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# ETS20

SERIES HITEMP  
20-AMP  
EMERGENCY LIGHTING  
CONTROL DEVICE

## INSTRUCTION MANUAL

### IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed, including the following:

#### READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. **CAUTION** – This unit operates in conjunction with more than one power supply output source. To reduce the risk of electrical shock, disconnect both normal and emergency sources by turning off the A.C. branch circuit.
2. **CAUTION** – This is a sealed unit with no servicable parts. Replace the entire unit when necessary.
3. **DO NOT USE OUTDOORS.** The **ETS20** is for use with grounded, UL Listed fixtures. Not for use in heated air outlets or hazardous locations.
4. The **ETS20** requires an unswitched A.C. power source of either 120 to 277 volts, 50/60Hz.
5. Do not mount near gas or electric heaters.
6. The **ETS20** should be mounted in locations and at heights where it will not readily be subjected to tampering by unauthorized personnel.
7. The **ETS20** is compatible with lighting fixture loads on a 20 amp maximum circuit.
8. 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.
9. Do not use this equipment for other than intended use.
10. Mount only to an approved electrical enclosure.
11. Install in accordance with the National Electrical Code and local regulations.
12. Installation and servicing should be performed by qualified personnel.
13. Lighting fixture manufacturers, electricians, and end-users need to ensure product system compatibility before final installation.

SAVE THESE INSTRUCTIONS

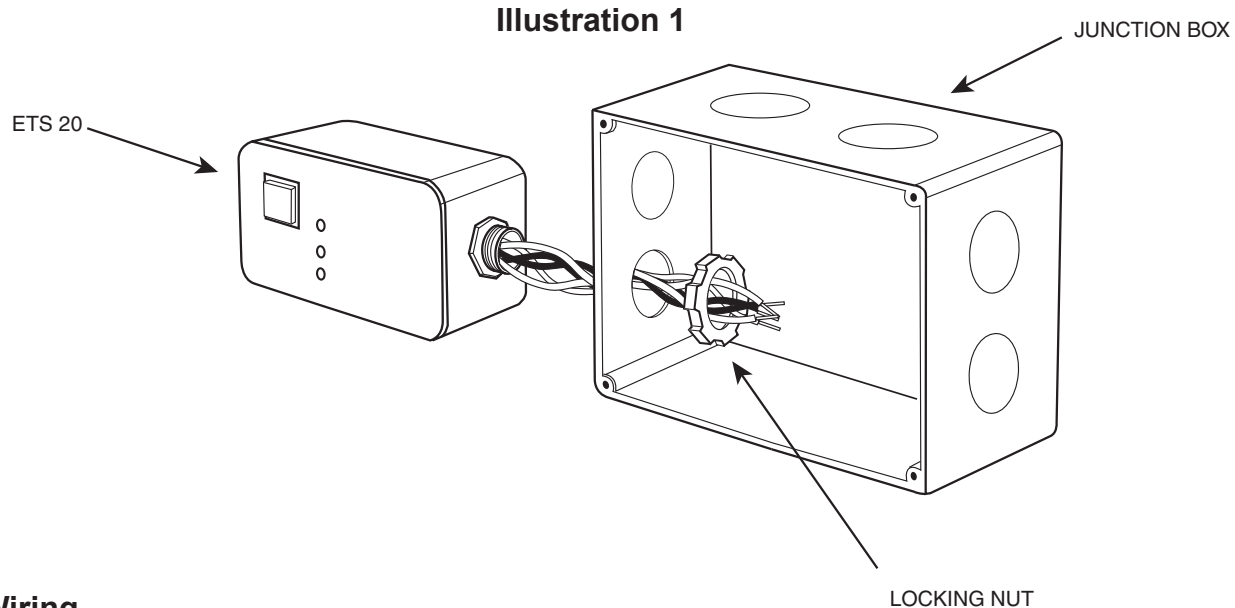


# INSTALLATION INSTRUCTIONS

**CAUTION:** Before installing, make certain the A.C. power is off on both normal and emergency circuits.

## 1. Mounting the ETS20

The **ETS20** is designed for connection to a junction box or electrical enclosure fitted with a  $\frac{7}{8}$ " diameter ( $\frac{1}{2}$ " knockout). Remove the locking nut and insert the threaded nipple through the knockout. Tighten the locking nut so that the unit is secured to the junction box or enclosure. See *Illustration 1*.



## 2. Wiring

Refer to the wiring diagrams on **Page 4** for the appropriate Normal Circuit and Emergency Circuit wiring connections. Install in accordance with the National Electrical Code and local regulations.

## 3. Remote Device Installation (optional)

The **ETS20** features an optional Remote Device lead for connection to a switch or other device to activate the unit and power the circuit from the emergency supply (such as a test switch or alarm system). The Remote Device lead is a blue jumper loop that must be cut for connection to the remote device. **Do not** cut this blue wire unless remote activation is desired.

**NOTE: Perform Initial Testing (Section 4) before proceeding with Remote Device installation.**

1) Cut the blue jumper lead.

2) Connect the two ends of the blue leads to the single pole contacts on the test switch or remote device (observe proper polarity of the blue wires and device connection, if necessary.) The device must provide a normally closed, maintained, dry contact closure. The remote device must open the circuit in order to force activation of the **ETS20** into the Emergency Mode. If the device is a test switch, it must be installed in an accessible location. **Note: No more than (5) ETS20 units can be installed in parallel with a remote device.**

## 4. Initial Testing

After completing installation, verify that the **ETS20** is functioning properly in both normal and emergency operation. Testing should be conducted at a time and in a manner that does not affect building occupants and operations.

**NOTE: Initial Testing should be performed with the blue jumper loop intact.**

1) Turn on the circuit breaker in the emergency panel for the designated circuit. The **Emergency Power** indicator (Red) should be lit. With only the emergency circuit on (Normal Power off), verify that all emergency fixtures are lit.

**INSURE WIRING IS IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL REGULATIONS.**

- 2) Temporarily disconnect and cap the wire connected to the Normal Switch Sense lead on the **ETS20**. This will disable the normal control function and allow testing of the “fail-to-ON” function.
- 3) Turn on the circuit breaker in the normal panel of the designated circuit. The **Normal Power** (Green) indicator will be lit indicating that normal power is present and that emergency lighting is not required. Emergency lighting should be off. Confirm automatic Emergency On operation by turning off the normal circuit breaker. The emergency lighting should immediately turn on.
- 4) With the normal circuit breaker off, reconnect the wire to the Switch In lead. Turn on the normal circuit breaker. The control device now controls both the normal and emergency lighting together.

### Ready to Test Indicator

After installation of the remote switch or device (Section 3), the remote device should be in normal mode (contacts closed) and the **Ready to Test** (Yellow) indicator on the **ETS20** will be lit. When the remote device is activated, or the remote test switch is pushed, the **ETS20** bypasses the control device settings, allowing operation of the emergency load. To confirm that the **ETS20** is operating properly, set the wall switch or control device in the ‘OFF’ position. Designated emergency fixtures should come on when pressing the Test Button.

**Note: for testing, the ETS20 will only bypass the control devices and operate the emergency fixtures from the normal supply - it does not activate nor confirm readiness of the auxiliary supply itself.** The **Ready to Test** (Yellow) indicator will extinguish and the **Emergency Power** (Red) indicator will remain lit.

If the **Ready to Test** Indicator is extinguished, it is an indication that Normal Power is lost or the unit is being forced into Emergency Power mode by the remote device or test switch. See **Table A**.

## 5. Labeling




Affix a self-adhesive caution label in a visible location on the enclosure and on each fixture controlled by the **ETS20** noting that the load is supplied from both normal and emergency power sources. Both power sources must be disconnected before servicing the fixture(s).

## OPERATION

**Normal Mode** – A.C. power is present. Fixtures are operating normally and all indicators on the **ETS20** will be lit: **Normal Power** (Green), **Emergency Power** (Red), and **Ready to Test** (Yellow). See **Table A**.

**Emergency Mode** – The A.C. power fails. The **ETS20** senses the A.C. power failure and automatically activates the emergency load. All designated fixtures are illuminated at full light output for as long as auxiliary power is available regardless of the normal wall switch position. The **Emergency Power** Indicator (Red) on the **ETS20** is lit and the **Normal Power** (Green) and **Ready to Test** (Yellow) indicators are off. When the A.C. power is restored, the **ETS20** switches the system back to the *Normal Mode*. See page 1 of the Instruction Manual.

TABLE A: ETS20 INDICATOR DESCRIPTIONS

STATUS DESCRIPTION					
	All OK	Normal Power not present	Emergency Power not present	Normal and Emergency Power not present	Test Button is pressed or Fire Alarm/Remote Device is open
 <b>READY TO TEST (YELLOW)</b>	ON	--	ON	--	--
 <b>NORMAL POWER (GREEN)</b>	ON	--	ON	--	ON
 <b>EMERGENCY POWER (RED)</b>	ON	ON	--	--	ON

## TESTING & MAINTENANCE

The **ETS20** is a maintenance free unit, however, periodic inspection and testing is required. Refer to the NFPA 101, Life Safety Code and local codes for required emergency testing schedules.

Testing should be conducted following maintenance or re-working of any of the fixtures connected to the emergency circuit.

“Written records of testing shall be kept by the owner for inspection by the authority having jurisdiction.”

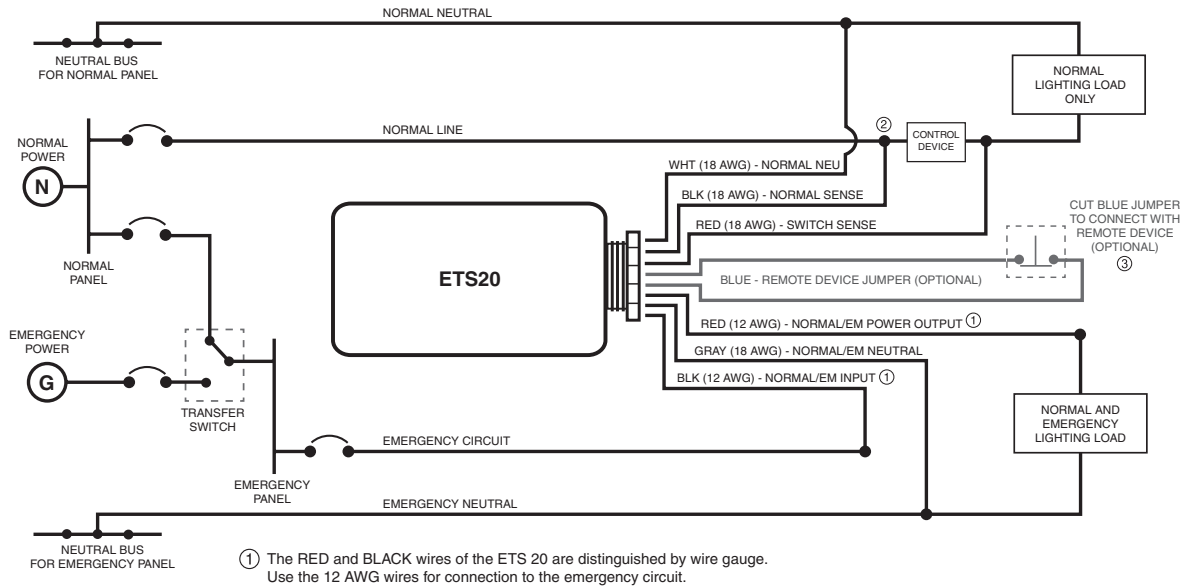
**SERVICING SHOULD BE PERFORMED BY QUALIFIED PERSONNEL.**

**Consult Customer Service or visit [www.iotaengineering.com](http://www.iotaengineering.com) for current warranty information.**

# TYPICAL WIRING DIAGRAMS

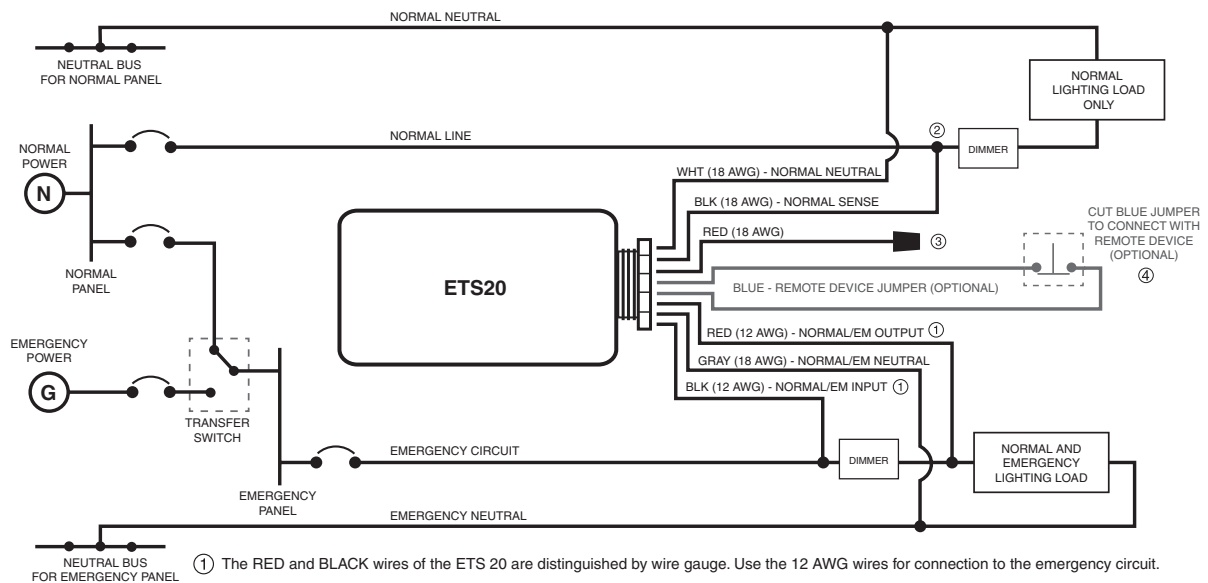
For additional wiring information, consult Customer Service.

## 1. ETS20 STANDARD SWITCH WIRING



- ① The RED and BLACK wires of the ETS 20 are distinguished by wire gauge. Use the 12 AWG wires for connection to the emergency circuit.
- ② The BLACK (Normal Sense) lead should be connected to the line side of the Control Device that serves the same area as the emergency lighting, ensuring that the emergency lighting in the controlled area turns on during a localized power failure.
- ③ Observe proper polarity, if necessary. No more than (5) ETS 20 units can be installed in parallel with a remote device.

## 2. ETS20 WIRING WITH DIMMER OPTION



- ① The RED and BLACK wires of the ETS 20 are distinguished by wire gauge. Use the 12 AWG wires for connection to the emergency circuit.
- ② The BLACK (Normal Sense) lead should be connected to the line side of the Control Device that serves the same area as the emergency lighting, ensuring that the emergency lighting in the controlled area turns on during a localized power failure.
- ③ Cap unused lead.
- ④ Observe proper polarity, if necessary. No more than (5) ETS 20 units can be installed in parallel with a remote device.