

SAVANT

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

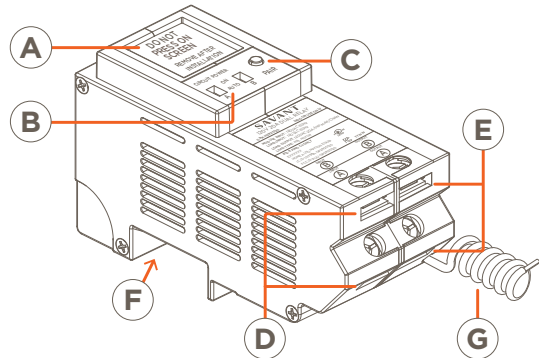
Box Contents

- (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 @ maximum 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				
See Features section to the right for compatibility information.				
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			
Construction of Control				
Open Type	Independently mounted for flush mounting			
Minimum Supported Release				
Savant OS	da Vinci 10.1.1			

Descriptions



Multiple page LCD screen that displays the following:

- A** - Power draw and energy usage at each output
- Firmware, Mac Address, and Regulatory Info
- UID of the Host the module is paired with
- Real-time Bluetooth status connectivity icon

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

PAIR Button - The duration the PAIR button is pressed determines the function:

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

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

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

Pigtail Neutral - The neutral wire that protrudes from the rear of the module and is wired to the neutral bar

- G**  **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 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 sum of the amperage of the breaker(s) feeding this 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
- 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 recommends **NOT** connecting any mission-critical loads (such as medical devices) to any 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 is based on the National Electric Code (NEC) (ANSI/NFPA70), Canadian Electric Code, Part 1 (CEC), and local codes minimum conductor size

⚠️ 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! Turn all disconnect switches providing power to the panel OFF and confirm to the panel is de-energized before servicing

⚠️ IMPORTANT! A licensed electrician is required to install any of Savant's power modules

Installation into Electrical Panel

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

1. Switch off the main breaker for the electrical panel to be serviced
2. Install a feeder breaker into the panel by pressing firmly until the breaker is fully seated onto the appropriate bus bars
3. Install a second feeder breaker into the panel.

i **HELPFUL!** Feeder breakers are typically installed alongside each other but it is not a requirement

4. Position and install the 20A power module into the electrical panel.

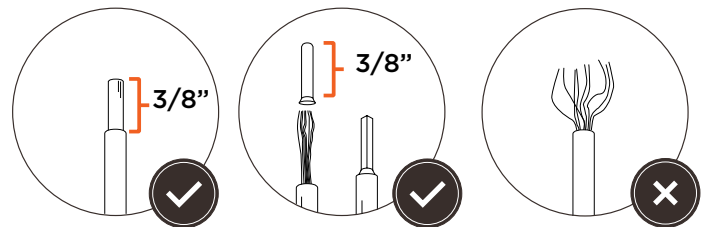
⚠️ IMPORTANT! The neutral clip on the bottom of 1 inch modules must sit on a portion of the neutral bar where no neutral wire is installed beneath it. With a wire installed in the hole in the neutral bar just under the neutral clip, the module will not seat properly

5. Press firmly until fully seated onto the appropriate bus bars. Power modules are typically installed alongside the feeder breakers installed in steps 2 and 3 but it is not required.

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

⚠️ IMPORTANT!:

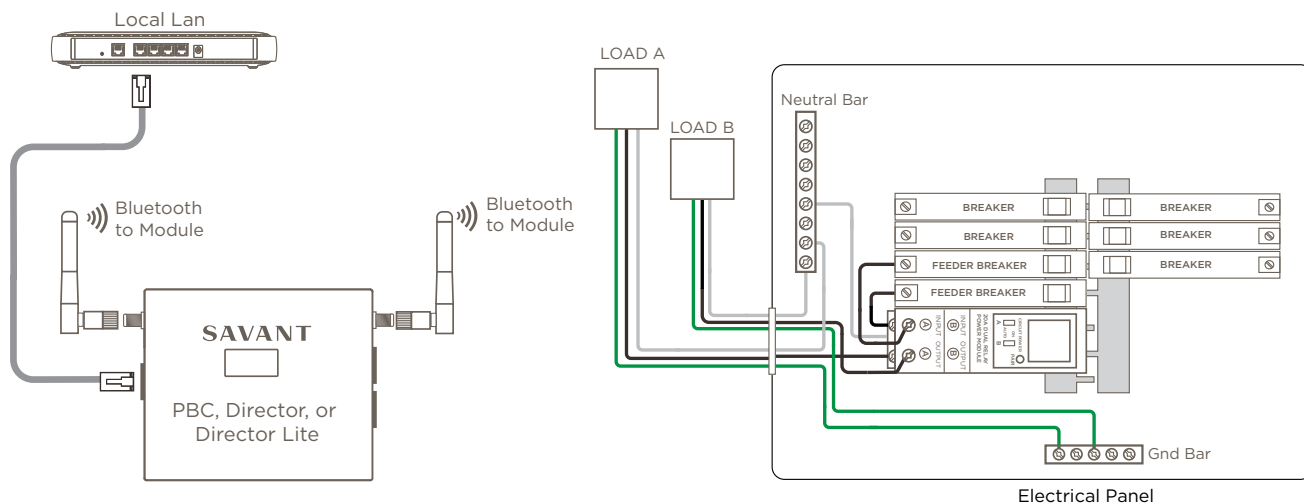
- When making connections, an electrician must confirm that all wires sit cleanly on one side of the terminal screw.
- Stranded wire must be neatly twisted to ensure proper connection. Savant also recommends using a UL-approved ferrule.



System Overview

A basic 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.

i **HELPFUL!** The diagram below 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.

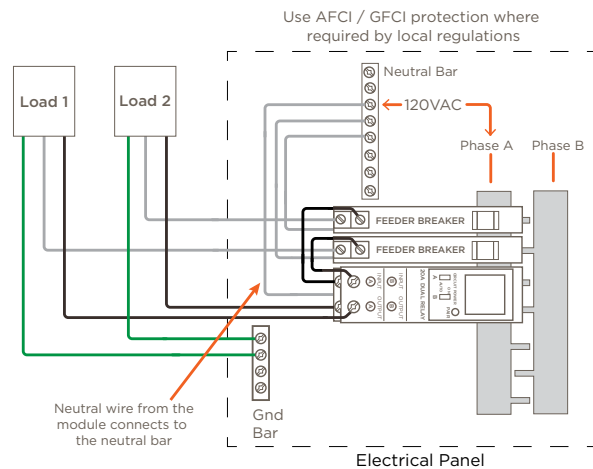


Wiring

The wiring diagrams below depict examples of basic power module installations. When making connections, observe all general electrical best practices including local wire sizing guidelines. See the **Branch Circuit Minimum Size of Conductors** under **Important Information**.

Non Plug-on Neutral Panel with ARC Fault Breakers

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

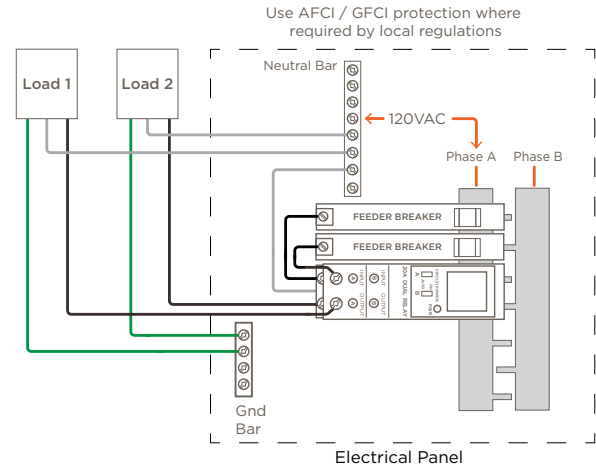


HELPFUL!

- Modules with a pigtail neutral wire can be used in plug-on neutral supported panels. The electrician, however, must terminate neutral wire of the modules to a neutral bar
- A Class 2 Surge Protection device is recommended when installing Savant equipment in areas that experience frequent lightning or other transient voltage and current producing phenomena

Non Plug-on Neutral Panel with Standard Breakers

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



Circuit Test Instructions

To test power module circuit control functionality, the following equipment is required:

- 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 under **Important Information** for wire sizing information

1. Plug the two feeder circuit breakers and one 20A 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)

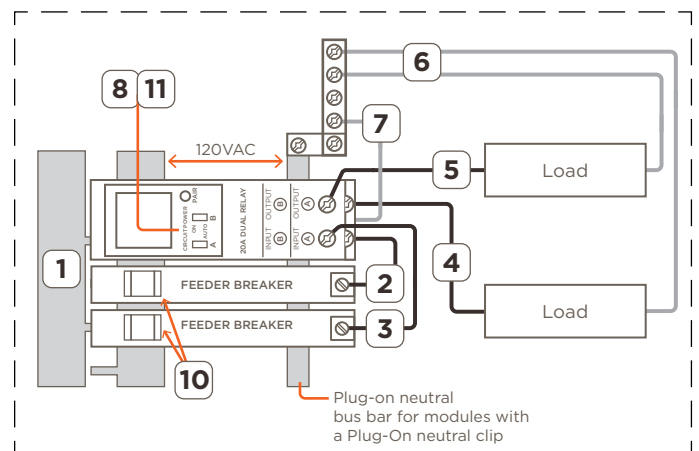
7. On the modules that contain a neutral wire, connect the neutral wire to the neutral bus bar

8. Set the Circuit Power switch on the front panel of the module 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 turn 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
