LEVITON

Applications Cookbook

Power Extenders

Version 2.0

FOR REFERENCE ONLY

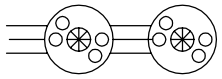
POWER EXTENDER COOKBOOK NOTES

1. Refer to manufacturer's data sheets and installation instructions prior to installation.
2. Line feed 120/230/277VAC, 60Hz.
3. Ground not shown. Ground devices per applicable national and local codes and best practices.
4. For emergency power situations, illustrations assume transfer switch by others upstream of shown devices.
5. Line voltage load not to exceed contact rating per device specifications.
6. Power packs receiving separate feeds for switched loads and self power must have both feeds on the same phase.
7. All low-voltage devices consume current. Device power budget is estimated for these details; additional power sources may be required. See product literature for power specifications.
8. Maximum run length for analog wiring is 1000' feet @ #18 AWG.
9. Sensors wired in parallel will cause line voltage relay closure when occupancy is detected by any unit.
10. Devices in series requiring contact closure from a single device (clock input, demand response, emergency, etc.) must follow these wiring conventions: first device in sequence provides the +V to the triggering relay; signal from closure attached to all devices in sequence input; com from first device in sequence attached to com on all devices in sequence.
11. Ultrasonic ceiling mount sensors should be located a minimum of 6 ft from HVAC supply/return vents.
12. Trough-mounted, pendant-mounted, and pendant-mounted indirect lighting sources affect the operation of locally mounted sensors. Contractor is responsible for adjusting sensor locations to allow for proper operation.
13. Contractor is responsible for proper sensitivity and time delay settings for non-adaptive products, following the manufacturer's recommended placement, and field verification of circuits with respect to power pack placement.
14. Contractor is responsible for coordinating the operational options of sensors and power packs with the specific work requirements.
    - Work relevant energy code requirements affect circuits to be controlled and their control characteristics.
    - One power pack is required for each controlled circuit.
    - Refer to power pack data sheet for power output and installation guide for maximum number of sensors connected to a power pack.
    - If multiple circuits are to be controlled by a sensor, auxiliary relays may be used in conjunction with a power pack.
15. Ceiling sensors mounted over doorways should be placed 1 ft inside the threshold.
16. Up to 100 Mark VII-style ballasts may be controlled per daylighting zone by IRC.
17. All relays shown in de-energized state.
18. Individually cap off unused leads.
19. One-line parenthesis use:
    (X) - Function
    [#] - Terminal
20. Plug load control commercial receptacle P/Ns:
    Standard Duplex:
    Split Control (1 Outlet) CR015-1Px, CR020-1Px
    Full Control (2 Outlets) CR015-2Px, CR020-2Px
    Decora:
    Split Control (1 Outlet) 16252-1Px, 16352-1Px
    Full Control (2 Outlets) 16252-2Px, 16352-2Px
21. Control Receptacle:
    - Quantity per applicable codes.
    - Termination shown split receptacle. Termination per applicable codes.
    - Receptacle markings per applicable energy codes.

DRAWING SYMBOLS

No connection

Connection



Devices wired in parallel

DRAWING ABBREVIATIONS

LC	Luma-CAN
LV	Low voltage
HV	High voltage switch (maintained)
LVM	Low voltage switch (momentary) Equal to Leviton: 1081 (Toggle) or 56081 (Decora)
LVT	Low voltage switch (maintained) Equal to Leviton: 12021-2 (Toggle) or 56021-2 (Decora)
LV2	IRC low voltage switch Equal to Leviton: RLVSW-1LW (1 button), RLVSW-2LW (2-button) or RLVSW-4LW (4-button)
UON	Unless otherwise noted

BLK	Black	VIO	Violet
WHT	White	BRN	Brown
BLU	Blue	ORG	Orange
YEL	Yellow		

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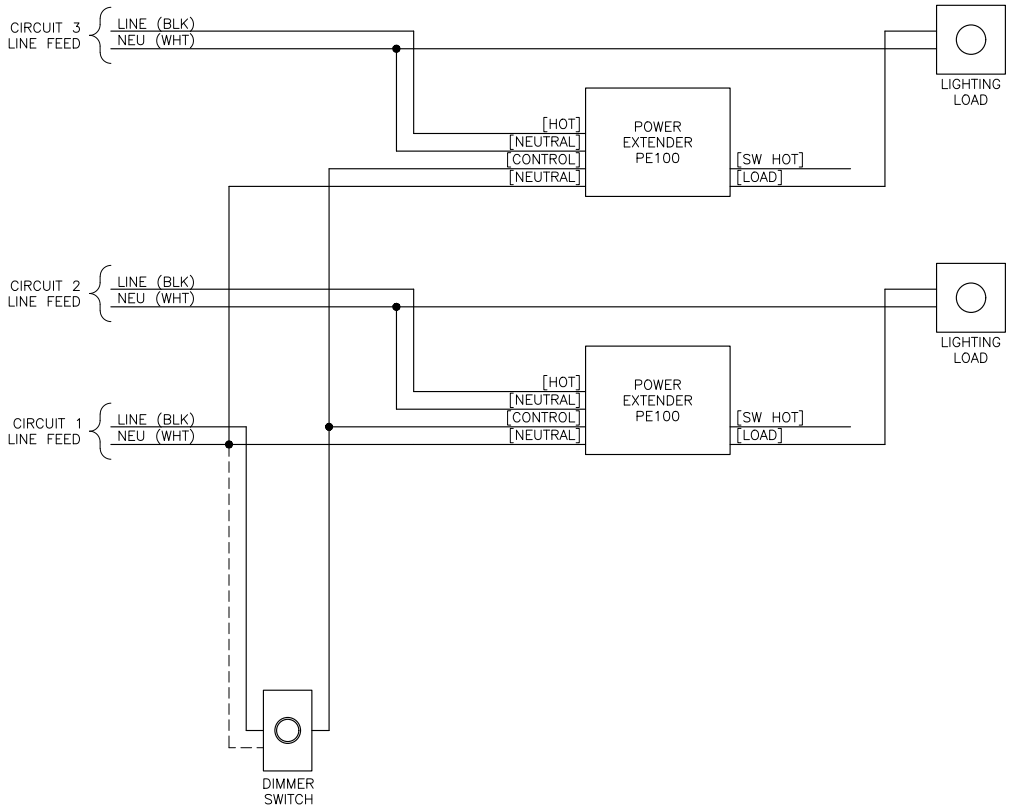
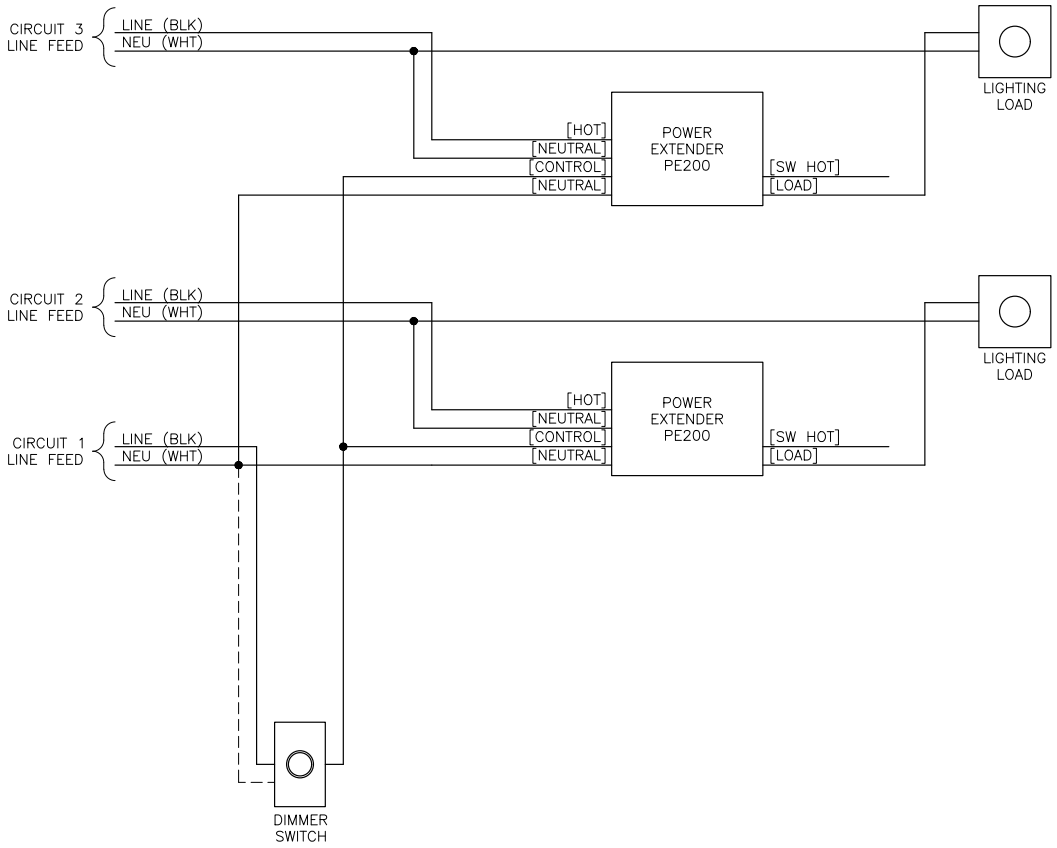
WALLBOX DIMMER TO PE100



NOTES:

1. CONNECT NEUTRAL AS SHOWN BY HIDDEN LINE WHEN THE DIMMER SWITCH REQUIRES A NEUTRAL.
2. POWER EXTENDERS MAY USE THE SAME FEED AS THE DIMMER SWITCH.
3. MULTIPLE POWER EXTENDERS OF DIFFERENT MODEL NUMBERS MAY BE USED WITH A SINGLE DIMMER SWITCH, UP TO THE LOAD OF THE DIMMER SWITCH. POWER EXTENDERS HAVE AN 18W LOAD.
4. DIMMER SWITCH MAY CONTROL A LIGHTING LOAD IN ADDITION TO THE POWER EXTENDERS.
5. VARYING DIMMER CURVES OF DIFFERENT LIGHTING LOAD TYPES MAY PRODUCE UNDESIRABLE RESULTS WHEN CONTROLLED BY THE SAME DIMMER SWITCH.
6. REFERENCE PRODUCT DATA SHEETS FOR POWER EXTENDER INFORMATION.
7. LED LIGHT ENGINES ARE MOST RELIABLE WHEN DIMMED WITH 0–10V SINKING CONTROL (EQUAL TO MARK 7). 2–WIRE LED LIGHT ENGINE DIMMING IS LESS PREDICTABLE DEPENDING ON LED LIGHT ENGINE QUALITY AND FIELD CONDITIONS.

WALLBOX DIMMER TO PE200 LIGHTING LOAD EQUAL TO MARK X BALLASTS



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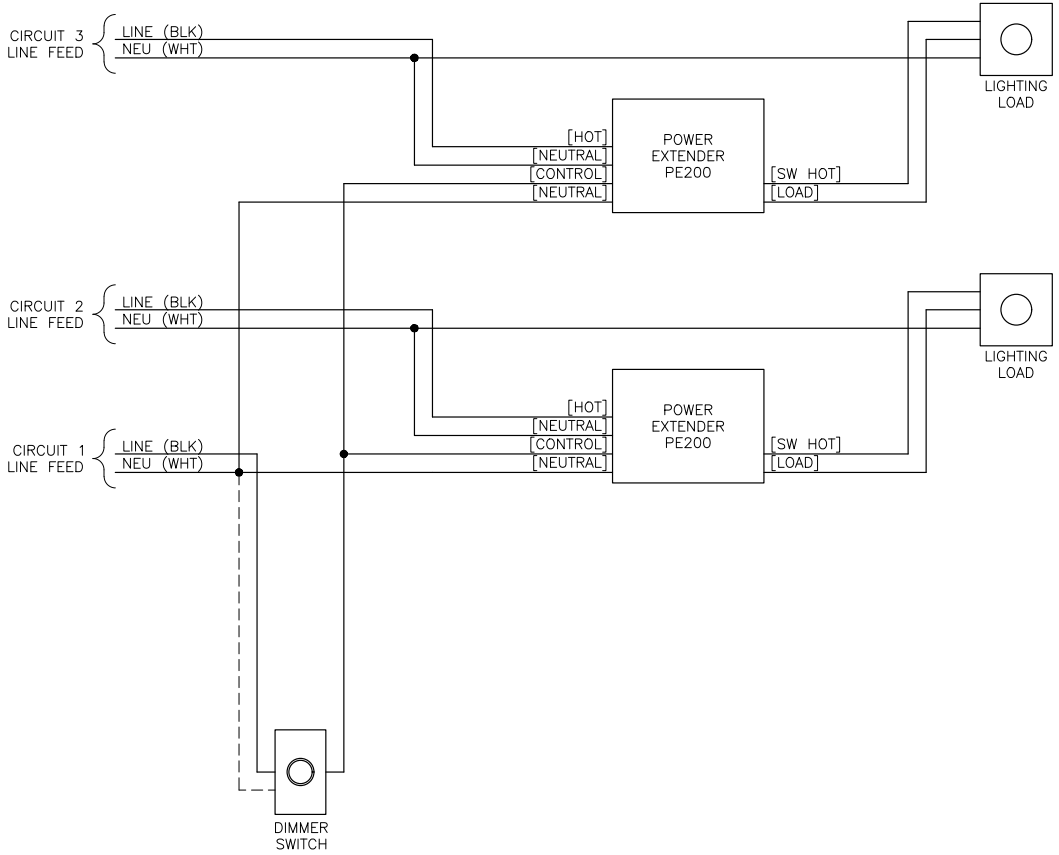
WALLBOX DIMMER TO PE200 LIGHTING LOAD EQUAL TO 3-WIRE BALLASTS



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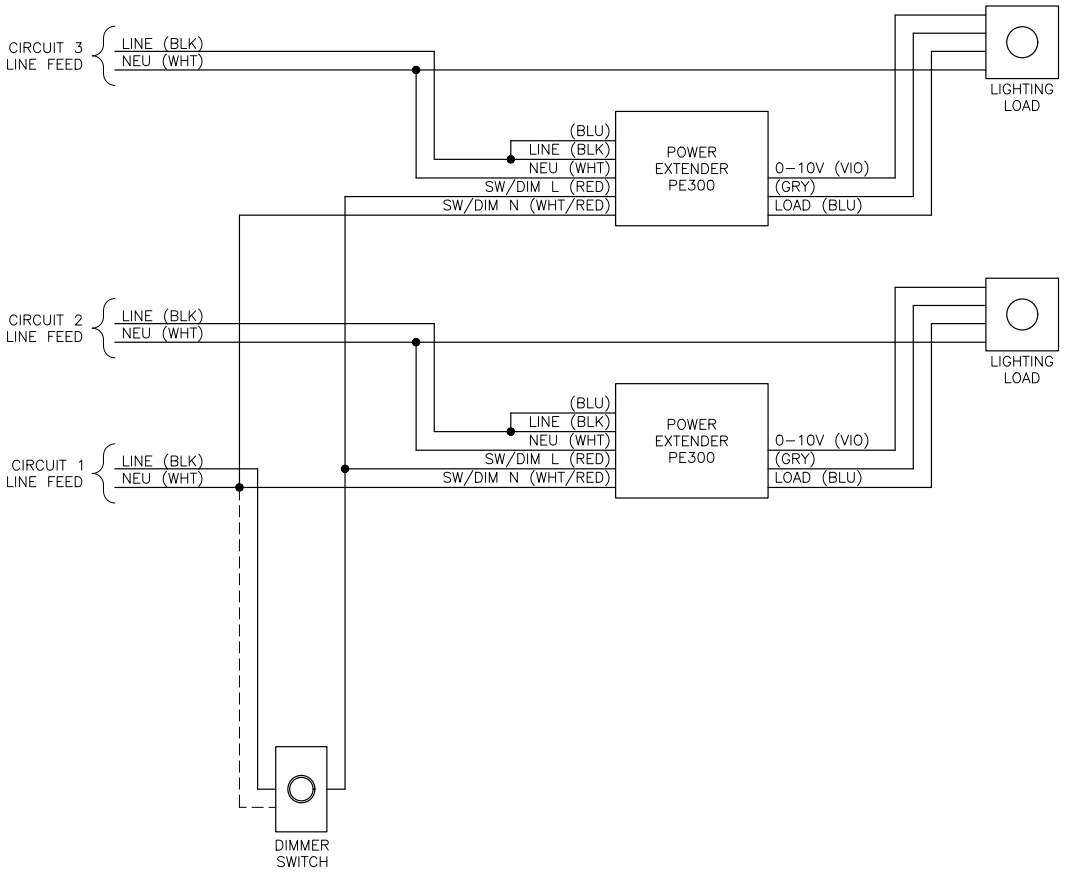
WALLBOX DIMMER TO PE300 LOAD EQUAL TO 0-10V SINKING (MARK 7)



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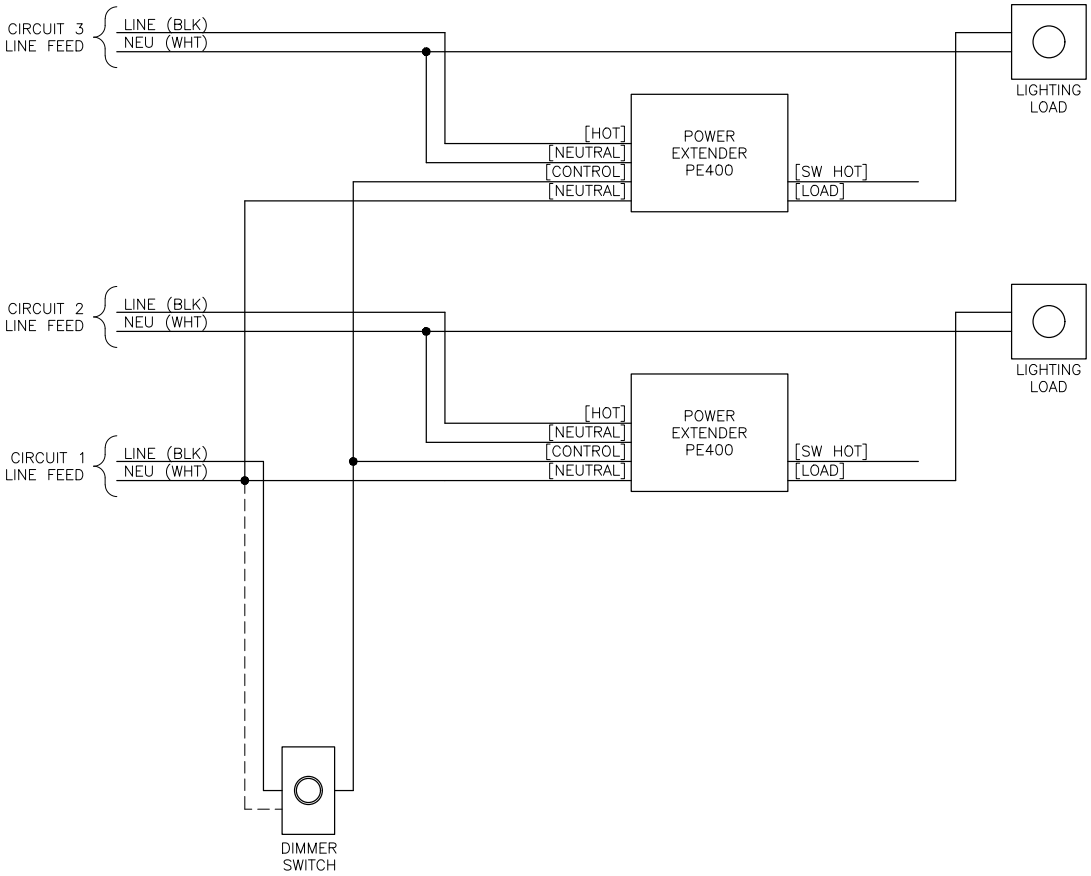
WALLBOX DIMMER TO PE400



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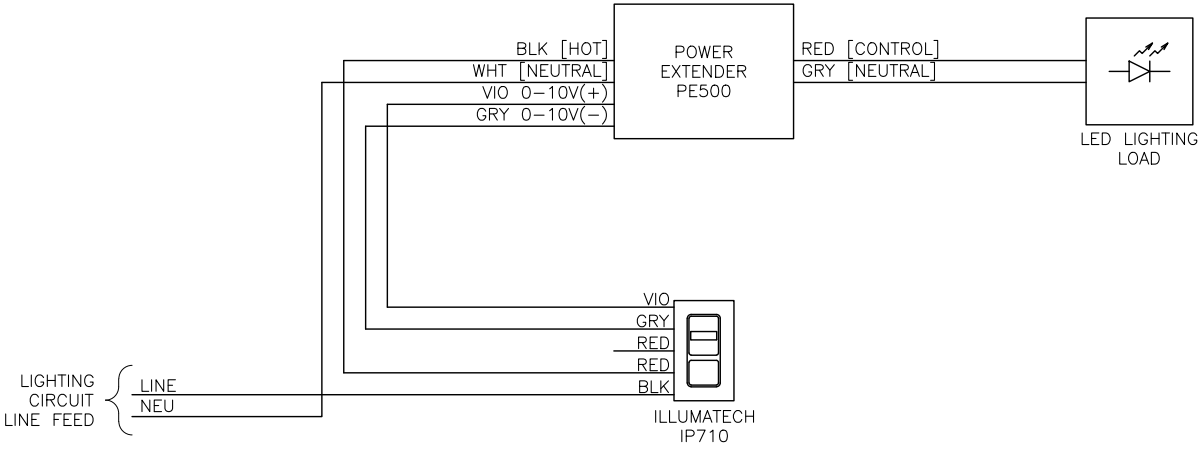
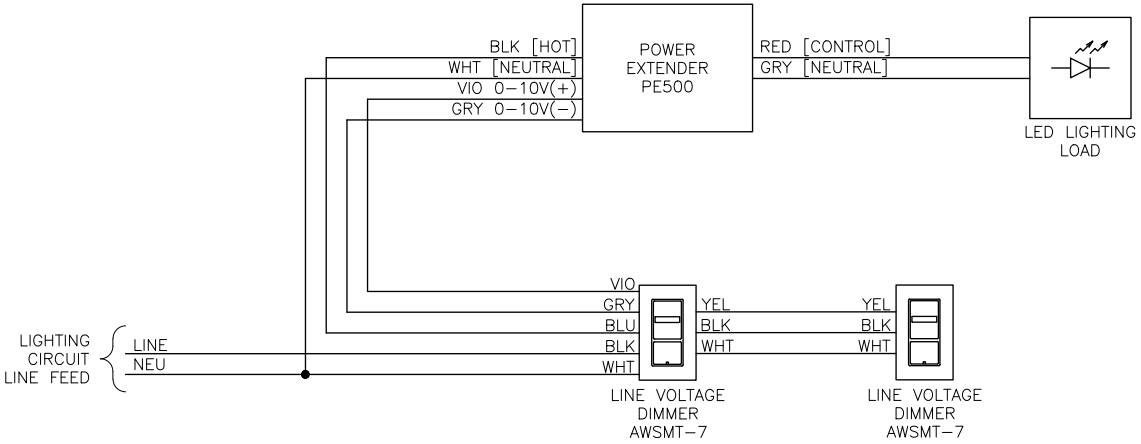
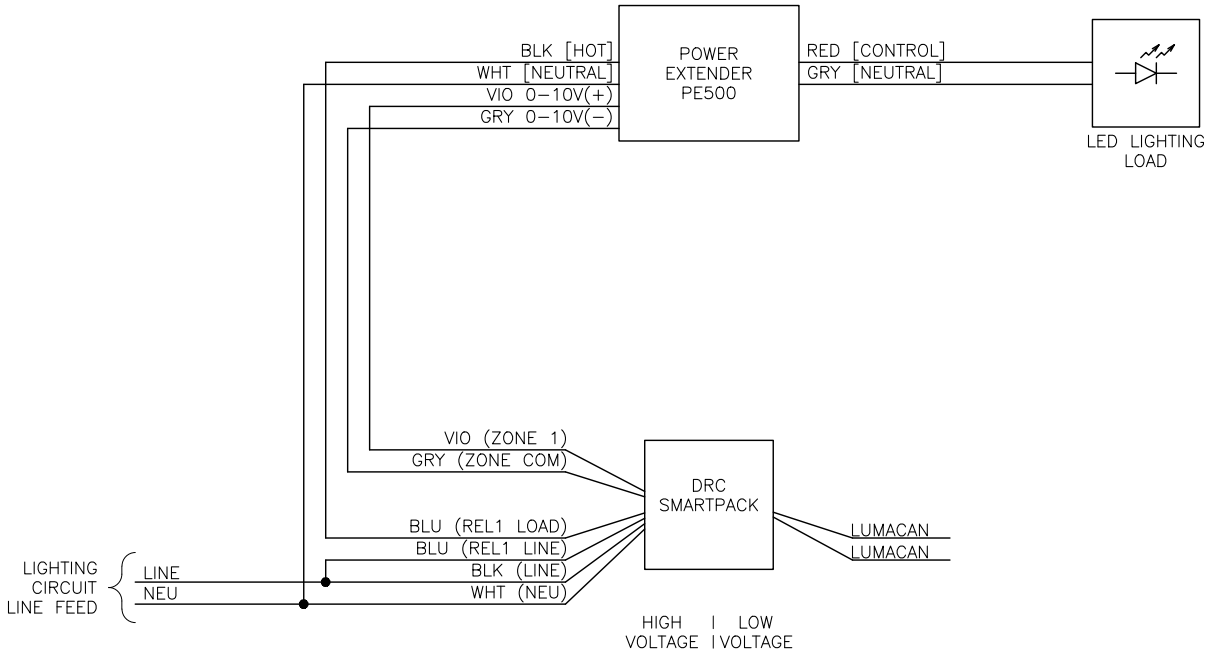
IP710-LFZ, PE500, ELV REVERSE PHASE DIMMED FIXTURES



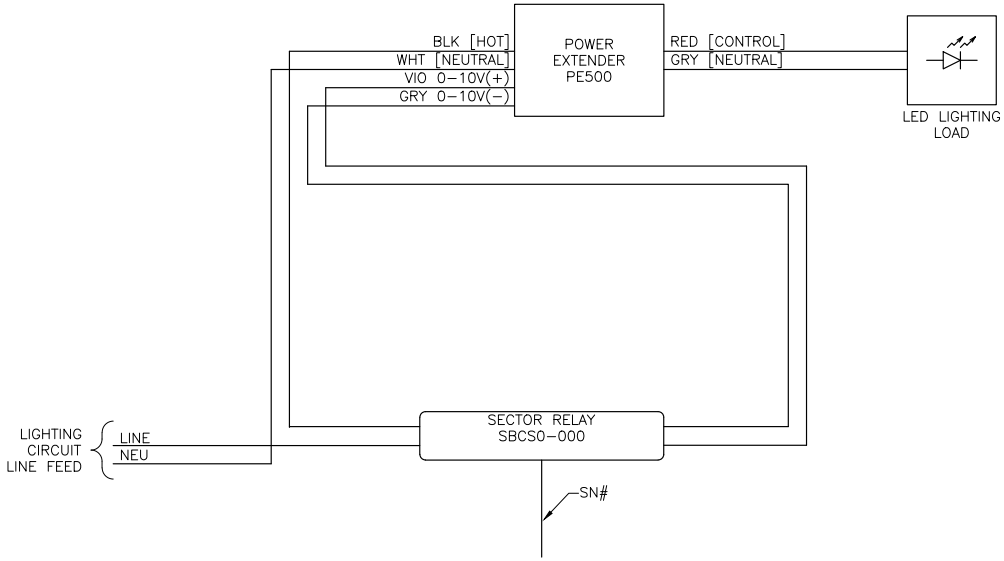
RENOIR AWSMT, PE500, ELV REVERSE PHASE DIMMED FIXTURES



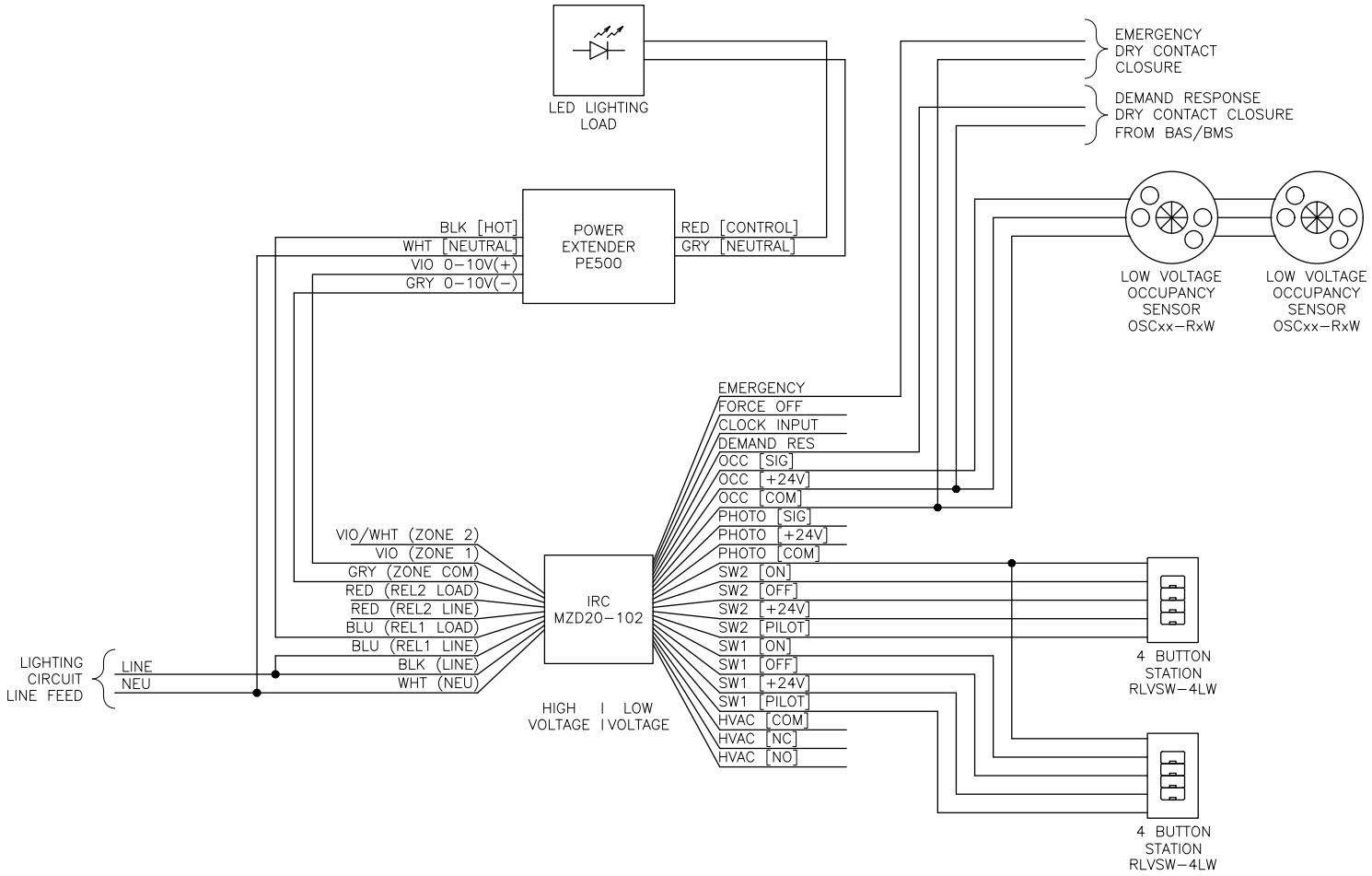
DRC SMART PACK, PE500, ELV REVERSE PHASE DIMMED FIXTURES



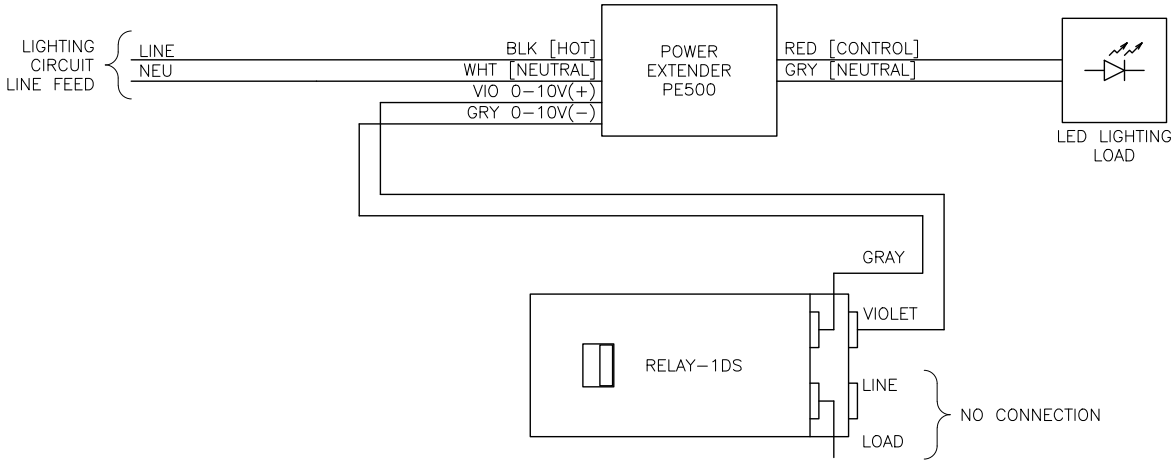
SECTOR RELAYS, PE500, ELV REVERSE PHASE DIMMED FIXTURES



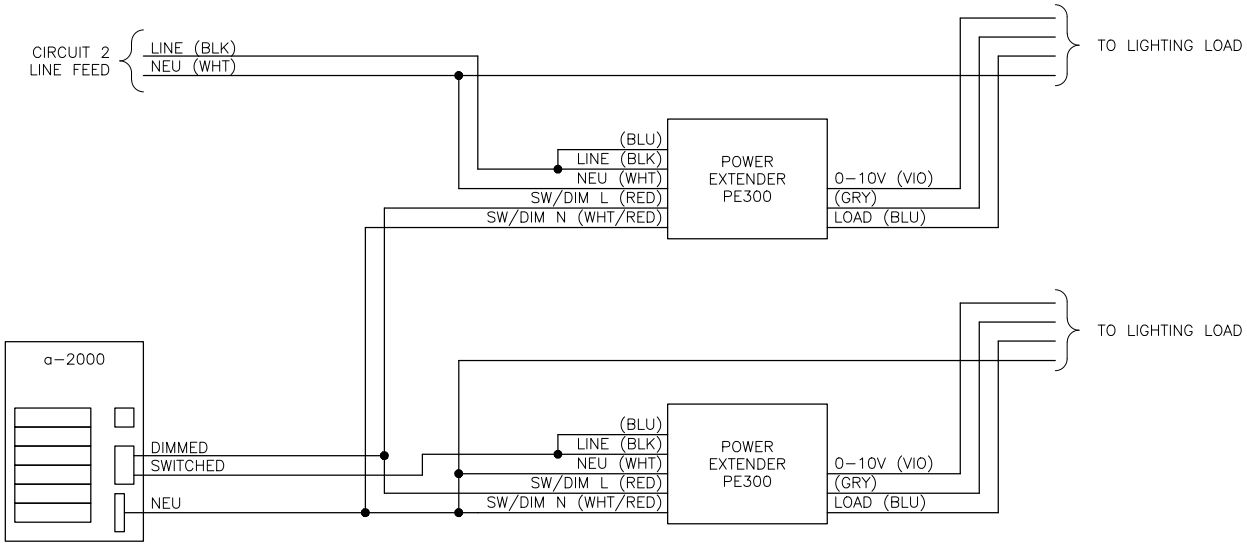
IRC, PE500, ELV REVERSE PHASE DIMMED FIXTURES



GREENMAX DIMMING RELAYS, PE500, ELV REVERSE PHASE DIMMED FIXTURES



A-2000 UNIVERSAL DIMMER TO PE300 LOAD EQUAL TO 0-10V SINKING (MARK 7)



NOTES:

1. THIS METHOD CAN ONLY BE USED WITH 120VAC a–2000 CABINETS.
2. TWO METHODS SHOWN, POWERING THE PE300 CONTROLLED CIRCUIT FROM THE DIMMER MODULE IN THE a–2000 AND FROM A SEPARATE BREAKER PANEL.
3. MULTIPLE POWER EXTENDERS OF DIFFERENT MODEL NUMBERS MAY BE USED WITH A SINGLE DIMMER OUTPUT, UP TO THE LOAD OF THE DIMMER. POWER EXTENDERS HAVE AN 18W LOAD.
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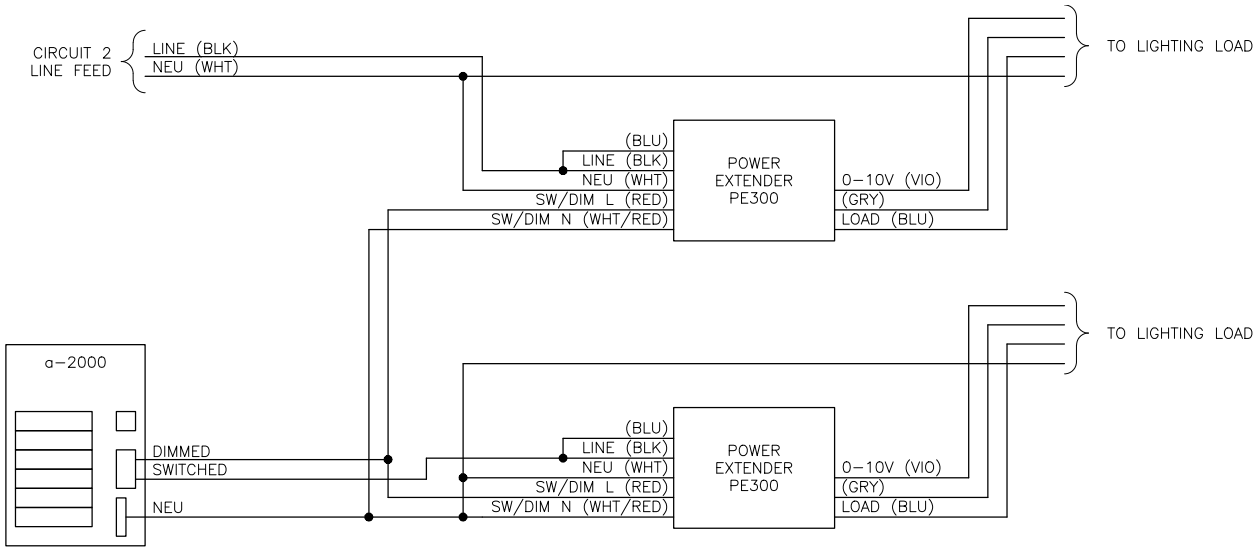
A-2000 UNIVERSAL DIMMER TO PE400



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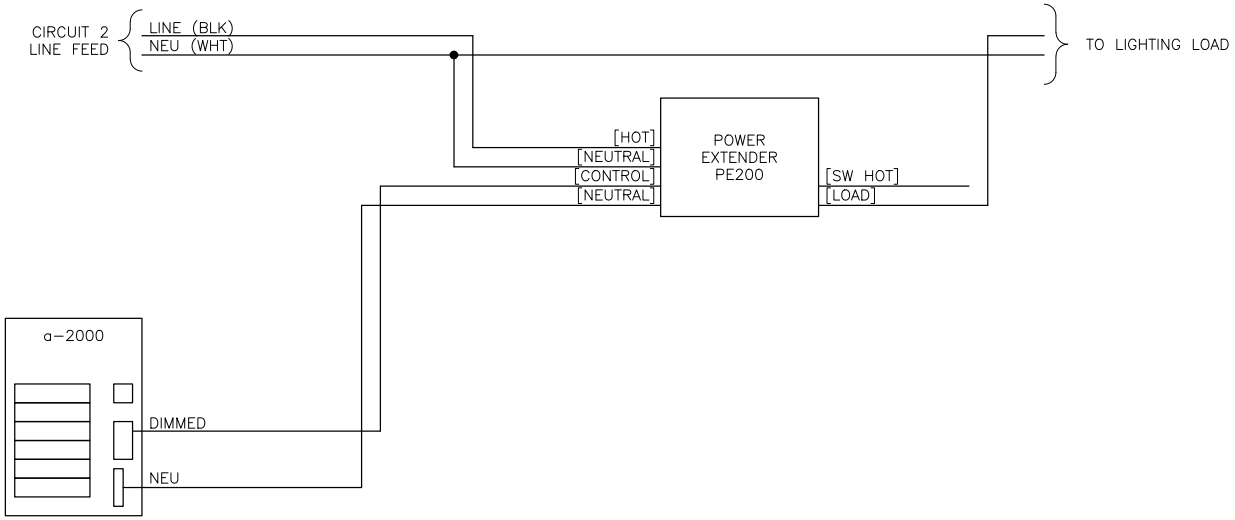
A-2000 UNIVERSAL DIMMER TO 277V PE200



NOTES:

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2. METHODS ILLUSTRATES 120V a-2000 CONTROLLING A 277V HI-LUME LOAD VIA A PE200.
3. MULTIPLE POWER EXTENDERS OF DIFFERENT MODEL NUMBERS MAY BE USED WITH A SINGLE DIMMER OUTPUT, UP TO THE LOAD OF THE DIMMER. POWER EXTENDERS HAVE AN 18W LOAD.
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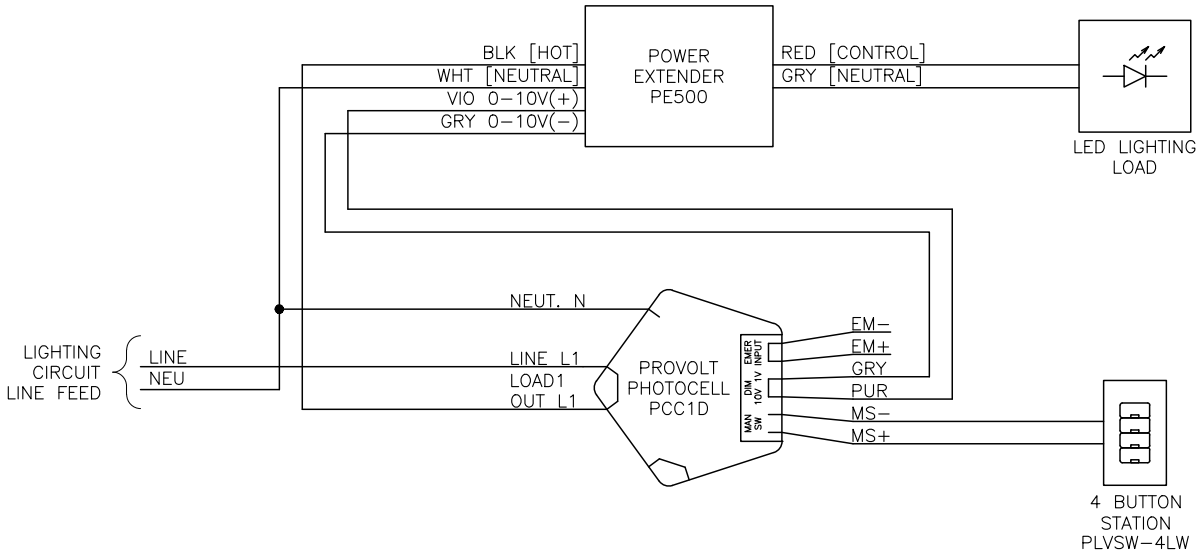
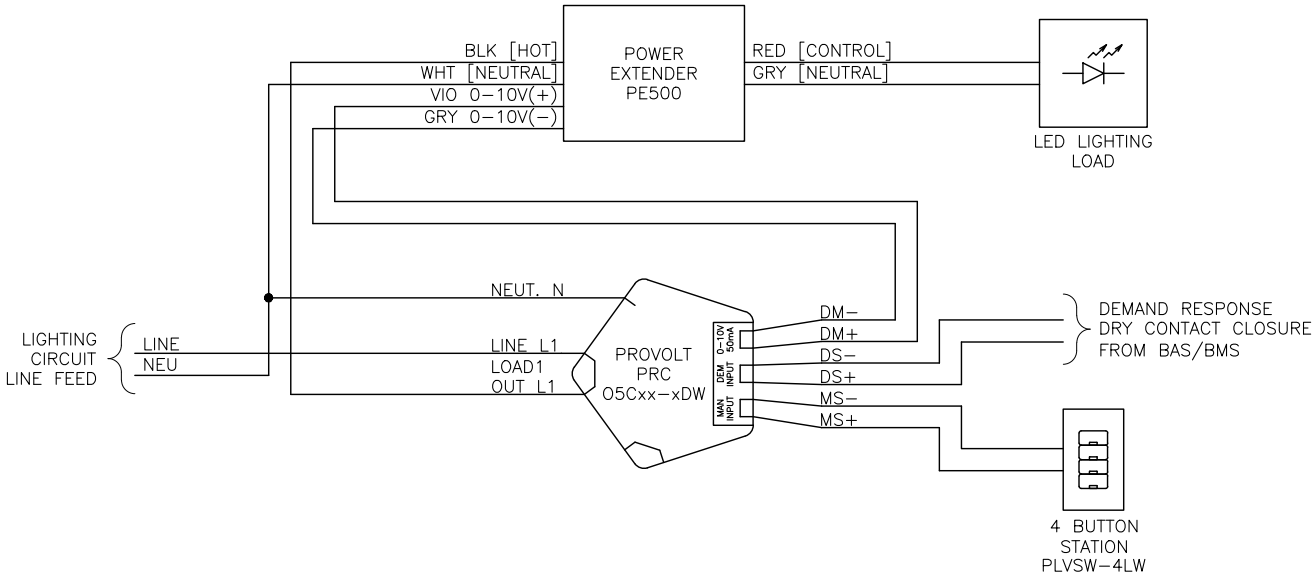
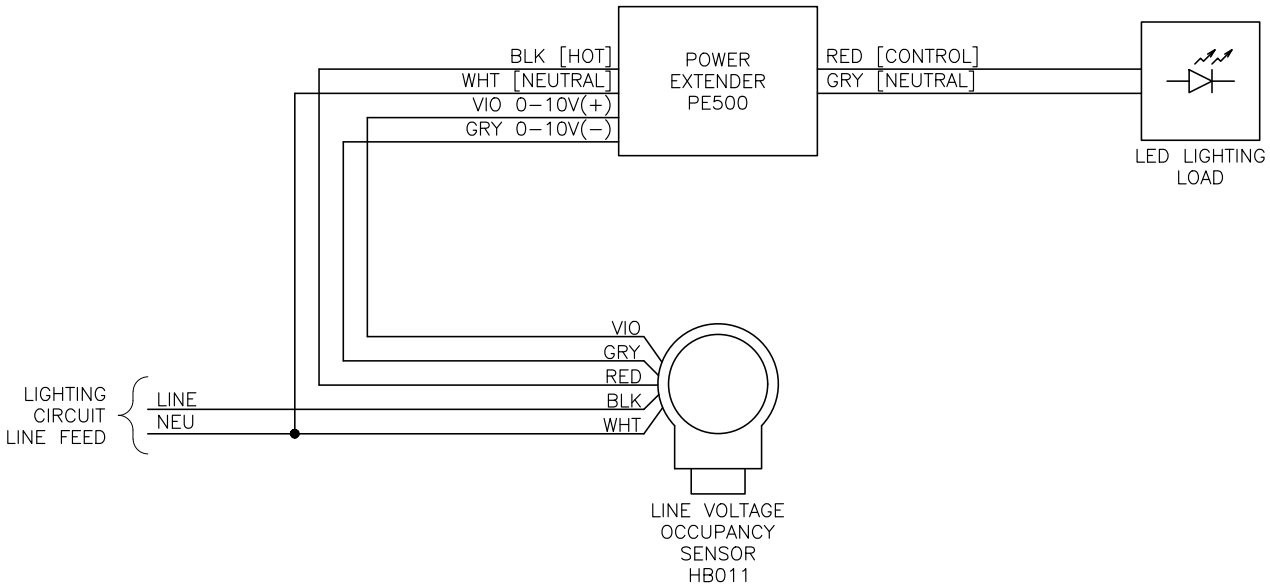
PROVOLT PHOTOCELL, PE500, ELV REVERSE PHASE DIMMED FIXTURES



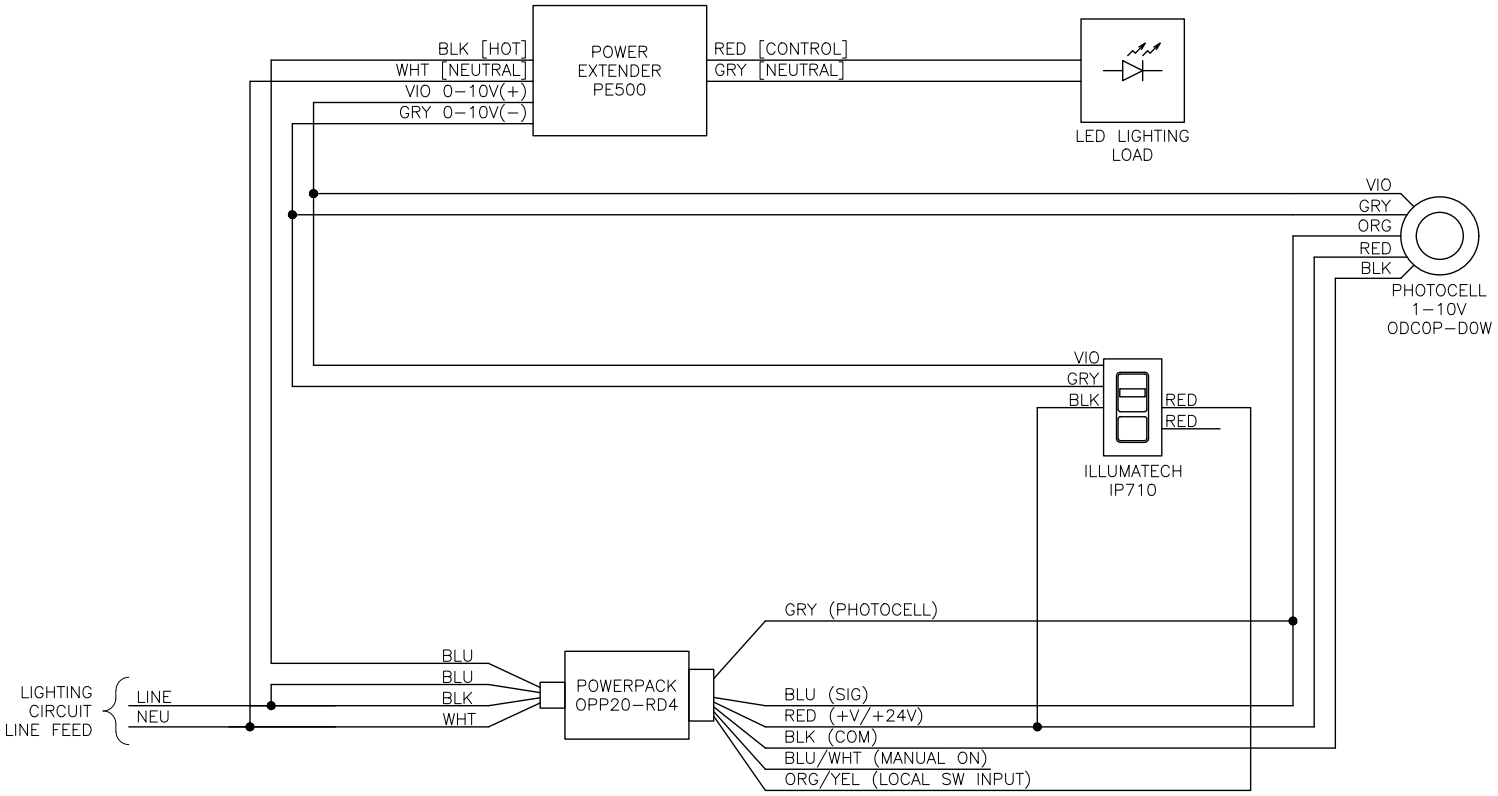
PROVOLT PHOTOCELL, PE500, ELV REVERSE PHASE DIMMED FIXTURES WITH DEMAND RESPONSE



HIGH BAY DIMMING SENSOR, PE500, ELV REVERSE PHASE DIMMED FIXTURES



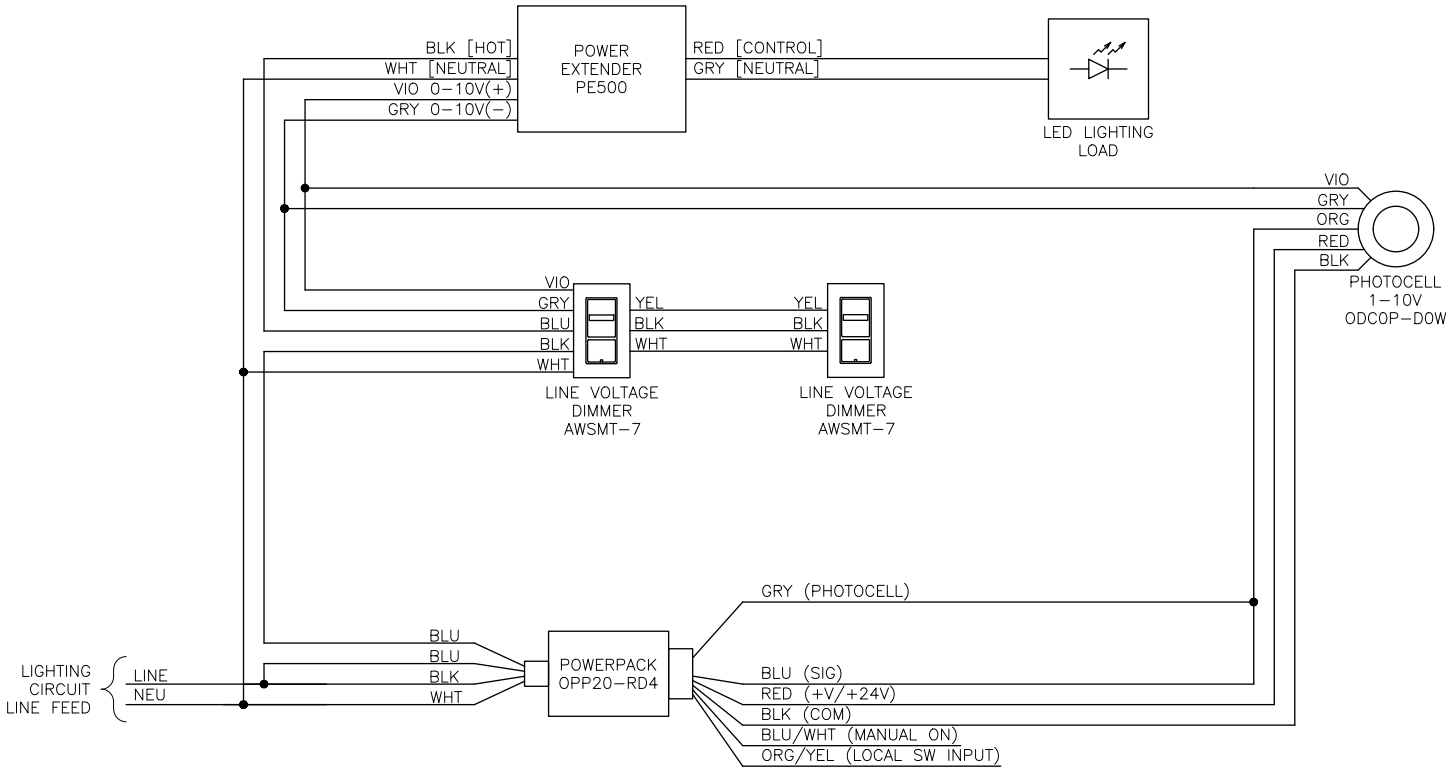
LOW VOLTAGE DIMMING PHOTOCELL, PE500, ELV REVERSE PHASE DIMMED FIXTURES



NOTES:

1. FOR 0–10V CONTROL, LOWEST LIGHTING LEVEL TAKES PRECEDENCE.

HIGH VOLTAGE DIMMING WITH PHOTOCELL, PE500, ELV REVERSE PHASE DIMMED FIXTURES



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201 North Service Road, Melville, NY 11747-3138 **tel** 800-323-8920 **fax** 800-832-9538 **tech line** (8:30AM-7:00PM ET Mon-Fri) 800-824-3005

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20497 SW Teton Avenue, Tualatin, OR 97062 tel 800-736-6682 **fax** 503-404-5594 **tech line** (6:00AM-4:00PM PT Mon-Fri) 800-959-6004

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