

LightLEEDER R20D-EM

Remote 20 Amp Dimming relay with Emergency Bypass



IMPORTANT: Read carefully before installing product. Retain for future reference.
Failure to comply with these instructions may result in death, serious bodily injury and property damage.

WARNING



Risk of Fire, Electrical Shock, Cuts or other Casualty Hazards- Installation and maintenance of this product must be performed by a qualified electrician. This product must be installed in accordance with the applicable installation code by a person familiar with the construction and operation of the product and hazards involved.



Before installing or performing any service, the power **MUST** be turned OFF at the branch circuit breaker. All installations should be in compliance with the National Electric Code and all state and local codes.



Risk of Fire and Electric Shock- Make certain power is OFF before starting installation or attempting any maintenance. Disconnect power at fuse or circuit breaker.



Risk of Burn- Disconnect power and allow product to cool before handling or servicing.

Risk of Personal Injury- Due to sharp edges, handle with care.

DISCLAIMER OF LIABILITY: Cooper Lighting Solutions assumes no liability for damages or losses of any kind that may arise from the improper, careless, or negligent installation, handling or use of this product.

NOTICE: Product may become damaged and/or unstable if not installed properly.

Note: Specifications and dimensions subject to change without notice.

ATTENTION Receiving Department: Note actual product description of any shortage or noticeable damage on delivery receipt. File claim for common carrier (LTL) directly with carrier. Claims for concealed damage must be filed within 15 days of delivery. All damaged material, complete with original packing must be retained.

NOTICE: All new wiring must be fully verified before applying power.

NOTICE: Designed for indoor installation and use only. Do Not Use Outdoors. The device is for use with grounded, UL Listed, indoor fixtures. Not for use in wet or hazardous locations. Install to a ½" Ko in a standard j-box or enclosure, suitable for plenum mounting.

NOTICE: Do not install near electric or gas heaters.

NOTICE: Refer to product cut sheet for additional operating environment specifications.

NOTICE: The unit must be installed in locations and at heights where it cannot be easily tampered with by unauthorized personnel.

NOTICE: The use of accessories not recommended by the manufacturer may cause hazardous conditions.

NOTICE: Do not use this equipment for purposes other than its intended use.

NOTICE: The Fixture, Normal power relay and Emergency Bypass Relay (R20D-EM) is powered by more than one power source. To reduce the risk of electrical shock, disconnect both normal and emergency sources by turning off the A.C. branch circuit breakers.

NOTICE: The device requires an unswitched A.C. normal power source of 120 to 277 volts A.C. 50/60Hz for the normal lighting loads, and an unswitched Emergency A.C. power source to be controlled by the Shunt relay portion of the device for the Emergency lighting loads.

NOTICE: When used with 0-10V dimming drivers the two dimming control connections should be wired as indicated to the normal and emergency lights independently.

NOTICE: The device should be mounted in a location and at heights where it will not be readily subject to tampering by un-authorized personnel, but still accessible to an electrician for testing and maintenance.

NOTICE: The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition, void warranty, and result in non-compliance with UL specifications



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SAVE THESE INSTRUCTIONS

This installation instruction is for the LightLEEDER R20D-EM.

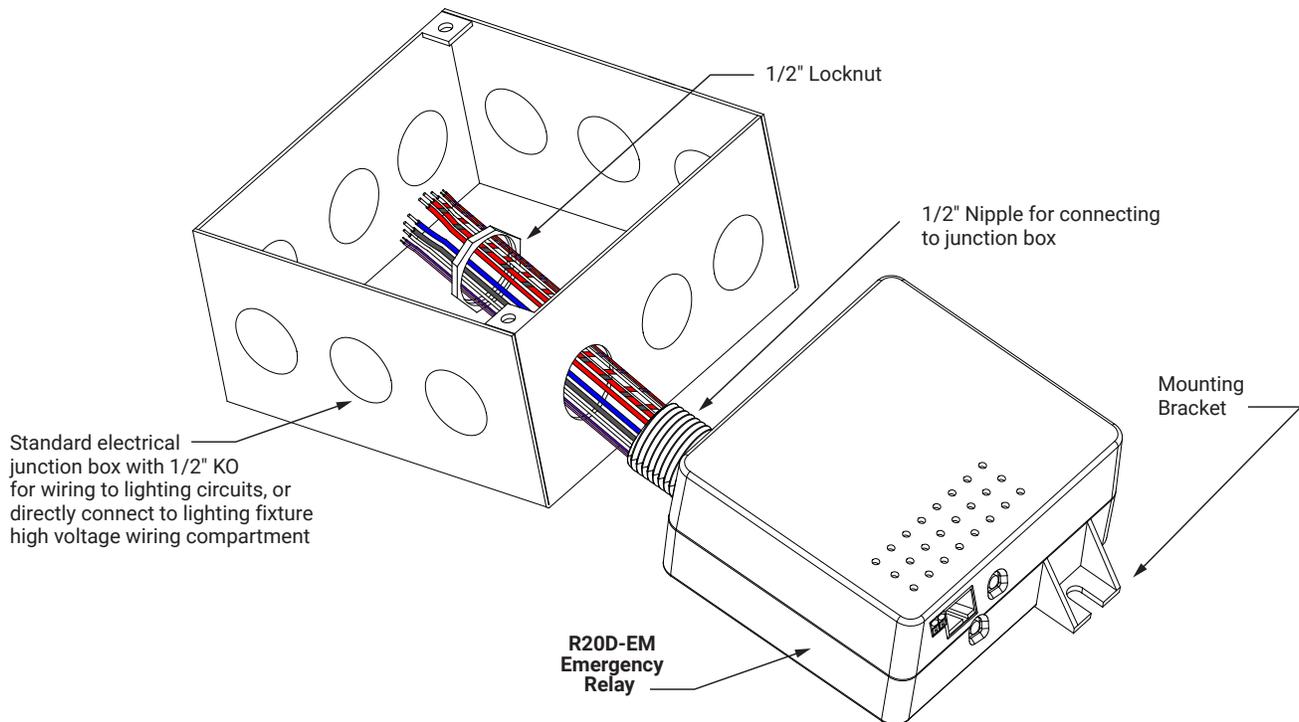
The purpose of this document is to provide sufficient detailed instructions for installation and basic troubleshooting.

This document covers installation of the following products.

- R20D-EM Remote 20 Amp Dimming relay with Emergency Bypass

Read and follow safety instructions

- CAUTION – The Fixture, Normal power relay and Emergency Bypass Relay (R20D-EM) is powered by more than one power source. To reduce the risk of electrical shock, disconnect both normal and emergency sources by turning off the A.C. branch circuit breakers.
- The device requires an unswitched A.C. normal power source of 120 to 277 volts A.C. 50/60Hz for the normal lighting loads, and an unstitched Emergency A.C. power source to be controlled by the Shunt relay portion of the device for the Emergency lighting loads.
- When used with 0-10V dimming drivers the two dimming control connections should be wired as indicated to the normal and emergency lights independently.
- The device should be mounted in a location and at heights where it will not be readily subject to tampering by un-authorized personnel, but still accessible to an electrician for testing and maintenance.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition, void warranty, and result in non-compliance with UL specifications.
- Test all connections and verify operation.

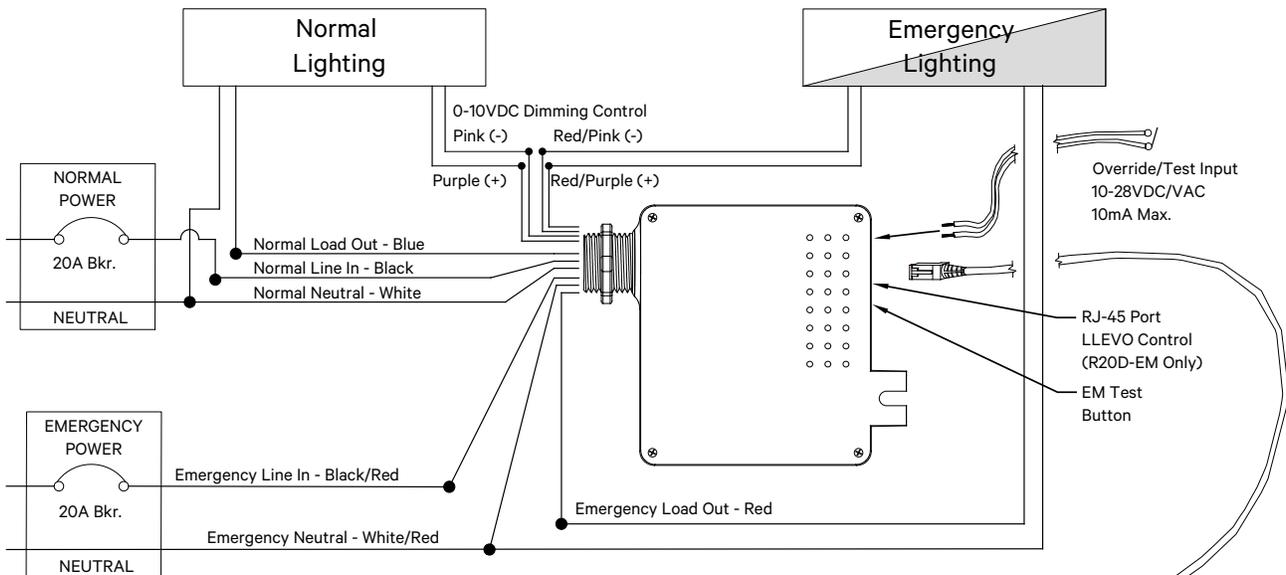


Installing the R20D-EM Relay

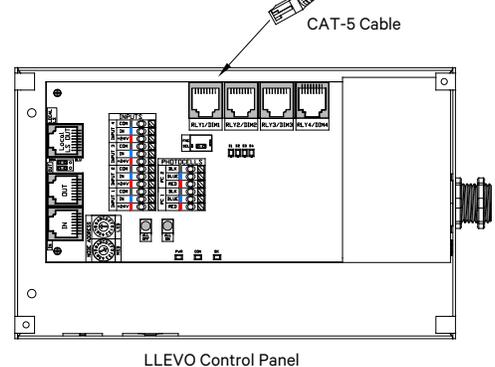
- Mount the relay in an easy to access location, typically at the power junction box feeding the first light fixture to be controlled, or directly into the fixture line voltage wiring compartment.
- This Emergency relay should be installed where it can be frequently tested for EM operation, refer to local code requirements for periodic testing.
- The R20D-EM relay should be installed within 100 feet of LLEVO panel for control using a CAT-5 data cable.
- Mount the relay to a junction box or fixture using the 1/2" nipple and secure with the 1/2" locknut provided and mounting bracket.
- Terminate the Emergency and Normal power line inputs 120/277VAC, neutrals, and fixture control load outputs from the relay to the EM and Normal power fixtures to be controlled as required by NEC Code.
- Test 0-10VDC wiring from the fixtures for proper voltage and reverse wiring of the DC control leads before connecting to the R20D-EM relay.
- Terminate the low voltage Class-2 0-10VDC dimming control leads using two #18AWG leads for EM and Normal control to the fixtures. Keep Class-2 wiring separate from line voltage runs per NEC Code requirements.
- Test the EM relay operation using the EM Test button on the relay.
- Control of the R20D-EM relay is provided from the LLEVO panel.

Wiring Details

The R20D-EM Relay combines both normal and emergency powered lighting control in the same device. Both loads operate together under normal conditions, when normal power is lost the Emergency load and 0-10V dimming are forced ON.



- The R20D or R20D-EM relay is powered by two electrical circuits, verify that both circuit breakers are OFF before connecting.
- Connect the Emergency power line and load wires as shown above.
- Connect the Normal power line and load wires as shown above.
- Keep the Emergency and Normal power separated per NEC Code.
- Connect all 0-10VDC dimming control wires as shown above, cap all unused leads.
- Press the Emergency Test button to force an Emergency state.
- Connect any remote test switches or connections from a Fire Alarm system and test the operation.
- Connect the R20D-EM relay to a LLEVO controller using a CAT-5 data cable for direct control of the loads. LLEVO Control Panel
- If used, pull 2wires from the Fire alarm system or remote test switch, and connect to the test input terminal. This input supports 10-28VDC/AC signal and draws a maximum of 10mA to trigger the signal



Caution:

The R20D-EM devices are feed from two independent electrical circuits, when servicing verify both circuit breakers are switched OFF to prevent accidental harm.

Emergency Power Connections	
Neutral	White/Red
Line In	Black/Red
Load Out	Red
0-10VDC (+)	Red/Purple
0-10VDC (-)	Red/Pink

Normal Power Connections:	
Neutral	White
Line In	Black
Load Out	Blue
0-10VDC (+)	Purple
0-10VDC (-)	Pink

Operation

The device is a combination normal power control and UL-924 emergency shunt bypass relay device that will automatically bypass to emergency power to an On state when normal power is lost. With normal power present the emergency portion will automatically track the on/off state of the normal power load relay, switching the emergency powered bypass relay on/off to match. The EM dimming control will also track the normal dimming and will automatically open when normal power is lost causing the EM dimming control to go to a 100% non-dim state.

Labeling

Label all wire connection and record the circuit number for both Normal and Emergency power for future maintenance.

Testing and Maintenance

The R20D-EM is a maintenance free unit, however periodic inspection and testing is required. Follow Life Safety Codes and local ordinances requirements, test the device on a schedule and keep written records of the test if required.

To test the device, press the EM Test button to force the device into an On-Override state, or by shutting Off the normal power circuit breaker to simulate a "BLACK OUT". The device will automatically turn On the EM load and dimming control will go to a 100% non-dim state. The device will no longer respond to control. When normal power is returned, the device will return to normal operation and track current relay control and dimming.

This test can be done using the normal power breaker panel feeding the device, or by simulating a building wide power loss during a Generator or UPS system test.

The device is also provided with a test input that can be activated by triggering an alarm event at the fire alarm/security system or by activating the remotely mounted test station refer to the wiring detail for test input requirements.

Servicing should be preformed by qualified personel.