



CANS110BA

Information Guide



CANS110BA		WARNING
SPECIFICATIONS		
Cell Type	Lithium-ion/Rechargeable	• Avoid mechanical shock
Rated Capacity	110Ah	• Do not expose to fire
Max. Voltage	12.8V	• Do not short-circuit
Operating Voltage	12.8V (12.2V)	• Do not overcharge
Max. Charge Current	110A (max)	• Do not use in restricted areas
Max. Discharge Current	110A (max)	• Do not use in explosive atmospheres
Max. Charge Voltage	14.6V	• Do not use in high humidity
Max. Discharge Voltage	10.5V	• Do not use in high temperature
Max. Charge Temperature	45°C	• Do not use in high altitude
Max. Discharge Temperature	0°C	• Do not use in high pressure
Max. Charge Humidity	95%	• Do not use in high vibration
Max. Discharge Humidity	95%	• Do not use in high salt
Max. Charge Altitude	2000m	• Do not use in high magnetic field
Max. Discharge Altitude	2000m	• Do not use in high electromagnetic interference
Max. Charge Humidity	95%	• Do not use in high dust
Max. Discharge Humidity	95%	• Do not use in high smoke
Max. Charge Altitude	2000m	• Do not use in high noise
Max. Discharge Altitude	2000m	• Do not use in high radiation

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1. Safety Precautions

WARNING

- ❑ Avoid mechanical shock.
- ❑ Avoid direct sunlight exposure.
- ❑ Do not store or mount batteries in incorrect orientations.
- ❑ Do not transport the battery unsecured.
- ❑ Do not expose the battery to water.
- ❑ Do not expose the battery to fire.
- ❑ Do not pierce the battery.
- ❑ Do not disassemble.
- ❑ Do not drill into the battery enclosure.
- ❑ Do not short battery terminals.
- ❑ Do not connect multiple batteries in a series configuration.
- ❑ Do not charge the battery outside the range of 0°C - 45°C.
- ❑ Do not store below -20°C or above 60°C.
- ❑ Risk of burns if misused.
- ❑ Always follow safe working practices.
- ❑ Installation of this device must only be carried out by appropriately qualified competent person(s).
- ❑ All connections must be fused at recommended fuse ratings to avoid damage to components.
- ❑ All minimum cable gauges and maximum lengths must be followed.
- ❑ Only use Lithium Battery Chargers to recharge batteries.

2. Specifications

Cell Type	Lithium Ferrous Phosphate
Total Capacity	110Ah
Nominal Voltage	12.8V
Charge Voltage	13.8 – 14.6V
Float Voltage	13.8V
Charge Current	100A
Discharge Current	100A Continuous
	200A Surge
Operating Temp	0°C - 45°C
Dimensions (LxWxD)	668.5mm x 264mm x 50mm

Table 1 CANS110BA Battery Specifications

3. Quick Start Guide – CANS110BA

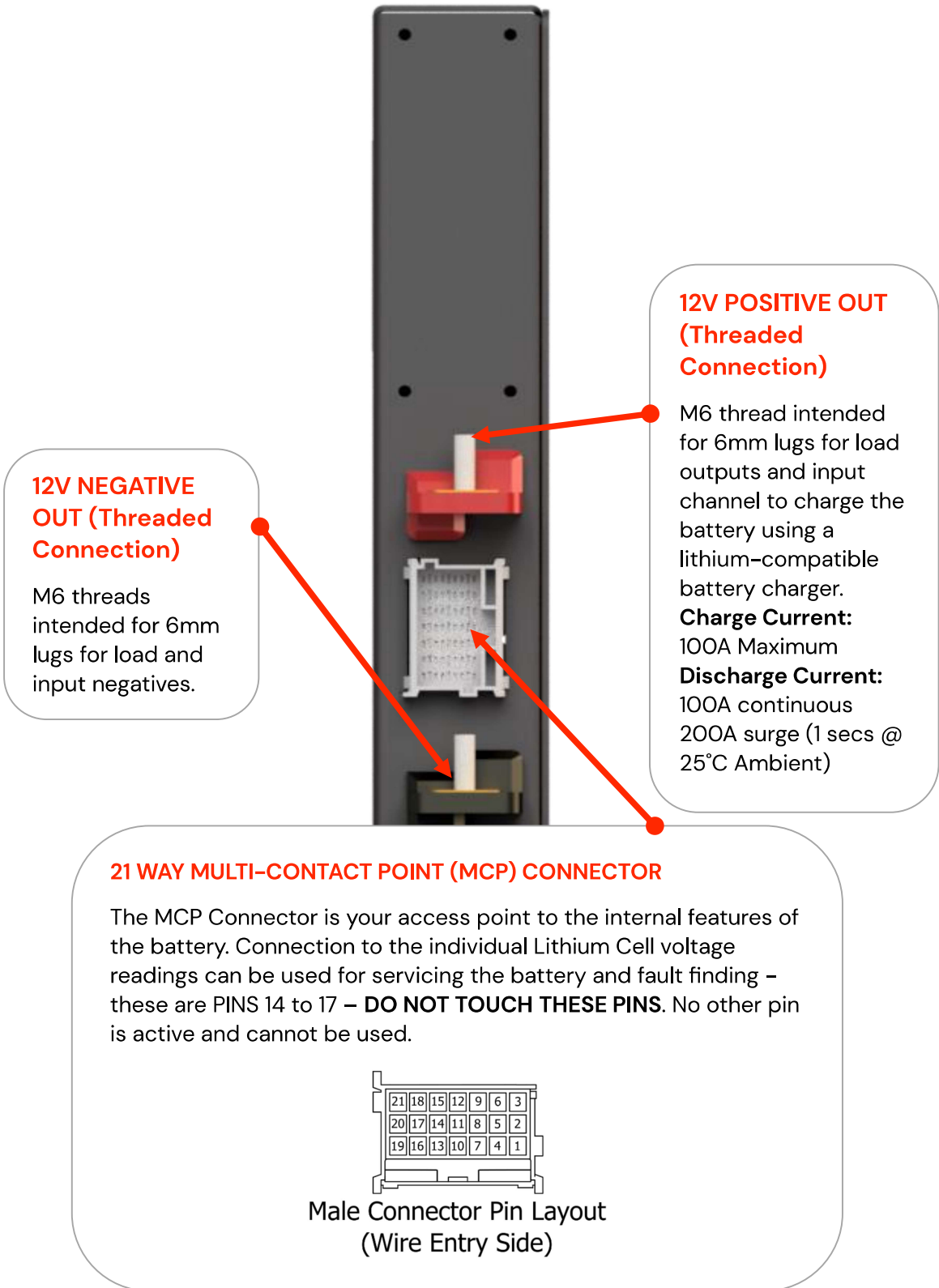


Figure 1 Battery Connection Description

4. CANS110BA Dimensions, Bracket Placement, and Mounting Orientation



Figure 2 CANS110BA Dimensions

CORRECT MOUNTING BRACKET CONFIGURATION	
Using Kit 10018 (optional)	
WALL MOUNT	FLOOR MOUNT
BRACKET MOUNTING OPTIONS – MAX 12MM LENGTH FOR MOUNTING SCREW	
Mounting Schematic	
MOUNTING HOLES THAT ARE SAFE TO MOUNT ARE OUTLINED IN RED.	

Table 2 Example Mounting Bracket Placement

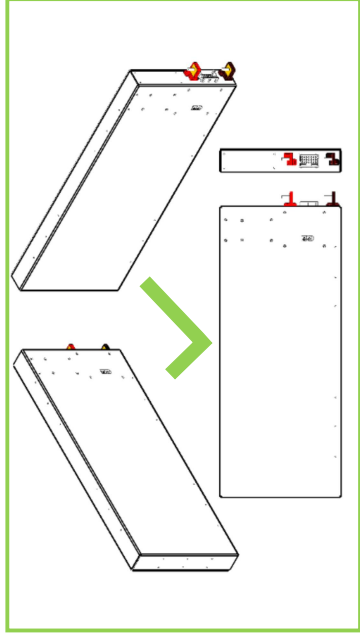
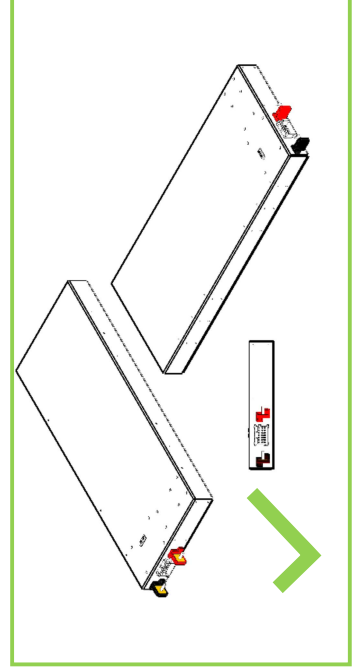
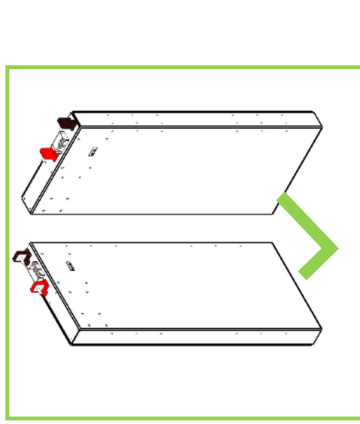
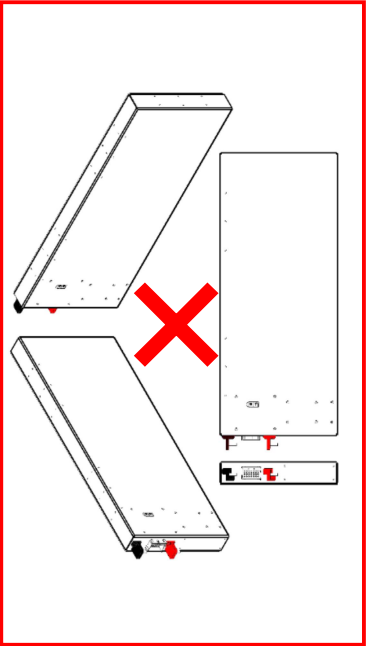
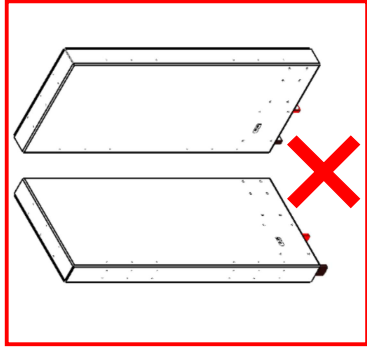
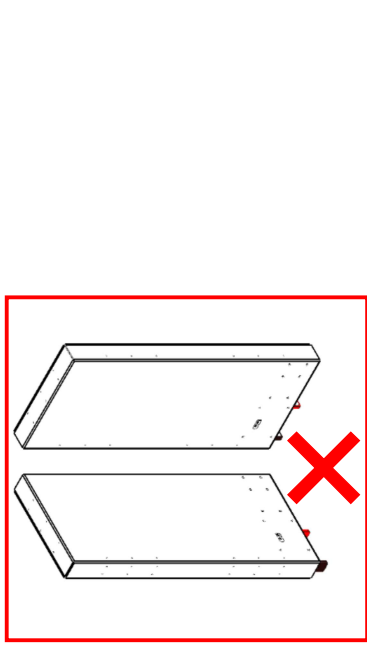
EXAMPLE MOUNTING ORIENTATIONS		
CORRECT Mounting Orientation		
		
<p>Vertical on long edge with terminals pointing towards the sky.</p>	<p>Flat mounting orientation.</p>	<p>Vertical on short edge with terminals pointing towards the sky.</p>
INCORRECT Mounting Orientation		
		
<p>Vertical on long edge with terminals pointing towards the ground.</p>	<p>Vertical on long edge with terminals pointing towards the ground.</p>	<p>Vertical on short edge with terminals pointing towards the ground.</p>

Table 3 Battery Mounting Orientations

5. CANS110BA Power Banks Example Use Case

Please Note: This is for illustration purposes only and is **NOT** intended to be used as a guide for installation.

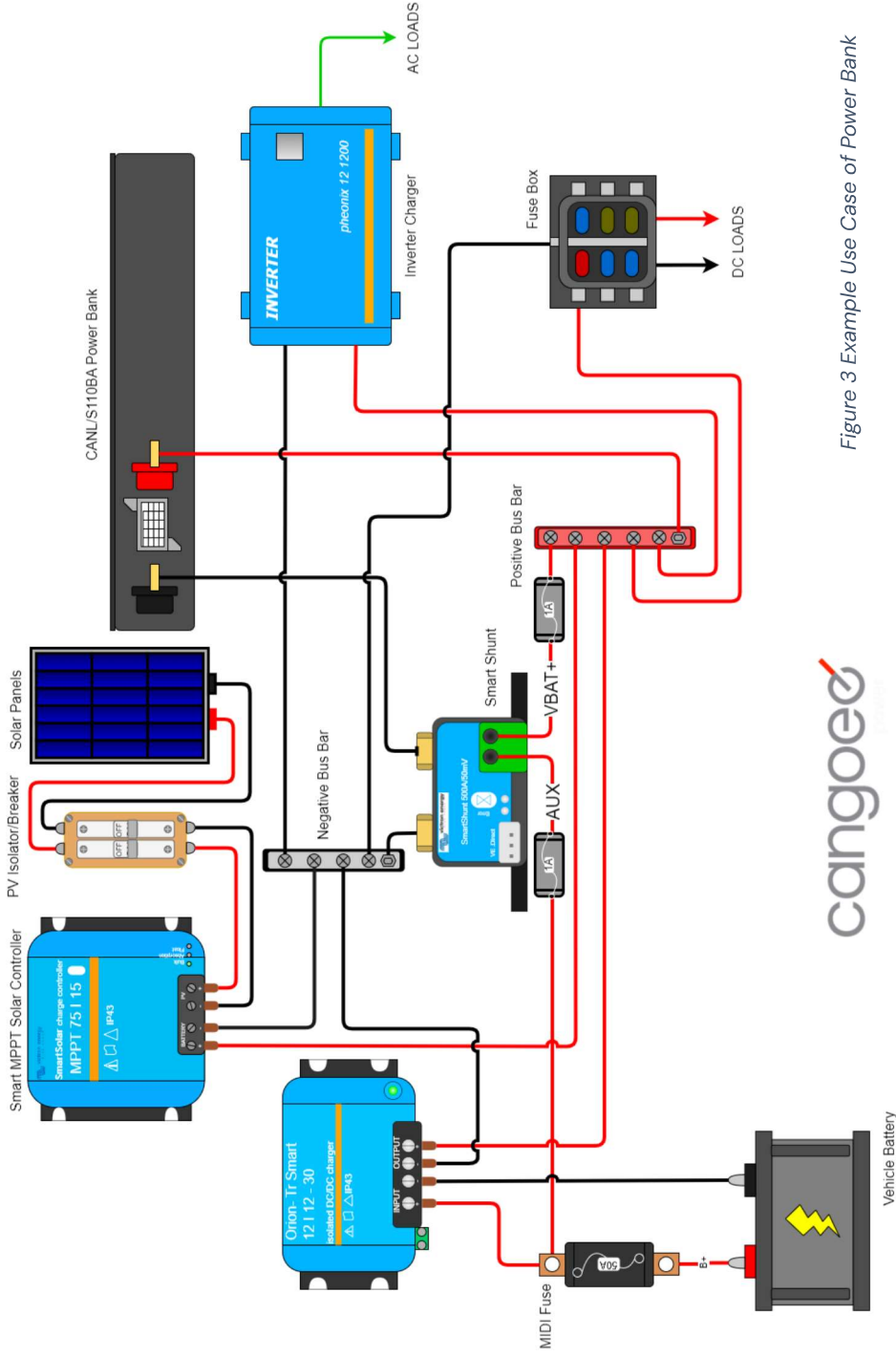


Figure 3 Example Use Case of Power Bank

6. Recommended Wire Sizes and Gauges Chart

The below table represents the recommended wire sizes/ gauges, for battery installation into vehicles.

DCDC Capacity/ Cable	Recommended Wire Size/ Gauge Figure 8 Cable	Recommended Wire Length
DC-DC 20A	8 B&S/ AWG (CSA 7.71mm ²)	1m- Up to/ Maximum 5m
DC-DC 40A	6 B&S/ AWG (CSA 13.5mm ²)	1m – Up to/ Maximum 5m
Ignition Sense Cable	18-14 B&S/ AWG (CSA 0.64mm ² – 1.84mm ²) (Running a max of 1-2 Amps)	1m – Up to/ Maximum 6m
Main Positive +	6 B&S/ AWG (CSA 13.5mm ²) 80A – 120A	1m – Up to/ Maximum 4m
Main GND -	6 B&S/ AWG (CSA 13.5mm ²) 80A – 120A	1m – Up to/ Maximum 4m

Table 4 Recommended Wire Sizes and Gauges

Please Note: These wire gauges are suggested to mitigate the voltage drop along the cable. It is recommended that you check the voltage at the battery’s DC-DC input and adjust charger selector switches accordingly.

7. Battery Management System

The Power Bank is equipped internally with a Battery Management System (BMS), which is an electronic solid-state circuit board that serves multiple important functions:

- ❑ Battery Cell Management: The BMS manages and maintains the cells within the battery.
- ❑ Safety Measures: The BMS provides safeguards that protect against overcharging and over-discharging as well as activating in response to situations where the battery is producing low voltage (less than 10.5V), overcurrent (more than 100A), or short-circuit situations.
- ❑ Cell Balancing: The BMS ensures that the Power Bank cells are equalised throughout its operation to promote overall efficiency and longevity.
- ❑ Cell Temperature Sensing. If the BMS detects the temperature of the cells to be above 45°C, it will automatically stop charging and discharging until the temperature has returned within the range of 0°C – 45°C.

Unlike lead-acid batteries, overcharging or over-discharging a lithium battery may lead to a hazardous scenario, therefore, the BMS is essential to the lithium battery.

8. Safety Tips

The battery contains Lithium Ferrous Phosphate (LiFePO₄) cells, considered to be the safest of all lithium-ion chemistries. The battery consists of a large amount of stored energy. Please follow these safety tips for use and operation:

- ❑ Ensure the battery is secured safely before travel.
- ❑ Do not drill into the enclosure. Doing so may inadvertently puncture one of the internal cells.
- ❑ Do not short-circuit the battery. Be careful not to drop a metallic object across the two exposed terminals. Always keep the terminal caps on the Positive (red) and Negative (black) posts during operation.
- ❑ Do not mount the battery upside down. The battery can also be mounted on its side if mounting upright is not an option. Correct battery mounting positions are shown in Table on page 6.
- ❑ Do not connect multiple batteries in series to raise the voltage. The BMS is not designed to accommodate higher voltages.

9. Longevity Tips

Factors that mainly affect the lifespan of the battery are depth of discharge and operating temperature. To ensure longevity and use of the battery:

- ❑ Do not fully discharge the battery to zero. Each time the battery is discharged to zero, either intentionally or unintentionally, it reduces the lifespan of the battery.
- ❑ Do not discharge the battery below 80% depth of discharge (i.e., 20% full).
- ❑ Do not charge the battery outside the range 0°C - 45°C to maximize the life of the battery and avoid damage to the cells.
- ❑ Avoid exposing the battery to direct sunlight, mount the battery in a compartment or undercover.

The cells are designed to last 2,000 cycles at 80% DOD (Depth of Discharge) and 5,000 cycles at 50% DOD.

10. Tips for Use

- ❑ Batteries of the same voltage may be placed in parallel to increase storage capacity. However, each battery should be independently fused, and the battery must be from **CANGOEE**.
- ❑ If the battery temperature is potentially less than 0°C it is essential to allow the battery to warm to ambient temperature before connecting power to it.
- ❑ The battery is splash-proof and water resistant but not waterproof, **DO NOT** directly submerge the battery in water.
- ❑ The battery is designed to be housed in a dry, enclosed compartment, not in direct sunlight or exposed to outside weather conditions for an extended period.
- ❑ Only use Lithium Battery Chargers to recharge the battery.

11. Maintenance Tips

If not using the battery for a prolonged period (months at a time), then store the battery as follows:

- ❑ Disconnect all loads from the battery so that there is no external current draw.
- ❑ Ensure the battery is close to full capacity as the battery will slowly self-discharge over time.
- ❑ Do not keep the battery on trickle charge as this may harm the internal battery cells.

Within every two months, give the battery a quick recharge to ensure battery longevity.