EMERGENCY LIGHTING DESIGN GUIDE

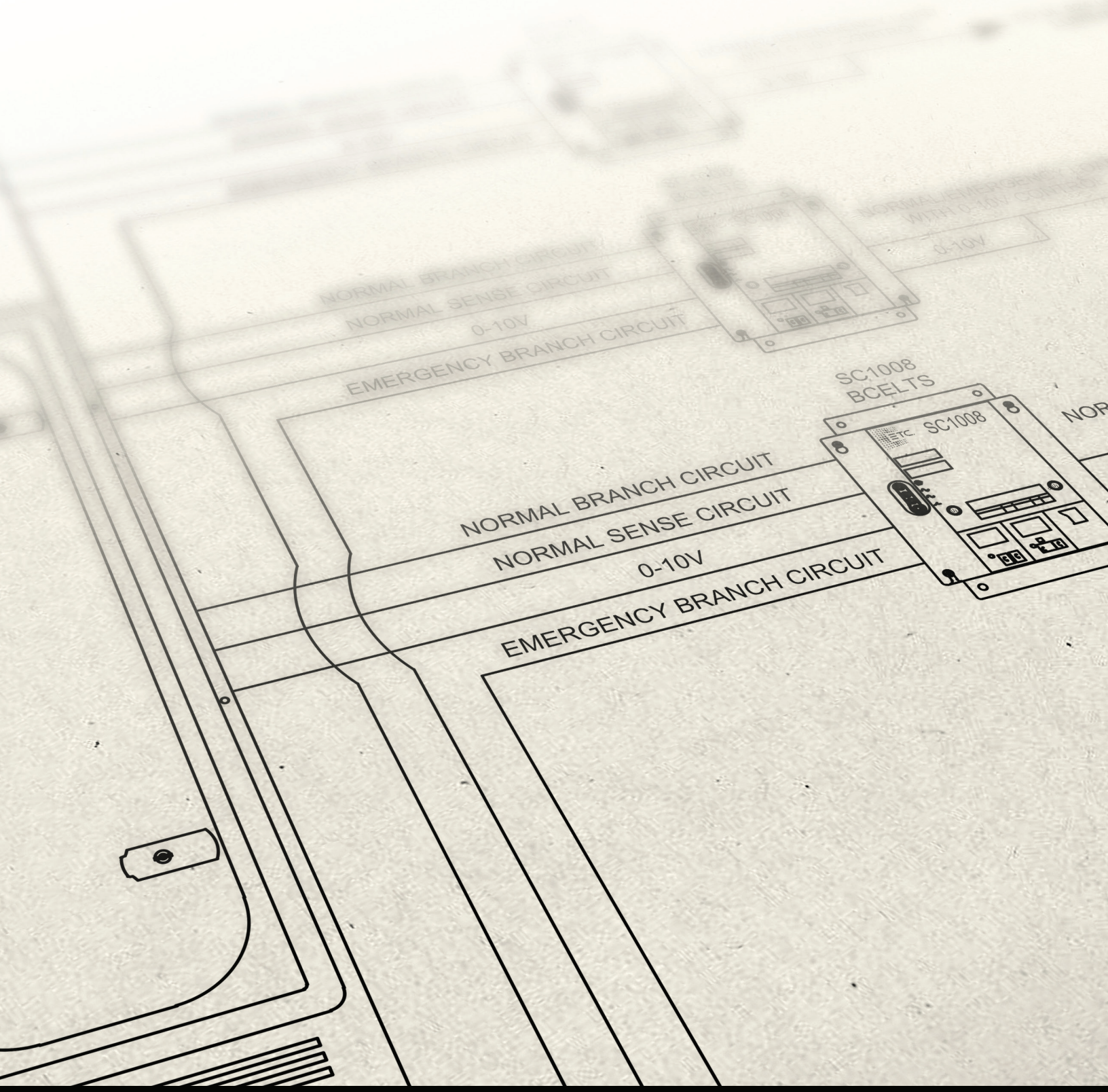


Table of Contents

About ETC

ETC is a global leader in the manufacture of award-winning lighting-control systems, backed by our renowned, in-person, 24/7/365 support. ETC offers complete solutions for any indoor or outdoor application, including office buildings, houses of worship, retail spaces, hospitality, and more. Our products lines include all the equipment necessary to meet stringent environmental codes, including occupancy and vacancy sensors, dual tech sensors, astronomical time clocks, centralized and distributed systems, wired and wireless controls, LED fixtures, power-control systems, and emergency lighting.

ETC's Philosophy on Emergency Lighting

An emergency lighting system is unlike any other lighting system for one obvious reason: Its primary purpose is to ensure life safety and get people out of danger in the event of an emergency. That emergency can be a fire, a blackout, or anything that leads to the loss of normal utility power. In an emergency, the overriding concern is the safe egress of the people affected.

This fact drives the priorities for emergency lighting system design. Additional features, cost, and all other considerations take second place to a system fulfilling its life-safety function. What constitutes an effective system is clearly defined by the National Fire Protection Association in the NFPA 101: Life Safety Code. This guide will help to ensure you meet those requirements.

A reliable system is critical to the safety of occupants affected. An emergency lighting system must be able to guarantee that the system will energize and deliver the required illumination within a very short period of time during an emergency, 100% of the time.

At ETC, we make a family of products that meet the necessary codes and standards that govern emergency lighting control, enabling you to design a system that is safe, reliable, economical, aesthetically pleasing, and safe. Yes, we said safe twice. It's the first and last thing we think about when it comes to emergency lighting, and it should be yours, too.

THE CONSTELLATION *of* STANDARDS

Standard for Emergency and Standby Power Systems – NFPA 110

Life Safety Code – NFPA 101

- **Dictates where emergency lighting must be and the required performance of emergency lighting systems.**
  - **Minimum 90-minute illumination**
  - **Maximum 10-second delay from loss of utility power to lights on**
  - **Required periodic testing**

Standard on Stored Electrical Energy Emergency and Standby Power Systems – NFPA 111

Many of the regulations that emergency lighting systems must comply with come from National Fire Protection Association codes. The NFPA 101: Life Safety Code is key to knowing what emergency lighting systems need to accomplish. Within the parameters set forth in NFPA 101 there are several other codes and standards that affect how a system is built. These codes and standards all play a part in emergency lighting system design.

The Logic of an Emergency System

The building blocks of a functional emergency lighting system are:

Sense Device – A lighting system needs to know when to go into an emergency state. This can be done via a sense device, which uses a sense circuit to detect when normal power is interrupted and drive the system into a panic look. A fire alarm, or other external emergency device, can also trigger a sense device. The sense device can be internal to a piece of equipment like a panelboard or a fixture, or it can be an external device.

Emergency Source – A battery, inverter, or generator that is asynchronous to the normal power source and will deliver power to emergency circuits in a timely manner.

Transfer Switch – A UL 1008 Listed device that monitors normal power and switches loads or feeders between normal and emergency sources as needed to provide power to other devices downstream.

Emergency Lighting Control Device (ELCD) – A UL 924 Listed device that ensures emergency lighting loads are driven to their correct emergency look. These devices can be anything from Automatic Load Control Relays that shunt around a relay or dimmer to DMX Bypass Controllers that override the control signal to drive DMX-controlled fixtures to their correct setting.

However complicated an emergency lighting system may seem, it will perform three basic functions:

1) ***Sense*** an emergency situation
2) ***Transfer*** loads to an emergency source
3) ***Bypass*** normal control to drive system to required emergency lighting levels

National Electrical Code – NFPA 70, Articles 700, 701, 702

- Specifies and defines installation requirements for emergency systems and the types of devices acceptable for emergency lighting control.
- Article 700 defines requirements Emergency Lighting Systems.
- Article 701 defines requirements for Legally Required Standby Systems.
- Article 702 defines requirements for Optional Standby Systems.

UL 924 - Emergency Lighting and Power Equipment

- UL 924 devices ***bypass the control state*** of a dimmer, switch, or relay connected to an emergency load in the event of an emergency.

UL 1008 - Transfer Switch Equipment

- UL 1008 devices monitor normal power and ***transfer loads*** between asynchronous normal and emergency power sources.

For more information, please check the appropriate sections of code listed above. Always check with your Authority Having Jurisdiction (AHJ) for requirements specific to project location. This design guide conforms to the requirements of the 2023 National Electrical Code.

Transfer vs. Bypass

Understanding the relationship between **UL 1008: Transfer Switch Equipment** and **UL 924: Emergency Lighting and Power Equipment** is key to designing a code-compliant emergency lighting system.

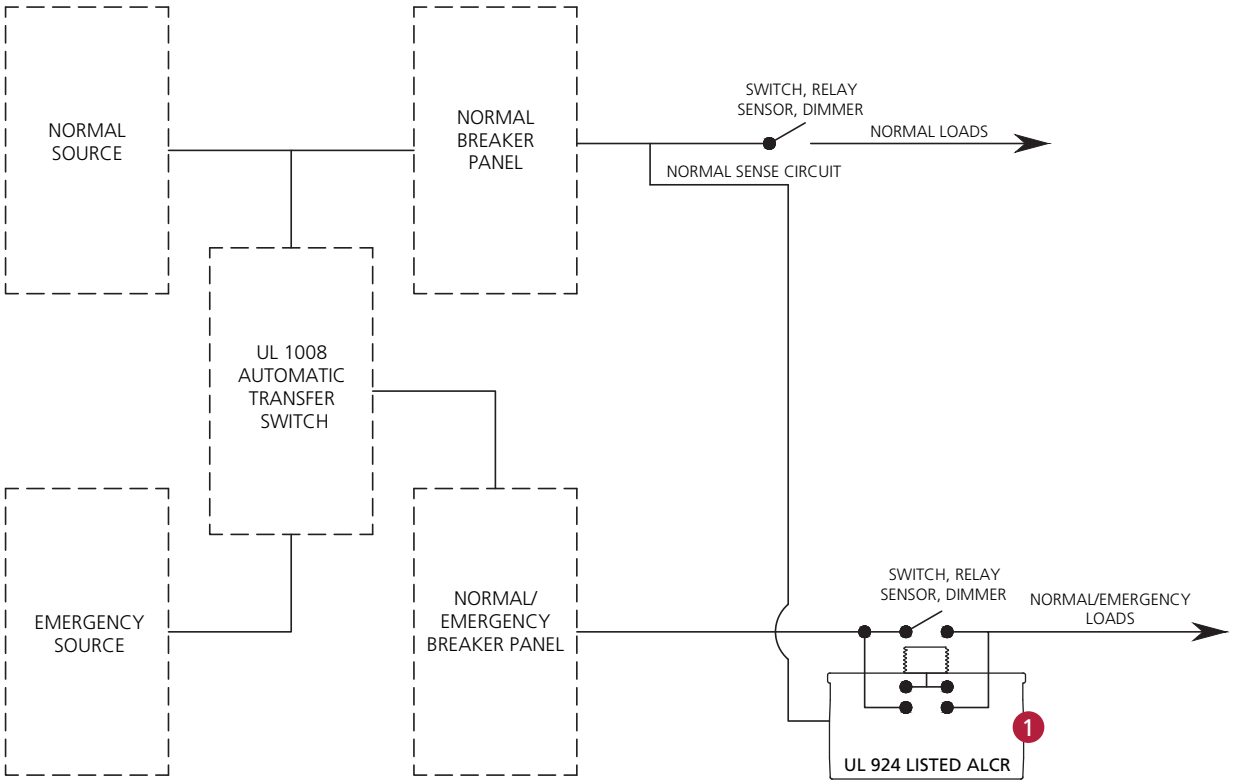
UL 1008 requirements cover what is necessary to safely and reliably switch a system from normal power to emergency power. UL 1008 devices can be very large, handling the utility input to a building, or much smaller, only transferring one 20-amp circuit. The defining trait of a UL 1008 device is that it physically transfers a load from normal power to an emergency power source.

UL 924 requirements only cover device control. UL 924 devices bypass the normal control of loads to ensure that emergency loads are turned on at the required level to provide the illumination suitable for egress lighting. UL 924 requirements do not address power transfer. UL 924 Listed devices are not built to comply with the safety and performance requirements that a UL 1008 listing requires and so a UL 924 Listed device may never be used as a transfer device.

A UL 1008 device ensures that emergency fixtures have *power.*

A UL 924 device ensures that emergency fixtures output *proper emergency illumination.*

Simple Bypass or Shunt Function



RECOMMENDED FOR:

- Classroom
- Office
- Small single-room system

OPERATION DETAILS:

Sense Device:

- Automatic Load Control Relay is the sense device. Normal sense is located on the normal breaker panel, on the same circuit as normal loads.

Transfer Switch:

- Upstream of normal/emergency panels.

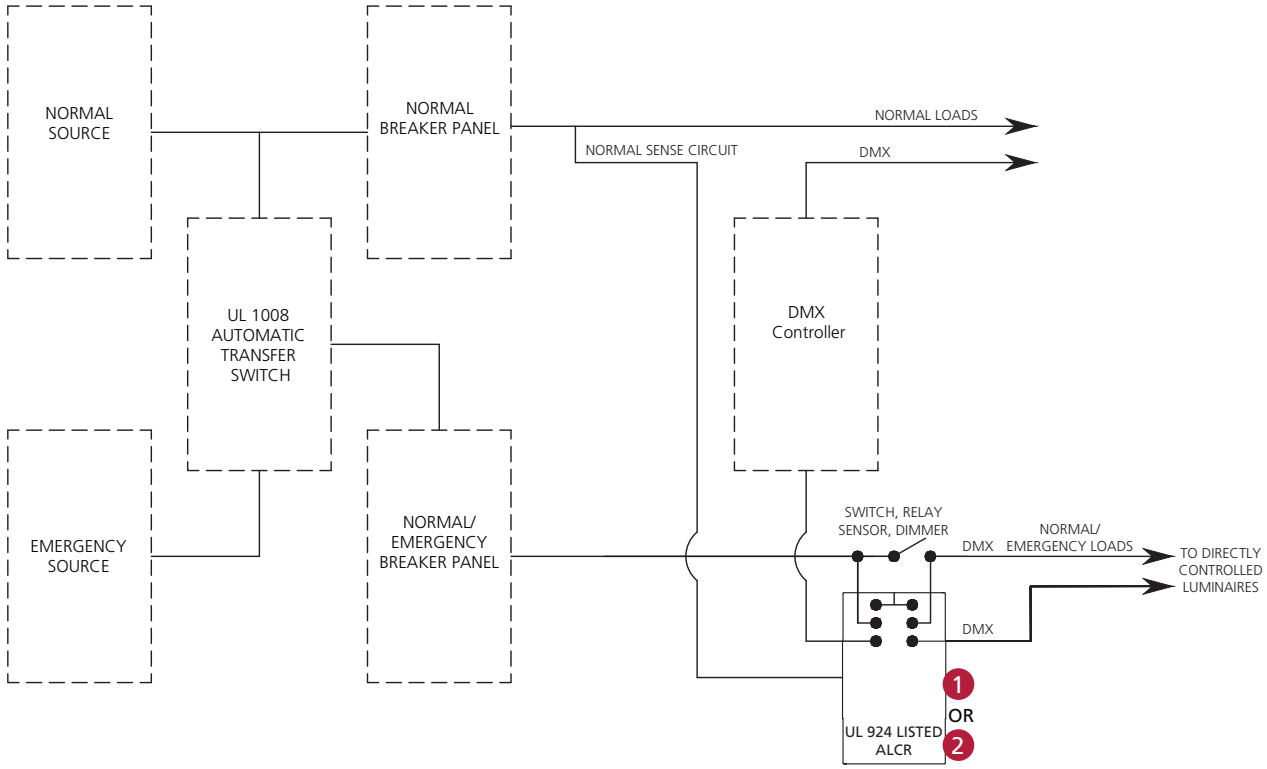
Bypass Device:

- The Automatic Load Control Relay performs a shunt operation and closes the circuit automatically, energizing emergency loads.

BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Automatic Load Control Relay	ALCR-PP-Mk2, ALCR-DIN	UL 924 Listed device for bypass control of a single branch circuit. ETC ALCR units also drive 0-10V luminaires to full by control disconnection in their emergency state.

Shunt Bypass with 0-10V Control Disconnect



RECOMMENDED FOR:

- Classroom
- Office
- Small single-room system

OPERATION DETAILS:

Sense Device:

- Automatic Load Control Relay is the sense device. Normal sense is located on the normal breaker panel, on the same circuit as normal loads.

Transfer Switch:

- Upstream of normal/emergency panels.

Bypass Device:

- Automatic Load Control Relay.

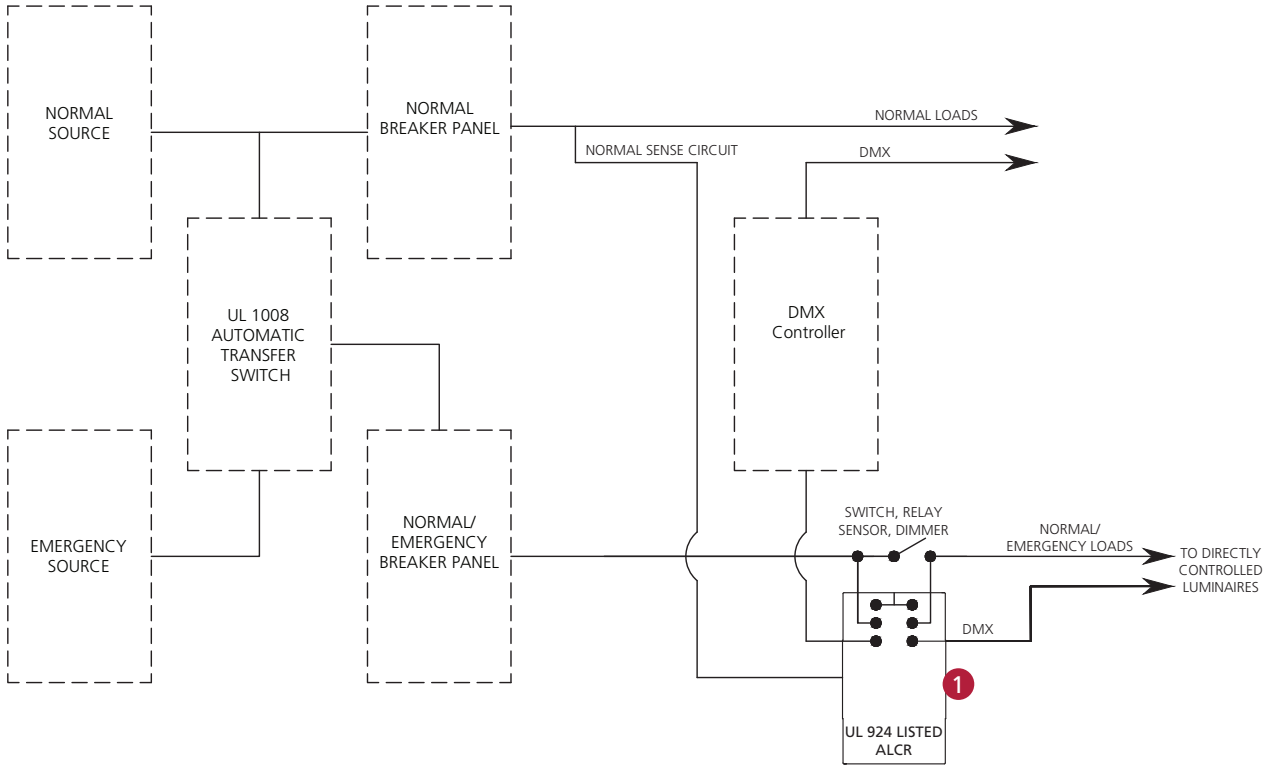
BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Automatic Load Control Relay	ALCR-DIN	UL 924 Listed device for bypass control of a single branch circuit and disconnect of a single 0-10V or DALI control circuit.
2 	1	Automatic Load Control Relay	ALCR-PP-Mk2	UL 924 Listed device for bypass control of a single branch circuit and disconnect up to two 0-10V or DALI circuits.

ADDITIONAL NOTES:

- DALI control circuits can be used in place of 0-10V circuits throughout this guide.

Shunt Bypass with DMX Control Disconnect



RECOMMENDED FOR:

- Classroom
- Office
- Small single-room system
- Theatrical house lighting

OPERATION DETAILS:

Sense Device:

- Automatic Load Control Relay is the sense device. Normal sense is located on the normal breaker panel, on the same circuit as normal loads.

Transfer Switch:

- Upstream of normal/emergency panels.

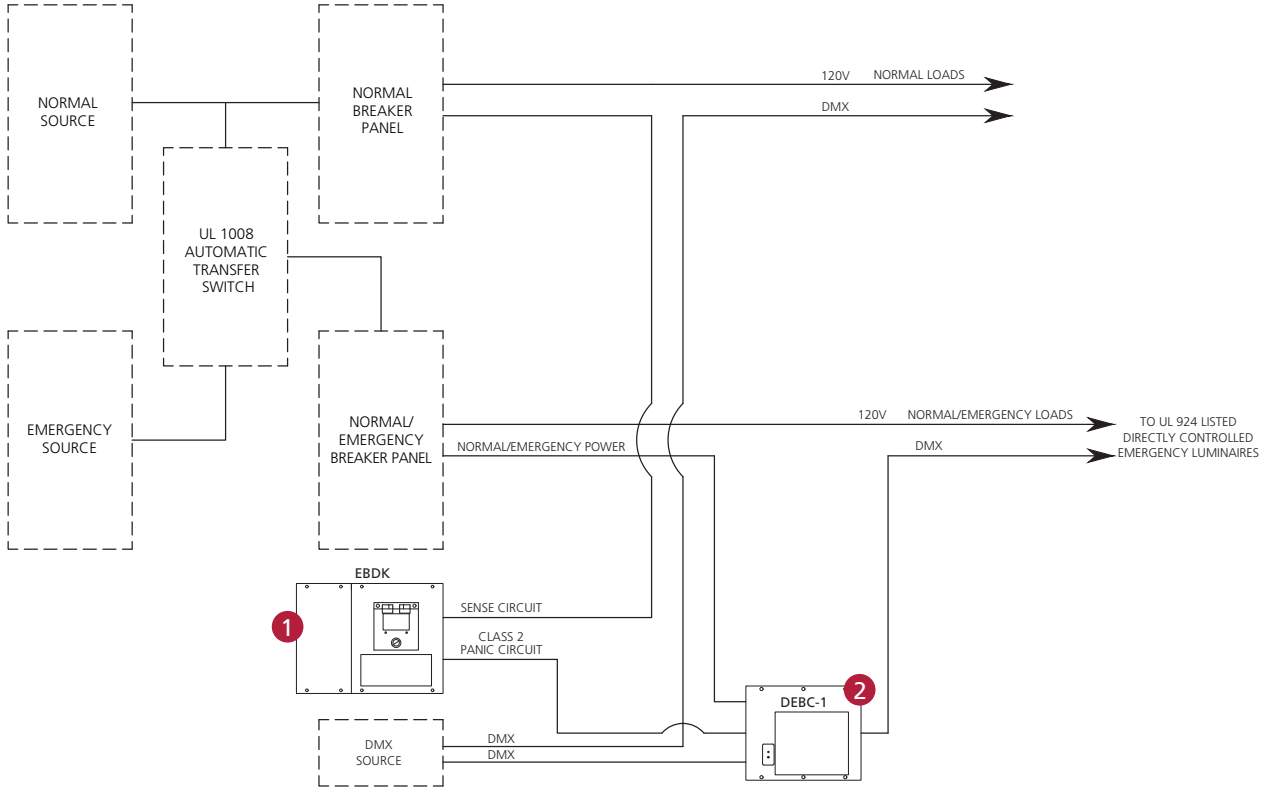
Bypass Device:

- Automatic Load Control Relay.

BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Automatic Load Control Relay	ALCR-PP-Mk2	UL 924 Listed device for bypass control of a single branch circuit and disconnect up to two 0-10V or DALI circuits.

Bypass with Directly Controlled Emergency Luminaires – DMX Active Control Case



RECOMMENDED FOR:

- Auditorium House Light Systems
- Lobbies
- Hospitality
- Ballrooms
- Anywhere you're using DMX-controlled architectural luminaires

OPERATION DETAILS:

Sense Device:

- The Emergency Bypass Detection Kit senses normal power from the same circuit as the normal loads.

Transfer Switch:

- Upstream of normal/emergency panels.

Bypass Device:

- DMX Emergency Bypass Controller outputs emergency DMX signal to directly controlled emergency luminaires.

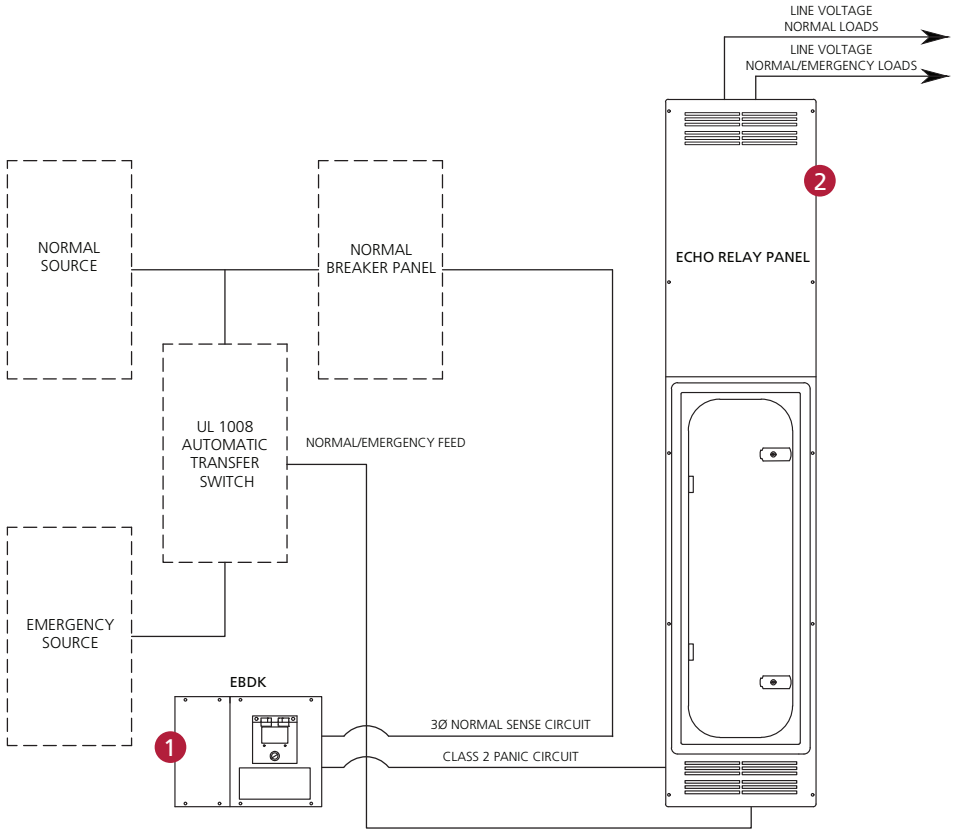
BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Emergency Bypass Detection Kit	EBDK	Monitors normal power in a single- or three-phase system and triggers emergency-lighting bypass operation in UL 924 Listed products.
2 	1	DMX Emergency Bypass Controller	DEBC-1, DEBC-6	UL 924 Listed device for bypass control of DMX-controlled lights. Single-output and six-output models.

ADDITIONAL NOTES:

- The DEBC-1 and DEBC-6 utilize active control in their emergency state and must be used with UL 924 Listed directly controlled emergency luminaires.

Mains-Feed Panel Bypass with Load Shedding



RECOMMENDED FOR:

- Stadiums
- Casinos
- Hotels
- Office Buildings
- TV Studios
- Theatres
- Schools
- Healthcare Facilities
- Anywhere with centralized power control

OPERATION DETAILS:

Sense Device:

- Emergency Bypass Detection Kit (EBDK). Normal sense is located on normal breaker panel, from three-phase, between panel and EBDK.

Transfer Switch:

- Upstream of normal/emergency panels.

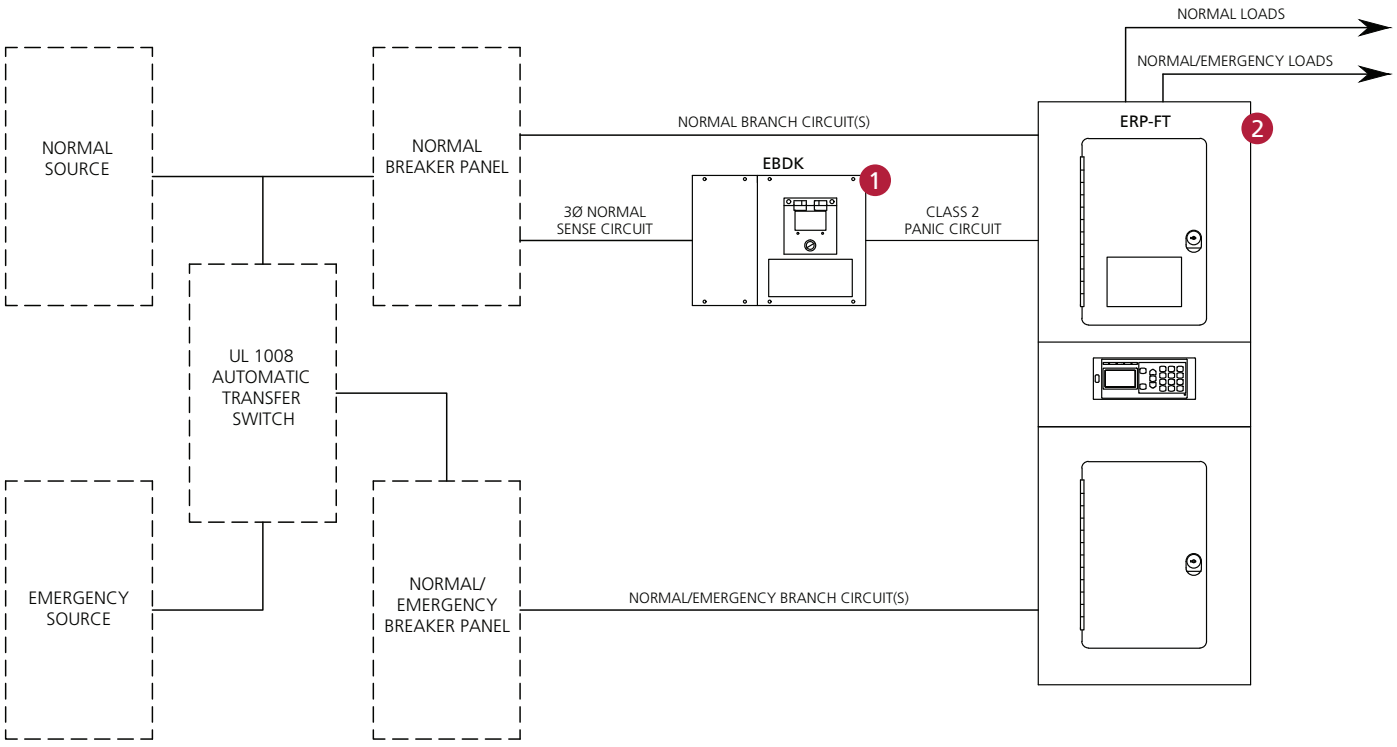
Bypass Device:

- Echo Relay Panel with Power Control Processor Mk2.

BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Emergency Bypass Detection Kit	EBDK	Monitors normal power in a single- or three-phase system and triggers emergency-lighting bypass operation in UL 924 Listed products.
2 	1	Echo Relay Panel Mains Feed	ERP	Power control enclosure which supports 120 or 277 V mains feed power for 24 circuits of dimming or switching. UL 924 Listed.

Branch Circuit-Fed Panel with Bypass



RECOMMENDED FOR:

- Stadiums
- Casinos
- Hotels
- Office Buildings
- TV Studios
- Theatres
- Schools
- Healthcare facilities
- Anywhere with centralized power control

OPERATION DETAILS:

Sense Device:

- Emergency Bypass Detection Kit (EBDK). Normal sense is located on normal breaker panel, from three-phase, between panel and EBDK.

Transfer Switch:

- Upstream of normal/emergency panels.

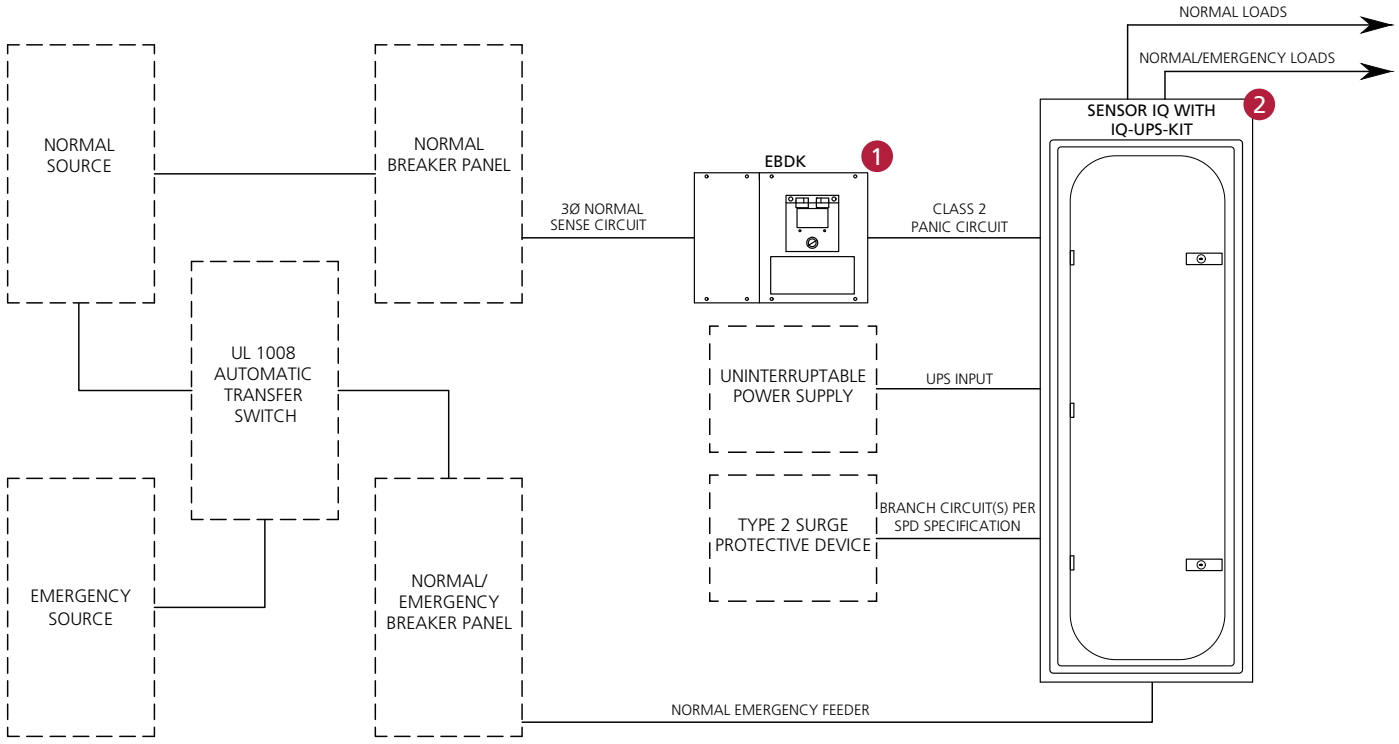
Bypass Device:

- Echo Relay Panel Feed-Through with Echo Power Control Processor.

BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Emergency Bypass Detection Kit	EBDK	Monitors normal power in a single- or three-phase system and triggers emergency-lighting bypass operation in UL 924 Listed products.
2 	1	Echo Relay Panel Feedthrough	ERP-FT	Power control enclosure which supports 120 and 277 V branch fed power for 24 or 48 circuits of low voltage dimming or switching. UL 924 Listed.

Mains-fed Panel with Bypass, Load Shedding, and Surge-Protective Device



RECOMMENDED FOR:

- Stadiums
- Casinos
- Hotels
- Office Buildings
- TV Studios
- Theatres
- Schools
- Healthcare facilities
- Anywhere with centralized power control

OPERATION DETAILS:

Sense Device:

- Emergency Bypass Detection Kit (EBDK). Normal sense is located on normal breaker panel, from three-phase, between panel and EBDK.

Transfer Switch:

- Upstream of normal/emergency panels.

Bypass Device:

- Sensor IQ with PCP-MK2.

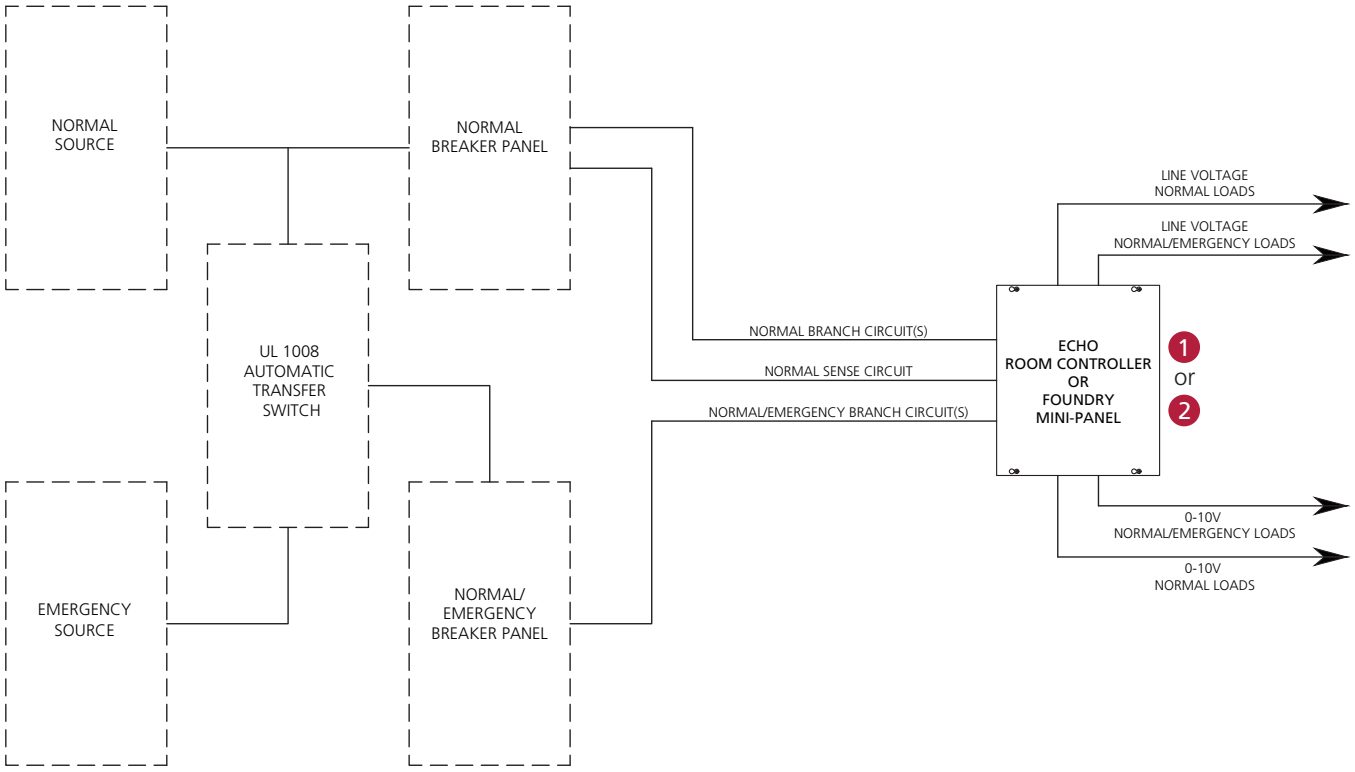
BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Emergency Bypass Detection Kit	EBDK	Monitors normal power in a single- or three-phase system and triggers emergency-lighting bypass operation in UL 924 Listed products.
2 	1	Sensor IQ Panel	IQ24	Power control enclosure which supports 120 and 277 V mains-fed power for 24 or 48 circuits of low voltage dimming or switching. UL 924 Listed.

ADDITIONAL NOTES:

- For load shedding applications with Sensor IQ enclosures, a UPS option kit (IQ-UPS-KIT) and an external UPS (minimum 200 W peak load, provided by others) are required as shown.

Branch Circuit-Fed Room Control Device with Bypass



RECOMMENDED FOR:

- Stadium Support Spaces
- Casinos
- Hotels
- Office Buildings
- TV Studios
- Theatres
- Schools
- Anywhere with distributed power control

OPERATION DETAILS:

Sense Device:

- Echo Room Controller or Foundry Mini Panels both include internal normal sense features. Normal sense is taken from a branch circuit between normal source and Room Controller, on same phase as emergency loads.

Transfer Switch:

- Upstream of normal/emergency panels.

Bypass Device:

- Echo Room Controller or Foundry Mini Panel

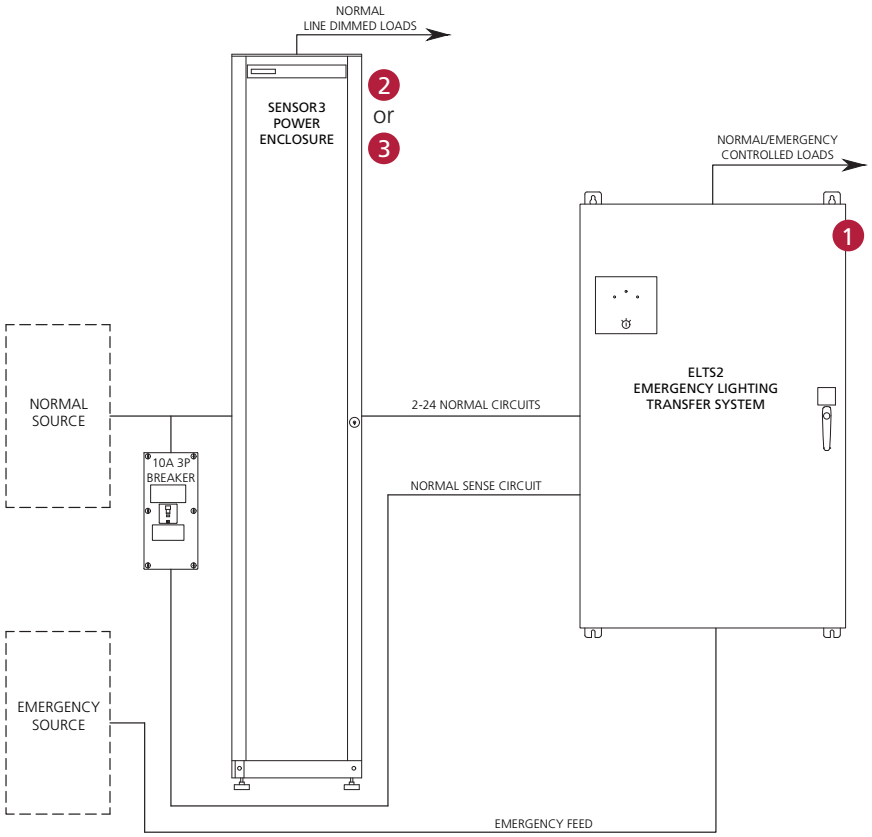
BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Echo Room Controller	ERMC4 -G2, ERMC8-G2, ERMCT4-G2, ERMCT8-G2	Relay and 0-10V control for small- and medium-sized rooms using the Echo system. Four input/output or eight input/output models available. UL 924 Listed.
2 	1	Unison Foundry Mini Panel	UFMP4 UFMP8	Relay and 0-10V control for small- and medium-sized rooms using DMX protocol. Four input/output or eight input/output models available. UL924 Listed.

ADDITIONAL NOTES:

- Can be used with an EBDK if multiple room control devices are in close proximity and fed from the same panel. This can make wiring easier by providing a central normal sense and alarm trigger location.

Transfer of Many Branch Circuits from Power Enclosure



RECOMMENDED FOR:

- Theatres and Performance Venues
- Casinos
- Theme Parks
- Sports Arenas
- Convention Centers

OPERATION DETAILS:

Sense Device:

- The Emergency Lighting Transfer System (ELTS2) has an integrated normal sense function. Normal sense should be placed on a 3-pole, 10-amp circuit breaker upstream of the dimmer rack, between normal breaker panel and Emergency Lighting Transfer System.

Transfer Switch:

- ELTS2

Bypass Device:

- When circuits are transferred in the ELTS2 to the energized emergency source, all power control is bypassed and luminaires will illuminate automatically.

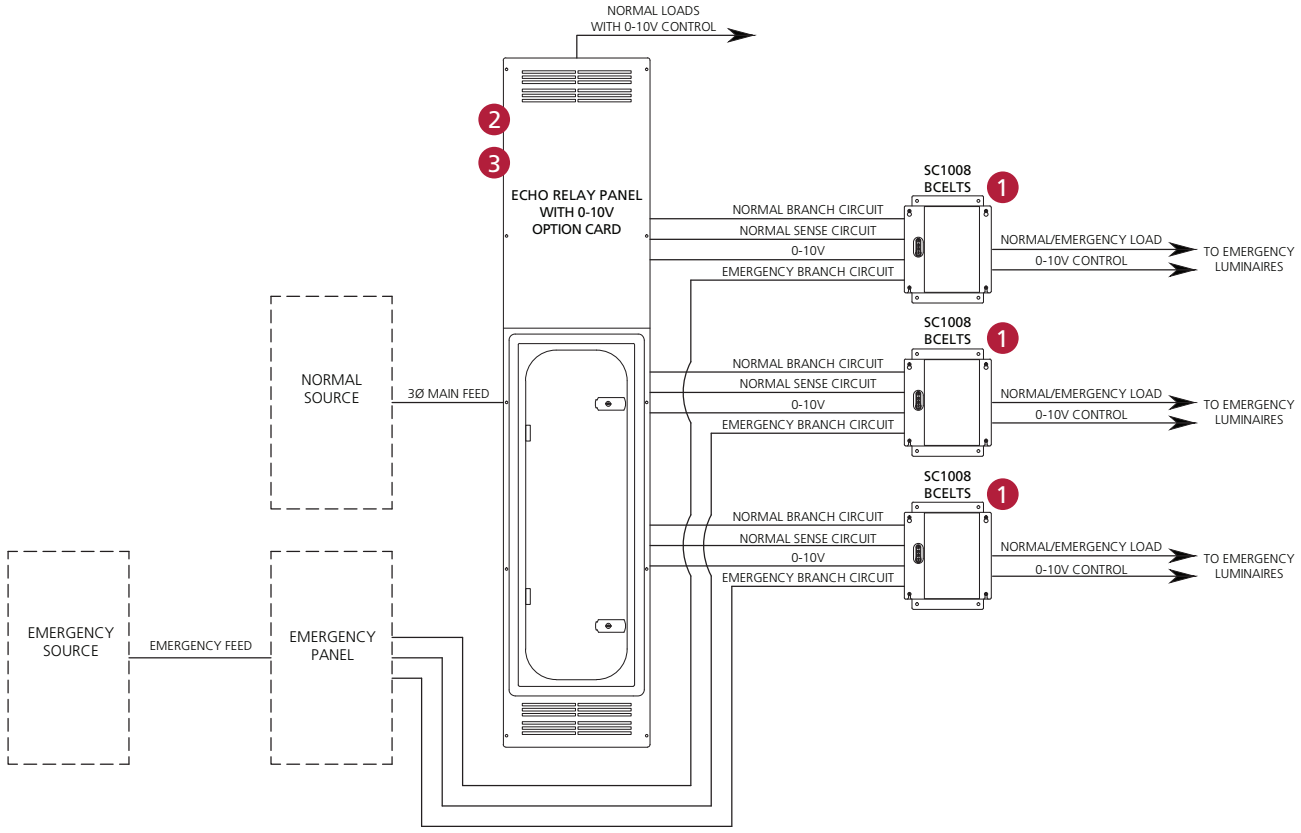
BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Emergency Lighting Transfer System	ELTS2	Transfers 2-24 circuits from normal to emergency power. Mains Fed and Branch Circuit Input options. UL 1008 Listed.
2 	1	Unison DRd Power Enclosure	DRd	Power control enclosure which supports 120 or 277 V mains feed power for 12, 24, or 48 circuits of dimming or switching. UL 924 Listed.
3 	1	Sensor3 Power Enclosure	S	Power control enclosure which supports 120 V mains feed power for 12, 24, 48, or 96 circuits of dimming or switching. UL 924 Listed.

ADDITIONAL NOTES:

- The ELTS2 can be either mains-fed or branch circuit-fed.
- The Sensor power enclosure can be replaced by a mains-fed relay panel with no other changes.

Transfer of Few Branch Circuits from Panel – 0-10V Control Disconnect



RECOMMENDED FOR:

- Schools
- Office Buildings
- Hotels and Casinos
- Healthcare Facilities
- Anywhere using 0-10V architectural luminaires

OPERATION DETAILS:

Sense Device:

- The Branch Circuit Emergency Lighting Transfer Switch (SC1008) has an integrated normal sense feed. Normal sense should be located on the branch circuit, upstream of the relay.

Transfer Switch:

- SC1008 – Transfers a single branch circuit for lighting loads only up to 20 amps.

Bypass Device:

- The SC1008 includes control bypass for 0-10V or DALI controlled circuits.

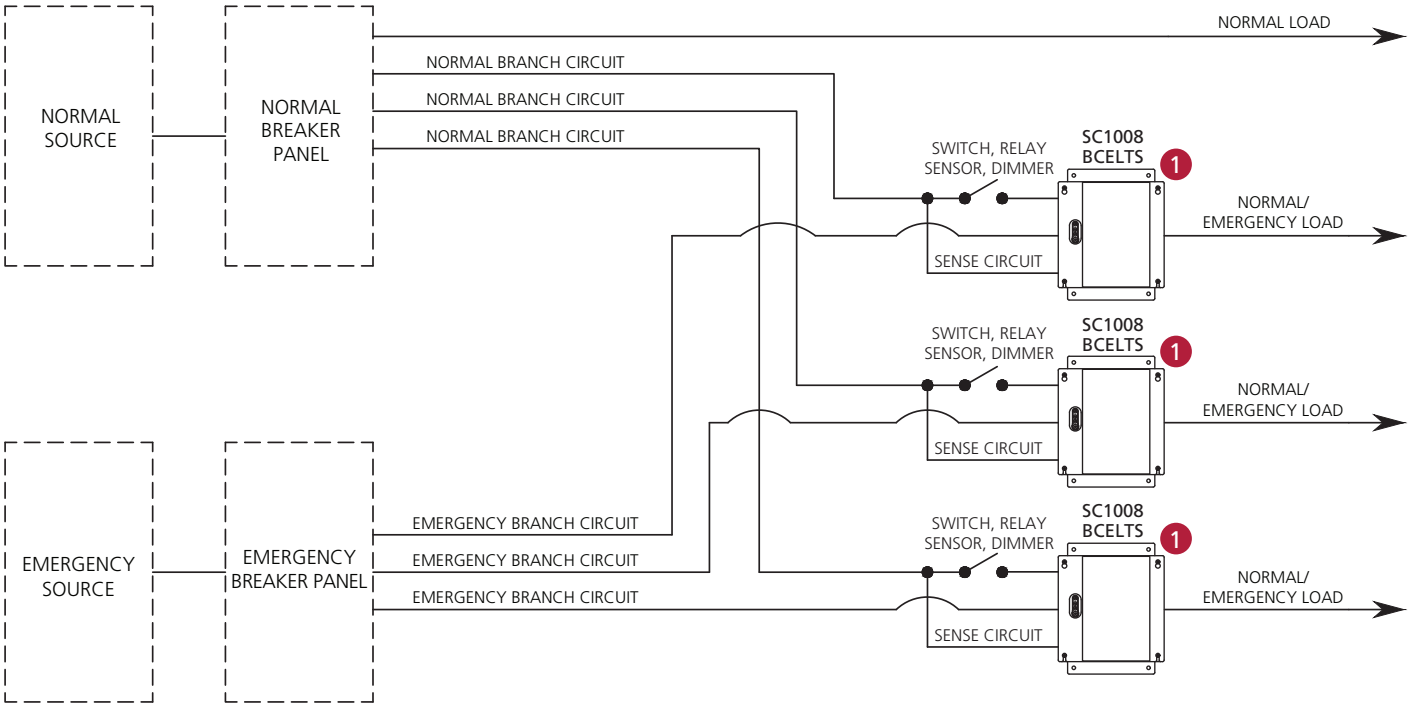
BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	3	Branch Circuit Emergency Lighting Transfer Switch	SC1008	Switches individual 120 or 277V, 20A circuits from Normal to Emergency power. Includes control bypass for 0-10V or DALI controlled circuits. UL 1008 Listed.
2 	1	Echo Relay Panel	ERP	Power control enclosure which supports 120 or 277 V mains feed power for 24 circuits of dimming or switching. UL 924 Listed.
3 	1	0-10V Dimming Control Option	ERP-LVD	Card to enable 0-10V dimming in Echo Relay Panels.

ADDITIONAL NOTES:

- A Sensor IQ panel with 0-10V option card, or DRd enclosure with LVD card may be substituted for the ERP shown. If using either, the normal sense circuit will be provided by a tap kit in the enclosure on the same phase as the normal branch circuit feeding the BCELTS.
- 0-10V luminaires energized in emergency state by control disconnection need not be UL 924 Listed.

Branch Circuit Transfer with Distributed Controls



RECOMMENDED FOR:

- Restaurants
- Hotels
- Stadium Suites
- Office Buildings
- High-rise Residencies
- Anywhere with smaller emergency loads

OPERATION DETAILS:

Sense Device:

- The Branch Circuit Emergency Lighting Transfer Switch (SC1008) has an integrated normal sense feed. The sense feed should be placed on the branch circuit, upstream of the power control device.

Transfer Switch:

- SC1008 – Transfers a single branch circuit for lighting loads only up to 20 amps.

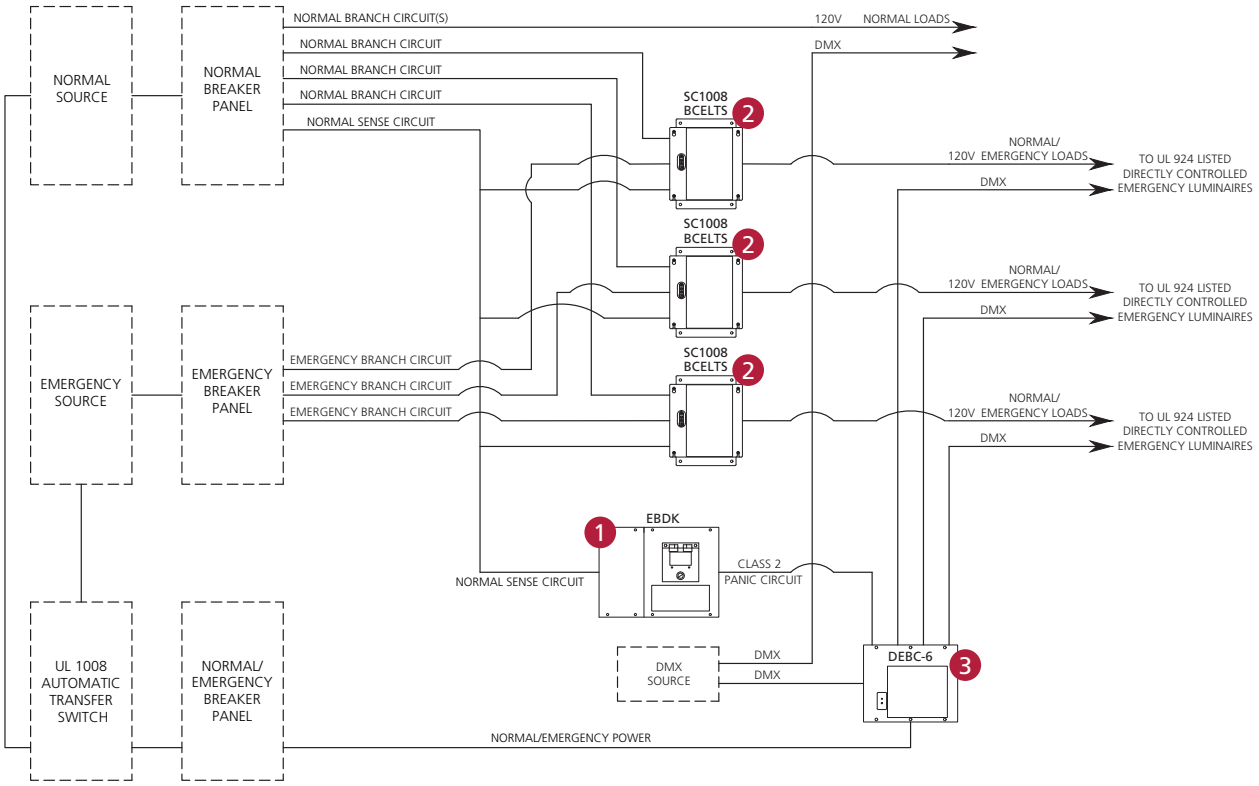
Bypass Device:

- No bypass device is required.

BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	3	Branch Circuit Emergency Lighting Transfer Switch	SC1008	Switches a single 120 or 277V, 20A circuit from Normal to Emergency power. Includes control bypass for 0-10V or DALI controlled circuits. UL 1008 Listed.

Branch Circuit Transfer with Directly Controlled Emergency Luminaires – DMX Active Control



RECOMMENDED FOR:

- Auditorium House Light Systems
- Hotels
- Hospitality
- Anywhere you're using DMX-controlled architectural luminaires

OPERATION DETAILS:

Sense Device:

- The Branch Circuit Emergency Lighting Transfer Switch (SC1008) has an integrated normal sense feed. The sense feed should be placed on branch circuit on the normal panel feeding the BCELTS devices.
- The Emergency Bypass Detection Kit senses loss of normal power for bypass device (DEBC-6, see below). Sense feed should be placed on branch circuit on the normal panel feeding the BCELTS devices.

Transfer Switch:

- SC1008 – Transfers a single branch circuit for lighting loads only up to 20 amps.

Bypass Device:

- DMX Emergency Bypass Controller, six output version.

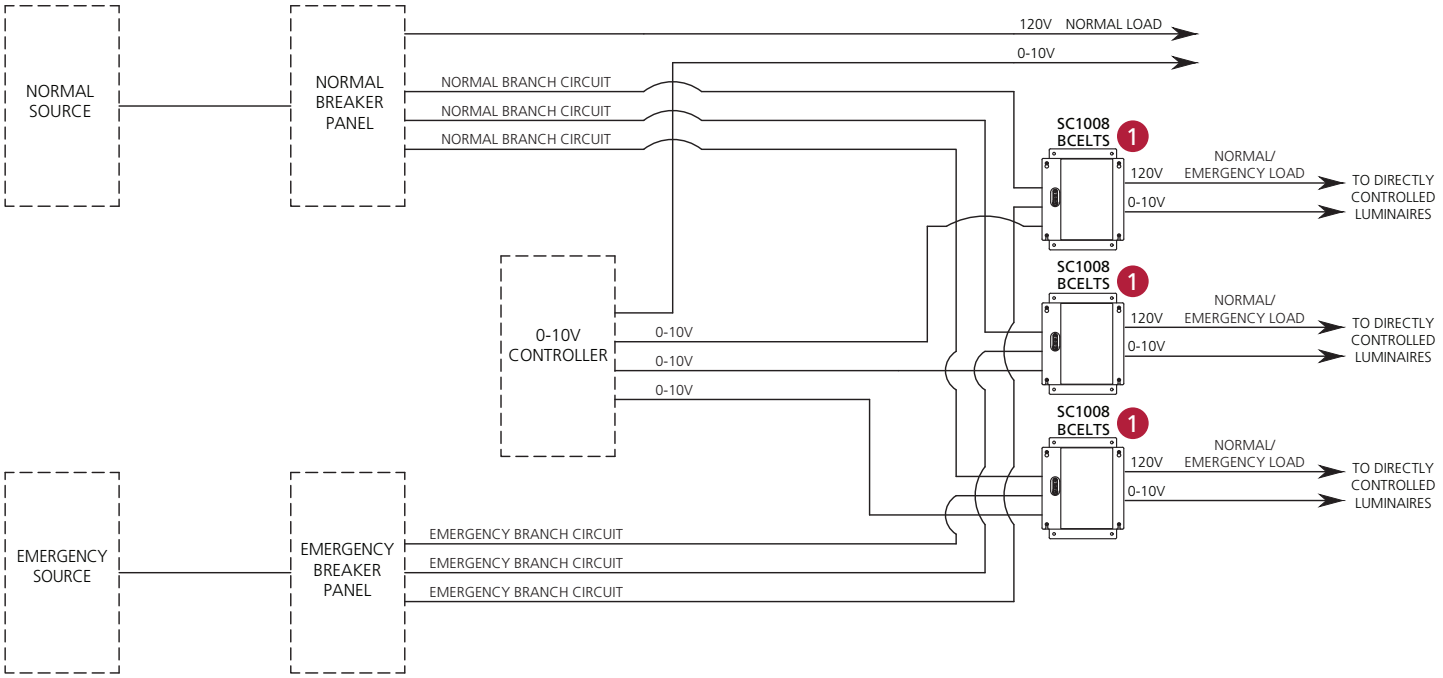
BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	1	Emergency Bypass Detection Kit	EBDK	Monitors normal power in a single - or three-phase system and triggers emergency-lighting bypass operation in UL 924 Listed products.
2 	3	Branch Circuit Emergency Lighting Transfer Switch	SC1008	Switches a single 120 or 277V, 20A circuit from Normal to Emergency power. Includes control bypass for 0-10V or DALI controlled circuits. UL 1008 Listed.
3 	1	DMX Emergency Bypass Controller	DEBC-1, DEBC-6	UL 924 Listed device for bypass control of DMX-controlled lights. Single-output and six-output models.

ADDITIONAL NOTES:

- Because the DMX signal is being actively overridden, not disconnected, all emergency loads in this case must be UL 924 Listed.
- The six-output DMX Emergency Bypass Controller (DEBC-6) requires power during normal operation and must be fed by a normal/emergency branch circuit.
- If you need to send more than six outputs of DMX, you can add a Response Opto-Splitter in the OPTO-BOX or OPTO-DBOX configuration to the signal chain between a DEBC unit and your Directly Controlled Emergency Luminaires. In this configuration the Response-Opto Splitter is UL 924 Listed and will distribute control bypass instructions.

Branch Circuit Transfer with Directly Controlled Luminaires – 0-10V Control Disconnect



RECOMMENDED FOR:

- Auditorium House Light Systems
- Hotels
- Hospitality
- Anywhere you're using 0-10V controlled architectural luminaires

OPERATION DETAILS:

Sense Device:

- The Branch Circuit Emergency Lighting Transfer Switch has an internal normal sense. The sense circuit is jumpered in the BCELTS between the normal terminal and the sense terminal.

Transfer Switch:

- Branch Circuit Emergency Lighting Transfer Switch.

Bypass Device:

- The Branch Circuit Emergency Lighting Transfer Switch disconnects a 0-10V circuit, thus driving luminaires to full.

BILL OF MATERIALS

PRODUCT	QTY	NAME	MODEL #	DESCRIPTION
1 	3	Branch Circuit Emergency Lighting Transfer Switch	SC1008	Switches a single 120 or 277V, 20A circuit from Normal to Emergency power. Includes control bypass for 0-10V or DALI controlled circuits. UL 1008 Listed.

ADDITIONAL NOTES:

- 0-10V fixtures energized in emergency state by control disconnection need not be UL 924 Listed.

Sense Devices

Sense devices monitor normal power and trigger emergency systems to activate when normal power is no longer detected. Normal sense circuits are incorporated into many ETC emergency products, negating the need for an external sense device. ETC power control products with an integrated sense circuit include:

- Unison Foundry Mini Panel
- Echo Room Controllers
- Emergency Lighting Transfer System ELTS2
- Branch Circuit Emergency Lighting Transfer Switch (SC1008 BCELTS)
- Automatic Load Control Relay (ALCR)

For panels and devices that control emergency loads but do not have an internal normal sense, such as dimmer racks and relay panels, ETC offers an external normal sense device:

Emergency Bypass Detection Kit

Model number EBDK, EBDK-Switch

- Monitors normal power in a single- or three-phase system
- Triggers emergency-lighting bypass operation in UL 924 Listed products
- Automatic or manual return to normal lighting operation

Master Phase Loss Detector 2

Model number MPLD2

- Extensive, customizable input and output configurations
- Field-modifiable
- Fully customizable with up to 15 input cards/1 output card (30 inputs/4 outputs) or 1 input card/15 output cards (2 inputs/60 outputs)

Transfer Switches

All of ETC's transfer switches are UL 1008 Listed for any North American emergency lighting application.

Emergency Lighting Transfer System

Model number ELTS2

- Switches 2-12 or 2-24 circuits from normal to emergency power
- Mains feed or branch circuit-fed power input options
- Single- or three-phase power (120/208V, 120/240V, 277/480V)
- Remote station, fire alarm, and auxiliary circuit activation
- Normal sense included

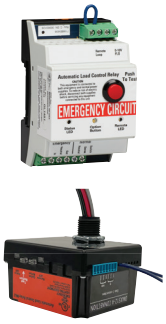
Branch Circuit Emergency Lighting Transfer Switch

Model number SC1008

- Switches a single 120 or 277V, 20A lighting circuit
- Control bypass for 0-10V or DALI controlled circuits
- Fire alarm input can be normally open/normally closed
- Normal sense included

Control Bypass Devices

All of ETC's control bypass devices are UL 924 Listed, and ensure emergency fixtures are driven to their correct emergency level.



Automatic Load Control Relay

Model number ALCR-PP-Mk2, ALCR-DIN

- Internal normal power sense, also has dry contact closure for activation by fire alarm or BMS
- Compatible with 120-277V, 50-60Hz emergency power
- ALCR-PP-MK2 supports connection of up to two channels of 0-10V or DALI control, or one channel of DMX control
- ALCR-DIN supports connection of one channel of 0-10V or DALI control
- Utilizes control disconnect; does not require UL 924 Listed luminaires

DMX Emergency Bypass Controller

Model number DEBC-1, DEBC-6

- UL 924 Listed DMX control bypass
- Provides one or six DMX outputs
- Compatible with 120-277V, 50-60Hz emergency power
- Not for use with non-emergency fixtures
- Requires external normal power sense
- Utilizes active control; requires UL 924 Listed luminaires

Response 0-10V Gateway

Model number RSN-LV

- Accepts sACN or DMX control input
- 24 independent 0-10V control outputs
- Can set each channel's output to programmed level in emergency state
- Requires external normal power sense
- Utilizes active control; requires UL 924 Listed luminaires

Response Opto-Splitter

Model number: OPTO-BOX-E, OPTO-DBOX-E

- For use in multiple DMX run situations
- 8 or 16 DMX outputs
- Requires a DMX Emergency Bypass Controller
- Utilizes active control; requires UL 924 Listed luminaires

Panel, Mini-Panels, and Room Controllers

Many of ETC's panels, mini-panels, and room controllers provide UL 924 functionality – including load-shedding, phase-dimmed level control, 0-10V, and DALI control – negating the need for external control bypass devices This simplifies system design, and saves on costs.

Echo Relay Panels

Model number ERP, ERP-FT

- Mains feed or feedthrough
- 0-10V, DALI, DMX, and sACN control bypass
- Requires external normal power sense, also has dry contact closure for activation by fire alarm or BMS
- Utilizes control disconnect; does not require UL 924 Listed luminaires

Echo Room Controllers and Foundry Mini Panel

Model Numbers ERMC, UFMP

- Emergency bypass for switched or 0-10V control
- Internal normal power sense, also has dry contact closure for activation by fire alarm or BMS
- Independent 120V, 277V, emergency, and plug-load control as needed
- Utilizes control disconnect; does not require UL 924 Listed luminaires

Sensor IQ Intelligent Breaker System

Model number IQ

- 120V, 240V, and 277V
- 0-10V, DALI, DMX, and sACN control bypass
- Requires external normal power sense, also has dry contact closure for activation by fire alarm or BMS
- Available UPS kit required for load shedding applications
- Utilizes control disconnect; does not require UL 924 Listed luminaires

Directly Controlled Emergency Luminaires (UL 924 Listed Luminaires)

ColorSource Spot and PAR

Model number CSSPOT, CSPAR

- UL 924 Listed
- Requires a DMX Emergency Bypass Controller

ArcSystem Pro One-Cell

Model number ARCP1, ARCP1S, ARCP1M, ARCP1H

- UL 924 Listed when used with ArcSystem Pro D1, D2, D4, or W1 Emergency Drivers
- Single-cell LED solution ideally suited for recessed or surface-mount installations

ArcSystem Pro Four-Cell Round and Pendant

Model number ARCPE4R, ARCPE4P

- UL 924 Listed
- Onboard driver with Normal Power sense input
- Pendant offers stem kit with canopy, Round features multiple hanging options
- 19, 24, 37, and 60-degree beam-angle options

ArcSystem Pro Two-Cell, Four-Cell (Linear, Square) and Eight-Cell

Model number ARCPE2, ARCPE4L, ARCPE4S, ARCPE8

- UL 924 Listed
- Normal power sense input
- Onboard driver
- 19, 24, 37, and 60-degree beam-angle options

ArcLamp

Model number ARCL, ARCLF, ARCLFF

- UL 924 Listed when used with ArcLamp drivers
- Globe or candle form factors
- Fixed White, Fade to Warm, and Flicker options

ArcSystem Navis 100

Model number ARCN100

- UL 924 Listed when used with F-Drive W1E Driver
- White (2700 K, 3000 K, 3500 K, 4000 K, and 5000 K) and Fade to Warm luminaires
- 15, 25, 40, and 60-degree lenses

ArcSystem D4 CV Drivers

Model number ARCPED4D

- UL 924 Listed
- Easily connects 24V DC constant voltage LED loads
- Models with 115W, 264W, or 528W total output

Glossary

- **Branch Circuit Emergency Lighting Transfer Switch (BCELTS)**
  Transfers a single lighting circuit up to 20A from a normal source to an emergency source during a power failure or other emergency situation.
- **Directly Controlled Emergency Luminaire**
  Any luminaire with a control input that is used for emergency lighting qualifies as a directly controlled emergency luminaire. That control input might be DMX, 0-10 volts, DALI, or any other control input, including normal power sense.
- **Emergency Power**
  An asynchronous alternate power source – generator, battery, or separate power grid – that provides power to an emergency lighting system when the normal power source is not available.
- **Normal Power**
  Comes from main utility source; powers lighting system under non-emergency conditions.
- **Sense Circuit**
  A circuit that monitors the normal power source without energizing a load. May be circuit breaker protected.
- **UL 1008 Listed Transfer Switch Equipment**
  UL 1008 Listed devices monitor normal power and switch loads or feeders between normal and emergency sources as needed to provide power to other devices downstream.
- **UL 924 Listed Emergency Lighting, Power Equipment, and Directly Controlled Emergency Luminaires**
  UL 924 devices affect or bypass the control state of a dimmer, switch or relay connected to an emergency load. When normal power is lost these devices bypass the normal control of loads to ensure that emergency loads are turned on at the required level to provide the illumination suitable for egress lighting. May NEVER be used as a power transfer device.

NOTES

ETC Architectural Lighting Solutions

Unison Paradigm

Unison Paradigm is powerful and flexible enough to support small control systems as well as the largest and most complex lighting control needs, plus it integrates easily into building management systems. Touchscreens, elegant wall stations, and advanced control from apps provide a sophisticated face for users while occupancy sensing, daylight harvesting, and time-scheduling capabilities deliver maximum energy and budget savings.

Unison Echo

Unison Echo provides flexible, intelligent control – simply. Whether you need basic control, multiple presets, daylighting and occupancy controls, or management of color-changing LED luminaires, Echo has a solution. Echo is a distributed control system, with each room capable of being independently controlled. Advanced features for space combine and third-party system integration are also supported.

Unison Mosaic

Interactive lighting, audio and visual spectacles, and dynamic exterior lighting can differentiate a venue, turning a building into a landmark. Unison Mosaic provides the hardware and software to design, run, and maintain the most demanding projects. Whether you're painting buildings with LEDs or merging show control, media effects, and more into one visionary work, Unison Mosaic is the solution.

Unison Foundry

Foundry delivers DMX-driven distributed power control products that help users create complete lighting and plug-load control packages. They are a perfect fit for ETC's Paradigm and Mosaic systems, providing a simple yet robust power infrastructure that can take advantage of the advanced control, energy-saving features, and color expertise in those systems.

Corporate Headquarters ▪ Middleton, WI USA
Global Offices ▪ London, UK ▪ Rome, IT ▪ Holzkirchen, DE ▪ Paris, FR ▪ Hong Kong
Dubai, UAE ▪ New York, NY ▪ Orlando, FL ▪ Los Angeles, CA ▪ Austin, TX

etcconnect.com