

PSR-381 Series

Battery Charger / Rectifier



- Three-phase unit in compact 19" design
- Special in- and output side OVP
- Hot-swappable module with backplane connection
- High power density and low weight
- Digital display for output voltage, current and adjustment values
- Optional plug-in module for PFC
- CAN-bus interface

A combination of modern AC to DC switching power conversion technology and a flexible 19" compatible mechanic like the PSR gives many advantages and is suitable for a wide range of applications. Power supply modules of series PSR are optimized for telecommunication applications. Due to the high flexibility for mounting of complete prewired slots in system cabinets this system is very easy in use, during commissioning and maintenance. Modules can be exchanged during system operation. The total system output power can be increased by plugin of new modules in prewired slots during operation. During start-up the rectifiers read all necessary operation parameters via CAN bus from control unit. A fully equipped 19" cabinet has an maximal output current of up to 1660A @ 48V.

The combination of an active power factor correction unit and a soft-switching DC to DC-converter provides a wide input voltage range, high efficiency, small dimensions, and low weight.

With an optional PFC plug-in module the input current is sinusoidal with $\cos \varphi = 1$.

A constant voltage and current control circuit performs correction of output voltage deviations due to input voltage or load transients within less than 1.5 ms and permits constant current operation down to continuous short circuit.

A microcontroller unit with two control keys and digital displays on the front panel provides continuous monitoring of input and output voltage, output current, temperature, and offers easy adjustment and programming of output parameters and monitoring thresholds.

An CAN-bus interface allows remote control of output voltage and current from real time transmission of all parameters and measurement values to central supervisory unit (MU1000C or MU2000C). CAN bus is very secure serial bus with enhanced failure correction.

TYPE LISTING

Type	PSR-381/48-166	PSR-381/60-133	PSR-381/108-74	PSR-381/216-37
Order code	100-080-251	100-080-261	100-080-271	100-080-281
Category	Primary Switch Mode Rectifier			

AC INPUT

Nominal voltage	3x 400 V AC +/-20%			
Nominal current	15 A AC	15 A AC	15 A AC	15 A AC
Input frequency	47-63 Hz			
Power factor λ	> 0.93; with optional PFC: >0.93 at $P_{nom} < 25\%$; > 0.97 at 50% > $P_{nom} > 25\%$; > 0.99 at 100% > $P_{nom} > 50\%$			
Efficiency	$\geq 90\%$	$\geq 91\%$	$\geq 91\%$	$\geq 91\%$
Fusing	16 A gL	16A gL	16A gL	16A gL

DC OUTPUT

Nominal voltage	48 V DC	60 V DC	108 V DC	216 V DC
Nominal current	166 A DC	133 A DC	74 A DC	37 A DC
Charge line	IU-line acc. to DIN 41772 / DIN 41773, power regulated			
Charge line U_{A1} : Equalize charge	54,5 V DC $\pm 1\%$ (46.6 to 57.6 V adjustable)	68,1 V DC $\pm 1\%$ (57 to 72 V adjustable)	122,6 V DC $\pm 1\%$ (105 to 129 V adjustable)	215,2 V DC $\pm 1\%$ (210 to 259 V adjustable)
With MU: Boost charge	57,6 V DC $\pm 1\%$ (48 to 60 V adjustable on control unit)	72 V DC $\pm 1\%$ (60 to 75 V adjustable on control unit)	129,6 V DC $\pm 1\%$ (108 to 135 V adjustable on control unit)	159,2 V DC $\pm 1\%$ (216 to 270 V adjustable on control unit)
With MU: Battery test	44,4 V DC $\pm 1\%$ (40.8 to 48 V adjustable on control unit)	55,5 V DC $\pm 1\%$ (51 to 60 V adjustable on control unit)	99,9 V DC $\pm 1\%$ (91 to 108 V adjustable on control unit)	199,8 V DC $\pm 1\%$ (183 to 216 V adjustable on control unit)
Voltage ripple	≤ 20 mV _{ss}		≤ 100 mV _{ss}	≤ 200 mV _{ss}
Psophometric ripple acc. to CCITT	≤ 1.8 mV _{eff}		not applicable	
Dynamic behaviour	< 3% U_{nom} for load transients between 10% - 90% - 10% I_{nom} recovery time $t \leq 1$ ms			
Short circuit protection	Continuous short circuit proof, 1x I_{nom}			
Parallel operation	< 100 pieces			
Internal decoupling circuit	minus pole	plus pole		

STANDARD FEATURES

LED indicators	Mains (green); U_o (green); I_o (yellow); $U >$ (red); Alarm (red)
Digital display	Output voltage, output current
Relay contacts	"Common Alarm"
Monitoring	Output voltage high / low, output voltage, output current, short circuit
External functions	Boost charge and battery test function, temperature compensation of charge voltage, remote ON / OFF via CAN interface and control unit; external sense links for output voltage
Communication	CAN-bus interface for communication with central monitoring unit (MU1000C/MU2000C)

ENVIRONMENT

Ambient temperature	Operation: 0°C to +40°C Storage: -30°C to +70°C
Climatic conditions	IEC 721-3-3 class 3K3 / 3Z1 / 3B1 / 3C2 / 3S2 / 3M2
Humidity class	F
Dust	< 1 mg / m ³
Altitude	≤ 1000 m a.s.l.; extension possible
Audible noise	< 40 dB (A) at 1m distance

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MECHANICAL CONSTRUCTION				
Construction	19" rack for mounting in prewired 19" slots with backplane			
Dimensions [mm] W / H / D	483 / 133 / 420 (19" x 3HU)	483 / 133 / 420 (19" x 3HU)	483 / 133 / 420 (19" x 3HU)	483 / 133 / 420 (19" x 3HU)
Weight [kg]	28	28	26	26
Cooling	Forced fan cooling (temperature controlled, monitored)			
Protection class	IP20 (mech.); 1 (electr.)			
Surface	Front panel: powder coating RAL 7032, constructive parts: anodised			

COMPLIANCES	
Conducted and radiated emissions EN 50081-1	EN 55011 / EN 55022 class B
Safety	EN 60950 ; VDE 0100 part 410; VDE 0110, EN 50178, EN 60146
Interference Immunity EN 50082-2	Case: Electrostatic discharge: EN 61000-4-2 (6 kV contact, 8 kV air discharge) Radiated radio frequency: EN 61000-4-3 (10V/m, 30 MHz - 1 GHz)
	Power line: EN 61000-4-4 (2 kV, other 2 kV) EN 61000-4-5 (4 kV unsymmetrical, 2 kV symmetrical, others: 2 kV unsymmetrical)
	Control line EN 61000-4-4 (2 kV) EN 61000-4-5 (2 kV unsymmetrical)

For Telecommunications are also available:

- **DC/DC-Converter PSC**
Document: D30-1000.DB001



- **Inverter UNV**
Document: D65-1000.DB001

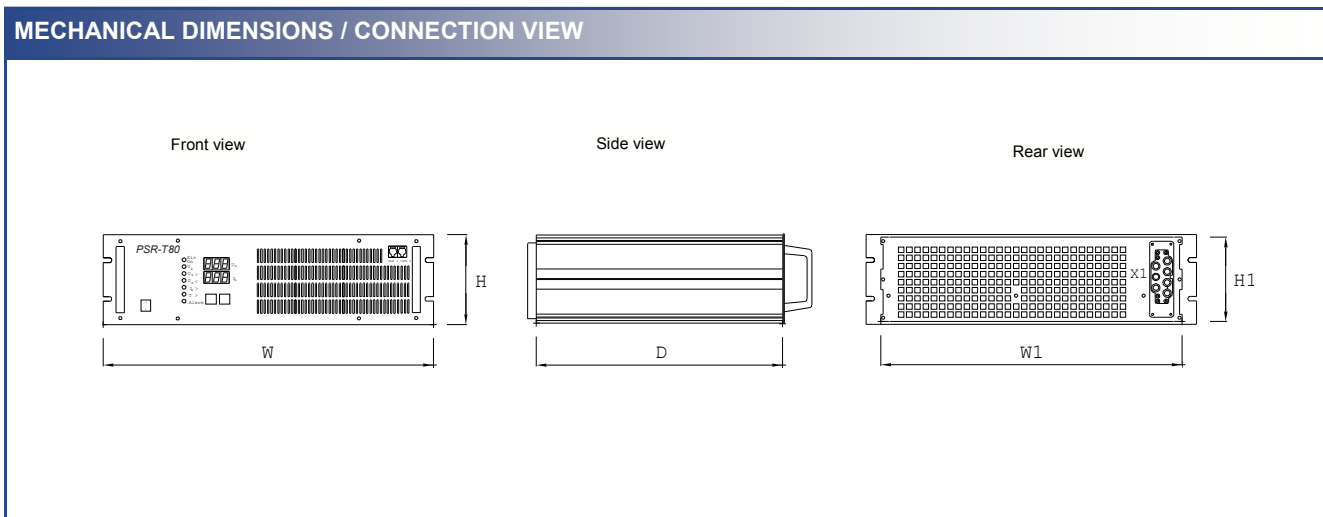


- **Monitoring Unit MU1000C**
Document: D24-1000.DB001



Options:

- CAN distribution board, board with 5 CAN sockets; order code: C24-9999.00004
- Monitoring Unit MU1000C; order code: C24-1011.00001
- 19" mounting kit with gliding rails and backplane



Additional Information

Full information, drawings, manuals and application notes and advice to any of the wide range of products are available on request.

The manufacturer reserves the right to change the specification, product design and parameters at any time, without notice.

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