

SAVANT



Single 30 Amp Power Module (2-Pole, 240V AC) (Supports Eaton CH Load Centers)

Quick Reference and Installation Guide

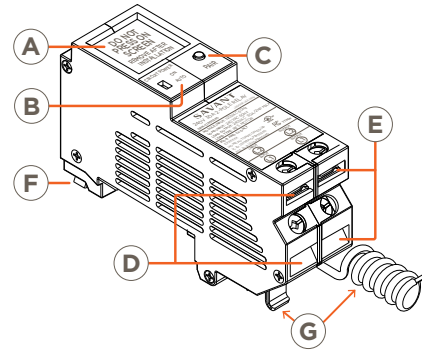
Box Contents

- (1) Single 30A Power Module (240VAC, 2-Pole) (Eaton CH)
 - GPM-CP1R30240-21 w/Plug-on Neutral
 - GPM-C1R30240-21 w/Pigtail Neutral
- (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	4.96 inch (12.6 cm)	1.46 inch (3.7 cm)	3.39 inch (8.61 cm)	.57 lbs (.26 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)	240V AC @ max load power			
Load Power	7200VA max (240V AC 30A resistive load / 2HP 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-QP1R30240	Contains IC: 10798A-QP1R30240			
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	3.0 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



Multi-Page LCD screen that can display the following:

- A** - 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 > ENERGY > 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 the outputs from the two feeder breakers to inputs L1 and L2 on the module. See the **Wiring** section below.
- E** **Output Power Connections** - Connect a 240V AC load across outputs L1 and L2. See the **Wiring** section below.
- F** **120V AC Connection** - Plugs onto the 120V AC bus bar in the electrical panel. This connection powers the module.
- Neutral** - The Power 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.
 - **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 neutral wire must be connected directly to the neutral bus bar.

Features

- Control capability for loads up to 7200 VA (volt-ampere).
- The GPM-CP1R30240-21 and GPM-C1R30240-21 power modules are compatible with Eaton CH **3/4** 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(s) feeding the module should not be larger than 30 amps.
- The module can handle loads up to 30 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.
 - Each 2-pole breaker requires two spaces.
 - Each GPM-CP1R30240-21 and GPM-C1R30240-21 power module requires two spaces.
- On Eaton CH 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.

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

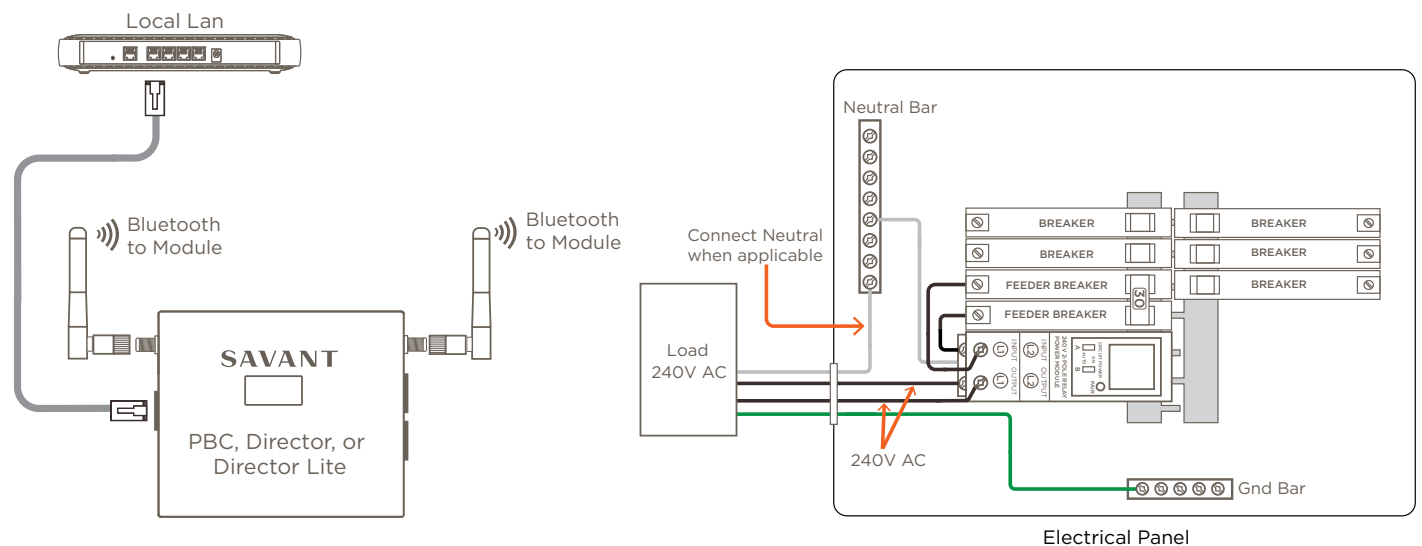
15A	20A	30A	40A	50A	60A
#14 AWG	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG

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.

- ⚠️ 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.

System Overview

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



- ⓘ 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.

Installation into Breaker Panel

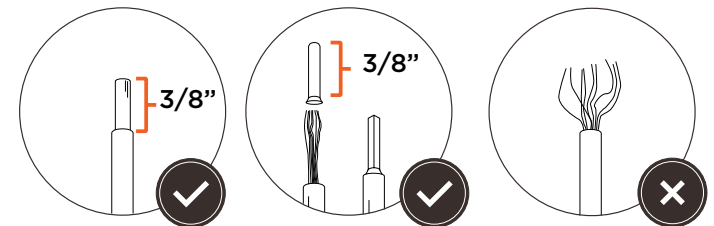
Savant recommends making wire connections with the power module before it is installed into the panel so that wire connections can more easily be checked. Once installed, electrician should re-torque to ensure screws are tight. Refer to the [Wiring](#) section to make the appropriate connections.

1. Switch off the electrical panel's main breaker to remove power from the panel.
2. Position and install a feeder circuit breaker into a slot in the panel. Press firmly until the breaker fully seats onto the appropriate bus bars.
3. Position and install the 30 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 neutral clip, the module won't seat properly. Both plug-on and pigtail-style modules have a neutral clip.
4. Press firmly until fully seated onto the appropriate bus bars. The power module is typically installed alongside the feeder breakers installed in steps 2 and 3.

- ⓘ HELPFUL!** A power module fills two slots in the electrical panel but connects to just one phase (120V AC). This connection powers the module.

⚠️ IMPORTANT NOTES!:

- When making connections, an electrician must confirm that all wires sit cleanly on one side of the terminal screw.
- Stranded wire must be neatly twisted to ensure proper connection. Savant recommends using a UL-approved ferrule.

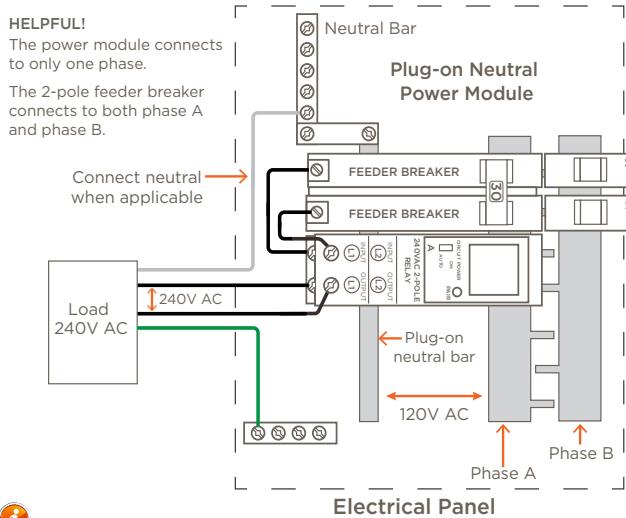


Wiring

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

Plug-on Neutral Panel with Standard Breakers

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

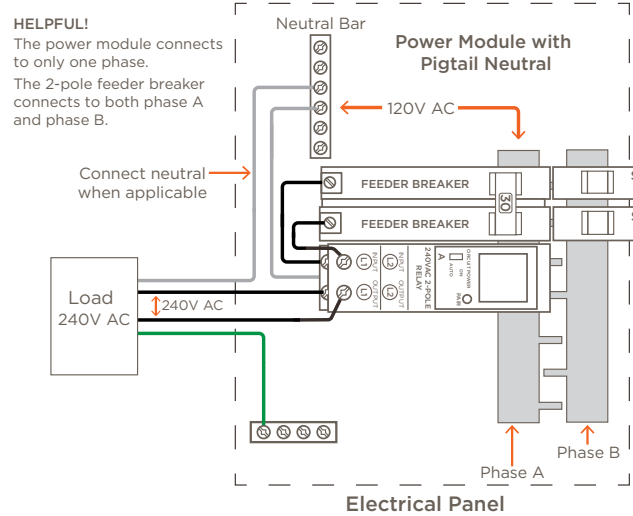


HELPFUL!

- 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.

Standard Neutral Panel with Standard Breakers

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



Circuit Test Instructions

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

- 30 Amp Relay Power Module.
- Load with maximum amperage of 30A.
- Standard 2-pole, 30 amp circuit breaker.
- Breaker test panel. The type of module determines the type of breaker panel (plug-on neutral or not).
- 120/240V AC source

IMPORTANT!

- The GPM-CPIR30240-21 and GPM-CIR30240-21 modules can accept up to a #10 AWG wire. See the **Branch Circuit Minimum Size of Conductors** table on the previous page for wire sizing information.

1. Plug the 30 amp 2-pole feeder breaker and a Single 30 Amp Power Module into an electrical test panel.

2. Connect the output from one of the feeder circuit breakers to the L1 input on the module.

3. Connect the output from the remaining side feeder circuit breaker to the L2 input on the module.

4. Connect one side of a load to the L1 output on the module.

5. Connect the remaining side of the load to the L2 output on the module.

6. On modules that have a neutral wire, connect wire to the neutral bar.

7. Connect the ground wire from the load to GND in the electrical panel.

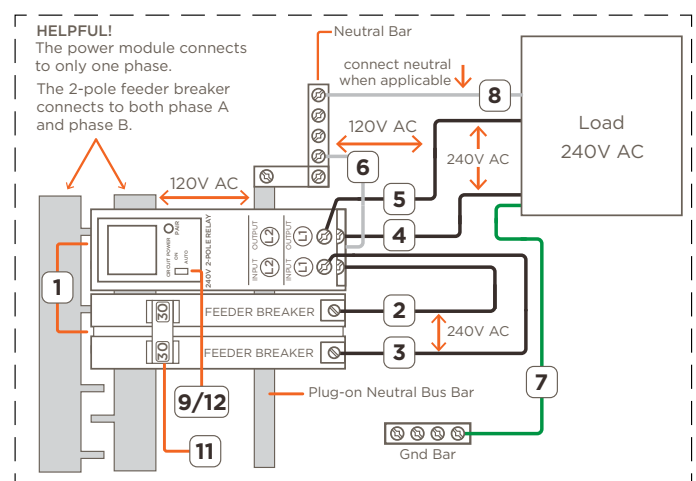
8. Connect the neutral wire from the load to the neutral bar (only when applicable).

9. Set the Circuit Power switch on the module to AUTO.

10. Apply power to the electrical panel (not shown in diagram)

11. Toggle the 30 amp 2-pole breaker to On.

12. To test, toggle the CIRCUIT POWER switch to the ON position and observe the load switches On. Toggle the CIRCUIT POWER switches 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 with PoE (PBC-P1000) QRG
- Savant Panelized Lighting Deployment Guide.
- Savant Power System Deployment Guide - Power & Light App

Notes
