

**SPS-6F-277 & SPS-12F-277
Power Supplies/Chargers**
SPS-6F-277 - 24VDC @ 6 Amps
SPS-12F-277 - 12VDC @ 12 Amps
277Vac Input

Made in the USA - Life Time Warranty

Features:

- Efficient Off-Line Switching Power Supply
- Self Contained, No External Transformer
- World Wide Universal AC Input 105-285vac
- Operates on 277VAC Lighting Power
- Clean Low Frequency Switching Linear Performance
- Extreme temperature
- Conformal coated for moist applications
- Precise Battery Regulation for Lead Acid Batteries
- Fast Charging for charging large batteries overnight
- LED's Indicate AC; Power Good; and DC On
- Battery Float Charges, No Drop or Switch Over with Power Fail
- Multiple Units may be connected in parallel for additional power.
- Electronic Power Limited Short Circuit Protection
- Thermal Regulation Prevents Overheating
- Smart Fan inside module comes on when temperature goes above 35C
- Battery Cutoff Relay Controls Battery Service Range
- Output ON/OFF Service Switch *
- Power Trouble Relay Indicates One of the Following has Occurred
 - AC Power Fail
 - Low Battery (approx. 70% capacity)
 - Output Voltage High
- Emissions are Certified CSPIR EN55022 and FCC A
- RoHS Lead Free



Description

The SPS-6F-277 and SPS-12F-277 are clean, efficient, heavy duty, low frequency off line switching power supplies with battery charger and power supervision. Even though the wattage is the same for both the 6 Amp 24VDC SPS-6F-277, and the 12 Amp 12VDC SPS-12F-277, we offer separate 12V and 24V models for optimum performance. Both models use a very low switching frequency of 23KHz, just above our hearing range. This, coupled with extensive filtering, provides a balance of super clean power and efficiency. This low frequency design also eliminates interference problems with card readers and can be used wherever a linear power supply is required. The SPS-6F-277 and SPS-12F-277 are self-contained with a universal line input of 105-285vac. Each weigh less than 1.5 lbs and occupy less than 1/2 of a cubic foot of cabinet space. The SPS-6F-277 and SPS-12F-277

become an uninterruptible power supply when a stand-by battery(s) is connected with the supplied cable. These supplies have a special power limiting circuit that allows the batteries to be float charged across the output without lock up or chirping on and off. The battery(s) is protected with an automatic resetting circuit breaker and diode for over current and accidental reversed battery hookup. Float charging means faster recovery time for the battery(s). There is no switch over or voltage drop when power fails. Standby battery(s) can be any capacity above 4 amp hours. The precise output voltage provides longer battery life. The SPS-6F-277 has 1 Amp in reserve for charging the battery(s), while the SPS-12F-277 has 2 Amps reserved.



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SPS-6F-277 & SPS-12F-277 Continued

Power Supervision includes a battery cut off relay and a separate power trouble alarm relay. The battery cut off relay removes the battery from the load when the battery reaches its service limit. This prevents the battery from going into deep discharge. A typical Gel Cell battery left in deep discharge for more than a couple of days, will usually have to be replaced with a new one. The power trouble alarm relay output, form C contacts, can be used to signal a buzzer and/or other signaling device. The relay is normally energized for fail-safe operation. The relay has a green LED that is on when power is good. The relay will drop off of normal when the standby battery(s) reaches about 70% of capacity. This low voltage indication represents low battery and/or AC power failure. High voltage failure will also indicate power trouble.

Specifications

AC Input: 3P Terminal block in high voltage barrier

AC input/Hz/Watts 120-285vac/47-63Hz/220W
Universal AC input does not require any selection switching.
Earth ground terminal must be connected to earth ground.

AC LED Indicator (Next to AC Input Terminal Strip)

AC Line Fuse Link - Inside unit for catastrophic failure. This fuse is not field replaceable. A blown fuse would be indicated by the AC LED off with AC power applied.

DC OUTPUT: (2P Terminal block marked -DC+)

Nominal Output Voltage SPS-6F-277/SPS-12F-277 24vdc/12vdc
Typ. Output Voltage SPS-6F-277/SPS-12F-277 27.3vdc/13.65vdc

DC LED Indicator (Adjacent to battery connection)..... Red

SPS-6F-277/SPS-12F-277 output Rating 24vdc-5A/10vdc-10A
Load regulation no load to max25%Typ
AC Line regulation 90-264vac03%Typ

Output ripple & noise:

SPS-6F-277/SPS-12F-277 50mv/25mv pp

Current Overload Short Circuit Protection Yes
Output is short circuit protected with power limiting and a self-resetting circuit breaker in series with Battery

Battery PTC Circuit Breaker SPS-6F-277/SPS-12F-277
6A/9A

Temperature (internal) thermal cut back 160°F

Ambient Operating Temperature Range -30°F to 120°F

Storage Temperature -60°F to 190°F

Switching Frequency 23KHz

Supervision Characteristics:

Service Switch * (Disables power and Battery from Output)

Battery Cutoff Voltage:

SPS-6F-277/SPS-12F-27719.6VDC/9.8VDC

Battery Cutoff internal relay contacts 15A

Battery Cutoff Relay is normally energized for fail-safe operation

Trouble Output: 3P Terminal block - annunciates AC

fail, low battery, & high charge – “C” contacts .2A/120vac

Three position trouble terminal block is marked “NO, C, NC” are shown in the Normal, energized, no trouble condition.

A **Service Switch** * is provided to disable the power output. When the switch is turned off, the power supply is electronically disabled and the battery cut off relay is de-energized to remove battery from the output terminal.

Each model is equipped with an internal smart **Fan /F option** that turns on when internal temperature goes above 35C. The fan is very effective in reducing hot spots inside the power supply in extreme conditions.

Ordering information

We have a wide variety on indoor and outdoor enclosure options along with many power distribution accessories.

Trouble (low) SPS-6F-277/SPS-12F-277 24.2vdc/12.1vdc
Trouble (high) SPS-6F-277/SPS-12F-277 28.1vdc /14.1vdc

Trouble LED Indicator On Green Normal

Battery Charging: Keyed header plug marked -Bat+

The battery charger is precision set to float charge 12V or 24V sealed or wet Lead Acid Batteries. Two 12V batteries are connected in series for 24V. The amp hour capacity must be above 4AH. The practical limit is 400AH. The re-charge rate is (full power(6A/12A) – load)

Note: The SPS-6F-277 has 1 Amp in reserve for battery charging while the SPS-12F-277 has 2 Amps in reserve for Battery Charging. See charge/discharge table on instructions.

Environmental:

Ts Storage Temperature -40°C – 85°C

Ot Operating Temperature Range 100% rating:

Ot Power module only -20 – 44°C

Ot with E-1414 Enclosure on wall -20 – 40°C

“/F” module Smart Fan option Increases Ot by: 11C

Over temp inside module (DC output is reduced) .. 71°C

Ot Module with /F option & 50% load -20- 64°C

Each 3% load reduction increases Ot by +1°C

Mechanical Characteristics:

Smart Fan comes with models mounted in an enclosure.

The fan regulates temperature by adjusting fan speed

Weight - Module Only 1.6 lbs

Weight - SPS-6F-277EL16C or SPS-12F-277EL16C 13.0 lbs

Overall Size - Module 7.40H” x 3.94”W x 2.35”D

Mounting holes center to center (4 holes) 3.5”H x 6.8”W

Enclosure (EL) Large Metal Cabinet .. 14” x 14” x 4.75”

Approvals:

EMI conducted and radiated en5022 cispr-22 A, FCC A

Specifications are subject to Change without notice.

* Note: **CE** models SPS-6F-277CE & SPS-12F-277CE do not have the ON/OFF service switch.