SAVANT

Single 60 Amp Power Module with Current Transformer (Supports 1-Inch On-Center Load Centers)

Quick Reference and Installation Guide

Box Contents

(1) Single 60A Power Module (GPM-H1R60240-21) with 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	4.96 inch (12.6 cm)	2.98 inch (7.57 cm)	2.80 inch (7.11 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 feeder breaker)	240V AC @ max load power
Load Power	14400VA max (240V AC 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			
	FCC Part 15	UL	ICES 003
Safety and Emissions			
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.

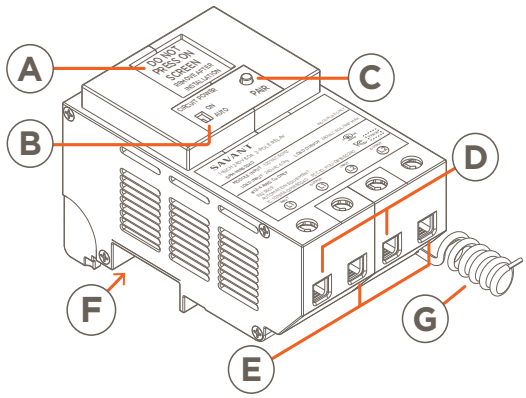
Supported Load Types	
Standard Configuration	Relay On/Off type loads (home automation)

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 LCD screen that displays:
- 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 ON to switch the load on. or toggle to AUTO for normal operation

C **PAIR Button** - The duration the PAIR button is pressed determines its function:
Press and Release - Cycle through the screens available on the LCD (POWER > ENERGY > INFO 1 > INFO 2)
Press and hold (2 seconds) - Pairing mode
Press and hold (5 seconds) - Reset power module

D **Input Power Connections** - Connect the 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 **Pigtail Neutral** - The 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-H1R60240-21 power module is compatible with Schneider Homeline, Eaton BR, Siemens, and GE Powermark Gold load centers with a one-inch on-center bus bar
- Dynamic load management
- Built-in energy monitoring; +/- .5% revenue grade accuracy / 1 sec sample time
- Communicates over the air using Bluetooth Low Energy (BLE)
- Manual load switch on the front panel toggle powers to the output ON/OFF
- Color LCD display for easy identification and load status

Important Information

- The breaker feeding the module should not be larger than 60 amps
- A GPM-H1R60240 module can switch up to a 60 amp load.
- The number of spaces needed in the electrical panel is equal to the number of spaces required for the feeder breaker(s) plus the number of spaces needed for the module(s)
  - A single pole breaker requires one space
  - A 2-pole breaker requires two spaces
  - Each GPM-H1R60240-21 module requires three spaces
- When plugging the module into an Eaton type panel, the module will not fully seat onto the bus bar if a wire is installed in the neutral bar directly under the module's neutral clip
- Savant does not recommend connecting any mission critical loads such as medical devices to this 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 Relay 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

HELPFUL! The GPM-H1R60240 60 Amp power module fills three slots in the electrical panel but connects to just one phase (120V AC). This connection powers the module

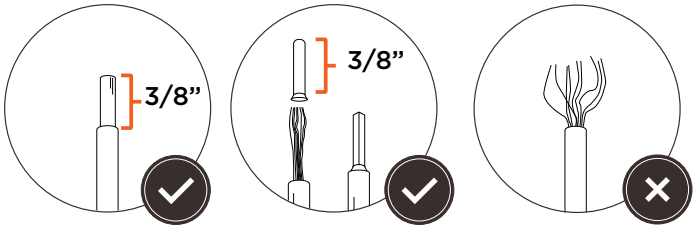
Installation into Electrical Panel

Savant recommends wiring power module connections before it is installed into the panel so that connections can more easily be checked. Once installed, electrician should re-torque to ensure screws are tight

1. Switch off the electrical panel's main breaker to remove power from the panel
2. Position and install a 2-pole breaker into any two slots in the electrical panel. Press firmly until the breaker is fully seated onto the appropriate bus bars
3. Position and install the 60 Amp Power Module into the electrical panel.
   IMPORTANT!: The neutral clip on the bottom of 1 inch modules 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 will not seat properly
4. Press firmly until the module is fully seated onto the appropriate bus bar. This module can be plugged anywhere there are three consecutive open slots but is typically installed alongside the breaker installed in step 2

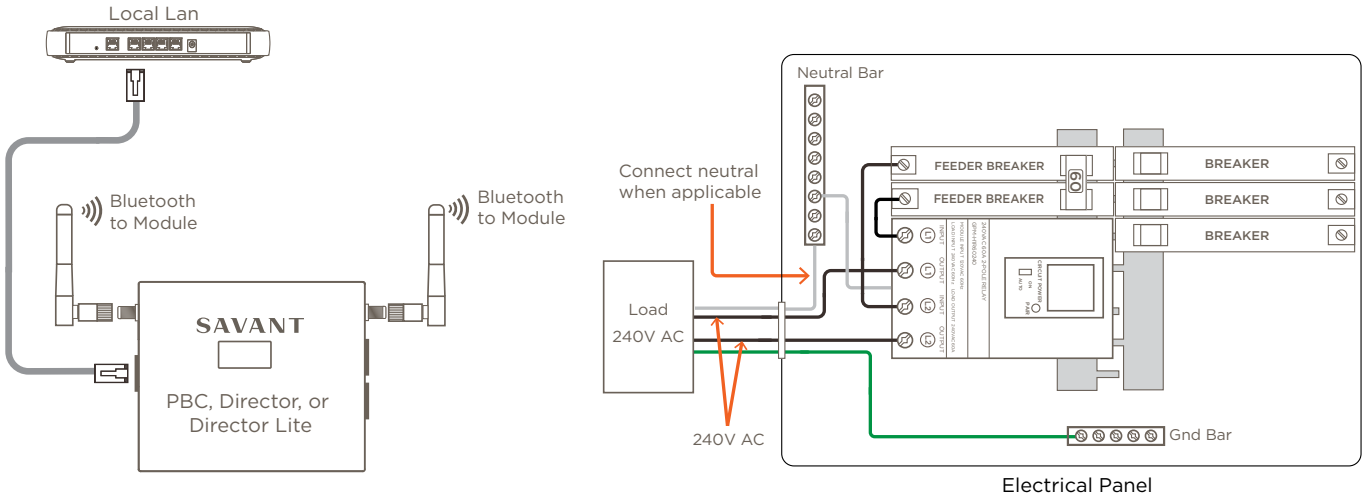
IMPORTANT NOTES!:

- 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 also recommends using a UL-approved ferrule



System Overview

An example of a 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.



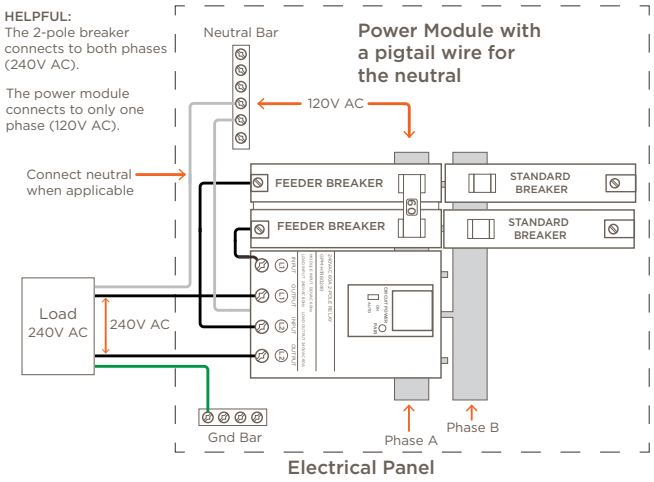
HELPFUL! The diagram shows an electrical panel that doesn't contain a plug-on neutral bus bar. However, both plug-on neutral and non-plug-on neutral panels are supported.

Wiring

The diagram below shows basic system installation. 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.

Non 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 lug-On Neutral supported electrical panels. The electrician, however, must terminate the module's neutral wire to a neutral bus 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

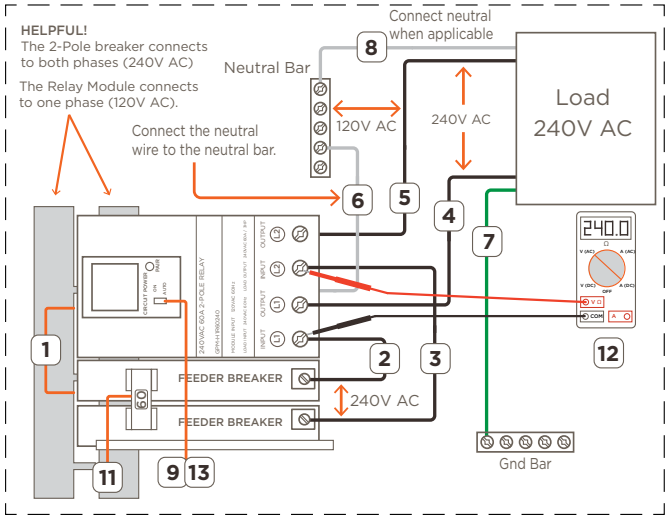
Use the instructions below to test a power module. The setup requires:

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

IMPORTANT!

- The GPM-H1R60240-21 module 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 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 the 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 (only when applicable).
9. Verify the Circuit Power switch on the module is set to AUTO.
10. Apply power to the electrical panel (not shown in diagram).
11. Toggle the 2-pole 60 Amp 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