



Charge-X

DC Charger – 110V_{DC}

The Charge-X (CSX-110-20S) is a 110V_{DC} 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 20A 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-110-20R

Input Voltage	75 – 175V _{AC} for 1500W output (10A output current) 175 – 300V _{AC} for 3000W output (20A output current)
DC Output Voltage	120V _{DC} (settable 90 – 150V _{DC})
DC Output Current	20A (0 – 20A)
Voltage Regulation	≤ 0.6%
Load Regulation	≤ 0.5%
Voltage Regulation	≤ 0.1%
Power Factor	≥ 0.99
Efficiency	≥ 95%
Temperature Compensation Coefficient	Set manually mV/°C
DC Output Noise	≤ 200mV 0 - 20MHz Wide frequency noise voltage: ≤ 50mV @ 3.4kHz - 150kHz ≤ 20mV @ 0.15 MHz - 30MHz Discrete noise voltage: ≤ 5mV @ 3.4kHz - 150kHz ≤ 3mV @ 150kHz - 200kHz ≤ 2mV @ 200kHz - 500kHz ≤ 1mV @ 0.5MHz - 30MHz
Alarm & Protection	Overcurrent (input fuse, output fuse, PFC surge diverter, short circuit protection), input overvoltage*, output overvoltage**, under-voltage*** and over-temperature****
Operating Temperature	-25 – 45°C
Storage Temperature	-40 – 70°C
Relative Humidity	≤ 97%
Altitude	≤ 3000m
Dimensions W x D x H	103 x 261 x 88 mm
Weight	2.6Kg
Noise	≤ 45dBA

*Parameters set by hardware. Input protection 300V ± 5V (5 – 20V); output protection 37V ± 1V

**Parameters set by hardware. Output protection 155V ± 1V

***Parameters set by hardware. 75V ± 5V (10 – 20V)

****Default value 80°C (10°C)

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-110-50C
Rated Input Voltage	120V _{DC}
Voltage Range	90 – 150V _{DC}
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

The main configuration for the CXS-110-20S is shown in the image below.



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.