

PSR-T Series

Battery Charger / Rectifier



- Single phase module with sinusoidal input current
- Special in- and output side OVP
- Flexible 1/6-19"-module system "Hot-Plug-In"
- Temperature compensation of the charge voltage, natural convection cooling
- Digital display for output voltage, current and adjustments values (optional)
- CAN-bus interface

A combination of modern AC to DC switching power conversion technology and a flexible 19" compatible mechanic like the PSR-T gives many advantages and is suitable for a wide range of applications. Power supply modules of series PSR-T are optimized for telecommunication applications. Due to the high flexibility for mounting of complete prewired subracks 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" subrack has an maximal output current of up to 320A @ 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.

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 (optional).

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-T10/48-21	PSR-T16/48-33	PSR-T27/48-55
Order code	C22-1002.00000	C24-1012.00010	C24-1013.00010
Category	Primary Switch Mode Rectifier		

AC INPUT			
Nominal voltage	230 V AC +/-20% (high voltage version -25/+30%)		
Nominal current	5.0 A AC	7.7 A AC	12.9 A AC
Input frequency	47-63 Hz		
Power factor λ	> 0.95 at $P_{nom} < 25\%$; > 0.97 at $50\% > P_{nom} > 25\%$; > 0.99 at $100\% > P_{nom} > 50\%$		
Efficiency	$\geq 91\%$	$\geq 91\%$	$\geq 91\%$
Fusing	6 A gL	10A gL	16 A gL

DC OUTPUT			
Nominal voltage	48 V DC		
Nominal current	21.0 A DC	33.0 A DC	55.0 A DC
Charge line	IU-line acc. to DIN 41772 / DIN 41773		
Charge line U_{A1} : Equalize charge	54.5 V DC $\pm 1\%$ (46.6 to 57.6 V adjustable)		
With MU: Boost charge	57.6 V DC $\pm 1\%$ (48 to 60 V adjustable on control unit)		
With MU: Battery test	44.4 V DC $\pm 1\%$ (40.8 to 48 V adjustable on control unit)		
Voltage ripple	≤ 20 mV _{ss}		
Psophometric ripple acc. to CCITT	≤ 1.8 mV _{eff}		
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, $1 \times I_{nom}$		
Parallel operation	< 100 pieces		
Internal decoupling circuit	minus pole		
Internal Output fuse	25A	35A	80A

STANDARD FEATURES	
LED indicators	Mains (green); U_o (green); I_o (yellow); $U >$ (red); Alarm (red)
Digital display	Output voltage, output current (optionally)
Relay contacts	"General fault"
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: -10°C to +40°C Storage: -30°C to +50°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	< 30 dB (A) at 1m distance

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MECHANICAL CONSTRUCTION			
Construction	1/6-19" cassette for mounting in subracks acc. to DIN 41 494, rear connectors		
Dimensions [mm] W / H / D	71 / 262 / 220	71 / 262 / 420	71 / 262 / 420
Weight [kg]	3.5	8.5	11.5
Cooling	Natural convection	Temperature controlled fan cooling	
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)

Options:

- Digital displays for output voltage and current; order code: C22-9999.00001
- Fan rack (temperature controlled); order code: C40-9999.00018
- CAN distribution board, board with 5 CAN sockets; order code: C24-9999.00004
- Monitoring Unit MU1000C; order code: C24-1011.00001
- 19" subrack for 6 PSR-T; order code: C22-9999.00002

For Telecommunications the following are available:

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



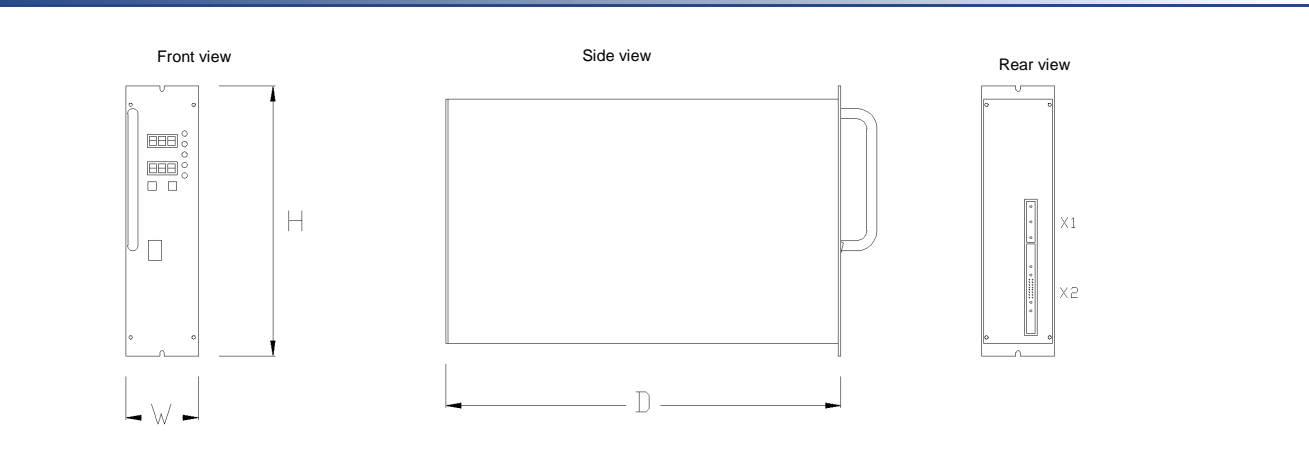
- **Inverter UNV**
Document: D65-1000.DB001



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



MECHANICAL DIMENSIONS / CONNECTION VIEW



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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For further information contact :

CP Power & Automation Ltd
8 Hotchkiss Way, Binley Industrial Estate
Coventry, CV3 2ZW, UK
Phone: +44 2476 444845
Fax: +44 2476 561531
Email: sales@cppowerautomation.com
Internet: www.cppowerautomation.com