



CHARGER

Light Electric Vehicle
Electric Vehicle
Industry

POWER
NEVER ENDS

About FSP Group

FSP Group is the leading power supply manufacturer in the world. Since established in 1993, the company has been committed to its R&D capability, production capacity and product quality to stand out from the competitive market.

FSP Group provides a great variety of products related to power and electronics technology, such as adapter, open frame, LED Lighting, Medical, LCD TV, Industrial / Desktop computers and Servers to fulfil our OEM / ODM customers' needs. And FSP Group is now making more efforts to develop better environment friendly products, including PV Inverter, UPS and ESS products.

FSP Group's global presence in Taiwan, Brazil, China, Germany, Sweden, France, India, Japan, Korea, Russia, Turkey, UK, and USA has made it easier to provide immediate support. As FSP Group is aiming to create a win-win situation, we treat our customers as friends by providing customized products and excellent service.

For FSP Group, making **Power Never Ends** will be our sustainable goal.

Our vision:

To be the global leading provider of green energy solutions, touch better environment.

Our mission:

Providing the best value to customers, employees and shareholders by our high quality products.

Energetic | **Friendly** | **Simple** | **Reliable**

POWER
NEVER ENDS



FSP Battery Charger Solutions

-Customized Design and Service-

FSP provides various battery charger solutions that are applicable to the 7S-16S battery module; the output power ranges from 84W-20KW, providing wide applications for different fields, including external chargers or on-board chargers. The optimized circuit design, programmable charging curve, and highly efficient heat dissipation processing can protect the battery effectively and prolong battery life, providing stable and lasting operation time while reducing costs. We provide customized service and design products that are most suitable for customer applications based on different battery specifications, usage environment conditions, and safety requirement assessments.

Product Advantages and Applications

Light Electric Vehicle Applications

Battery chargers that are suitable for handheld and portable devices. The products are lightweight and compact and are used in consideration of the various safety regulations for physical contact situations; for example the charger for electric bicycles. They have 90% high energy conversion efficiencies, miniaturized and portable design features, visualized charging status indications, and can charge under $-10^{\circ}\text{C}\sim+40^{\circ}\text{C}$ environments. The related products already passed safety certifications in many countries for your selection.

- Four charging modes to maintain batteries performance.
- Fan-less design with natural heat dissipation.
- Built-in protections: OCP, OVP, OTP, SCP.
- Safety certifications: IEC / UL variants.
- Wide operation range.

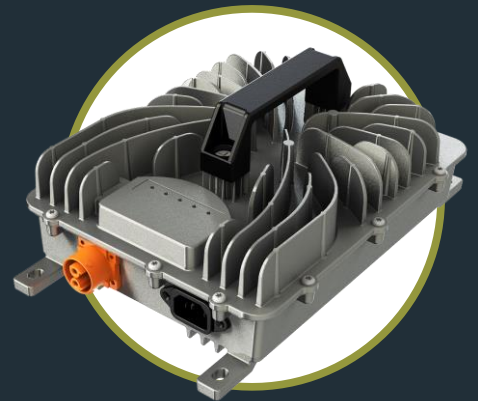


Electric Vehicle Applications

Battery chargers that are suitable for purely electric/hybrid power/range extender and other new energy transportations.

The products have high conversion efficiencies and meets water-proof and dust-proof levels, able to operate normally under rigorous environments, ensuring smooth and stable operations of transportation.

- The CC-CV charging mode keeps the battery 100% performance.
- Fanless solution with optimized thermodesign and high efficiency.
- Water-proof and dust-proof up to IP67.
- Temperature Monitoring.
- Connection reverse protection.
- Constant Power Mode option to shorter the charging time
- High input voltage protection.
- Optional CAN bus functionality.
- For on-board / off-board applications.

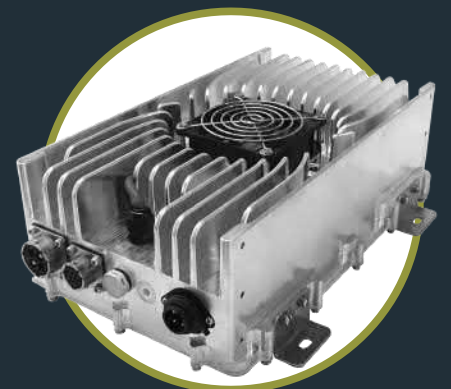


Industry Applications

Suitable for mobile warehouse machineries or handling equipment that need frequent high-level vibrations, impacts, and temperature changes (including refrigeration).

FSP can customize highly reliable and high charging quality on-board chargers according to customer needs.

- Active heat dissipation system can effectively extend the charger's life.
- High reliability and charge quality.
- Long usage time in different operating modes.
- Multi products are available for different applications.
- Optional CAN bus functionality.
- For off-board EV application.



Light Electric Vehicle

Battery Chargers



SPECIFICATIONS	24V (6S/7S) BATTERY CHARGER		
MODEL	FSP059-7S2AC8	FSP147-7S5AC8	FSP235-7S8AC18
DC OUTPUT			
Output Voltage (max.)	29.4 V	29.4 V	29.4 V
Output Current (max.)	2.0 A	5.0 A	8.0 A
Output Power (max.)	59 W	147 W	235 W
Efficiency	≥ 90%		
AC INPUT			
Input Voltage Range	90 Vac ~ 264 Vac	198 Vac ~ 264 Vac	90 Vac ~ 264 Vac
Input Frequency Range	47 Hz ~ 63 Hz		
MECHANICAL			
Dimensions	128 x 67 x 32 mm	177 x 86 x 32 mm	177 x 86 x 32 mm
Weight	300 g	560 g	680 g
Cooling	Convection		
ENVIRONMENTAL			
Enclosure	IP 50		
Operating Temperature	-10°C ~ +40°C		
Safety	CE, CSA		

SPECIFICATIONS	36V (10S) BATTERY CHARGER					
MODEL	FSP063-10S1AC8	FSP168-10S4AC8	FSP252-10S6AC18	FSP084-10S2AC8H	FSP168-10S4AC8H	FSP252-10S6AC8H
DC OUTPUT						
Output Voltage (max.)	42.0 V	42.0 V	42.0 V	42.0 V	42.0 V	42.0 V
Output Current (max.)	1.5 A	4.0 A	6.0 A	2.0 A	4.0 A	6.0 A
Output Power (max.)	63 W	168 W	252 W	84 W	168 W	252 W
Efficiency	≥ 90%					
AC INPUT						
Input Voltage Range	90 Vac ~ 264 Vac			180 Vac ~ 264 Vac		
Input Frequency Range	47 Hz ~ 63 Hz			47 Hz ~ 63 Hz		
MECHANICAL						
Dimensions	128 x 67 x 32 mm	177 x 86 x 32 mm	177 x 86 x 32 mm	128 x 67 x 32 mm	177 x 86 x 32 mm	177 x 86 x 32 mm
Weight	300 g	560 g	680 g	300 g	560 g	680 g
Cooling	Convection					
ENVIRONMENTAL						
Enclosure	IP 50					
Operating Temperature	-10°C ~ +40°C					
Safety	CE, CSA					

Light Electric Vehicle

Battery Chargers



SPECIFICATIONS	48V (12S/13S/14S) BATTERY CHARGER				
MODEL	FSP151-12S3AC8	FSP164-13S3AC8	FSP176-14S3AC8	FSP235-14S4AC18	FSP246-13S4A5C18
DC OUTPUT					
Output Voltage (max.)	50.4 V	54.6 V	58.8 V	58.8 V	54.6 V
Output Current (max.)	3.0 A	3.0 A	3.0 A	4.0 A	4.5 A
Output Power (max.)	151 W	164 W	176 W	235 W	246 W
Efficiency	90%				
AC INPUT					
Input Voltage Range	90 Vac ~ 264 Vac				
Input Frequency Range	47 Hz ~ 63 Hz				
MECHANICAL					
Dimensions	177 x 86 x 32 mm	177 x 86 x 32 mm	177 x 86 x 32 mm	177 x 86 x 32 mm	177 x 86 x 32 mm
Weight	560 g	540 g	560 g	680 g	680 g
Cooling	Convection				
ENVIRONMENTAL					
Enclosure	IP 50				
Operating Temperature	-10°C ~ +40°C				
Safety	CE, CSA				

SPECIFICATIONS	48V (12S/13S/14S) BATTERY CHARGER				
MODEL	FSP151-12S3AC8H	FSP164-13S3AC8H	FSP176-14S3AC8H	FSP202-12S4AC8	FSP227-12S4A5C18
DC OUTPUT					
Output Voltage (max.)	50.4 V	54.6 V	58.8 V	50.4 V	50.4 V
Output Current (max.)	3.0 A	3.0 A	3.0 A	4.0 A	4.5 A
Output Power (max.)	151 W	164 W	176 W	202 W	227 W
Efficiency	90%				
AC INPUT					
Input Voltage Range	200 Vac ~ 264 Vac			90 Vac ~ 264 Vac	
Input Frequency Range	47 Hz ~ 63 Hz				
MECHANICAL					
Dimensions	177 x 86 x 32 mm	177 x 86 x 32 mm	177 x 86 x 32 mm	177 x 86 x 32 mm	177 x 86 x 32 mm
Weight	560 g	540 g	560 g	560 g	680 g
Cooling	Convection				
ENVIRONMENTAL					
Enclosure	IP 50				
Operating Temperature	-10°C ~ +40°C				
Safety	CE			CE, CSA	

Electric Vehicle / Industry

Battery Chargers



SPECIFICATIONS	ON-BOARD BATTERY CHARGER (OBC)			
MODEL	FSP600-1CH01F-C	FSP700-BC50V14A	FSP1800C-1Q01A	FSP332-U3GBCA00
DC OUTPUT				
Output Voltage (max.)	28.0V ~ 58.8V	28.0V ~ 51V	28.0V ~ 60.0V	200V ~ 420V
Output Current (max.)	10.0 A	18 A	30.0 A	10.0 A
Output Power (max.)	600 W	700 W	1800 W	3300 W
AUX Voltage	11.4V ~ 12.6V		11.4V ~ 12.6V	14.5V
Efficiency	≥ 90%	≥ 90%	≥ 90%	≥ 90%
AC INPUT				
Input Voltage Range	90 Vac ~ 264 Vac	90 Vac ~ 264 Vac	90 Vac ~ 264 Vac	90 Vac ~ 264 Vac
Input Frequency Range	47 Hz ~ 63 Hz	47 Hz ~ 63 Hz	47 Hz ~ 63 Hz	47 Hz ~ 63 Hz
MECHANICAL				
Dimensions	245 x 135 x 61 mm	284 x 200 x 108 mm	300 x 190 x 91 mm	260 x 193 x 112 mm
Weight	3 kg	5 kg	5.5 kg	8 kg
Cooling	Fan Cooling	Passiv	Fan Cooling	Fan Cooling
COMMUNICATION				
CAN Bus	Optional	Optional	Optional	Optional
ENVIRONMENTAL				
Enclosure	IP 20	IP 65	IP 65	IP 65
Operating Temperature	-10°C ~ +40°C	-25°C ~ +60°C	-25°C ~ +60°C	-25°C ~ +60°C
Safety	CE, CSA (on going)	CE, CSA	CE	

SPECIFICATIONS	OFF-BOARD BATTERY CHARGER	
MODEL	FSP700-BC58V12A	FSP1800D-1Q01A
DC OUTPUT		
Output Voltage (max.)	58.8 V	28.0V ~ 60.0V
Output Current (max.)	14.0 A	30.0 A
Output Power (max.)	700 W	1800 W
AUX Voltage	-	11.4V ~ 12.6V
Efficiency	≥ 90%	≥ 90%
AC INPUT		
Input Voltage Range	90 Vac ~ 264 Vac	90 Vac ~ 264 Vac
Input Frequency Range	47 Hz ~ 63 Hz	47 Hz ~ 63 Hz
MECHANICAL		
Dimensions	284 x 200 x 108 mm	300 x 190 x 91 mm
Weight	5 kg	5.5 kg
Cooling	Passiv	Fan Cooling
COMMUNICATION		
CAN Bus	Option	Option
ENVIRONMENTAL		
Enclosure	IP 40 (IP67 Optional)	IP 65
Operating Temperature	-15°C ~ +40°C	-20°C ~ +40°C
Safety		



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