

CCP Custom Combination Panels



Description

- Ideal for projects with many small loads.
- Each panel provides power and dimming for 4 to 32 dimming legs.

Features

- LP Dimming Modules work directly with incandescent, leading edge electronic low voltage, magnetic low voltage, and neon/cold cathode lighting.
- ELV Dimming Modules work with trailing edge electronic low voltage and incandescent lighting.
- TVM Low-Voltage Control modules (12 modules, 24 dimming legs total per panel, max.) work with 0-10 V and DSI controlled dimming ballasts. DALI intensity broadcast is available with Load Type 2-7 on the Circuit Selector. This function is the same as DSI; the ballasts are not addressable.
- Panels are prewired - just bring in feed and load wiring.

Models available with:

- 100-127V, 220-240V (non-CE), or 230V (CE) input power.
- 1 to 8 Dimming Modules for 4 to 32 dimming legs.

CCP Dimming Panels work with:

- GRAFIK Eye 4000 Series Control Units
- GRAFIK 5000™, GRAFIK 6000®, and GRAFIK 7000® Systems.
- GP Dimming Panels and XP Switching Panels
- DMX512 dimming systems via the 2LINK™ option.
- Homeworks Interactive™

Job Name:	Model Numbers:
Job Number:	

Specifications - 100-127V, 220-240V (non-CE)

Standards

- UL Listed (Reference: UL File 42071).
- Complies with CSA or NOM (where appropriate).

Power

- Input power: 100-127V or 220-240V (non-CE). All voltages 50/60Hz, phase-to-neutral.
- Branch Circuit Breakers: UL-rated thermal magnetic.
AIC ratings:
100-127V – 10,000
220-240V – 6,000
- Lighting strike protection: Meets ANSI/IEEE standard 62.41-1980. Can withstand voltage surges of up to 6000V and current surges of up to 3000A.
- 10-year power failure memory: Automatically restores lighting to scene selected prior to power interruption.

Sources/Load Types

Operate these sources with a smooth continuous Square Law dimming curve or on a full-conduction non-dim basis:

LP Dimming Modules

- Incandescent (Tungsten)/Halogen
 - Magnetic Low Voltage Transformer
 - Leading edge electronic low voltage.
 - Neon/Cold Cathode
- Operate HID sources on a full conduction non-dim basis.

ELV Dimming Modules

- Trailing edge electronic low voltage transformer.
- Incandescent (tungsten)/Halogen

TVM Low Voltage Control Modules

- Each module controls two consecutive dimming legs of lighting for 0-10V and DSI ballasts.
- 50mA max. low voltage ballast control current per dimming leg, 750mA per panel.

Dimming Modules

- Each Dimming Module can handle a fully loaded electrical circuit - up to four dimming legs per Module.
- Maximum Ratings:

Voltage	Capacity per Dimming Module	Capacity per Dimming Leg
100-127 V	16 A	16 A
220-240 V (non-CE)	16 A	16 A

- RTISS™ filter circuit technology compensates for incoming line voltage variations: No visible flicker with +/-2% change in RMS voltage/cycle and +/-2% Hz change in frequency/second.

Motor Modules

- Maximum Ratings:
120V -16A per module, 5A (1/4 HP) per motor leg.

Wiring

- Internal: Prewired by Lutron.
- System communications: Low-voltage Class 2 (PELV) wiring connects Dimming Panels to other components.
- Line (mains) voltage: Feed and load wiring only. No other wiring or assembly required.

Setup

Circuit Selector electronically assigns dimming legs to zones and sources. Permits reassignment of zones and sources without rewiring.

Physical Design

- Enclosure: NEMA-Type 1, IP-20 protection; #16 U.S. Gauge Steel. Indoors only.
- Weight: 80lb (36kg).

Mounting

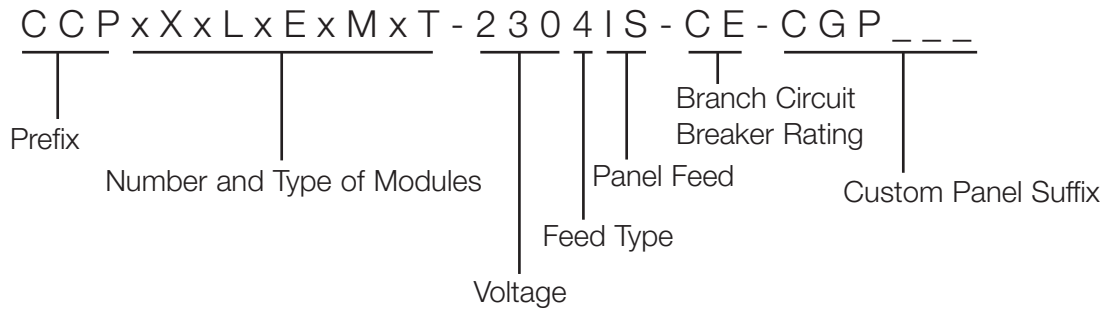
- Surface mount or recess mount between 16" (40cm) studs.
- Allow space for ventilating.

Environment

32-104°F (0-40°C). Relative humidity less than 90% non-condensing.

Job Name:	Model Numbers:
Job Number:	

How to Build a Model Number



Prefix:

CCP for Custom Combination Panel

Number and Type of Modules:

Number and letter combination indicates the number of that module type.

X for XP Switching Modules

L for LP (4U) Dimming Modules

E for ELV (4E) Dimming Modules

M for Motor (4M) Modules

T for TVM Modules (Every 2 TVM Modules requires 1 LP Dimming Module)

Example: 2X3L means 2 Switching Modules and 3 LP Dimming Modules

Voltage:

230 for 230 V (CE)

240 for 220-240 V (non-CE)

Feed Type:

4 for 3 phase 4 wire

Panel Feed:

IS for Isolator Switch

Branch Circuit Breaker Rating:

13 for 13 A branch circuit breakers (230 V CE only)

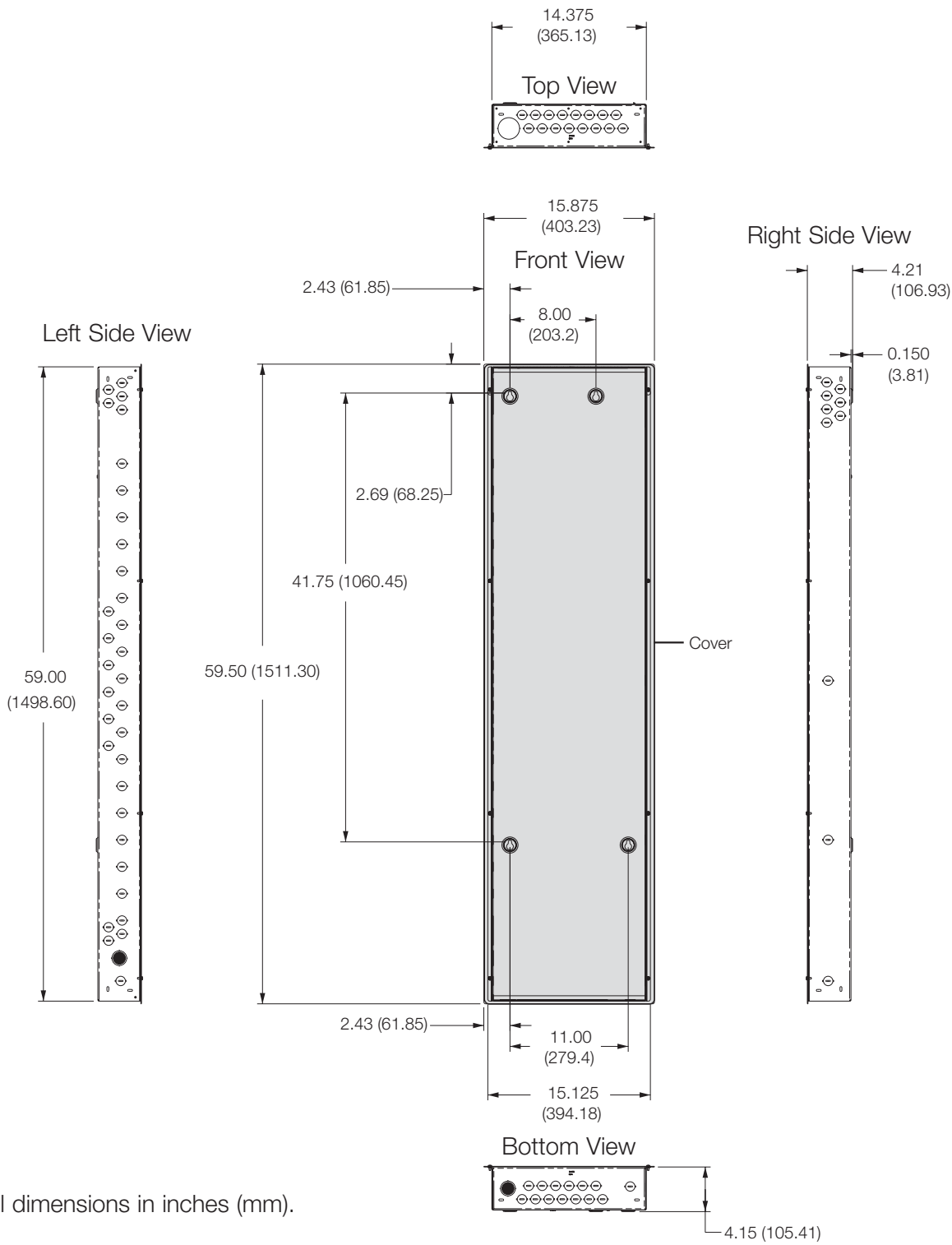
16 for 16 A branch circuit breakers (240 V non-CE only)

Custom Panel Suffix:

Indicates panel with special options

Job Name:	Model Numbers:
Job Number:	

CCP Dimensions



All dimensions in inches (mm).

<p>Job Name:</p>	<p>Model Numbers:</p>
<p>Job Number:</p>	

CCP Mounting

- Surface or recess mount indoors.
- Consult Dimensions page for dimensions and conduit knockout locations.
- Panel generates heat. Mount only where ambient temperature is 0-40°C.
- This equipment is air-cooled. Do not block vents or warranty will be void.

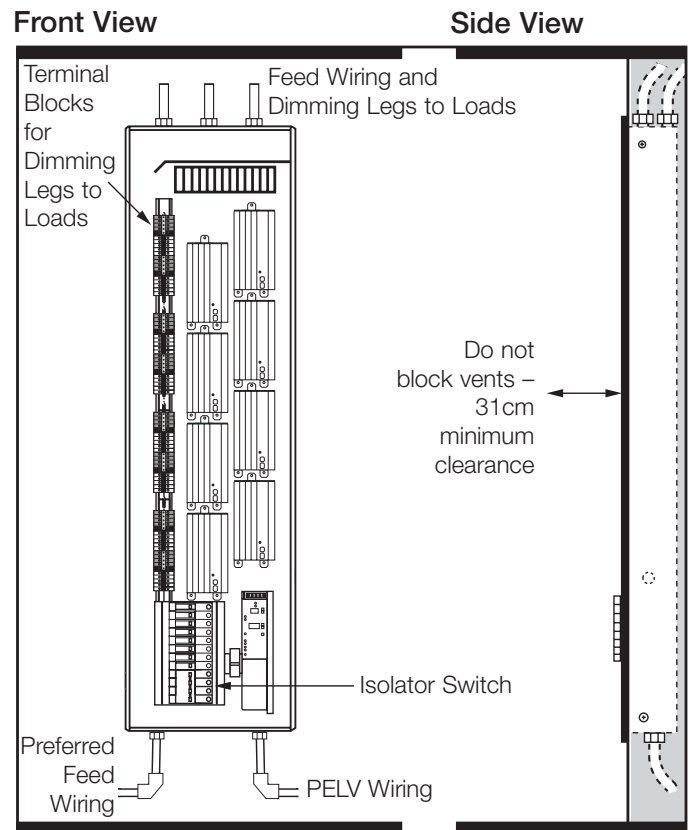
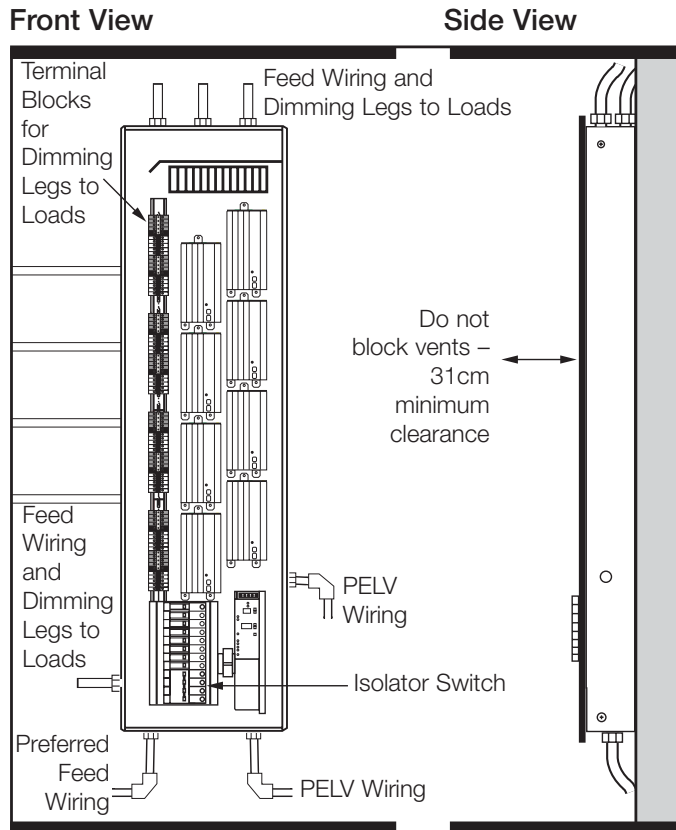
- Reinforce wall structure for weight and local codes.
- Mount Panels where audible noise is acceptable. (Panels hum slightly and internal relays click.)
- Mount Panels so line (mains) voltage wiring is at least 1.8m from sound or electronic equipment and wiring.
- Mount Panel within 7° of true vertical.

Surface Mounting

- Surface mounting keyholes accept 6mm mounting bolts. This size is recommended.

Recess Mounting

- Mount Panel flush to 3mm below finished wall surface.
- Allow room for top cover. Leave 38mm clearance to each side of Panel.



Job Name:	Model Numbers:
Job Number:	

CCP Wiring

Wire Sizes

- **Power (Live) Feed:**
2.5mm² (#12 AWG) to 35mm² (#2 AWG)
- **Neutral Feed:**
2.5mm² (#12 AWG) to 35mm² (#2 AWG)
- **Dimmed Live:**
2.0mm² (#14 AWG) to 6.0mm² (#10 AWG)
- **Load Neutral:**
2.0mm² (#14 AWG) to 6.0mm² (#10 AWG)

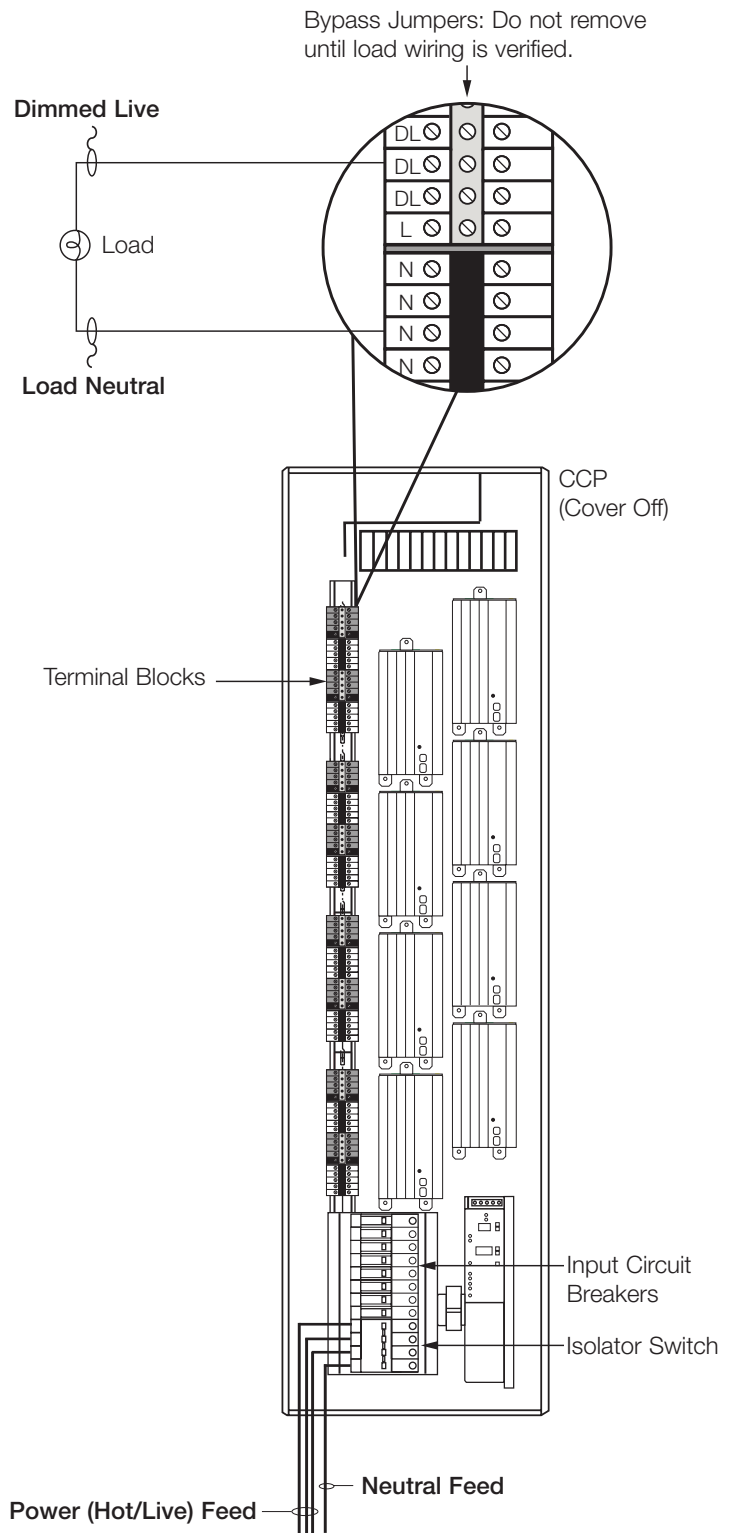
Wiring Tips

Wire the CCP similar to wiring a lighting Distribution Panel:

- Run feed and load wiring. No other wiring or assembly required.
- Run separate neutrals for each module - no common neutrals across phases.

The CCP can provide temporary lighting:

- Wire all loads.
- Do not remove the bypass jumpers that protect the Dimming Modules.
- Use Branch Circuit Breakers to switch lights on and off.

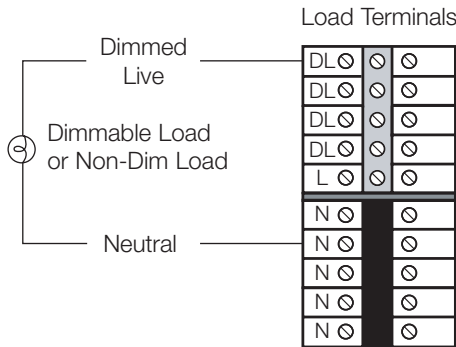


Job Name:	Model Numbers:
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Typical Load Wiring

Load Wiring for LP Module

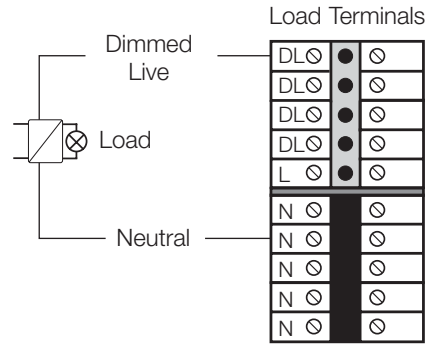
- For all load types except ELV and fluorescent dimming ballasts.



Load Wiring for ELV Module

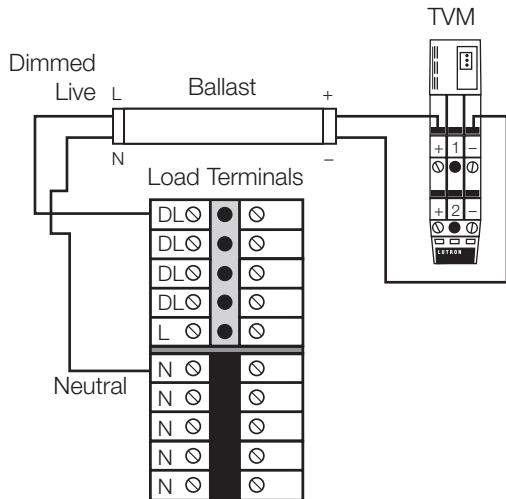
- For incandescent* and dimmable reverse phase control electronic low voltage loads.

* Load type 5-1 **must** be selected at the Circuit Selector regardless of load type.



Load Wiring for TVM Module

- For 0-10V, PWM, DSI, and DALI (Intensity broadcast only) loads. Each TVM controls two consecutive dimming legs of lighting and are the first dimming legs in the panel. Maximum low-voltage ballast control current: 50mA per zone, 750mA per panel.



Job Name:	Model Numbers:
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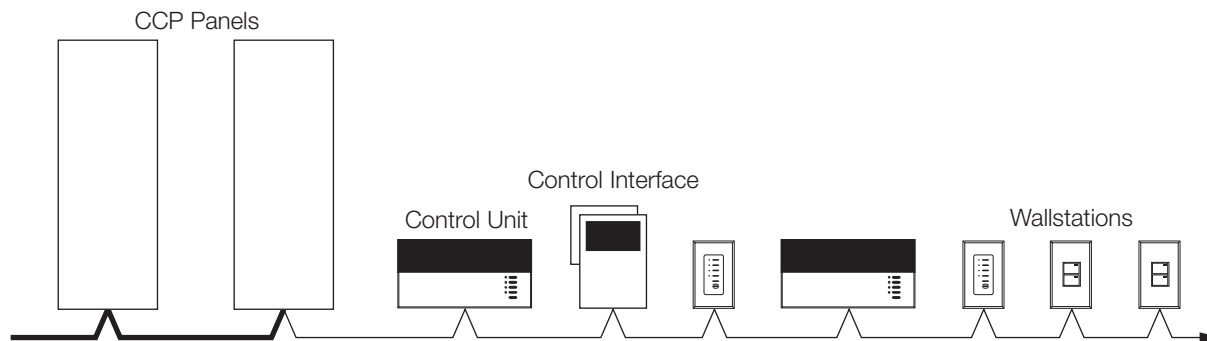
Low-Voltage Class 2 (PELV) Wiring (All Models)

System communications use low-voltage Class 2 wiring.
 Wiring must be daisy-chained.
 Wiring must run separately from line (mains) voltage.

GRAFIK Eye® 4000 System

Class 2 (PELV) wiring link requires:
 Two #12 AWG (2.5mm²) conductors for control power.
 One twisted, shielded pair of #18 AWG (1.0mm²) for data link.
 One #18 AWG (1.0mm²) conductor for Emergency (Essential) sense line, from panel to panel.

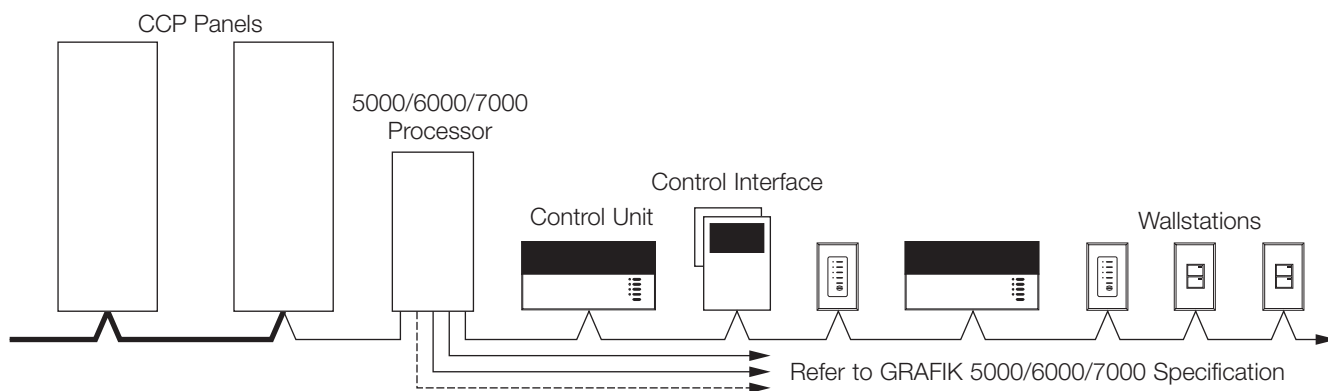
Total length of Control Link may be no more than 2,000 ft. (610m).
 Approved low-voltage cable is available from Lutron,¹ Belden, and Liberty. These are approved with #22 AWG data link wires.



GRAFIK 5000™/6000®/7000® System

Class 2 (PELV) wiring link requires:
 Two #12 AWG (2.5mm²) conductors for control power.
 One twisted, shielded pair of #18 AWG (1.0mm²) for data link.
 One #18 AWG (1.0mm²) conductor for emergency (essential) sense line, from panel to panel.

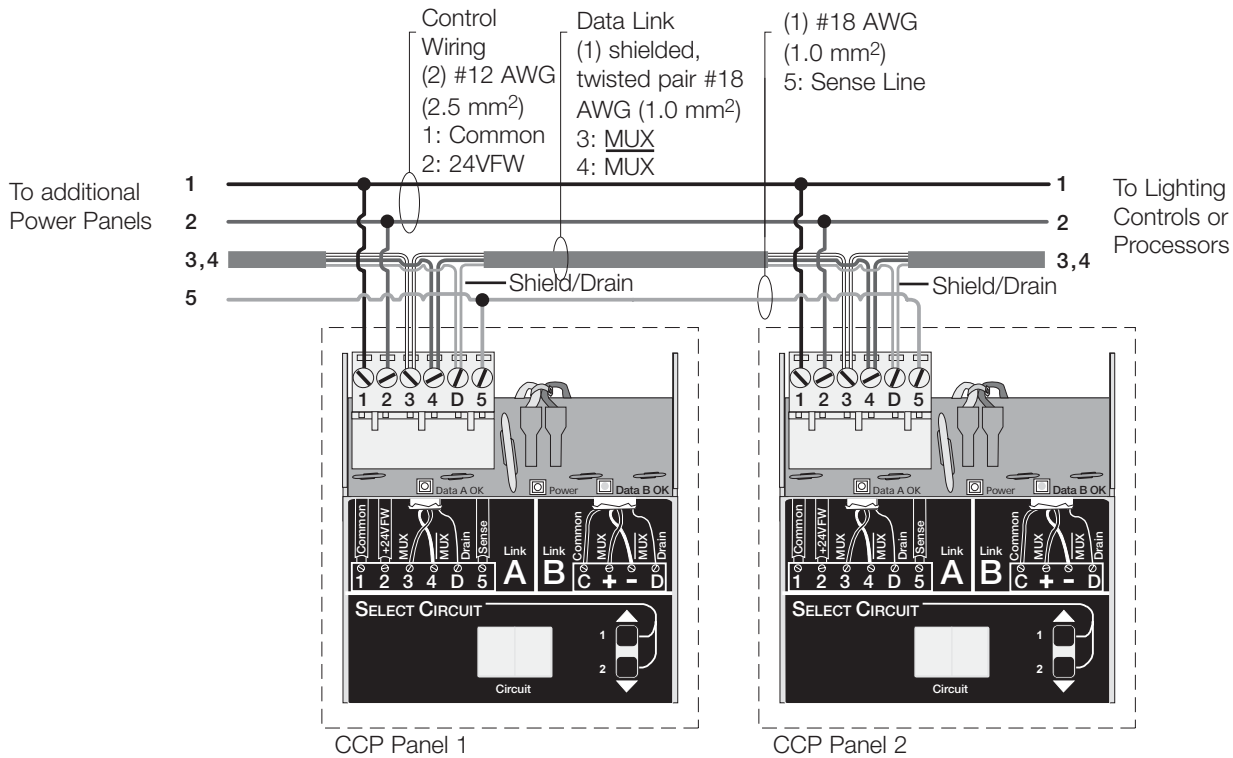
Total length of Control Link may be no more than 2,000 ft. (600m).
 If MUX-RPTR interface and GRX-CBL-46L cable¹ is used, length may be up to 4,000 ft. (1200m).



¹ GRX-CBL-46L Class 2 (PELV) wiring cable is available from Lutron and contains:
 Two #12 AWG (2.5mm²) conductors for control power.
 One twisted, shielded pair of #22 AWG (0.625mm²) for data link.
 One #18 AWG (1.0mm²) conductor for emergency (essential) sense line.

Job Name:	Model Numbers:
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Class 2 (PELV) Panel-to-Panel Wiring (All Models)

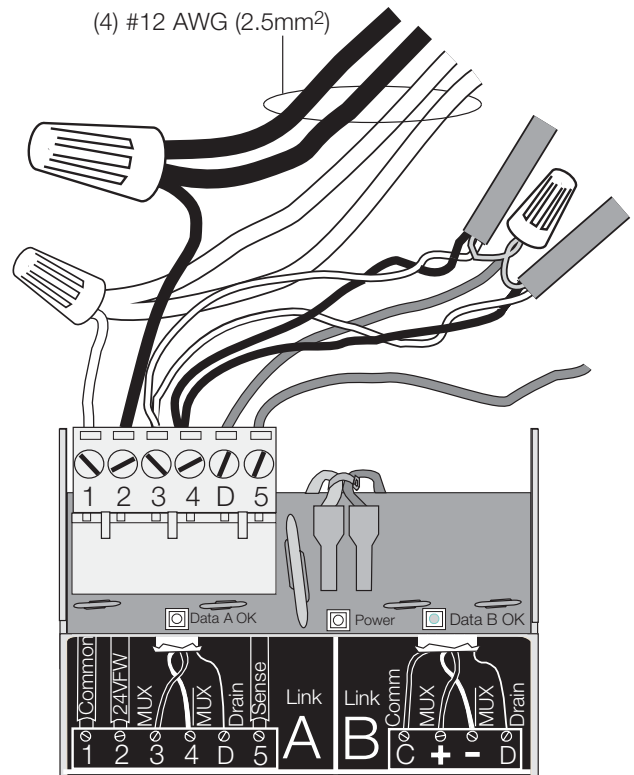


Notes:

- Emergency Power: The additional #18 AWG (1.0mm²) wire is a “sense” line from terminal 5 of another Panel. This sense line allows an Emergency (Essential) Lighting Panel to “sense” when Normal (Non-Essential) power is lost. If more than one Emergency Lighting Panel needs to sense from a specific Normal Panel, a dedicated wire between each pair of Normal (Non-Essential) and Emergency (Essential) panels may be required.
- Shield/Drain: Connect shielding as shown. Do not connect to Ground (Earth) or circuit board of Circuit Selector. Connect the bare drain wires and cut off the outside shield.

Class 2 (PELV) Terminal Connections

Each low-voltage Class 2 (PELV) terminal can accept only two #18 AWG (1.0mm²) wires. Two #12 AWG (2.5mm²) conductors will not fit. Connect as shown using appropriate wire connectors.



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