

# DC POWER-L 12P

## Thyristor rectifiers 25 A - 800 A

### DC POWER-L 12P: Charging systems for stationary batteries

Salicru's 12 pulse **DC power-L 12P** range of rectifiers/battery chargers are based on microprocessor-controlled thyristor technology and provides a renewed state-of-the-art digital processing platform with maximum care for the battery and maximum reliability and protection for critical DC loads. The 12-pulse **DC power-L 12P** series is environmentally friendly with low harmonic distortion and a high power factor, and is highly efficient in reducing its carbon footprint.

The 12 pulse **DC power-L 12P** series covers the range between 25 A and 800 A with outputs from 24 to 220 Vdc. The output accuracy is better than  $\pm 1\%$  and the system is designed to charge open or sealed lead acid and nickel cadmium batteries. The entire range is ventilated by natural convection. The advanced digital control system is responsible for applying charge algorithms adapted to the different battery charging stages. These, combined with battery temperature compensation and control of the maximum charge current, determine the specific charging process for each battery type.

All alarms, monitoring and status indicators (via display and LEDs) are controlled by a microprocessor. The systems are completely customisable to the specific characteristics and needs of each client and application. The robust design of devices with natural ventilation allows parallel redundancy, master/slave, separate/shared battery, parallel capacity and other configurations, which results in a low-maintenance installation, being able to operate for long periods completely unattended.



### Applications: Efficient, reliable and robust solutions

**DC power-L 12P** systems are designed to protect DC loads of maximum criticality and to operate with nickel cadmium or lead acid batteries in harsh and demanding operating environments, such as power plants, electrical substations, oil and gas pipelines, petrochemical plants, mines, railways, telecommunications facilities, hospitals, industrial plants, etc.



**SALICRU**

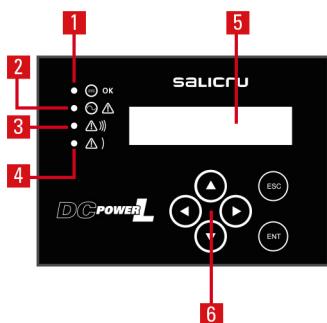
## Performances

- Microprocessor-controlled thyristor technology.
- Galvanic isolation between input and output via transformer.
- Complete 12-pulse bridge.
- Ventilation by natural convection.
- Standard DC output earth fault detection.
- Electrolyte level detection for NiCd batteries (optional).
- Charging states: floating, fast and exceptional.
- Robust and compact design.
- High power density.
- Monitoring of all equipment parameters through LCD display.
- Possibility of parallel operation.
- Operation with lead acid or nickel cadmium batteries.
- Temperature-compensated float voltage.
- Automatic disconnection in the event of minimum battery voltage or temperature.
- Extensive configuration options.
- High MTBF and low MTTR.
- Easy installation, start-up and maintenance.



## Display

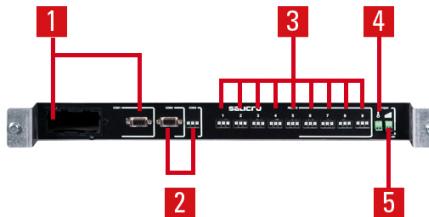
1. Correct input voltage indicator.
2. Charger in operation indicator.
3. Indication state of the battery
4. Correct output voltage indicator.
5. LCD display with multiple languages.
6. Navigation keys.



## Communications

1. Slot for the telemagement or RS-232 interface.
2. RS-485 serial ports. MODBUS communication protocol.
3. Programmable relay (x4) interface.
4. Battery temperature measurement input.
5. NiCd electrolyte level detection input. <sup>(1)</sup>

(1) Only extended version.

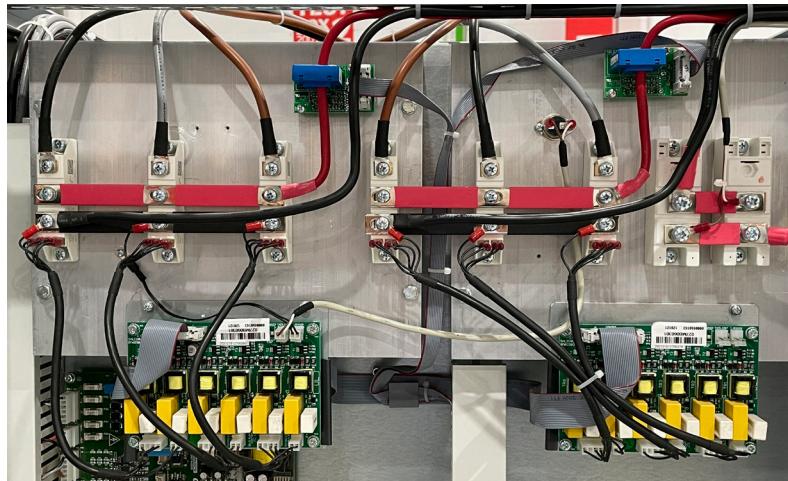


## Options

- Voltage drop diodes.
- TCP/IP interface.
- Heater.
- Output diodes for parallel operation.
- Different types of batteries (SLA, lead acid, nickel cadmium, etc.).
- Other degrees of protection.
- Other input voltages on request.
- Top cable entry.
- Schuko outlet socket.
- Board with 9 additional relays.

## Technical support and service

- Pre and post-sales advice.
- Multiple maintenance and telemaintenance options.

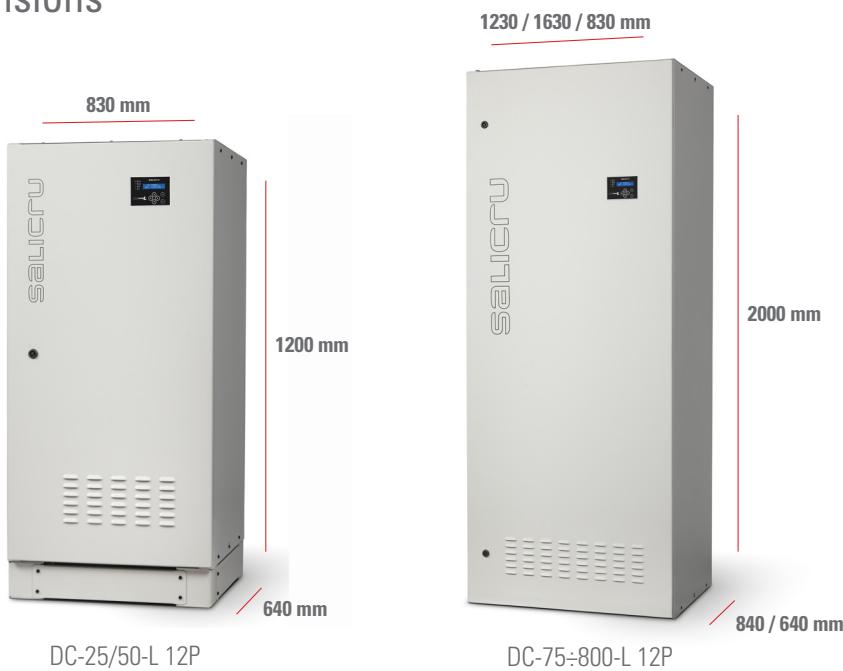


## Range

MODEL	OUTPUT CURRENT (A)	INPUT VOLTAGE (VAC)	OUTPUT VOLTAGE (VDC)
DC-25-L 12P	25	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-50-L 12P	50	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-75-L 12P	75	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-100-L 12P	100	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-150-L 12P	150	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-200-L 12P	200	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-250-L 12P	250	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-300-L 12P	300	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-350-L 12P	350	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-400-L 12P	400	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-450-L 12P	450	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-500-L 12P	500	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-600-L 12P	600	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-700-L 12P	700	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-800-L 12P	800	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220

Check for other output currents.

## Dimensions



# Technical specifications

MODEL	DC POWER-L 12P	
TECHNOLOGY	Thyristor, 12-pulse	
INPUT	Rated voltage	3 × 208 / 3 × 220 / 3 × 400 V / 3 × 480 V (3F + PE)
	Voltage range	±15%
	Rated frequency	50/60 Hz
	Frequency range	±15%
	Total harmonic distortion (THDi)	8%
	Power factor	0.96
	Performance	94%
OUTPUT	DC nominal voltage	24 V, 48 V, 110 V, 120 V, 125 V, 220 V
	Float voltage	2.27 V/cell (Pb) / 1.4 ÷ 1.45 V/el (NiCd)
	Fast charging voltage	2.5 V/cell (Pb) / 1.5 V/el (NiCd)
	Exceptional charging voltage/formation	2.5 V/cell (Pb) / 1.5 V/el (NiCd)
	Accuracy	<1%
	Ripple	<1%
	Three phase current	25 / 50 / 75 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 600 / 700 / 800 A <sup>(1)</sup>
BATTERY	Protection	Against overvoltage and undervoltage
	Battery type	PbCa (sealed or open) or NiCd
	Charge type	IU constant as per DIN 41773
	Recharge time	Up to 80% in 4 hours (0.2 C)
	Voltage/temperature compensation	Yes, customisable as per battery specifications (mV / °C)
	No. of cells Pb	12 (24 V) / 24 (48 V) / 55 (110 V) / 60 (120 V) / 62 (125 V) / 110 (220 V)
	No. of elements NiCd	19 (24 V) / 38 ÷ 39 (48 V) / 81 ÷ 86 (110 V) / 88 ÷ 94 (120 V) / 92 ÷ 96 (125 V) / 161 ÷ 173 (220 V)
COMMUNICATION	Ports	RS-232/485 - 4 Dry contacts
	Intelligent slot	Yes, one
	Protocol	Modbus
PROTECTION	Input and output	Circuit breaker
	Battery	Fuses
	Soft start	Yes
GENERAL	Operating temperature	-10° C ÷ +55° C <sup>(2)</sup>
	Storage temperature	-20° C ÷ +70° C <sup>(3)</sup>
	Relative humidity	Up to 95% non-condensing
	Maximum operating altitude	Up to 3000 m.a.s.l. <sup>(4)</sup>
	Dielectric strength (Input - Output)	2500 V @1 min
	Degree of protection	IP20
	Cooling	Natural
STANDARDS	Safety	IEC/EN 61204-7, IEC 60146-1-1
	Electromagnetic compatibility (EMC)	IEC/EN 61204-3 class A
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) Includes battery charging current (Ibat). In Premium, Ibat version, can power loads

(2) Power degradation from +40°C

(3) Without batteries

(4) Power degradation from 1000 m.a.s.l.

Information subject to change without notice.

