

UL924 Listed Emergency Lighting Bypass / Shunt RIB® Relays

Description

Our UL924 Listed RIB® relays are suitable for shunting around wall switches, lighting panels, and controllers, which turn on emergency lighting in the event of the loss of normal utility power. Emergency power is supplied by either a generator or inverter system switched by an automatic transfer switch. This is typically done close to the emergency power source.

Our UL924 Listed RIB® relays can be ordered with various configurations of LED indicators, which are used for initial wiring verification and field inspection. Many models allow for remote testing, giving your inspector access during scheduled inspections. Some models are available with a dimming override, enabling full brightness when emergency power is present. Other models can be used when the designated emergency light is needed for normal lighting, both controlled by a single switch.

Operation

When normal power is present, the relay coil is activated, and the emergency panel is fed from normal power. The lighting load can be switched on or off using an individual wall switch. When normal power drops out, the relay coil is deactivated, and N/C contact closes, creating the pathway for the emergency backup power to flow. The automatic transfer switch changes over to backup (generator) power, and the lighting load is illuminated regardless of the position of the wall switch or controller scheme.

Features

- Multi-coil voltage input
- 10 and 20 Amp contact ratings
- 16 Amp electronic ballast rating (specific models)
- 0-10 Vdc dimmer override
- Remote test capability
- NEMA 1 enclosure with bright yellow color for easy identification
- Pre-wired and prepackaged for convenience
- LED indicator of utility and emergency voltage
- Nipple mount, wall mount, or ballast channel mount
- UL 924 Listed & California State Fire Marshall
- DPDT configurations available
- 5-year warranty
- Made in the U.S.A.



Emergency Lighting Bypass / Shunt Relays (UL924)

Features

Perfect for all emergency lighting shunt applications

- Up to 16 Amp electronic ballast rating
- 0-10 Vdc dimmer override
- Coil input range: 120 Vac through 277 Vac
- Bypass/shunt override
- Normal control of emergency lighting
- LED indicators for normal voltage, emergency voltage, and load status
- Nipple mount, wall mount, or ballast channel mount
- 10 Amp and 20 Amp SPST versions including magnetic ballast, electronic ballast, and tungsten ratings
- Made in the U.S.A.
- Remote control/test capability (model ESRTB)



Applications

Our Emergency Shunt Relays are designed to fill every need in your emergency lighting applications.

- Emergency lighting can be controlled under normal conditions using the wall switch input.
- A two second self-test of the unit is performed every time the wall switch input is turned off.
- The on-board local test button and LEDs allow for installation to be tested immediately.
- Remote test capability allows for a button, switch, controller, fire alarm panel, etc. to be conveniently mounted anywhere desired. [Class 2 acceptable] See model ESRTB (remote test button).
- Under normal operation, emergency light can be controlled by a controller using the dry contact input.
- The dry contact output can be used to override 0-10 V dimmers to full brightness (or for feedback to controllers, etc.)
- High contact ratings allow for multiple loads on a single relay unit.
- Different housings allow for wall or nipple mount (model ESRN), or ballast channel mount (model ESRB).

Input and Output Characteristics

Electrical Specifications (ESRB, ESRN)

Normal Power Supply Voltage	120-277Vac
Normal Power Current Draw	24mA max
Normal Power Operating Frequency	50/60Hz
Emergency Power Supply Voltage	120-277Vac
Emergency Power Current Draw	118mA max
Emergency Power Operating Frequency	50/60Hz
Remote Test Input (Class 2, Dry Contact)	ESRTB or other switching method ^{1,2}
Feedback/Dimmer Contact Switching Capability (Dry Contact Output)	130mA @ 250V max
Relay Contact (ESRN) SPST	20A Magnetic Ballast @ 277V 16A Electronic Ballast @ 277V 10A Tungsten @ 120V
Relay Contact (ESRB) SPST	10A Magnetic Ballast @ 277V 10A Electronic Ballast @ 277V 10A Tungsten @ 120V

- 1: If not using the ESRTB Remote Test Button (sold separately), switching methods should be rated for at least 24Vdc. External voltage should not be supplied to this input. No specific current rating is required.
- 2: To maintain Class 2, a maximum of 45 total test inputs (ESRB and/or ESRN) can be wired in parallel per ESRTB.

Mechanical Specifications

Housing: UL accepted for use in Plenum, NEMA 1

Wire: 16" 600V Rated

Weight: 0.675 lbs. (ESRN)
0.40 lbs (ESRB)

Operating Temperature: -30° to 140° F (-35° to 60° C)

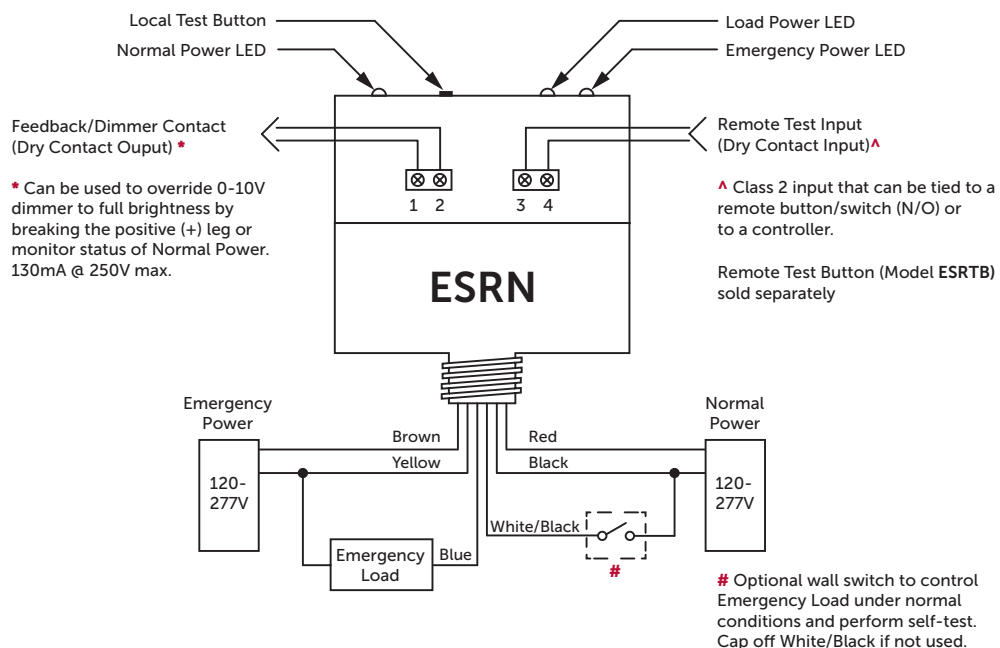
Humidity Range: 5 to 95% (noncondensing)
Rated for dry and damp locations only

Approvals: UL listed, UL924, C-UL

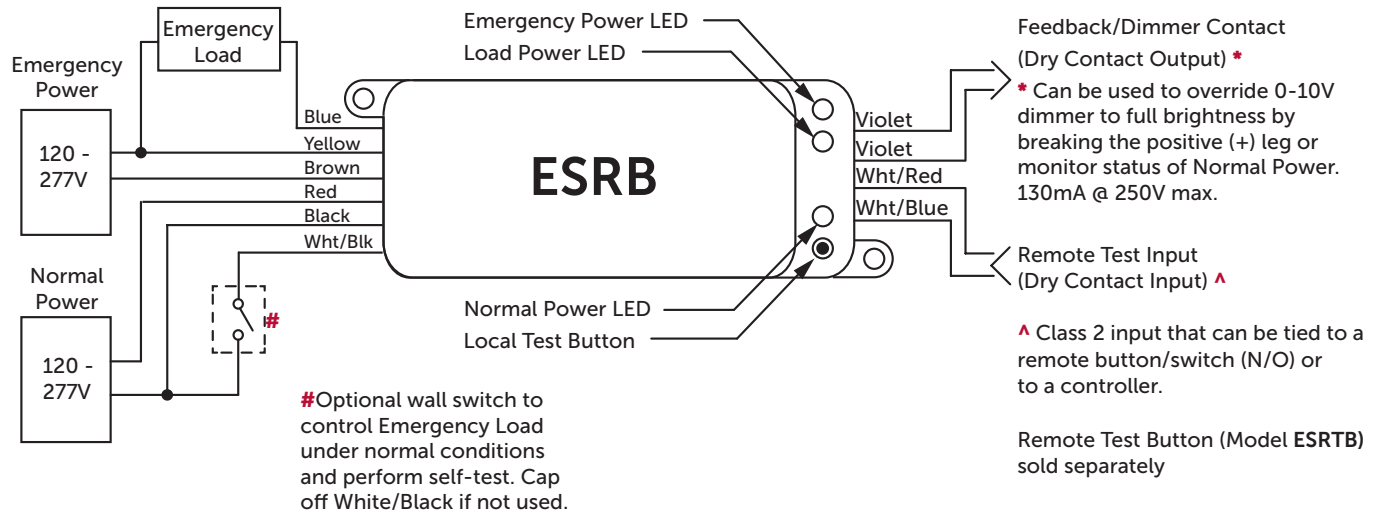
Wiring Information

Wiring Descriptions

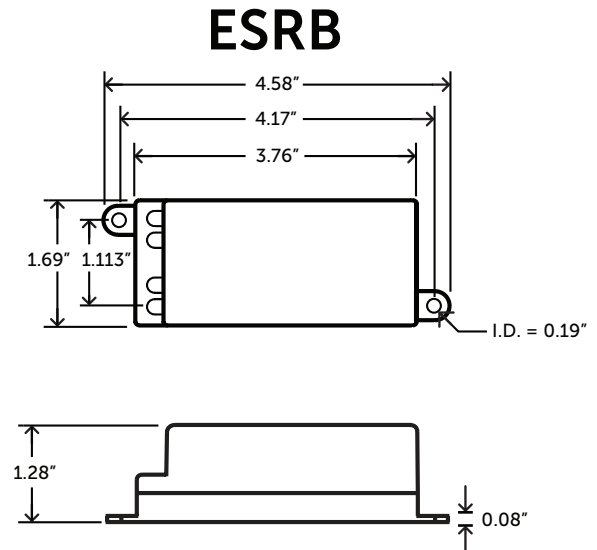
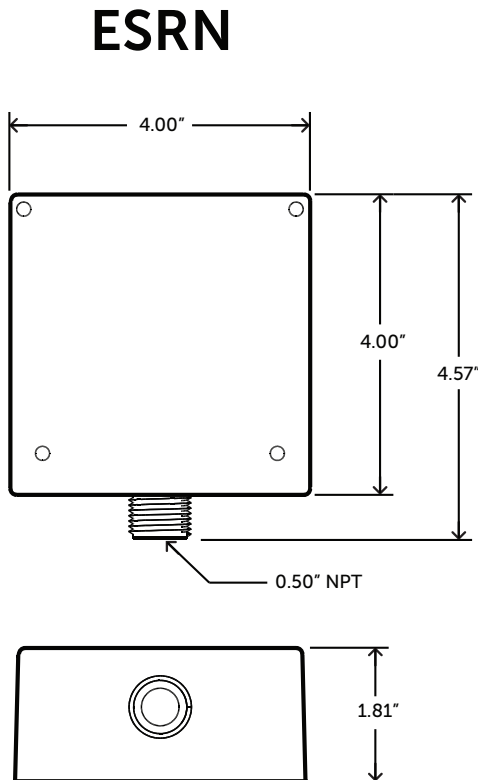
Wire Color	Description	Notes
BLACK	Normal Hot	—
WHITE/BLACK	Wall Switch Input (Self-Test Input)	WHITE/BLACK wires must be from same branch circuit as BLACK and RED. When switched off, a two second delay keeps the load on to test emergency power. This does not test feedback/dimmer output.
RED	Normal Neutral or other Phase	—
BROWN	Emergency Hot	—
BLUE	Emergency Hot Switched to Load	Switches out the voltage from BROWN
YELLOW	Emergency Neutral or other Phase	—
WHITE/BLUE (ESRB) Terminal Screw 4 (ESRN)	Remote Test Input (Class 2, Dry Contact Input)	When wiring multiple units together, WHITE/BLUE or Terminal Screw 4 must be a shared common. Test is performed when Input is CLOSED.
WHITE/RED (ESRB) Terminal Screw 3 (ESRN)		
VIOLETS (ESRB) Terminal Screws 1, 2 (ESRN)	Feedback/Dimmer Contact (Dry Contact Output) Wall Switch Input does not test this output.	Relay contacts are OPEN when normal power is absent or Remote Test Input is CLOSED. Relay contacts are CLOSED when normal power is present or Remote Test Input is OPEN.



Wiring Descriptions

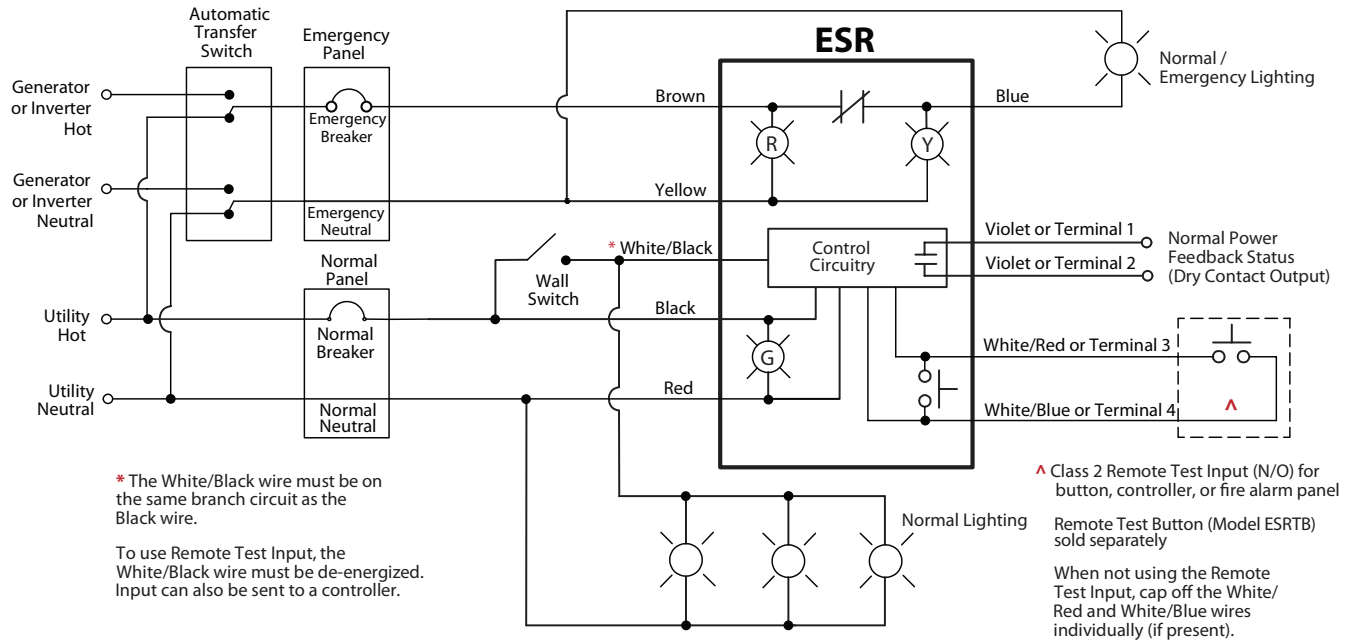


Dimensions

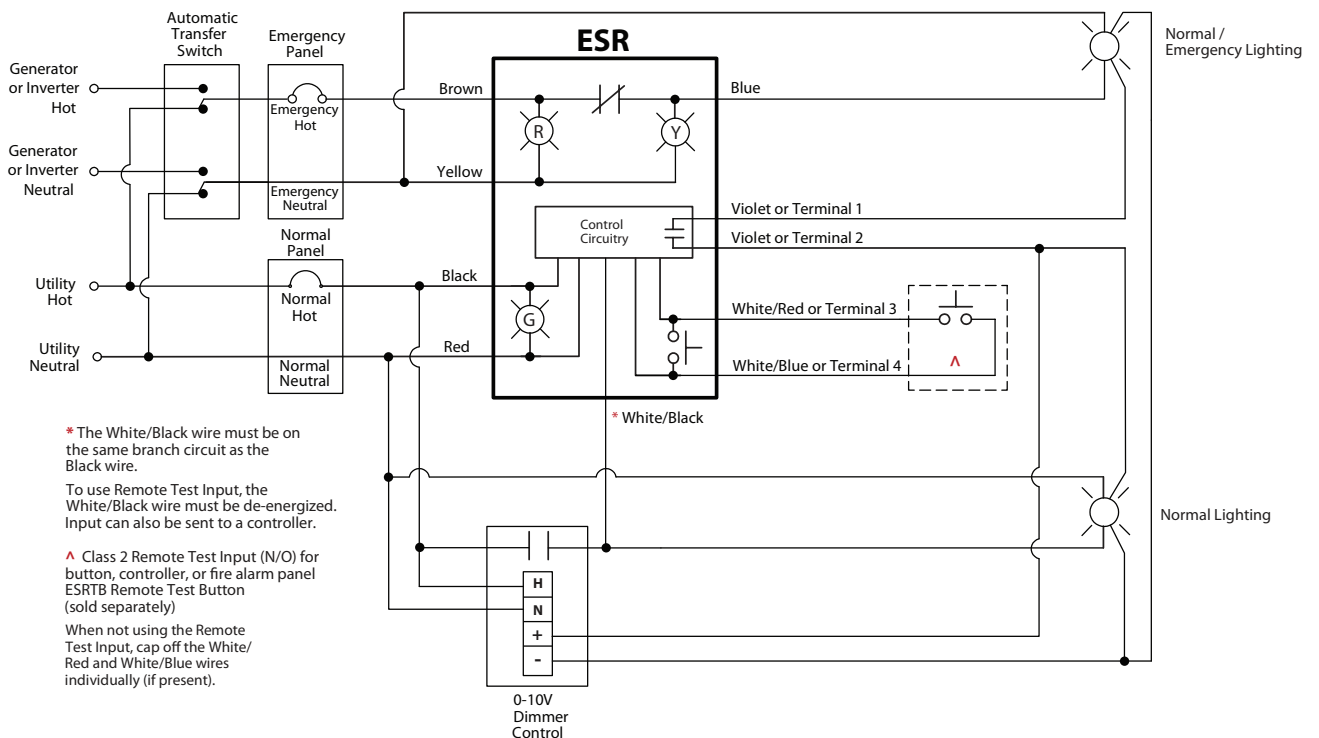


Typical Applications

Using Emergency Lighting as Normal Lighting



Overriding a 0-10Vdc Dimmer





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Testing and Troubleshooting

Test Procedure: Four options to test the ESRB and ESRN after installation:

Initial Test for Correct Wiring

Apply Emergency Power to the Emergency Power Input and Normal Power to the Normal Power Input. (If using the Wall Switch Input, apply Normal Power to the switch also, but keep the switch OFF/OPEN.)

- a. The Red LED (Emergency Power available) should be ON.
- b. The Green LED (Normal Power available) should be ON.
- c. The Yellow LED (Load Status) should be OFF.
- d. The Load should be OFF.
- e. The Feedback/Dimmer Contact should be CLOSED.

Local Test Button

1. Turn switched circuit OFF. Emergency light should be OFF.
2. Press and hold "Local Test Button"
3. Emergency light should turn ON.
4. Release "Local Test Button" and emergency light should turn off.

Remote Test Button (Model ESRTB - sold separately)

1. Turn switched circuit OFF. Emergency light should be OFF.
2. Press and hold "Remote Test Button"
3. Emergency light should turn ON.
4. Release "Remote Test Button" and emergency light should turn off.

Wall Switch

1. Turn ON wall switch if not already on.
2. Emergency light should turn ON.
3. Turn wall switch OFF.
4. Emergency light will remain on for two seconds before turning off.

To test the ESRB and ESRN periodically, repeat the appropriate Test Procedure above in accordance with national and local codes.

Troubleshooting

Condition	Action
Red LED is OFF	<ul style="list-style-type: none"> • Check Emergency Power Input wiring (BROWN and YELLOW wires) and voltage.
Green LED is OFF	<ul style="list-style-type: none"> • Check Normal Power Input wiring (BLACK and RED wires) and voltage.
Yellow LED is ON but Load is OFF	<ul style="list-style-type: none"> • Check Load wiring (BLUE wire and Load's neutral). • Verify Load's operating voltage is the same as the Emergency Power Input Voltage. • Replace unit. • Check bulbs and ballast.
Load is ON but Yellow LED is OFF	<ul style="list-style-type: none"> • Replace unit.
Yellow LED and Load do not turn on when being tested	<ul style="list-style-type: none"> • Check bulbs and ballast. • Check wiring connections if using a remote test option. • Press local test button on the unit. • Replace unit.
Yellow LED and Load will not turn OFF	<ul style="list-style-type: none"> • Verify status of Normal Power Input. • Open Wall Switch Input. • Verify that no test inputs are stuck closed. (i.e. Remote Test Input is not closed).