Certificate of Compliance

Certificate: 80049557 **Master Contract:** 601776

Project: 80049557 **Date Issued:** 2020-09-10

Issued To: Exide Australia PTY Ltd.
135 Nancy Ellis Leebold Drive
Bankstown, New South Wales 2200
Australia

Attention: Mr. RUSSELL ZAMMIT

The products listed below are eligible to bear the CSA Mark shown with adjacent indicator 'US'

Issued by: *Peng (Cheney) Chen*
Peng (Cheney) Chen

US

PRODUCTS

CLASS 3701-82 - Battery System for use in Stationary Applications. - Certified to US standard.

Secondary lithium ion battery system for use in stationary application, Model, LIBM048050-G01.

Electrical Ratings:

Battery Pack Model	Battery Pack Ratings				Battery Module	BMS Model
	Normal Voltage, Vdc	Normal Capacity, Ah/Wh	Battery Pack Configuration*	Enclosure IP Rating		
LIBM048050-G01	48	50Ah/2400Wh	(5s2p)*3	IP20	XM1650A	48V50AH BMS

Note*: Battery Pack consists of 3 modules XM1650A, which are in series connected. The Module XM1650A consists of 10pcs Cells, which are connected in 5 series-2 parallel configuration.

Manufacturer's Specified Charging Parameters for Battery Pack

Battery Pack Model	Temperature Range, °C	Normal Charging Voltage, Vdc	Normal Charging Current, A	Maximum Charging Voltage, Vdc	Maximum Charging Current, A
LIBM048050-G01	-10~45	51.5	20	51.5	40

Manufacturer's Specified Discharging Parameters for Battery Pack:

Battery Pack Model	Temperature Range, °C	Normal Discharging Current, A	End-of-discharge voltage, Vdc	Maximum Discharging Power, W	Maximum Discharging Current, A
LIBM048050-G01	-20~45	40	42	--	50

Notes:

1. The battery pack including its battery management system has been tested according to the functional-safety requirements of ANSI/CAN/UL-1973:2018, Second Edition. Solid state circuits and software controls relied upon as the primary safety protection, have been evaluated to the Standard for Safety: Automatic Electrical Controls – Part 1, UL 60730-1. Any change to the software and electronic controls of the BMS may require additional testing.
2. The enclosure was evaluated only to establish an IP rating of IP20 with the Standard for Degrees of Protection Provided by Enclosure (IP Code) IEC 60529.
3. Product is evaluated for indoor use and shall avoid being used in moisture environment, and not being used near sea environments.
4. Further evaluation for Resistance of Moisture and/or Salt Fog may be required for the battery pack intended to be used in the end product where moisture and/or salt fog condition were applied.
5. Corrosion due to electrochemical action is to be determined for conductive parts in contact with terminals when subjecting to the installation of the end products.
6. Equipment Application Location: Stationary
7. Access Location: Operator Accessible.
8. The installation was not evaluated. The battery system shall be installed in accordance with NFPA 70 or other applicable installation code.
9. Dielectric Voltage Withstand Test was performed with the test potential of 2000Vac/2828 Vdc, a higher test potential shall be considered in the end product if higher overvoltage category specified.
10. Overvoltage Category(OCV): 2
11. Pollution Degree(PD): 2
12. Altitude for Operation: Up to 2000 m.

APPLICABLE REQUIREMENTS

ANSI/CAN/UL-1973:2018, Second Edition - Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications.

MARKINGS

See CSA report.

Supplement to Certificate of Compliance

Certificate: 80049557 **Master Contract:** 601776

The products listed, including the latest revision described below, are eligible to be marked in accordance with the referenced Certificate.

Product Certification History

Project	Date	Description
80049557	2020-09-10	Multiple Listing Certification for Battery Pack for used in Energy Storage System, Model LIBM048050-G01. (Listee: Exide Australia PTY Ltd.)