PRACTICAL PROCUREMENT REFERENCE | FOR DISTRIBUTORS, INSTALLERS AND BUYERS

48V vs 51.2V Battery-Inverter Compatibility

What the label does not tell you about cell count, operating voltage and inverter matching.

The fast answer 48 V and 51.2 V are labels, not complete operating specifications. The inverter must accept the battery's actual voltage window and BMS controls.

Use this sheet when a customer asks whether a 48 V inverter can work with a 51.2 V LFP battery.

Voltage and cell-count reference

Label	Common battery structure	What to compare
48 V class	Often used for low-voltage battery systems; exact cell count and chemistry vary	Minimum/maximum operating voltage and inverter battery window
51.2 V LFP	Commonly 16 x 3.2 V nominal LFP cells	Operating window, charge voltage, discharge cut-off and BMS limits
Inverter side	Battery input range and maximum charge/discharge current	The range must cover the battery at full and low SOC
Communication side	CAN or RS485 profile	Voltage matching without correct BMS data is incomplete
System side	Cable, fuse, breaker and connector	Current and protection must match the inverter duty

Use the exact model, document and supply route for the final quotation.

Practical current example

Use the minimum project voltage for a conservative check. Nominal voltage is not the only value used by the inverter.

5 kW low-voltage system 5,000 W / 51.2 V / 0.95 = about 103 A. Compare this with the battery continuous BMS discharge current and the inverter limit.

Before you call it compatible

- Read the battery operating range and the inverter permitted range.
- Confirm the battery continuous current and inverter charge/discharge limits.
- Confirm cell count, BMS profile, connector pinout and firmware.
- Confirm whether the inverter maker lists the exact battery model or only the battery brand.

Need a product match? CVC can help match product models, technical parameters and supply routes to the project requirement.

Website: www.cvcenergy.com
WhatsApp phone / account: +66 99 581 9802
WhatsApp chat: wa.me/66995819802

Prepared as a concise sourcing reference. Confirm exact model, certificate scope, compatibility and warranty responsibility for the final quotation.