

SMPS 4000

AEON 4000



AEON 4000

Functional, Flexible and Futuristic

In the competitive telecom market Eltek Energy knows that operators require strong product support and value added services from their suppliers to realize a high rate of return on their investments. To meet these demands Eltek Energy has developed the AEON 4000 - a highly sophisticated, cost efficient, and energy saving DC power system.

Functional

The AEON 4000 is a highly sophisticated power rack system developed and designed using technological expertise accumulated through more than 30 years in the DC power business. The AEON 4000 has high efficiency and can operate at optimal load levels, which help contribute to a reduction in power consumption and eliminate the unnecessary waste of energy. The AEON 4000 power cabinet contains a number of 24 Volt or 48 Volt, SMPS 4000 SI rectifiers, providing power ranging from 24 KW to 96 KW in a single 48 VDC cabinet. Up to 96 rectifiers can be paralleled, providing maximum power of up to 384 KW, in a 48 VDC system equivalent to an output current of 8,160 Amps. The maximum current in a 24 VDC system is 12,000 Amps.

Each SMPS 4000 SI rectifier can be remotely monitored by the AEON Gold, a micro-processor based power system controller. WinPower, Eltek's windows-based management software, can access the AEON Gold locally or remotely via modem or Ethernet.

WinPower's user-friendly interface allows trouble-free configuration of AEON 4000 systems. In addition to WinPower, the AEON 4000 can also provide SNMP communication through TCP/IP, and modem callback through fixed or wireless phone lines.

The AEON 4000 Power Systems have a maximum capacity of 384 KW and are highly sophisticated and reliable thanks to the compact and advanced SMPS 4000 SI rectifier.



Compact units, which provide high power, enable the system to be redundant in applications with limited space. Moreover, the fact that these high quality rectifiers can be replaced on a live system ensures safe and reliable operation.

AEON 4000 Power Systems

The AEON 4000 power systems are based on the SMPS 4000 SI rectifier, where the rectifier and DC distribution are combined within the same cabinet. These systems are available in different styles and variations where some are CE- marked, while the AEON 4000 AM may be configured for UL and NEBS approvals. The rectifier and system controller are UL- recognized and NEBS Level 3 certified. The systems are available in heights from 1.5m (60") up to 2.2m (7').

The power bays have one to three rectifier shelves, which may contain six rectifiers each. The power shelf gives 24 KW of power at 48 VDC with a total of 72 KW power for one rectifier bay. The maximum output current from one cabinet is 1,530 Amps for 48 VDC systems and 2,250 Amps for 24 VDC systems.

The system controller, AEON Gold, is normally an integral part of the power systems. The unit consists of two parts, one display unit on the front door of the cabinet and one controller unit which may be mounted either on the back side of the front door or placed inside the cabinet.

Cables for load and battery connections are normally configured for top entry, however in sites with raised floors, cable entry from the bottom is often preferred. Eltek Energy offers systems that can handle both entry options.



AEON 4000



AEON 4000 AM

AEON 4000 power cabinets are available in various heights, ranging from 1.5m (60") to 2.2m (7'), depending on the number of rectifiers installed. A maximum of 18 rectifiers may be installed in a single cabinet.

AEON 4000 DC distribution options can be customer specified, either integral to the rectifier cabinet or as a separate distribution cabinet. Systems over 48 KW typically require external distribution cabinets.



High Current AEON 4000 Power Systems

The high current AEON 4000 power systems have current ratings exceeding 2,000 Amps and thus consist of more than one cabinet of rectifiers. These systems contain a number of rectifier bays placed in parallel and connected to a primary DC distribution cabinet, which normally contains battery fusing, battery current measurement and some large load distribution fuses. Primary distribution is often connected to secondary distribution cabinets, which contains a large number of small breakers. As part of the high current AEON 4000 systems, Eltek Energy often supplies battery disconnect units (BDU's) that are located near the battery racks and contain battery fusing and a battery disconnect contactor (LVBD).



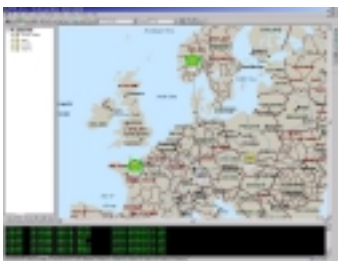
The high current AEON 4000 power systems are designed according to local requirements and needs. Eltek Energy can provide large systems according to CE- standards as well as UL and NEBS. The rectifier and system controller are UL- recognized and NEBS Level 3 certified.

High Current AEON system sizes are available from 1,530 Amps up to 8,160 Amps for 48 VDC and from 2,250 Amps up to 12,000 Amps for 24 VDC.

WinPower Gold



System Configuration during factory test and commissioning is made easy thanks to WinPower Gold. This windows based control software is also used for local or remote control of the power system. All critical data is presented on the main screen with direct access to system settings through password protected drop-down menus. Authorized personnel can be given access to change the system parameters while others are restricted to read only access.



WinPower Gold is available in six different languages, English, German, Chinese, Polish, Norwegian and Spanish. The software offers advanced battery monitoring features like symmetry monitoring, capacity calculations through automatic discharge tests and dynamic back- up time calculation. In addition, WinPower Gold has detailed status information of all rectifiers and an Input Monitor that keeps you updated of all voltages, currents and temperatures measured in the power system.

WinPower Gold accesses the system controller, AEON Gold, locally through an RS-232 connection. Remote connection is also available, either as a modem connection or as an Ethernet connection. Offering both Ethernet and modem connectivity makes WinPower Gold a versatile and powerful management software which can access the AEON 4000 power systems anywhere from any regular PC.

Rectifier Module and Monitoring Unit

SMPS 4000 SI Rectifier

Flexible

The SMPS 4000 SI is a plug-in switch mode power supply designed to produce a maximum of 4000 Watts of power in 48 VDC systems and 3,375 Watts of power in 24 VDC systems. Each SMPS 4000 SI has a front display and keypad for stand-alone control and monitoring, and all relevant information regarding rectifier status is accessible from the front of the rectifier. The SMPS 4000 SI accepts AC input voltage range from 100 VAC to 300 VAC making it the perfect choice for areas and applications with wide variations in AC input voltage.



The **SMPS 4000 SI** rectifier module is tailor-made for modern telecommunication applications. Such high power has never been provided in such an elegant, compact package until now.

AEON Gold Monitoring and Control Unit

Futuristic

The AEON Gold is configurable to generate alarms based on information available from the power system. User specified and standard alarms can be grouped into classes, and using conditional logic to combine individual alarm inputs they may be routed to any of 10 relay outputs. Eight digital inputs can be used for signals from other site equipment such as emergency generators and fire alarm systems.

Eltek Energy's AEON Gold technology provides maximum reliability in your power system while also assuring maximum lifetime for the back-up batteries. In addition to standard features such as temperature compensated charging and battery testing, the AEON Gold also provides enhancements such as multi-language selection and dynamic battery back-up time estimation. The AEON Gold may be configured for load shedding, using up to five contactors that can be controlled independently. This enables loads with different back-up requirements to be connected to the same battery string without increasing size and cost of the battery considerably.

The **AEON Gold** system controller is the "brain" of the system, continuously monitoring and controlling the SMPS 4000 SI rectifier modules. In addition, it also provides remote surveillance - via modem or TCP/IP connections.



Technical specifications

System configuration

Rectifier modules (per cabinet)	Maximum 24 SMPS 4000 SI modules per bay
Control unit	AEON Gold
Battery fuse options	Size and quantity based on customer specification
Load fuse options	Size and quantity based on customer specification
Load circuit breaker options	Size and quantity based on customer specification
AC circuit breakers	Single pole 32 Amps MCB for each rectifier
AC configurations	480 VAC three phase without neutral 380/400 VAC three phase with neutral 230 VAC three phase 208 to 240 VAC single phase
Low voltage disconnect	Up to five battery and load disconnect contactors

Electrical data- AC input

Input range	100-300 VAC
Low input voltage	Shutdown below 100 VAC
Power limitation	48 VDC: linear power increase 2- 4 KW between 100-185 VAC 24 VDC: linear power increase 2- 3.4 KW between 100-150 VAC > 300 VAC, shutdown and rectifier disconnection
High input voltage	> 300 VAC, shutdown and rectifier disconnection
Surge protection	Varistor protection in two levels, rectifiers and cabinet
Line frequency	50 Hz -10%, 60 Hz +10% (45- 66 Hz)
Input current	< 20 Amps at full load and 230 VAC input
Power factor	> 0.995 at full load and 230 VAC input
Harmonic distortion	< 8 %, according to EN 61000-3-2

Electrical data- DC output

Output voltage	24 VDC, 48 VDC
Output current per module, 48 VDC	75 Amps at 54 VDC, 85 Amps at 48 VDC (4 KW constant power)
Output current per module, 24 VDC	125 Amps (constant current)
Maximum current, 48 VDC	2040 Amps (per cabinet) 8160 Amps (multi-cabinet system)
Maximum current, 24 VDC	2250 Amps (per cabinet) 12000 Amps (multi-cabinet system)
Active current share	+/- 2.5 % of nominal rectifier current
Hold- up time	> 10 ms at full load
Ripple voltage	< 100 mVpp
Psophometric noise	< 0.49 mVrms (< 26 dBrc), according to CCITT
Output protection	160 Amps fuse, high voltage shutdown at 59 VDC / 30 VDC
Efficiency	91% at nominal voltage and full load (> 90% for 24V - version)

General data

NEBS	Level 3 certified
EMC	FCC Regulation Part 15, Subpart B GR-1089-Core EN 300 386
Lighting Protection	ANSI/IEEE C62.41
Safety	UL 1950/EN 60950/IEC 950
Isolation voltages	Input/earth: 1.5 KVAC, Input/Output: 3.0 KVAC, Output/Earth: 1.0 KVDC
Enclosure	IP 20
Operating temperature	-10°C to 55°C (14°F to 131°F), temperature dependant power limiting may occur above 40°C (104°F)
Storage temperature	-25°C to 85°C (-13°F to 185°F)
Ventilation	Forced-air fan cooling
Rectifier indications	LED's and LCD for indication of parameters and alarm status
Control unit indications	Graphical display and numeric keypad for local monitoring and control
User interface	WinPower Gold, for monitoring and control by PC
Remote communication	Through direct RS-232 connection, modem connection, or SNMP through TCP/IP



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