



49-15LNCM04-xx Series Lithium Battery
15V 7AH, 10AH, 20AH, 40AH Capacity
Waterproof Sealed Construction
User's Manual



General Product Specifications

Model Number	Nom. Volt	Capacity	Max. Cont. Discharge-A	Discharge Voltage	Charge Voltage
49-15LNCM04-07	15V	7AH, 105Wh	3.5A	11.6V	16.8V
49-15LNCM04-10	15V	10AH, 150Wh	5.0A	11.6V	16.8V
49-15LNCM04-20	15V	20AH, 300Wh	10.0A	11.6V	16.8V
49-15LNCM04-40	15V	40AH, 600Wh	20.0A	11.6V	16.8V

NOTE: UTILITY AND/OR PATENT PENDING APPLIED IN 2022/23



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www.Hydro-Bioscience.com

Table of Contents

























1. <i>Safety Information</i>	3
Safety Symbols and Terms	3
Safety Symbols	3
Safety Terms.....	4
General Safety Requirements	4
DOT Shipping Regulations	4
General Information.....	4
FOR CHEMICAL EMERGENCY - Spill, Leak, Exposure, or Incident	4
2. <i>Installation</i>	5
Battery Installation	5
3. <i>Operation</i>	6
Charging Recommendations	6
Battery Management System (BMS)	6
4. <i>Appendix</i>	7
Battery Maintenance	7
Battery Storage Conditions	7
FAQ	7
Product Dimensions	8
Specifications	9
5. <i>General Warranty</i>	10

1. Safety Information

Safety Symbols and Terms


Safety Symbols

The following symbols may appear on the product:

	Direct current (DC)		Caution, risk of danger
	Alternating current (AC)		Warning, risk of electric shock
	Both direct and alternating current		Risk of explosion
	Ground terminal		Recycle lithium-ion batteries
	Chassis ground		Do not incinerate
	Power on/off		Power port
	Battery/cell power connection		Battery/cell power connection
	Communication port		Solar panel port
	Repair/service		AC connection port
	Navigation light connection		MyQuattro App communication
	Conforms to European Union directives		
	Complies to the Federal Communications Commission		
	Complies with the Restriction of Hazardous Substances Directive (2002/95/EC)		
	This product complies with the WEEE Directive (2002/96/EC) marking equipment. The affixed product label indicates that you must not discard this electrical/electronic product in domestic household waste.		

Safety Terms

Terms in this manual:

 Warning/Caution: BE ALERT – YOUR SAFETY IS INVOLVED'. If you do not follow these safety instructions, personal injury, loss of life, and/or property damage may occur.


Terms on the product:

Danger: Indicates an immediate hazard which will result in death or serious injury.

Warning: Indicates a hazard which may result in death or serious injury.

Caution: Indicates a hazard which may result in minor or moderate injury.

General Safety Requirements

 **WARNING - Read this manual thoroughly before using the battery.**

DOT Shipping Regulations

1. This battery ships Class 9. It cannot be carried by a passenger aircraft.

General Information

1. Risk of fire, explosion, and burns. Do not subject the battery to heat above 100°C (212°F) or incinerate.
2. Keep away from children and pets. NEVER put batteries in your mouth.
3. Swallowing may lead to serious injury or death. If ingested, immediately contact your physician or a poison control center.
4. Use only DPI or HBS branded and approved battery chargers.
5. Do not touch or connect the terminals of the battery to each other.
6. Do not subject the battery to a short circuit.
7. Do not place the battery near fire, in direct sunlight, or in high temperature locations.
8. Do not disassemble or modify the battery.
9. Do not crush, step on, or subject the battery to strong impact.
10. Do not smoke around or near the battery.
11. Immediately discontinue use of the battery if it emits an unusual smell, feels hot, expands, or appears abnormal in any way.
12. Inspect battery for any damage before using. Do not use battery if it has been damaged in any way.
13. Dispose of used batteries promptly according to local recycling or waste regulations.

FOR CHEMICAL EMERGENCY - Spill, Leak, Exposure, or Incident

1. DURING TRANSPORT ONLY Call INFOTRAC
2. 24-Hour Number: 1-800-535-5053 or +352-323-3500 (outside USA)

2. Installation

Battery Installation

1. Check battery voltage before use. Battery terminals must be clean to secure a proper electrical connection. Batteries are pre-charged to 30% capacity at ship time; therefore, it is required that the batteries be charged before using.
2. DO NOT connect the positive terminal and negative terminal together with wire or metal objects or cause a short circuit.
3. Series Connection: Do not put batteries in series.
4. Series-Parallel Connection: Do not put batteries in a series-parallel.
5. Parallel Connection: Parallel connection is possible if and only if you follow this procedure:
 - a. Using a voltmeter check every battery voltage at its terminal and write down the voltage read.
 - b. All batteries must be balanced and at the exact voltage level +/-0.10V.
 - c. Fully charge each battery and verify, using a voltmeter, that each battery is at the same voltage reading, +/-0.10V.
 - d. Then, batteries may be wired in parallel.
 - e. If you are unfamiliar with the terms, 'volt' or 'voltage' or 'amp' or 'capacity' or 'voltmeter' or 'charging', do not attempt to balance the batteries – seek the advice of an electrician.
6. Install battery in a clean and open, well-ventilated area.
7. Remove all jewelry.
8. Have another person present in case of an emergency.
9. Make sure you are installing your battery in a dry, clean environment that has temperatures from 0°C(32°F) to 40°C(104°F).
10. The battery uses 0.25in (6.35mm) male fast-on terminals. Use high quality mating 0.25in (6.35mm) female fast on terminals.
11. Ensure that all the battery terminals are clean and accessible.
12. Ensure that your device is turned off before installing the battery.
13. Connect the Red lead to either of the terminals labeled '+' and connect the black lead to either of the terminals labeled NEG and/or '-'.
14. Ensure that the connections from the terminal to the battery are mechanically secure. A good mechanical connection will not move when jerking the wire back and forth or pulling on it.

3. Operation

Charging Recommendations

1. Follow all Charge Instructions.
2. Use only HBS branded and approved battery chargers.
3. Ensure the battery terminals are clean and the charger cables are secure and have a good mechanical and electrically mated connection.
4. Remove all jewelry before charging or working batteries.
5. Never use any charger that has a de-sulfation mode, nor a high voltage mode, nor an equalization mode, nor a top-off mode.
6. Never use a charger that has a voltage exceeding 16.8 volts on any stage.
7. Charge output rate must not exceed this rate, for these models:
 - a. 49-15LNMC04-07 3.5A
 - b. 49-15LNMC04-10 5.0A
 - c. 49-15LNMC04-20 10.0A
 - d. 49-15LNMC04-40 20.0A
8. Charge must terminate when charge current decreases to one percent of capacity.

Battery Management System (BMS)

1. The BMS protects the battery's cells with an internal on/off switch; circuitry that balances each cell; and an internal, automatically resettable, short circuit fuse.
2. The internal switch will turn off the battery pack for many different external conditions such as low voltage, high current, and high or low temperature. The BMS or battery management system also balances the four cells when the battery is being charged.
3. BMS Protection Specifications
 - a. Low Voltage Disconnect at 11.6 volts.
 - b. High Current Disconnect approximately 30 amps.
 - c. High and Low temperature disconnect.
 - d. Maximum Charge Voltage is 16.8 volts.
 - e. Short Circuit protection – remove short to reset internal fuse.

4. Appendix

Battery Maintenance

1. Keep battery clean and free from debris, corrosion, or build-up of any kind.
2. Charge and discharge according to battery specifications.
3. Dispose of the battery at your nearest recycling center.

Battery Storage Conditions

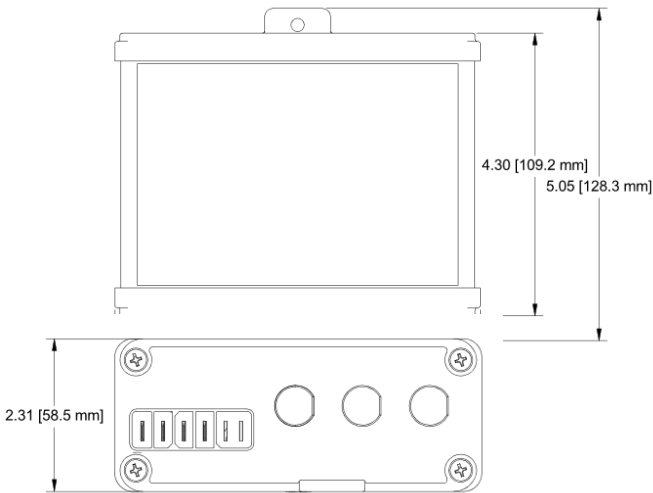
1. Always locate your battery in the coolest possible shaded location while in storage. Avoid storage in sunlit areas.
2. Batteries are damaged primarily by subjecting them to prolonged exposure to high temperature storage and/or deep discharge.
3. All batteries lose energy capacity while in storage. Lithium batteries lose much less energy than lead-acid batteries over the same period but can still be stored one or more years without damage.

FAQ

1. Why is my battery pack measuring zero volts?
 - a. Answer: The battery may have turned itself off for the following reasons: voltage low, current too high, or temperature too high or low.
 - b. Solution: Disconnect battery and place the battery at room temperature for 24 hours (25°C or 77°F). Fully Charge the battery with an approved charger and place battery back into service.
2. Why does my battery make my charger click?
 - a. The circuit inside the charger and the BMS circuit inside the battery are working with each other.
 - b. Solution: Leave the battery connected to the charger and the charger clicking will stop when the battery is fully charged.
3. Why isn't my battery charging properly with the charger I am using?
 - a. The charger circuit and the battery's BMS circuit are not working well with each other.
 - b. Solution: Only use battery chargers and smart battery chargers recommended.
4. Why does my battery keep turning off when I am using it?
 - a. Possible causes include load current high, not charged, or the battery or ambient temperature too high or low.
 - b. Solution: Fully charge battery and place back into service. If it turns off quickly then a larger capacity battery may be needed.

Product Dimensions

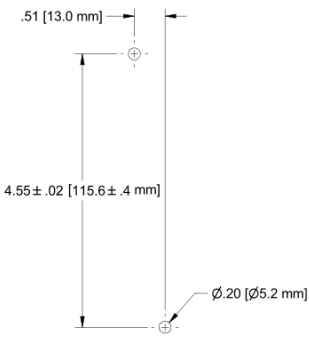
Series 49-15LNMC04-07, 49-15LNMC04-10



Two Positive 0.250in (6.35mm) Tab Terminals are located on the left.
Two Negative 0.250in (6.35mm) Tab Terminals are located on the right.

Important: Always use food grade Dielectric Grease on Tabs and Fast-On Terminals when making electrical connections from cable terminals to battery tabs.

Mount Pattern and Mounting Hole Description:



Drill Hole:

#6 Drill Size, 0.204in, 5.2mm

#8-32 or equivalent screw

Use Stainless Steel 18-8 minimum Hardware

Specifications

Parameter (Series P/N)	49-15LNMCO4-07	49-15LNMCO4-10	49-15LNMCO4-20	49-15LNMCO4-40
Dimensions:				
LxWxH (mm):	141 x 107 x 59	141 x 107 x 59	282 x 214 x 59	Custom
LxWxH (in):	5.6 x 4.2 x 2.3	5.6 x 4.2 x 2.3	11.2 x 8.4 x 2.3	Custom
Approximate Weight:	0.98kg (2.15 lb)	0.98kg (2.15 lb)	2.3kg (5.1 lb)	4.7kg (10.4 lb)
Nominal Voltage:	15V	15V	15V	15V
Internal Resistance (est):	≤13mΩ	≤10mΩ	≤5mΩ	≤3mΩ
Nominal Capacity: Rated at 25°C (77°F), Capacity tolerance: +/-5%				
20-hr:	(0.35A), 7AH	(0.5A), 10AH	(1.0A), 20AH	(2.0A), 40AH
10-hr:	(0.70A), 7AH	(1.0A), 10AH	(2.0A), 20AH	(4.0A), 40AH
5-hr:	(1.4A), 7AH	(2.0A), 10AH	(4.0A), 20AH	(8.0A), 40AH
2-hr:	(3.5A), 6.3AH	(5.0A), 9AH	(10.0A), 18AH	(20.0A), 36AH
Shelf Life (% of normal capacity at 20° C (68° F):				
3 months (all types):	97%			
6 months (all types):	95%			
12 months (all types):	85%			
Storage Temperature (all types): -10°C to 35°C (14°F to 95°F)				
Operating Temperature:				
Charge (all types):	0°C to 45°C (32°F to 113°F)			
Discharge (all types):	-20°C to 60°C (-4°F to 140°F)			
Temperature Dependency of Capacity:				
-10°C (all types):	50%			
0°C (all types):	65%			
20°C (all types):	100%			
55°C (all types):	95%			
Charge Method (all types): Constant current / Constant Voltage / Float				
Cycle Use (Repeat Use):				
Initial Current:	≤3.5A	≤5.0A	≤10.0A	≤20.0A
Control Voltage:	16.8V	16.8V	16.8V	16.8V
Float Use:				
Control Voltage:	15V	15V	15V	15V

5. General Warranty

Hydro BioScience, LLC (HBS) warrants that the product will be free from defects in materials and workmanship for a period of 3 years (1 year for accessories) from the date of purchase of the product by the original purchaser from HBS. This warranty only applies to the original purchaser and is not transferable to the third party.

If the product proves defective during the warranty period, HBS either will repair the defective product without charge for parts and labor or will provide a replacement in exchange for the defective product. Parts, modules, and replacement products used by HBS for warranty work may be new or reconditioned like new performance. All replaced parts, modules and products become the property of HBS.

To obtain service under this warranty, customer must notify HBS of the defect before the expiration of the warranty period. Customer shall be responsible for packaging and shipping the defective product to the service center designated by HBS, and with a copy of customer proof of purchase. Customer must ensure that an RMA (Return Material Authorization) number has been received from HBS. This RMA number must be printed on outside of the return packaging.

This warranty shall not apply to any defect, failure or damage caused by improper use or improper or inadequate maintenance and care. HBS shall not be obligated to furnish service under this warranty:

- a) to repair damage resulting from attempts by personnel other than HBS representatives to install, repair or service the product;
- b) to repair damage resulting from improper use or connection to incompatible equipment;
- c) to repair any damage or malfunction caused by the use of non-HBS supplies;
- d) to service a product that has been modified or integrated with other products when the effect of such modification or integration increases the time or difficulty of servicing the product.

Please contact the nearest HBS's Sales and Service Offices for services. For better after-sales service, please visit www.hydro-bioscience.com and register the purchased product online. Warranty may also be requested on-line, along with obtaining an RMA, automatically.

Excepting the after-sales services provided in this summary or the applicable warranty statements, HBS will not offer any guarantee for maintenance declared or hinted, including but not limited to the implied guarantee for marketability and special-purpose acceptability. HBS should not take any responsibility for any indirect, special, or consequent damages.

For Customer Service, and to request an RMA or obtain Return Information, please call Hydro Bioscience, LLC at 888-500-5011.

For all returns, clearly mark the RMA # on the outside of the packaging and send to:

Hydro Bioscience, LLC
414 Century Court
Piney Flats, TN 37686
RMA Number: _____