AWILCO

LITHIUM BATTERY LFP12100BM

LIFEPO4 WITH BLUETOOTH IN METAL CASE

12V - 100AH

RoHS Compliant UN38.3

OWNER'S MANUAL

AWILCO

FLEXIBLE POWER SOLUTIONS

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INTRODUCTION

For secure and optimal use of this battery always read this manual before the unit is taken into use.

Make sure to study the technical specification before use. The technical specification applies to the 12V LiFePO4 battery and describes the type and size, performance, technical characteristics, warning and caution of the rechargeable cell.

DISCLAIMER

While every precaution has been taken to ensure the accuracy of the contents of this guide, the supplier assumes no responsibility for errors or omissions. Note as well that specifications and product functionality may change without further notice.

CAUTION

Please be sure to read and save the entire manual before using your LFP12100BM battery. Misuse may result in damage to the unit and/or cause harm or serious injury.

PRODUCT NO.

LFP12100BM Lithium 12V 100Ah LiFePO4 incl. Bluetooth metal casing

SERVICE AND CONTACT INFORMATION

Email: mail@awilco.dk
Phone: +45 56 56 54 00
Web: www.awilco.dk

SAFETY INSTRUCTIONS

Lithium batteries are considered as hazardous goods due to the fact that they can overheat and ignite under certain conditions.

LFP12100BM battery is classified as dangerous goods UN 3481, Class 9, Packing instruction 966 and 967 respectively. LFP12100BM contains a power source with high energy density and hazardous materials mounted in metal cabinet.

CAUTION

1. Please always read the battery specification before using the battery.
2. Always use the battery +in accordance with specifications.
3. Must not be used or stored in the environment of corrosively, explosives, high temperature (like in hot environments or direct sun exposure)
4. Use a compatible charger **– e.g. the Kisae AC-series.**
5. Do not short circuit terminals. Do not demolish or disassembly the battery.
6. Guarantee is two years as of invoice date. Life time: 2000 cycles or 2 years*. Any damage by incorrect use will void the guarantee. Free service will not be provided by the manufacturer.
7. The battery must be used in the assigned application.
8. Disposal of the batteries must be at approved recycling centers and in accordance with national legislation.

STORAGE:

The LFP12100BM battery must be fully charged before they are put into storage (please see the technical specification for information). Furthermore please note that the battery must be recharged every 3-6 months.

HANDLING & MAINTENANCE

Before installation, please read this manual and ensure qualified personal to install the battery.

PRODUCT DESCRIPTION

Each LFP12100BM carton contains the following:

1 x LiFePo4 battery in closed metal cabinet
2 x Andersson plugs red (see picture)
1 x Andersson plugs black (see picture)
4 x metal brackets for safe mounting
(see picture, screws not included)
1 x Installation manual

Please check the battery construction on receipt of goods whether fastness, impact, drop and extrusion issue has caused box distortion. If yes, please contact the supplier

* Please see ”Electrical features” ”Cycle life”.

INSTALLATION

WARNING

It is recommended that all wiring must be handled by a certified technician or electrician to ensure adherence to the applicable electrical safety wiring regulations and installation codes. Failure to follow these instructions can damage the unit and may result in personal injury or loss of life.

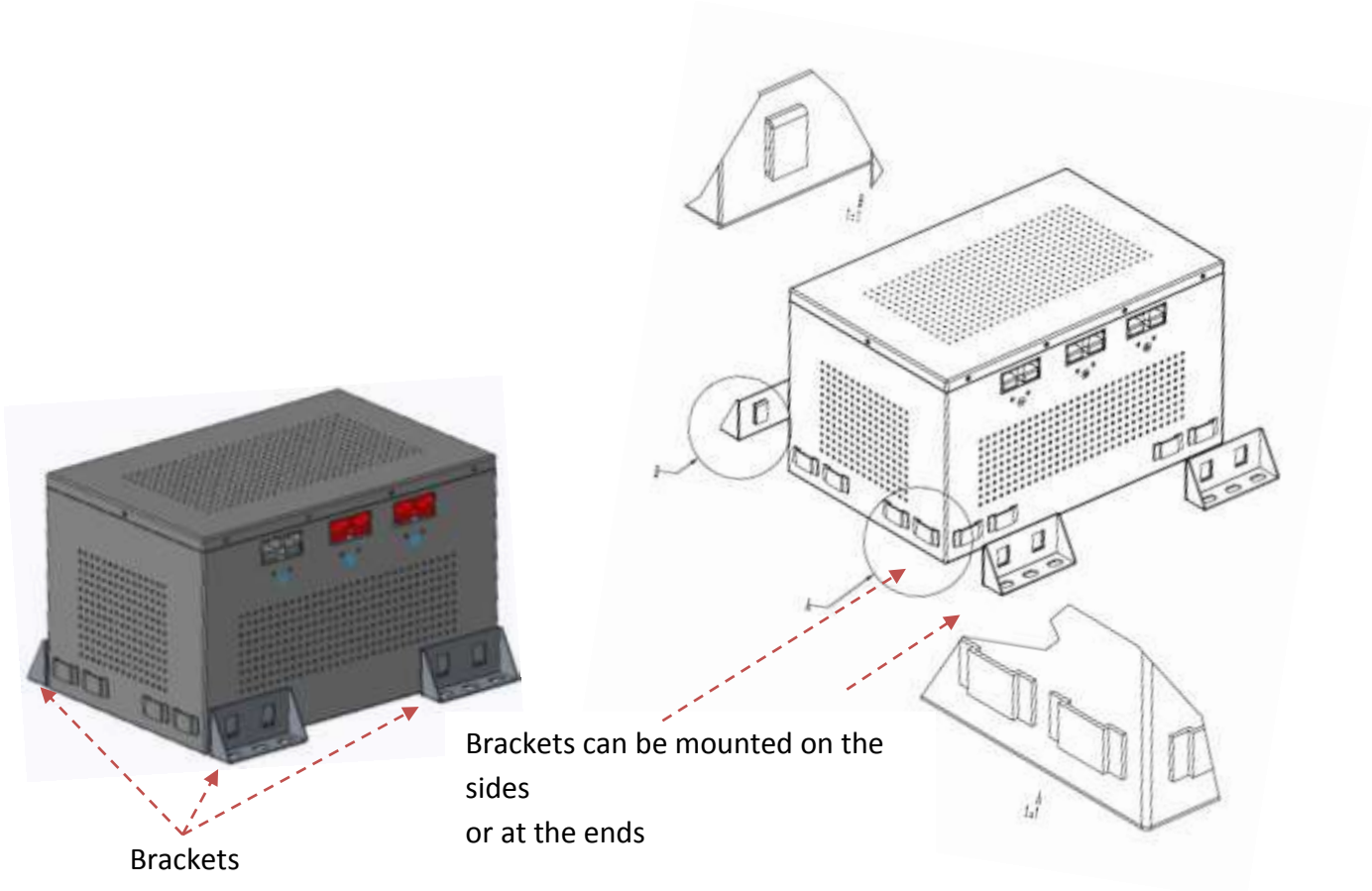
CAUTION

Before beginning unit installation, please consider the following:

- The unit should be used or stored in an indoor area away from direct sunlight, heat, moisture or conductive contaminants.
- When placing the unit, make sure that the area is well ventilated. Installed in a cabinet, allow a minimum of three inches of space around the unit for optimal ventilation.

DESCRIPTION OF FEATURES

Picture: LFP12100BM without mounting



INSTALLING THE UNIT

CABLES

When mounting the LFP12100BM it is essential that all batteries are connected correctly to the connection terminals.

All cables connecting the batteries to the connection terminals must be of the same length and dimension.

Use suitable crimping tool for the cables for the 120A Andersson connectors.
Make sure that it is firmly crimped for good connection.
To minimize the resistance, please note the longer cables, the higher mm2 for the 120A Andersson connectors. Use as minimum 16mm2 cables.

WARNING: Do not short circuit terminals; otherwise, the battery or appliance will be damaged or burned.

Do NOT connect to the positive and negative terminals of the battery directly. Otherwise, the battery will be damaged or burned.

Please use a special LiFePo4 battery charger e.g. Kisae AC-series. Recommended: Standard charging voltage 14.6V, floating 13.8V, and charging current ≤50A.

PARALLEL CONNECTION

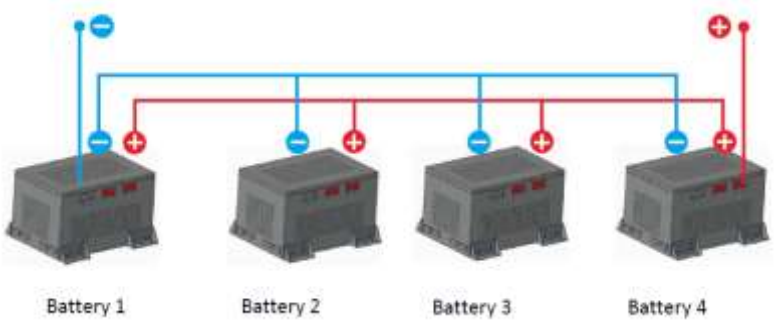
GENERAL PRECAUTIONS:

- Only LFP12100BM 100A batteries must be mounted in parallel. Other batteries or other brands must not be mixed together with LFP12100BM batteries
- Do NOT connect LFP12100BM in serial. Otherwise the battery will be damaged and the warranty immediately expires.
- Make sure that all battery packs have the same voltage level (voltage difference <0.2V) before connecting the batteries in parallel. Charge every battery pack to full and rest for 5 hours or more with same type of chargers.

PARALLEL CONNECTING LITHIUM BATTERIES

Connect the batteries according to the pictures below. Wires are connected to the poles of the battery as follows:

1. Positive terminal + (Andersson RED connector) from battery 1 to battery 2
2. Negative terminal – (Andersson BLACK connector) from battery 1 to battery 2



Example of 4 units in parallel:

CAUTION

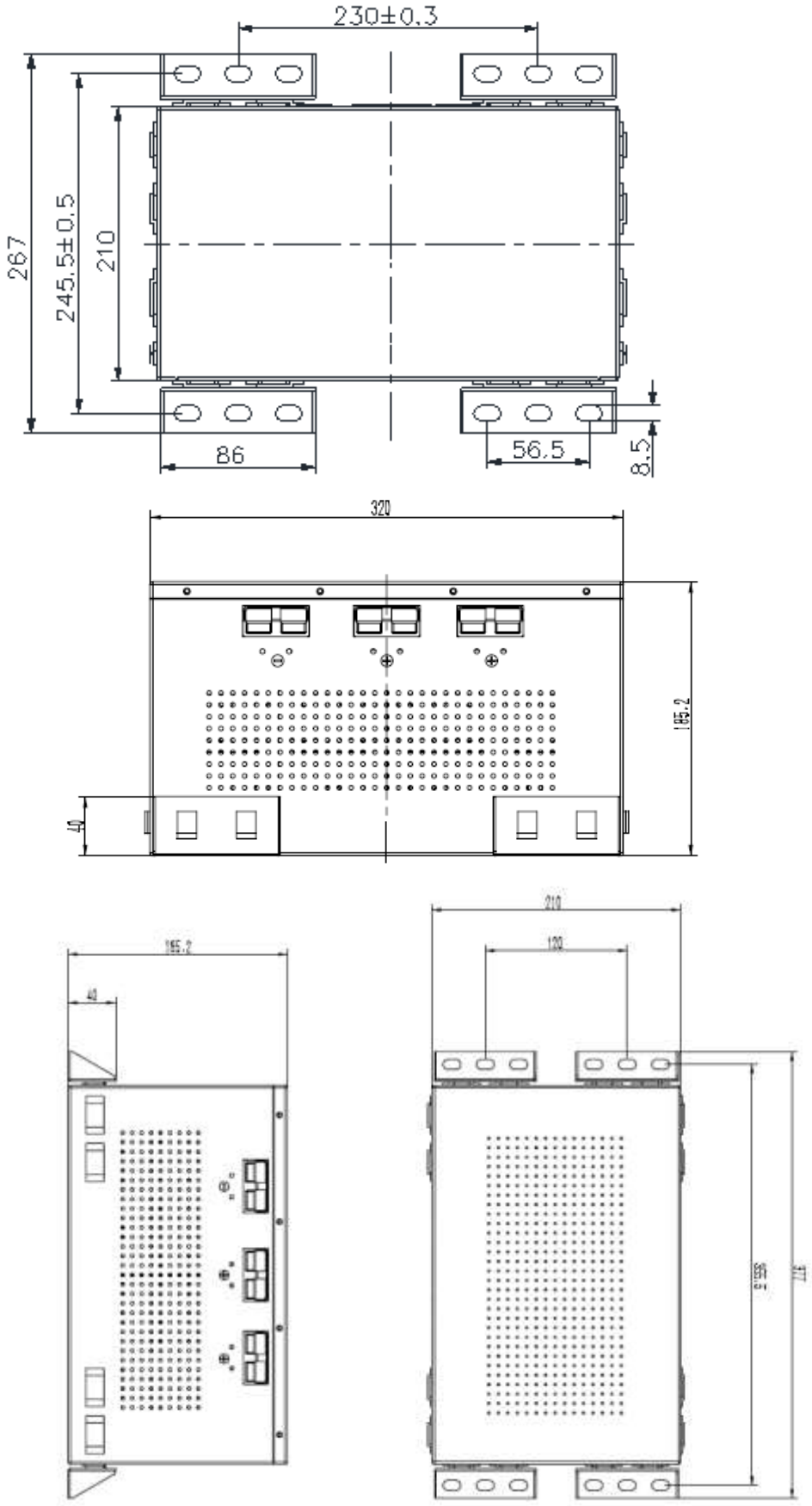
1. Make sure that all batteries have the same voltage level (voltage difference <0.2V) before connecting the batteries in parallel.
2. Avoid reverse polarity by connecting + to + (Positive terminal) and – to – (Negative terminal). Caution: The batteries are only to be connected in parallel!

3. Cable dimensions must be able to handle > 100A. Please use min. 25mm2 or higher.
4. Please make sure that the environment of the battery is safe and protected from corrosion, vibrations and loose connections. Make sure the battery is fastened. Connection impedance < 0.1mΩ
5. Do not use the batteries in series. This will cause sparks, short circuit and destruction at the battery.

MOUNTING

- Please choose a well ventilated area for mounting the unit.
- The unit can be mounted both vertically and horizontally. Do NOT mount the unit upside down, or the unit can be damaged.
- Please use the template below for marking the locations of the mounting screws.
- Please use the according screws and correct screw size for the material to which the battery will be attached and mounted.

DIMENSIONS



ELECTRICAL FEATURES

STANDARD CHARGE

Charging the cell initially with constant current at 0.2C and then with constant voltage at 14.6V (accuracy ±0.05V) till charging current declines to 0.02C at 25°C.

STANDARD DISCHARGE

Discharging the cell with constant current at 0.2C till cut-off voltage at 9.2V. Temperature: 25°C.

INITIAL INTERNAL IMPEDANCE

This means AC impedance of the pack measured at 1kHz after 50% charge. Initial Internal Impedance≦60mΩ.

INITIAL CAPACITY

The capacity means the discharge capacity of the battery, which is measured with discharge current of 0.2C with 9.2V cut-off voltage after the standard charge. Initial Capacity≧95% Nominal Capacity. Temperature: 25°C.

BATTERY CAPACITY AS SHIPMENT

Capacity of battery pack shipment is more than 50%.

CYCLE LIFE

Test condition: Temperature: 25 ~ 30°C Charge, 0.2C CC to 14.6V, and CV to 200mA cut off Discharge, 0.2C DC discharge to 9.2V, 80% or more of 1st cycle capacity at 0.2C discharge of operation, cycles quantity must not be less than 2000cycles.

BLUETOOTH MINI GUIDE

Every LFP12100BM battery can be connected and monitored by a mobile phone via bluetooth. However, the APP only supports Android and IOS.

Attention: Please note that only one user at a time can be connected to the bluetooth feature.

1. Download the APP by scanning APP-store or Google Play store – AWILCO Smart Battery App.
2. Open the APP
   a. Scanning
   b. Found bluetooth!
3. Under ”Devices” – find and choose the according battery
   a. Trying to create new connection
   b. Connecting to GATT server
   c. Connected!
4. When ”status connected” is shown – press ”start”
5. Her vises nu info om det pågældende batteri spænding + capacity, f.ex. 13,3V 100Ah
   a. Under U.I.T.C. info you can follow the battery temperatur e and – cycles
   b. Under System info ”Events” includes a log status of the battery
6. Choose the dots in the lower right corner and the box ”Login dialog” will appear
7. Login dialog: Info about battery cell status – press1234 + confirm
8. Login dialog: Rename device – press 5678 + confirm

TECHNICAL SPECIFICATION

Specification	LFP12100BM
Nominel voltage	12.8V
Typical capacity	100Ah
Internal impedance	≤ 20mΩ
Max charge voltage	14.6±0.1V
Cut-off discharge voltage	≤10V
Max continuous charge current	100A
BMS / PCM	200A
Pulse discharge current (2s)	500A
Terminal Type	Andersson
Battery Case Type	Metal
Work temperature	-20 °C to 55 °C
Weight (approx.)	15.53kg
Dimension	320 x x210 x 185mm
Support Bluetooth	Yes