

Powerwall 3

Power Everything



Powerwall 3 is a fully integrated solar and battery system designed to accelerate the world's transition to sustainable energy. Powerwall 3 can store solar or grid energy for later use when the sun goes down or when the electricity prices are high; lowering their electricity bills, reducing their reliance on the grid, and power their homes during a grid outage. Once installed, customers can manage their home energy system using the Tesla App and customize system behavior to meet their energy goals.

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.04 kW AC of continuous power per unit. It has the ability to store up to 13.5 kWh of energy and start heavy loads rated up to 185 A LRA, meaning a single Powerwall 3 can support the power needs of most homes. Powerwall 3 is designed for fast and efficient installations, modular system expansion, and simple connection to any electrical service.



Powerwall 3 Technical Specifications

System Technical Specifications

Model Number	1707000-xx-y
Nominal Grid Voltage (Input & Output)	230 VAC
Grid Type	Single phase
Frequency	50 Hz
Solar to Battery to Home/Grid Efficiency	89% ^{1,2}
Solar to Home/Grid Efficiency	97.5% ³
Supported Islanding Device	Backup Gateway 2
Connectivity	Wi-Fi (2.4 and 5 GHz), Ethernet, Cellular (LTE/4G ⁴)
Hardware Interface	Dry contact relay 60V 2A, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters
AC Metering	Accuracy (+/- 0.5%)
Protections	Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), Integrated DC Isolator
Customer Interface	Tesla Mobile App
Warranty	10 years ⁵

Battery Technical Specifications

Nominal Battery Energy	13.5 kWh AC ²							
Nominal AC Output Power at 230 V (kW) ⁶	3.68	5	6	7	8	9	10	11.04
Maximum Apparent Power (kVA)	3.68	5	6	7	8	9	10	11.04
Maximum Continuous Current (A)	16	21.7	26.1	30.4	34.8	39.1	43.5	48
Overcurrent Protection Device (A)	20	25	32	32	40	50	50	63
Maximum Continuous Charge Power	Configurable up to 5 kW							
Output Power Factor Rating	0 - 1 (Grid Code configurable)							
Maximum Output Fault Current (1 s)	160 A							
Maximum Short-Circuit Current Rating	10 kA							
Load Start Capability	185 A LRA (Locked Rotor Amps)							
Power Scalability	Up to 4 Powerwall 3 units supported							

Solar Technical Specifications

Maximum Solar STC Input	20 kW
Withstand Voltage	600 V DC
PV DC Input Voltage Range	60 – 550 V DC
PV DC MPPT Voltage Range	60 – 480 V DC
MPPTs	3
Maximum Current per MPPT (I_{mp})	26 A
Maximum Short Circuit Current per MPPT (I_{sc})	30 A

¹ Typical solar shifting use case.

² Values provided for 25°C (77°F), at beginning of life. 3.3 kW charge/discharge power.

³ Tested using CEC weighted efficiency methodology.

⁴ The customer is expected to provide internet connectivity for Powerwall 3; cellular should not be used as the primary mode of connectivity. Cellular connectivity subject to network operator service coverage and signal strength.

⁵ Powerwall 3 must be reliably connected to the internet to secure the full 10-year warranty.

⁶ Powerwall 3 can output up to 15.4 kW AC power at 64 A and 240 V.

Powerwall 3 Technical Specifications

Environmental Specifications

Operating Temperature	-20°C to 50°C ⁷
Operating Humidity (RH)	Up to 100%, condensing
Storage Temperature	-20°C to 30°C, up to 95% RH, non-condensing, State of Energy (SOE): 25% initial
Maximum Elevation	3000 m
Environment	Indoor and outdoor rated
Enclosure Rating	IP55
Ingress Rating	IP67 (Battery & Power Electronics) IP55 (Wiring Compartment)
Pollution Rating	PD3
Operating Noise @ 1 m	< 50 db(A) typical, < 62 db(A) maximum

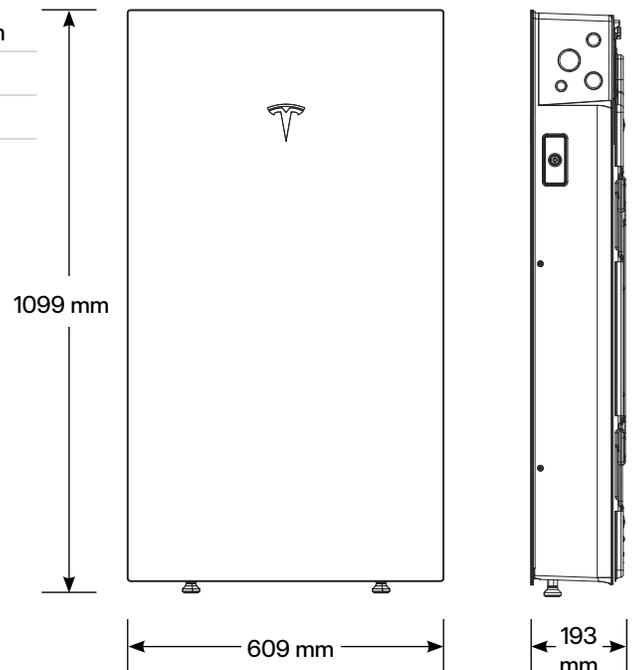
⁷ Powerwall 3 is designed to operate in all climates and in direct sunlight, from temperatures of -20°C to 50°C. Performance may be de-rated at operating temperatures above 40°C.

Compliance Information

Certifications	IEC 61000-6-1:2016, IEC 61000-6-3:2020, IEC 62477-1:2022, IEC 62109-1:2010, IEC 62109-2:2011, IEC 62933-5-2:2020, IEC 62619:2022, UL 9540A, UN 38.3, Radio Equipment Directive 2014/53/EU, EN 50549-1:2023, EN 50549-10:2022, G98 Issue 1 - Amd 7:Oct 2022, G99 Issue 1 - Amd 9:Oct 2022, G100 Issue 2 - Amd 2
Grid Connection	Single phase
Emissions	FCC Part 15 Class B, ICES 003
Environmental	RoHS Directive 2011/65/EU REACH Regulation EC 1907/2006
Seismic	AC156, IEEE 693-2005 (high)
Fire Testing	Meets the unit level performance criteria of UL 9540A

Mechanical Specifications

Dimensions	1099 x 609 x 193 mm
Weight	130 kg
Mounting Options	Floor or wall mount



Backup Gateway 2 Specifications

Backup Gateway 2 provides energy management and monitoring for solar self-consumption, time-based control, and backup operation. When Powerwall 3 is in Backup mode, Backup Gateway 2 controls connection to the grid, detects outage, and provides backup power.

Electrical Specifications

AC Voltage (Nominal) ¹	230 V (Line-to-Neutral) 400 V (Line-to-Line)
Feed-In Type	Single phase, Three phase
Grid Frequency	50-60 Hz
Maximum Overcurrent Protection Device	100 A (single-phase service) 80 A (2- and 3-phase service)
Maximum Input Short Circuit Current ²	16 kA
Overvoltage Category	Category III
AC Meter	Accuracy (+/- 0.2 %)
Compatible Earthing Systems ³	TN or TT networks
Distribution boards intended to be operated by ordinary persons (DBO) Type	Type B

¹230 V (Line-to-Line) is not a supported three-phase configuration.

²16 kA rating when installed with current limiting fuse compliant to BS 88.3; 10 kA rating without fuse.

³TT earthing networks supported for Gateways with part number 1152100-13-H and higher.

Environmental Specifications

Operating Temperature ⁴	-20°C to 50°C
Operating Humidity (RH)	Up to 100%, condensing
Maximum Altitude	3000 m
Ingress Rating	IP55
Environmental Category	Outdoor rated
Wet Location Rating	Yes
Pollution Degree	PD2

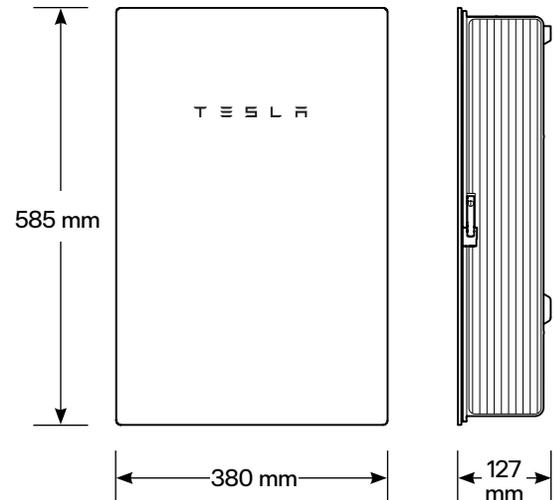
⁴Performance may be de-rated in extreme ambient temperatures.

Compliance Information

Safety	IEC 61439-1, IEC 61439-3
Environmental	ROHS DIRECTIVE 2011/65/EU WEEE Directive 2012/19/EU Battery Directive 2006/66/EC REACH Regulation EC 1907/2006

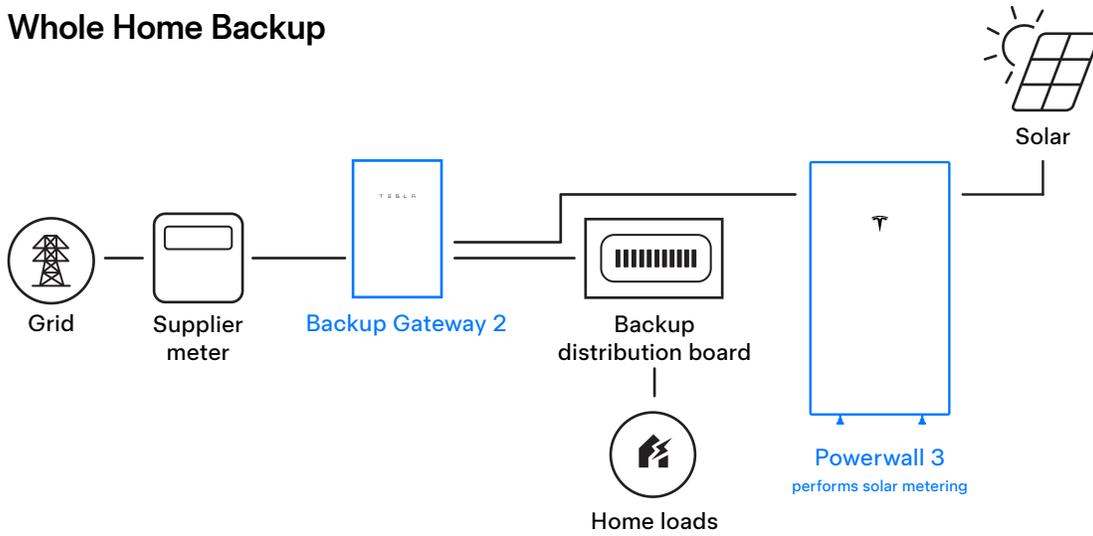
Mechanical Specifications

Dimensions	585 x 380 x 127 mm
Weight	11.4 kg
Breaker Space (DIN rail)	Up to 9 single pole breakers
Mounting Options	Wall mount

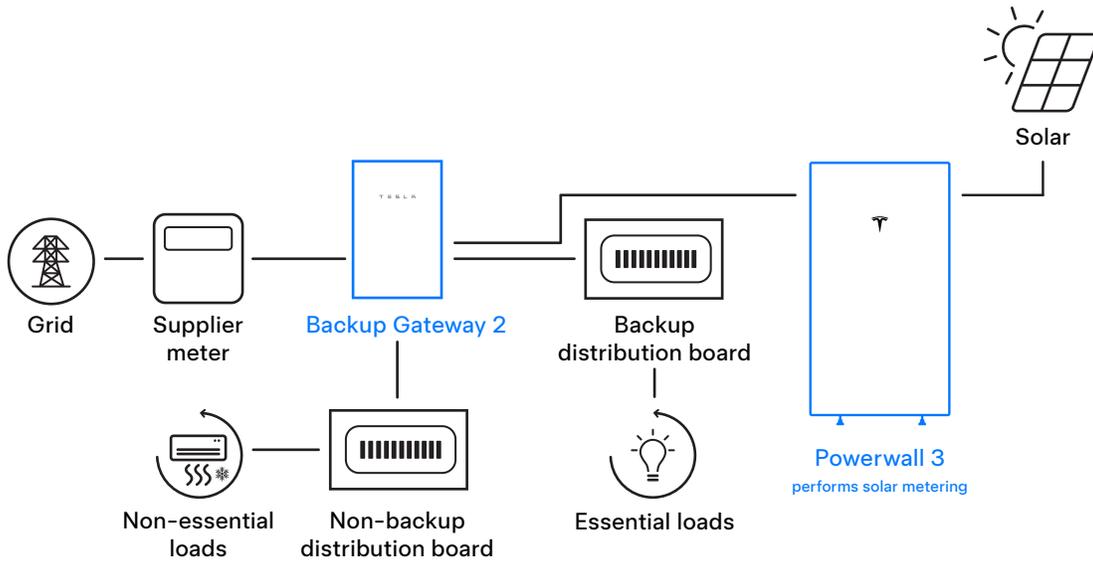


Powerwall 3 Example System Configurations

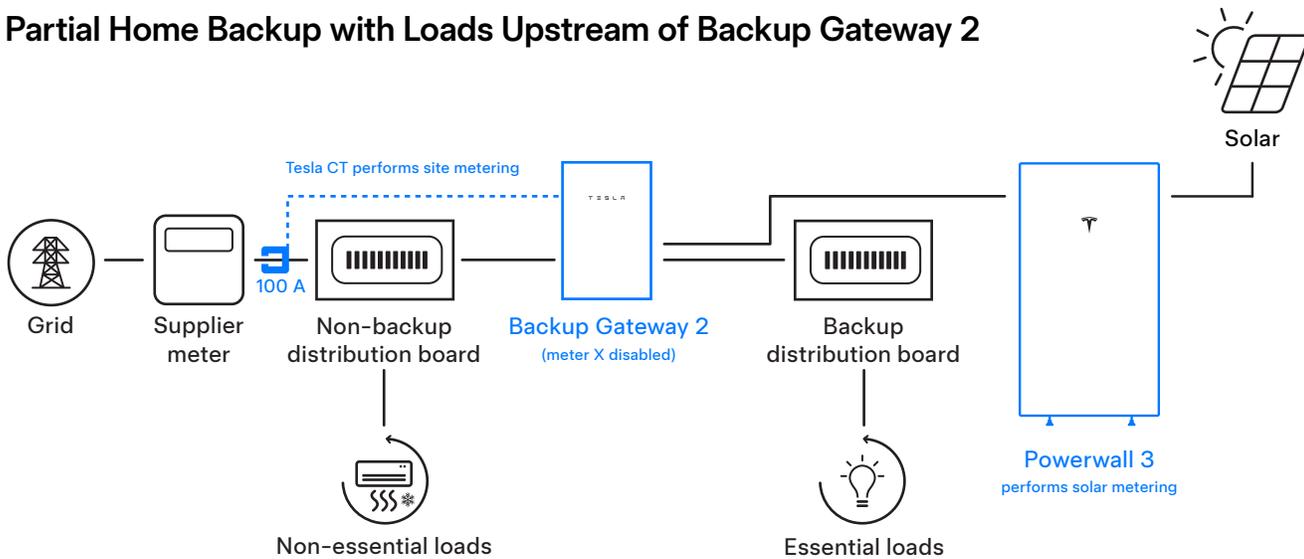
Whole Home Backup



Partial Home Backup with Loads Downstream of Backup Gateway 2

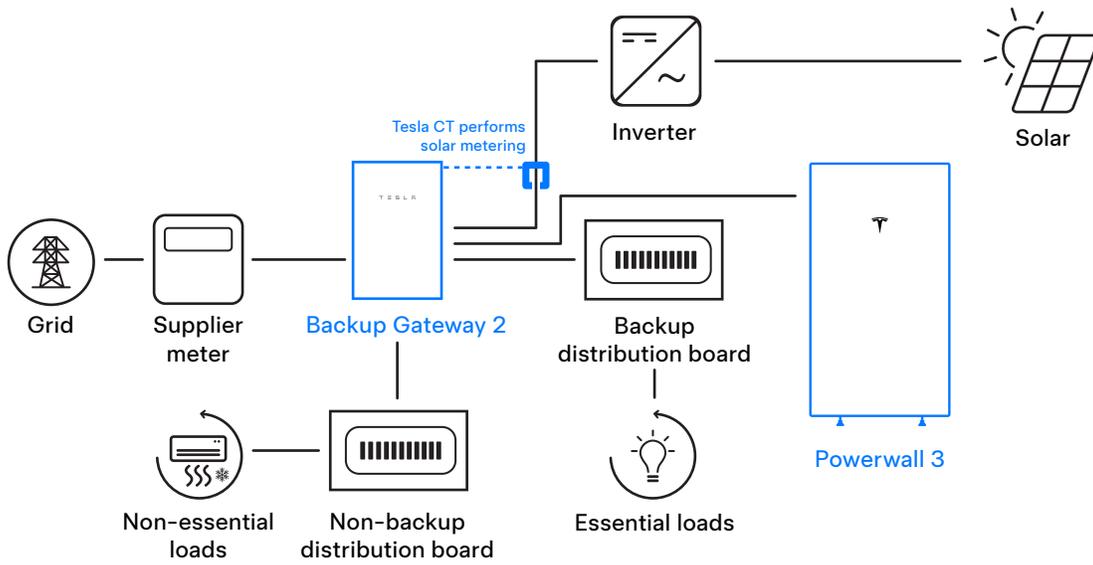


Partial Home Backup with Loads Upstream of Backup Gateway 2



Powerwall 3 Example System Configurations

Powerwall 3 with AC Coupled Solar



Powerwall 3 with AC and DC Coupled Solar

