Modulaire UPS-systemen

Gelijkrichters

DC/DC omzetters

Omvormers

Statische schakelaars

ePower

DATASHEET MODULAR RECTIFIER

RECTIFIER/CHARGER 24, 48, 60, 110, 220Vdc

Product Description

The power supplies of the PSR series are modular battery charging rectifiers with an optimized switching principle offering a high efficiency and a very high power density. The rectifier modules can be used in all DC applications with or without battery.

The modular design concept ensures a high scalability either for increasing the total system output power or to reach redundancy requirements. The rectifier modules are very user friendly and can be swapped and upgraded during operation.

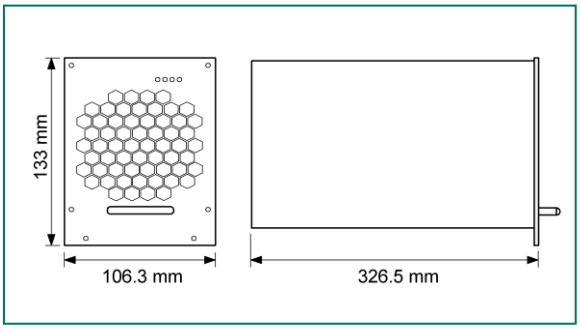
The devices get their operational parameters via the system wide CAN communication bus. After a successful login a central monitoring unit controls and monitors the devices. In case of CAN bus interruption the modules operate continuously with internal default values. Up to 4 modules can be integrated in a 19" sub rack with 3U

Applications

Rectifier module for DC power supply facilities with or without battery in all areas of telecommunication, industry, power generation and power distribution.

Key features

- **Wide input voltage range**
- **Sinusoidal input current (PFC)**
- **Input overvoltage protection**
- **Modular hot swappable design**
- **High power density**
- **High efficiency**
- **Excellent dynamic behaviour**
- **Low ripple voltage**
- **Integrated DC bus decoupling**
- **load sharing in parallel operation**
- **CAN-Bus interface**
- **Temperature compensated battery charging.**



DATASHEET MODULAR RECTIFIER

TECHNICAL DATA	RECTIFIER PSR312/327				
Nominal output voltage	24Vdc	48Vdc	60Vdc	110Vdc	220Vdc
Nominal output power	1200W	2700W			
Nominal output current	50A	56A	45A	25A	12.5A
Type code	PSR312/24-50	PSR327/48-56	PSR327/60-45	PSR327/110-25	PSR327/220-12.5
Article code ; standard Lead	101-012-148.00	101-027-158.00	101-027-168.00	101-027-178.00	101-027-188.00
Article code ; Nickel Cadmium	101-012-148.01	101-027-158.01	101-027-168.01	101-027-178.01	101-027-188.01
Nominal input voltage	230 Vac ±20%				
Nominal input current	5.8 A	12.9A			
Input frequency range	47-63 Hz				
Input power factor	>0.99 at Pnom >50%				
Total harmonic distortion	<5%				
Efficiency	≥88%	≥91%			
Internal input fuse	16 A (6.3x32 mm)				
Charge characteristic	IU according DIN41772/DIN41773, power limited				
Output voltage range	20.4 - 30 Vdc	40.8-60Vdc	51-75Vdc	91.8– 135Vdc	184 - 270Vdc
Default setting output voltage	27.24 Vdc	54.5Vdc	68.1Vdc	122.6Vdc	245.2Vdc
Voltage ripple	≤20mVpp	≤20mVpp	≤20mVpp	≤100mVpp	≤200mVpp
Dynamic stability output voltage	<3% Unom at load changes between 10%-90%-10% load; regulation time ≤1.5 ms				
Short circuit protection	Continuous short circuit proof; 1x Inom				
Parallel operation	Yes, with load sharing ≤10% Inom				
Internal decoupling at the output	Yes; low-loss decoupling circuit in the positive output line				
Internal output fuse	80 A			30A	20A
LED signalling	Operation (green), Vo OK (green), Vo> (red), Alarm (red)				
Isolated signalling contacts	“General fault”; COM/NC				
Communications interface	CAN-Bus, proprietary protocol				
Ambient temperature	Operation: -20°C to +55°C, storage: -40°C to +85°C				
Cooling	Fan cooling (temperature-regulated; monitored)				
Climatic conditions	according to IEC 721-3-3 class 3K3/3Z1/3B1/3C2/3S2/3M2				
Max. installation altitude	≤ 1500 m				
Audible noise	<45 dBA				
Type of construction	1/4 x 19“; 3U				
Dimensions (W/H/D)	106.3/133/326.5 mm				
Weight	app. 3.9 kg				
Protection class	IP20 (front panel)				
Colour (front panel)	RAL 7035, black imprint				
CE conformity	yes				
Compliance to safety standards	EN60950-1; VDE0100 T410; VDE0110; EN50178; EN60146				
Compliance to EMC standards	EN55022/24 (ITE), class “A“; EN61000-4 T2-5				
Connections	AC input, DC output and signalisation: DIN41612-M-connector				

ASSEMBLIES & OPTIONS

102-327-408.LV01; 24-60Vdc 102-327-408.HV01; 110/220Vdc		Assembly set 19“ sub rack 3U incl. backplane for 4pcs. rectifier PSR312/327
102-327-318.LV01; 24-60Vdc 102-327-318.HV01; 110/220Vdc		Assembly set 19” sub rack 3U incl. backplane for 3pcs. rectifier PSR312/327 and 1pc. DC controller UPC3
301-003-498.00; 24Vdc 301-003-598.00; 48/60Vdc 301-003-798.00; 110Vdc 301-003-898.00; 220Vdc		Monitoring, controlling and signalling unit (DC controller) UPC3
302-DCC-CB1.00		Connection board CONB_HS_01 to connect all measuring, control and signalling wires to UPC3 backplane (MSTB screw terminals)

DATASHEET MODULAR INVERTER

230Vac INVERTER, input 24, 48, 60, 110, 220Vdc

Product Description

The power supplies of the INV series are modular inverters with the latest switching technology offering a high efficiency and a very high power density. The state-of-the-art control and monitoring system provides an excellent functionality with optimal protection features.

The modular design concept ensures a high scalability either for increasing the total system output power or to reach redundancy requirements. For higher reliability the hard wired synchronization bus between paralleled inverters is working in a redundant mode. The inverter module is ready for operation with the new static switches of the STS series to increase the system availability furthermore.

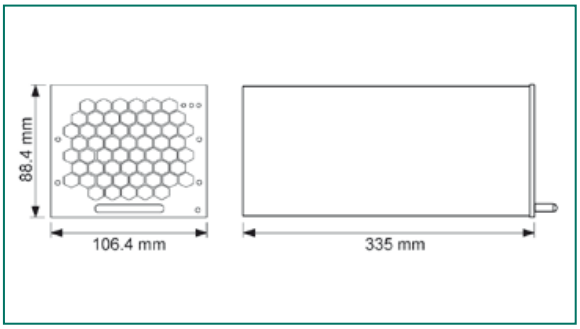
The inverter modules are very user friendly and can be swapped and upgraded during operation. Up to 4 inverters can be installed in a 19" subrack with only 2U.

Applications

Inverter module for AC power supply facilities with or without battery in all areas of telecommunication, industry, power generation and power distribution.

Key features

- **Wide input voltage range**
- **Input overvoltage protection**
- **Input undervoltage protection**
- **Modular hot swappable design**
- **High power density**
- **High efficiency**
- **Excellent sinusoidal output**
- **Excellent dynamic behaviour**
- **load sharing in parallel operation**
- **redundant synchronization bus**
- **CAN-Bus interface**
- **Overload and short circuit-proof**
- **Temperature-controlled fan cooling**



DATASHEET MODULAR INVERTER

TECHNICAL DATA	INVERTER INV211/222				
Nominal input voltage	24Vdc	48Vdc	60Vdc	110Vdc	220VdC
Nom. output power at cosϕ 0,8/1	1100VA/880W	2250VA/1800W			
Type code	INV211-24/ 230-50	INV222-48/ 230-50	INV222-60/ 230-50	INV222-110/ 230-50	INV222-220/ 230-50
Article code	501-015-415.00	501-022-515.00	501-022-615.00	501-022-715.00	501-022-815.00
Nominal input current	41.6Adc/24Vdc	41.6Adc/48Vdc	33.3Adc/60Vdc	18.4Adc/108Vdc	9.2Adc/216Vdc
Input voltage range	20.4 - 30Vdc	40.8–67.5Vdc	52-76Vdc	91.8-135Vdc	183.6-270Vdc
Inrush current	≤nominal input current				
Overall efficiency	≥88%	≥90%			
External input Fuse required	63A	63A	63A	25A	16A
Nominal output voltage	230Vac ±5%, adjustment range: 200-242Vac; parallel mode: 230Vac ±5%				
Nom. output current @ cosϕ 0,8/1	6.5 / 5.2Aac	9.8 / 7.8 Aac			
Overload capability	130% for 3sec, 110% for 1min				
Output frequency	50 Hz ±0.01 Hz				
Synchronisation range	48-52 Hz/58-62 Hz (60 Hz optional)				
Static stability output voltage	±0.5%				
Dynamic stability output voltage	<3% Vnom at load variations between 10%-90%-10% Inom; regulation time ≤0.3 ms				
Short circuit protection	Continuous short circuit proof; 3x Inom for 3 sec.				
Parallel operation	Yes; current sharing ≤10% Inom; slope down output voltage line				
THD/Crest factor	≤2% at linear load/≤3				
Power factor range	0.5 ind. - 1 - 0.5 cap.				
Internal output fuse	No, External output fuse 10A gL or MCB characteristic B				
LED signalling	Operation (green), Vo OK (green), Alarm (red)				
Electronic protection	Input undervoltage, input overvoltage, overtemperature, overload and short circuit				
External synchronisation	Parallel operation; no fixed master; external synchronization by static transfer switch				
Isolated signalling contacts	“General fault”; relay contact NO; 60V/0.1A				
Communications interface	CAN-Bus, proprietary protocol				
Ambient temperature	Operation: -20C to +55°C (de-rating 2%/K above +40°C); storage: -40°C to +85°C				
Cooling	Fan cooling (temperature-regulated; monitored)				
Climatic conditions	according to IEC 721-3-3 class 3K3/3Z1/3B1/3C2/3S2/3M2				
Max. installation altitude	≤ 1500 m				
Audible noise	<45 dBA				
Type of construction	1/4 x 19“, 2U				
Dimensions (W/H/D) ; Weight	106.4/88.4/335 mm ; app. 4.0 kg				
Protection class	IP20 (front panel) / 1				
Colour (front panel)	RAL 7035, black imprint				
CE conformity	yes				
Compliance to safety standards	EN60950-1; VDE0100 T410; VDE0110; EN50178; EN60146				
Compliance to EMC standards	EN55011/22 class “B“; EN61000-4 T2-5				
Connections	DC input, AC output and signalisation: DIN41612-M connector				

ASSEMBLIES & OPTIONS

502-222-405.LV 24-60Vdc **502-222-405.HV** 110-220Vdc		Assembly set 19“ sub rack 2U incl. backplane for 4pcs. inverters INV2xx
502-222-315.LV 24-60Vdc **502-222-315.HV** 110-220Vdc		Assembly set 19“ sub rack 2U incl. backplane for 3pcs. inverters INV2xx and 1pc. static switch type STS207
601-070-515.00 24-60Vdc **601-070-715.00** 110-220Vdc		Static bypass switch STS207 LV 24-60V or STS207 HV 110-220Vdc

DATASHEET STATIC SWITCH MODULE

230Vac STATIC SWITCH, 7kVA

Product Description

The new static switch of the series STS207 is a compact electronic switch. The digital PLL guarantees minimized synchronization time of the inverter to the bypass mains frequency. Due to the high synchronization speed the unit is well suited to operate with emergency generators. The transfer time between the two inputs is less than 4ms, suitable for all IT applications. The STS monitors the voltage level, frequency and the synchronization of the incoming supplies

In combination with the inverter series INV222 the unit can operate in offline or online mode. This function is programmable at site. All main functional parameters and measuring values are displayed on the LCD display. For highest reliability the internal circuits are supplied in redundancy by the bypass mains as well as the battery circuit of the AC system.

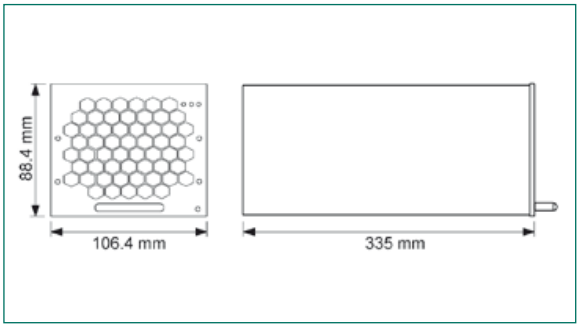
For communication between STS and inverter a CAN-Bus communication is used. The unit has an Ethernet interface for remote connection via SNMP protocol or WEB-Browser.

Applications

Static bypass switch for AC power supplies in all areas of telecommunication, industry, power generation and power distribution.

Key features

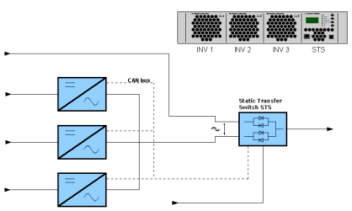
- **1/4 x 19‘‘, 2U**
- **Modular hot swappable design**
- **High power density**
- **Optimized synchronization speed**
- **CAN-Bus interface**
- **Temperature-controlled fan cooling**
- **SNMP interface**
- **WEB based monitoring**
- **Display for all main operating parameters, settings & measuring values**



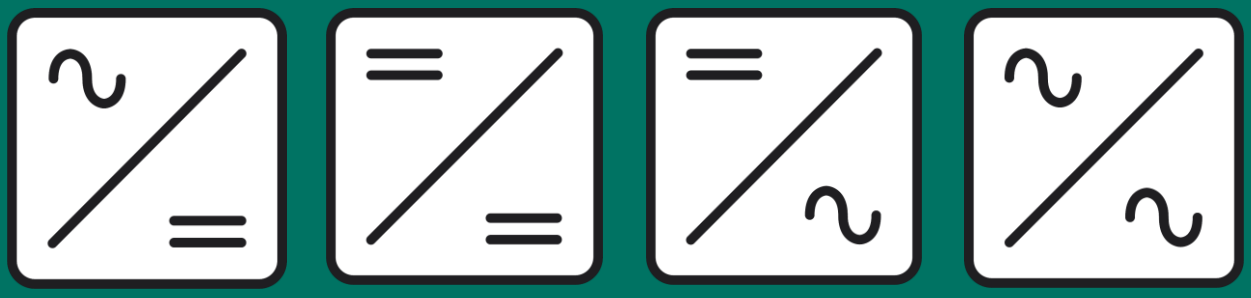
DATASHEET STATIC SWITCH MODULE

TECHNICAL DATA	STATIC SWITCH STS207		
Type code	STS207-230/230-24V	STS207-230/230LV	STS207-230/230HV
Article code	601-070-415.00	601-070-515.00	601-070-715.00
Nominal input voltage - Source 1	230 VAC ±20%		
Nominal input voltage - Source 2	230 VAC ±20%		
Redundant DC supply	20.4– 30 VDC (24V)	40.2– 75 VDC (LV)	91.8- 275VDC (HV)
Input frequency range	50/60 Hz		
Synchronisation range	±2 Hz		
Overall Efficiency	≥99%		
Mains input fuse	63A semiconductor protection		
Recommended external input fuse	32A gL or MCB characteristic B		
Nominal output voltage	230 VAC; equal to input values; switch-over threshold ±5 to ±20% programmable		
Nominal output current	30.4 AAC		
Nominal switching capacity	7000 VA		
Overload capability	1000% for 10 ms (fuse tripping of 32 A gL is guaranteed)		
Output frequency	equal to the input frequency		
Transfer time	≤4 msec		
LED signalling	Operation (green), Inverter OK (green), Mains OK (green), Load on Inverter (green), Load on Mains (green), Synchronization (green), Alarm (red)		
Main processor	16Bit Fujitsu		
Monitoring functions	Voltage/frequency of sources 1 and 2; synchronization mains-inverter; over temperature; CAN communication lost; synchronization bus interrupted		
Configuration	Via front side operating buttons UP/DOWN/ENTER/ESC and LCD (4x16 characters); via SNMP and HTTP		
Fault signalization	Text message on LCD; alarm relay output		
Communications interface	CAN-Bus, proprietary protocol; redundant synchronization bus; Ethernet 10Base-T		
Ambient temperature	Operation: -20°C to +55°C; storage: -40°C to +85°C		
Cooling	Fan cooling (temperature-regulated; monitored)		
Climatic conditions	according to IEC 721-3-3 class 3K3/3Z1/3B1/3C2/3S2/3M2		
Max. installation altitude	≤ 1500m		
Audible noise	<45dBA		
Type of construction	1/4 x 19“, 2U		
Dimensions (W/H/D)	106.4/88.4/335mm		
Weight	approx. 2.2kg		
Protection class	IP20 (front panel)		
Colour (front panel)	RAL 7035, black imprint		
CE conformity	yes		
Compliance to safety standards	EN60950-1; VDE0100 T410; VDE0110; EN50178; EN60146		
Compliance to EMC standards	EN55011/22 class “B“; EN61000-4 T2-5		
Connections	Rear: AC inputs/output, DC input and signalization (DIN41612-M-connector);		
	Front: Ethernet (RJ45), CAN (RJ11)		

ASSEMBLIES & OPTIONS

502-222-315.LV 24-60Vdc **502-222-315.HV** 110-220Vdc		Assembly set 19“ sub rack 2U incl. backplane for 3pcs. inverters INV2xx and 1pc. static switch type STS207
		Web based system monitoring is standard included.

Powerful Solutions



UPS-systemen

Gelijkrichters

DC-systemen

Batterij Management

Advies & Training

Service & Onderhoud

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