



FranklinWH Smart Circuits Module Installation Guide

Version 1.1.03

©2024 FranklinWH Energy Storage Inc. All rights reserved.

All information in this Manual is subject to the copyright and other intellectual property rights of FranklinWH Energy Storage Inc. This manual may not be modified, copied or reproduced, in whole or in part, without the prior written permission of FranklinWH Energy Storage Inc.

Please visit [FranklinWH Support](#) for the latest Franklin Home Power documents.

All brands and trademarks mentioned in this document are the property of their respective owners, and their use in this document does not imply the sponsorship or recognition of their products or services.

Please read this document carefully to ensure the best reliability of the product and your warranty eligibility. For further information about the warranty, please refer to the **FranklinWH Limited Warranty**.

This document is intended for use by professional installation and maintenance service providers only and no statements, information or recommendations in this document constitute any express or implied warranty.



Please read this document carefully before installing or using the Franklin Home Power equipment. Failure to follow any instructions or warnings in this document may result in damage to the equipment, personal electric shock, severe injury, or even death.

Product Information

This document applies only to the following products: aGate X and the FranklinWH Smart Circuits Module.

FranklinWH Energy Storage Inc. ("FranklinWH") reserves the right to make any improvements to the product, and the contents in this document shall be subject to updates without further notification.

All images and pictures provided in this Manual are only for demonstration purposes and may differ in detail from the product, based on the product version.

Feedback

If you have any questions or comments, please send us an email at: service@franklinwh.com

Disposal of Scrapped Products

Scrapped products (including their internal chemicals and electrical materials) should not be disposed of with household waste. Please refer to your local laws and regulations regarding disposal.



Overview



The Smart Circuits Module is an optional aGate component. It provides the ability to connect up to three circuits in order to remotely manage unique devices, from anywhere and anytime.

The three Smart Circuits are as follows:

- Smart Circuit 1 & Smart Circuit 2 are 1-pole circuit breakers which may be merged into a single 2-pole circuit.
- Smart Circuit 3 requires a 2-Pole circuit breaker.

Through the FranklinWH App, homeowners can schedule times for the circuits to automatically turn on and off. For instance, the EV charger may be set to only run from 1:00 am to 5:00 am, during a low demand, low-cost period.

Additionally, homeowners can manually turn on and turn off individual Smart Circuits as needed. An example is that of turning on the air conditioner shortly before returning home.

Preparation

The Smart Circuits Module does not come with breakers. Before heading to the installation site, evaluate the installation needs and bring all necessary components.

Smart Circuits Module Installation

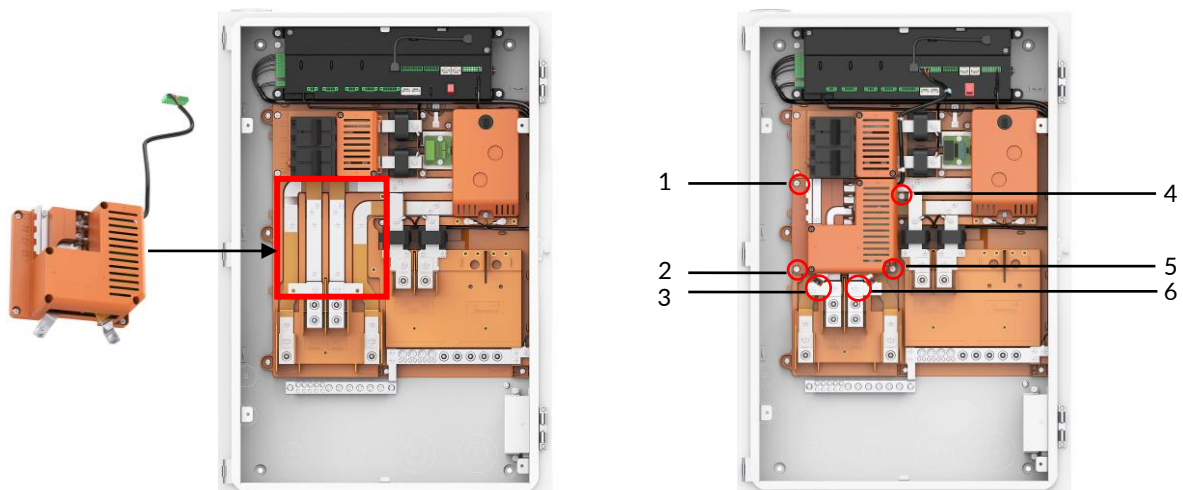
Before installation, make sure all breakers in the aGate and all switches connected to the aGate are disconnected. Use a multimeter to check the voltages at both input and output terminals of aGate are zero (0).



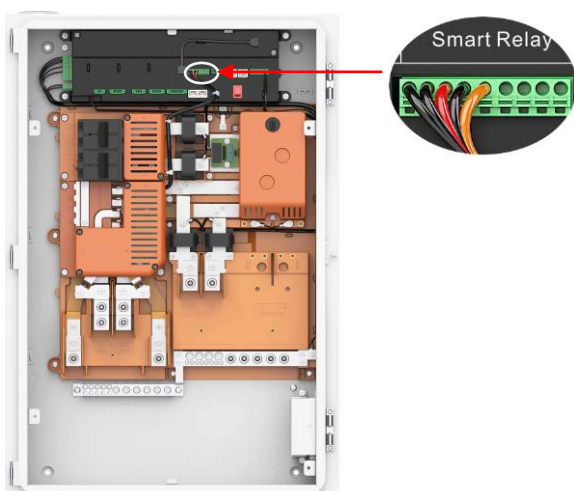
DANGER: Despite control through the FranklinWH App, the remote OFF status does not mean the circuit has been physically disconnected. It is important to test the circuit status before performing installation.

Do not touch the output ports of the Smart Circuits Module directly or indirectly through conductive material before disconnecting the circuit breakers.

1. Place the Smart Circuits Module in the position as shown in the figure below and check that all installation holes 1 to 6 have been properly aligned.

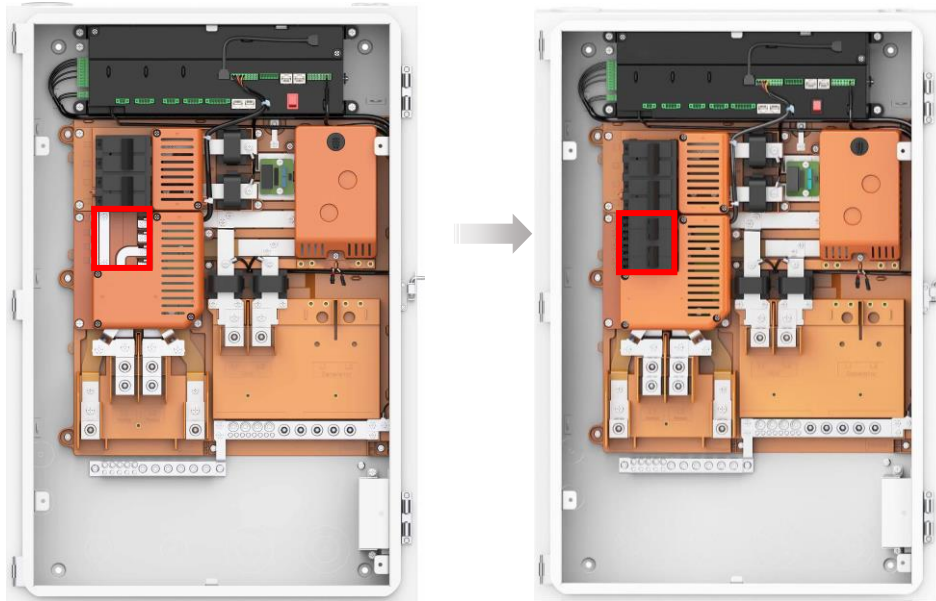


2. Tighten the four M5 x 12 combination screws at positions 1 to 4 to 2.21 lbf.ft (3.0 Nm) using a Phillips head screwdriver. Tighten the two M6 x 16 combination screws at positions 5 and 6 to 4.42 lbf.ft (6 Nm), using a torque screwdriver.
3. Insert the cables into the aGate **Smart Relay** port. Fix the cables with cable ties and remove the excess tie.



Install Smart Circuit Breakers

Loads connected to Smart Circuits always require a breaker. The Smart Circuit breakers are not included and must be ordered separately. Refer to [Appendix 1](#) for compatible breaker information.

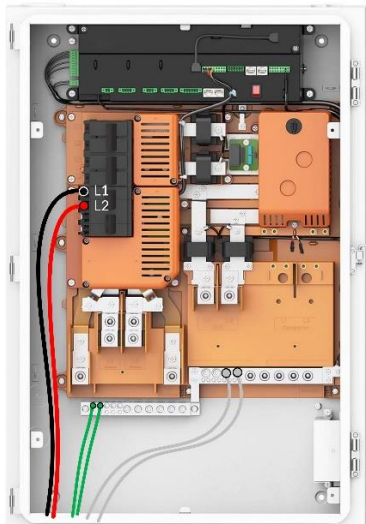
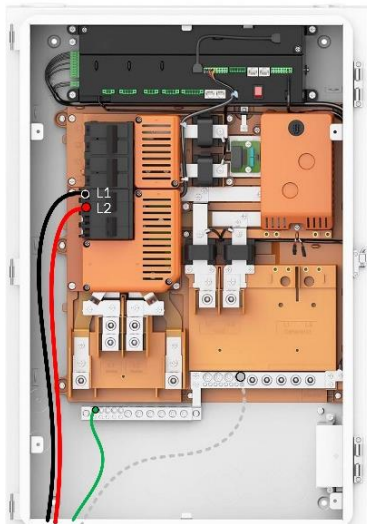
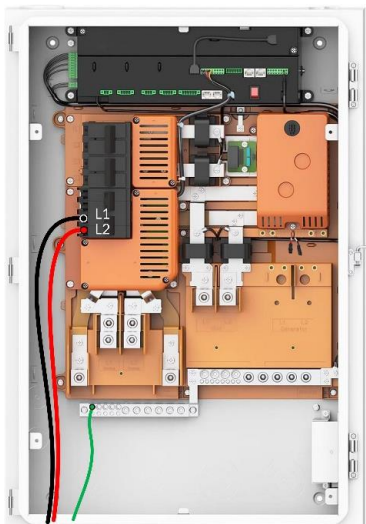


Connect loads to Smart Circuits



NOTE: Refer to the breaker specifications for breaker output cable screws tightening torque valued. The ground cable does not pass through the circuit breaker.

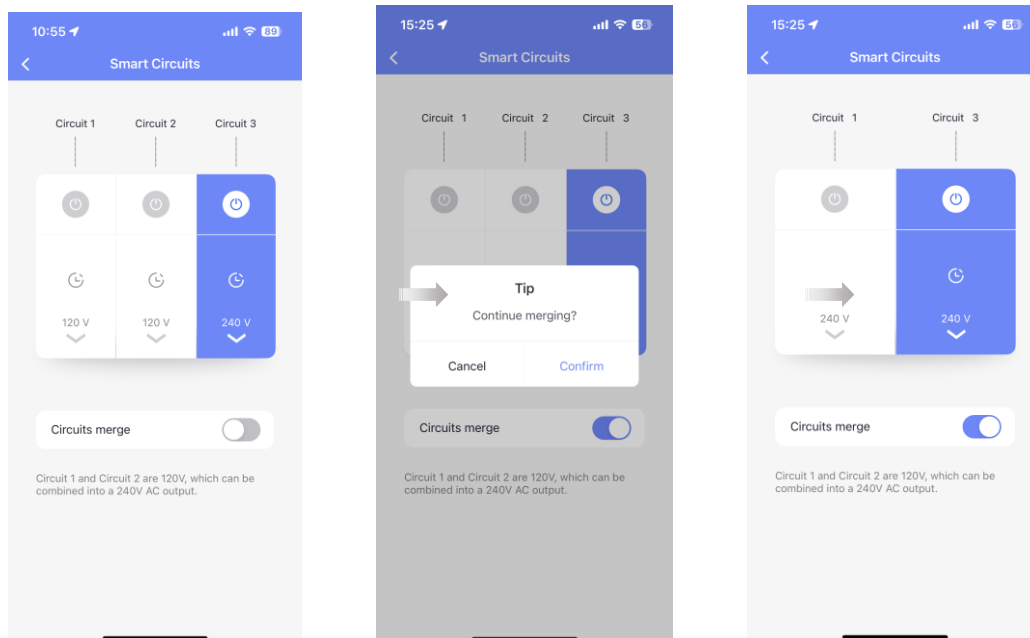
Follow the instructions below to connect loads to Smart Circuits. Refer to [Appendix 2](#) for wiring requirements.

Load Connections to Smart Circuit 1 / Smart Circuit 2		Load Connections to Smart Circuit 3
<p>If Smart Circuit 1 and Smart Circuit 2 connect two 1-pole breakers, connect the load conductors to the Smart Circuit module output terminals on aGate (L1, L2, Neutral & Ground), as shown below.</p>	<p>If Smart Circuit 1 and Smart Circuit 2 connect one 2-pole breaker, connect the load conductors to the Smart Circuit module output terminals on aGate (L1, L2, Neutral & Ground), as shown below.</p>	<p>Smart Circuit 3 is only used for 240 V loads. Connect the load conductors to the Smart Circuit module output terminals on aGate (L1, L2 & Ground), and don't connect the load neutral line to the aGate, as shown below.</p>
		

Configure Smart Circuits using the FranklinWH App

After system installation and wiring, login to the FranklinWH App on the installer account and navigate to the **Smart Circuits** screen.

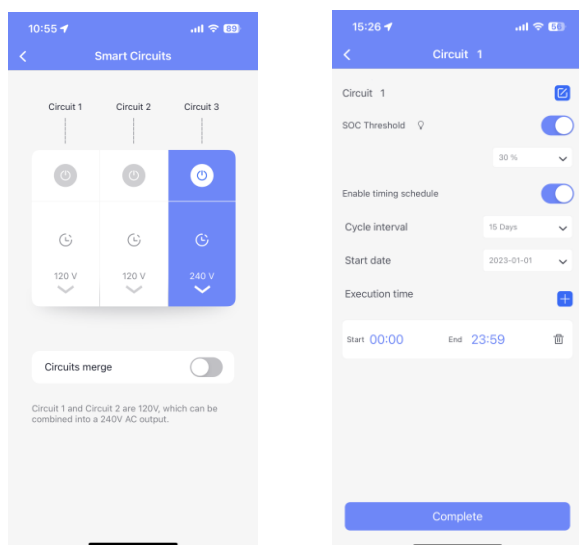
1. If Smart Circuit 1 and Smart Circuit 2 share the same 2-pole breaker, enable the **Circuits Merge** slider and follow the on-screen prompt to complete the configuration.



NOTE: Circuits must remain in agreement with the physical electrical wiring.

2. Click on the circuit box to customize a power supply plan for each specific circuit. Each circuit is allowed to be named with up to 20 characters.

When the aPower battery capacity drops to the set SOC Threshold, the Smart Circuit will be automatically disconnected to reduce power consumption.



3. Click **Complete**. Repeat the above steps to configure all Smart Circuits.

For more information, refer to [Franklin Home Power Commissioning Guide](#).

Appendix 1 Recommended Smart Circuits Breakers

Breaker for Smart Circuit 1 and 2 (1-Pole)			
S/N	Model	Current	Description
1	CH120	20 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 20 A/240 V
2	CH130	30 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 30 A/240 V
3	CH135	35 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 35 A/240 V
4	CH140	40 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 40 A/240 V
5	CH145	45 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 45 A/240 V
6	CH150	50 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 50 A/240 V
7	CHF130	30 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 30 A/240 V
8	CHF135	35 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 35 A/240 V
9	CHF140	40 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 40 A/240 V
10	CHF145	45 A	Eaton#Circuit Breaker; 1-Pole, 10 kAIC, 45 A/240 V
11	CHF150	50 A	Eaton # Circuit Breaker; 1-Pole, 10 kAIC, 50 A/240 V
Breaker for Smart Circuit 1 + Circuit 2 (2-Pole)			
S/N	Model	Current	Description
1	CH230	30 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 30 A/240 V
2	CH235	35 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 35 A/240 V
3	CH240	40 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 40 A/240 V
4	CH245	45 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 45 A/240 V
5	CH250	50 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 50 A/240 V
6	CHF230	30 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 30 A/240 V
7	CHF235	35 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 35 A/240 V
8	CHF240	40 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 40 A/240 V
9	CHF245	45 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 45 A/240 V
10	CHF250	50 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 50 A/240 V
Breaker for Smart Circuit 3			
S/N	Model	Current	Description
1	CH230	30 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 30 A/240 V
2	CH235	35 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 35 A/240 V
3	CH240	40 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 40 A/240 V
4	CH245	45 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 45 A/240 V
5	CH250	50 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 50 A/240 V
6	CH260	60 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 60 A/240 V
7	CH270	70 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 70 A/240 V
8	CH280	80 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 80 A/240 V
9	CHF230	30 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 30 A/240 V
10	CHF235	35 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 35 A/240 V
11	CHF240	40 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 40 A/240 V
12	CHF245	45 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 45 A/240 V
13	CHF250	50 A	Eaton#Circuit Breaker; 2-Pole, 10 kAIC, 50 A/240 V

Appendix 2 Wiring

Terminal Name	Wire Gauge	Tool	Strip Length	Torque
Dual-lug terminal	4 AWG–250 MCM CU/AL	8 mm hex wrench 5/8-18 UNF hex screw	1 in. (upper) 2 in. (lower)	3/0 AWG–250 MCM 275 LB-IN 4 AWG–2/0 AWG 110 LB-IN
Single-lug terminal	4 AWG–250 MCM CU/AL	8 mm hex wrench 5/8-18 UNF hex screw	1 in	3/0 AWG–250 MCM 275LB-IN 4 AWG–2/0 AWG 110LB-IN
Neutral bar terminal lug	4 AWG–250 MCM CU/AL	8 mm hex wrench 5/8-18 UNF hex screw	1 in	3/0 AWG–250 MCM 275 LB-IN 4 AWG–2/0 AWG 110 LB-IN
	14 AWG–2/0 AWG CU/AL	5 mm hex wrench 7/16-20 UNF Hex head screw	1 in.	3 AWG–2/0 AWG 110 LB-IN 14 AWG–4 AWG 35 LB-IN
	14 AWG–4 AWG CU/AL	Straight screwdriver 1/4-28 UNF	0.6 in.	14 AWG–4 AWG 26 LB-IN
Ground bar terminal lug	14 AWG–2/0 AWG CU/AL	5mm hex wrench 7/16-20 UNF hex screw	0.8 in.	3 AWG–2/0 AWG 110 LB-IN 14 AWG–4 AWG 35 LB-IN
	14 AWG–4 AWG CU/AL	Straight screwdriver 1/4-28 UNF	0.4 in./0.8 in.	14 AWG–4 AWG 26 LB-IN