



# Charge-X 24V

## DC Charger – 24V<sub>DC</sub>

The Charge-X (CSX-24-70S-A and CSX-24-70S-B) is a 24V<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 70A 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/Part Number**

**CSX-24-70R**

<b>Input Voltage</b>	175 – 300V <sub>AC</sub> for normal output 75 – 175V <sub>AC</sub> for reduced output
<b>DC Output Voltage</b>	24V <sub>DC</sub> - 20 – 36V <sub>DC</sub> adjustable
<b>DC Output Current</b>	0 – 70A
<b>Output Power</b>	1960W maximum
<b>Voltage Regulation</b>	≤ 0.6%
<b>Load Regulation</b>	≤ 0.5%
<b>Voltage Regulation</b>	≤ 0.1%
<b>Power Factor</b>	≥ 0.99
<b>Efficiency</b>	≥ 95%
<b>Temperature Compensation Coefficient</b>	Set manually mV/°C
<b>DC Output Noise</b>	≤ 200mV @ 0 – 20MHz Wide frequency noise voltage: ≤ 50mV @ 3.4kHz – 150kHz ≤ 20mV @ 0.15MHz – 30MHz Discrete noise voltage: ≤ 5mV @ 3.4kHz – 150kHz ≤ 3mV @ 150kHz – 200kHz ≤ 2mV @ 200kHz – 500kHz ≤ 1mV @ 0.5MHz – 30MHz
<b>Alarm &amp; Protection</b>	Overcurrent (input fuse, output fuse, PFC surge diverter), overvoltage*, under-voltage** and over-temperature***
<b>Operating Temperature</b>	-25 – 65°C
<b>Storage Temperature</b>	-40 – 85°C
<b>Relative Humidity</b>	≤ 97%
<b>Altitude</b>	≤ 3000m
<b>Dimensions W x D x H</b>	103 x 261 x 88 mm
<b>Weight</b>	2.4Kg
<b>Noise</b>	45dBA

\*Parameters set by hardware. Input protection 300V ± 5V (5 – 20V); output protection 37V ± 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-24-70C
Rated Input Voltage	24V <sub>DC</sub>
Voltage Range	20V – 36V <sub>DC</sub>
Working Temperature	-25 – 65°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 24V<sub>DC</sub> system as shown below.



Configuration A (CSX-24-70S-A): 1 x monitor module, 2 x rectifier modules and 1 x distribution board with 50A load and battery circuit breakers.



Configuration B (CSX-24-70S-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.