

# Tesla Solar Inverter with Site Controller

Tesla Solar Inverter completes the Tesla home solar system, converting DC power from solar to AC power for home consumption. Tesla's renowned expertise in power electronics has been combined with robust safety features and a simple installation process to produce an outstanding solar inverter that is compatible with both Solar Roof and traditional solar panels. Once installed, homeowners use the Tesla mobile app to manage their solar system and monitor energy consumption, resulting in a truly unique ecosystem experience.

## KEY FEATURES

- Built on Powerwall technology for exceptional efficiency and reliability
- Wi-Fi, Ethernet, and cellular connectivity with easy over-the-air updates
- Designed to integrate with Tesla Powerwall and Tesla App
- 0.5% revenue-grade metering for Solar Renewable Energy Credit (SREC) programs included



# Tesla Solar Inverter Technical Specifications

## Electrical Specifications: Output (AC)

|                                  |                             |          |          |          |
|----------------------------------|-----------------------------|----------|----------|----------|
| Model Number                     | 1538000-xx-y                |          |          |          |
| Output (AC) <sup>1</sup>         | 3.8 kW                      | 5 kW     | 5.7 kW   | 7.6 kW   |
| Nominal Power                    | 3,800 W                     | 5,000 W  | 5,700 W  | 7,600 W  |
| Maximum Apparent Power           | 3,840 VA                    | 5,040 VA | 6,000 VA | 7,680 VA |
| Maximum Continuous Current       | 16 A                        | 21 A     | 24 A     | 32 A     |
| Breaker (Overcurrent Protection) | 20 A                        | 30 A     | 30 A     | 40 A     |
| Nominal Power Factor             | 1 - 0.9 (leading / lagging) |          |          |          |
| THD (at Nominal Power)           | <5%                         |          |          |          |

## Electrical Specifications: Input (DC)

|   |                           |
|---|---------------------------|
| MPPT  | 4                         |
| Input Connectors per MPPT                           | 1-2-1-2                   |
| Maximum Input Voltage                               | 600 VDC                   |
| DC Input Voltage Range                              | 60 - 550 VDC              |
| DC MPPT Voltage Range                               | 60 - 480 VDC <sup>1</sup> |
| Maximum Current per MPPT ( $I_{MP}$ )               | 13 A <sup>2</sup>         |
| Maximum Short Circuit Current per MPPT ( $I_{SC}$ ) | 17 A <sup>2</sup>         |

<sup>1</sup>Maximum current.

<sup>2</sup>Where the DC input current exceeds an MPPT rating, jumpers can be used to allow a single MPPT to intake additional DC current up to 26 A IMP / 34 A ISC.

## Performance Specifications

|                            |  |
|----------------------------|--|
| Peak Efficiency            | 98.6% at 240 V   |
| CEC Efficiency             | 98.0% at 240 V   |
| Allowable DC/AC Ratio      | 1.7  |
| Customer Interface         | Tesla Mobile App   |
| Internet Connectivity      | Wi-Fi (2.4 GHz, 802.11 b/g/n),<br>Ethernet, Cellular (LTE/4G) <sup>3</sup> |
| Revenue Grade Meter        | Revenue Accurate (+/- 0.5%)  |
| AC Remote Metering Support | Wi-Fi (2.4 GHz, 802.11 b/g/n)  |
| Protections                | Integrated arc fault circuit<br>interrupter (AFCI), Rapid Shutdown         |
| Supported Grid Types       | 60 Hz, 240 V Split Phase   |
| Warranty                   | 12.5 years   |

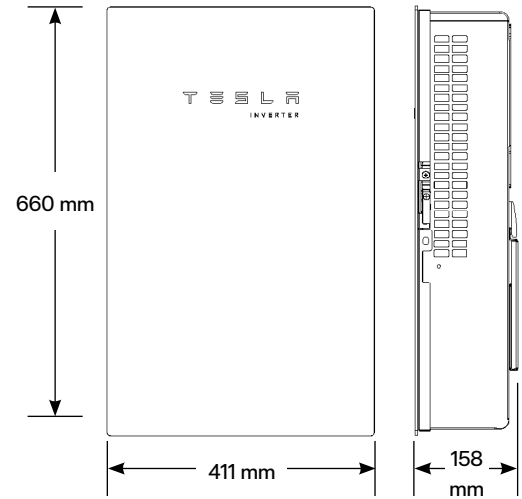
<sup>3</sup>Cellular connectivity subject to network operator service coverage and signal strength.

# Tesla Solar Inverter Technical Specifications

## Mechanical Specifications

### Dimensions

660 mm x 411 mm x 158 mm (26 in x 16 in x 6 in)



### Weight

52 lb<sup>4</sup>

### Mounting Options

Wall mount (bracket)

<sup>4</sup>Door and bracket can be removed for a mounting weight of 37 lb.

## Environmental Specifications

### Operating Temperature

-30°C to 45°C (-22°F to 113°F)<sup>5</sup>

### Operating Humidity (RH)

Up to 100%, condensing

### Storage Temperature

-30°C to 70°C (-22°F to 158°F)

### Maximum Elevation

3000 m (9843 ft)

### Environment

Indoor and outdoor rated

### Enclosure Rating

Type 3R

### Ingress Rating

IP55 (Wiring compartment)

### Pollution Rating

PD2 for power electronics and terminal wiring compartment, PD3 for all other components

### Operating Noise @ 1 m

< 40 db(A) nominal, < 50 db(A) maximum

<sup>5</sup>Performance may be de-rated to 6.2 kW at 240 V when operating at temperatures greater than 45°C.

## Compliance Information

### Grid Certifications

UL 1741, UL 1741 SA, UL 1741 SB, UL 1741 PCS, IEEE 1547-2018, IEEE 1547.1

### Safety Certifications

UL 1741 PVRSS, UL 1699B, UL 1998 (US), UL 3741

### Emissions

EN 61000-6-3 (Residential), FCC 47CFR15.109 (a)

# Solar Shutdown Device Technical Specifications

The Solar Shutdown Device is a Mid-Circuit Interrupter (MCI) and is part of the PV system rapid shutdown (RSD) function in accordance with Article 690 of the applicable NEC. When paired with Tesla Solar Inverter, solar array shutdown is initiated by any loss of AC power.

| Electrical Specifications  | Model  | MCI-1   | MCI-2                                  | MCI-2 High Current     |
|--|--|---|--|------------------------|
|  | Nominal Input DC Current Rating ( $I_{MP}$ )     | 13 A  | 13 A                                   | 15 A                   |
|  | Maximum Input Short Circuit Current ( $I_{SC}$ ) | 19 A  | 17 A                                   | 19 A                   |
|  | Maximum System Voltage (PVHCS)                   | 600 V DC  | 1000 V DC <sup>6</sup>                 | 1000 V DC <sup>6</sup> |
|  | Maximum Disconnect Voltage <sup>7</sup>          | 600 V DC  | 165 V DC                               | 165 V DC               |
| <sup>6</sup> Maximum System Voltage is limited by Tesla Solar Inverter to 600 V DC.  |  |   |  |                        |
| <sup>7</sup> Maximum Disconnect Voltage is the maximum voltage allowed across each MCI in the open position (Rapid Shutdown Initiated). An individual MCI-2 has a voltage rating of 165V but in combination (connected in the same string) their voltage ratings are additive. |  |   |  |                        |
| RSD Module Performance   | Maximum Number of Devices per String             | 5   |  |                        |
|  | Control  | Power Line Excitation   |  |                        |
|  | Passive State                                    | Normally Open   |  |                        |
|  | Maximum Power Consumption                        | 7 W   |  |                        |
|  | Warranty   | 25 years  |  |                        |
| Environmental Specifications   | Operating Temperature                            | -40°C to 50°C<br>(-40°F to 122°F)   | -45°C to 70°C<br>(-49°F to 158°F)      |                        |
|  | Storage Temperature                              | -30°C to 70°C<br>(-22°F to 158°F)   | -30°C to 70°C<br>(-22°F to 158°F)      |                        |
|  | Enclosure Rating                                 | NEMA 4X / IP65  | NEMA 4X / IP65                         |                        |
| Mechanical Specifications  | Electrical Connections                           | MC4 Connector   | MC4 Connector                          |                        |
|  | Housing  | Plastic   | Plastic                                |                        |
|  | Dimensions                                       | 125 x 150 x 22 mm<br>(5 x 6 x 1 in)   | 173 x 45 x 22 mm<br>(6.8 x 1.8 x 1 in) |                        |
|  | Weight   | 350 g (0.77 lb)   | 120 g (0.26 lb)                        |                        |
|  | Mounting Options                                 | ZEP Home Run Clip<br>M4 Screw (#10)<br>M8 Bolt (5/16")<br>Nail / Wood screw | Wire Clip                              |                        |
| Compliance Information   | Certifications                                   | UL 1741 PVRSE, UL 3741,<br>PVRSA (Photovoltaic Rapid Shutdown Array)        |  |                        |
|  | RSD Initiation Method                            | PV System AC Breaker or Switch  |  |                        |

## UL 3741 PV Hazard Control (and PVRSA) Compatibility

See [UL 3741 Application Addendum](#)