



SAVANT

Dual 20 Amp Power Module (120V AC) (Supports 1-Inch On-Center Load Centers) Quick Reference and Installation Guide

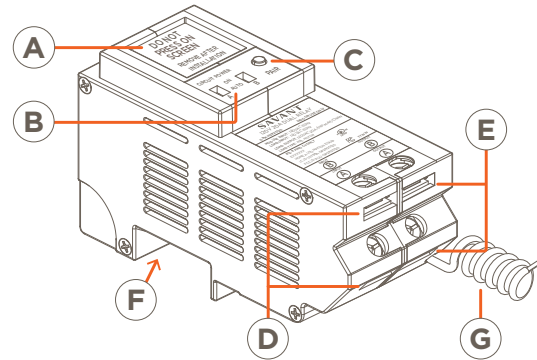
Box Contents

- (1) Dual 20 Amp Power Module
 - GPM-H2R20120-21 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	
	Length Width Height Weight
Module	4.98 inch (12.65 cm) 1.98 inch (5.03 cm) 2.80 inch (7.11 cm) .54 lbs (.24 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 power load
Load Power	2400VA max per channel (20A resistive load / 1 HP max per channel)
Features of Automatic Action	Type 1.B action
Standards	
Wireless	Bluetooth 5 Low Energy (BLE) - 2.4 GHz radio frequency
Regulatory	
	FCC Part 15 UL ICES 003
Safety and Emissions	 
Contains FCC ID: PUU-QP2R20120 Contains IC: 10798A-QP2R20120	
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 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 and energy usage at each 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 Switches - Toggle to the ON position to switch the load on. Toggle to AUTO for normal operation. Switch A controls output A, Switch B controls output B.

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:


- C 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 two feeder breakers to inputs A and B on the module. See the [Wiring](#) section below.

E Output Power Connections - Connect output A and output B to separate loads. See the [Wiring](#) section below.

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

Pigtail Neutral - A neutral wire protrudes from the module's rear and gets wired to the neutral bar in the electrical panel.

- G**  **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 bar.

Features

- Control capability for loads up to 2400VA per channel.
- The GPM-H2R20120-21 power module is compatible with Schneider Homeline, Eaton BR, Siemens, and CE Powermark Gold load centers with a one-inch on-center bus bar.
- 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).
- Manual load switches on the front panel can toggle power to the outputs 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 20 amps.
- Each relay output can switch up to 20 amps.
- To determine the number of spaces needed in the electrical panel, add the number of spaces required for the feeder breaker(s) to the number of spaces needed for the module.
 - A single pole circuit breaker requires one space.
 - A 2-pole circuit breaker requires two spaces.
 - Each GPM-H2R20120-21 power module requires two spaces.
- On Eaton type power modules, when plugging the module into an electrical panel, the module won't fully seat onto the bus bar if a wire is 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)

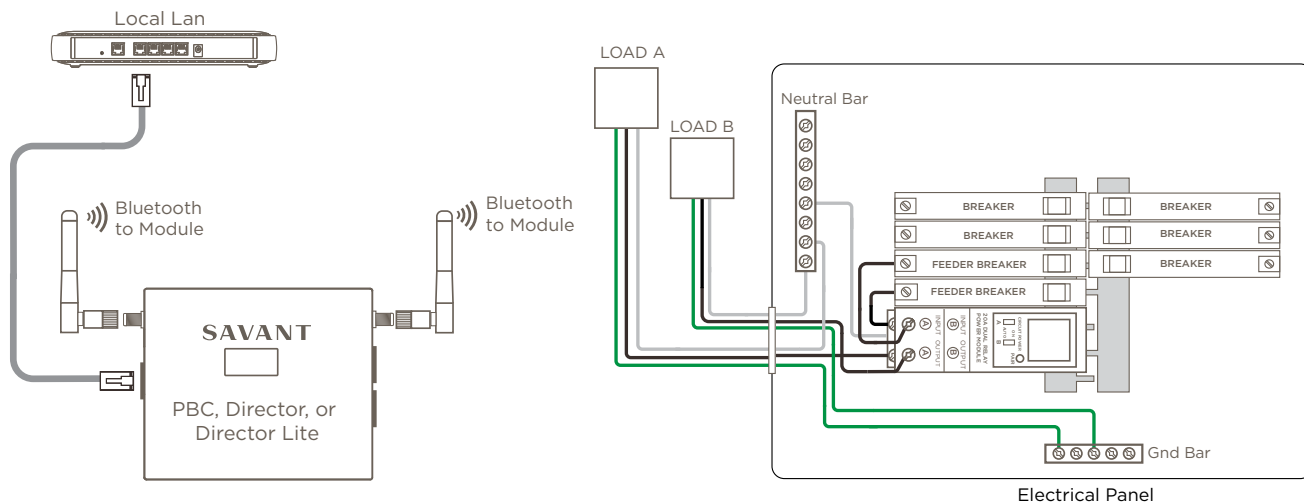
15A	20A	30A	40A	50A	60A
#14 AWG	#12 AWG	#10 AWG	#8 AWG	#6 AWG	#4 AWG

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 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 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 Electrical Panel

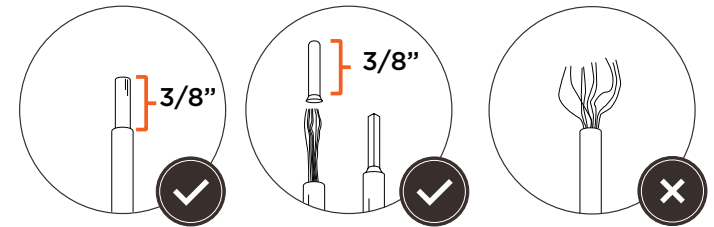
Savant recommends wiring power module connections before it is installed into the panel so that connections can more easily be checked. Once installed, electrician should re-torque to ensure screws are tight. Refer to the [Wiring](#) section to make the appropriate connections.

1. Switch off the electrical panel's main breaker to remove power from the panel.
2. Position and install a feeder breaker into the panel. Press firmly until the breaker is fully seated onto the appropriate bus bars.
3. Install a second feeder breaker into the panel. Typically the feeder breakers are installed alongside each other but don't have to be.
4. Position and install the 20 Amp Power Module into the electrical panel. The neutral clip on the bottom of the Eaton type 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 won't seat properly.
5. Press firmly until fully seated onto the appropriate bus bars. This power module is typically installed alongside the feeder breakers installed in steps 2 and 3 but doesn't need to be.

- HELPFUL!** A 20A power module fills two slots in the electrical panel but connects to just one phase (120V AC). This connection powers the module.

IMPORTANT!

- 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.

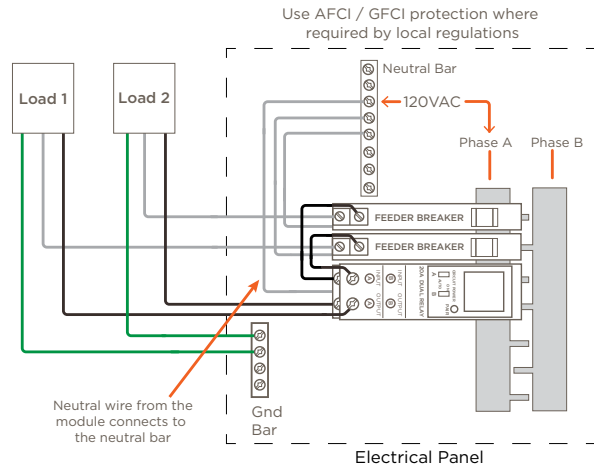


Wiring

The next few wiring diagrams cover a few 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.

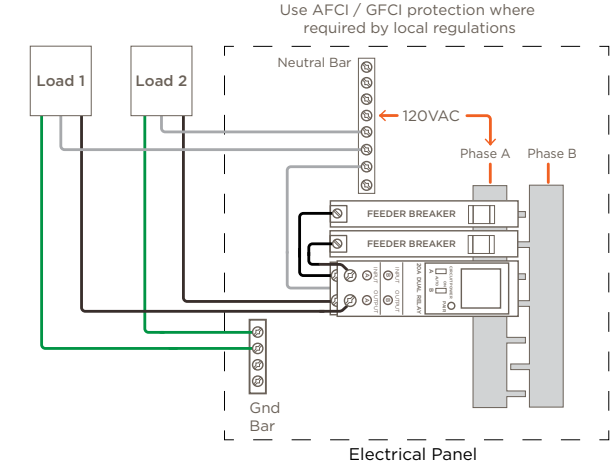
Non Plug-on Neutral Panel with ARC Fault Breakers

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



Non Plug-on Neutral Panel with Standard Breakers

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



i HELPFUL!

- Modules with a pigtail neutral wire can be used in Plug-on Neutral supported 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 and energy equipment in areas that experience frequent lightning or other transient voltage and current producing phenomena.

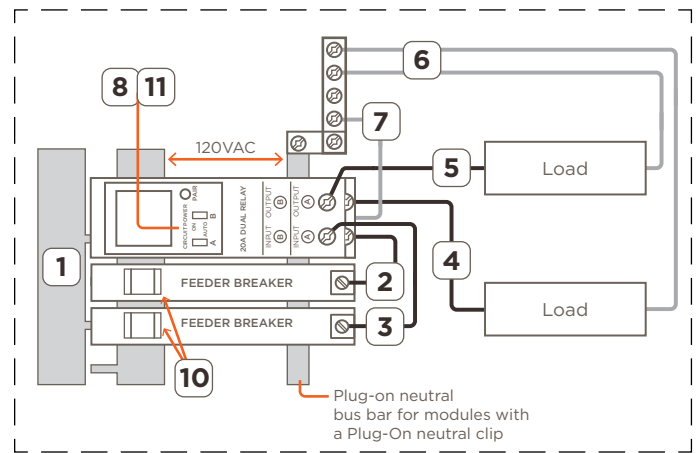
Circuit Test Instructions

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

- Dual 20 Amp Power Module.
- (2) loads (20 amps max for each).
- (2) 20 amp circuit breakers.
- Electrical test panel. The type of module determines the type of electrical panel (plug-on neutral or not).
- 120V AC source

⚠ IMPORTANT! The GPM-H2R20120-21 power module can accept up to a #12 AWG wire. See the **Branch Circuit Minimum Size of Conductors** table on the previous page for wire sizing information.

1. Plug the two feeder circuit breakers and one 20 Amp Power Module into the electrical test panel.
2. Connect the output from one of the feeder breakers to Input A on the module.
3. Connect the output from the remaining feeder breaker to Input B on the module.
4. Connect a load to Output A.
5. Connect a second load to Output B.
6. Connect the neutral wire from each load to the neutral bus bar or arc fault breaker (when applicable).
7. On the modules that contain a neutral wire, connect the neutral wire to the neutral bus bar.
8. Set the Circuit Power switch on the module's front panel to AUTO.
9. Apply power to the panel (not shown in diagram).
10. Toggle the 20 amp feeder breakers to On.
11. 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



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
