



# Charge-X 48V

## DC Charger – 48V<sub>DC</sub>

The Charge-X (CSX-48-50S-A and CSX-48-50S-B) is a 48V<sub>DC</sub> rack mount, modular charging system that can be used for various systems and system sizes. The modular design allows system expansion for charging of larger batteries and powering systems. With hot swappable rectifier modules the CSX is easy to install, maintain, operate, monitor and expand if/when needed. It also adopts automatic output voltage regulation so that constant output can be achieved even if a rectifier module is faulty or damaged.

### Key features include:

- 0.99 power factor
- Compact 2RU design
- High power density
- Up to 50A output current
- High efficiency
- Built in battery protection & load disconnect management system
- LVD function for battery protection
- Hot swappable monitor and modules
- Communication & dry contacts: emergency alarm, major alarm, minor alarm
- Complete fault protection
- Flexible system configuration – N + 1 redundancy

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**Rectifier Specifications**



Model	CSX-48-15R	CSX-48-30R	CSX-48-40R	CSX-48-50R
<b>Nominal Output Power</b>	900W	1800W	2400W	3000W
<b>Input Voltage</b>	175 – 300V <sub>AC</sub> for normal output 75 – 175V <sub>AC</sub> for reduced output			
<b>Peak Voltage Noise</b>	≤ 200mV 0 – 20MHz			
<b>Wide Frequency Voltage Noise</b>	≤ 50mA 3.4 – 150kHz ≤ 20mV 0.15 – 30MHz			
<b>Discrete Voltage Noise</b>	≤ 5mV 3.4 – 150kHz ≤ 3mV 150 – 200kHz ≤ 2mV 200 – 500kHz ≤ 1mV 0.5 – 30MHz			
<b>Output Voltage (DC)</b>	48V <sub>DC</sub> (42 – 59V adjustable via monitor)			
<b>Output Current</b>	15A	30A	40A	50A
<b>Power Factor</b>	≥ 0.99			
<b>Efficiency</b>	≥ 96%			
<b>Temperature Compensation Coefficient</b>	User selectable (mV/°C)			
<b>Alarms</b>	Overcurrent (input fuse, output fuse, PFC) short circuit protection, input overvoltage (hardware settable 130V ± 5V), input under voltage (hardware settable 500V ± 5V), output overvoltage (59V ± 1V) & over temperature (default value 80°C)			
<b>Operating Temperature</b>	-25 – 45°C			
<b>Storage Temperature</b>	-40 – 70°C			
<b>Relative Humidity</b>	≤ 97%			
<b>Altitude</b>	≤ 3000m			
<b>Load Regulation</b>	≤ 0.5%			
<b>Voltage Regulation</b>	≤ 0.10%			
<b>Dimensions W x D x H</b>	103 x 261 x 88 mm			
<b>Weight</b>	2.6Kg			
<b>Noise</b>	≤ 45dBA			

## Monitor Module

The monitor has an LCD display (128 x 64 mm), LED indicators, built in CPU and provides both local and remote communications. It is designed to communicate directly with the rectifier modules. The built in CPU monitors and controls the operational status of each module in real time.



Model/Part Number	CSX-48-50C
Rated Input Voltage	48V <sub>DC</sub>
Voltage Range	42 – 59V <sub>DC</sub>
Working Temperature	-25 – 45°C
Display	Blue LCD: Operating status, fault/alarm, settings & control LED: power supply, charging status, fault status
Dimensions W x D x H	103 x 261 x 88 mm

There are 2 main configurations for the 48V<sub>DC</sub> system as shown below.



Configuration A (CSX-48-50S-A): 1 x monitor module, 2 x rectifier modules and 1 x distribution board with 50A load and battery circuit breakers.



Configuration B (CSX-48-50S-B): 1 x monitor module, 3 x rectifier modules.

Shelf configurations can differ; blank panels can be used to accommodate for smaller systems where fewer rectifiers are needed. Total shelf dimensions are 482 x 385 x 92 mm.