



# POWERWALL SYSTEM COMPATIBILITY

## Supported System Configurations

In addition to Powerwall(s) for energy storage, every system requires one Islanding Controller and one Site Controller:

1. The **Islanding Controller** manages the system's transition to and from backup operation. The Islanding Controller is the Backup Switch or Gateway 3 if one is present; otherwise it is the Backup Gateway 2
2. The **Site Controller** is the computer that coordinates site functions like charging, discharging, self-consumption, power control, etc.
  - Backup Gateway 2 is the Site Controller when installed with Powerwall 2 or Powerwall+
  - Powerwall+ is the Site Controller when installed with Backup Switch
  - Powerwall 3 is always the Site Controller when installed with any Islanding Controller


Table 1. Powerwall 2 and Powerwall+ Compatibility per System

Backup Switch <sup>2</sup> / Backup Gateway 2	Number of Powerwall+ Units	Maximum Number of Powerwalls
Backup Switch <sup>2</sup> and Backup Gateway 2 <sup>1</sup>	0	10
Backup Gateway 2	0	10
Backup Switch <sup>2</sup> , Backup Gateway 2, or none (non-backup systems)	1	3
Backup Switch <sup>2</sup> , Backup Gateway 2, or none (non-backup systems)	2	2

<sup>1</sup>Powerwall 2 installed with Backup Switch and Backup Gateway 2 is an allowable configuration, but Tesla strongly recommends installing Powerwall+ with Backup Switch instead for the following reasons:

- Powerwall+ with Backup Switch achieves the same installation goals (with or without DC solar input) without requiring a Backup Gateway 2, leading to material and labor savings
- Powerwall 2 with Backup Switch and Backup Gateway 2 is not a PCS-certified configuration

<sup>2</sup>Backup Switch is not certified for installation in Canada; any installation configuration that includes Backup Switch is not applicable for the Canadian market.

 **NOTE:** Backup Gateway 1 is not compatible with Powerwall+, Powerwall 3, Backup Switch, or Gateway 3.


 **NOTE:** While only 10 Powerwalls can be installed per Gateway, more than one Gateway can be installed per site. See the [Multiple Gateways on a Single Site application note](#) for more information.

Table 2. Powerwall 3 Compatibility per System

Backup Switch <sup>2</sup> / Backup Gateway 2 / Gateway 3	Maximum Number of Powerwall 3 Units <sup>3</sup>	Maximum Number of Expansion Units <sup>4</sup>
Backup Switch <sup>2</sup> , Backup Gateway 2, or Gateway 3 (backup systems only)	4	3

<sup>3</sup>Powerwall 3 is not compatible with Powerwall 2 or Powerwall+ at this time.

<sup>4</sup>Powerwall 3 units with Tesla P/N 1707000-xx-J or greater are compatible with Powerwall 3 Expansion units.



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## Service Type

Site Type	Residential
Service Type	Split phase - 240V / 120V
Metering Compatibility	See <a href="#">Metering Compatibility</a> in the <i>Residential Energy Products Metering Guide</i>
Load Limits	See the <a href="#">Loads in Backup Cheat Sheet</a>

## Solar Compatibility

Preferred solar inverter	Tesla Solar Inverter, Powerwall+, or Powerwall 3
Recommended alternative solar inverters	Modern solar inverters with frequency-watt droop control that do not drive overvoltages during a fault (such as Enphase IQ8, Delta Mario, SolarEdge HDWave, SMA, or Sunnyboy)
Allowable solar inverters in backup circuit	Any solar inverter certified to UL 1741
Maximum solar size outside of backup circuit	Unlimited (local utility limits may apply)
Maximum solar size within backup circuit	Tesla solar: Up to (2) Powerwall+ units and/or up to (5) Tesla Solar Inverters (200A uncontrolled)
	Third party solar inverters: 7.68 kW AC solar per Powerwall <sup>5</sup> (200A uncontrolled)

<sup>5</sup>If DC system size is less than AC system size, the DC rating can be used to calculate the solar / Powerwall ratio; note that this ratio is not impacted by Powerwall 3 Expansion units if present

## Powerwall 2 / Powerwall+ Compatibility with Other Energy Systems

Hydro / Wind / Combined heat and power systems	Yes <sup>6</sup>
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<sup>6</sup>Other energy systems must be UL1741 listed and must meet the max PV AC size to be installed inside the backup circuit. These systems must be metered like Solar and will appear in the customer app as solar generation. Powerwall warranty will be subject to "any other application or combination of applications" when paired with other non-solar renewables.



**NOTE:** Powerwall 3 is not currently compatible with other energy systems.



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## Backup System Compatibility

Connect Powerwall to upstream utility	Yes
Charging of Powerwall from upstream generator	No
Automatic generator control	No
Asynchronous backup systems (includes generators, vehicles, Powerwall 1, third party battery storage systems, UPS, etc.)	Yes (see the <a href="#">Powerwall Application Note on Installing Powerwall with Third Party Backup Systems</a> for allowable configurations) <sup>7,8</sup>

<sup>7</sup>Although Powerwall systems can be installed with asynchronous third party backup systems, Tesla is not responsible for the performance of the third party system or related performance issues.

<sup>8</sup>Powerwall 3 can be installed with a downstream generator. At this time, it cannot be installed with any asynchronous battery or solar system (e.g. Powerwall 1, third party battery storage systems, etc.).

## Off-grid System Compatibility

Off-Grid system with no grid access	Not supported
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## Modes of Operation

	With Solar	Without Solar
Home Energy monitoring	Powerwall, Solar, Grid, Home	Powerwall, Grid, Home
Self-Powered mode	Yes <sup>9</sup>	N/A
Configurable backup reserve while in other modes	Yes (0-100%) <sup>9</sup>	Yes (0-100%) <sup>9</sup>
Solar charging during outage	Yes (may not be supported where third party solar inverter is configured with an export limit)	N/A
Time-Based Control mode	Yes	Yes
Powerwall grid charging	Yes (where allowed by utility and when not claiming the investment tax credit (ITC)) <sup>9</sup>	Yes <sup>9</sup>
Powerwall grid export	Yes (where allowed by utility)	Yes (where allowed by utility)
Special Mode: Preconditioning	Yes	Yes
Special Mode: Preventative maintenance on thermal system	Yes	Yes
Special Mode: Storm watch	Yes	Yes

<sup>9</sup>Some aggregation programs and restricted use applications do not conform exactly to this configuration.