



ESRN-U

UL924 Low Draw ALCR
Dimming Disable

Overview

The ESRN-U is a UL924-listed automatic load control relay designed for emergency lighting applications. Supporting universal 120 VAC to 277 VAC input, it features a 20 Amp SPDT relay with overrides for 0 – 10 V dimmers, DALI systems, and dry contact fire alarms. Key features include a low power draw, local and remote testing capabilities, and an LED indicator for normal power status. It is suitable for shunting around switches or lighting panels to ensure emergency lights activate upon loss of normal power, and it holds UL, C-UL, CE, and RoHS certifications, with a plenum-rated housing.

Physical Specification

Dimensions:	4.00" H x 4.00" W x 1.81" D (102 mm x 102 mm x 46 mm)
Mounting:	Flat Mount or 1/2-14 NPT Threaded Stem *See OEM Spec Sheet for mounting screw pattern.
Temperature Rating:	-30 °F to 122 °F (-34 °C to 50 °C)
Humidity Range:	5% to 95% (noncondensing)
Relay:	One (1) SPST Continuous Duty Coil
Operate Time:	18 ms
Expected Relay Life:	10 Million Cycles
Approvals:	UL Listed, UL924, C-UL, CE, RoHS
Housing Rating:	UL Accepted for Use in Plenum, NEMA 1
Gold Flash:	No
Override Test Switch:	Yes



Features

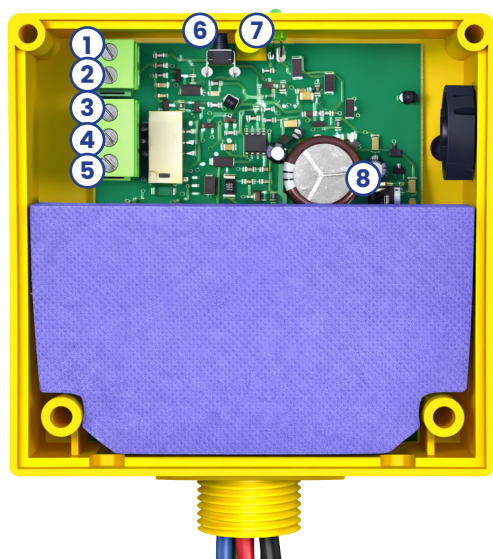
- » The low power draw reduces energy consumption and minimizes impact on emergency power systems.
- » UL924 Listing ensures compliance with stringent safety standards for emergency lighting control, a critical requirement for life safety systems.
- » Universal Voltage Input (120 VAC to 277 VAC) provides flexibility and simplifies installation in a wide range of building power systems.
- » 20 Amp SPDT Relay offers robust switching capacity for controlling significant lighting loads.
- » 0 – 10 V Dimmer & DALI Override enables seamless integration with dimming systems, ensuring full brightness during emergencies.
- » Dry Contact Fire Alarm Interface allows integration with fire alarm systems for emergency lighting activation.
- » Local and remote testing simplifies maintenance and verification of proper operation.
- » LED indication provides quick visual confirmation of normal power status.
- » Plenum rated housing allows for installation in plenum spaces, increasing installation flexibility.



Electrical

Normal Power:	4 mA Typical 40 mA Maximum
Normal Input Voltage:	120 VAC to 277 VAC (50/60 Hz)
Emergency Power:	0 VA 0 VAR 0 W
Magnetic Ballast Rating:	20 A @ 277 VAC
Electronic Ballast Rating:	16 A @ 277 VAC
Tungsten Rating:	5540 W @ 277 VAC 10 A @ 120 VAC

Terminal Identification



1. Remote Test Input		
2. Remote Test Input	YEL	Emergency Line
3. Feedback Normally Open*	BLU	Emergency Load
4. Feedback Common*	ORG	Emergency Normally Open
5. Feedback Normally Closed	BLK/WHT	Normal Switched Line
6. Local Test Button	BLK	Normal Line
7. Normal Power LED	RED	Normal Neutral
8. Automatic Self-Test Jumper		

*Commonly used for 0 – 10 V Dimming Disable. See notes below.

Remote Test Input Overview: Terminals 1 and 2 are designated for the Remote Test Input. Connecting a momentary switch to these terminals allows for testing the emergency operation of the lighting system, ensuring proper response during an emergency state.

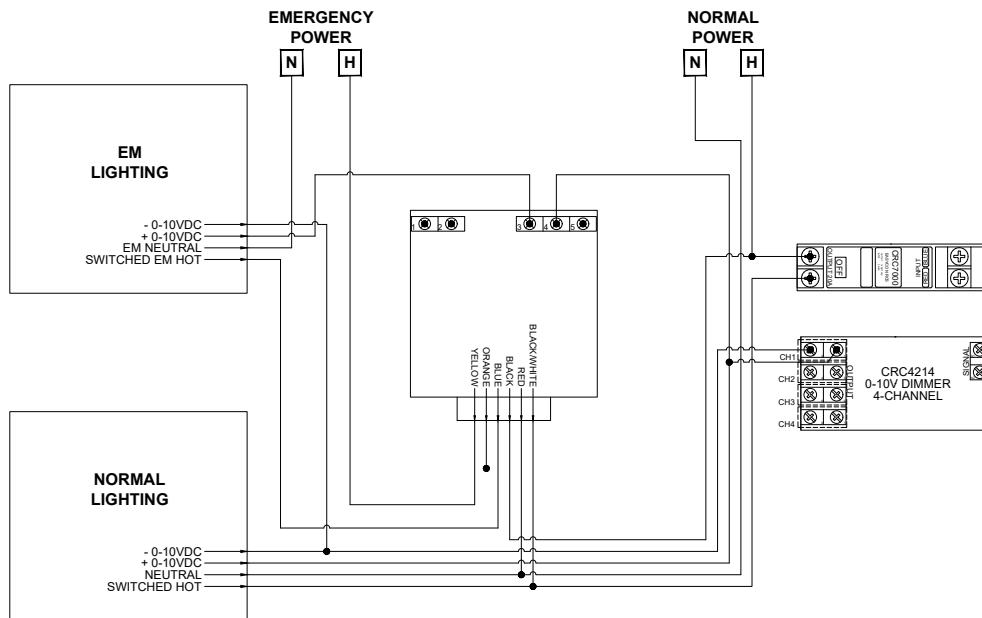
0 – 10 V Dimming Disable Overview: Terminals 3 and 4 are used for disabling the 0 – 10 V dimming function. By creating an open circuit between these terminals, the system can be configured to ensure that the lights operate at full output during emergencies.

Status Monitoring Overview: Terminals 4 and 5 are utilized to provide a contact closure in an emergency state. By creating a closed circuit between these terminals, the system generates a contact closure output during emergencies for monitoring purposes.

Automatic Self-Test Jumper Overview: Terminals 6 and 7 are designated for a jumper to enable the Automatic Self-Test feature. Installing the jumper between the terminals allows the ESRN device to perform regular self-testing of the lighting system, ensuring functionality and readiness in emergency situations. To disable the Self-Test function, remove the jumper and place it on only one of the two pins to prevent losing the jumper.



Wiring Diagrams



UL924 WIRING DETAIL (ESRN-U)

Installation Verification

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.)

- The green LED (Normal Power Available) should be on.
- The load should be off.
- The feedback/dimmer contact should be closed.

Local Test Button:

- Turn switched circuit off. The emergency fixtures should turn off.
- Press and hold Local Test Button.
- Emergency fixtures should turn on.
- Release Test Button.
- Emergency fixtures should turn off.

Wall Switch:

- Turn switched circuit on.
- Emergency fixtures should turn on.
- Turn switched circuit off.
- Emergency fixtures should remain on for two (2) seconds before turning off.



Troubleshooting

Condition	Action
Green LED is OFF	Check Normal Power Input wiring (BLACK and RED wires) and voltage.
Wall Switch Input is ON but Load is OFF	Check bulbs and ballast. Check Load wiring (Blue wire and Load's neutral). Check Wall Switch Input wiring (Black/White wire). Replace Unit.
Load does not turn on when being tested	Check bulbs and ballast. Check wiring connections if using a remote test option. Press local test button on the unit. Replace unit.
Load will not turn OFF	Verify status of Utility Power Input. Verify no test inputs are stuck closed.

