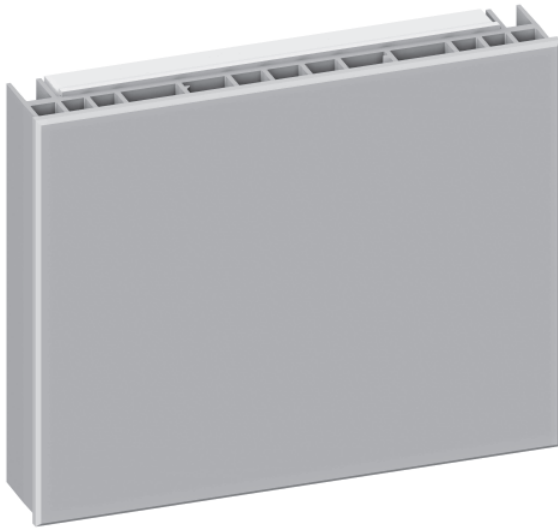


Phase-Adaptive Power Module



Description

- Provides capability for a zone on a *GRAFIK Eye* control unit (or other product) to dim a fully loaded circuit of lighting.
- May be used to control incandescent, electronic low-voltage, magnetic low-voltage, and neon/cold cathode lighting sources, as well as Lutron® Tu-Wire® fluorescent dimming ballasts.
- Automatically selects leading-edge or trailing-edge dimming for low-voltage transformers.
- Provides power and dimming for one zone.
- Up to 3 power modules may be wired on a single *GRAFIK Eye* zone.
- Models available for 120 V~ control power.
- Models available for 120 V~ or 120 - 277 V~ load power.
- Not for use with non-dim loads.

Works with 120 V~ versions of:

- *GRAFIK Eye* QS control units*
- *GRAFIK Eye* 3000 Series control units**
- LP, LCP, and GP dimming panels**
- HomeWorks® remote power panels**
- *Lutron* 3-wire fluorescent dimmers (consult Lutron for Vierti®); see approved list in the dimmers & switches specification guide at www.lutron.com

*Set to power module load type

**Set to incandescent load type

Model and Capacities

Control Power	Load Power	Capacity	Model Number
120 V~	120 - 277 V~	16 A	PHPM-PA-DV-WH
120 V~	120 V~	16 A	PHPM-PA-120-WH

Job Name:	Model Numbers:
Job Number:	

Specifications

Power

- Control voltage: 120 V~
- Load voltage: 120 V~ only for PHPM-PA-120-WH
120 – 277 V~ for PHPM-PA-DV-WH
- Capacity: Full 16 A
120 V~ 1920 W
120 – 277 V~ 1920 – 4432 W
- Frequency: 50 / 60 Hz, phase-to-neutral.
- Load (output) power: Phase independent of control device/control voltage.

Sources/Load Types

- Operates these sources with a smooth continuous Square Law dimming curve:
 - Incandescent (tungsten)
 - Halogen
 - Magnetic low-voltage transformer (iron core)
 - Electronic (solid-state) low-voltage transformer (must be manufacturer approved for reverse-phase control dimming).
 - Neon/Cold cathode
 - Lutron® Tu-Wire® fluorescent dimming ballasts
- Incandescent and electronic low-voltage sources may be controlled on the same circuit/control zone. Up to 30% of the unit’s capacity may be used for incandescent lighting.
- Incandescent and magnetic low-voltage sources may be controlled on the same circuit/control zone. Up to 30% of the unit’s capacity may be used for incandescent lighting.
- Electronic low-voltage and magnetic low-voltage sources may NOT be controlled on the same circuit/control zone.
- PHPM-PA not for use with non-dim loads. Use switching power module (PHPM-SW-DV-WH) for non-dim loads.
- Minimum load on power module is 10 W.
- Output must be directly connected to the load. Load side switching is not recommended.

Key Design Features

- Automatically selects between forward phase/leading edge (e.g., magnetic low-voltage) and reverse phase/trailing edge (e.g., electronic low-voltage) dimming/output based on connected load.
- Patented RTISS™ circuitry compensates in real time for incoming line voltage variations: Compensates for +/-2% change in RMS voltage/cycle and +/-2% Hz change in frequency/second.
- Provides air-gap off.
- Module protects itself during most temporary over-current and over-voltage conditions.
- Two LEDs on front of unit provide diagnostic information (visible when faceplate is removed).

Terminals

Each terminal accepts up to two 12 AWG (2.5 mm²) wires.

Environment

- 32 to 104 °F (0 to 40 °C). Relative humidity less than 90% non-condensing.
- Indoor use only.
- Maximum heat output of module: 135 BTU/hour.

Mounting

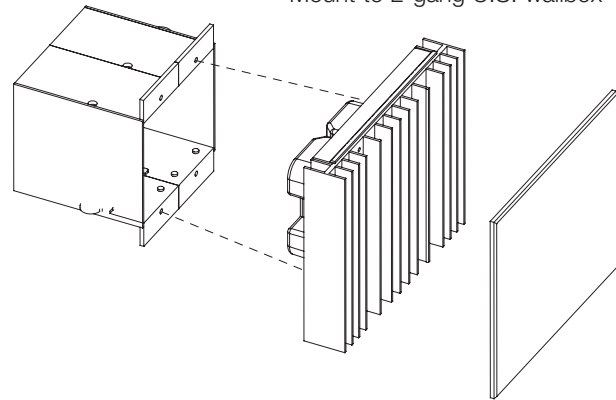
- Surface or recess mount.
- Power module is UL tested and approved for use in spaces designed for environmental air handling.

Job Name:	Model Numbers:
Job Number:	

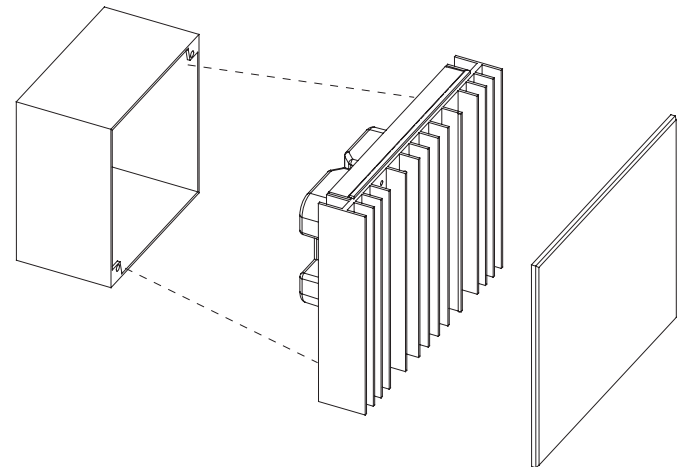
Dimensions and Mounting

- Mount in 2-gang U.S. wallbox 3.5 in (89 mm) deep or 4 x 4 in (102 x 102 mm) junction box 2.1 in deep (53 mm).
- Indoors only.
- This device generates heat; mount only where ambient temperature is 32 to 104 °F (0 to 40 °C).
- Mount with arrows facing up to ensure adequate cooling.
- Allow 4.5 in (114 mm) above and below faceplates when mounting several modules in a vertical layout.
- Units may butt together when mounted in a horizontal layout.
- Mount so line (mains) voltage wiring is at least 6 ft (1.8 m) from sound or electronic equipment and wiring.
- Mount within 7° of true vertical.

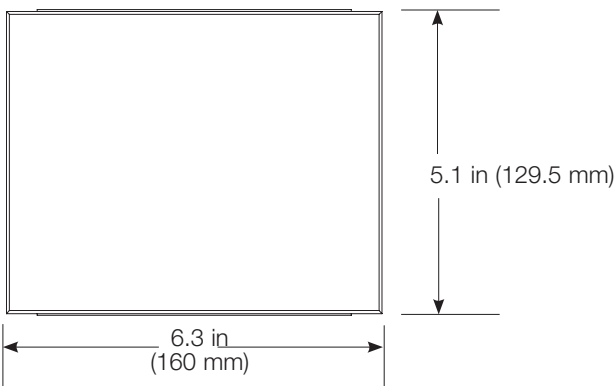
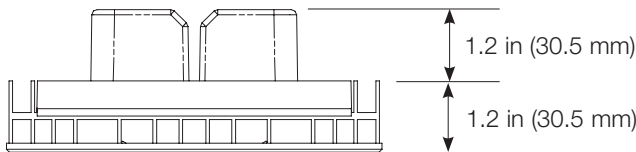
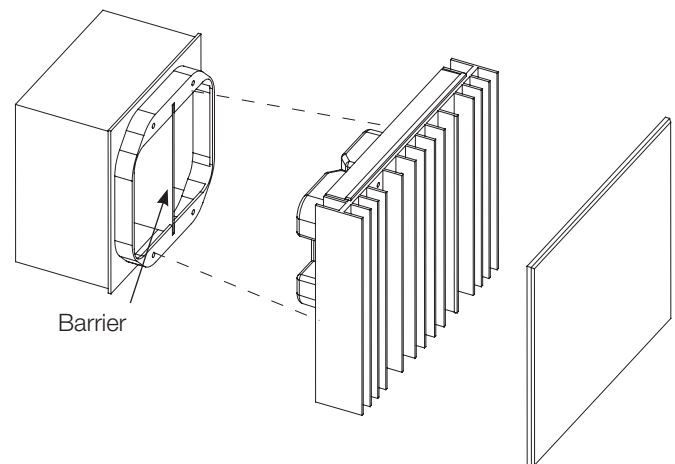
Mount to 2-gang U.S. wallbox



Mount to 4 x 4 in (102 x 102 mm), 2.1 in (53 mm) deep U.S. junction box



Mount to 4 x 4 in (102 x 102 mm), 2.1 in (53 mm) deep U.S. junction box with barrier (for 277 V~ loads if required by local electrical code)



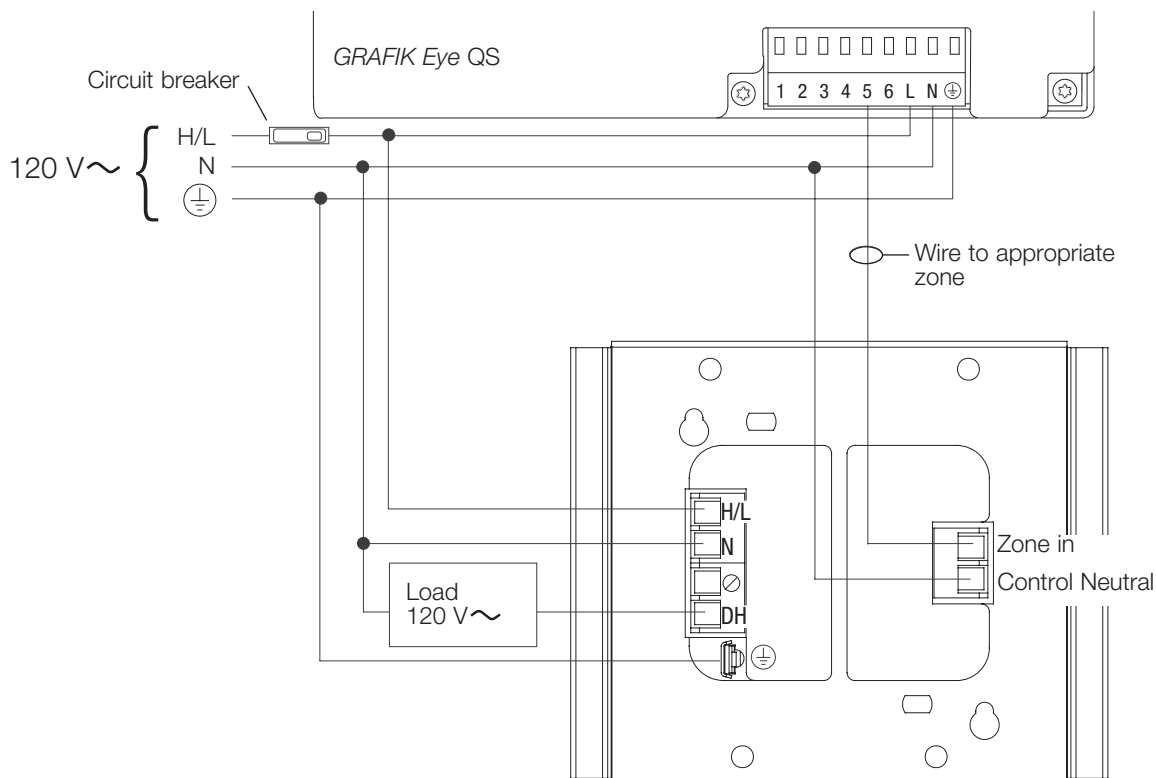
<p>Job Name:</p>	<p>Model Numbers:</p>
<p>Job Number:</p>	

Wiring

- Pull 12 AWG (2.5 mm²) copper (Cu) wires (75 °C/167 °F minimum) for input power and load circuit.
- Strip 1/2 in (12 mm) insulation from wires before connecting.
- Run separate neutral for load circuit - no common neutrals.
- May be used with GFI breaker protected loads. Load circuit wiring (from GFI breaker to power module to load) must be run in its own non-metallic conduit, or nuisance tripping may occur. Maximum 100 ft (30.5 m) between power module and load.
- May be used with AFI breaker protected loads. Maximum load on AFI circuit is 1000 W. Exceeding 1000 W may cause nuisance tripping of AFI breaker.

Single Power Feed

Note: The power module may be on the same circuit as the control unit only if the total load does not exceed the rating of the breaker.



Legend

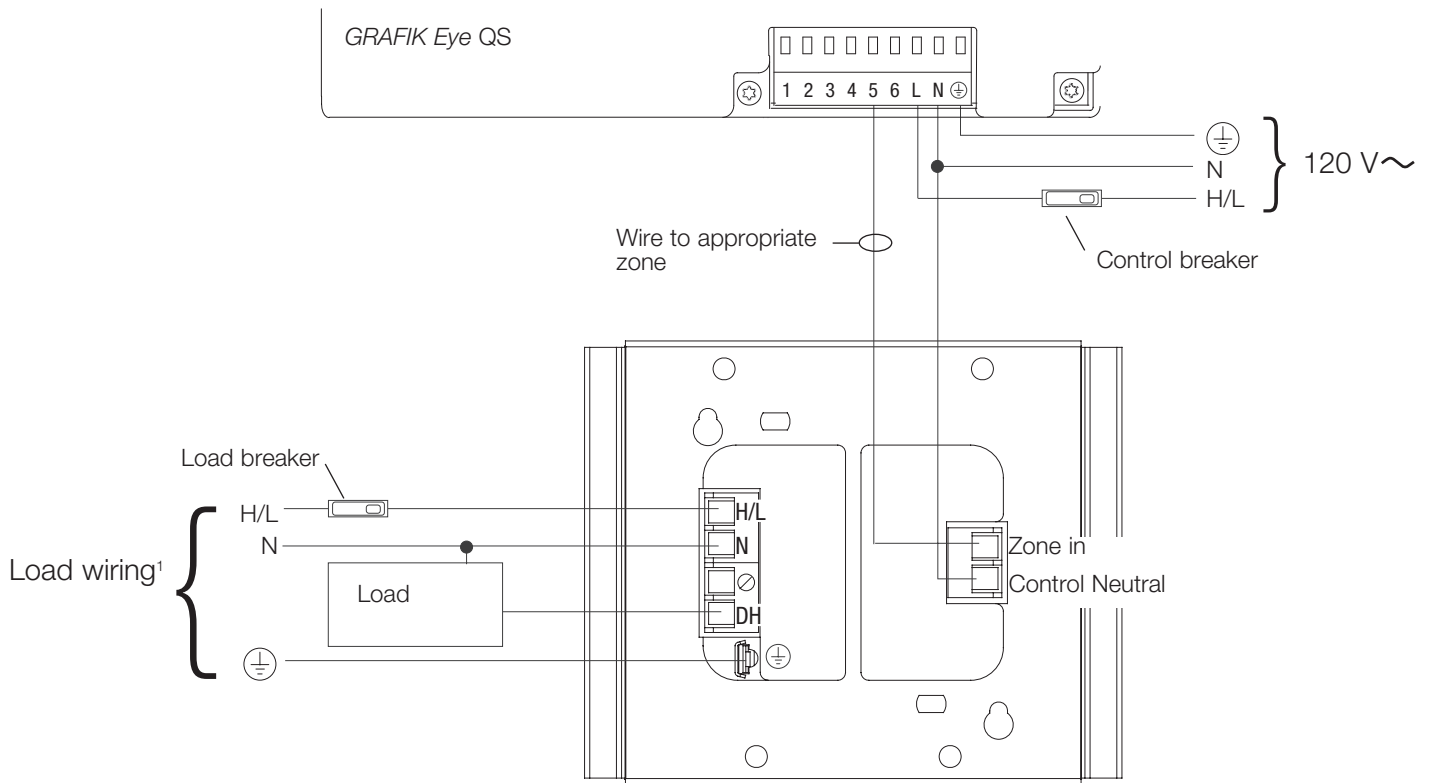
- H/L Hot/Live
- N Neutral
- SH Switched Hot
- DH Dimmed Hot
- ⊕ Ground
- ⊘ Not Used

Job Name:	Model Numbers:
Job Number:	

Wiring

Multiple Power Feeds

The load breaker may be on a different phase than the control breaker.



Legend

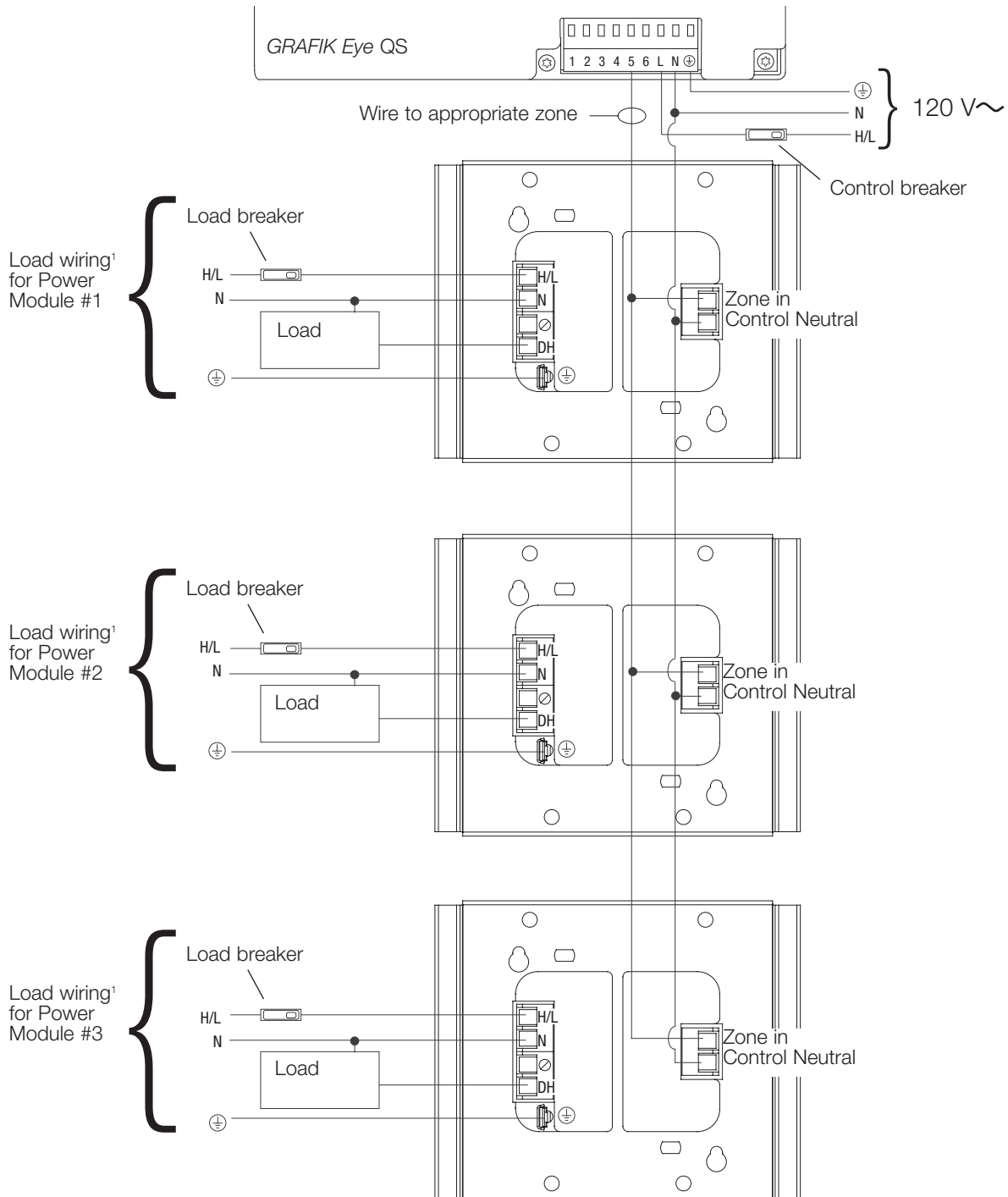
- H/L Hot/Live
- N Neutral
- SH Switched Hot
- DH Dimmed Hot
- ⊕ Ground
- ⊘ Not Used

¹Load feed: 120 V~ for PHPM-PA-120-WH;
120 – 277 V~ for PHPM-PA-DV-WH

Job Name:	Model Numbers:
Job Number:	

Wiring Multiple Power Modules to a Single GRAFIK Eye® Zone

Shown with separate feeds for control and loads. All breakers must be turned off prior to installing or servicing the modules. Up to 3 power modules may be wired to a single zone.

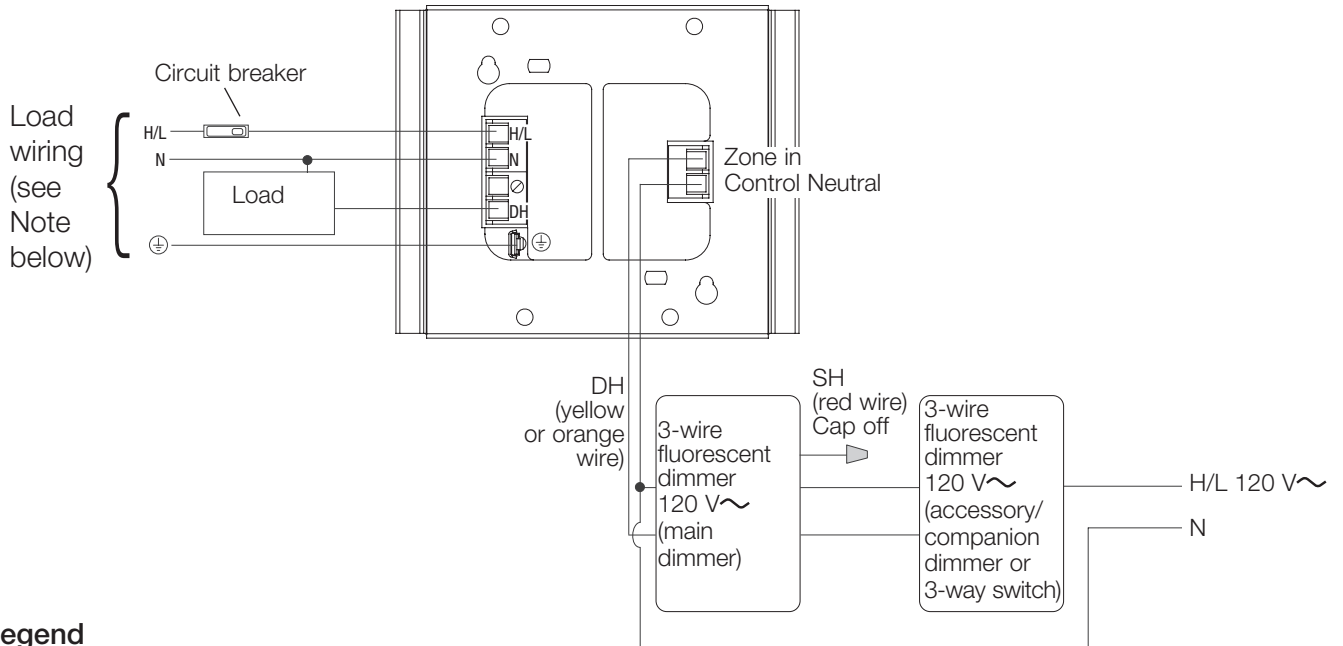


¹Load feed: 120 V~ for PHPM-PA-120-WH; 120 – 277 V~ for PHPM-PA-DV-WH

Job Name:	Model Numbers:
Job Number:	

Multilocation Wiring

Note: The power module may be on the same circuit/control zone as the control device only if the total load does not exceed the rating of the breaker (120 V~ only).



Legend

- H/L Hot/Live
- N Neutral
- SH Switched Hot
- DH Dimmed Hot
- ⊕ Ground
- Not Used

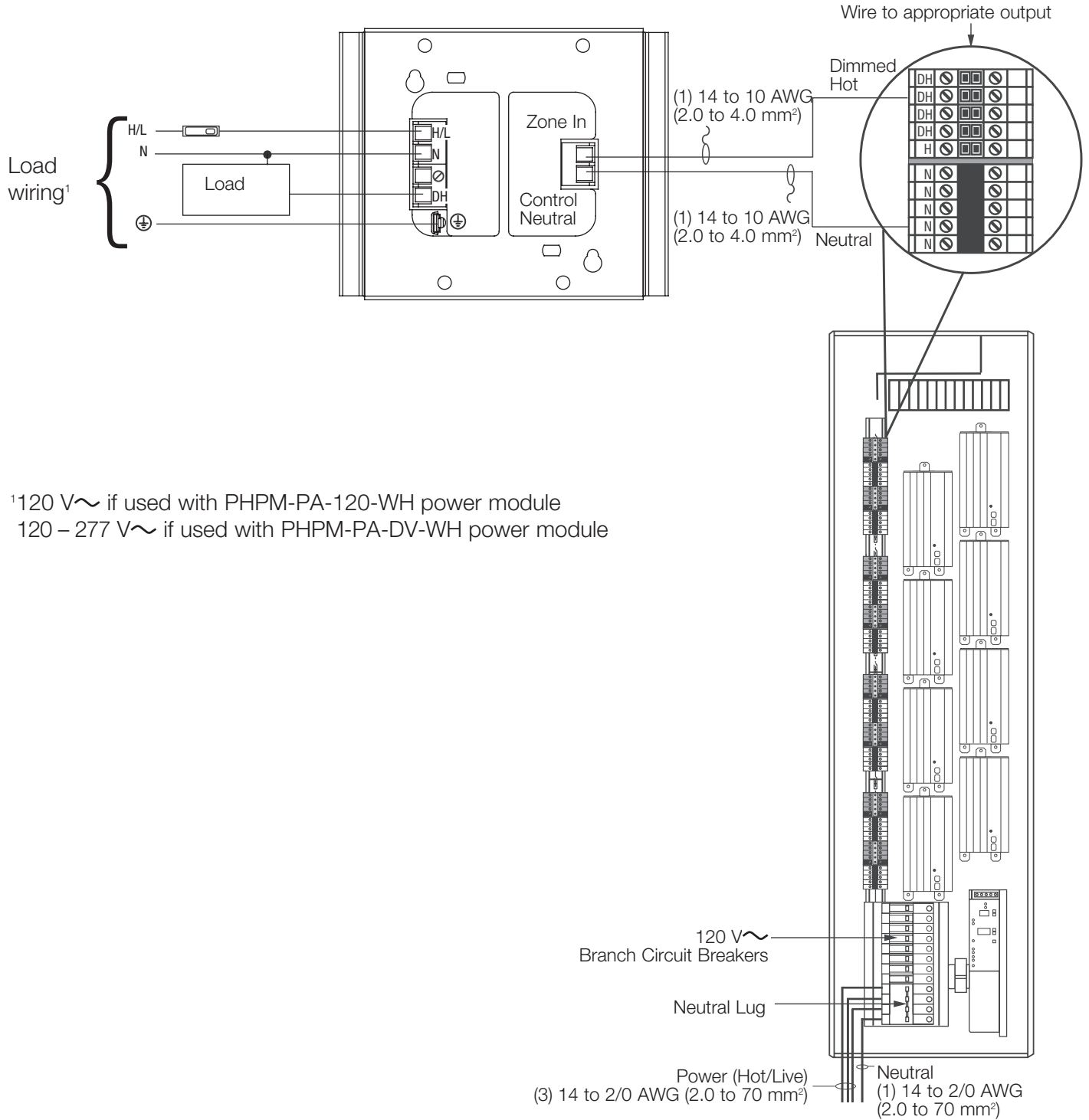
For specific wire colors, see the wallbox lighting controls catalog at www.lutron.com/wallbox catalog

Note: Load feed: 120 V~ for PHPM-PA-120-WH;
120 – 277 V~ for PHPM-PA-DV-WH

Job Name:	Model Numbers:
Job Number:	

Wiring a Power Module to an LP, LCP, GP, or HomeWorks® Panel

Up to three phase-adaptive power modules may be wired to an output of a 120 V~ LP or LCP panel. The load type for the output must be set appropriately on the panel's circuit selector (for an LP or GP panel), controller (for an LCP panel), or *HomeWorks* software (for a *HomeWorks* panel).



¹120 V~ if used with PHPM-PA-120-WH power module
 120 – 277 V~ if used with PHPM-PA-DV-WH power module

Job Name:	Model Numbers:
Job Number:	