

SMPS 1000 SI

**PRS 700
MPSU 4000
MPSU 6000**



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Modular and expandable power solutions



The SMPS 1000 SI based product range consists of flexible and expandable Modular Power Supply Units and stand alone Power Rack Systems with a maximum power capacity up to 21 Kilowatt.

The SMPS 1000 SI based product range fits perfectly into applications like GSM, CDMA and UMTS base stations as well as street side cabinets and customer POP sites. This range allows for remote operation, tailor-made installations and maximum DC power in a minimum of space.

Modular Power Supply Units (MPSU) are 19" or ETSI rack mountable DC standby systems for integration in the users own equipment. The Power Rack System (PRS) is a wall or floor mounted rack system with or without batteries. Both the MPSU and PRS solutions can have internal or external load distribution.

Standard modules

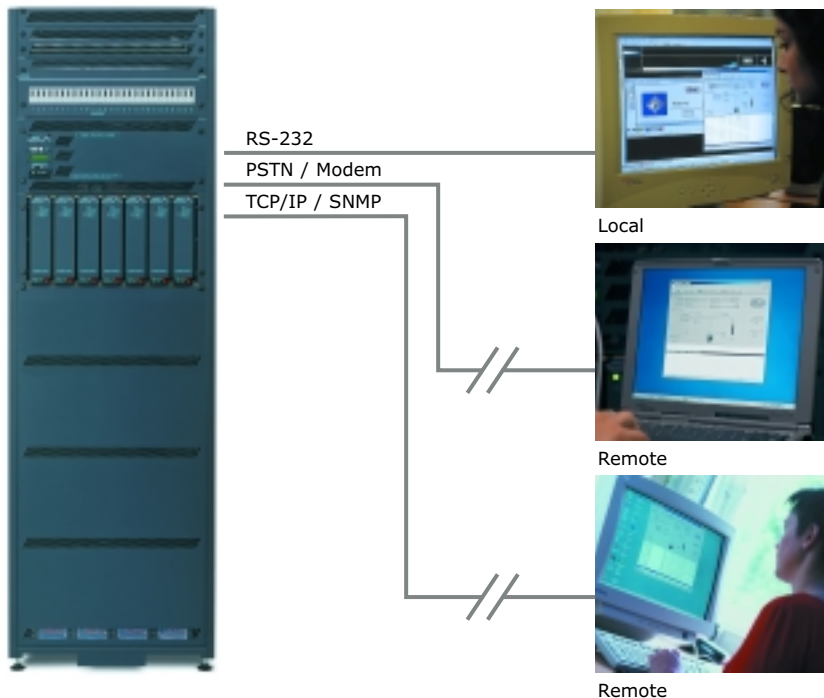
All systems in the medium range are built around the SMPS 1000 SI rectifier, a plug-in switch mode rectifier, and the AL 175NT, a monitoring and control unit with advanced communication functions.

Remote monitoring

Thanks to the advanced microprocessor controlled alarm and monitoring unit AL 175NT, remote control and operation is a valued option. A PC connected to the power system gives easy operation on site or remote access from a central control facility.

A variety of Input/Output options

The system can be accessed locally by RS-232 connection, or remote by PSTN or TCP/IP. The latter option gives access via the Internet and sets a new standard in operation and alarm flexibility.



AL 175NT monitoring and control unit

The AL 175NT has a user friendly, menu driven interface, which provides advanced set-up, monitoring and configuration possibilities. The operation of the AL 175NT is possible through a front panel with LCD screen and keypads or via RS-232 communication with a PC.

Remote monitoring

The wide range of alarm and control facilities is also available through remote supervision, either via modem, or through a TCP/IP adapter. Configurable alarm outputs with voltage free contacts that can also be used for remote monitoring are included. Monitoring via SNMP is also available.

Functions

Automatic/manual boost charging, Automatic battery testing, Symmetry monitoring, Temperature compensated charging, Alarm log with time and date, Modem callback, Relay test, Site information, Charge current limitation, Battery test results, Low voltage disconnect.

Alarms

High/low battery voltage, Low voltage disconnect, Mains failure, Rectifier failure, Load/battery fuse trip, Battery test failure, Symmetry alarm (optional), Battery temperature alarm, System/common alarm.

Measured values

Battery temperature, Output voltage, Battery current, Rectifier current, Load current (calculated).



SMPS 1000 SI rectifier

The SMPS 1000 SI plug-in switch mode rectifier module has been specifically developed to provide high quality and reliable DC power for telecommunication applications.

Reliable operation

The current share bus ensures that the temperature is distributed evenly between the rectifiers, therefore increasing their expected lifetime. This feature operates independent of the Alarm Module. Output power limiting, non-destructive short circuit protection and high voltage shutdown also protect the rectifier module and system.

Front access

LED's indicate the module's power, alarm and current limit status.

Functions

The SMPS 1000 SI supports the following control functions: External shut down input, remote output voltage adjust for temperature compensation, boost charging and battery testing.



WinPower Silver



Monitoring and control for the PRS 700 and MPSU 4000/6000 is made easy thanks to WinPower Silver. This windows based system transforms your PC screen into an active window displaying the power supply system status. All critical data is presented on the main screen with direct access to system settings and interrogation of the AL 175NT monitoring/control unit via clear sub-menus. Different passwords can be programmed for different access levels. Authorised personnel can thereby be given access to change the systems parameters or set-up, while others are restricted to read-only access.

Local or remote

The communication set-up differs whether the PC is local, or on a remote location. Local communication is achieved using a RS-232 cable, connection the PC and the monitoring unit, whereas remote communication is possible via the Public Service Telephone Network (PSTN), using modems. Remote communication is also available via Ethernet (TCP/IP) using an SNMP agent (converter). There may also be some differences in functionality between the different communication methods.

Floor based or wall mounted: The PRS 700 power rack system

Standard PRS 700 up to 21 rectifiers

21" wide (ETSI standard) rack with the AL 175NT control and alarm module. Up to 21 SMPS 1000 SI rectifier modules. Distribution with up to 54 ways load circuit breakers 2-50 Amps depending on configuration. Floorspace: 400 x 600mm (15.75 x 23.62") or 600 x 600mm (23.62 x 23.62").



The PRS 700 AC to DC power system is a complete rack including up to 21 rectifiers in different configurations, with control module and distribution. The modular concept offers various options; floor based with or without batteries and wall mounted. The high power density achievable makes the PRS 700 ideal for applications such as large base stations.

Assembled and tested

The power supply system is delivered ready to use according to the customer's specifications. With no on-site assembly, this system drastically reduces vital set-up time and costs.

Complete solution including batteries: PRSB 700

The floor based system gives the site designers a complete power supply and battery back-up system in only 600 x 600mm (23.62 x 23.62") floor space.

21" wide (ETSI standard) rack with the AL 175NT control and alarm module. Up to 14 SMPS 1000 SI rectifier modules. Distribution with up to 54 ways load circuit breakers 2-50 Amps depending on configuration.



Wall mounted solution: PRSV 700

21" wide (ETSI standard) and only 300mm (11.81") deep, the PRSV 700 is ideal for applications with external batteries and no floor space to spare. The low weight of only 30kg (66.13lbs) makes the unit easy to handle.

The PRSV 700 utilizes the AL 175NT control and alarm module. Up to 7 SMPS 1000 SI rectifier modules. Distribution with up to 27 ways load circuit breakers 2-50 Amps.



**Rack mountable for a total integration:
MPSU 4000 and MPSU 6000 modular power supply units**

The MPSU 4000 and MPSU 6000 are rack mountable power chassis, which will accept up to 4 or 6 SMPS 1000 SI rectifiers respectively. Load distribution and battery connections are provided as an integral part of the unit. These rack mountable power supplies are very convenient when used within the telecom equipment rack at the base station or wherever the available footprint is limited.

Integrated distribution

Eltek has managed to fit in distribution in spite of the compact layout. On the MPSU 4000, the breakers are accessible from the front cover. The MPSU 6000 has a risen distribution unit at the back, which provides easy access and high flexibility.

Features

- Wide input voltage range
- High efficiency and unity power factor
- Active current sharing and redundant rectifier operation
- High power density
- Compliance with international standards

See last page for specifications.



MPSU 6000

Back mounted distribution allows for 6 rectifiers, which make the unit extremely power dense. 21" wide chassis with the AL 175NT control and alarm module. Up to 6 SMPS 1000 SI rectifier modules. Distribution with up to 16 ways load circuit breakers 2-50 Amps as well as 2 battery fuses NH00.

MPSU 4000

With integrated DC-distribution and front accessible circuit breakers, the MPSU 4000 has a clean and functional user interface.

19" wide chassis with the AL 175NT control and alarm module. Up to 4 SMPS 1000 SI rectifier modules. Distribution with up to 6 ways load circuit breakers 2-50 Amps as well as one battery breaker 63 Amps.

MPSU 4000 AM

Adapts original MPSU 4000 design to UL 1801 safety agency listing.

19" wide chassis with the AL 175NT control and alarm unit. Up to 4 SMPS 1000 SI rectifier modules. Distribution with up to 10 ways load circuit breakers 2-50 Amps as well as one battery breaker 100 Amps.



Technical specifications

	MPSU 4000 / MPSU 4000 AM	MPSU 6000	PRS 700
System configuration			
Rectifier modules (SMPS 1000 SI)	max. 4	max. 6	PRS/V 700-7 pcs. PRS/B 700-7 or 14 pcs. PRS 700-7, 14 or 21 pcs.
Control unit	AL 175NT		
DC distribution			
Load MCB's (2-50 Amps)	6 (9 with 3 SMPS 1000 SI) 10 with MPSU 4000 AM	16	PRS/V 700-up to 27 pcs. PRS/B 700-up to 54 pcs. PRS 700-up to 54 pcs.
Load fuses	-	-	3 x NH0x (630 Amps max.)
Battery distribution	1 x MCB (100 Amps max.)	2 x NH00 (160 Amps max.)	3 x NH03 (630 Amps max.)
Low voltage disconnect	Upon request		Battery and / or load disconnect
Electrical data - Mains input			
Mains configuration	230 VAC single phase 230 VAC three phase (not applicable to MPSU 4000 AM) 400 VAC three phase + neutral (not applicable to MPSU 4000 AM) 230 VAC +20% / -35% (150-276 VAC)		
Input range	Shutdown below 150 VAC. Reduced output power between 150 VAC and 185 VAC		
Low input voltage	276-300 VAC: Operation with reduced power factor. 300-345 VAC: Non-destructive operation in 400ms		
High input voltage	Varistor protection inside each rectifier		
Surge protection	45-66Hz		
Line frequency	According to EN 61000-3-2 (<9%, typical 7%)		
Harmonic distortion			
Electrical data - DC output			
Output voltage	24-48-60 VDC		
Maximum system current (54 VDC)	24 VDC: 160 ADC 48 VDC: 82 ADC 60 VDC: 74 ADC	24 VDC: 240 ADC 48 VDC: 123 ADC 60 VDC: 111 ADC	PRS/V 700/24-280 Amps PRS/B 700/24-280 or 560 Amps PRS 700/24-280 or 560 Amps PRS/V 700/48-144 Amps PRS/B 700/48-144 or 288 Amps PRS 700/48-144, 288 or 432 Amps PRS/V 700/60-130 Amps PRS/B 700/60-130 or 260 Amps PRS 700/60-130, 260 or 390 Amps
Active current share	±5% from average current at full load		
Hold-up time	>10ms		
Ripple voltage	<100mVp-p		
Psophometric noise	<2mVrms, according to CCITT		
Efficiency	>91% at 100% load and nominal input voltage		
General data			
EMC	Emission: EN 50081-1, Immunity: EN 50082-2, ETS 300 386-2		
Safety	EN 60950 / IEC 950 / UL 1801 (for MPSU 4000 AM only)		
Enclosure	IP 20		
Operating temperature	-10°C to + 55°C (+14°F to +131°F) (Power limiting may occur above 35°C (95°F))		
Storage temperature	-40°C to +85°C (-40°F to +185°F)		
Ventilation	Convection cooled		
Control unit indications	LCD display and keypad for local monitoring and control (AL 175NT)		
User interface	WinPower Silver for monitoring and control using a PC		
Remote communication	Through direct RS-232 connection, modem connection or SNMP through TCP/IP		
SMPS 1000 SI			
Input voltage range	230 VAC +20% / -35%		
Low input voltage	Shutdown below 150 VAC. Reduced output power between 150 VAC and 185 VAC		
High input voltage	276-300 VAC: Operation with reduced power factor. 300-345 VAC: Non-destructive operation in 400ms		
Output voltage	24V nominal (20-30V adjustable). 48V nominal (45-59V adjustable). 60V nominal (60-75V adjustable)		
Max output current	40.0 Amps at 24V. 20.5 Amps at 48V. 18.5 Amps at 60V		
Input current	5.5 Amps at full load and 230 VAC		
Operating range	-10°C to + 55°C (+14°F to +131°F) (Power limiting may occur above 35°C (95°F))		
Cooling	Convection		
Efficiency	>91%		
Rectifier indications (LED)	Power on, Module failure, Output limit		
Isolation voltages (SMPS 1000 SI)	Input/Earth: 1.5 kVAC, Input/Output: 3.0 kVAC, Output/Earth: 1kVDC		
Housing	IP 20		
Weight	1kg (2.2lbs)		
Protection	Current limited output. Short circuit protected output. Selective high output voltage shutdown		
AL 175NT			
Input voltage	48 VDC		
Weight	1kg (2.2lbs)		
Functions	Automatic/manual boost charging, Automatic battery test, Symmetry monitoring, Temperature compensated charge voltage, Alarm log with time and date, Modem call back, Relay test, Site information, Charge current limitation, Battery test results, Low voltage disconnect		
Alarms	High/low battery voltage, Low voltage disconnect, Mains failure, Rectifier failure, Critical rectifier failure, Load/battery fuse trip, Battery test failure, Symmetry alarm (optional), Battery temperature alarm, System/common alarm		
Measured values	Battery temperature, Output voltage, Battery current, Rectifier current, Load current (calculated)		



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