SAVANT

Dual 20 Amp Relay Companion Module (120V AC) (Supports Eaton CH Load Centers)
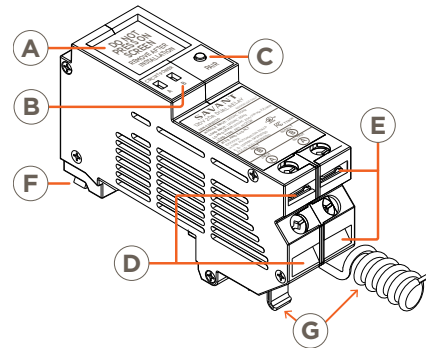## Quick Reference and Installation Guide

Box Contents

(1) Dual 20 Amp Relay Companion Module (Eaton CH)
   – GPM-CP2R20120-21 w/Plug-on Neutral **-or-**
   – GPM-C2R20120-21 w/Pigtail

(1) Product Information and Regulatory Insert (009-1950)

(1) Quick Reference and Installation Guide (this document)

Specifications

Environmental	
Temperature	32° to 104° F (0° to 40° C)
Humidity	5% to 85% Relative Humidity (non-condensing)
Location	Indoor Use Only

Dimensions and Weights				
	Length	Width	Height	Weight
Module	4.96 inch (12.6 cm)	1.46 inch (3.7 cm)	3.39 inch (8.61 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			
Safety and Emissions	FCC Part 15	UL	ICES 003
Contains FCC ID:	PUU-QP2R20120		
Contains IC:	10798A-QP2R20120		
RoHS	Compliant		

Recommended Load Center Types	
All Eaton CH style modules fit into a ¾ inch Eaton CH load center.	

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

Descriptions

A	Multi-Page LCD screen that can display the following: – 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.
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 second 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 breaker panel. The voltage on this connection powers the module.
G	**Neutral** - The model number of the Companion Module determines the type of neutral connection available: – **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 module's rear and gets wired to the neutral bar in the breaker panel.

Features

– Control capability for loads up to 2400VA per channel.

– All Eaton CH style relay modules are compatible with Eaton CH ¾ 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) technology.

– Manual load switches, available on the front panel, can toggle power to the outputs On and Off.

– Color LCD display for easy identification and load status.

45 Perseverance Way, Hyannis MA 02601
Savant.com | 508.683.2500

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 breaker panel spaces needed, add the number of spaces required for the circuit 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 Companion Module requires two spaces.

- Savant recommends not connecting any mission-critical loads such as medical devices to this relay module.

⚡ **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 Relay Companion 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.

Installation into Breaker Panel

1. Remove power from the breaker panel by switching off the panel's main breaker.

2. Position and install a circuit breaker into one of the slots in the panel. Press firmly until the breaker is fully seated onto the appropriate bus bars.

3. Install a second breaker alongside the first.

4. Position and install the Companion Relay Module into the slot where it will be installed. Press firmly until fully seated onto the appropriate bus bars. This module is typically installed alongside the breakers installed in steps 2 and 3.

ℹ **HELPFUL!** A relay module fills two slots in the breaker panel but connects to only one phase (120V AC). See the diagram below.
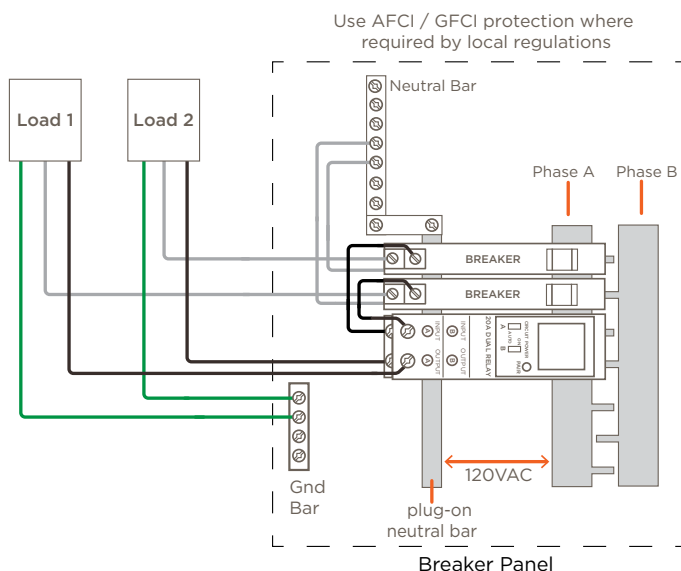
5. Refer to the Wiring section below and make the appropriate connections.

Wiring

Use the diagrams below when wiring the modules. The diagrams cover the following scenarios:
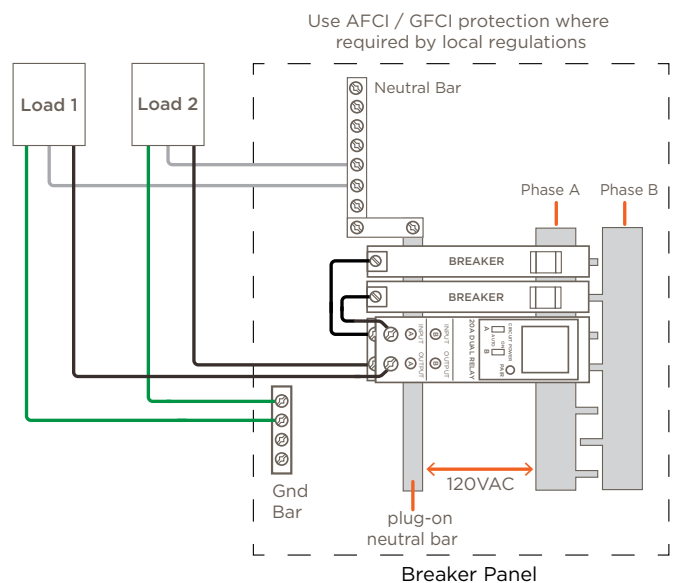
Plug-on Neutral Bus Bar with ARC Fault Breakers

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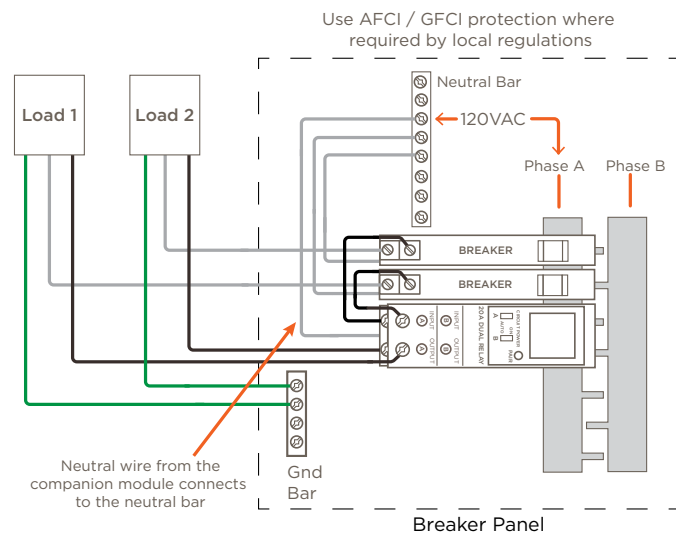

Plug-on Neutral Bus Bar with Standard Breakers

Breaker panel with a plug-on neutral bus bar (with standard type feeder breakers).
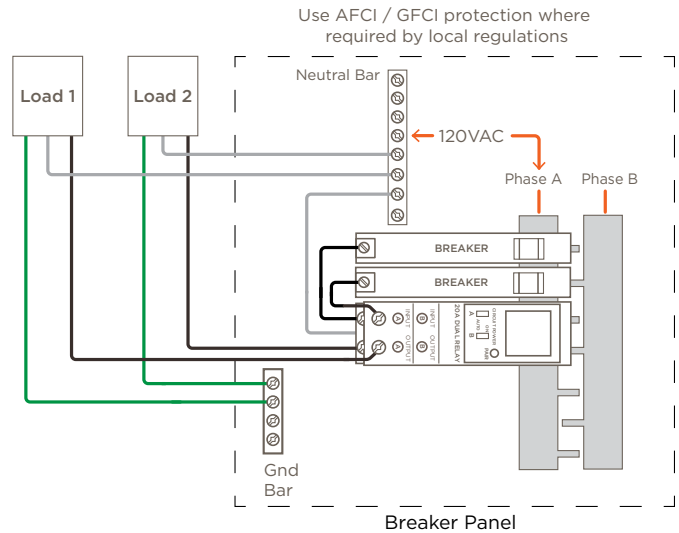
Standard Neutral Bus Bar with ARC Fault Breakers

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

Use AFCI / GFCI protection where required by local regulations

Neutral Bar

120VAC

Phase A   Phase B

Load 1   Load 2

BREAKER
BREAKER
20A DUAL RELAY

Neutral wire from the companion module connects to the neutral bar

Gnd Bar

Breaker Panel

Standard Neutral Bus Bar with Standard Breakers

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

Use AFCI / GFCI protection where required by local regulations

Neutral Bar

120VAC

Phase A   Phase B

Load 1   Load 2

BREAKER
BREAKER
20A DUAL RELAY

Gnd Bar

Breaker Panel

Circuit Test Instructions

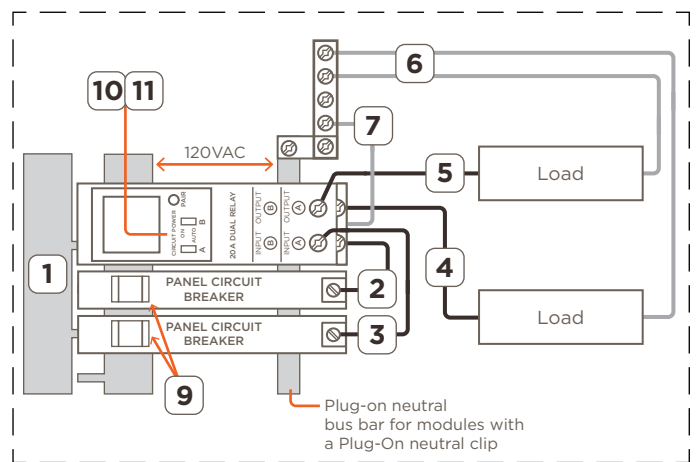Use the instructions below to test the relay modules. The setup requires:

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

⚠ IMPORTANT!

– When making connections, observe all general electrical best practices including local wire sizing guidelines.
– The GPM-CP2R20120-21 and GPM-C2R20120-21 modules 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 Dual Relay Companion Module into the circuit breaker test panel.

2. Connect the output from one of the circuit breakers to Input A on the module.

3. Connect the output from the remaining circuit 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 unused side of each load to the neutral bus bar in the breaker panel.

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

8. Apply power to the breaker panel (not shown in diagram).

9. Toggle the 20 amp feeder breakers to On.

10. To test, toggle the CIRCUIT POWER switches A and B to ON and verify both loads switch On.

11. Toggle the CIRCUIT POWER switches to AUTO and verify the loads switch Off

120VAC

PANEL CIRCUIT BREAKER
PANEL CIRCUIT BREAKER
20A DUAL RELAY

Load
Load

Plug-on neutral bus bar for modules with a Plug-On neutral clip

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

NOTES