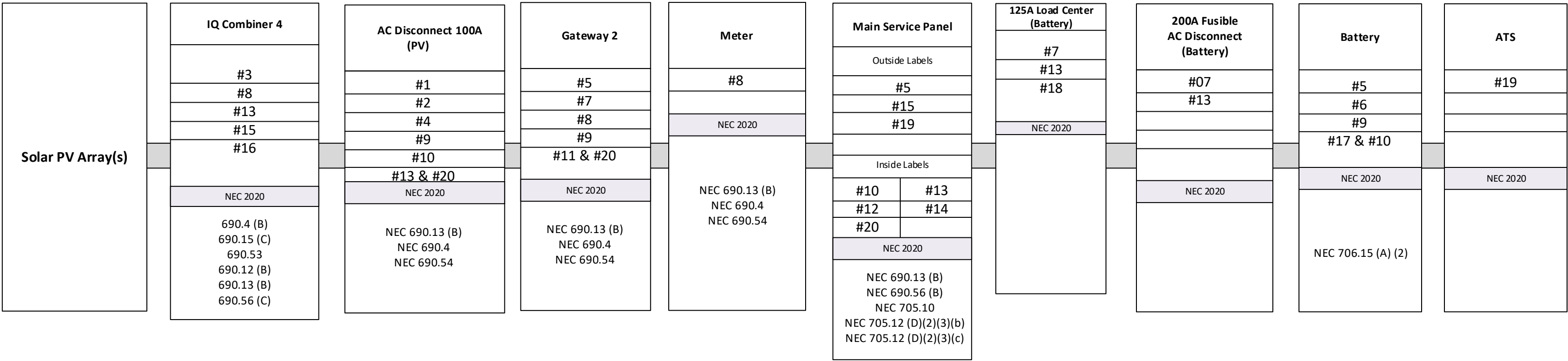




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**LABELING AND WARNING
SIGNS: NEC 2020**

A. PURPOSE
PROVIDE EMERGENCY RESPONDERS WITH APPROPRIATE WARNING AND GUIDANCE WITH RESPECT TO ISOLATING THE SOLAR ELECTRIC SYSTEM. THIS CAN FACILITATE IDENTIFYING ENERGIZED ELECTRICAL LINES THAT CONNECT THE SOLAR PANELS TO THE INVERTER, AS SHOULD NOT BE CUT WHEN VENTING FOR SMOKE REMOVAL.

- B. MAIN SERVICE DISCONNECT:
- 1. RESIDENTIAL BUILDINGS- THE MARKING MAY BE PLACED WITHIN THE MAIN SERVICE DISCONNECT. THE MARKING SHALL BE PLACED ON THE OUTSIDE COVER IF THE MAIN SERVICE DISCONNECT IS OPERABLE WITH THE SERVICE PANEL CLOSED.
 - 2. COMMERCIAL BUILDINGS- THE MARKINGS SHALL BE PLACED ADJACENT TO THE MAIN SERVICE DISCONNECT CLEARLY VISIBLE FROM THE LOCATION WHERE THE LEVER IS OPERATED
 - 3. MARKINGS, VERBIAGE, FORMAT AND TYPE OF MATERIAL
 - a. VERBIAGE: CAUTION; SOLAR ELECTRIC SYSTEM CONNECTED
 - b. FORMAT:
 - (1) WHITE LETTERING ON A RED BACKGROUND
 - (2) MINIMUM 3/8 INCH LETTER HEIGHT
 - (3) ALL LETTERS SHALL BE CAPITALIZED
 - (4) ARIAL OR SIMILAR FONT, NON-BOLD
 - c. MATERIAL:
 - (1) REFLECTIVE, WEATHER RESISTANT MATERIAL SUITABLE FOR THE ENVIRONMENT (USE UL-969) AS STANDARD FOR WEATHER RATING); DURABLE ADHESIVE MATERIALS MEET THIS REQUIREMENT.

- C. MARKING REQUIREMENTS ON CONDUIT, RACEWAYS, ENCLOSURES, CABLE ASSEMBLIES, COMBINERS AND JUNCTION BOXES;
- 1. MARKING: PLACEMENT, VERBIAGE, FORMAT AND TYPE OF MATERIAL
 - a. PLACEMENT: MARKINGS SHALL BE PLACED EVERY 10 (TEN) FEET ON ALL INTERIOR AND EXTERIOR DC CONDUITS, RACEWAYS, ENCLOSURES AND CABLE ASSEMBLIES, AT TURNS ABOVE AND/OR BELOW PENETRATIONS, ALL COMBINERS AND JUNCTION BOXES.
 - b. VERBIAGE: CAUTION SOLAR CIRCUIT
 - c. THE FORMAT AND TYPE OF MATERIAL SHALL ADHERE TO SECTION B-3.B & C ABOVE

D. INVERTERS ARE NOT REQUIRED TO HAVE CAUTION MARKINGS

#1 PHOTOVOLATIC
AC DISCONNECT

#2 RAPID SHUTDOWN
SWITCH FOR
SOLAR PV SYSTEM

#3 PHOTOVOLTIC POWER SOURCE
OPERATING AC VOLTAGE 240 V
MAXIMUM OPERATING AC OUTPUT CURRENT 45.98 A

#4 AC DISCONNECT
PHOTOVOLTAIC SYSTEM
POWER SOURCE
RATED AC OUTPUT CURRENT 45.98 AMPS
NOMINAL OPERATING AC VOLTAGE 240 VOLTS

#5 SOLAR AC DISCONNECT
LOCATED AT SOUTH-WEST SIDE
WALL OF THE HOUSE BESIDE
THE UTILITY METER

#6 BATTERY

#7 MAIN BATTERY
SYSTEM DISCONNECT

#8 WARNING
THREE POWER SOURCES
SOURCES: UTILITY GRID, BATTERY AND
PV SOLAR ELECTRIC SYSTEM

#9 SERVICE DISCONNECT LOCATED
IN THE aGate 1.3

#10 BATTERY DISCONNECT LOCATED
IN THE aGate 1.3

#11 WARNING
SOLAR ELECTRIC CIRCUIT BREAKER IS
BACKFEED

#12 WARNING
TURN OFF PHOTOVOLTAIC
AC DISCONNECT PRIOR TO
WORKING INSIDE PANEL

#13 WARNING
ELECTRIC SHOCK HAZARD
TERMINAL ON THE LINE AND LOAD
SIDES MAY BE ENERGIZED IN THE OPEN
POSITION

#14 WARNING
POWER SOURCE
OUTPUT CONNECTION
DO NOT RELOCATE THIS
OVERCURRENT DEVICE

#15 SOLAR PV SYSTEM EQUIPPED WITH
RAPID SHUTDOWN
TURN RAPID SHUTDOWN
SWITCH TO THE "OFF"
POSITION TO SHUT DOWN
PV SYSTEM AND REDUCE
SHOCK HAZARD IN THE
ARRAY

#16 PHOTOVOLTAIC SYSTEM
COMBINER PANEL
DO NOT ADD LOADS

#17 ENERGY STORAGE
SYSTEM DISCONNECT
NOMINAL ESS AC VOLTAGE 240V
NOMINAL ESS DC VOLTAGE 550V
AVAILABLE FAULT CURRENT
DERIVED FROM THE ESS 10kA
DATE CALCULATION PERFORMED 09/29/2025

#18 WARNING
THIS EQUIPMENT FED BY MULTIPLE
SOURCES. TOTAL RATING OF ALL OVERCURRENT
DEVICES, EXCLUDING MAIN SUPPLY
OVERCURRENT DEVICE, SHALL NOT EXCEED
AMPACITY OF BUSBAR

#19 CAUTION
POWER TO THIS BUILDING IS SUPPLIED
FROM THE FOLLOWING SOURCES
UTILITY GRID
ELECTRICAL GENERATOR
PV SOLAR ELECTRICAL SYSTEM

#20 GENERATOR WILL BE MANAGED
BY THE aGate 1.3

Customer Information:

Jeffrey Hoener

97 Mt. Olive Church Rd
Lillington, NC 27546

Customer Signature:

Sheet Name:

PV Labels

JOB NUMBER:

25-662-JF

Date:

09/29/2025

Revision:

A

Sheet Size:

ANSI C
17" X 22"

Sheet Number:

PV3



10-14-2025



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Customer Information:

Jeffrey Hoener

97 Mt. Olive Church Rd
Lillington, NC 27546

Customer Signature:

Sheet Name:

Bill of Material

JOB NUMBER:

25-662-JF

Date:

09/29/2025

Revision:

A

Sheet Size:

ANSI C
17" X 22"

Sheet Number:

PV4



TESLA & SUPPORTING ITEMS

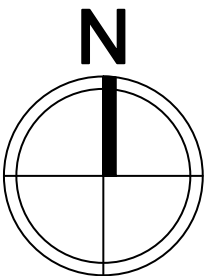
- 02 x 1707000-00-J :Tesla Powerwall3
- 01 x 2045796-xx-y: Tesla Remote Energy Meter Kit
- 02 x 2060713-xx-y CT Extension Wire
- 01 x 2045794-xx-y:RS485 Harness Remote Energy Meter

ELECTRICAL ITEMS

- 01 x BR215: Eaton BR 15/2
- 01 x BR2125: Eaton BR 125/2
- 01 x BR816L125RP: Load Center (EATON) MLO (NEMA 3R)
- 02 x BR260: Eaton BR 60/2
- 01 x DG224URK: 250volt/200amp/2pole non fusible disconnect (NEMA 3R)

PV LABELS		
Sr No	Code	Qty
01	02-314	10
02	03-301	03
03	03-302	02
04	02-316	02
05	03-308	03
06	03-390	02
07	03-306	03
08	05-215	03
09	05-211	04
10	03-230	03
11	05-372	01
12	05-103	02
13	05-216	05
14	05-342	01
15	07-111	02
16	8M-001	05
17	03-511	02
18	05-108	01
19	8M-005	02
20	8M-003	03

BILL OF MATERIAL
SCALE: NTS



Powerwall 3

Power Everything

Powerwall 3 is a fully integrated solar and battery system, designed to accelerate the transition to sustainable energy. Customers can receive whole home backup, cost savings, and energy independence by producing and consuming their own energy while participating in grid services. Once installed, customers can manage their system using the Tesla App to customize system behavior to meet their energy goals.

Powerwall 3 achieves this by supporting up to 20 kW DC of solar and providing 11.5 kW AC of continuous power per unit. It has the ability to start heavy loads up to 150 A LRA, meaning a single unit can support the power needs of most homes. Powerwall 3 is designed for mass production, fast and efficient installations, easy 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)	120/240 VAC
Grid Type	Split phase
Frequency	60 Hz
Overcurrent Protection Device	Configurable up to 60 A
Solar to Battery to Grid Round Trip Efficiency	89% ^{1,2}
Solar to Grid Efficiency	97% ³
Supported Islanding Devices	Backup Gateway 2, Backup Switch
Connectivity	Wi-Fi (2.4 and 5 GHz), Dual-port switched Ethernet, Cellular (LTE/4G ⁴)
Hardware Interface	Dry contact relay, Rapid Shutdown (RSD) certified switch and 2-pin connector, RS-485 for meters
AC Metering	Revenue Grade (+/- 0.5%)
Protections	Integrated arc fault circuit interrupter (AFCI), Isolation Monitor Interrupter (IMI), PV Rapid Shutdown (RSD) using Tesla Mid-Circuit Interrupters
Customer Interface	Tesla Mobile App
Warranty	10 years

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	150 — 480 V DC
MPPTs	6
Maximum Current per MPPT (I_{mp})	13 A ⁵
Maximum Short Circuit Current per MPPT (I_{sc})	15 A ⁵

Battery Technical Specifications

Nominal Battery Energy	13.5 kWh AC ²
Maximum Continuous Discharge Power	11.5 kW AC
Maximum Continuous Charge Power	5 kW AC
Output Power Factor Rating	0 - 1 (Grid Code configurable)
Maximum Continuous Current	48 A
Maximum Output Fault Current	10 kA
Load Start Capability (1 s)	150 A LRA
Power Scalability	Up to 4 Powerwall 3 units supported

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 Cellular connectivity subject to network service coverage and signal strength.

⁵ Where the DC input current exceeds the MPPT rating, a jumper can be used to combine two MPPTs into a single input to intake DC current up to 26 A I_{mp} / 30 A I_{sc} .

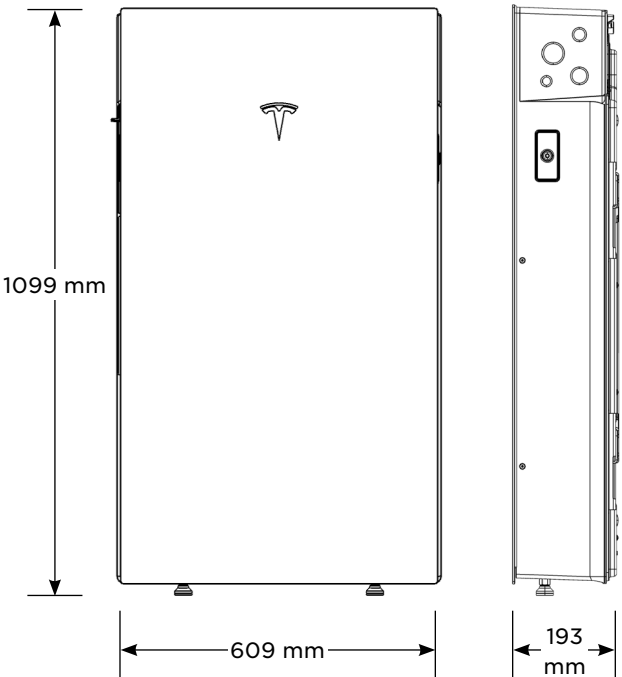
Powerwall 3 Technical Specifications

Environmental Specifications	Operating Temperature	-20°C to 50°C (-4°F to 122°F) ⁶
	Operating Humidity (RH)	Up to 100%, condensing
	Storage Temperature	-20°C to 30°C (-4°F to 86°F), up to 95% RH, non-condensing, State of Energy (SOE): 25% initial
	Maximum Elevation	3000 m (9843 ft)
	Environment	Indoor and outdoor rated
	Enclosure Rating	NEMA 3R
	Ingress Rating	IPX7 (Battery & Power Electronics) IPX5 (Wiring Compartment)
	Pollution Rating	PD3
	Operating Noise @ 1 m	< 50 db(A) typical < 62 db(A) maximum

⁶ Performance may be de-rated at operating temperatures above 40°C (104°F).

Compliance Information	Certifications	UL 1642, UL 1699B, UL 1741, UL 1741 SA, UL 1741 SB, UL 3741, UL 1973, UL 1998, UL 9540, IEEE 1547-2018, IEEE 1547.1, UN 38.3
	Grid Connection	United States
	Emissions	FCC Part 15 Class B
	Environmental	RoHS Directive 2011/65/EU
	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 (43.25 x 24 x 7.6 in)
	Weight	130 kg (287 lb)
	Mounting Options	Floor or wall mount



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 Powerwall 3, solar array shutdown is initiated by any loss of AC power.

Electrical Specifications	Model	MCI-1	MCI-2
	Nominal Input DC Current Rating (I_{MP})	12 A	13 A
	Maximum Input Short Circuit Current (I_{SC})	19 A	17 A
	Maximum System Voltage (PVHCS)	600 V DC	1000 V DC ⁷
⁷ Maximum System Voltage is limited by Powerwall to 600 V DC.			
RSD Module Performance	Maximum Number of Devices per String	5	5
	Control	Power Line Excitation	Power Line Excitation
	Passive State	Normally Open	Normally Open
	Maximum Power Consumption	7 W	7 W
	Warranty	25 years	25 years
Environmental Specifications	Operating Temperature	-40°C to 50°C (-40°F to 122°F)	-45°C to 70°C (-49°F to 158°F)
	Storage Temperature	-30°C to 70°C (-22°F to 158°F)	-30°C to 70°C (-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 (5 x 6 x 1 in)	173 x 45 x 22 mm (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 M4 Screw (#10) M8 Bolt (5/16") Nail / Wood screw	Wire Clip
Compliance Information	Certifications	UL 1741 PVRSE, UL 3741, PVRSA (Photovoltaic Rapid Shutdown Array)	
	RSD Initiation Method	External System Shutdown Switch or Powerwall 3 Enable Switch	

UL 3741 PV Hazard Control (and PVRSA) Compatibility

The following categories of solar module meet the UL 3741 PVHCS listing when installed with Powerwall 3 and Solar Shutdown Devices.

Tesla Solar Roof	PV Hazard Control System: BIPV compliance document
Tesla or Hanwha (Q.Peak Duo BLK or BLK-G6+) Modules certified for use with ZEP racking	PV Hazard Control System: ZS PVHCS compliance document
Other module and racking combinations	PV Hazard Control System: Generic PV Array compliance document

Backup Switch

The Tesla Backup Switch controls connection to the grid in a Powerwall system, and can be easily installed behind the utility meter or in a standalone meter panel downstream of the utility meter.

The Backup Switch automatically detects grid outages, providing a seamless transition to backup power. It communicates directly with Powerwall, allowing home energy usage monitoring from any mobile device with the Tesla app.

Performance Specifications	Model Number	1624171-xx-y
	Continuous Load Rating	200 A, 120/240 V split phase
	Maximum Supply Short Circuit Current	22 kA with breaker ¹⁰
	Communication	CAN
	AC Meter	Revenue accurate (+/- 0.5%)
	Expected Service Life	21 years
	Warranty	10 years

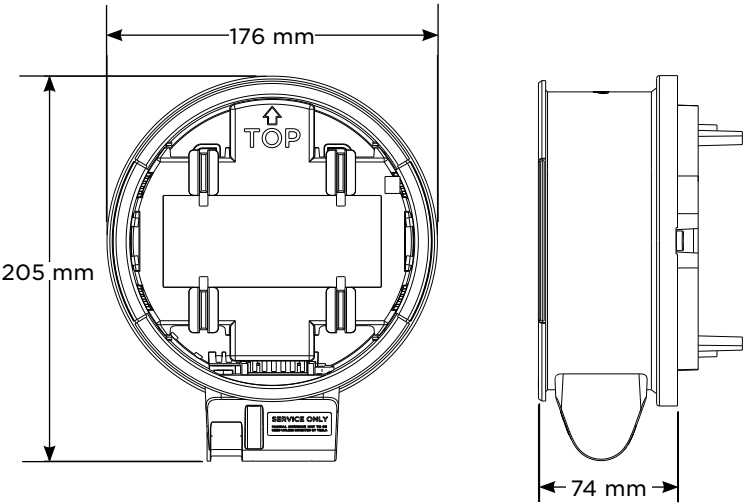
¹⁰ Breaker maximum supply short circuit current rating must be equal to or greater than the available fault current.

Environmental Specifications	Operating Temperature	-40°C to 50°C (-40°F to 122°F)
	Storage Temperature	-40°C to 85°C (-40°F to 185°F)
	Enclosure Rating	NEMA 3R
	Pollution Rating	PD3

Compliance Information	Safety Standards	USA: UL 414, UL 2735, UL 916, CA Prop 65
	Emmissions	FCC, ICES

Mechanical Specifications	Dimensions	176 x 205 x 74 mm (6.9 x 8.1 x 2.9 in)
	Weight	2.8 lb
	Meter and Socket Compatibility	ANSI Type 2S, ringless or ring type
	External Service Interface	Contactor manual override ¹¹ Reset button
	Conduit Compatibility	1/2-inch NPT

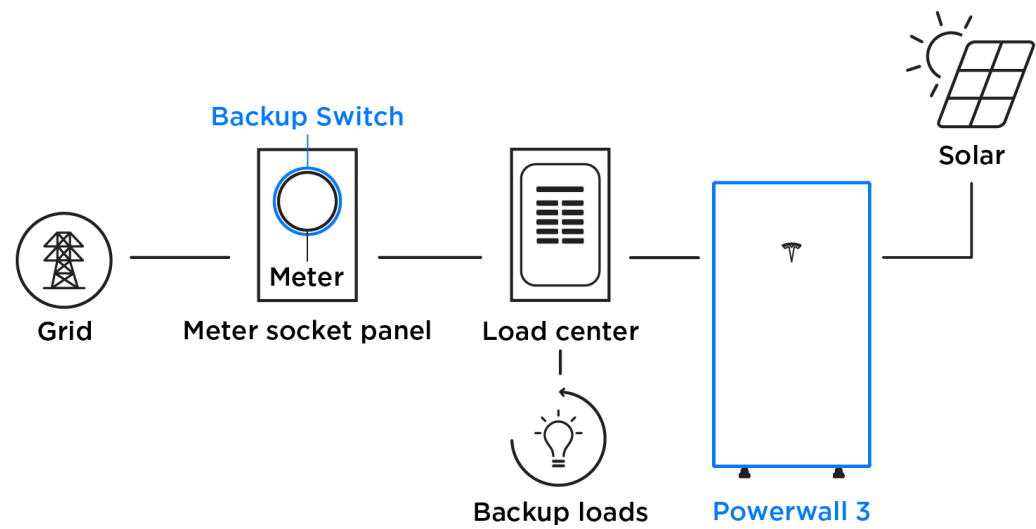
¹¹ Manually overrides the contactor position during a service event.



Powerwall 3 Example System Configurations

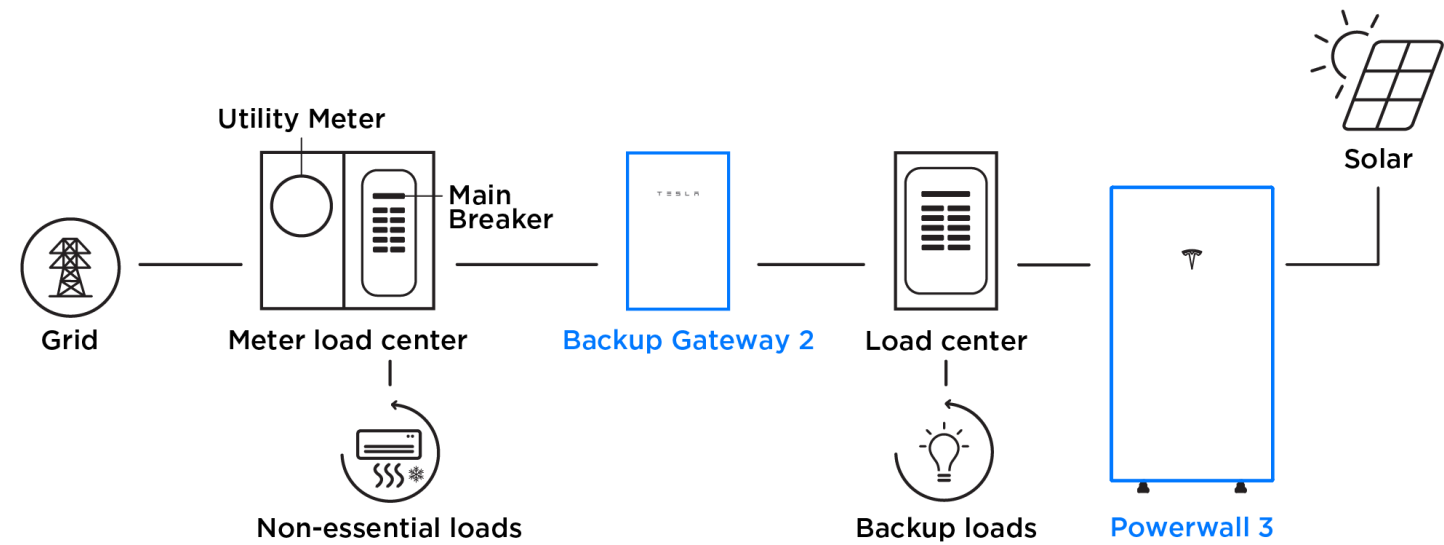
Powerwall 3 with Backup Switch

Whole Home Backup



Powerwall 3 with Backup Gateway 2

Partial Home Backup



Specifications

Photo is representative

Eaton DG224URK

Eaton General duty non-fusible safety switch, single-throw, 200 A, NEMA 3R, Rainproof, Painted galvanized steel, Two-pole, Two-wire, 240 V

General specifications

PRODUCT NAME	Eaton general duty non-fusible safety switch
CATALOG NUMBER	DG224URK
UPC	786685234816
PRODUCT LENGTH/DEPTH	11.25 in
PRODUCT HEIGHT	25.5 in
PRODUCT WIDTH	16 in
PRODUCT WEIGHT	55 lb
WARRANTY	Eaton Selling Policy 25-000, one (1) year from the date of installation of the Product or eighteen (18) months from the date of shipment of the Product, whichever occurs first.
COMPLIANCES	NEC 230.62 (C) Compliant Barrier
CERTIFICATIONS	UL Listed
CATALOG NOTES	WARNING! Switch is not approved for service entrance unless a neutral kit is installed.

Physical Attributes

ENCLOSURE	NEMA 3R
ENCLOSURE MATERIAL	Painted galvanized steel
FUSE CONFIGURATION	Non-fusible
NUMBER OF POLES	Two-pole
NUMBER OF WIRES	2
TYPE	Non-fusible, single-throw

Miscellaneous

PRODUCT CATEGORY	General duty safety switch
------------------	----------------------------

Performance Ratings

AMPERAGE RATING	200A
VOLTAGE RATING	240V

Resources

CATALOGS	Commercial Distribution, Switching Devices, Volume 2, Tab 1
MULTIMEDIA	Switching Devices Flex Center Double Up on Safety
SPECIFICATIONS AND DATASHEETS	Eaton Specification Sheet - DG224URK
WARRANTY GUIDES	Selling Policy 25-000 - Distribution and Control Products and Services

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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30 Pembroke Road
Dublin 4, Ireland
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Specifications



Eaton BR816L125RP

Eaton Eaton BR main lug loadcenter ,Dual grounds,Main lug,125 A,Box Size 7,Aluminum Bus,Cover included,NEMA 1,Metallic,10 kAIC,BR,Surface,NEMA 1,8 Spaces,16 Circuits,Three-wire

General specifications

PRODUCT NAME	Eaton BR main lug loadcenter
CATALOG NUMBER	BR816L125RP
UPC	786676001472
PRODUCT LENGTH/DEPTH	3.56 in
PRODUCT HEIGHT	13 in
PRODUCT WIDTH	11 in
PRODUCT WEIGHT	11.7 lb
WARRANTY	10 year
CERTIFICATIONS	UL 67 UL 50

Product specifications

SPECIAL FEATURES	Current design
TYPE	Main lug
AMPERAGE RATING	125 A
BUS MATERIAL	Aluminum
COVER	Cover included
MAIN CIRCUIT BREAKER	BR
MOUNTING	Surface
NUMBER OF CIRCUITS	16
NUMBER OF SPACES	8
PHASE	Single-phase
VOLTAGE RATING	120/240V
WIRE SIZE	#14-1 AWG Cu/Al
BOX SIZE	7R
ENCLOSURE	NEMA 3R
ENCLOSURE MATERIAL	Metallic
INTERRUPT RATING	10 kAIC
NUMBER OF WIRES	3

Resources

CATALOGS	Residential and Light Commercial, Loadcenters and Circuit Breakers, Volume 1 Tab 1
SPECIFICATIONS AND DATASHEETS	Eaton Specification Sheet - BR816L125RP
WARRANTY GUIDES	Eaton type BR circuit breaker limited warranty June 2024

PROJECT NAME:

PROJECT NUMBER:

PREPARED BY:

DATE:



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