



# Certificate of Compliance

**Certificate:** 80029076

**Master Contract:** 600581

**Project:** 80029076

**Date Issued:** 2019-12-18

**Issued To:** Darfon Electronics Corp.  
No.167, Shanying Rd., Gueishan Dist,  
Taoyuan, City 33341,  
Taiwan

**Attention:** David Yang

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

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



## **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, Models B09ULF-XXX, B07ULF-XXX.

Electrical Ratings:



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Battery System Model	Battery Pack Ratings				Battery Module	BMS Model
	Normal Voltage, Vdc	Normal Capacity, Ah/Wh	Battery Pack Configuration*	Enclosure IP Rating		
B09ULF-XXX	48	200Ah/9600Wh	1s4p	IP55	H4850M-P02X, B02ULFXXX	N/A
B07ULF-XXX	48	150Ah/7200Wh	1s3p	IP55	H4850M-P02X, B02ULFXXX	N/A

Note\*: Battery System consists of 3 or 4 Battery Packs model H4850M-P02X (B02ULFXXX is identical to H4850M-P02X except for model designation), which are in parallel connection. The Battery Pack contains BMS inside it, is approved by CSA with the certified Battery Pack H4850M-P02X. (Refer to CSA report 80002586). There is no additional BMS for battery system, except for the BMS from battery pack, and each of the BMS can run independently.



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Model difference:

B07ULF-XXX is similar to B09ULF-XXX, except that B07ULF-XXX contains 3 battery packs in parallel connection, while B09ULF-XXX contains 4 battery packs in parallel connection. Others refer to Electrical Rating Table and Charging/Discharging Parameters Table.

For B09ULF-XXX, B07ULF-XXX: XXX represents Serial number, include 0~9 and A~Z, a~z or blank, which only has model designation difference, not safety related.

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
B09ULF-XXX	-10~45	51.5	40	51.5	100
B07ULF-XXX	-10~45	51.5	30	51.5	100

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
B09ULF-XXX	-10~45	90	42	--	120
B07ULF-XXX	-10~45	67.5	42	--	120

**Conditions of Acceptability:**

1. There is no additional BMS for battery system, except for the BMS inside the battery pack, which can run independently. 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. Refer to CSA report 80002586.
2. The enclosure was evaluated to establish an IP rating of IP55 with the Standard for Degrees of Protection Provided by Enclosure (IP Code) IEC 60529.
3. Product is evaluated for being used near marine environments, with a severity level of 2 salt fog condition according to IEC 60068-2-52.
4. Further evaluation for Resistance of Moisture and/or Salt Fog may be required for the battery system intended to be used in the end product where higher level of moisture and/or salt fog condition were applied.
5. The cable entry holes at the top and bottom of enclosure were sealed and the Machine feet at the bottom of enclosure were mounted, while conducting the IP test and salt fog test. Additional evaluation may be required after the holes opened for the cable connecting or after the machine feet uninstalled, during the installation or using in the end product.
6. 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.



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7. Equipment Application Location: Stationary
  8. Access Location: Operator Accessible.
  9. The installation was not evaluated. The battery system shall be installed in accordance with NFPA 70 or other applicable installation code.
  10. Dielectric Voltage Withstand Test was performed with the test potential of 2000Vac/2828Vdc, a higher test potential shall be considered in the end product if higher overvoltage category specified.
  11. Overvoltage Category(OCV): 2
  12. Pollution Degree(PD): 2
  13. 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.