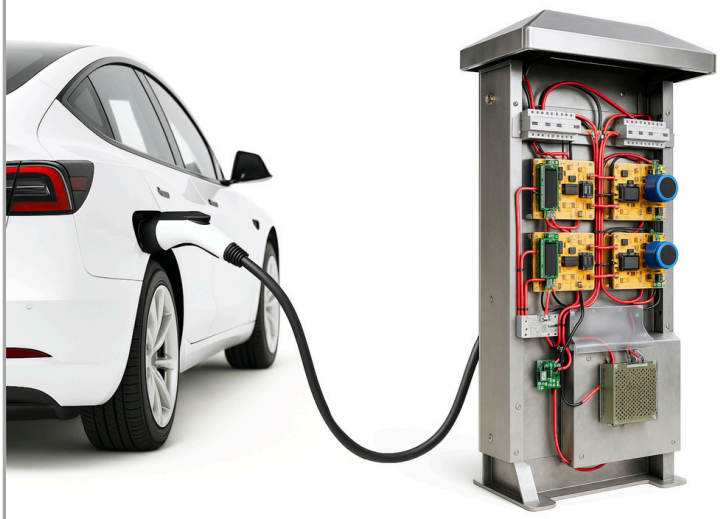
50KW 1000V SOLAR DC-DC FAST CHARGER

The Microcare 50kW 1000V Solar DC-DC Fast Charger is designed to deliver a consistent 50kW output at up to 415V DC, connecting directly to solar panel strings through a combiner box—eliminating the need for external inverters, converters, or an AC grid connection. With integrated MPPT (Maximum Power Point Tracking) technology, the charger maximizes energy extraction from solar arrays, ensuring high efficiency under varying conditions. Built-in output protection and a pre-charge circuit enhance safety and operational reliability. Engineered for true standalone performance, this fully self-contained DC power solution operates independently of external power infrastructure.

Designed with rugged, industrial-grade components, the charger offers plug-and-play DC coupling for rapid deployment in diverse environments such as mining operations, construction sites, transport hubs, and solar-powered EV stations - anywhere grid access is limited or non-existent. Additionally, it can be used for DC microgrid battery charging applications. The 50kW DC-DC Fast Charger achieves a high conversion efficiency of up to 96%, significantly outperforming traditional AC-to-DC systems, which typically offer efficiencies of up to 80%.

Traditional EV fast chargers rely on converting alternating current (AC) from the grid into direct current (DC) to charge EV batteries, an approach that places increasing strain on aging and capacity-limited electrical infrastructure. As demand for high-power EV charging accelerates, especially in remote or high-traffic locations, the need for grid-independent, scalable alternatives becomes critical. The Microcare 50kW DC-DC Fast Charger eliminates the inefficiencies and limitations of AC-based systems by enabling direct solar-to-vehicle charging. This streamlined architecture not only reduces energy conversion losses but also bypasses the need for costly grid upgrades. By leveraging smart DC architecture and solar microgrid integration, this charger represents a fundamental shift toward decentralized, resilient energy infrastructure—future-proofing EV charging networks while supporting sustainable, high-efficiency transport solutions.



KEY FEATURES

- Input Panel Voltage (700-1000V), Solar (330-415V)
- Output up to 50kW
- Input & Output protection
- Electronic Current Limiting
- Data Logger: 24hr Average and 63 Day Logger
- Programmable Features
- Peak efficiency greater than 96%
- Advanced Constant Power Point Tracking algorithm
- CANBUS & RS485 connectivity

50KW 1000V SOLAR DC-DC FAST CHARGER

	PARAMETER	VALUE
ELECTRICAL SPECIFICATIONS	Charger Output Power	50 kW
	PV Input Voltage Range	500–1000 V DC
	PV Open Circuit Max Voltage	1000 V DC
	EV Battery Voltage Range	700–1000 V DC
	Max Input per String	16.5 kW
	Max Total Input per Module	66 kW
	Output Current	2 × 63 A DC breakers
	No. of MPPTs	4
	No. of PV String Inputs	4 × 30 A DC breakers
	Output Voltage	Up to 415 V DC
	Efficiency (DC-DC)	>96%
	Power Conversion	DC to DC only (solar to EV)
MECHANICAL SPECIFICATIONS	Dimensions (W×D×H)	480 × 380 × 1400 mm
	Weight	?
	Enclosure Rating	?
	Cooling	?
INTERFACE & CONNECTIVITY	Communication Protocols	CANBUS, RS485
	Display/Logging	24-hr Average + 63-Day Logger
	Programmable Features	Yes
	Output Connection	Industrial DC terminals / Plugs
PROTECTION & SAFETY	Input Protection	4 × 25 A DC breakers
	Output Protection	2 × 63 A DC breakers
	Overcurrent Limiting	Electronic
	Pre-charge Circuit	Integrated
	Monitoring & Fault Logging	Built-in data logger
	Operating Temperature	0˚C to +62˚C
WARRANTY	Transformer	Lifetime
	Metal Work	5 years