SAVANT

Current Track Module (Supports QO Style Load Centers)
Quick Reference and Installation Guide

Box Contents

(1) Current Track Module
- GPM-Q2SEM-xx w/Pigtail type neutral

(1) 4-pin screw down plug-in connector (028-9395)
(1) Product Information and Regulatory Insert (009-1950)
(1) Quick Reference and Installation Guide (this document)

Accessories

Current Transformers	
SEM-050Ax	50 Amp
SEM-150Ax	150 Amp
SEM-250Ax, SEM-REV250Ax	250 Amp
SEM-400Ax, SEM-REV400Ax	400 Amp
SEM-600Ax, SEM-REV600Ax	600 Amp

NOTE: Both single and multi-pack current transformers are available. See the Savant Store for details (x = CTs in package).

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 (QO)	4.97 in. (12.63 cm)	1.45 in. (3.68 cm)	2.60 in. (6.61 cm)	.5 lbs (.23 kg)
Shipping	7.50 in. (19.05 cm)	4.30 in. (10.92 cm)	1.71 in. (4.34 cm)	1.0 lbs. (.45 kg)

Power	
Input Power (powers the module)	120V AC (+/- 10%) @ 60 Hz, 0.1A (max)
Signal Input	0.333V AC @ 60Hz
Type of Action	Type 1 action

Standards	
Wireless	Bluetooth 5 Low Energy (BLE) – 2.4 GHz radio frequency

This module will be tested and certified to the following standards:

ANSI C12.20-2015	American National Standard for Electricity Meters - 0.5 Accuracy Class
ANSI C12.1-2014	American National Standard for Electric Meters - Code of electricity Metering

Regulatory			
	FCC Part 15	UL	ICES 003
Safety and Emissions	FC	c UL us LISTED	
Contains FCC ID: PUU-HQC2SEM	Contains IC: 10798A-HQC2SEM		
RoHS	Compliant		

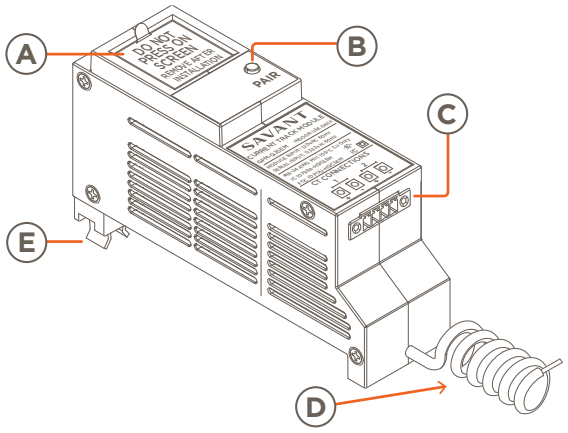
Recommended Load Center Types
Refer to the **Features** section to the right for compatibility information.

Electrical and Safety Characteristics	
Pollution Degree	2
Purpose of Control	Energy Monitoring
Software	Class A
Impulse Voltage	2500V

Construction of Control	
Open Type	Independently mounted for flush mounting

Minimum Supported Release	
Savant OS	da Vinci 10.2.3

Descriptions



A Multi-Page LCD screen that offers the following:
- Real-time energy usage.
- Firmware and Mac Address.
- UID of the connected Host.
- Real-time Bluetooth status connectivity icons.
- A step by step hardware setup process.

B **PAIR Button** - The PAIR button is a multi-use button. The duration that the button is pressed and held determines the function initiated:
- **Press and Release** - Cycles through the screens on the LCD.
- **Press and hold:**
  - **Three seconds** - Launches the Bluetooth discovery mode. An orange gear icon appears during discovery mode
  - **Five seconds** - Resets and clears any error conditions that exist on the module, such as an overload.

C **CT Connections** - Observing polarity, connect a current transformer to each CT Connection input port labeled 1 and 2. Refer to the Install the Current Transformer section later in the document for wiring information.

D **Neutral** - Connect the pigtail type neutral wire to the neutral bar in the electrical service panel.

TIP! Modules with an external neutral wire (pigtail) are supported in Plug-On Neutral electrical panels. In these cases, the pigtail neutral must be connected directly to the neutral bus bar.

E **120V AC Connection** - Plug the Current Track Module onto the 120V AC bus bar in the electrical service panel. The module gets its power from this connection.

Features

- The GPM-Q2SEM-00 is compatible with Schneider/Electric Square D™ QO™ load centers.
- Energy monitoring; +/- 0.5% revenue grade accuracy / 1 sec sample time when used with revenue grade current transformers.
- Communication with a Panel Bridge Controller, Director, or Director Lite is achieved over Bluetooth Low Energy (BLE).
- Color LCD display for easy identification.

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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. Always disconnect the power to the module before making any connections.ring Modules.

IMPORTANT! A licensed electrician is required to install any of Savant's Power and Energy Modules.

CHOC ÉLECTRIQUE! La source alimentation électrique de 120 V AC, 60 Hz présente un risque d'électrocution susceptible de causer des blessures graves aux installateurs et aux utilisateurs finaux.

ATTENTION! Risque de choc électrique - Plus d'un interrupteur de déconnexion peut être nécessaire pour mettre l'appareil hors tension avant l'entretien. Débranchez toujours l'alimentation du module avant d'effectuer des connexions.

IMPORTANT! Un électricien agréé est requis pour installer l'un des modules de surveillance de l'alimentation et de l'énergie de Savant.

Important Information

- Each Current Track Module requires two spaces in an electrical service panel.
- All wiring in the United States must be installed in accordance with the latest adopted edition of the National Electrical Code (ANSI/NFPA 70, NEC)
- All wiring in Canada must be installed in accordance with the latest adopted edition of the Canadian Electrical Code (CSA C222.2 CEC, Part 1) and any provincial or local requirements.
- Use only Savant approved current transformers. A list of supported transformers is available in the Accessories section on the previous page.
- The largest current transformer offered from Savant supports wire diameters up to a 750 kcmil conductor (750 kcmil = just under 1 inch).

Installation into Breaker Panel

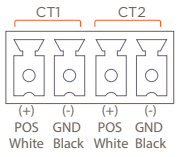
IMPORTANT! See the Single and Three Phase Electrical Panel Installation section before plugging the module into an electrical panel.

1. Remove power from the electrical service panel by switching off the panel's main breaker.
2. Position and install the Current Track Module into the appropriate slots. Press firmly until fully seated onto the bus bars.
3. The next few sections describe how to install and wire a current transformer to the Current Track Module.

Install the Current Transformer

Up to two current transformers can be connected to a GPM-Q2SEM. Information on orienting and connecting the CTs into an electrical panel is described below.

1. Toggle the electrical panel's main breaker Off.
2. Remove the panel's front cover and set it aside. Verify that power is removed from the circuit breakers using a voltage tester.
3. Separate the current transformer by squeezing the knurled panel and pulling/rotating the top open.
4. Place the current transformers around each of the conductors being monitored.
   - Orient the current transformer so the arrow in the middle points towards the source i.e., breaker or utility meter.
   - On solar or generator installations, orient the current transformer so the arrow points away from the solar panels or generator.
5. Close the current transformer around the conductor. For added security, wrap a cable tie around the CT or run the tie through the loops on the front.
6. Route the twisted black and white wires around the breaker panel back to the module. Route the wires so they don't directly come in contact with a live bus bar or terminal.
7. Observing polarity, insert the wires into the supplied 4-pin connector and secure by turning screws clockwise. See the **Making Connections** section to the right for info on attaching the wires.

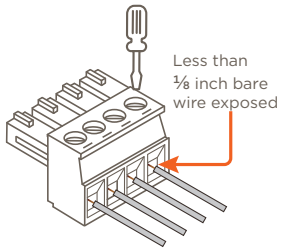


HELPFUL: A negative current will be measured if the wires are reversed or the current transformer is installed backward.

8. Repeat steps 3-7 to install a second current transformer if needed.
9. Ensure the 4-pin connector is fully seated into the module and tighten the connector's screws to .18 ft-lb (.25 N-m) max.
10. Toggle the main breaker back to the On position and re-apply power to the electrical panel. The Current Tracker Module is ready to monitor the circuit the CT is installed over.

Making Connections

1. Remove power if power is applied.
2. Pull to remove the terminal block from the module's rear panel.
3. With a small flat-bladed screwdriver, turn the screws on the top of the connector counterclockwise until the silver crimps on the front of the connector open enough to slide the wire into the square slot.
4. Strip back the insulation of each wire to ¼ inch (6.5 mm). Insert the stripped wire into the proper port. Do not allow more than ⅛ inch (3.2 mm) of bare wire exposed. See image.

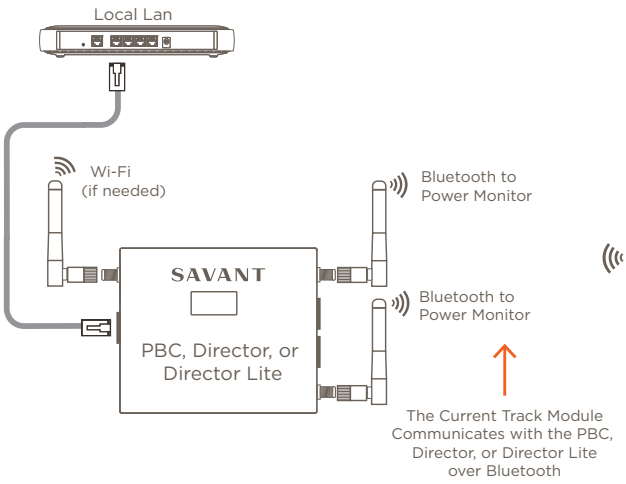


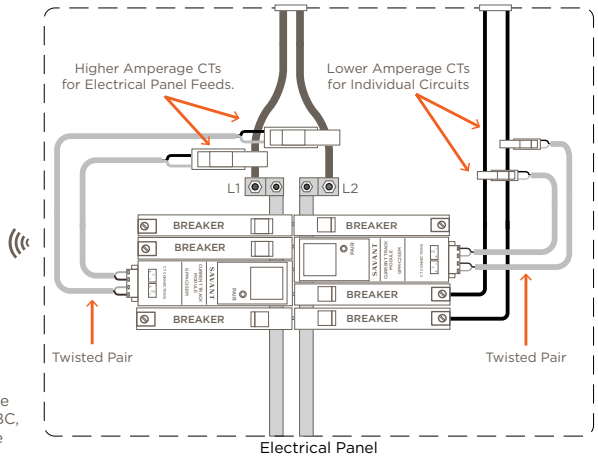
5. Turn the screws clockwise until the silver crimps tighten around the wire. Tug on the wire a bit to verify the wire is installed securely.
6. Continue until all wires are installed.
7. Plug the terminal block into the appropriate port.
8. Repeat steps 2-7 to install a second current transformer.
9. Reapply power.

Additional Information

- Savant Power Deployment Guide - Sol-Ark
- Savant Power System Deployment Guide - Savant Power & Light App

System Overview





HELPFUL! 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.

LCD Screen Orientation

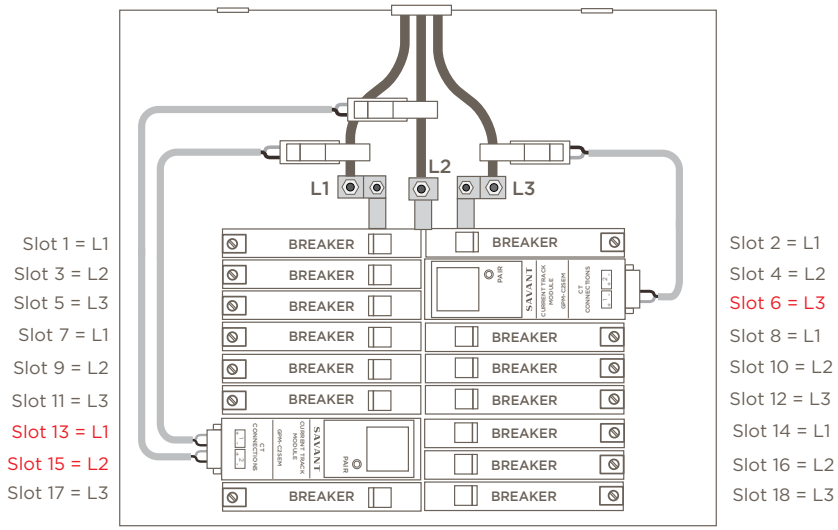
During power-up, the text and icons on the LCD screen are oriented so they are right side up. If the text and icons are upside down, unplug and replug the Current Track Module to power cycle it. The LCD screen will reorient itself during boot-up, so the screen becomes right side up.

Single and Three Phase Electrical panel Installations

In a single-phase electrical panel, phases L1 and L2 alternate slots. In a three-phase panel, phases L1, L2, and L3 repeat every three spaces. The slot in the electrical panel that the Current Track Module is plugged into, and the wire being monitored must be on the same phase. Not doing this will result in the module's LCD displaying a negative power. See the diagram below for more information.

IMPORTANT!

- The Current Track Module is plugged into slots 13 and 15 and is positioned so Port 1 is plugged into the L1 phase in the panel. Therefore, the current transformer wired to Port 1 must monitor a wire connected to the L1 Phase.
- Port 2 on the Current Track Module is plugged into the L2 Phase so the current transformer wired to port 2 must monitor a wire connected to the L2 Phase.
- The same is true for ports connected to the L3 Phase. The wire being monitored must be connected to the L3 Phase.



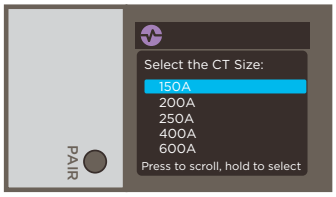
Hardware Setup Process

Useful Information

- A hardware setup screen opens when the Current Track Module is first powered on. Follow the instructions in the On-Device Setup Process Screens section for information on navigating the setup options.
- During the hardware setup process:
  - Press and release the PAIR button to scroll through the menu options.
  - Press and hold the PAIR button to save the highlighted menu option and then move to the next screen.
- Select the **Exit** option to bypass the hardware setup process.

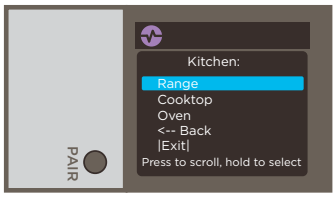
On-Device Setup Process Screens

With the module installed and powered, a series of On-Device setup screens are made available to configure the type and location of the device being monitored by the Current Track Module. The progression of screens for this process is shown below. If a user decides not to use this process, they can simply **|Exit|** out of the setup and can instead set up the device using the Savant Power & Light mobile app.

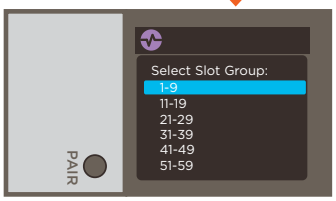


- Select the appropriate sized current transformer for the monitored circuit.
- Optionally, select **|Exit|** to skip the process
- Select the **More -->** option.

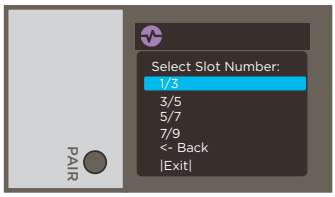
- Select the room the device being monitored is located.



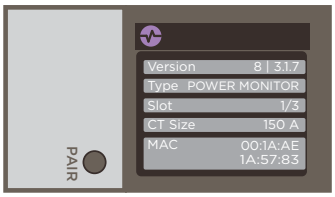
- Select the circuit to be monitored.



- Select a Slot Group.
- Each Slot Group spans 9 slots.
- Slot Group 1-8 is offered for panels with only one row of breaker slots.



- Select the slots where the Current Track Module is installed.
- Each module spans two slots in the service panel (i.e. slots 1 and 3). The module's orientation determines if odd or even slots are offered on the screen.



- Press and release the PAIR button to locate the above screen and verify the information is correct.

HELPFUL!

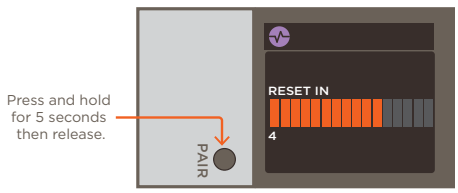
- The screen options differ depending on the selections made.
- After the setup process, if a mistake was made, to clear the labels from the module's display, scroll to the **Gateway** screen, press and hold the **PAIR** button for 1 second, and follow the **RESET** instructions.
- After configuring the module using the On-Device setup, the module is ready to be paired to a Director or Director Lite. Refer to the **Savant Power System Deployment Guide - Power & Light App** for pairing instructions.

LCD Screen Icon Descriptions

Icon	Description
	This icon indicates the device is a Current Track Module. Other modules such as the relay or dimmer display a different icon.
	The monitor is communicating with a controller such as a Panel Bridge Controller (PBC) or Director over Bluetooth. This icon appears when the module is discovered in the OLA server and communicating with a PBC or Director.
	The module is in Bluetooth Discovery Mode and ready to connect to any PBCs or Directors discovered by the OLA server. To put the monitor into this mode, press and hold the PAIR button for three seconds until the icon appears. Similarly, it can be taken out of Discovery Mode by pressing the PAIR button for 3 seconds until the Discovery Mode icon disappears. See the **Bluetooth Discovery Mode** section below for more information.

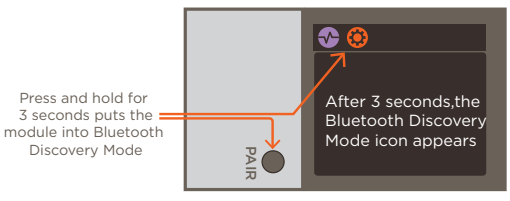
Reset the Module

From any screen, press and hold the **PAIR** button for 5 seconds until the **Reset** screen opens; then release. A **RESET IN** screen opens and counts down from 5 seconds and resets. After the reset, any error conditions that exist, such as an overload, are cleared.



Bluetooth Discovery Mode

From any screen, press and hold the **PAIR** button for three seconds until the Bluetooth Discover icon appears, then release. In Discovery Mode, the module can now be connected to a PBC or Director. Discovery Mode automatically cancels itself after 5 minutes. At that point the module will need to be put back into this mode to be discovered.



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