Remote Control Technology
Simple Wireless Solutions

#70100STS Mid-Range Light Duty Stationary System

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 interference 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:

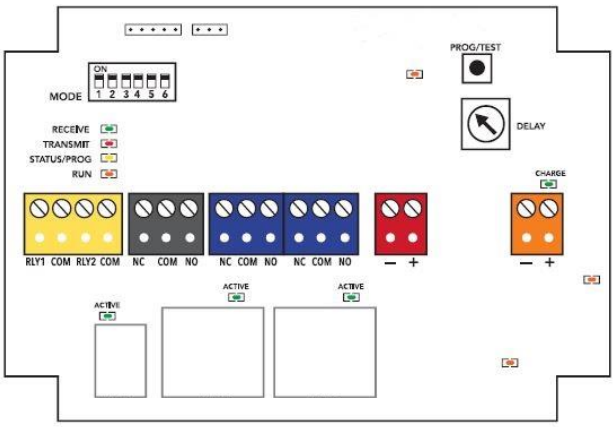
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/ TV technician for help.

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).

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.

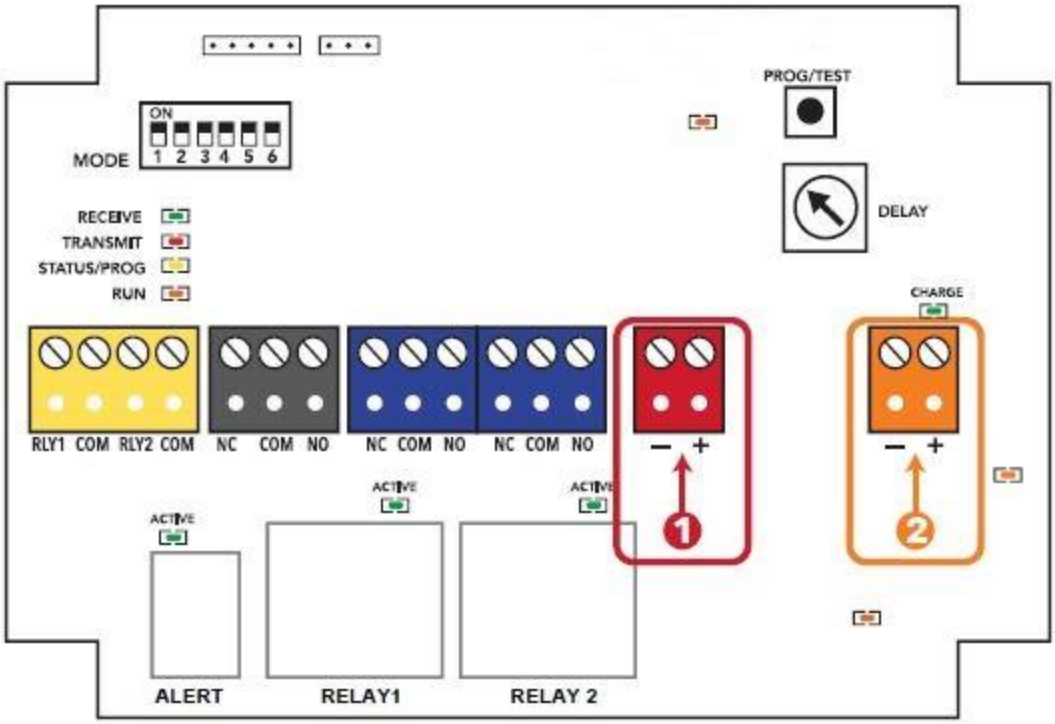
BATTERY INPUT: for 12 Volt Sealed Lead Acid (SLA) battery only.

Solid GREEN LED indicates battery charging. Momentarily flashing GREEN LED indicates battery is charged and a trickle/conditioning charge is occurring.

POWER DETAILS

Each unit needs 1 amp of current draw to transmit at full power.

IMPORTANT - UNITS REQUIRE AT LEAST 1 AMP 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

LED INDICATORS

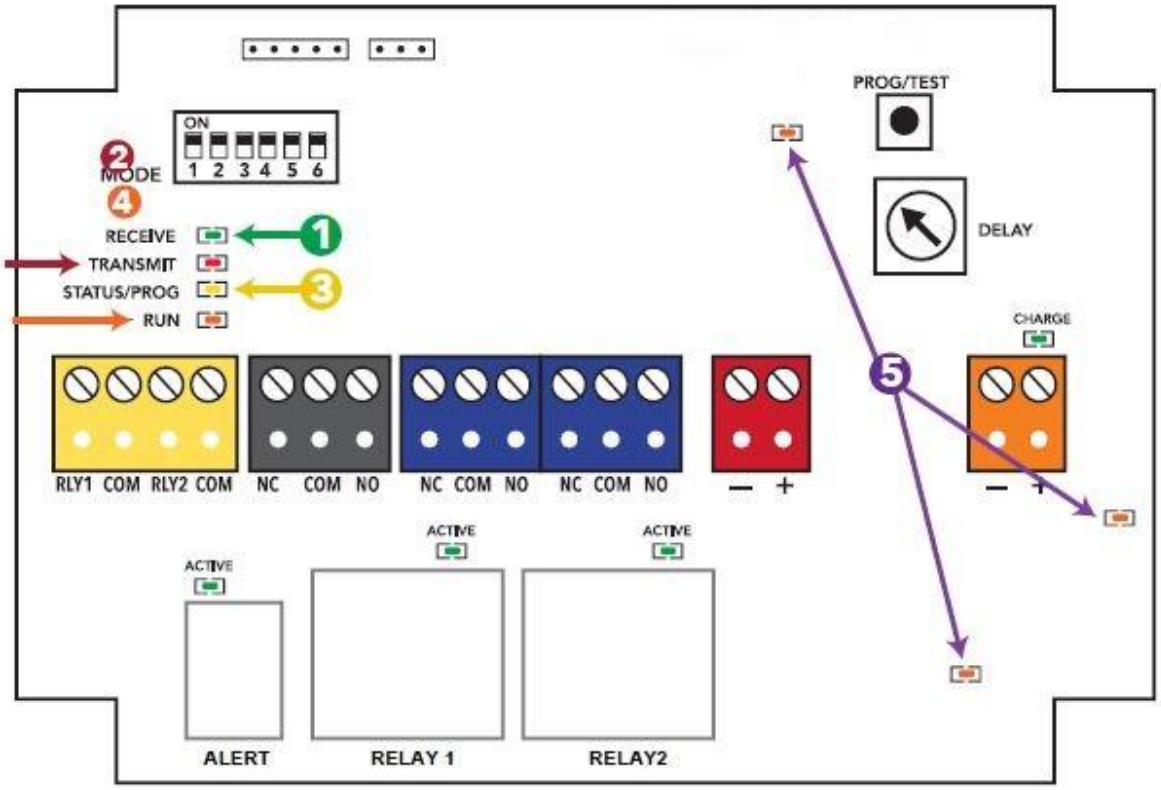
RECEIVE - Flashes GREEN momentarily when a valid radio transmission is received.

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

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

RUN - Flashes ORANGE 1 second ON and 1 second OFF indicating the microprocessor is running.

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.



RELAY DIAGRAM AND WIRING

RELAY INPUTS

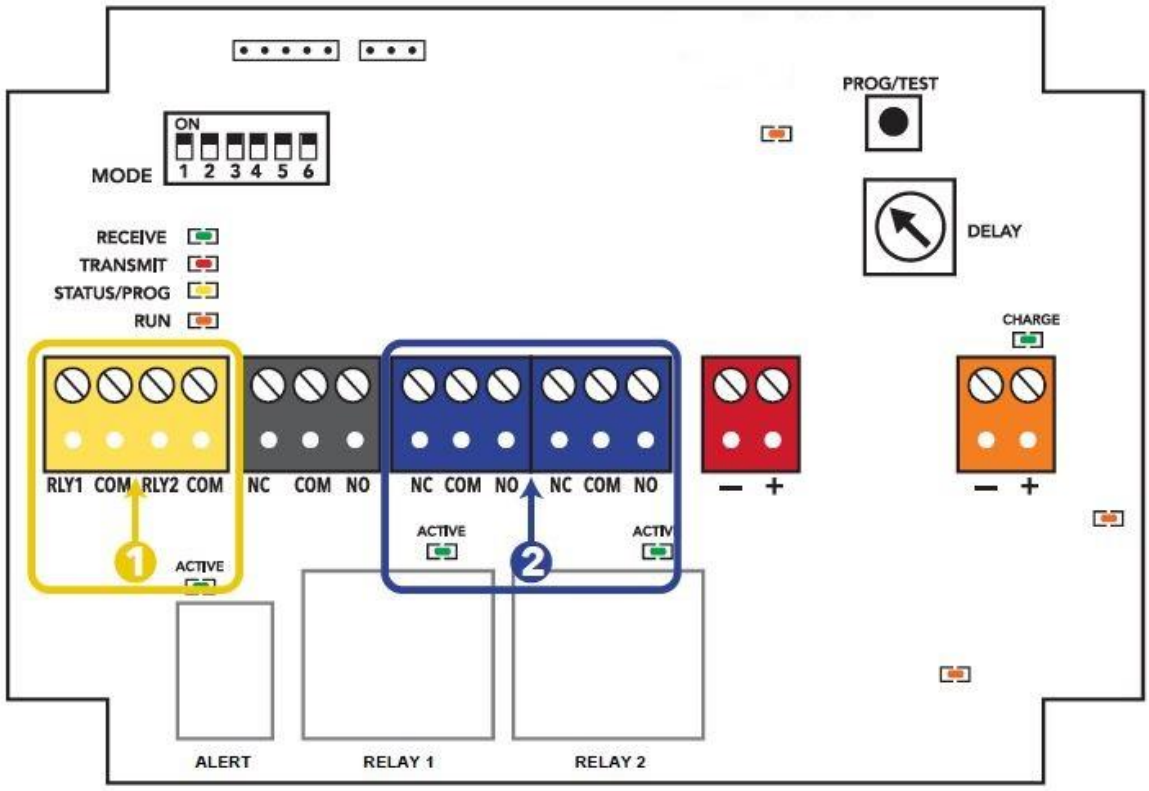
Relay Inputs - The units come with 2 relay inputs. Connect DRY closure from devices relay to be extended. A closure on RLY1/COM input will result in a closure on RLY1 (NC/COM/NO) of the paired unit. A closure on RLY2/COM input will result in a closure on RLY2 (NC/COM/NO output) of the paired unit.

RELAY OUTPUTS

Relay Outputs - The units come with 2-relay outputs. Each output follows RELAY INPUTS from other paired unit. When RLY1 or RLY2 INPUTS on one unit are closed, RLY1 and RLY2 OUTPUTS on the other unit are energized and connect NC/COM/NO respectively. This relay state is also indicated by the GREEN ACTIVE LED above each relay.

NOTE: The "Alert" relay (bottom left in diagram below) will activate if the unit loses contact with the network for longer than 90 seconds.

The black terminal block is for the "Alert" relay output and is located in between the yellow "Input" terminal blocks and the blue "Output" terminal blocks.



MODES OF OPERATION & DIP SWITCH SETTINGS

ONE-TO-ONE: Consists of two units only (one "Transmitter" & one "Receiver").

In this mode, funtionality is in one direction only, from a single "Transmitter" to two or more "Receivers".

Inputs 1 & 2 on the transmitter will activate relay Outputs 1 & 2 on all receivers simultaneously.

Transmitter (One)

DIP Switch #5 = ON

Receiver (One)

All DIP Switches = OFF

ONE-TO-MANY: Consists of one "Transmitter" and two or more "Receivers".

In this mode, funtionality is in one direction only, from a single "Transmitter" to two or more "Receivers".

Inputs 1 & 2 on the transmitter will activate relay Outputs 1 & 2 on all receivers simultaneously.

Transmitter (One)

DIP Switch #5 = ON

Receivers (Many)

All DIP Switches = OFF

MANY-TO-ONE: Consists of two or more "Transmitters" and a single "Receiver".

In this mode, functionality is in one direction only, from multiple "Transmitters" to a single "Receiver".

Inputs 1 and/or 2 on any transmitter will activate relay Outputs 1 and/or 2 on the receiver.

Transmitters (Many)

DIP Switch #4 = ON

Receiver (One)

DIP Switch #4 & #5 = ON

ADDITIONAL DIP SWITCH SETTINGS

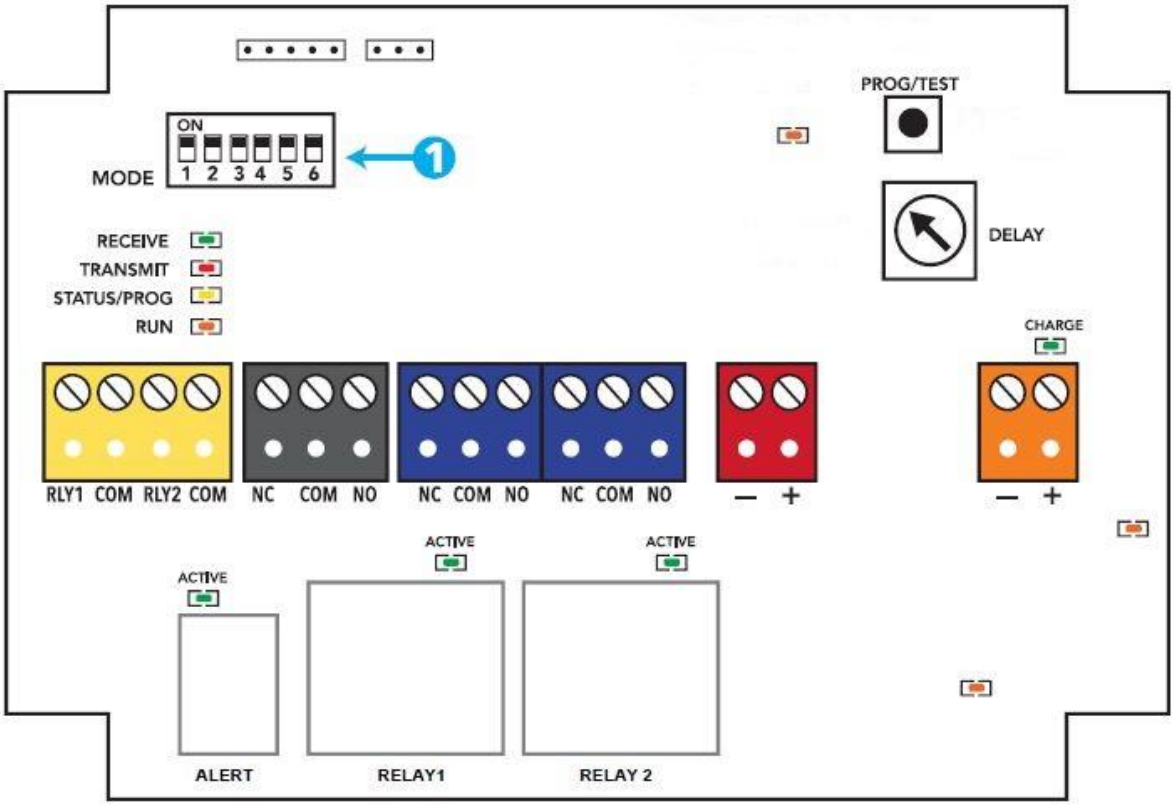
DIPSWITCH 1: Used for pairing/ programming.

When ON the unit will pair to the units. To do this both units must have DIPSWITCH 1 ON. Press the Program/Test button on either unit.

DIPSWITCH 6: Is used to configure relay output behavior if communications are lost.

If DIPSWITCH 6 = OFF, the relays remain in the same state as they were before lost comms.

If DIPSWITCH 6 = ON, relays will deactivate with lost comms after 90 seconds. Lost comms is determined by 3 consecutive SYNC transmissions from the other unit. SYNC transmissions are every 30 seconds, 90 seconds total.



PAIRING THE UNITS IN THE FIELD

NOTE: ONLY (2) TWO UNITS SHOULD BE POWERED-UP AT A TIME DURING PROGRAMMING…ALL OTHER UNITS SHOULD BE POWERED OFF!!!

1) Flip DIPSWITCH 1 to ON on both units.

IMPORTANT: Set additional DIP switches per the "MODES OF OPERATION & DIP SWITCH SETTINGS" section above.

2) Press the PROG/TEST button on the:

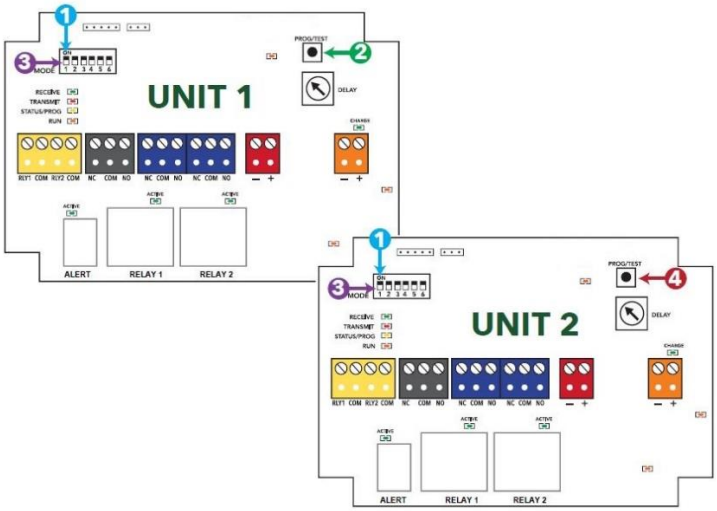
- One-to-One = "Transmitter"
- One-to-Many = "Transmitter"
- Many-to-One = "Receiver"

NOTE: Observe the STATUS/PROG LED flashing.

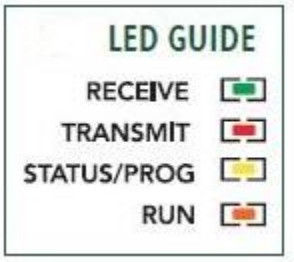
3) Flip DIPSWITCH 1 to OFF on both units.

4) Press PROG/TEST on the designated "Transmitter(s)" and observe that the TRANSMIT and RECEIVE LEDs are operating normally.

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



TROUBLESHOOTING



Units are not communicating:

1. Check the "RUN" LED. Normal operation will be orange LED flashing once per second.
2. Press the red "PROGRAM" button. When pressed, the radio will send a test packet and the red "TRANSMIT" LED will illuminate. If the paired radio is online, it will acknowledge with its own test packet, confirmed on the original radio by a green "RECEIVE" LED.

If you do not see the "Transmit" and "Receive" LEDs illuminate:

1. Power cycle both radios.
2. Move the units to a higher location.

If you are not getting the desired range:

1. Ensure that both units are powered by their own dedicated power supply.
2. Ensure that 1A of power draw is available to each device during transmission
3. Move the units to a higher location.

The warranty period of this product is 12 months, beginning from the manufacturing date.

During this period, if the product does not operate correctly, due to defects in workmanship and/or materials, the product will be repaired or replaced at the sole discretion of Remote Control Technology.

Notes:

Other reliable products from Remote Control Technology

Stationary Solutions

Ranging from Short to Long Range Wireless Remote Control Systems. Learn how our solutions can help your company save time and money.

Handheld Solutions

Remote Control Technology has designed and manufactured custom wireless applications for a number of Fortune 500 companies.

Irrigation Control

Since 1982, Remote Control Technology has taken the lead in RF radio frequency wireless remote controls for irrigation controllers.

At Remote Control Technology, we are committed to quality and service.

With nearly 40 years of experience, we manufacture and sell the highest quality wireless control systems in the industry.