SAVANT

Single 60 Amp Power Module (Supports Eaton CH Load Centers)

Quick Reference and Installation Guide

Box Contents

(1) Single 60A Power Module (Eaton CH)
- GPM-CP1R60240-21 w/Plug-on Neutral **-or-**
- GPM-C1R60240-21 w/Pigtail

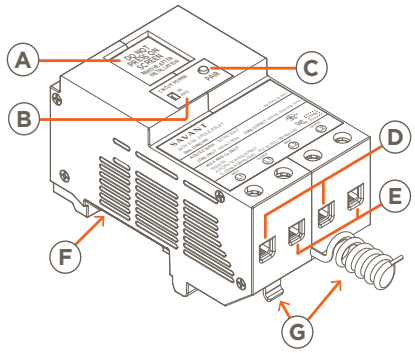
(1) Product Information and Regulatory Insert (009-1950)

(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 (net)				
	Length	Width	Height	Weight
Module	4.98 inch (12.65 cm)	2.91 inch (7.4 cm)	3.39 inch (8.62 cm)	1.0 lbs (.45 kg)
Shipping	7.32 inch (18.6 cm)	6.18 inch (15.7 cm)	3.15 inch (8.00 cm)	1.25 lbs. (.57 kg)
Power				
Input Power (powers the module)	120V AC (+/- 10%) @ 60Hz, 0.1A (max)			
Input Power (from external source)	240V AC @ max load power			
Load Power	14400VA max (240VAC 60A resistive load / 3HP max)			
Features of Automatic Action	Type 1.B 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-QP1R60240		Contains IC: 10798A-QP1R60240		
RoHS	Compliant			
Recommended Load Center Types				
Refer to the **Features** section to the right for compatibility info.				
Supported Load Types				
Standard Configuration	Relay On/Off type loads (home automation)			
Electrical and Safety Characteristics				
Screw Tighten Torque	5.0 Nm			
Wire 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



A Multi-Page LCD screen that can display the following:
- Power draw at the output.
- Firmware, Mac Address, and Regulatory Info.
- UID of the Host that the module is communicating with.
- Real-time Bluetooth status connectivity icon.

B **Manual Load Switch** - Toggle to the ON position to switch the load on. Toggle to AUTO for normal operation.

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

Press and Release - Cycles through the screens available on the LCD (POWER > 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 Connections** - Connect outputs from the two feeder breakers to inputs L1 and L2. See the Wiring section.

E **Output Power Connections** - Connect a 240V AC load across outputs L1 and L2. See the Wiring section.

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

G **Neutral** - The model number of the module determines the type of neutral connection on the module:
- **Plug-On Neutral** - Positioned on the bottom of the module is a neutral clip that plugs directly onto the neutral bar.
- **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 type electrical panels. In these cases, the pigtail wire must be connected directly to the neutral bus bar.

Features

- Control capability for loads up to 14400VA (volt-ampere).
- The GPM-CP1R60240-21 and GPM-C1R60240-21 power modules are compatible with Eaton CH ¾ inch load centers.
- Dynamic management of loads.
- Built-in energy monitoring; +/- .5% revenue grade accuracy / 1 sec sample time.
- Communicates over the air using Bluetooth Low Energy (BLE).
- The manual load switch on the front panel can toggle power to the output On and Off.
- Color LCD display for easy identification and load status.

Important Information

- The breaker feeding the module should not be larger than 60 amps.
- This module can handle loads up to 60 amps.
- To determine the number of spaces needed in the electrical panel, add the number of spaces required for the feeder breakers to the spaces needed for the module.
  - A single pole breaker requires one space.
  - A 2-pole breaker requires two spaces.
  - Each GPM-CP1R60240-21 and GPM-C1R60240-21 power module requires four spaces.
- On Eaton type power modules, when plugging the power 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.
- Savant recommends not connecting any mission critical loads such as medical devices to this power module.

ELECTRIC SHOCK! The 120/240V 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 any of Savant's power 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 an Electrical Panel

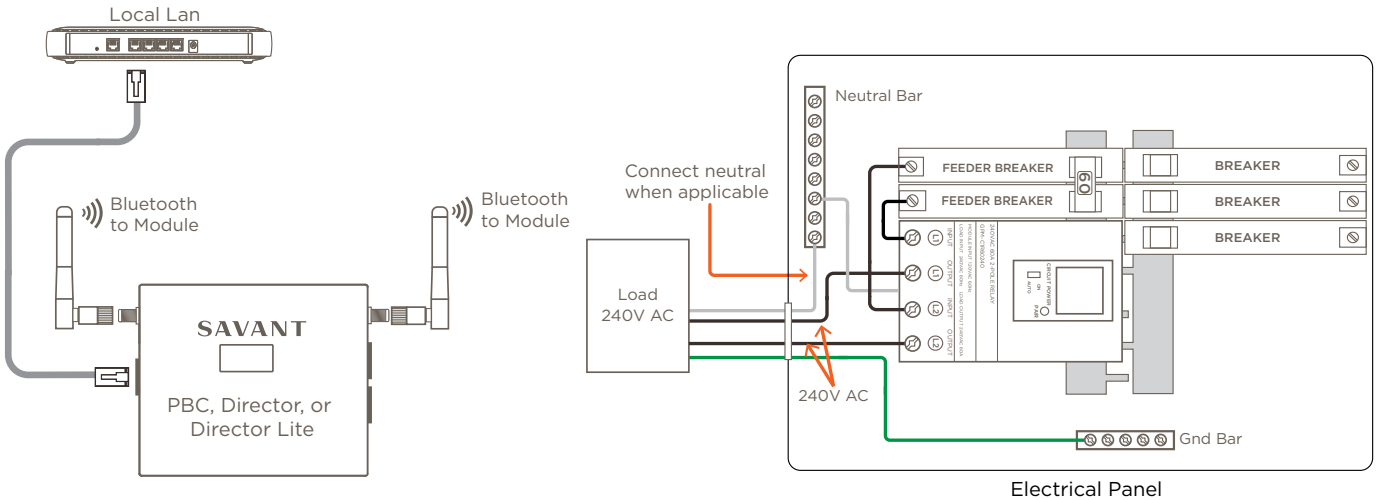
1. Switch off the electrical panel's main breaker to remove power from the panel.
2. Position and install a 2-pole feeder breaker into any two slots in the panel. Press firmly until the breaker fully seats onto the appropriate bus bars.
3. Position and install the 60 Amp Power Module into the electrical panel. 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 clip, the module won't seat properly. Both plug-on and pigtail-styled modules have a neutral clip.
4. Press firmly until the module is fully seated onto the appropriate bus bar. The power module is typically installed alongside the feeder breaker installed in step 2 but doesn't have to.

HELPFUL! The 60 amp power module fills four slots in the breaker panel but connects to just one phase (120V AC). This connection powers the module.

5. Refer to the Wiring section to make the appropriate connections

System Overview

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



Electrical Panel

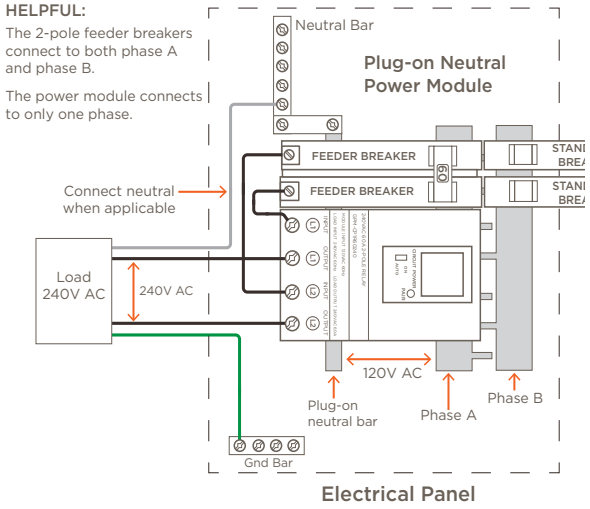
HELPFUL! The diagram shows an electrical panel that doesn't contain a plug-on neutral bus bar. However, both plug-on neutral and non plug-on neutral panels are supported.

Wiring

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

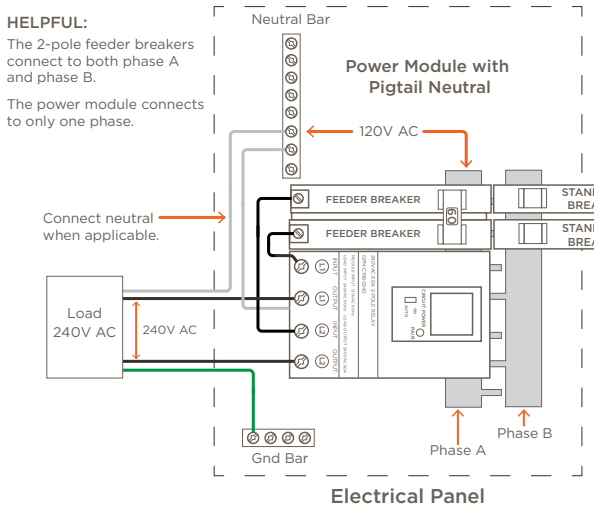
Plug-on Neutral Panel with ARC Fault Breakers

Electrical panel with a plug-on neutral bus bar (with standard type feeder breakers).



Plug-on Neutral Panel with Standard Breakers

Electrical panel without a plug-on neutral bus bar (with standard type feeder breakers).



HELPFUL!

- Modules with a pigtail 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

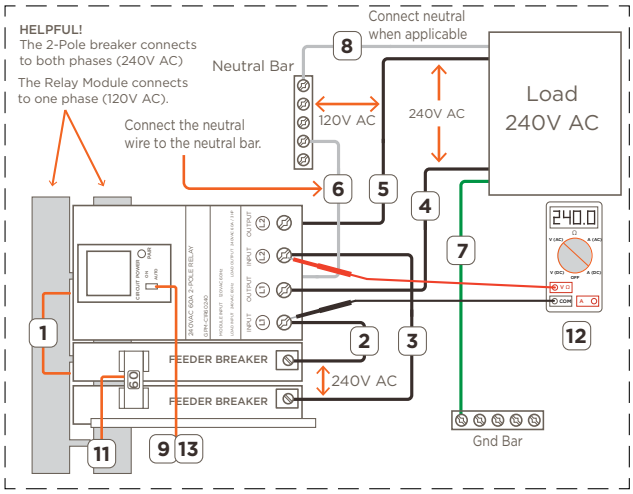
Use the instructions below to test a power module. The setup requires:

- 60 Amp Power Module.
- Load with maximum amperage of 60A.
- Standard 2-pole, 60 amp circuit breaker.
- Electrical test panel. The type of module determines the type of panel (plug-on neutral or not).
- 120/240V AC source

IMPORTANT!

- The GPM-C1R60240-21 and GPM-CP1R60240-21 modules can accept up to a #4 AWG wire. See the **Branch Circuit Minimum Size of Conductors** table on the previous page.
- In a 2-phase system, a 2-pole feeder breaker supplies roughly 240V AC across the L1 and L2 inputs on the power module. In a 3-phase system, a 2-pole breaker provides about 208V AC.
- The power module plugs onto one phase in an electrical panel. This 120V AC connection powers the module.

1. Plug the 60 Amp Power Module and 60 amp 2-pole feeder breaker into the electrical panel.
2. Connect the output from one side of the 2-pole feeder breaker to INPUT L1 on the module.
3. Connect the output from the remaining side of the 2-pole feeder breaker to INPUT L2 on the power module.
4. Connect one side of a load to OUTPUT L1 on the power module.
5. Connect the remaining side of the load to OUTPUT L2 on the power module.
6. On modules that have a neutral wire, connect that wire to the neutral bar.
7. Connect the ground wire from the load to GND in the electrical panel
8. Connect the neutral from the load to the neutral bar (when applicable).
9. Set the Circuit Power Switch on the module's front panel to AUTO.
10. Apply power to the electrical panel (not shown in diagram).
11. Toggle the 60 amp 2-pole breaker to On.
12. With a voltage tester or similar, verify that roughly 240V AC is measured between INPUT L1 and INPUT L2 on the power module. In a three phase system, measure 208V AC.
13. To test, toggle the CIRCUIT POWER switch to the ON position and observe the load switches On. Toggle the CIRCUIT POWER switch to AUTO and verify the load switches Off.



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