



USER MANUAL

Advanced Lithium Battery Superieur



12 V | 140 Ah

We connect, we manage, we control
Full control over your OctoPower energy system

1. INTRODUCTION

WhisperPower Advanced Lithium Superieur batteries are Lithium Iron Phosphate re-chargeable batteries. Lithium Iron Phosphate (LiFePO4) technology is considered as the safest lithium technology available in the market. Potential applications of this Advanced Lithium Superieur batteries include: recreational vehicles, small craft boats, recreational off-grid houses, light duty industrial energy storage solutions.

2. PRODUCT FEATURES & BENEFITS

- High end replacement for deep cycle lead acid batteries
- Long life cycle use
- Lithium Iron Phosphate LiFePO4 chemistry
- Build in BMS and CBS (Cell Balancing System)
- Easy to install and maintenance free
- Low self consumption
- Not suitable to be used for engine starting applications

Optional easy connect accessories

- Easy connect local remote panel, OctoView 3
- Easy connect for cloud connection, OctoControl Gateway
- Easy connect installation mounting sets and busbars

The Advanced Lithium Superieur is a intelligent battery. This stand-alone battery is packed with features: Integrated BMS, built-in safety-solid state switch, pre-charge circuit and protection sensors. The second generation LiFePO4 chemistry in combination with the intelligent concept makes this battery the ultimate choice.

The Advanced Lithium Battery Superieur system includes one or more batteries and connectivity to the Whisper Connect CAN bus. The design and technology is based on our proven line of batteries in combination with the safest and most reliable BMS in the market.

3. INTERNAL SAFETY SOLID STATE SWITCH

The built-in safety solid stated switch, rated at 140 A, protects the Lithium-ion battery from overcurrent conditions. The safety function is to interrupt the electrical circuit when a current exceeds its rated capacity. It prevents excessive current flows that could lead to overheating or other safety hazards. It's a crucial component to ensure the safe operation of the battery. This type of protection is essential for the safe and reliable operation of lithium battery systems, especially in applications where high currents are involved, such as industrial equipment, or renewable energy systems.

4. FLEXIBLE BATTERY CONFIGURATION 12V AND 24V

Easy to setup different parallel and serial battery configuration. Change in a twist the battery configuration. The internal BMS of the Advanced Lithium Battery Superieur parallel en series algorithm ensures that the batteries are never overcharged or undercharged. Furthermore, it will always keep the battery within the operating window including temperature and current control. The internal solid state switch combines maximum safety with ultra low standby consumption. Thanks to the efficiency decision maker technology inside. When fully charged the standby-time will be more than 2 years. When starting up one or more Advanced Lithium Superieur batteries, the internal solid state safety contactor of each battery automatically closes. The built-in pre-charge / discharge circuit prevents overcurrent during the start-up. Besides, it ensures that the solid state switches softly, which increases longevity.

5. REMOTE MONITORING

The basic remote panel OctoView and our advanced OctoControl system panel by WhisperConnect is the monitor en control system of the battery configuration. It is the central unit which controls all connected components. This includes other WhisperPower WhisperConnect chargers, energy monitor and inverters. Furthermore, it monitors and tracks all parameters to provide insight into the status and daily energy consumption. It gathers and combines all battery and communication data in the battery system. All data is transmitted over CAN bus to make it available for third party devices. The OctoControl and OctoView detects the state of the system, including warnings and errors, and intervenes when needed.

6.DIAGNOSTIC TOOL WHISPERCONNECT

Get direct insight in the energy consumption, state-of-charge and all essential battery parameters. Use the optional WhisperConnect diagnostic tool for easy installation of your WhisperPower system. This requires the WhisperConnect USB-CAN Interface. Furthermore, this enables you to get support and perform system diagnostic.

7. WEB BASED ENERGY MONITOR & PORTAL

When connecting the optional OctoControl Gateway in your system, you get access to advanced system cloud based monitoring. The monitor provides in-depth cell information, including individual cell monitoring. All essential parameters such as battery temperature, voltage and current are real time available. Possibility to have remote access with the web based WhisperCare portal

8. SAFETY AND MODULARITY

The Advanced Lithium Battery Superieur includes a comprehensive set of features designed to ensure the optimal performance and safety of the battery. The Lithium Battery Power Advanced is equipped with temperature, voltage, current sensors, strategically placed throughout the battery. Additionally, the Advanced Lithium Superieur batteries are designed to offer the convenience of a direct connection to both the load and charger. Finally, connect up to 4 batteries in parallel and allow 2 batteries in series to increase system capacity/voltage.

9. SPECIFICATIONS

Advanced Lithium Battery Superieur 12 V | 140 Ah

Article Number 40291215

ELECTRICAL SPECIFICATIONS

Nominal Voltage	12.0 Vdc
Open Circuit Voltage	13.2 Vdc
Rated Capacity	140 Ah
Energy	1848 Wh
Resistance	<5 mΩ
Efficiency	>99 %
Cycle Life	>3500 cycles at 1C, 100 % DoD
Cell Self-Discharge	<2 % per month
Cell Type (chemistry)	Cylindrical (LiFePo4)
Cells in Series/Parallel	4S/30P
Max. Module configuration	2S/4P

DISCHARGE PARAMETERS

Continuous Discharge Current	120 A
Max. Discharge Current	140 A
Pulse Discharge Current	180 A (1 s)
Recommended Volt. Disconnect	10.5 Vdc
BMS Discharge Cut-off Voltage	9.2 Vdc
Short Circuit Protection	200 μs to 600 μs

MECHANICAL SPECIFICATIONS

Dimensions in mm (inch)	329 x 180 x 204 (12.95" x 7.09" x 8.03")
Weight	15.0 kg (33 lb)
Terminal Thread	2x M 8 x 1.25
Battery Housing	ABS Plastic Case
Housing Protection	IP21 With additional raincover IP54

CHARGE PARAMETERS

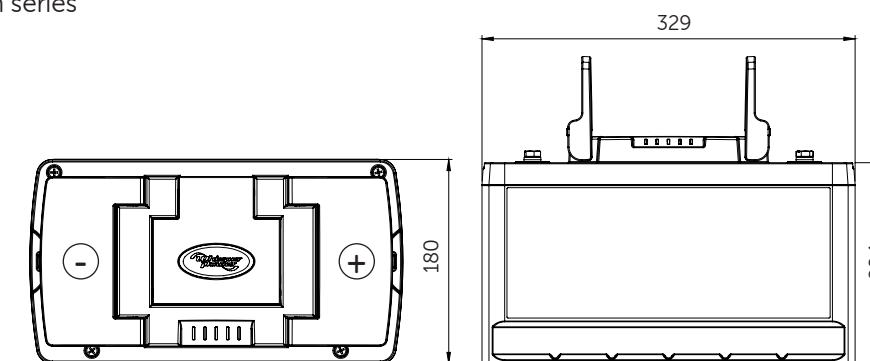
Charge Method	CC-CV
Recommended Charge Voltage	14.2 Vdc to 14.4 Vdc
Recommended Float Voltage	13.6 Vdc
Recommended Charge Current	40 A
Maximum Charge Current	80 A
BMS Charge Cut-off Voltage	14.6 Vdc

TEMPERATURE PARAMETERS

Discharge Temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Charge Temperature	0 °C to 60 °C (32 °F to 140 °F)
Storage Temperature	-20 °C to 45 °C (-4 °F to 113 °F)

COMPLIANCE

Certifications	UL 1642 For Cells
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9. ACCESSOIRES



Smart Shunt Pro

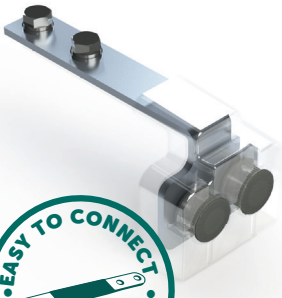


OctoView 3 remote panel



OctoControl Gateway

OctoControl Gateway for cloud connection

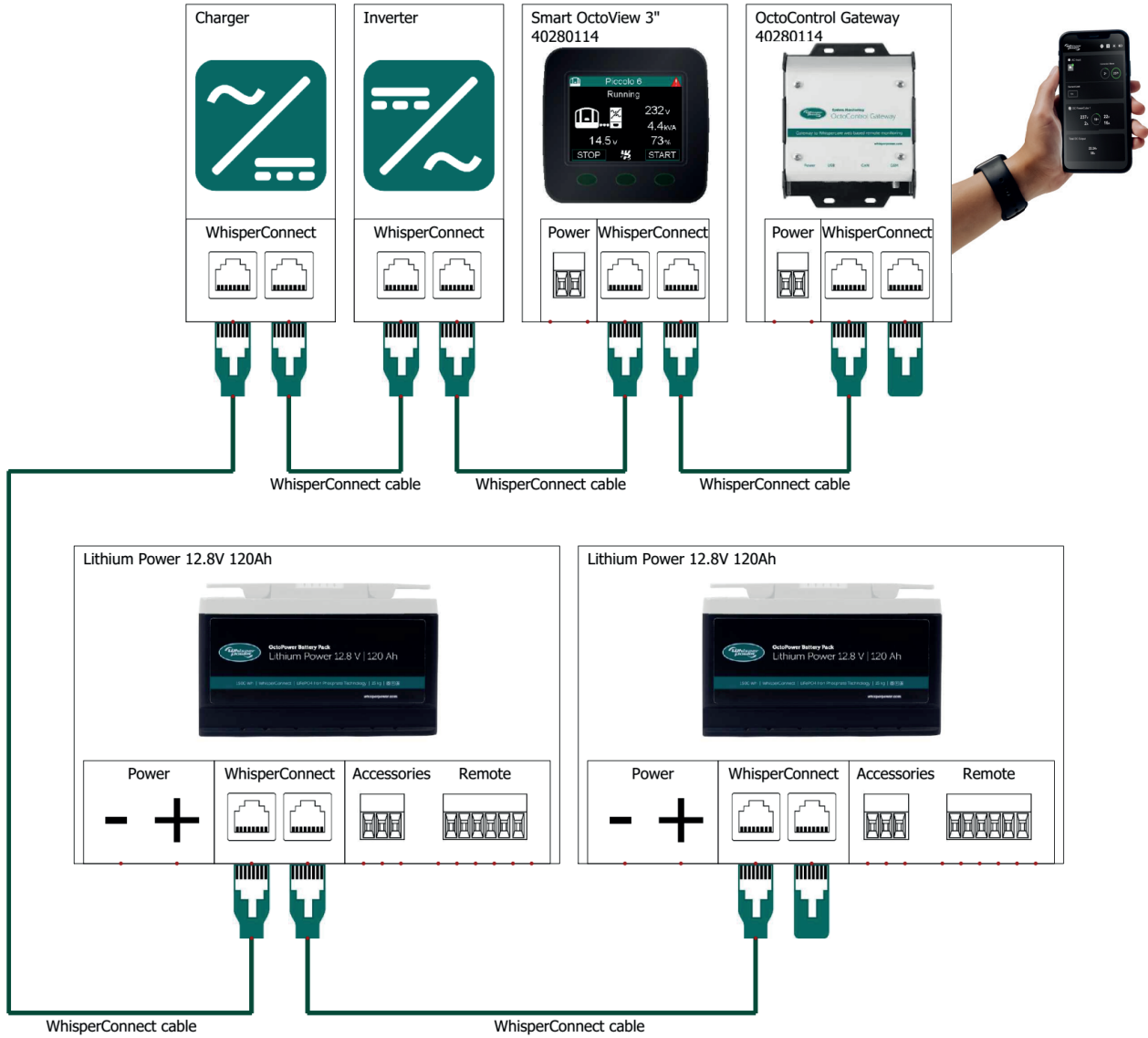


Linkbar 90° Battery Pack

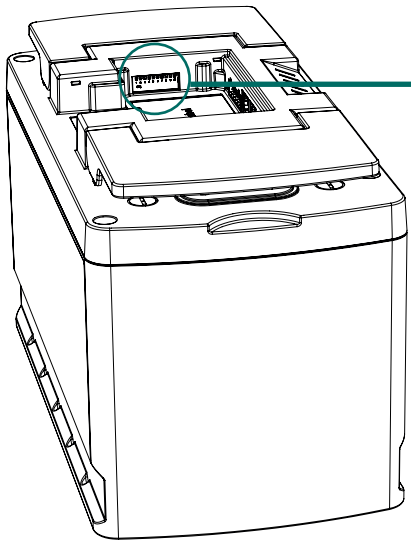


Battery Pack Installation kit (optional)

10. CONNECTION EXAMPLE 1 CANBUS WHISPERCONNECT

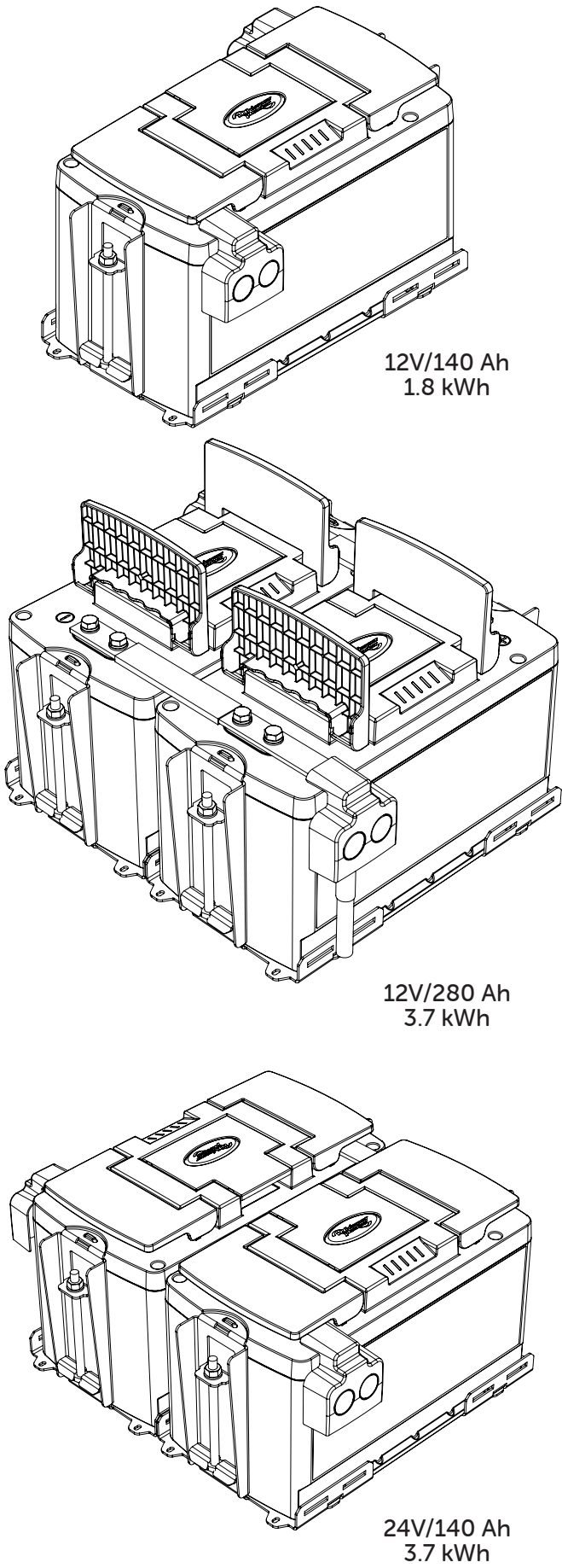


11. CONNECTION EXAMPLE 2

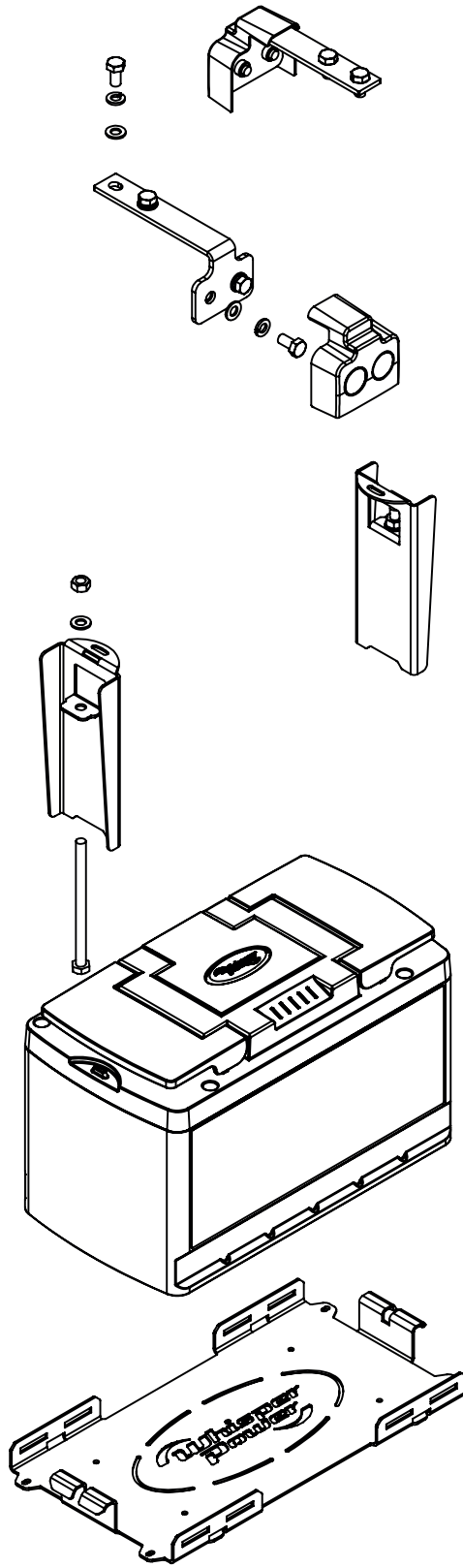
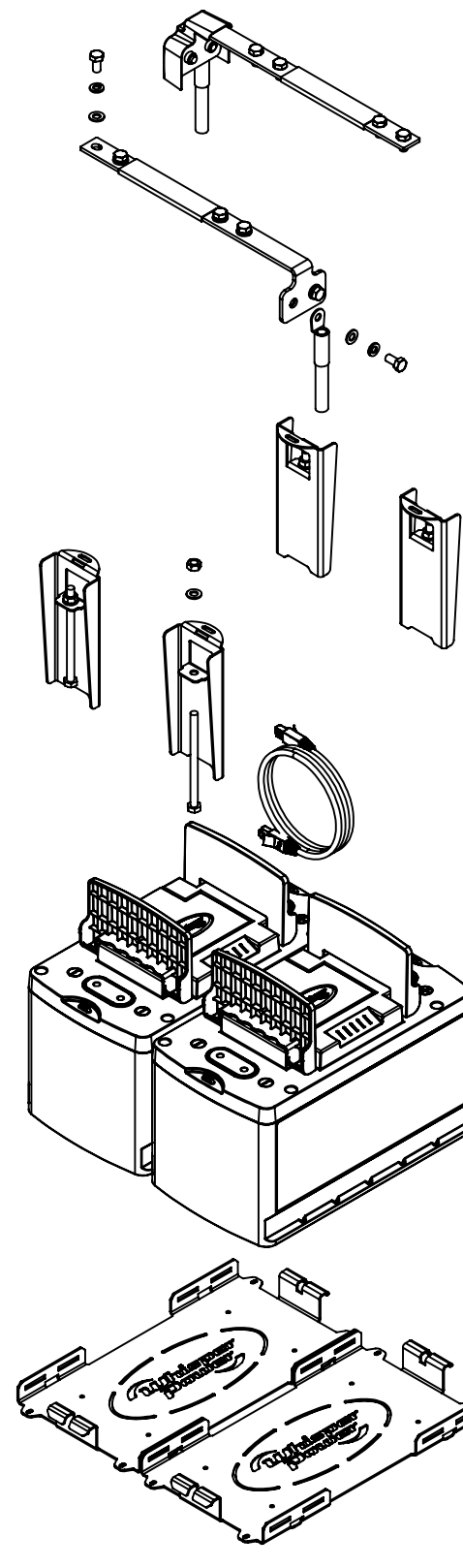
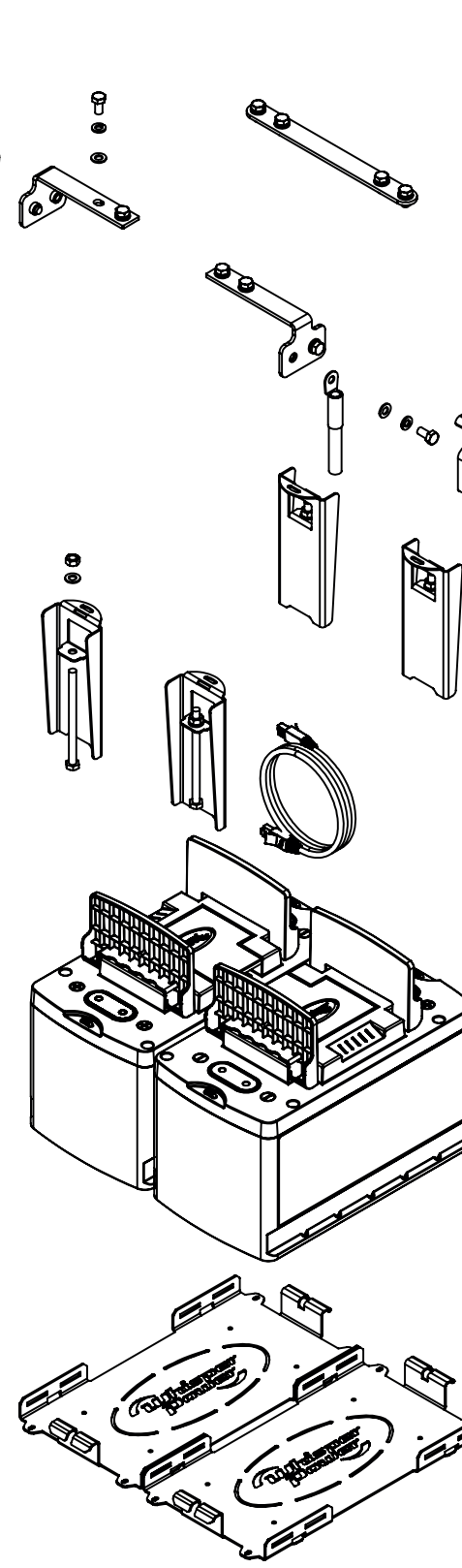


Dipswitches – 10x	
1.	Reserved for future use
2.	Override protection
3.	Battery detect function
4.	WhisperConnect identification
5.	WhisperConnect identification
6.	WhisperConnect identification
7.	WhisperConnect identification
8.	WhisperConnect identification
9.	Battery bank voltage
10.	Battery bank voltage

12. DIFFERENT ASSEMBLY OPTIONS FOR 12V/24V:



13. DIFFERENT ASSEMBLY OPTIONS EXPLODED VIEW:

12 V 140 Ah 1848 Wh	12 V 280 Ah 3.7 kWh	24 V 140 AH 3.7 kWh/Hz
		
	12 V 560 Ah 7.4 kWh (2x)	24 V 280 Ah 7.4 kWh (2x)

13. INSTALLING MULTIPLE 12 V BATTERIES IN SERIES AND/OR PARALLEL

WhisperPower advises building a battery bank starting with 2 paired 12V/140Ah modules, connected in a daisy chain using battery cables. For equal charge and discharge contribution, WhisperPower recommends cross-connecting the paired modules (positive to positive, negative to negative). The maximum recommended number of modules in a single daisy chain is 4 units. If more capacity is required beyond 4 units, we recommend creating two parallel banks (strings of modules) and combining them at a common DC bus for distribution.

Preparation Before Connecting positive and negative poles

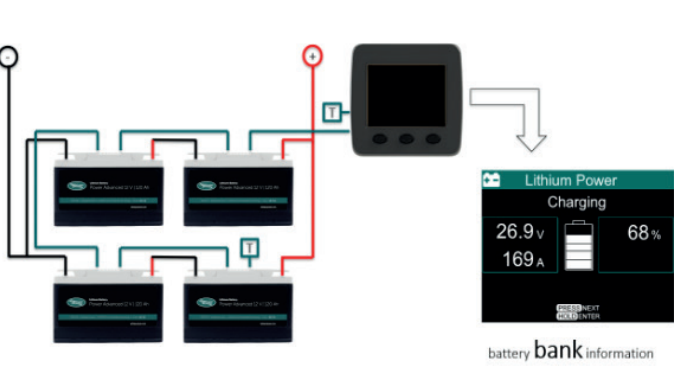
- Before linking batteries together, make sure they are well matched.
- **Check the open-circuit voltage** of each battery. If the difference is more than 0.05v...50 mV, charge them individually with a 12 V charger until their voltages are nearly identical. This prevents current surges between batteries when you first connect them
 - **Double-check polarity before connecting** — reversed polarity can cause sparks and damage.
 - **Determine the parallel series configuration and define your the can bus id configuration** so each bank and module has is own unique identifier. Use the dipswitch for select WhisperConnect CANbus id and voltage setting or us the advance WhisperConnect tool for advanced CANbus addressing.

WhisperConnect CANbus Battery Communication

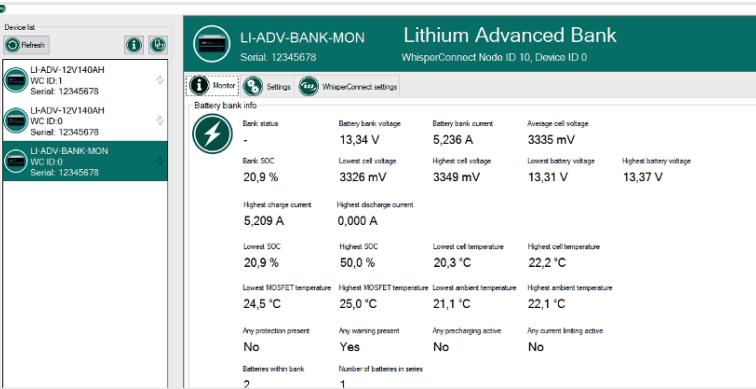
When multiple batteries are installed, the CANbus network automatically assigns one battery as the Bank Coordinator. The Bank Coordinator collects information sent by the other batteries in the group. The remaining batteries are defined as Node units, each reporting their individual status. In this setup, the Bank Coordinator is also recognized as a Node within the battery group, but it carries the additional responsibility of managing the entire bank. A unique identifier ensures that only one unit acts as the Bank Coordinator. At the same time, it also behaves as a Node, reporting its own status just like the other batteries.

- The WhisperConnect CANbus network therefore uses a Coordinator–Node structure:
- The Coordinator manages communication and collects data.
 - The Nodes provide information about their status and respond to requests from the Coordinator.
- This structure ensures reliable operation and centralizes all information in a single control unit.

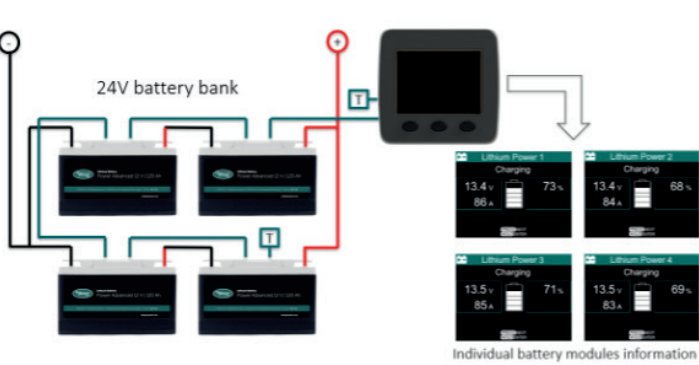
First level info defined as primaries information of the battery bank of the four battery send by the bank coordinator



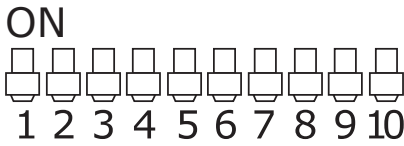
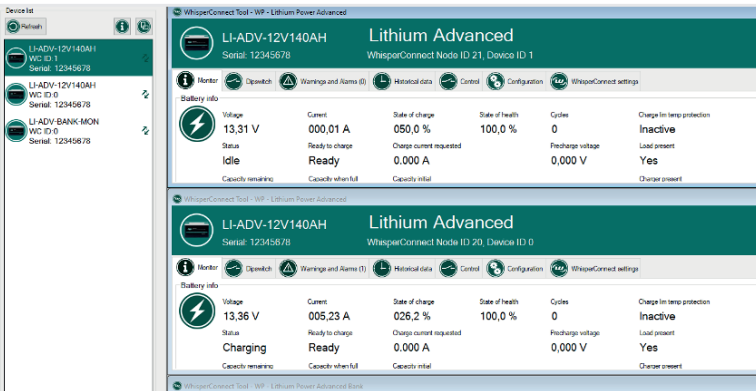
Example of WhisperConnect data readout by WhisperConnect tool for advanced diagnostics



Additional info on deeper level of each 12v battery module (node)

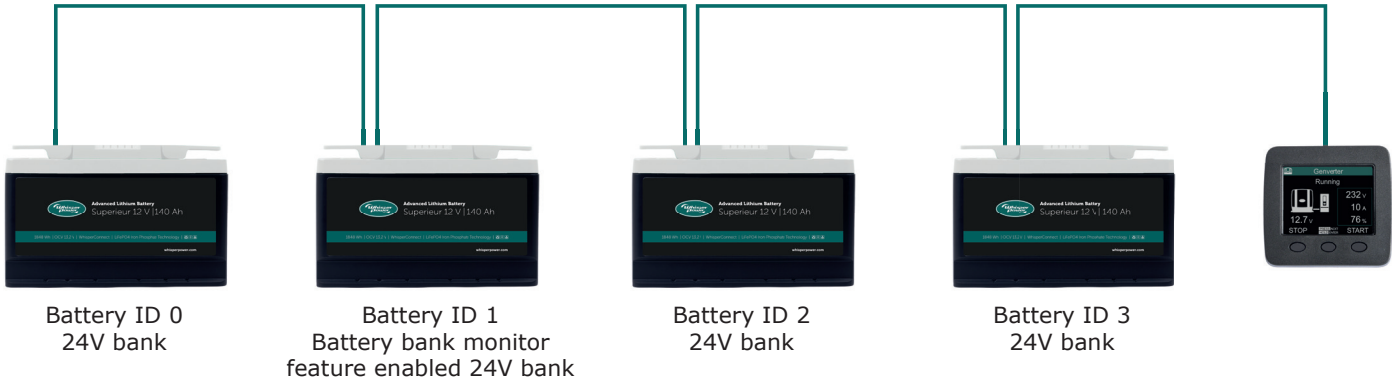


Example of Whisperconnect data readout by Whisperconnect tool for advanced diagnostics



Dipswitch setting for WhisperConnect ID for battery modules which enable battery bank monitor (coordinator) and WhisperConnect device (node) Id for monitor and control over CANbus. For correct analyze of data of the node the voltage nominal system has to be setup meaning 12V or 24V setting by dipswitch number 9.

Dipswitch	Function
1	RESERVED, for future use
2	Prohibit BMS automatic control discharge protection
3	Enable battery detection function
4	WhisperConnect ID: 4
5	WhisperConnect ID: 3
6	WhisperConnect ID: 2
7	WhisperConnect ID: 1
8	WhisperConnect ID: 0
9	System Setting: 1
10	Not used



Dipswitch					Battery Module Identification
4	5	6	7	8	
OFF	OFF	OFF	OFF	OFF	WhisperConnect device ID = 0x00 Transmit CAN ID = 0x5E0 Receive CAN ID = 0x660
OFF	OFF	OFF	OFF	ON	WhisperConnect device ID = 0x01 Transmit CAN ID = 0x5E1 Receive CAN ID = 0x661
OFF	OFF	OFF	ON	OFF	WhisperConnect device ID = 0x02 Transmit CAN ID = 0x5E2 Receive CAN ID = 0x662
...	...	...	...	...	...
ON	ON	ON	ON	OFF	WhisperConnect device ID = 0x1E Transmit CAN ID = 0x5FE Receive CAN ID = 0x67E
ON	ON	ON	ON	ON	WhisperConnect device ID = 0x1F Transmit CAN ID = 0x5FF Receive CAN ID = 0x67F

14. RELIABLE INSTALLATION GUIDELINES FOR BATTERY POWER CONNECTIONS

1. Use Matched Batteries

- Same chemistry, model, capacity, age, and similar usage history.

2. Top-Balance First

- Charge each battery separately to the **same resting voltage**
 - within **0.02–0.05 V** for lead-acid
 - within **≤10–20 mV** for LFP (lithium iron phosphate)
- If the state of charge differs, temporarily connect a resistor or 12 V lamp between the positive terminals to gently equalize before hard-connecting.

3. Star/Busbar Wiring with Equal-Length Cables

- Run **identical-length positive and negative cables** from each battery to a **common positive and negative busbar**
- Connect **loads and chargers diagonally across the bank**:
 - Positive take-off from the busbar side near Battery A
 - Negative take-off from the busbar side near Battery B
 - This ensures each battery “sees” the same total resistance and current is shared evenly.

4. Correct Torque, Crimping, and Corrosion Protection

- Use proper cable lugs, apply correct torque, and use anti-corrosion paste.
- Loose joints create heat and lead to imbalance.
- Always use the **same cable gauge** for all parallel battery cables.

5. Fuse Each multiple Battery strings

- Install a **fuse as close as possible to battery’s positive terminals** (rated for your system but below the cable’s ampacity).
- If the negative is **not bonded to the chassis/ground** (for example in metal boats or vehicles), install a **fuse in each negative cable** as required by applicable codes.

24V Series Connection Overview

How it works:

- Connect the **negative (–)** terminal of Battery 1 to the **positive (+)** terminal of Battery 2 using a DC link/ busbar.
- The remaining free terminals become your main system output:
 - **Positive output** from Battery 1’s (+)
 - **Negative output** from Battery 2’s (–)

Result:

- **Voltage adds** → 12 V + 12 V = 24 V
- **Capacity stays the same** → two 12 V 140 Ah batteries become **24 V 140 Ah**

- **Energy doubles** → from 1.68 kWh to 3.36 kWh

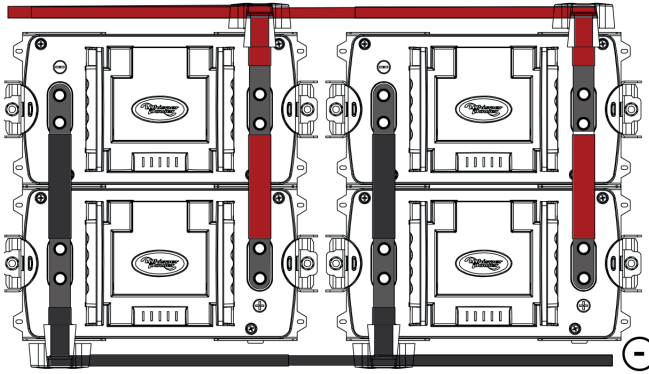
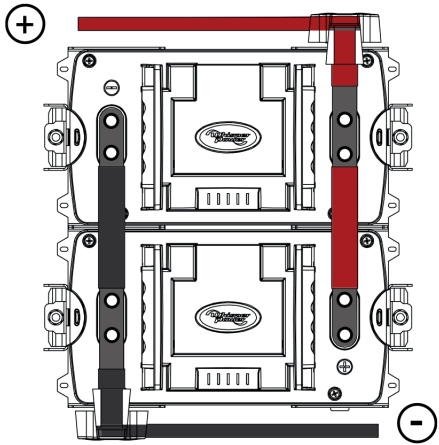
12V Parallel Connection Overview

How it works:

- Connect the **positive (+)** terminals of both batteries together.
- Connect the **negative (–)** terminals of both batteries together.
- Take your **system positive and negative** from opposite ends of the bank (“diagonal take-off”) to balance the current.

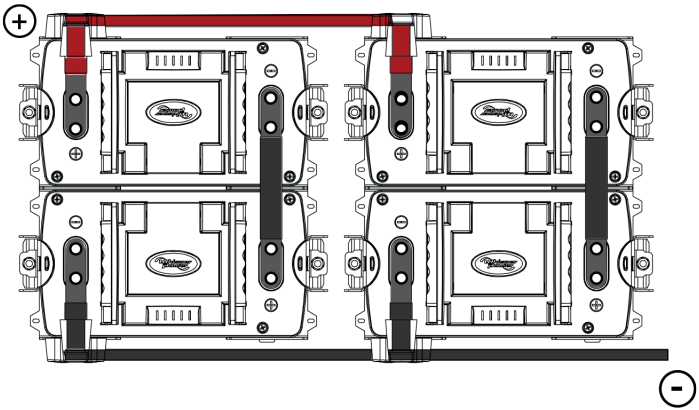
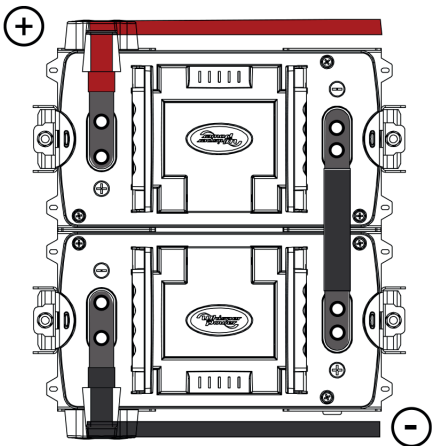
Result:

- **Voltage stays the same** → 12 V
- **Capacity adds** → two 12 V 140 Ah batteries become **12 V 280 Ah**
- **Energy doubles** → from 1.68 kWh to 3.36 kWh



Commissioning and Monitoring

- After installation, **check each battery’s terminal voltage and case temperature** during charging and discharging.
- After connecting, **measure the voltage with a multimeter** to confirm the correct reading and verify the remote panel shows the expected value. Check if all node and bank coordinator are present correctly in the optional OctoView or OctoControl remote monitor setup
- If differences appear or grow over time, find the cause.



- For 24v systems consider installing an **optional battery balancer** for pack-to-pack balancing to maintain long-term health. If large differences in voltage or state of charge appear over time, install a battery balancer between the batteries.

15.MAINTENANCE GUIDE – LFP 12 V / 140 AH BATTERY

Lithium-Iron-Phosphate (LFP or LiFePO₄) batteries require minimal routine maintenance compared to lead-acid batteries. However, correct use and periodic checks help maintain maximum performance, safety, and service life.



SAFETY PRECAUTIONS

Disconnect loads and chargers before performing maintenance.

- Avoid **short circuits**; use preferable insulated tools.
- Never open the battery casing – the Battery Management System (BMS) is not user-serviceable.
- Keep battery away from **open flames, sparks, and water immersion**.
- Wear **eye protection and gloves** when handling battery terminals.
- Ensure **proper ventilation** during charging.

ROUTINE MAINTENANCE SCHEDULE

Interval	Action
Monthly	• Check SoC (State of Charge) via display/BMS or multimeter. • Visually inspect terminals, cables, and fuses for looseness, corrosion, or overheating.
Every 3–6 months	• Verify that all terminal connections are clean, tight, and torque-correct (typically 8–12 Nm – check manufacturer’s spec). • Inspect the battery case for cracks, bulges, or leakage (should never occur in LFP). • Check that ventilation around the battery is unobstructed.
Annually	• Record battery health data from the BMS (cycle count, capacity, cell balance, fault logs). • Update BMS firmware if recommended by the manufacturer.
As Needed	• If SoC drops below 20% during storage, recharge to 50–70%. • If stored for >6 months, recharge to 50–70% and repeat every 6 months.

CLEANING

- Keep battery surface **dry and free of dust**.
- Wipe with a slightly damp cloth; **do not use solvents or aggressive cleaners**.
- Clean terminals with a dry cloth or a small brass brush if needed.
- Apply a **thin film of terminal grease** or dielectric grease to reduce oxidation.

ELECTRICAL CHECKS

- Normal resting voltage (at 25 °C, after ≥1 h rest): **13.2–13.4 V**.
- Fully charged voltage: **13.6–14.4 V** (depending on charger/BMS settings).
- Never allow battery voltage to fall below **11.0 V under load** (or the BMS cut-off).
- For batteries connected in parallel or series, check that each battery’s voltage is within **±50 mV** of others at rest.
- Unusual imbalance may indicate a wiring issue or a cell/ BMS fault.

STORAGE GUIDELINES

- Ideal storage SoC: **50–70%**.
- Disconnect all loads to prevent parasitic drain.
- Store in a **dry, cool place** (–10 °C to +35 °C; ideal is 15–25 °C).
- Avoid prolonged storage at temperatures above **45 °C**.
- Do not store fully discharged or fully charged for long periods.

TEMPERATURE CONSIDERATIONS

- Recommended operating range:
 - **Discharge**: –20 °C to +60 °C
 - **Charge**: 0 °C to +45 °C (avoid charging below 0 °C unless battery has integrated heater)
- High temperature (>50 °C) accelerates capacity loss; provide **ventilation or cooling** in hot environments.