

# Powerwall 3P

More Than a Battery



Energy

Powerwall 3P is a fully integrated solar and battery system for homes with a three-phase electrical connection. It enables you to store and use solar or low-cost grid energy, lowering electricity bills, reducing reliance on the grid, and powering the home during grid outages. With the Tesla App, you can customize Powerwall 3P to manage your home energy system, export excess energy to the grid, and maximize your energy savings.

With Powerwall 3P, you can convert up to 20.4 kW of solar power, deliver up to 15 kW of continuous power to your home, and store up to 13.5 kWh of energy, making a single unit sufficient to meet the energy needs of most homes. The system can be scaled by adding Powerwall 3P Expansion units to increase energy storage in 13.5 kWh increments, or by adding multiple Powerwall 3P units to boost both power and energy.



# Technical Specifications

## System Technical Specifications

|                                                          |                                                                                                                                                      |        |       |      |
|----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------|------|
| Part Number                                              | 1988000-xx-y                                                                                                                                         |        |       |      |
| Nominal Grid Voltage (Input & Output)                    | 230/400 VAC                                                                                                                                          |        |       |      |
| Grid Type                                                | Three phase                                                                                                                                          |        |       |      |
| Supported Grid Configurations                            | 4-conductor Wye (L1, L2, L3, N)                                                                                                                      |        |       |      |
| Supported Earthing Systems                               | TN or TT networks                                                                                                                                    |        |       |      |
| Frequency                                                | 50 Hz                                                                                                                                                |        |       |      |
| Usable Battery Energy (AC) <sup>1</sup>                  | 13.5 kWh                                                                                                                                             |        |       |      |
| Nominal AC Output Power at 230/400 V (kW) <sup>2</sup>   | 15                                                                                                                                                   | 11.5   | 10    | 5    |
| Maximum Apparent Power (kVA)                             | 15                                                                                                                                                   | 11.5   | 10    | 5    |
| Maximum Continuous Current (A)                           | 21.74                                                                                                                                                | 16.67  | 14.49 | 7.25 |
| Minimum Circuit Breaker Size (A)                         | 32                                                                                                                                                   |        |       |      |
| Power Scalability <sup>3</sup>                           | Up to 60 kW                                                                                                                                          |        |       |      |
| Energy Scalability <sup>3</sup>                          | Up to 94.5 kWh                                                                                                                                       |        |       |      |
| Maximum Continuous Charge Power                          | Powerwall 3P only                                                                                                                                    | 5 kW   |       |      |
|                                                          | with <a href="#">Expansion</a> units                                                                                                                 | 8 kW   |       |      |
| Output Power Factor Rating                               | -1 to 1 (Grid code configurable)                                                                                                                     |        |       |      |
| Maximum Output Fault Current per Phase (1 s)             | 54 A                                                                                                                                                 |        |       |      |
| Maximum Short-Circuit Current Rating                     | 10 kA                                                                                                                                                |        |       |      |
| Peak AC Output Power (1 s)                               | for Three Phase Loads                                                                                                                                | 21 kW  |       |      |
|                                                          | for Single Phase Loads                                                                                                                               | 7.4 kW |       |      |
| Solar to Battery to Home/Grid Efficiency <sup>1, 4</sup> | 90%                                                                                                                                                  |        |       |      |
| Solar to Home/Grid Efficiency <sup>5</sup>               | 98.4%                                                                                                                                                |        |       |      |
| Supported Islanding Device                               | <a href="#">Backup Gateway 2</a>                                                                                                                     |        |       |      |
| AC and DC Surge Protection                               | Integrated Type II SPD                                                                                                                               |        |       |      |
| Connectivity                                             | Wi-Fi (2.4 and 5 GHz), Dual-port switched Ethernet, Cellular (LTE/4G <sup>6</sup> )                                                                  |        |       |      |
| Electrical Interface                                     | Dry contact relay 60V 2A, Rapid Shutdown (RSD), RS485 connector for <a href="#">Tesla Remote Meter</a>                                               |        |       |      |
| Protections                                              | AC Overcurrent Protection, DC Reverse Polarity Protection, Residual Current Interrupter, Isolation Monitor Interrupter (IMI), Integrated DC Isolator |        |       |      |
| Customer Interface                                       | Tesla App                                                                                                                                            |        |       |      |
| Warranty                                                 | 10 years                                                                                                                                             |        |       |      |

<sup>1</sup>Values provided for 25°C, at beginning of life. 5 kW charge/discharge power.

<sup>2</sup>15 kW AC output available at ambient temperatures ≤ 25°C, with sufficient solar generation. Up to 11.5 kW AC output is available when solar is not available, or when operating at higher temperatures.

<sup>3</sup> These values reflect a maximum system size of four Powerwall 3P units and three Expansion units.

<sup>4</sup> Typical use case with energy produced by solar and stored in battery and then released to loads or the grid.

<sup>5</sup> Tested using EU weighted efficiency methodology.

<sup>6</sup> Cellular connectivity subject to network service coverage and signal strength.

# Technical Specifications

## Solar Technical Specifications

|                                            |                     |                |
|--------------------------------------------|---------------------|----------------|
| Maximum Solar STC Input                    |                     | 20.4 kWp       |
| PV DC Startup Voltage                      |                     | 60 V DC        |
| PV DC Input Voltage Range                  |                     | 60 — 1000 V DC |
| PV DC MPPT Voltage Range                   |                     | 60 — 800 V DC  |
| MPPTs                                      |                     | 4              |
| Maximum Current ( $I_{mp}$ )               | per MPPT            | 16 A           |
|                                            | 2 MPPTs in parallel | 32 A           |
| Maximum Short Circuit Current ( $I_{sc}$ ) | per MPPT            | 21 A           |
|                                            | 2 MPPTs in parallel | 42 A           |

## Environmental Specifications

|                                    |                                                                                 |
|------------------------------------|---------------------------------------------------------------------------------|
| Operating Temperature <sup>7</sup> | -20°C to 50°C                                                                   |
| 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                                                        |
| Ingress Rating                     | IP67 (Battery & Power Electronics)                                              |
|                                    | IP55 (Wiring Compartment)                                                       |
| Pollution Rating                   | PD3                                                                             |
| Operating Noise @ 1 m              | < 50 dB(A) typical, < 62 dB(A) maximum                                          |

## 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 1973, UL 9540A, AS/NZS 4777.2 |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## Mechanical Specifications

|                  |                     |
|------------------|---------------------|
| Dimensions       | 1105 x 609 x 193 mm |
| Weight           | 138 kg              |
| Mounting Options | Floor or wall mount |

<sup>7</sup> Performance may be de-rated at operating temperatures above 40°C. 15 kW AC output available at ambient temperatures ≤ 25°C.

# Powerwall 3 Expansion Unit Technical Specifications

Powerwall 3 Expansion is a battery designed to add storage capacity to a Powerwall 3P system. It does not include an inverter or system controller, so it cannot connect directly to solar or operate without a Powerwall 3P. Up to three Expansion units can be stacked behind Powerwall 3P or wall-mounted next to it.



|                                                             |                       |                                      |                           |  |
|-------------------------------------------------------------|-----------------------|--------------------------------------|---------------------------|--|
| Battery Specifications                                      | Model Number          | 1807000-xx-y                         |                           |  |
|                                                             | Usable Battery Energy | 13.5 kWh                             |                           |  |
|                                                             | Voltage Range         | 52 - 92 V DC                         |                           |  |
| Powerwall 3P Model Numbers When Installed with Expansion(s) | Model Number          | Powerwall 3P Configured Power Output | Number of Expansion Units |  |
|                                                             | 1988000-15 kVA-13.5   | 15 kW                                | None                      |  |
|                                                             | 1988000-11.5 kVA-13.5 | 11.5 kW                              |                           |  |
|                                                             | 1988000-10 kVA-13.5   | 10 kW                                |                           |  |
|                                                             | 1988000-5 kVA-13.5    | 5 kW                                 |                           |  |
|                                                             | 1988000-15 kVA-27     | 15 kW                                | 1                         |  |
|                                                             | 1988000-11.5 kVA-27   | 11.5 kW                              |                           |  |
|                                                             | 1988000-10 kVA-27     | 10 kW                                |                           |  |
|                                                             | 1988000-5 kVA-27      | 5 kW                                 |                           |  |
|                                                             | 1988000-15 kVA-40.5   | 15 kW                                | 2                         |  |
|                                                             | 1988000-11.5 kVA-40.5 | 11.5 kW                              |                           |  |
|                                                             | 1988000-10 kVA-40.5   | 10 kW                                |                           |  |
|                                                             | 1988000-5 kVA-40.5    | 5 kW                                 |                           |  |
|                                                             | 1988000-15 kVA-54     | 15 kW                                | 3                         |  |
|                                                             | 1988000-11.5 kVA-54   | 11.5 kW                              |                           |  |
|                                                             | 1988000-10 kVA-54     | 10 kW                                |                           |  |
|                                                             | 1988000-5 kVA-54      | 5 kW                                 |                           |  |

# Powerwall 3 Expansion Unit Technical Specifications

|                              |                                          |                                                                                 |     |     |
|------------------------------|------------------------------------------|---------------------------------------------------------------------------------|-----|-----|
| Environmental Specifications | Operating Temperature <sup>8</sup>       | -20°C to 50°C                                                                   |     |     |
|                              | 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                                                        |     |     |
|                              | Ingress Rating                           | IP67                                                                            |     |     |
|                              | Pollution Rating                         | PD3                                                                             |     |     |
| Compliance Information       | Certifications                           | IEC 62619, IEC 62933-5-2, IEC 61000-6-1:2016, EN IEC 61000-6-3: 2020            |     |     |
| Mechanical Specifications    | Dimensions                               | 1105 x 609 x 168 mm (with glass front cover)                                    |     |     |
|                              | Weight                                   | 118.5 kg (wall-mounted unit with glass front cover and bracket)                 |     |     |
|                              |                                          | 110 kg (stacked unit without glass front cover and bracket)                     |     |     |
|                              | Mounting Options                         | Floor or wall mount                                                             |     |     |
|                              | Stacking Capability                      | Up to (3) Expansion units behind Powerwall 3P (floor mount only)                |     |     |
|                              | Compatibility                            | Only with Powerwall 3P or Powerwall 3                                           |     |     |
|                              | Connection to Powerwall 3P or Expansions | Expansion harness                                                               |     |     |
| Expansion Harness Options    |                                          | 0.5 m                                                                           | 2 m | 4 m |

<sup>8</sup> Performance may be de-rated at operating temperatures above 40°C.

# Backup Gateway 2 Specifications

Backup Gateway 2 is required for installing Powerwall 3P in a backup configuration. It provides energy monitoring and backup operation. When Powerwall 3P is in Backup mode, Backup Gateway 2 detects outage, controls connection to the grid, and provides backup power.



## Electrical Specifications

|                                           |                                                               |
|-------------------------------------------|---------------------------------------------------------------|
| Model Number                              | 1152100-xx-y                                                  |
| AC Voltage (Nominal) <sup>9</sup>         | 230 V (Line-to-Neutral)<br>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)<br>80 A (2- and 3-phase service) |
| Maximum Input Short Circuit Current       | 10 kA                                                         |
| Overvoltage Category                      | Category III                                                  |
| AC Metering Accuracy                      | +/- 0.2 %                                                     |
| Compatible Earthing Systems <sup>10</sup> | TN or TT networks                                             |

## Environmental Specifications

|                         |                          |
|-------------------------|--------------------------|
| Operating Temperature   | -20°C to 50°C            |
| Operating Humidity (RH) | Up to 100%, condensing   |
| Maximum Altitude        | 3000 m                   |
| Ingress Rating          | IP55                     |
| Environmental Category  | Indoor and outdoor rated |
| Pollution Degree        | PD2                      |

## Compliance Information

|               |                                                                                                                     |
|---------------|---------------------------------------------------------------------------------------------------------------------|
| Safety        | IEC 62109-1, IEC 62053-22, IEC 61439-1, IEC 61439-3                                                                 |
| EMC           | EMC Directive 2014/30/EU, IEC 61000-6-1, IEC 61000-6-3                                                              |
| Environmental | ROHS DIRECTIVE 2011/65/EU, WEEE Directive 2012/19/EU<br>Battery Directive 2006/66/EC, REACH Regulation EC 1907/2006 |
| Seismic       | AC156, IEEE 693-2005 (high)                                                                                         |

## Mechanical Specifications

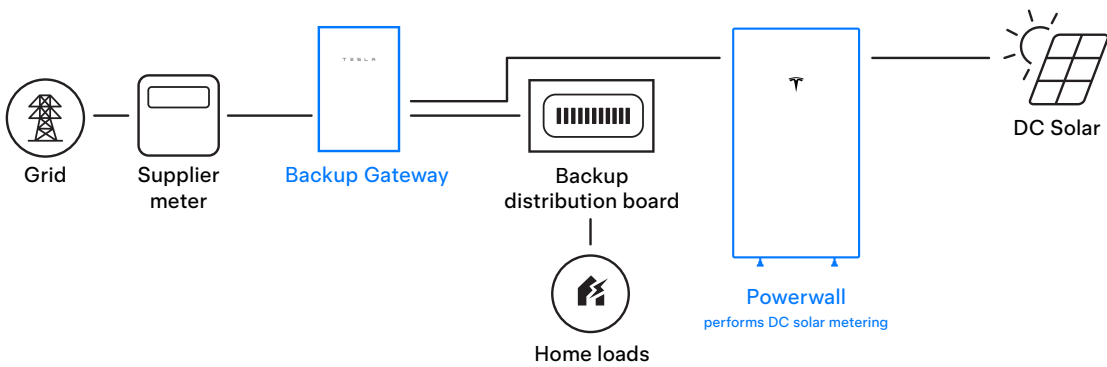
|               |                                          |
|---------------|------------------------------------------|
| Dimensions    | 584 x 380 x 127 mm                       |
| Weight        | 11.4 kg                                  |
| Breaker Space | Up to 9 single pole breakers on DIN rail |
| Mounting      | Wall mount                               |

<sup>9</sup> 230 V (Line-to-Line) is not a supported three-phase configuration.

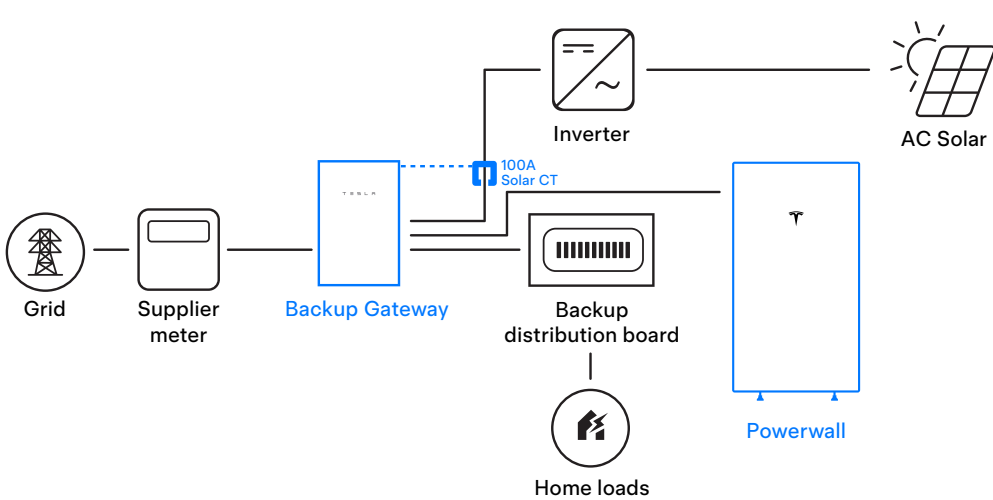
<sup>10</sup> TT earthing networks supported for Gateways with part number 1152100-13-H and higher.

# Powerwall 3P Backup Configuration Examples

## Powerwall 3P System with DC-Coupled Solar

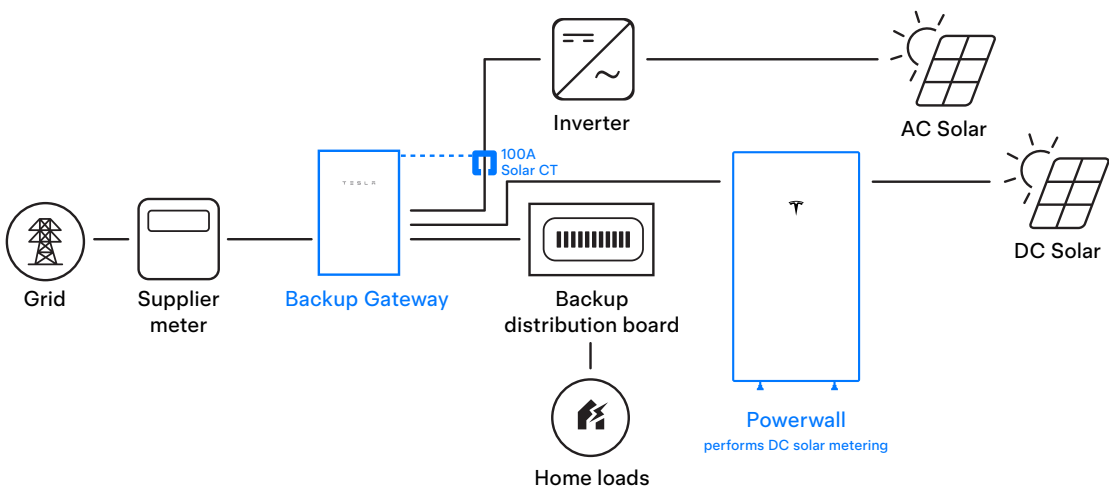


## Powerwall 3P System with AC-Coupled Solar

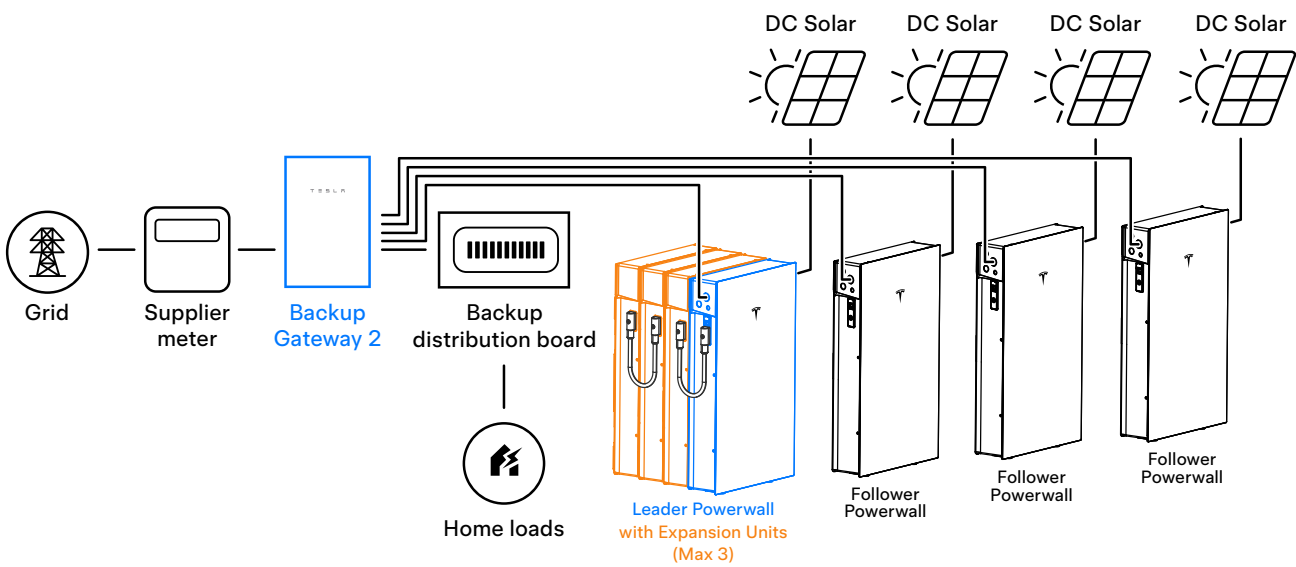


# Powerwall 3P Backup Configuration Examples

## Powerwall 3P System with AC- and DC-Coupled Solar

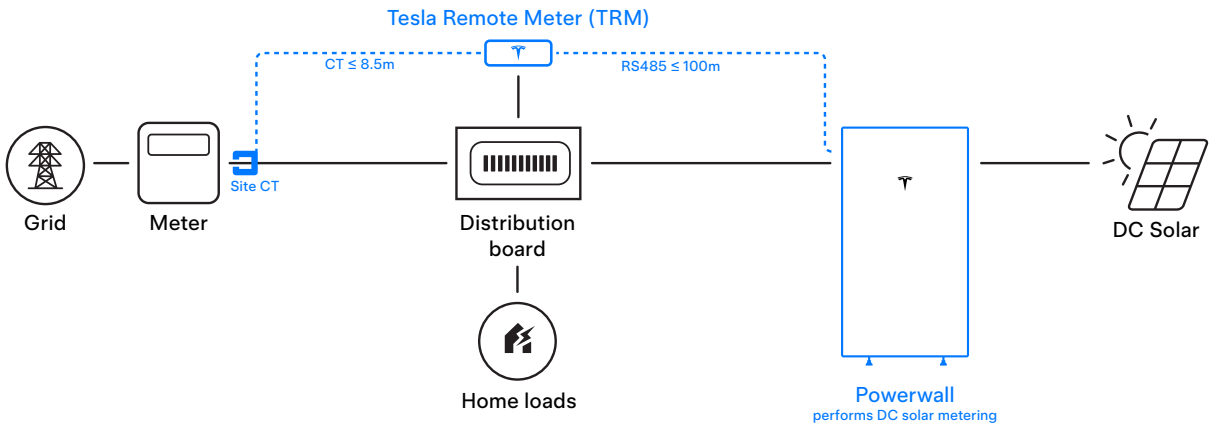


## Multi-Powerwall 3P System with Expansion Units



# Powerwall 3P Non-Backup Configuration Examples

## Powerwall 3P System with DC-Coupled Solar



## Powerwall 3P System with AC- and DC-Coupled Solar

