POWER SHARING FOR GEN 3 WALL CONNECTOR

Introduction

Power sharing is a firmware feature that allows up to **six** Gen 3 Wall Connectors to limit their total grid current draw to a specified maximum current. This enables more connector installations and higher charging throughput by allowing individual Wall Connectors to be installed at their full current branch circuit capability, while setting a total allocated current so that the electrical service is not overloaded.

Firmware

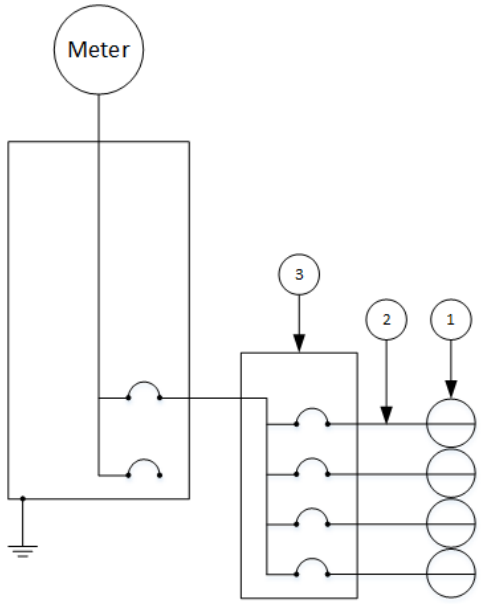
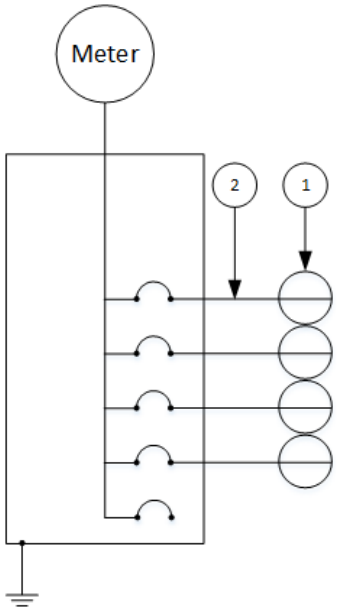
Wall Connector firmware version **21.18.0 or higher** is required for Power Sharing operation. Connecting a Wall Connector to local Wi-Fi will allow for automatic firmware updates.

Terms

Power sharing network	A set number of Gen 3 Wall Connectors commissioned for wireless communication. A power sharing network shall consist of one Leader and multiple Follower Wall Connectors.
Leader	Refers to the Wall Connector unit that is set up as the sole controller of current allocation in a power sharing network. Acts as the primary controller of Follower Wall Connectors.
Follower	A Wall Connector under the control of a Leader.
Network Limit	The maximum total current a power sharing network is allowed to consume in amps.
Network Current	The sum total current of all Wall Connectors set up in a sharing network, in amps.
Network Size	The total number of Wall Connectors configured in a power sharing network.
Fallback (Fair) Limit	The maximum safe fallback current for a unit if communication is lost. Equal to (network limit) / (network size) bounded to within a single unit's capability.
Pilot Current	The current limit advertised to a connected vehicle by a single Wall Connector in amps.
Vehicle Current	The actual measured current consumption of a vehicle connected to a Wall Connector in amps.
Branch circuit	The circuit conductors between the final overcurrent device protecting the circuit and the Wall Connector.
Shared panel	A load center with multiple Wall Connector branch circuits, in additional to other unrelated electrical loads.
Dedicated EV panel	A load center which is fully dedicated to Tesla Wall Connectors installed for power sharing.

Installation Options

Electric vehicle branch circuits can be installed in shared panels or dedicated EV panels.

Example 1: Dedicated EV Panel	Example 2: Shared Panel
	
When power sharing from a dedicated EV panel, the installing electrician can set the network limit to match the sub panel capacity.	When power sharing from a shared panel, the installing electrician should conduct a load calculation to determine the network limit.

Setup Instructions - Order of operations

Step 1: Confirm each Wall Connector has firmware version 21.18.0 or higher to enable power sharing. In the Wall Connector Commissioning wizard, this can be found under the 'Software' card

- Note: When connecting to multiple wall connector, disable the auto-join network feature to ensure that your device does not re-join a Wall Connector you are no longer working on

Step 2: Once firmware version is confirmed, in the 'Installation' card of the comissioning wizard, set the country and power level for each Wall Connector. It is recommended to install each at the max circuit capacity; however, the branch circuit can be set to a lower output.

Step 3: Designate a leader Wall Connector and add its follower units - see next page for more detailed

Step 4: Tap the 'Enabled' button on the leaders power sharing configuration page

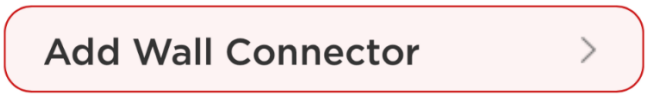
Step 5: Connect the leader Wall Connector to the local Wi-Fi network, the leader in a power sharing network will share the Wi-Fi credentials with the follower units

Power Sharing Commissioning

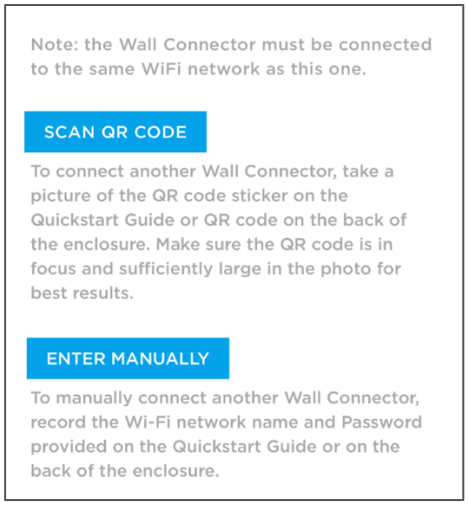
To begin, connect to the Commissioning Wizard for one of the Wall Connectors. This Wall Connector will become the “leader” unit and will be responsible for communicating available amperage to the network.

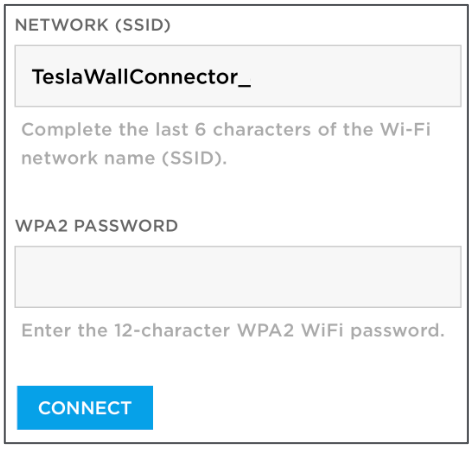
Select “Power Sharing” from the Commissioning Wizard:

Select “Add Wall Connector” to begin pairing process:



Follow on screen instructions to add a second Wall Connector by either scanning the QR code from QuickStart guide or manually entering the SSID and WPA2 info:

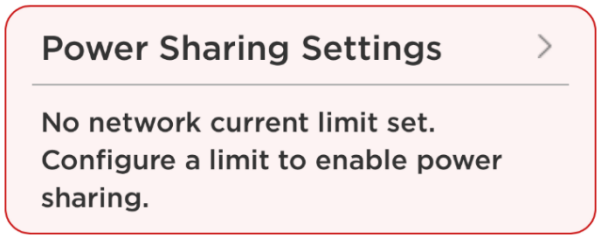


SCAN QR CODE Locate QuickStart guide of the Wall Connector you want to add to the network	ENTER MANUALLY Input SSID and WPA2 info from the Wall Connector you want to add to the network
	

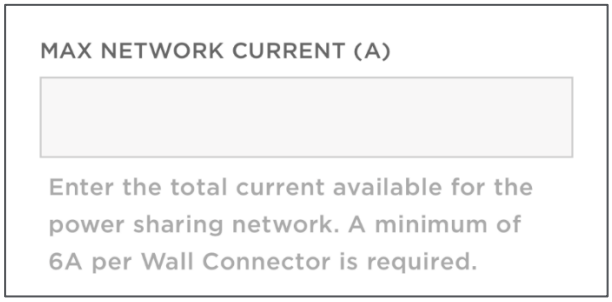
Note: The Wall Connector you are *adding* must be broadcasting its Wi-Fi SSID signal. Press and hold the cable handle button for 5 seconds to prompt the unit to broadcast.

Repeat process to add more Wall Connectors to the network. All added Wall Connectors become followers in the network.

Select “Power Sharing Settings” to program a network limit.



In the field, input the network limit:



Important note: This is the maximum total current a power sharing network is allowed to consume in amps.

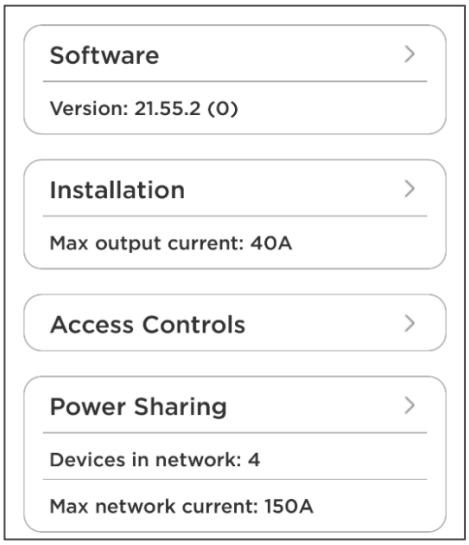
This represents the continuous current which the network will not exceed. An electrician will need to determine the correct amount of amperage and confirm that the load center has appropriate overcurrent protection

Expected Behaviors

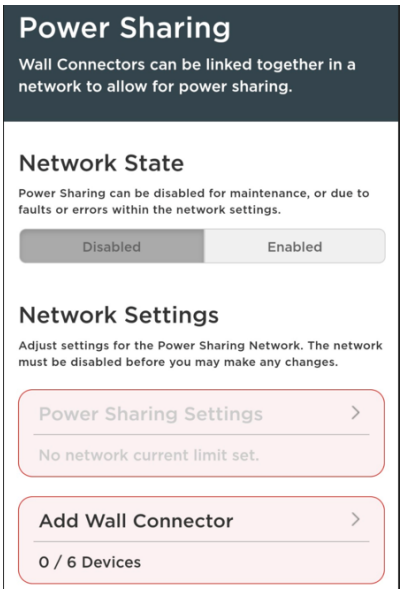
- SSID access point of all Wall Connectors in a power sharing network will continue to broadcast.
- Removing a Wall Connector from a network will temporarily set that device’s max output to 6 amps. Cycle circuit breaker to reset Wall Connector to original configuration setting
- Leader Wall Connector will share site Wi-Fi with follower Wall Connectors

How to View Existing Power Sharing Networks

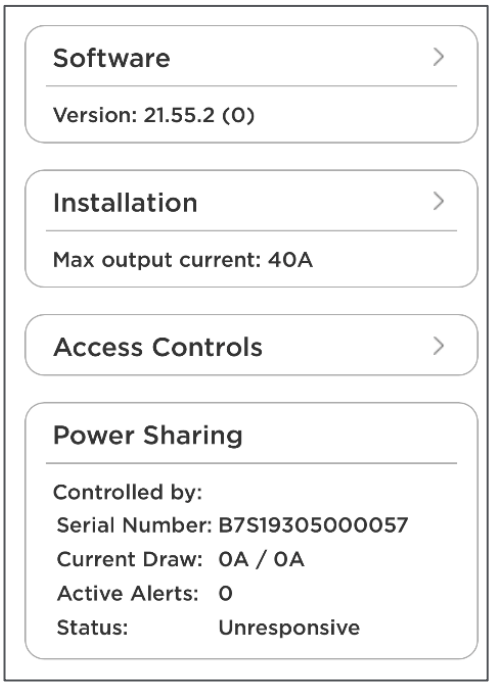
Leader Home Page



Leader Settings Page



Follower Home Page



Follower Settings Page