



SAVANT

Dual 300W Forward Phase Dimmer - Lighting Module (Supports Eaton CH Load Centers) Quick Reference and Installation Guide

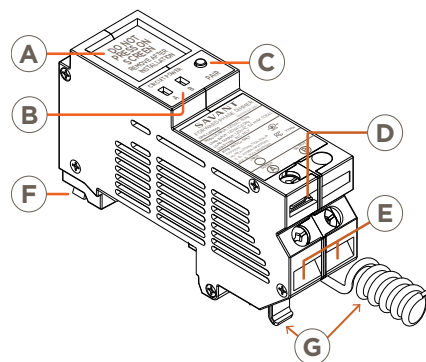
Box Contents

- (1) Forward Phase Dimmer Module
 - GPM-CP2FPD05-21 Plug-on Neutral -or-
 - GPM-C2FPD05-21 Pigtail
- (1) Product Information and Regulatory Insert (009-1950)
- (1) Quick Reference and Installation Guide (this document)

Specifications

| Environmental | | | | |
|---|---|---|------------------------------|---------------------|
| Temperature | -22° to +122° F (-30° to +50° C) | | | |
| Humidity | Up to 90% Relative Humidity (non-condensing) | | | |
| Location | Indoor use unless installed in a NEMA 3R rated enclosure | | | |
| Dimensions and Weights | | | | |
| | Length | Width | Height | Weight |
| Module | 4.96 inch (12.6 cm) | 1.46 inch (3.7 cm) | 3.39 inch (8.61 cm) | .5 lbs (.23 kg) |
| Shipping | 7.48 inch (19.0 cm) | 4.17 inch (10.60 cm) | 1.69 inch (4.29 cm) | 1.0 lbs (.45 kg) |
| Power | | | | |
| Input Power (powers the module) | 120V AC (+/-10%) @ 60 Hz, 0.1A (max) | | | |
| Input Power (from feeder breaker) | 120V AC @ max load power | | | |
| Load Power | 300VA 2.5A @ 120V AC max per channel | | | |
| | 600VA 5.0A @ 120V AC max per channel (when just one channel is used) | | | |
| Features of Automatic Action | Type 1 Action | | | |
| Standards | | | | |
| Wireless | Bluetooth Low Energy (BLE) 2.4 GHz radio frequency | | | |
| Regulatory | | | | |
| Safety and Emissions | FCC Part 15 | UL | ICES 003 | |
| |  |  | | |
| Contains FCC ID: | PUU-QP2FPD05 | | Contains IC: 10798A-QP2FPD05 | |
| RoHS | Compliant | | | |
| Recommended Load Center Types | | | | |
| Refer to the Features section to the right for compatibility info. | | | | |
| Supported Load Types | | | | |
| Standard Configuration | Dimmable circuits – Incandescent, halogen, magnetic low-voltage transformer, and forward phase dimmable fluorescents | | | |
| Minimum Power | > 6W (See Output Power Minimums section) | | | |
| Electrical and Safety Characteristics | | | | |
| Screw Tighten Torque | 3.0 Nm | | | |
| Wire / Conductor Type | Copper (Cu) only | | | |
| Pollution Degree | 2 | | | |
| Purpose of Control | Operating Control, Smart Relay Control Module or the equivalent | | | |
| Software | Class A | | | |
| Impulse Voltage | 2500V | | | |
| Construction of Control | | | | |
| Open Type | Independently mounted for flush mounting | | | |
| Minimum Supported Release | | | | |
| Savant OS | da Vinci 10.1.1 | | | |

Descriptions



Multi-Page LCD screen can display the following:

- A** - Energy usage in watts at the output.
- Percentage of brightness at the output.
- Firmware, Mac Address, and FCC/IC information.
- Real time Bluetooth status connectivity icon.

- B** **Manual Load Switches** - Toggle to the ON position to switch load on. Toggle switch to AUTO for normal operation. Switch A controls output A and Switch B controls output B.

PAIR Button - This is a multi-use button. The duration that the button is pressed and held determines the function that gets initiated.

- C** **Press and Release** - Cycles through the screens on the LCD (POWER > DIMMER > INFO 1 > INFO 2).

Press and hold - Press and hold for 2 seconds to put the module into pairing mode. Press and hold for 5 seconds to reset.


- D** **Input Power Connection** - Connect the 120V AC output from the feeder breaker to this input. See the **Wiring** section.

- E** **Output Connections** - The connections are labeled OUTPUT A and OUTPUT B. Connect each output to a separate load. See the **Wiring** section.

- F** **120V AC Connection** - Plugs into the 120V AC bus bar in the electrical panel. This connection powers the module.

Neutral - The dimmer module's model number indicates the type of neutral connection:

- **Plug-On Neutral** - Positioned on the bottom of the module is a neutral clip that plugs directly onto the neutral bar.
- G** - **Pigtail Neutral** - A neutral wire protrudes from the rear of the module and is wired to the neutral bar.

 **TIP!** Modules with an external neutral wire (pigtail) are supported in Plug-On Neutral electrical panels. In these cases, the pigtail neutral must be connected directly to the neutral bus bar.

Features

- Each output can control dimming loads up to 300 VA (volt-ampere).
- The GPM-CP2FPD05-21 and GPM-C2FPD05-21 dimmer modules are compatible with Eaton CH ¾ inch load centers.
- Modules are forward phase (leading edge) type dimmers.
- Built-in energy monitoring; +/- 3% accuracy / 1 sec sample time.
- Communicates over the air using Bluetooth Low Energy(BLE).
- Color LCD display for easy identification and load status.

Output Power Maximums

The maximum wattage per channel that each type of load the dimmer module supports is shown below. Use the table to determine the number of loads that can safely be wired to each module's output.

| Dimmer Type | Incandescent | MLV | LED |
|---------------|--------------|------|-----------------|
| Forward Phase | 300W | 240W | Not Recommended |

Output Power Minimums

The minimum sized load supported with the GPM-CP2FPD05 or GPM-C2FPD05 forward phase dimmer is 6 watts. A load of less than 6 watts can cause the bulb to glow, flash, and/or flicker when the dimmer slider is moved to its minimum position. Loads that are less than 6 watts are not supported.

Important Information

- Use the **Branch Circuit Minimum Size of Conductors** table below to determine the amperage of the feeder breaker. For example, if the wire feeding each channel load circuit is a #14 AWG, the feeder breaker should be no larger than 15 amps. When the wire size is #12 AWG, the feeder breaker should be no larger than 20 amps.



HELPFUL! A channel load circuit is defined as the circuit attached to each output on a Savant Lighting Dimmer Module. Each forward phase dimmer module contains a Channel Load Circuit A and a Channel Load Circuit B.

- The total current draw from all the loads connected to a dimmer module should not exceed 80% of the size of the feeder breaker. For example, when a 15 amp feeder breaker is installed, the maximum current drawn from all loads should not exceed 12 amps or 1440 watts. With a 20 amp feeder breaker installed, the maximum current drawn should not exceed 16 amps or 1920 watts.
- To determine the number of breaker panel spaces needed, add the number of spaces required for each feeder breaker to the number of spaces needed for each dimmer module
 - A single pole circuit breaker requires one space.
 - A two pole circuit breaker requires two spaces.
 - Each dimmer module requires two spaces.
- When plugging either the GPM-CP2FPD05 or GPM-C2FPD05 dimmer module into an electrical panel, the module won't fully seat onto the bus bar if there is a wire installed in the neutral bar directly under the module's neutral clip.



ELECTRIC SHOCK! The 120V AC, 60 Hz source poses an electrical shock hazard that has the potential to cause serious injury to installers and end users.



CAUTION! Risk of Electric Shock - More than one disconnect switch may be required to de-energize the device before servicing.



IMPORTANT! A licensed electrician is required to install Savant's lighting modules.

Branch Circuit Minimum Size of Conductors (General circuit wiring, Copper Conductors)

| 15A | 20A | 30A | 40A | 50A | 60A |
|---------|---------|---------|--------|--------|--------|
| #14 AWG | #12 AWG | #10 AWG | #8 AWG | #6 AWG | #4 AWG |

NOTE: This wiring requirement was based on the National Electric Code (NEC) (ANSI/NFPA70), Canadian Electric Code, Part 1 (CEC), and local codes Minimum Size of Conductors.

Installation into Breaker Panel

- Switch off the main breaker so there is no power supplied through the electrical panel.
- Position and install the feeder breaker into a slot in the electrical panel. Press firmly until the breaker fully seats onto the appropriate bus bars.
- Position and install the dimmer module into the electrical panel. On Eaton styled dimmer modules, the neutral clip on the bottom of the module must sit on a portion of the neutral bar where no neutral wire is installed beneath it. With a wire installed in the hole in the neutral bar just under the neutral clip, the module won't seat properly. Both the plug-on and pigtail-style modules have a neutral clip.
- Press firmly until fully seated onto the appropriate bus bars. The dimmer module is typically installed alongside the feeder breaker installed in step 2 above, but doesn't have to.

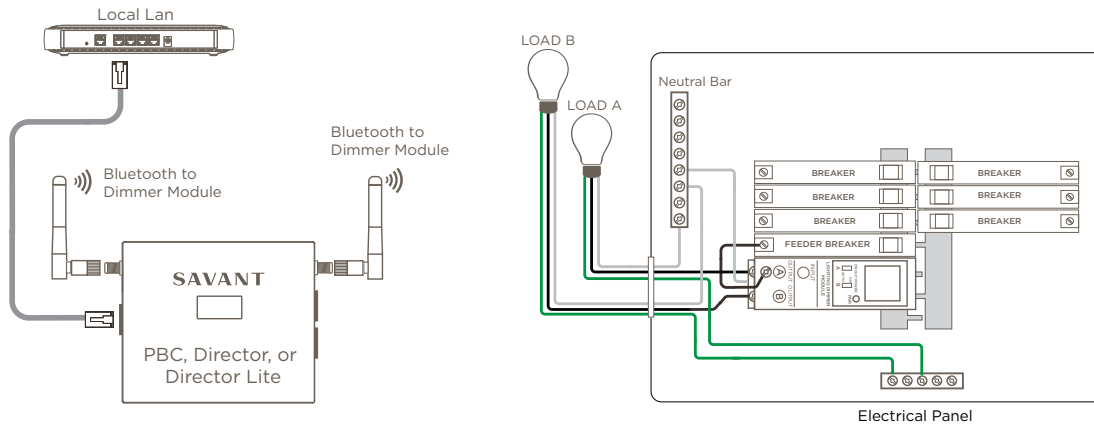


HELPFUL! A dimmer module fills two slots in an electrical panel but connects to only one phase (120V AC). This connection powers the module.

- Refer to the **Wiring** section to make the appropriate connections.

System Overview

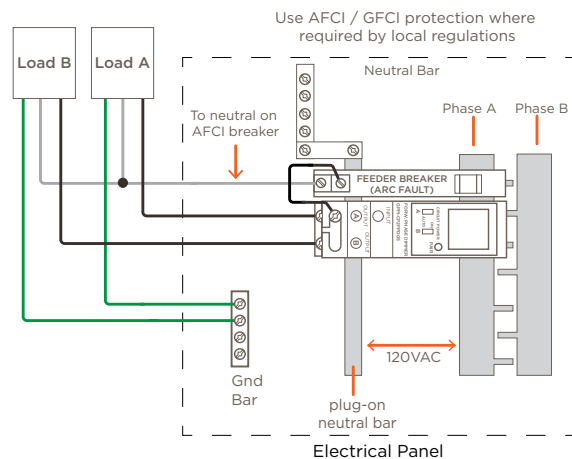
The complete system is shown below for reference. The controller (PBC, Director, or Director Lite) communicates with the dimmer module over Bluetooth and communicates with the Host over Ethernet.



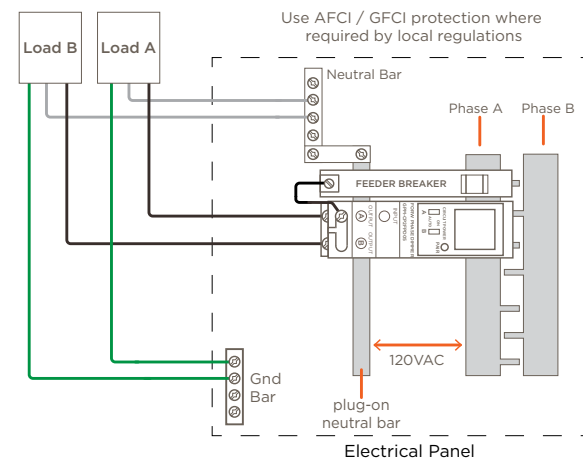
Wiring

The next few diagrams cover a few of the basic installations. When making connections, observe all general electrical best practices including local wire sizing guidelines. See the **Branch Circuit Minimum Size of Conductors** table on the previous page.

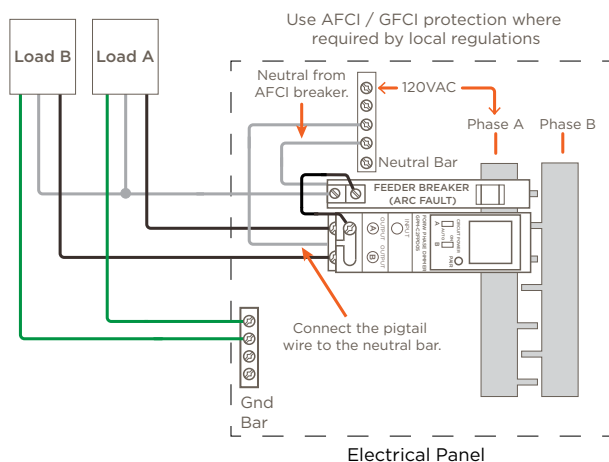
Plug-on Neutral Panel with ARC Fault Breakers



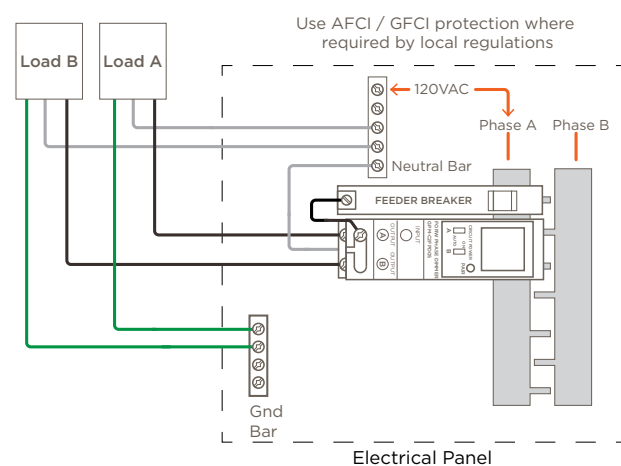
Plug-on Neutral Panel with Standard Breakers



Non Plug-on Neutral Panel with ARC Fault Breakers



Non Plug-on Neutral Panel with Standard Breakers



HELPFUL!

- Modules with a pigtail neutral wire can be used in Plug-On Neutral supported electrical panels. The electrician, however, must terminate the module's neutral wire to a neutral bar.
- A Class 2 Surge Protection Device is recommended when installing Savant's power or energy equipment in areas that experience frequent lightning or other transient voltage and current producing phenomena.

Circuit Test Instructions

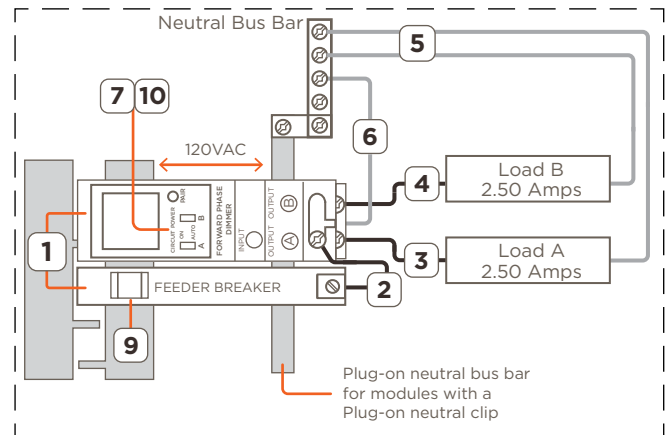
Use the instructions below to test that a dimmer module is functioning correctly. The setup requires the following:

- Forward Phase Dimmer Module.
- (2) resistive loads (maximum amperage = 2.5 Amps).
- 15 amp circuit breaker.
- Electrical test panel. The type of dimmer module determines the type of electrical panel (plug-on neutral or not).
- 120V AC source

⚠ IMPORTANT!

- When making connections, observe all general electrical best practices including wire sizing guidelines.
- The GPM-CP2FPD05 and GPM-C2FPD05 modules can accept up to a #14 AWG wire. See the **Branch Circuit Minimum Size of Conductors** table on the previous page for wire sizing information.

1. Plug a feeder breaker and a Forward Phase Dimmer Module into the electrical test panel. The feeder breaker should not exceed 15A.
2. Connect the output of the feeder circuit breaker to the INPUT port on the dimmer module.
3. Connect a load to Output A.
4. Connect a second load to Output B.
5. Connect the unused side of each load to the neutral bus bar or arc fault breaker (when applicable).
6. On modules that contain a neutral pigtail wire, connect the neutral wire to the neutral bus bar.
7. Toggle the CIRCUIT POWER switches to AUTO.
8. Apply power to the panel (not shown in diagram)
9. Toggle the feeder circuit breaker On.
10. To test, toggle the CIRCUIT POWER switches A and B to ON and verify both loads switch On. Toggle the CIRCUIT POWER switches to AUTO and verify the loads switch Off. Leave switches in the AUTO position for normal operation.



Additional Documentation

Further information is available in the documents listed below and can be accessed via the [Savant Customer Community](#).

- Panel Bridge Controller - PoE (PBC-P1000) - QRG
- Savant Panelized Lighting Deployment Guide.
- Savant Power System Deployment Guide - Power & Light App

NOTES