Tesla Inc.
3500 Deer Creek Road,
Palo Alto, CA 94304
USA

5th Mar, 2024

Report Number: US24ACMZ.001
Project Number: 234209021_P01245692
Product(s) tested: Powerwall 2 with Backup Gateway 2
Model(s): Powerwall 2 - 2012170-XX-Y & 3012170-XX-Y
Backup Gateway 2 - 1232100-XX-Y
(X = 0-9 or A-Z; Y = 0-9 or A-Z)

Dear Mr. Viraj Andrabadu/Gaurav Joglekar,

Based on the evaluations undertaken, the model(s) of the below product have been found to comply with the requirements of the referenced specifications at the time the tests were carried out.

Nationally Recognized Testing Laboratory (NRTL)	TUV Rheinland of North America, Inc.
NRTL Issuing Office Address	1279 Quarry Lane, Suite A, Pleasanton, CA 94566
Applicant Name	Tesla, Inc.
Applicant Address	3500 Deer Creek Road, Palo Alto, CA 94304, USA
Model Numbers	Powerwall 2 (2012170-XX-Y & 3012170-XX-Y) with Backup Gateway 2 • Gateway 2 (1232100-XX-Y) • Site Master Controller in GW2. (X = 0-9 or A-Z; Y = 0-9 or A-Z)
Software/Firmware Version	b624638a90cf
Standard(s) Tested	UL 1741: Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources, April 20, 2010. Edition 2 [(Supplement SA)+R:15Feb2018], Power Control Systems (PCS), Certification Requirement Decision 3/8/2019. PCS limits defined by NFPA 2020 edition section 705.13.
Testing period:	11/7/2023-11/8/2023
Reference reports:	Powerwall 2 with Backup Gateway 2: US24PQ82.001 and ETL report no. 102591059CRT-001d.

TUV Rheinland of North America, Inc.
Pleasanton Office

1279 Quarry Lane, Suite A, Pleasanton, CA 94566

Tel: (925) 249-9123
Fax: (925) 249-9124
Web: www.us.tuv.com

TUV Rheinland of North America, Inc.
North American Headquarters

12 Commerce Road
Newtown, CT 06470

Tel: +1 (203) 426-0888
Fax: +1 (203) 426-4009
Mail: info@tuv.com
Web: www.tuv.com

Powerwall 2 ratings

Nominal Battery Energy	13.5 kWh
Nominal Grid Voltage	100 - 240 VAC
Voltage range	90 - 252 VAC
BESS Continuous Power	2.5 kVA to 5.8 kVA
Frequency	50/60 Hz
Phase	200V/ 208V/ 240V - 2 wire + neutral + ground, 2-phase, All other voltages – 1 wire + neutral + ground, 1-phase
BESS Continuous Current	24 A
Overcurrent Protection Device	32 A
Software/Firmware version	b624638a90cf
Enclosure Type	Type 3R
Rated ambient temperature [°C]	-20°C to +50°C

PCS ratings with Backup Gateway 2

Maximum PCS controlled current	200 A
Maximum Open loop response time	1.95 seconds
Steady state % power	1% of power stability is achieved in less than 10 seconds
Average Open loop response time	0.95 seconds
Tested for Type of mode	Export Limit and Export only

Test List table

Clause	Test
203.5	Step change in load test
204.1.1	Export limit step change in load
204.4	Export limiting to Energy Storage Systems

Backup Gateway 2 Specifications

Backup Gateway 2 Specifications

Performance Specifications

AC Voltage (Nominal)	120/240 V
Feed-In Type	Split Phase
Grid Frequency	60 Hz
Current Rating	200 A
Maximum Input Short Circuit Current	10 kA[1]
Overcurrent Protection Device	100-200A; Service Entrance Rated[1]
Overvoltage Category	Category IV
AC Meter	Revenue accurate (+/- 0.2 %)

[1]When protected by Class J fuses, Backup Gateway 2 is suitable for use in circuits capable of delivering not more than 22 kA symmetrical amperes.

Mechanical Specifications

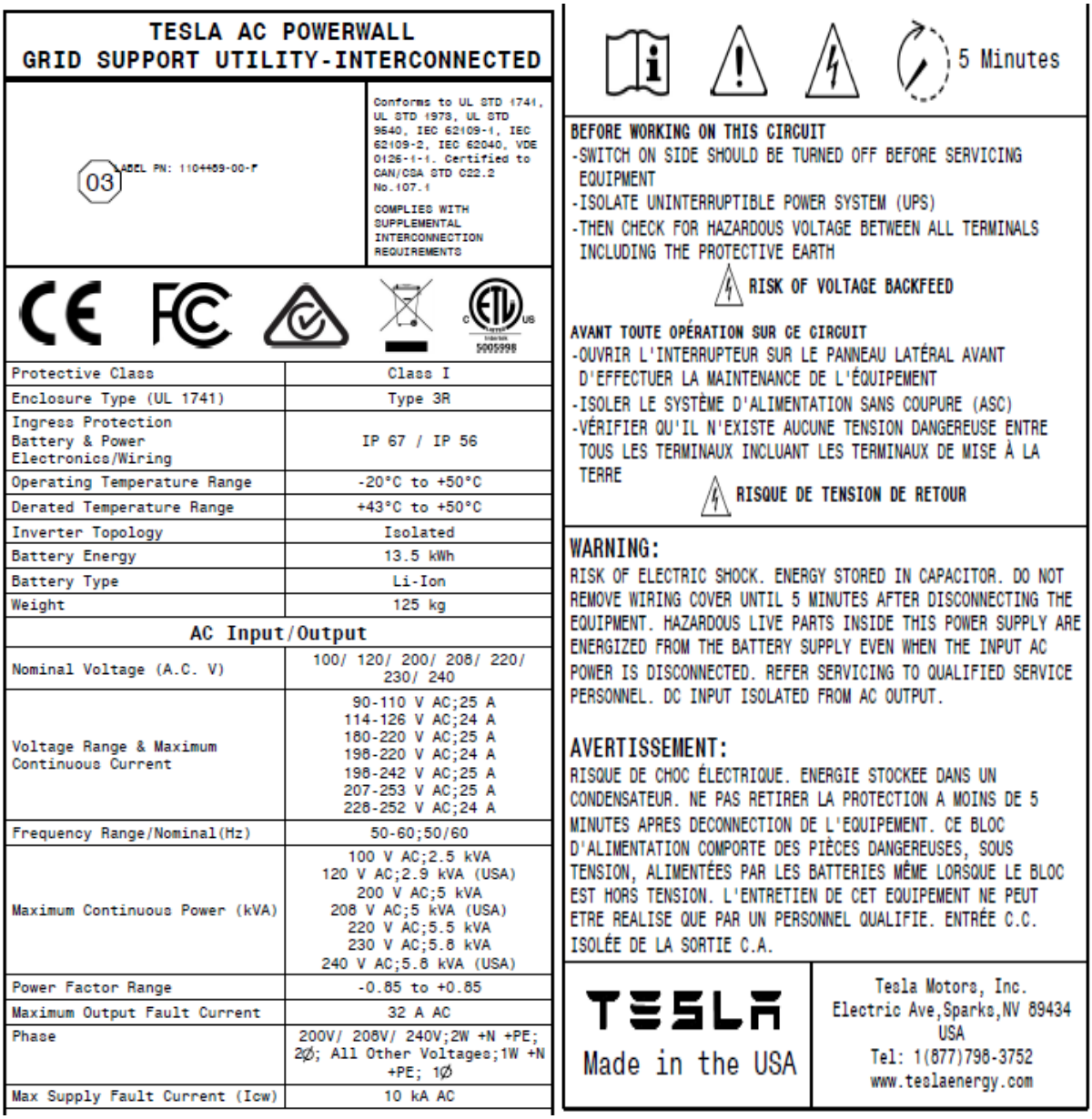
Dimensions	26 x 16 x 6 inches (660 x 411 x 149 mm)
Weight	45 lb (20.4 kg)
Mounting	Wall mount, Semi-flush mount

Environmental Specifications

Operating Temperature	-4°F to 122°F (-20°C to 50°C)
Operating Humidity (RH)	Up to 100%, condensing
Maximum Elevation	9843 ft (3000 m)
Environment	Indoor and outdoor rated
Enclosure Type	NEMA 3R

Attachments:

a. System Label for PCS – PW2



TESLA AC POWERWALL
GRID SUPPORT UTILITY-INTERCONNECTED

03 LABEL PN: 1104459-00-F

Conforms to UL STD 1741, UL STD 1973, UL STD 9540, IEC 62109-1, IEC 62109-2, IEC 62040, VDE 0126-1-1. Certified to CAN/CSA STD C22.2 No.107.1

COMPLIES WITH SUPPLEMENTAL INTERCONNECTION REQUIREMENTS

Protective Class	Class I
Enclosure Type (UL 1741)	Type 3R
Ingress Protection Battery & Power Electronics/Wiring	IP 67 / IP 56
Operating Temperature Range	-20°C to +50°C
Derated Temperature Range	+43°C to +50°C
Inverter Topology	Isolated
Battery Energy	13.5 kWh
Battery Type	Li-Ion
Weight	125 kg
AC Input/Output	
Nominal Voltage (A.C. V)	100/ 120/ 200/ 208/ 220/ 230/ 240
Voltage Range & Maximum Continuous Current	90-110 V AC;25 A 114-126 V AC;24 A 180-220 V AC;25 A 198-220 V AC;24 A 198-242 V AC;25 A 207-253 V AC;25 A 228-252 V AC;24 A
Frequency Range/Nominal(Hz)	50-60;50/60
Maximum Continuous Power (kVA)	100 V AC;2.5 kVA 120 V AC;2.9 kVA (USA) 200 V AC;5 kVA 208 V AC;5 kVA (USA) 220 V AC;5.5 kVA 230 V AC;5.8 kVA 240 V AC;5.8 kVA (USA)
Power Factor Range	-0.85 to +0.85
Maximum Output Fault Current	32 A AC
Phase	200V/ 208V/ 240V;2W +N +PE; 2Ø; All Other Voltages;1W +N +PE; 1Ø
Max Supply Fault Current (Icw)	10 kA AC

5 Minutes

BEFORE WORKING ON THIS CIRCUIT
-SWITCH ON SIDE SHOULD BE TURNED OFF BEFORE SERVICING EQUIPMENT
-ISOLATE UNINTERRUPTIBLE POWER SYSTEM (UPS)
-THEN CHECK FOR HAZARDOUS VOLTAGE BETWEEN ALL TERMINALS INCLUDING THE PROTECTIVE EARTH

RISK OF VOLTAGE BACKFEED

AVANT TOUTE OPÉRATION SUR CE CIRCUIT
-OUVRIR L'INTERRUPTEUR SUR LE PANNEAU LATÉRAL AVANT D'EFFECTUER LA MAINTENANCE DE L'ÉQUIPEMENT
-ISOLER LE SYSTÈME D'ALIMENTATION SANS COUPURE (ASC)
-VÉRIFIER QU'IL N'EXISTE AUCUNE TENSION DANGEREUSE ENTRE TOUS LES TERMINAUX INCLUANT LES TERMINAUX DE MISE À LA TERRE

RISQUE DE TENSION DE RETOUR

WARNING:
RISK OF ELECTRIC SHOCK. ENERGY STORED IN CAPACITOR. DO NOT REMOVE WIRING COVER UNTIL 5 MINUTES AFTER DISCONNECTING THE EQUIPMENT. HAZARDOUS LIVE PARTS INSIDE THIS POWER SUPPLY ARE ENERGIZED FROM THE BATTERY SUPPLY EVEN WHEN THE INPUT AC POWER IS DISCONNECTED. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. DC INPUT ISOLATED FROM AC OUTPUT.

AVERTISSEMENT:
RISQUE DE CHOC ÉLECTRIQUE. ENERGIE STOCKEE DANS UN CONDENSATEUR. NE PAS RETIRER LA PROTECTION A MOINS DE 5 MINUTES APRES DECONNECTION DE L'EQUIPEMENT. CE BLOC D'ALIMENTATION COMPORTE DES PIÈCES DANGEREUSES, SOUS TENSION, ALIMENTÉES PAR LES BATTERIES MÊME LORSQUE LE BLOC EST HORS TENSION. L'ENTRETIEN DE CET EQUIPEMENT NE PEUT ETRE REALISE QUE PAR UN PERSONNEL QUALIFIE. ENTRÉE C.C. ISOLÉE DE LA SORTIE C.A.

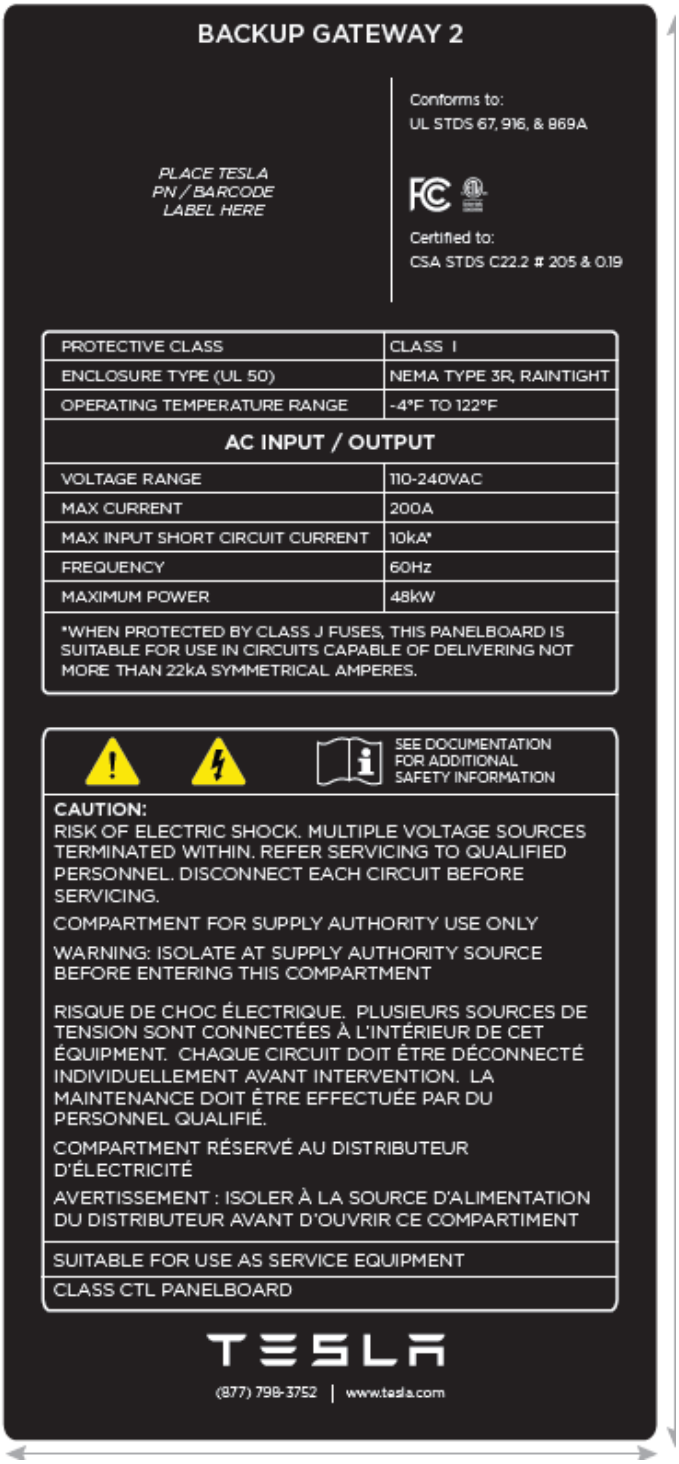
TESLA
Made in the USA

Tesla Motors, Inc.
Electric Ave,Sparks,NV 89434
USA
Tel: 1(877)798-3752
www.teslaenergy.com

b. Backup Gateway 2 Label

FOR INFORMATION ONLY - DO NOT PRINT

TESAL PN: 1494265-00-A
MATERIAL: 8B35 TEXTURED LEXAN, .005"
ADHESIVE: 3M, 300 SERIES, .002"
PROCESSING: DIE CUT AT EXTERNAL PERIMETER
OVERBLEED BLACK AS NECESSARY



Thank you for the opportunity to service your product testing needs. Please do not hesitate to contact our engineering or sales team for any questions you may have.

Evaluated by:

Himanshu Vaidya

Test Engineer

Email: hvaidya@us.tuv.com

Reviewed by:

Howard Liu

Manager, Power Electronics Segment – Americas

Email: hliu@us.tuv.com

Report History	
US24ACMZ.001	PW2 + GW2 original PCS VoC