to the Base unit).

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.

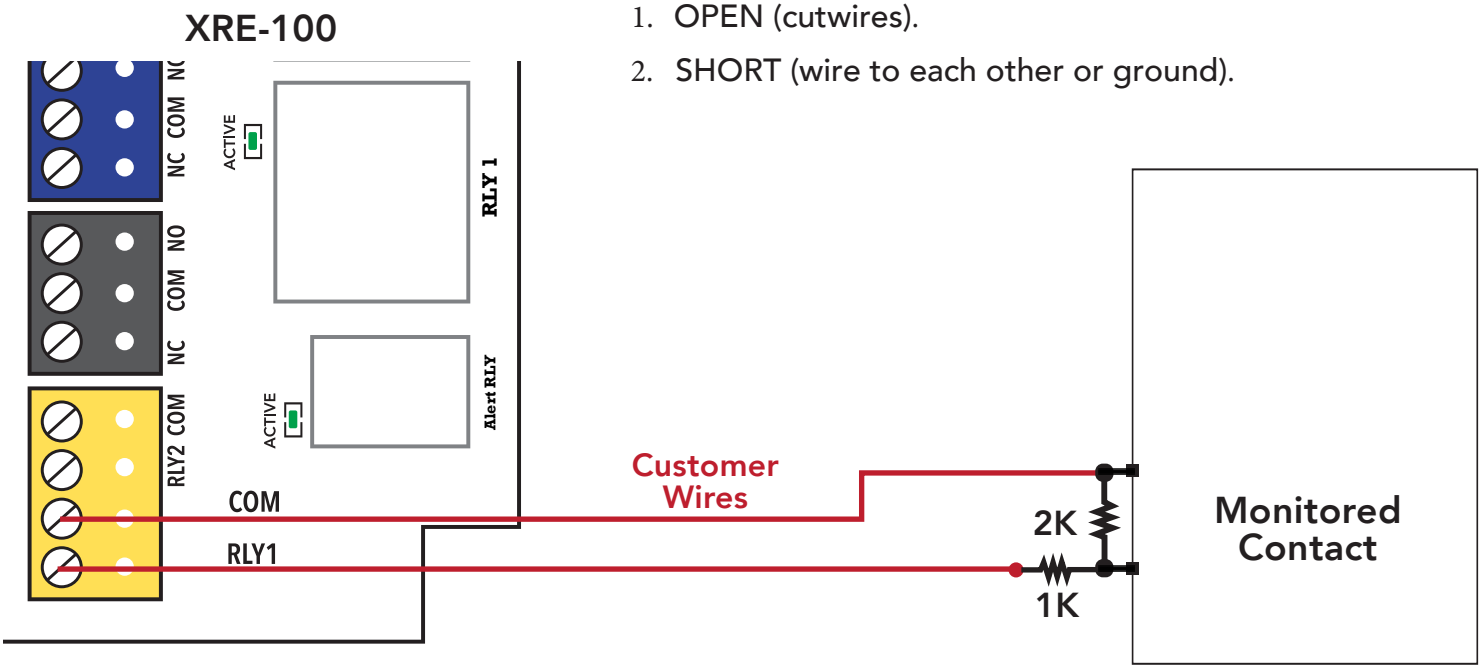
If Supervised Inputs are not desired, simply leave DIPSWITCH 3 OFF and wire your
contact directly across the Rx and COM pins.

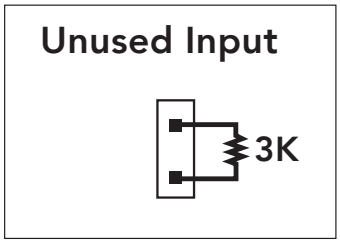
NOTE: Communication Loss - If the XRE-100 units stop communicating the Alert Relay Output(Black relay) will trigger. Alerting on loss of communication between devices.



Detects:

1. OPEN (cutwires).
2. SHORT (wire to each other or ground).





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

2. Associated DIPSWITCH SW3 must be ON

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

8. DIP SWITCHES

1 MODE SWITCHES

XRE-100 -> XRE-100 Mode
Set dipswitch 2 to OFF.
Dipswitches function according to page 8 of existing XRE-100 Manual except, Supervise is now on dipswitch 3 and Comms Loss Beacon is now on dipswitch 4.

		OFF	ON	NOTE
1	Pairing Mode	Pairing Mode OFF	Pairing Mode ON	
2	XRE/TX100 Mode	XRE -> XRE Mode	XRE -> TX100 Mode	Pairs with another XRE-100
3	Supervised Inputs	No Supervision	Supervision	Valid when Switch 2 = OFF
4	Alert Relay Beacon	Beacon Off	Beacon On	Pulse Alert 1sec ON/ 1sec OFF
5	RESERVED	RESERVED	RESERVED	
6	RESERVED	RESERVED	RESERVED	

2 RELAY OUTPUT SWITCH:

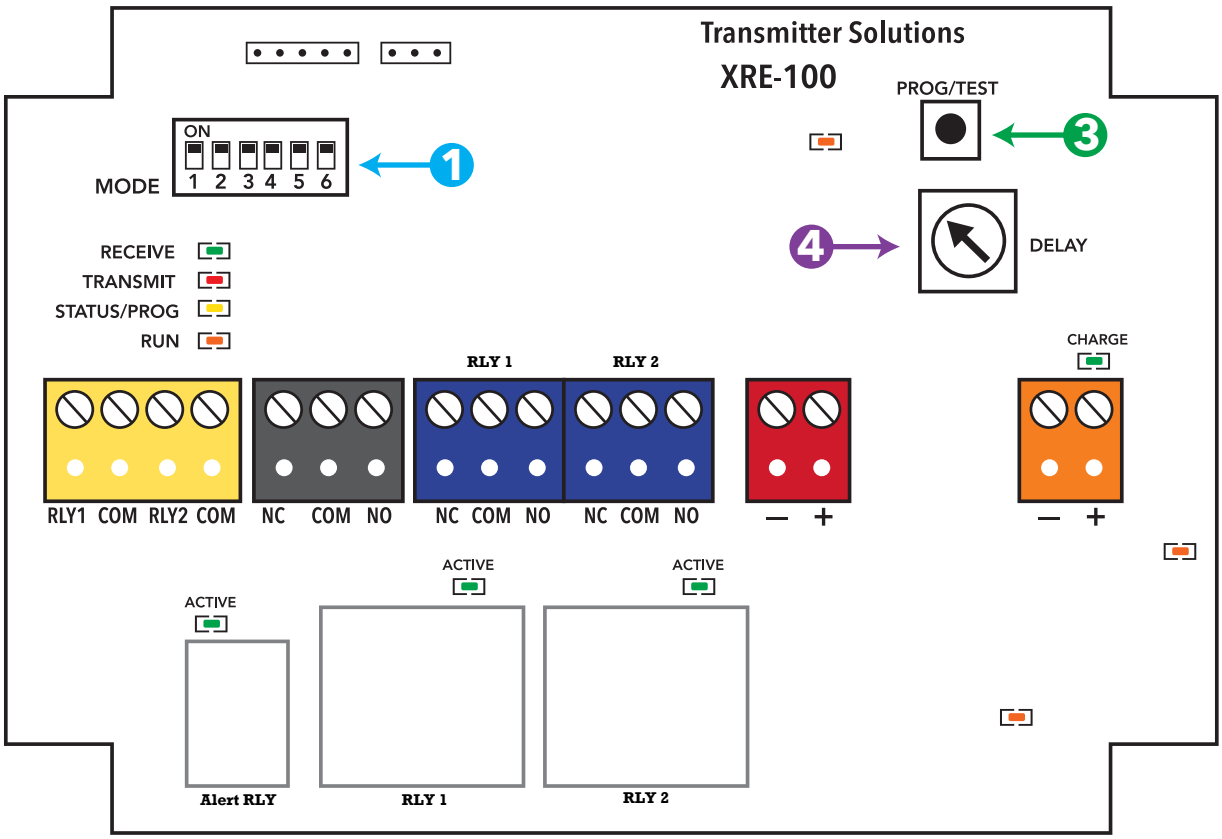
Relay Output Switch - not used in XRE-100 to XRE-100 Relay Extension operation.

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.



9. 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.

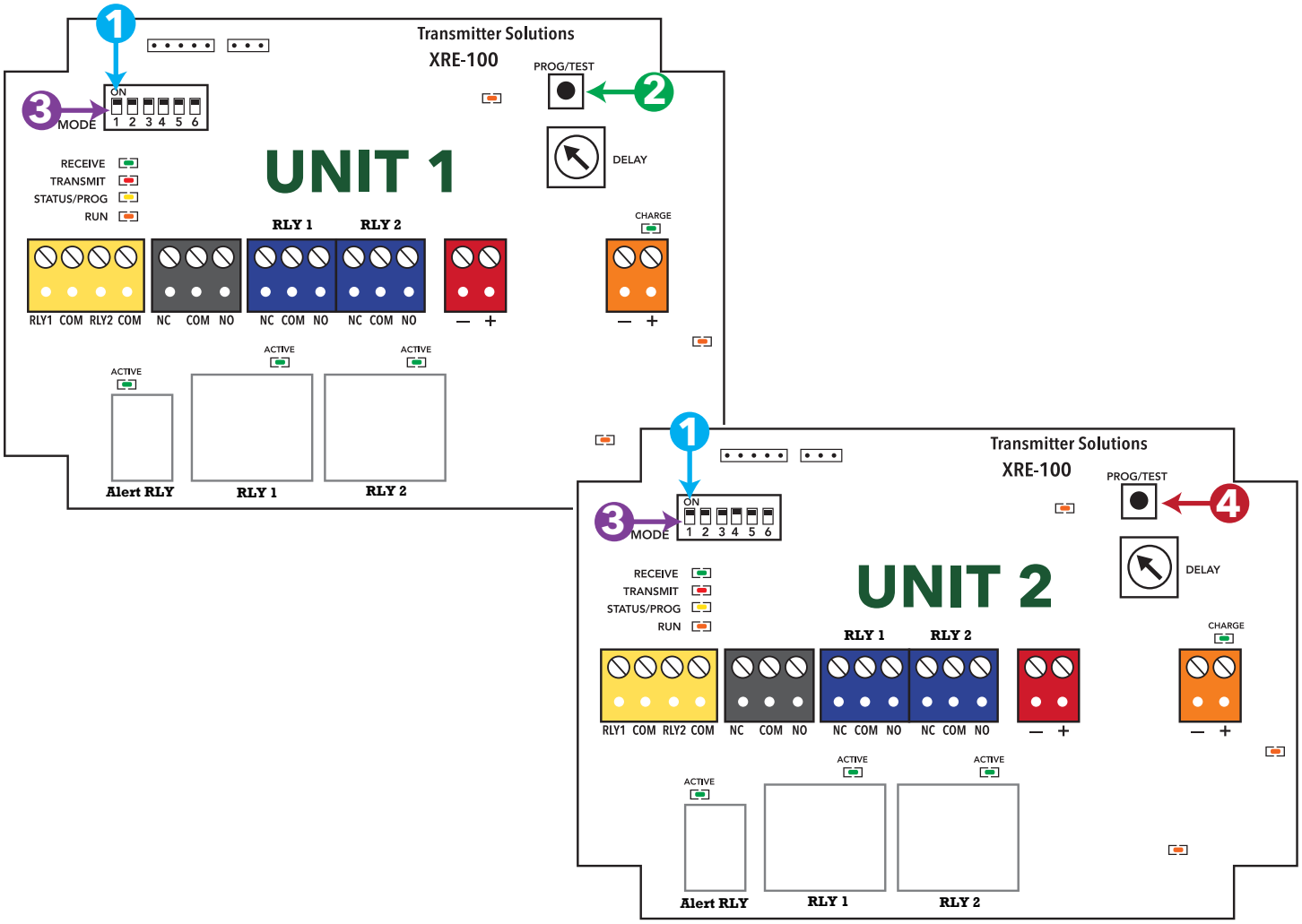
10. PAIRING IN THE FIELD

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.



11. TROUBLESHOOTING

XRE-100 units are not communicating:

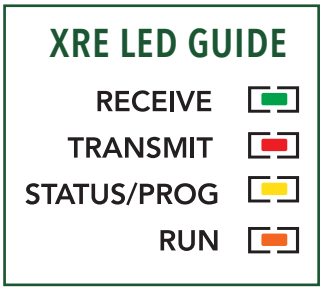
1 - Check the Run LED. Normal operation will be orange LED flashing once a second.

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

Delete all Memory:

Turn DIP switch 1 to the on position on the XRE-100. Then press and hold Pair/Test button for 10-seconds. If completed correctly the status light will flash 6-times.

Add this to just the TX-100 manual:

Delete Single TX-100 from Memory:

Turn DIP switch 1 to the on position of the TX-100. Verify DIP switch 1 is in the off position in the XRE-100. Press transmit button on the TX-100. Test by pressing TX-100 button, there should be no response from XRE-100.

Erase Feature:
To erase XRE of All ID's and Remotes

1. Flip Dip switch (1) to the on position. Only the single XRE not both (needing to be erased) at a time.
2. Hold down the test button for about 10 seconds until the yellow status light starts blinking and release button.
3. Flip dipswitch (1) back to the off position.
4. The unit is now erased of all ID's. This includes pairing of units.
5. Repeat on each unit needing to be erased.

To erase the TX-100 from the XRE only.

Single TX

1. (Must have in possession to erase.) Otherwise the option is to erase all remotes from XRE using the erase function of the XRE.
2. With the remote in hand - remove the cover to the battery. This can be done by squeezing the sides of the remote causing the lid to pop off or using a small tip screw driver and lightly pressing the tip in the side of the cover along seem.
3. Flip dipswitch (1) to the on position of the TX-100.
4. Make sure the XRE it was paired to is powered on and press the transmit button of the remote.
5. Now flip dipswitch (1) to the off position. The remote is now removed from the XRE.

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.

EXCEPT AS SET FORTH ABOVE, TRANSMITTER SOLUTIONS MAKES NO WARRANTIES REGARDING THE GOODS, EXPRESS OR IMPLIED, INCLUDING WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE. BUYER MAKES NO RELIANCE ON ANY REPRESENTATION OF TRANSMITTER SOLUTIONS, EXPRESS OR IMPLIED, WITH REGARD TO THE GOODS AND ACCEPTS THEM "AS-IS/WHERE-IS". TRANSMITTER SOLUTIONS SELLS THE GOODS TO BUYER ON CONDITION THAT TRANSMITTER SOLUTIONS WILL HAVE NO LIABILITY OF ANY KIND AS A RESULT OF THE SALE. BUYER AGREES THAT TRANSMITTER SOLUTIONS SHALL HAVE NO LIABILITY FOR DAMAGES OF ANY KIND, WHETHER DIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING INJURIES TO PERSONS OR PROPERTY, TO BUYER, ITS EMPLOYEES OR AGENTS, AS A RESULT OF THE SALE. BUYER ALSO AGREES TO HOLD TRANSMITTER SOLUTIONS HARMLESS FROM ANY CLAIMS BUYER, OR ANY THIRD PARTY, MAY HAVE AS A RESULT OF BUYER'S USE OR DISPOSAL OF THE GOODS. BUYER HAS READ THIS DISCLAIMER AND AGREES WITH ITS TERMS IN CONSIDERATION OF RECEIVING THE GOODS.

PH 866.975.0101 • **FX** 866.975.0404
www.transmittersolutions.com