



# DC POWER-S DC power systems

## DC power-S: Compact, flexible and modular DC power supply systems

Salicru's DC power-S energy systems assembled in a trolley case is the ideal auxiliary power supply for maintenance tasks. The equipment includes the following components: DC-S rectifier modules, subrack frames, control and monitoring system, communications module (optional) and the trolley case to house all the parts in. Also as an option, in a separate enclosure, dropper diodes with two steps and forced cooling can be built in.

The output voltage of DC power-S trolley is 110Vdc, and it can be assembled with different power rating rectifier modules 1000, 2000 and 2700 W. Thanks to its modular design, which enables up to 8 modules per 2U subrack frame can be achieved a very high power density.

The control and monitoring system manages the complete system: input and output measurements, battery charging currents, control of critical and non-critical loads, communication ports, dry contacts, etc. The maximum quantity of rectifier modules controlled by the control system in this kind of equipment is 8 (due to the size of the trolley case and DC current size), which allows the energy system to achieve power ratings from 1kW to 21,6 kW with N+n redundant configurations.

The communications module option has: six programmable relays, battery temperature probe, RS-232/485 channel, intelligent slot for an Ethernet/SNMP adapter and electrolyte level detection for NiCd batteries.

### Performances

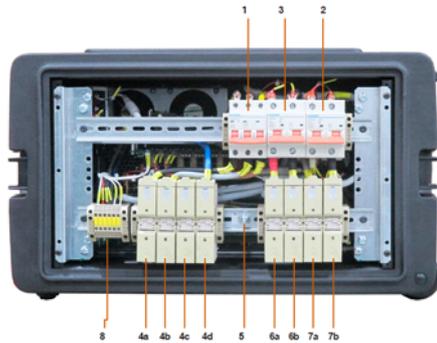
- Maximum power per trolley case up to 21,6 kW.
- Flexible, scalable and N+n redundant systems, configurable for current demand and future upgrading.
- High power density in the modules, up to 27 W/in<sup>3</sup>.
- High efficiency, up to 95% even with low load.
- Three or single phase input. Configurable at site.
- DC systems output voltage: 110 Vdc.
- Wide operating temperature range from -20° C to +55° C.
- Wide input voltage range from 90 Vac to 290 Vac with power derating.
- Input power factor 1 for better performance.
- Modular design of the rectifiers and control system.
- Output current sharing between rectifiers.
- Front and rear access for easy installation and maintenance.
- Hot-swap and hot-plug functions with automatic adjustment for module connection/disconnection.
- LLVD and BLVD - disconnection of non-critical loads and for low battery voltage.
- Full local control and monitoring system with LCD backlit (4x40 characters).
- Communication unit for remote monitoring.
- Monitoring software via Ethernet/SNMP.



## Applications: auxiliary power supplies

Salicru's DC power-S energy systems provide to technical staff the ideal auxiliary power supply when doing the maintenance tasks in the existing rectifiers, ensuring an excellent operation without unexpected outages. Because of its modular nature, it can also be expanded according to needs, thereby optimising the investment.

### System description



1. Input protection
2. Output protection
3. Battery protection
4. Input terminal strip
5. Protection earth stud
6. Battery terminal strip
7. Output terminal strip
8. Dropper diode control



1. Centralised controller
2. Rectifier power module
3. Indicator: alarm
4. Indicator: module on standby
5. Indicator: output voltage correct

### Dropper diode description



1. Input protection
2. Output protection



1. Input terminals
2. Output terminals
3. Dropper diode control
4. Earth stud

## TECHNICAL SPECIFICATIONS

MODEL		DC POWER-S	
INPUT	AC voltage	120 / 127 / 220 / 230 / 240 V 3x208 / 220 / 380 / 400 / 415 V (3Ph+N)	
	Range (phase-neutral)	90 ÷ 290 Vac	
	Frequency	50/60 Hz	
	Power factor	>0.99 (PFC)	
	THDi	<5%	
	Efficiency	Up to 95.5%	
	OUTPUT	DC voltage	110 V
		Voltage adjustment range	-9% +25%
Accuracy		±1%	
Psophometric noise		<2 mV	
Load sharing between modules		Active parallel	
Rectifier module power		1000 / 2000 / 2700 W	
Max. number of parallel modules		8	
Max. power (acc. to rect. module)		8 / 16 / 21,6 kW	
BATTERIES	Type	PbCa or NiCd	
	Charge type	Constant I/U in accordance with DIN 41773	
	Charging current	50 A (adjustable)	
	Recharge time	Up to 80% in 4 hours (0.2C)	
	Protection	Against overvoltage, undervoltage and	
	Voltage/temp. compensation	Yes, customized (mV/°C)	
	Electrolyte level probe (NiCd bat.)	Option	
PROTECTION	Input and output	Circuit breakers or fuses	
	Battery	Circuit breaker or Fuses + switch	
GENERAL	Dielectric strength (Input - Output)	4000 V @1 minute	
	Degree of protection	IP20	
	Cooling	Forced	
	Acoustic noise at 1 metre	<55 dB(A)	
	Operating temperature	-20°C ÷ +55°C <sup>(1)</sup>	
	Storage temperature	-40°C ÷ +70°C <sup>(2)</sup>	
	Relative humidity	Up to 95%, non-condensing	
	Maximum operating altitude	3,000 masl	
	Mean time between fails (MTBF)	250,000 hours	
	Mean time to repair (MTTR)	15 minutes	
SYNOPTIC CONTROLLER	Backlit LCD panel	Yes (4x40 characters)	
	Indicators (LED)	5	
COMMUNICATION	Ports	RS-232/485 (option)	
	Dry contacts	6 relays(option)	
	SNMP	Option	
	Slot	Yes, one (option)	
STANDARDS	Safety	IEC/EN 61204-7, IEC/EN 60950-1	
	Electromagnetic comp. (EMC)	IEC/EN 61204-3	
	Quality / environ. management	ISO 9001 and ISO 14001	

- (1) Power derating for temperatures >45°C  
 (2) Batteries not included



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