

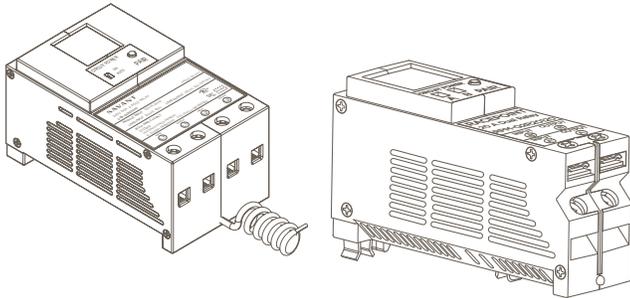
SAVANT

Smart Panel Reference Guide

Document Number: 009-2500-01

Document Date: September 2025

Power Modules



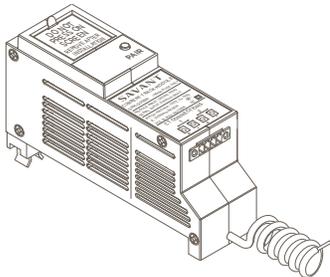
Key Features

- Monitor individual load consumption
- Circuit level load control via Savant App
- Plugs into all standard electrical panels the same way a circuit breaker does
- Electrician-friendly installation & onboarding

Supported Sizes

- 20A Dual Relay = 2- up to 20A 120V circuits
- 30A 2-Pole Relay = 1- up to 30A 240V circuits
- 60A 2-Pole Relay = 1- up to 60A 240V circuits

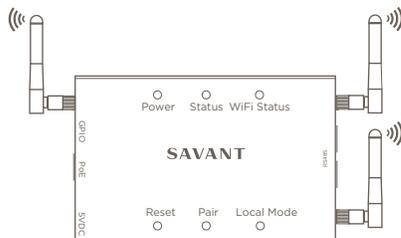
Current Track Module & CT's



Key Features

- Monitor the home's total energy consumption, solar power, & larger loads in the home. Single phase application 20A to 600A
- Daily energy metrics reporting via Savant App
- Plugs into all standard electrical panels the same way a circuit breaker does
- Electrician-friendly installation & onboarding

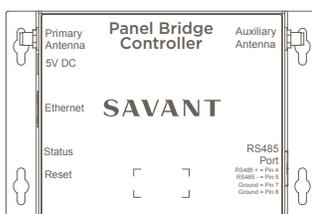
Savant Director



Key Features

- Energy monitoring, management, and control for the complete Savant Power System
- Included with Savant Power Storage 20
- Supports battery and inverter integration (Tesla, Enphase, Franklin)
- Up to 40 Savant Power Modules via Bluetooth Low Energy (BLE)
- 1 RJ 45 Ethernet Switch
- PoE and/or 5V Power

Savant Panel Bridge Controller (PBC)



Key Features

- Used as compliment to Savant host/Director
 - Support sub-panel OR sites > 40 PM
- Up to 40 Savant Power Modules via Bluetooth Low Energy (BLE)
- 1 RJ 45 Ethernet Switch
- PoE and/or 5V Power

Deployment Options

Do Branch Circuit Neutrals Land in the Over Current Panel Vs Power Module Panel?

- Q1
- Over Current Panel: No additional calculation required.
 - Critical Load Panel: The Neutral Wire will need to be sized to potentially handle the full capacity of a single phase worth of Branch circuit capacity.

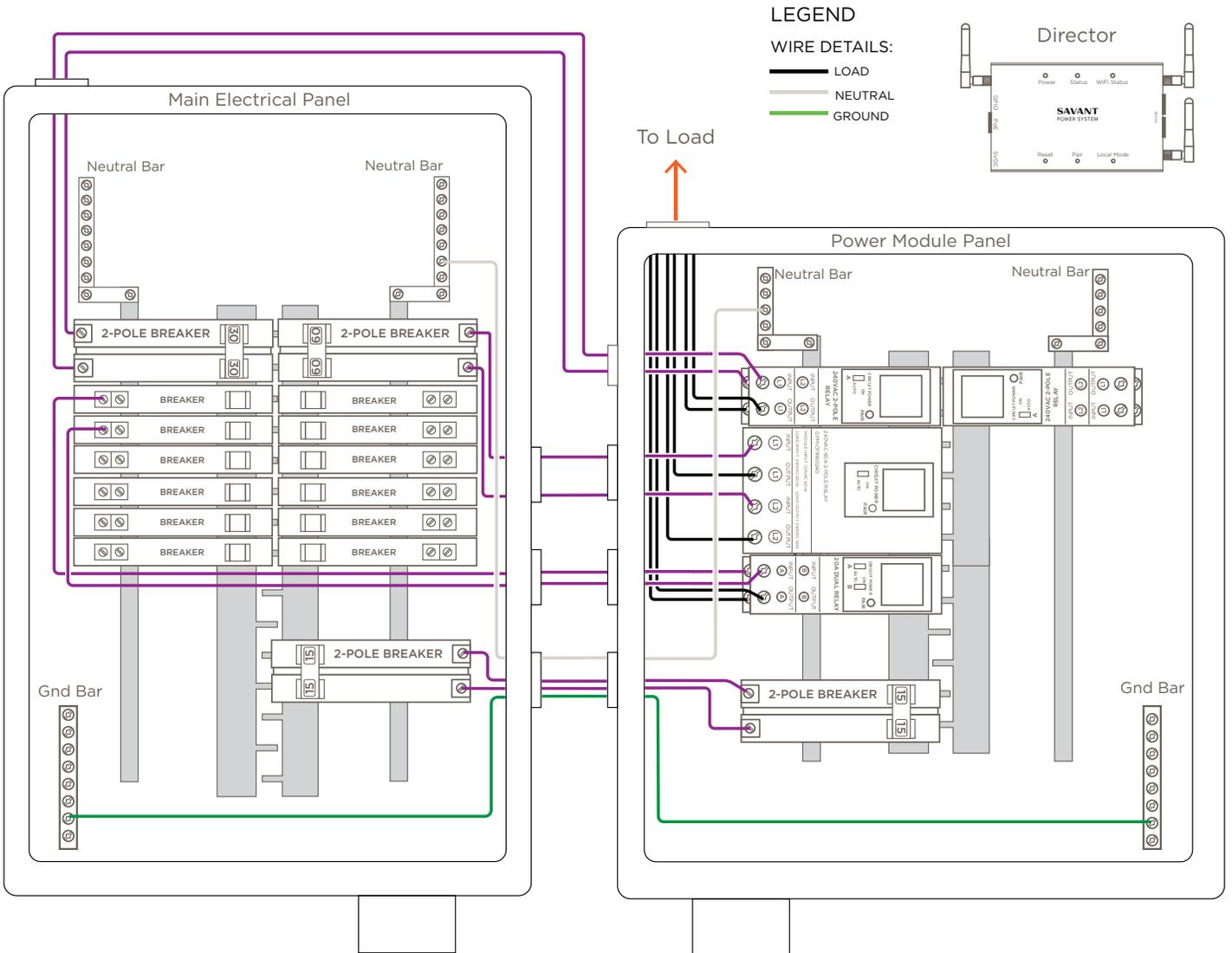
Will the critical Load Panel have any Branch circuit Breakers?

- Q2
- No: No additional Calculation Required.
 - Yes: Will require load calc and correctly sized Feeders.

Will the Critical Load Panel be energized via a 2 pole breaker or terminal lugs

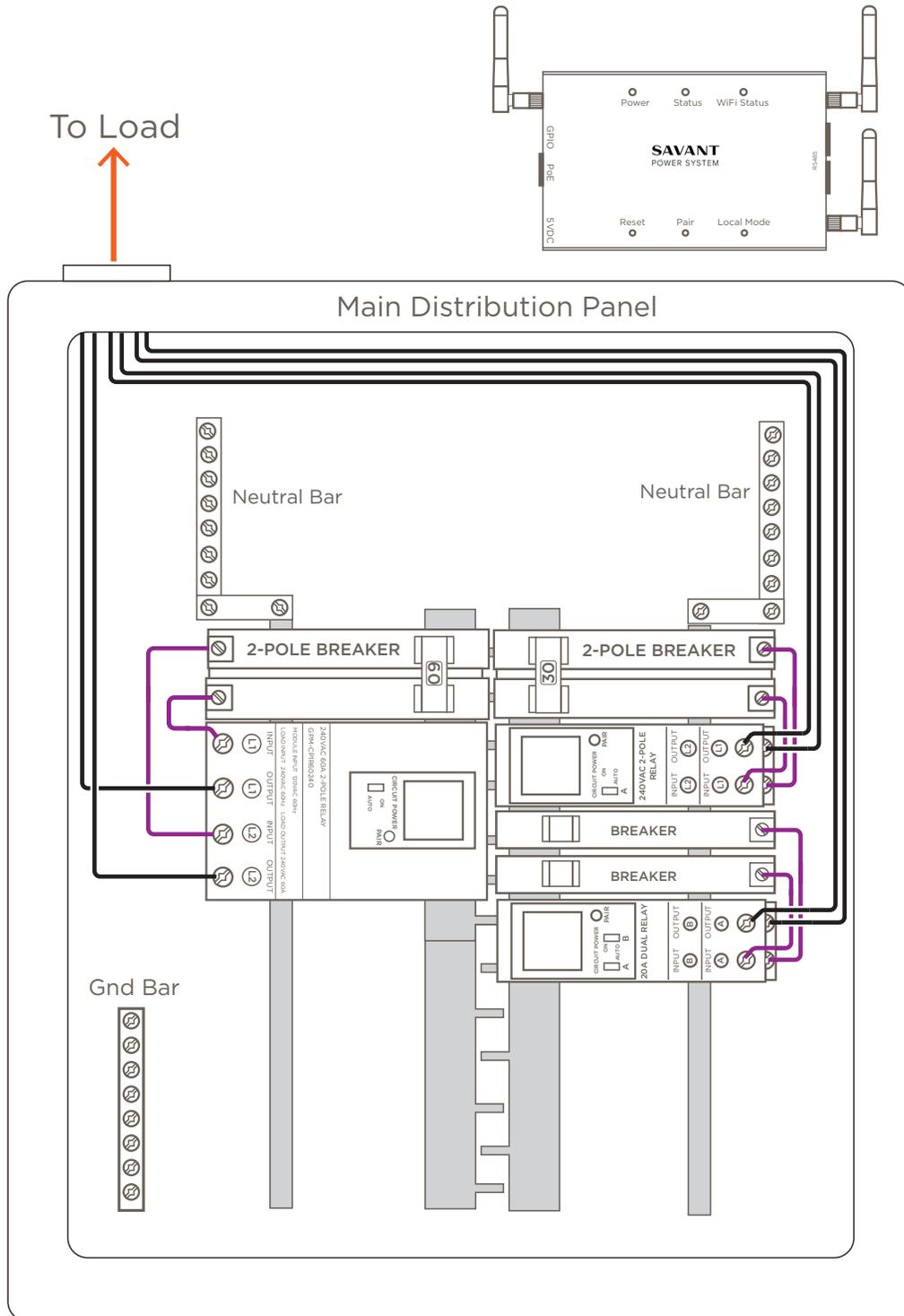
- Q3
- 2 pole breaker: No additional calculation required.
 - Terminal Lugs: Feeder wire must be of a AWG size rated for termination in the terminal lugs and the feeder circuit breaker must be rated to accept that gauge of wire.

Option 1



Option 2

- Mixed controls panel
- Uses space in existing load centers in the home



Savant Power Module Design Strategy

Full Home Control

- All loads on-site to be paired with Savant Power Modules
- Feeds to sub-panels do not need Power Modules

1. Spec on-site load to be controlled

- Full Home Control
 - Count all 15a and 20a 1 pole circuits. Each dual 20a module can control 2-1 Pole up to 20a circuits.
 - Count all 20a and 30a 2 pole circuits. 1- 240v 30a module for each circuit.
 - Count all 40a, 50a, and 60a 2 pole circuits. 1 - 240v 60a module for each circuit.
- Partial Load Control
- Count all 1 and 2 pole circuits to be controlled and spec modules using strategy listed above.

2. Identify load center make and model

- Validate number of spaces in load center based on breaker count + Module space count = Total # of spaces needed.

3. Spec additional energy monitoring

- Current Track module with appropriately sized CT's (20a to 600a) = 1-2 pole circuit or feeder
- SEM-2015 = Standalone Energy Monitor with 15 channels that will monitor single and three phase circuits or feeders
- **Savant Flexible Current Transformers:** (SEMFLEX-2500A2-16L-00, SEMFLEX-2500A2-24L-00, SEMFLEX-2500A2-36L-00, or SEMFLEX-2500A2-47L-00)
 - Current Range 100A-2500A
 - Sizes: 16in, 24in, 36in, and 47in

4. Identify unique situations requiring PBC

- Separate load center(s)
- Savant Smart Host system
- Controlled onsite load > 40 circuits

Partial Load Control

Identify loads to control at a minimum.

- Large inductive loads that could overload surge ratings of inverter or generator.
- Large continuous loads that will drain battery quickly.
- Sub-panel feeds (pool equipment, casitas, etc.) Understand estimated draw of non-backed up loads to understand what controlled loads available for off-grid situations.

**Dual 120V 20A Power Module
(for two 120v loads <20A)**

- A** - Controls (2) 120v Single pole loads <20A.
- Current Sensing of load happens within the Power Module.
- Spacing Rull of Thumb: (2) Single pole breakers <20A will need 2 breaker spaces reserved for Power Module.

2 Pole 240V 30A Power Module

- B** - Controls 240V 2 pole loads <30A.
- Current Sensing of load happens within the Power Module.
- Spacing Rull of Thumb: 2 pole breakers <30A will need 2 breaker spaces reserved for Power Module.

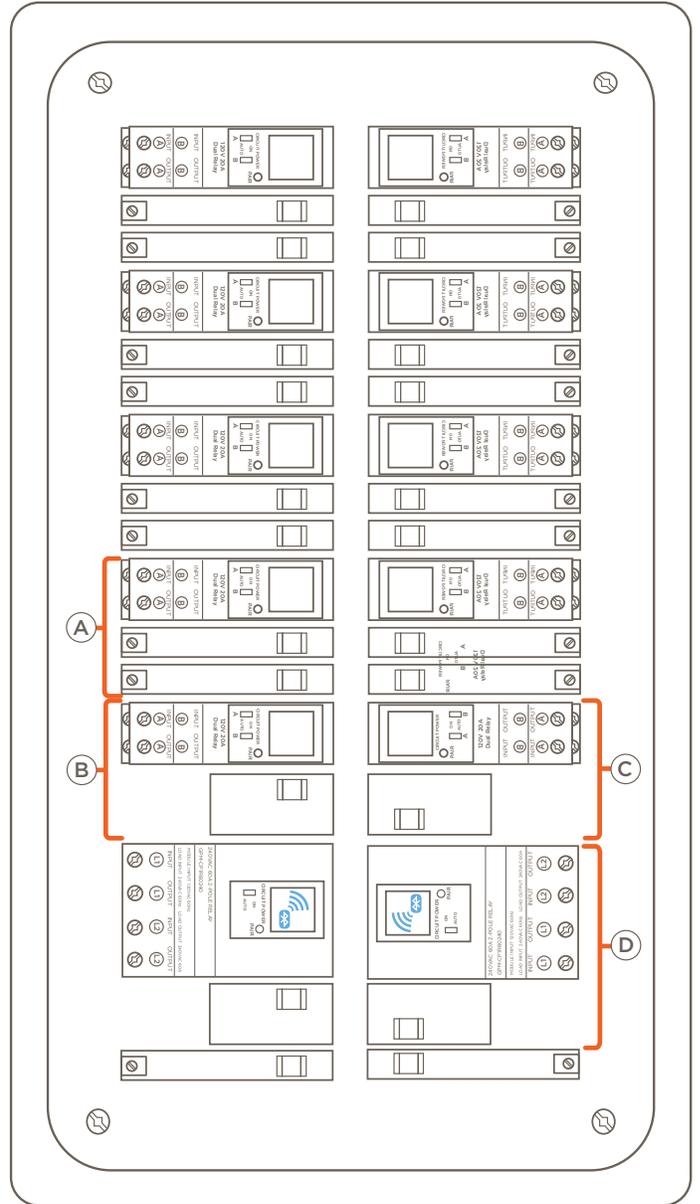
Dual 120V 20A Power Module (for 3 phase loads)

- Can also control (2) 3 phase loads control signal.
- C** - 3 pole Breaker for load gets wired to a 3 phase contactor. Then out of contactor to load. Two 20A control signals comes from the Dual 120v Power Module.
- Requires a clamp on Current Sensor per phase of load.
- Spacing Rull of Thumb: (2) 3 pole breakers will need 2 breaker spaces reserved for Power Module and one breaker space reserved for control signal.

2 Pole 240V 60A Power Module

- D** - Controls 240v 2 pole loads 35A to 60A.
- Current Sensing of load happens within the Power Module.
- Spacing Rull of Thumb: 2 pole breakers between 35A and 60A will need 4 breaker spaces reserved for Power Module.

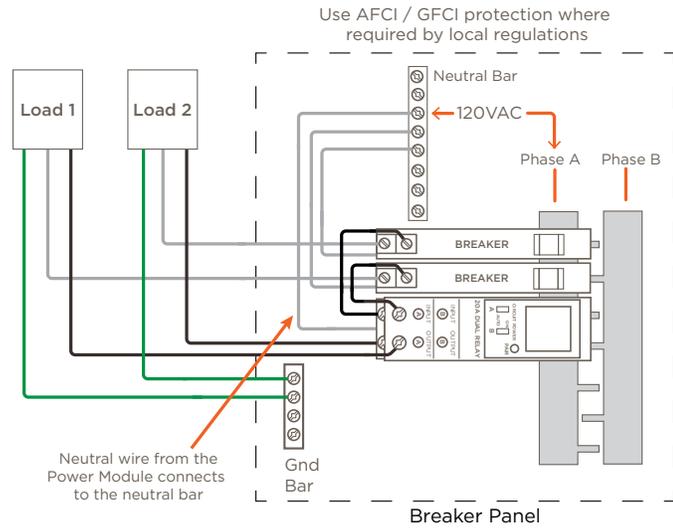
Note: Reserve 4 breaker spaces for QO and CH models, and 3 spaces for 1-inch (1") standard models.



Standard Neutral Bus Bar with ARC Fault Breakers

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

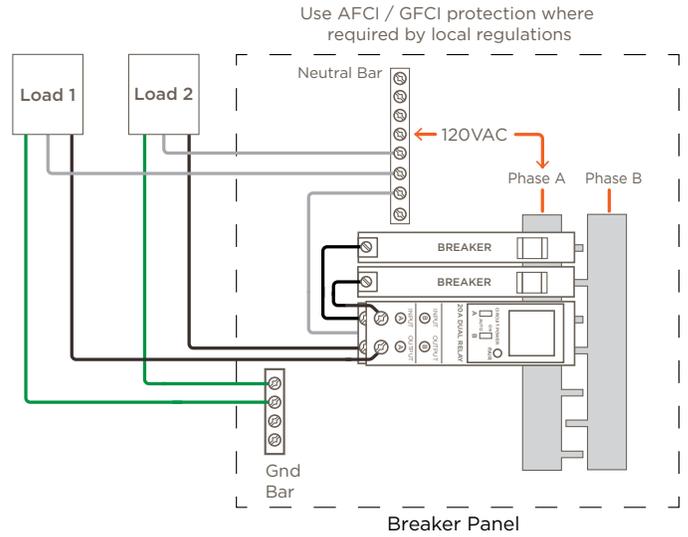
Pig Tail Neutral Dual 120V 20A Power Module for two 120V loads <20A with AFCI or GFCI protection



Standard Neutral Bus Bar with Standard Breakers

Breaker panel without a plug-on neutral bus bar and standard type feeder breakers.

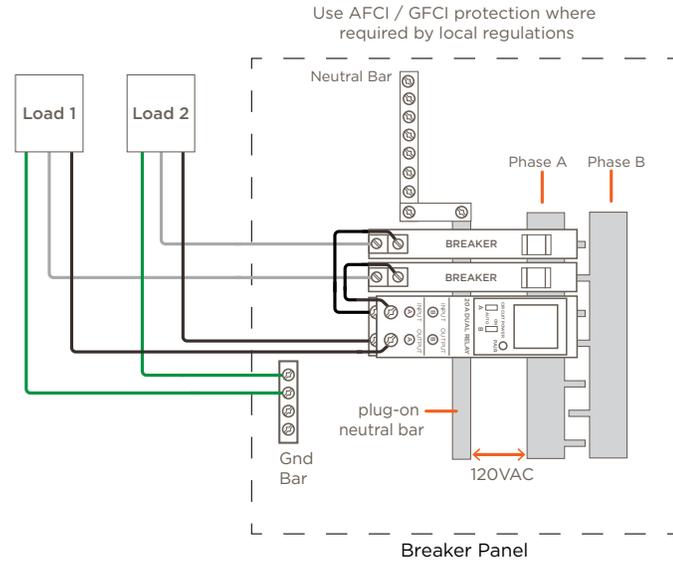
Pig Tail Neutral Dual 120V 20A Power Module for two 120V loads <20A



Plug-on Neutral Bus Bar with ARC Fault Breakers

Breaker panel with a plug-on neutral bus bar (with ARC Fault type feeder breakers).

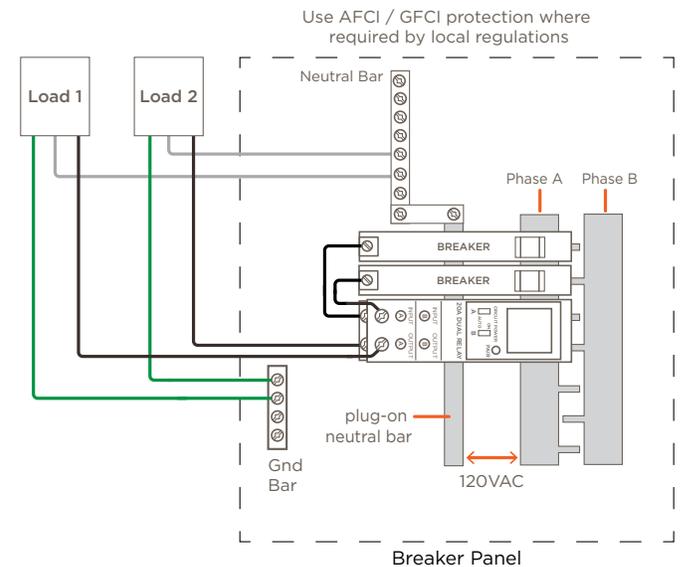
Plug on Neutral Dual 120V 20A Power Module for two 120V loads <20A with AFCI or GFCI protection



Plug-on Neutral Bus Bar with Standard Breakers

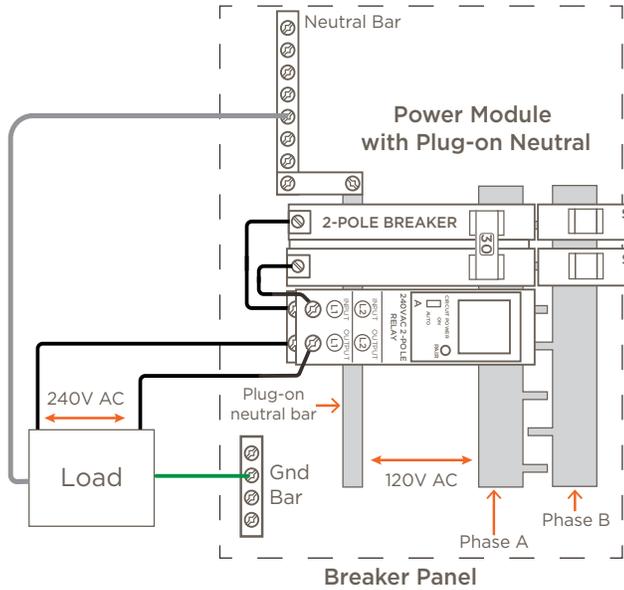
Breaker panel with a plug-on neutral bus bar (with standard type feeder breakers).

Plug on Neutral Dual 120V 20A Power Module for two 120V loads <20A



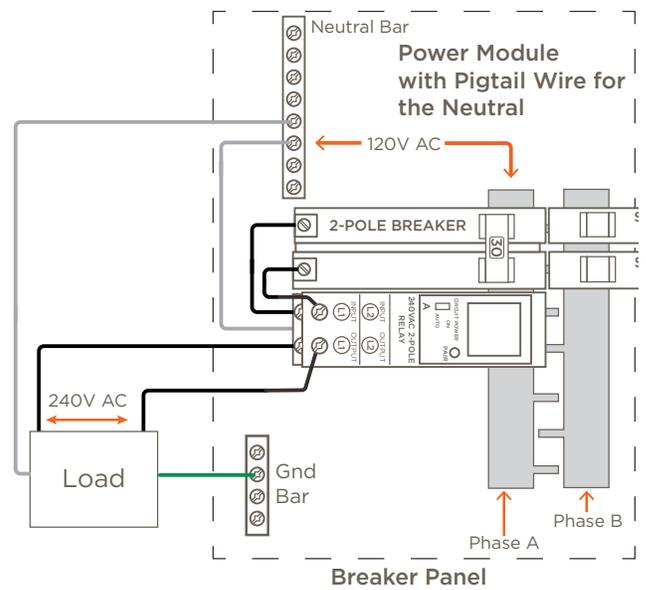
Wiring with Plug-on Neutral

Plug on Neutral Single 240V 30A Power Module



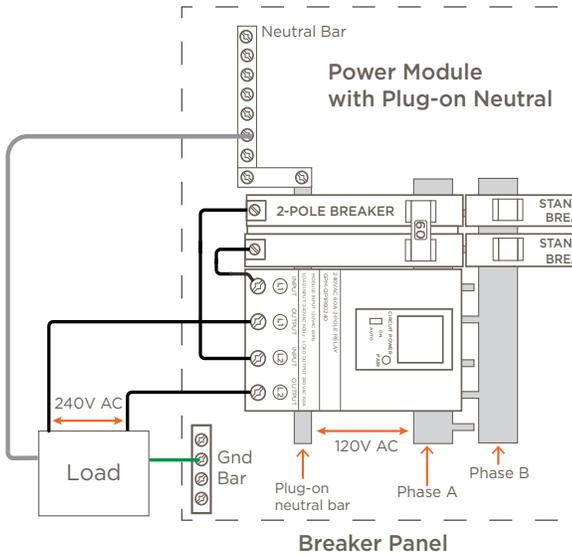
Wiring with Pigtail Neutral

Pig Tail Neutral Single 240V 30A Power Module



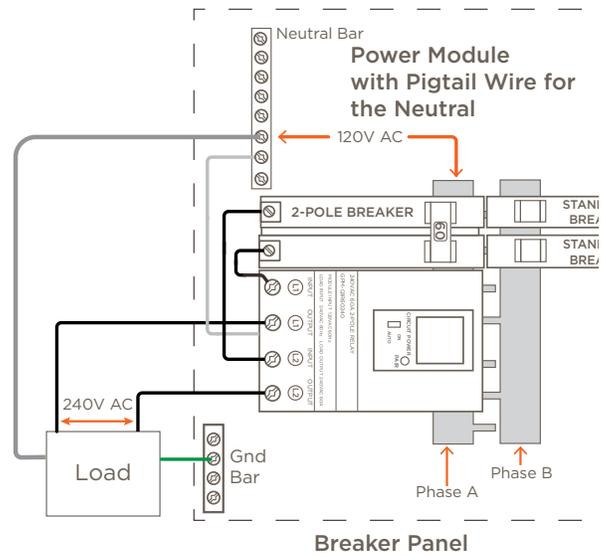
Wiring with Plug-on Neutral Clip

Plug on Neutral Single 240V 60A Power Module

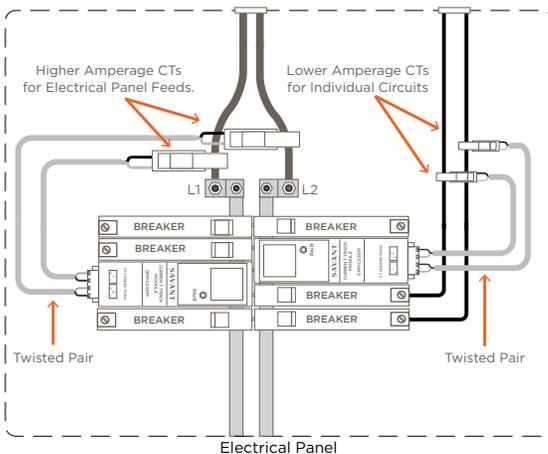


Wiring with a Pigtail Neutral Wire

Pig Tail Neutral Single 240V 60A Power Module



Current Track Module – Energy Monitor



Savant Power Control of Loads Over 60A and 120/208V Three-phase Loads

- The Savant Power System uses a standard 120V coil N.O. contactor to control circuits exceeding 60A single-phase and for 120/208V three-phase applications.
- Circuit is run from the circuit breaker through the contactor to the load.
- The 120v coil from the contactor is run through one of the channels on a Savant Power module controlling the power to the coil, which opens and closes the circuit.
- Savant Power CTs are used to monitor the power in this application.
- No limit on circuit size. If the contactor has a 120v coil it can be controlled by a Savant Power Module.

