

# CX48D4500NBM

## Bidirectional DC-DC power module

CE FC RoHS



### Introduction

- CX48D4500NBM is a digitally controlled bidirectional DC/DC power module designed with high efficiency and high power density. It supports a wide input voltage range, enabling automatic buck-boost conversion and intelligent adaptation to various operating conditions.  
It is suitable for multi-energy integration applications, such as grid-side peak shaving and valley filling (energy storage), PV-storage-charging systems, and data centers, providing efficient and flexible energy management solutions.

### Features

#### ▪ High Efficiency and Flexibility:

The functional modules support hot-swappable design, allowing flexible configuration according to customer requirements and application scenarios. The system is easy to install, maintain, and expand, while supporting redundant design for enhanced reliability.

#### ▪ High-efficiency conversion:

The peak conversion efficiency exceeds 98%, significantly reducing system energy losses and improving overall energy efficiency.

#### ▪ Intelligent Control (Wide Range):

Supports voltage adjustment and current limiting, with a wide input voltage range of 40-60Vdc. It can automatically perform buck-boost conversion and intelligently adapt to different operating conditions, ensuring stable and reliable system operation.

#### ▪ Intelligent Operation and Maintenance (O&M)

Integrated with an RS485 communication interface, enabling convenient remote monitoring and seamless system integration.

\*Product dimensions and parameters refer to the latest documents;

\*The product shall be subject to the actual item.

## Configuration

### CX48D4500NBM DC-DC Module for Telecom Grid-Solar and Energy Storage System

| Product Type                                                            |                                                                                                                     |
|-------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| Controller type                                                         | Non-isolated DCDC bidirectional power conversion module for base station                                            |
| Conversion Efficiency                                                   | $\geq 96\%$                                                                                                         |
| Standby consumption                                                     | $\leq 2.5W$                                                                                                         |
| Output Control                                                          | Bidirectional output, direction controlled via communication commands                                               |
| Cooling method                                                          | Fan Cooling                                                                                                         |
| Input Parameters                                                        |                                                                                                                     |
| Input protection voltage (overvoltage & undervoltage protection)        | 60Vdc/42Vdc                                                                                                         |
| Input protection recovery voltage (overvoltage & undervoltage recovery) | 57Vdc/45Vdc                                                                                                         |
| Input voltage range                                                     | 40Vdc~60Vdc                                                                                                         |
| Maximum input current                                                   | 75A                                                                                                                 |
| Maximum input power                                                     | 4500W                                                                                                               |
| Output Parameters                                                       |                                                                                                                     |
| Output DC voltage range                                                 | 40V ~ 60VDC (factory default: 56VDC)                                                                                |
| Maximum output current                                                  | 75A                                                                                                                 |
| Default Settings                                                        | Output voltage: 54V Over voltage: 60V Over voltage recovery: 57V (Adjustable)                                       |
| Display & Communication                                                 |                                                                                                                     |
| Communication protocols                                                 | Standard Modbus Protocol                                                                                            |
| Monitoring Method                                                       | Local PC monitoring, 4G remote monitoring, etc.                                                                     |
| Protection Functions                                                    |                                                                                                                     |
| input protection                                                        | input overvoltage and undervoltage protection                                                                       |
| Output protection                                                       | Output over-voltage and under-voltage protection, reverse polarity protection, and battery disconnection protection |
| General protection                                                      | Over-temperature protection, fan fault protection, over-current protection, and surge protection                    |
| Safety / Withstand Voltage                                              | Input-to-ground / Output-to-ground: 1.0KV / 20mA / 60S                                                              |
|                                                                         | Communication port-to-ground: 0.7KV / 20mA / 60S                                                                    |
| Insulation Resistance                                                   | $\geq 10M\Omega$                                                                                                    |
| Other Specifications                                                    |                                                                                                                     |
| Installation Method                                                     | Rack-Mounted                                                                                                        |
| Product Dimensions                                                      | 335*105*41mm                                                                                                        |
| Product Weight (kg)                                                     | 1.575                                                                                                               |
| Operating Ambient Temperature                                           | -20°C ~+50°C                                                                                                        |
| IP Protection Rating                                                    | IP21                                                                                                                |
| Altitude                                                                | $\leq 4000m$ (above 3000m, operating ambient temperature derated by 1°C per 100m increase)                          |

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