Electrical Specifications:

Inputs:

EMERGENCY, UTILITY and SWITCHED	120-277VAC, 47-63 Hz
0-10V controls (ELCD-D/FD model)	0-10V DC, 200mA maximum
Fire Alarm	12-24V AC/DC

Max Load Requirements:

LED, Ballast, Tungsten, Incandescent:	20A @ 120/277V
Standby Power Consumption:	0.25W@120V, 0.60W@277V
Dielectric Strength:	1550 VAC between ALL Inputs

Mechanical Specifications:

Size:	1.73"W x 1.28"D x 2.72"H
Weight:	4.5 oz.
Color:	RAL9003 White
Indicators:	LED's - EMERGENCY (Green), UTILITY (Green), ALARM (Red)
User Controls:	Test Button
Mounting:	Standard electrical box or fixture mount Breakaway tabs for mounting configurations
Environment:	0-50 deg. C
Connections:	Flying Leads – Pre-Tinned 12AWG for EMERGENCY INPUT (Blue) and LOAD (Yellow) 18AWG for UTILITY (Black), SWITCHED (Red), UTILITY NEUTRAL (White), EMERGENCY NEUTRAL (Gray) 20AWG Teflon for Fire Alarm (Red), 0-10V Dimming (Violet)

Warranty:
5 Year full replacement

Conformance:
UL-924, NEMA 410, IEC 6100-4-5, NEC, OSHA, NFPA

Programming Mode – Changing the Time Delay function

The ELCD has 5 pre-programmed time intervals which allows the user to extend the relay's "on time" when returning from an Emergency condition. The factory default time interval is set to 2 seconds and can be field modified to either No Delay, 1, 5, or 15 Minutes.

To change the time interval, press and hold the TEST button for at least 15 seconds to enter the programming mode. Once the programming mode is entered, the ALARM LED will illuminate solid red until the TEST button is released. Once the TEST button is released, a blinking pattern between the EMERGENCY LED and the ALARM LED will start. Blinking will alternate between the ALARM and EMERGENCY LED's followed by a pause and then repeated continuously. The quantity of blinks on the green EMERGENCY LED indicates which time interval is currently selected. To advance the time interval to a different pre-programmed setting, simply press the TEST button again. The Programming mode is a continuous loop so that if the button is pressed too many times, it will go back to the starting location. Once the desired time interval has been selected, press and hold the TEST button for at least 5 seconds until the ALARM LED is OFF to exit the programming mode.

Programming Mode Sequence 1)	One Blink = No Delay
Programming Mode Sequence 2)	Two Blinks = 2 Second Time Interval (Default)
Programming Mode Sequence 3)	Three Blinks = 1 Minute Time Interval
Programming Mode Sequence 4)	Four Blinks = 5 Minute Time Interval
Programming Mode Sequence 5)	Five Blinks = 15 Minute Time Interval

Press TEST Button momentarily to advance to new sequence

QUICK GUIDE - PROGRAMMING PROCEDURE (for details – see PROGRAMMING MODE description)

Step 1 – Enter the Programming mode

Press and Hold (15+ Seconds) → TEST → ALARM LED → Release TEST Button After ALARM LED is ON

Step 2 – Momentarily press the TEST button to advance to the desired Time Interval

TEST

NOTE
Count the blinks on the Green EMERGENCY LED after the Red Alarm

EMERGENCY LED:
1 Blink = No Delay.
2 Blink = 2 Sec.
3 Blinks = 1 Min.
4 Blinks = 5 Min.
5 Blink = 15 Min.

Step 3 – Exit the Programming mode

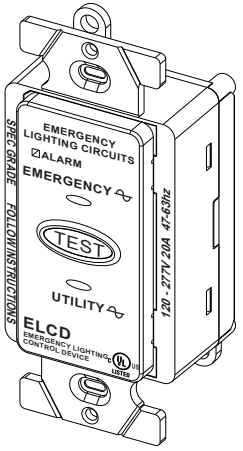
Press and Hold → TEST → Release TEST Button After ALARM LED is OFF

Assurance Emergency Lighting

a division of Assurance Engineering LLC

ELCD/ ELCD-F/ ELCD-FD Typical Wiring Diagrams

Emergency Lighting Wiring Diagrams when using a Central Inverter



This Document provides fully compliant 2017 NFPA 70, NEC Article 700 wiring diagrams using a Central Emergency Lighting Inverter and UL924 approved Emergency Lighting Control Device (ELCD). Diagrams show Single zone application with normal lights and emergency lights, 0-10V interface, fire alarm interface and switched power interface.

IMPORTANT – The ELCD does not transfer two nonsynchronous power sources. Emergency Power is continuously fed from the lighting inverter and provides the source of power for emergency fixtures under all modes of operation. Utility Power is only a sense line which causes a relay closure between the Emergency Power's Input/Output.

ELCD Inputs/Outputs:

Emergency Power: Emergency Power should always be present. Illustrations show a Central Inverter's Normally On output as the Emergency Power source. EMERGENCY LED Indicator will illuminate when present.

Utility Power should always be present. Loss of Utility Power will cause all models of the ELCD's internal power relay to connect the Emergency Power's Input to Output which will illuminate the Emergency Lights. UTILITY LED Indicator will illuminate when present.

Use of Switched Power allows all models of the ELCD to turn connected Emergency Lights on and off provided Utility Power is present.
Used in 0-10V dimming applications, the ELCD-FD dimming relay will open during an emergency condition causing the connected dimmers/drivers to go to full brightness.

Fire Alarm:
ELCD-F and ELCD-FD will go to emergency mode when 12-24V AC or DC is present.

Operating Modes:

Normal Mode: Both Emergency Power and Utility Power are present. All models of the ELCD main relay is off (OPEN). 0-10V relay is closed to allow dimming control.
Switched Mode: Both Emergency Power and Utility Power are present. All models of the ELCD main relay can be turned on and off when Switched Power is on and off respectively. ELCD-FD Dimming relay is closed to allow dimming control.
Emergency Mode: Utility Power is not present or Test Button is depressed or Fire Alarm 12-24V is applied. All models of the ELCD main relay are on (CLOSED), ELCD-FD dimming relay is open so connected dimmers / drivers are at full brightness.

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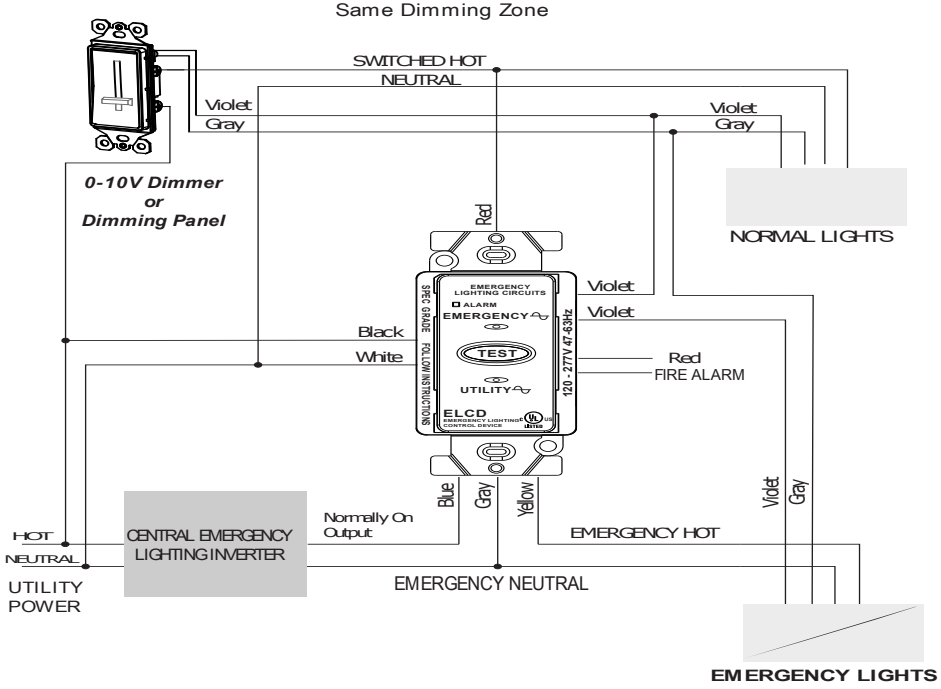
CENTRAL INVERTER WITH ELCD-FD

Single Zone Dimmed Using 0-10V Dimmer or Dimming Panel
Shows Emergency and Non-Emergency Lights on
Same Dimming Zone

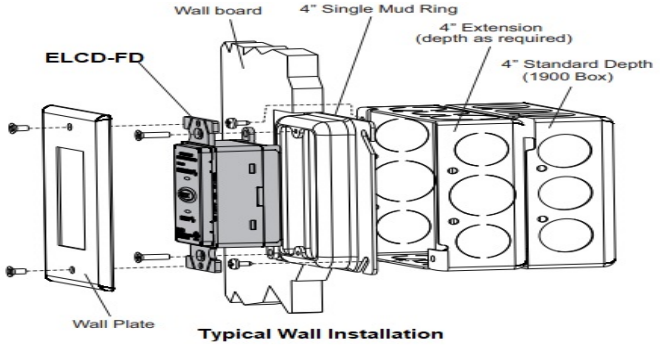


Operation:

During Normal Mode, Emergency Lights and Normal Lights can be dimmed with 0-10V dimmer or dimmer panel. Switched (Red) wire allows Normal Lights and Emergency Lights to be turned on/off.
During Emergency Mode, ELCD-FD opens the 0-10V (Violet) connection between Emergency Lights and Dimmer which brings them to full brightness. Upon loss of Utility Power (Black), the ELCD-FD connects the Inverter's Normally On output to the Emergency Lights regardless of the Switched (Red) state.

Installation:

All models should be installed in accordance with state, local and national electrical codes and requirements. Intended for fixture mount or installation in standard junction boxes covered with faceplate.This unit has more than one power supply connection point. To reduce the risk of electrical shock disconnect both the branch circuit breakers or fuses and emergency power supplies before servicing.

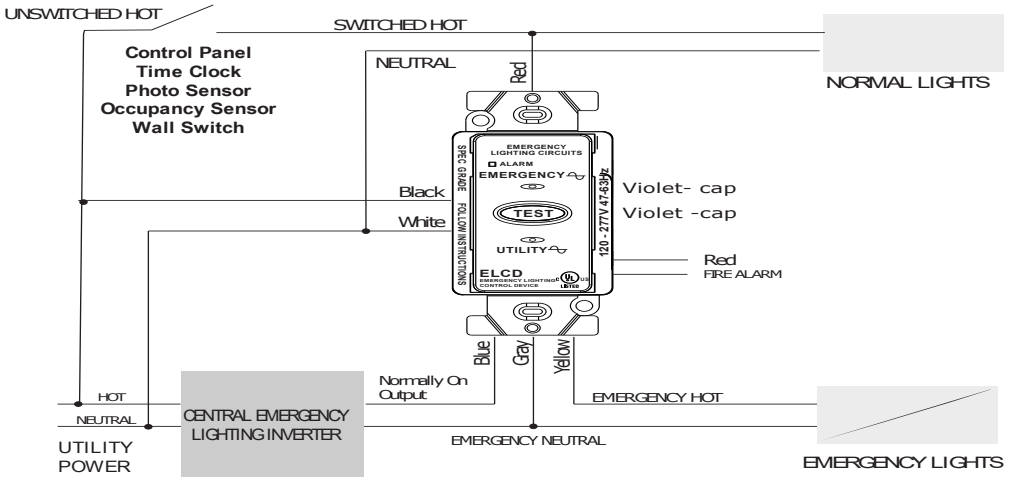


Typical Wall Installation

CENTRAL INVERTER WITH ELCD-DF

Non- 0-10 Dimming - Cap unused leads

Single Zone Switched Using Lighting Control
Panel, Time Clock, Photo Sensor, etc
Shows Emergency and Non-Emergency Lights on Same
Switching Zone



Operation:

During Normal Mode, Emergency lights and Normal lights can be turned On/Off with the Red (Switched) signal as long as Utility Power is present. Black (Utility) is the sense signal for the ELCD's internal power relay. Red and Black leads are signal wires only and do not carry load current. Load current for the Emergency Lights is carried on Blue (Emergency Input) and Yellow (Emergency Output).
During Emergency Mode (loss of Utility Power), the ELCD will automatically connect the Inverter's Normally On output power to the Emergency Lights regardless what state the Switched signal is in.

Operation: Fire Alarm input can be 12-24V AC or DC.

Testing/Troubleshooting:

Use the LED indicators on the front face to ensure proper connectivity. EMERGENCY LED only illuminates when EMERGENCY Input Power (Blue and Gray) are connected. UTILITY LED only illuminates when UTILITY power is present (Black and White). Both power sources must be present for proper operation. If either LED is not illuminated, please check for proper connections.
With both EMERGENCY and UTILITY power connected and both LED's illuminated, press the TEST button on the front face or energize the Switched Input to energize the emergency loads.When using the ELCD-D or ELCD-FD models, ensure that the emergency fixtures go to full brightness when the TEST button is pressed and also ensure the dimmer has full control of normal and emergency fixtures during normal mode.The ALARM LED should NEVER be illuminated during normal operation.in the event the ALARM LED is illuminated, the ELCD should be replaced immediately

The ELCD-FD can be installed in the Ceiling.

Electrical Specifications:

Inputs:

EMERGENCY, UTILITY and SWITCHED	120-277VAC, 47-63 Hz
0-10V controls (ELCD-D/FD model)	0-10V DC, 200mA maximum
Fire Alarm	12-24V AC/DC
Max Load Requirements:	
LED, Ballast, Tungsten, Incandescent:	20A @ 120/277V
Standby Power Consumption:	0.25W@120V, 0.60W@277V
Dielectric Strength:	1550 VAC between ALL Inputs

Mechanical Specifications:

Size:	1.73"W x 1.28"D x 2.72"H
Weight:	4.5 oz.
Color:	RAL9003 White
Indicators:	LED's - EMERGENCY (Green), UTILITY (Green), ALARM (Red)
User Controls:	Test Button
Mounting:	Standard electrical box or fixture mount Breakaway tabs for mounting configurations
Environment:	0-50 deg. C
Connections:	Flying Leads – Pre-Tinned 12AWG for EMERGENCY INPUT (Blue) and LOAD (Yellow) 18AWG for UTILITY (Black), SWITCHED (Red), UTILITY NEUTRAL (White), EMERGENCY NEUTRAL (Gray) 20AWG Teflon for Fire Alarm (Red), 0-10V Dimming (Violet)

Warranty:
5 Year full replacement

Conformance:
UL-924, NEMA 410, IEC 6100-4-5, NEC, OSHA, NFPA

Programming Mode – Changing the Time Delay function

The ELCD has 5 pre-programmed time intervals which allows the user to extend the relay's "on time" when returning from an Emergency condition. The factory default time interval is set to 2 seconds and can be field modified to either No Delay, 1, 5, or 15 Minutes.

To change the time interval, press and hold the TEST button for at least 15 seconds to enter the programming mode. Once the programming mode is entered, the ALARM LED will illuminate solid red until the TEST button is released. Once the TEST button is released, a blinking pattern between the EMERGENCY LED and the ALARM LED will start. Blinking will alternate between the ALARM and EMERGENCY LED's followed by a pause and then repeated continuously. The quantity of blinks on the green EMERGENCY LED indicates which time interval is currently selected. To advance the time interval to a different pre-programmed setting, simply press the TEST button again. The Programming mode is a continuous loop so that if the button is pressed too many times, it will go back to the starting location. Once the desired time interval has been selected, press and hold the TEST button for at least 5 seconds until the ALARM LED is OFF to exit the programming mode.

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Press TEST Button momentarily to advance to new sequence

QUICK GUIDE - PROGRAMMING PROCEDURE (for details – see PROGRAMMING MODE description)

Step 1 – Enter the Programming mode

Press and Hold (15+ Seconds) → TEST → ALARM LED → Release TEST Button After ALARM LED is ON

Step 2 – Momentarily press the TEST button to advance to the desired Time Interval

TEST

NOTE *Count the blinks on the Green EMERGENCY LED after the Red Alarm*

1 Blink = No Delay. → 2 Blink = 2 Sec. → 3 Blinks = 1 Min. → 4 Blinks = 5 Min. → 5 Blink = 15 Min. → 1 Blink = No Delay.

EMERGENCY LED

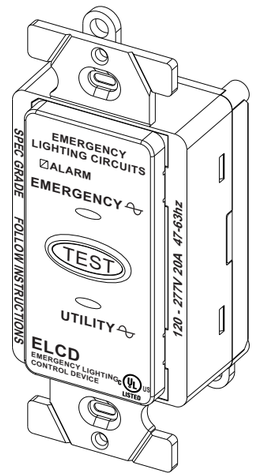
Step 3 – Exit the Programming mode

Press and Hold TEST Release TEST Button After ALARM LED is OFF

ELCD / ELCD-D / ELCD-F / ELCD-FD

Emergency Lighting Control Device

Installation / Operation Manual



- UL-924 Listed for Emergency Lighting
- Factory Calibrated Zero-Cross switching reduces relay arcing and inrush current up to 5X compared to conventional relays
- Industries lowest standby power consumption is less than 0.25W @120V
- 120 - 277 VAC Universal Input
- NEMA 410 Tested
- IEC 61000-4-5 Surge Tested
- Attractive standard faceplate - single or multi-gang box
- Breakaway tabs for multiple mounting configurations
- User Programmable Time Delay up to 15 min.

IMPORTANT SAFEGUARDS

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

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

This product can be used with LED Drivers, Fluorescent Ballasts, Incandescent, Tungsten/Quartz and general use loads

Servicing shall be performed by qualified service personnel

Ensure all wiring complies with applicable standards such as NFPA, NEC, and local codes

This product is not intended for use in wet locations – seal appropriately when using outdoors

Do not mount near gas or electric heaters

Do not use this equipment for other than intended use

The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition

WARNING
TURN POWER OFF BEFORE INSTALLATION,
ONLY QUALIFIED ELECTRICIANS SHOULD INSTALL

SAVE THESE INSTRUCTIONS

Z410153 Rev A

General Description:

The ELCD Product is listed to the emergency lighting standard UL-924 and is intended to operate so that normal lighting fixtures can also serve as emergency lighting fixtures. Use of the ELCD allows full control of any light fixture(s) during normal operating mode and during the EMERGENCY mode, it will automatically connect the attached light fixtures to the EMERGENCY power source. This device is particularly suited for use with an Emergency Lighting Central Inverter which can supply a continuous source of power to the connected light fixtures during a power outage.

This device DOES NOT transfer power between two different power sources. The internal power relay opens or closes between the EMERGENCY input to the EMERGENCY output. UTILITY power is a sense line (NOT CURRENT CARRYING) and is used to control the state of the internal power relay. Load current therefore is always derived from the EMERGENCY power.

Use in conjunction with lighting control systems such as photo-cells, time clocks, occupancy sensors, etc. the ELCD will significantly reduce power consumption to meet energy savings initiatives such as California's CEC Title 24.

ELCD Model	**ELCD-F Model**	**ELCD-D Model**	**ELCD-FD Model**
No Dimming No Fire Alarm	Includes Fire Alarm	Includes Dimming	Includes Fire Alarm and Dimming

Installation:

All models should be installed in accordance with state, local and national electrical codes and requirements.
Intended for fixture mount or installation in standard junction boxes covered with faceplate.
This unit has more than one power supply connection point. To reduce the risk of electrical shock disconnect both the branch circuit breakers or fuses and emergency power supplies before servicing.

Figure 1 – Basic ELCD Model Illustrates how to connect the Emergency Power Input, Emergency Power Output, Utility Power and Switched Power. This configuration allows normal fixtures and emergency fixtures to use the same switched source so that they form a lighting zone.

Figure 2 – ELCD-FD Model Illustrates how to connect a 0-10V dimming circuit with similar controls as Figure 1.
The 0-10V (Violet and Gray) signal is connected to the dimmer during normal operation and during emergency mode, the 0-10V signal (Violet) is opened so that the fixtures go to full brightness.

Fire Alarm - Red wires (not shown) accept 12-24 VAC/VDC.
Upon receiving a voltage from the fire alarm system, the ELCD-F and ELCD-FD models will force an emergency condition and turn on the Emergency Light fixtures and bring them to full brightness.

Testing/Troubleshooting:

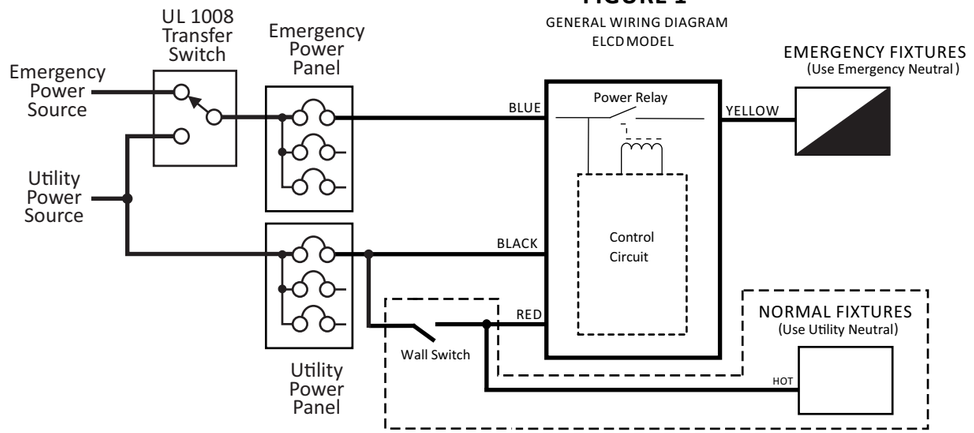
Use the LED indicators on the front face to ensure proper connectivity. EMERGENCY LED only illuminates when EMERGENCY Input Power (Blue and Gray) are connected. UTILITY LED only illuminates when UTILITY power is present (Black and White). Both power sources must be present for proper operation. If either LED is not illuminated, please check for proper connections.

With both EMERGENCY and UTILITY power connected and both LED's illuminated, press the TEST button on the front face or energize the Switched Input to energize the emergency loads.
When using the ELCD-D or ELCD-FD models, ensure that the emergency fixtures go to full brightness when the TEST button is pressed and also ensure the dimmer has full control of normal and emergency fixtures during normal mode.

The ALARM LED should NEVER be illuminated during normal operation.
In the event the ALARM LED is illuminated, the ELCD should be replaced immediately.

FIGURE 1

GENERAL WIRING DIAGRAM
ELCD MODEL



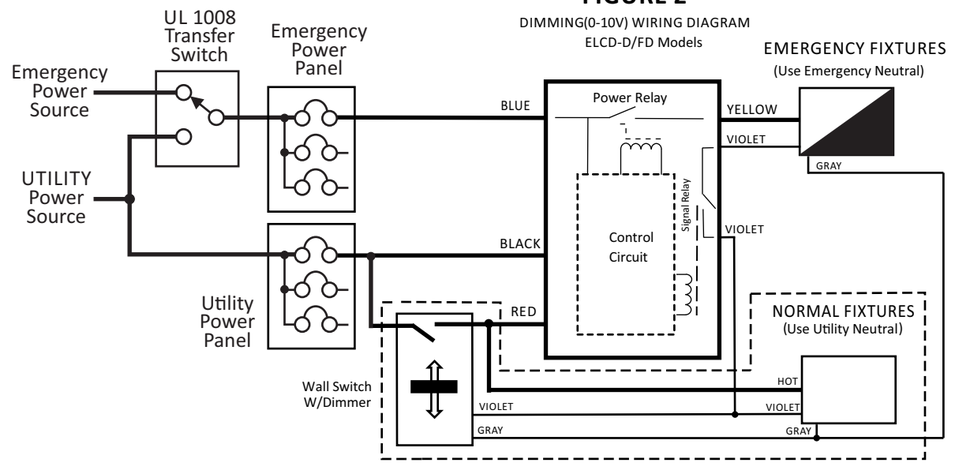
CIRCUIT SHOWS NORMAL AND EMERGENCY OPERATING FROM SAME WALL SWITCH
WALL SWITCH CAN BE REPLACED WITH CONTACTOR, OCCUPANCY SENSOR, TIME CLOCK, ETC.

WIRE LEGEND

EMERGENCY POWER INPUT (HOT) = BLUE	*SWITCHED POWER (HOT) = RED*
EMERGENCY POWER (NEUTRAL) = GRAY	*UTILITY/SWITCHED (NEUTRAL) = WHITE*
LIGHTING LOAD (HOT) = YELLOW	*DIMMING = VIOLET (ELCD-D/FD MODEL)*
UTILITY POWER (HOT) = BLACK	*FIRE ALARM = RED (ELCD-F/FD MODEL)*

FIGURE 2

DIMMING(0-10V) WIRING DIAGRAM
ELCD-D/FD Models



CIRCUIT SHOWS NORMAL AND EMERGENCY FIXTURES OPERATING FROM SAME WALL SWITCH
WALL SWITCH CAN BE REPLACED WITH CONTACTOR, OCCUPANCY SENSOR, TIME CLOCK, ETC.
VIOLET SIGNAL PATH IS OPEN DURING EMERGENCY MODE FOR FULL BRIGHTNESS ON EMERGENCY FIXTURE

Figure 1 and Figure 2 illustrate typical wiring for Non-Dimmed and Dimmed Loads

ELCD-D and ELCD-FD are for 0-10V dimming and are NOT compatible with 2-Wire dimming

For Additional wiring instructions, please consult factory