



POWER & GRID UTILITIES

SAFETY AND PROTECTION WITH POWER ELECTRONICS

SALICRU

ALWAYS ENERGY

Power electronics for systems that cannot fail

Six decades of research and investment

At Salicru, we specialise in manufacturing power electronics solutions for highly specialised environments that require customised and exceptionally robust electrical management. With over 60 years of experience, our solutions ensure uninterrupted operation, enhanced safety, and optimal performance in environments where precision and continuity are crucial.

For the electricity supply sector, we provide everything from essential protection and monitoring equipment to conversion, backup, and power quality systems. We design and provide systems that ensure the stability and availability of the power supply in critical environments, including electrical substations, transformation and control centres, communication services and auxiliary systems. Our objective is to minimise operational risks, protect critical loads from network disturbances and maintain uninterrupted service at all times.

In this environment, the power supply must be reliable, robust and permanently available, because any interruption, even one lasting only a few milliseconds, can compromise the operation of a protection system, a network control centre or critical generation, transmission or distribution infrastructure. We meet the primary electrical needs of AC and DC electrical infrastructure with products designed to withstand harsh environmental conditions, extended temperature ranges, high humidity, electrical noise, harmonics, transients, and

even electromagnetic forces. We lend our expertise to projects, both public and private, that focus on the generation, transmission, and distribution of energy in urban and industrial settings, as well as in high-, medium-, and low-voltage networks.



+160 000
EQUIPMENTS
production
per year

+2.000 000
EQUIPMENTS
in operation
worldwide

+200
MVA/YEAR
safe power
supply

SINCE
1965
industrial
activity

14
National
offices

8
International
subsidiaries



R&D	
Investment	
SPAIN	1,28%
EUROPE	1,87%
salicru	▲ 5%

LIFE, UNINTERRUPTED

Working to achieve clean and available electricity at all times

Technology, prevention and monitoring to strengthen every link in the energy system

At Salicru, we've been protecting the electricity grid against elements that can cause interruptions for six decades. Much like a nervous system, it is sensitive, interconnected and vulnerable to any disturbance, requiring constant layers of protection. Our mission is not to mitigate failures, but to protect the foundation of the electrical system by anticipating risks that range from local micro-cuts to disturbances that affect critical infrastructure.

Our track record has positioned us uniquely within the energy ecosystem. We have first-hand knowledge of the vulnerabilities affecting each link in the chain, and it is precisely there that we take action. In terms of generation, we work with technologies capable of stabilising voltages that can easily exceed 20–25 kV in both conventional and renewable power plants. Given that fluctuations typically occur at the initial stage of supply, we implement solutions that ensure a safe start-up and continuous operation, as well as a power quality that meets the highest industrial and regulatory standards. We also offer integrated solar energy solutions to enhance generation efficiency.

In the field of transportation, we work with high- and extra-high-voltage power lines ranging from 66 to 400 kV, where even the slightest deviation can have region-wide repercussions. We provide voltage transformation systems, uninterruptible power supplies and specialised power electronics designed to shield control centres, substations and internal network communications. Our mission is to ensure that minor

auxiliary failures do not escalate into significant structural problems. When it comes to distribution, at voltages ranging from 1 to 36 kV, the network approaches the point where the energy is converted into a service. This is the segment most vulnerable to atmospheric phenomena, overloading and load fluctuations. Our backup solutions—from UPS systems to stabilisers and rectifiers—support the operation of transformers, remote control systems and sensitive equipment, ensuring that homes, businesses, industries and essential services receive a stable, usable voltage.

In short, we work with all the things that simply cannot fail.

Every device, every architecture and every technological advance we develop has a purpose: to ensure that electricity reaches its destination with the required quality and without interruption. Remote monitoring, redundant communications, and predictive analysis allow actions to be taken before the network suffers, transforming reactive maintenance into preventive maintenance.



OUR SOLUTIONS

RECTIFIERS

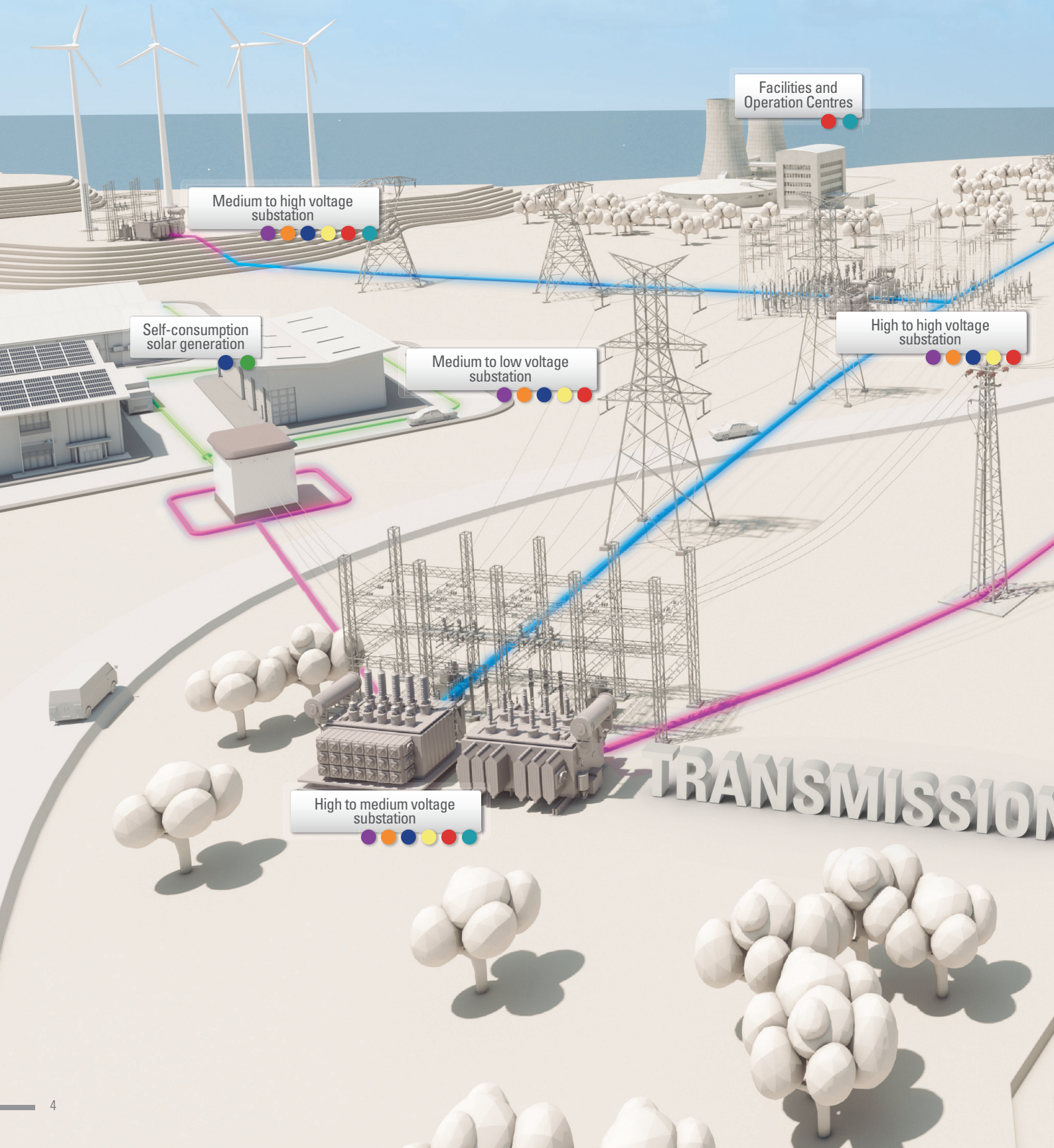
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TRANSFORMERS

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UNINTERRUPTIBLE POWER SUPPLY SYSTEMS (UPS)

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INDUSTRIAL BATTERIES 52

VARIABLE FREQUENCY DRIVES (VFD)

CV-50

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Emergency systems

Generation plants

Solar generation plants

Medium to low voltage substation

GENERATION

DISTRIBUTION

DC POWER-S

DC power systems



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

Salicru's **DC power-S** energy systems feature the following components: DC-S rectifier modules, subracks, a control and monitoring system, a communications module and a DC distribution unit, all situated in a closed cabinet with the possibility of including batteries.

DC power-S system rectifier modules are available in power ratings of 1000, 2000 and 2700 W and output voltages of 24, 48, 60, 110, 125 and 220 Vdc. Its modular design enables up to 4 modules to be installed in a 19" 2U subrack, achieving very high power density.

The control and monitoring system manages the entire system: input and output measurements, battery charging currents (Batteries are not supported for 60V output voltage option), control of priority and non-priority loads and communication channels with the outside. The maximum number of rectifiers controlled by a control system is 30, enabling systems to achieve power ratings of up to 81 kW with N+n redundant configuration options.

The basic version of the communications module has: three programmable relays, a battery temperature sensor and an RS-232/485 channel. Extended version features a slot for an Ethernet/SNMP Nimbus adapter, an NiCd electrolyte level detection input and six additional relays.

Applications: Redundant protection for critical applications

Salicru's **DC power-S** energy systems provide a high-level power supply to always critical telecommunications systems, ensuring excellent operation without unexpected outages. Because of its modular nature, it can also be expanded according to needs, thereby optimizing the investment. Typical applications include: fixed and mobile communications networks, broadband access networks, data and telecommunications networks and railway infrastructures,...



Performances

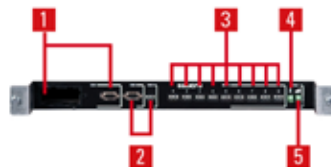
- Maximum power per system up to 81 kW.
- Flexible, scalable and N+n redundant systems, configurable for current demand and future expansion.
- High power density in the modules, up to 27 W/in³.
- High efficiency, up to 95% even with low load.
- Option of single or three-phase power supply.
- DC systems with output voltages of 24, 48, 60, 110, 125 or 220 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 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-priority 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/Nimbus SNMP.
- Smart-mode to maximise MTBF (Mean Time Between Failures).



Communications

1. Slot for the telemagement or RS-232 interface.
2. RS-485 serial ports. MODBUS communication protocol.
3. Programmable relay (x6) interface.
4. Battery temperature measurement input.
5. NiCd electrolyte level detection input. ⁽¹⁾

(1) Only extended version.



SMART mode

Load sharing in normal operation.



Load sharing and cycling of rectifiers in Smart-mode operation.



Options

- Surge protector.
- Output voltage dropping diodes.
- Positive, negative or isolated output voltages.
- Sealed or open PbCa batteries, NiCd, etc.
- Extended communications module.
- Other degrees of IP protection.
- Wireless-link communication.
- Non priority loads diconnector.

Range

MODEL	POWER (W)	CURRENT (A)	OUTPUT VOLTAGE (VDC)	CURRENT PER SYSTEM (A)	POWER PER SYSTEM MODEL (kW)
DC-36-S	1000	36	24	36 ÷ 1080	1 ÷ 30
DC-18-S	1000	18	48	18 ÷ 540	1 ÷ 30
DC-16-S	1000	16	60	16 ÷ 480	1 ÷ 30
DC-8-S	1000	8	110	8 ÷ 240	1 ÷ 30
DC-7-S	1000	7	125	7 ÷ 210	1 ÷ 30
DC-4-S	1000	4	220	4 ÷ 120	1 ÷ 30
DC-70-S	2000	70	24	70 ÷ 2100	2 ÷ 60
DC-33-S	2000	33	60	33 ÷ 990	2 ÷ 60
DC-36-S	2000	36	48	36 ÷ 1080	2 ÷ 60
DC-16-S	2000	16	110	16 ÷ 480	2 ÷ 60
DC-15-S	2000	15	125	15 ÷ 450	2 ÷ 60
DC-8-S	2000	8	220	8 ÷ 240	2 ÷ 60
DC-50-S	2700	50	48	50 ÷ 1500	2,7 ÷ 81
DC-45-S	2700	45	60	45 ÷ 1350	2,7 ÷ 81
DC-22-S	2700	22	110	22 ÷ 660	2,7 ÷ 81
DC-20-S	2700	20	125	20 ÷ 600	2,7 ÷ 81
DC-10-S	2400	10	220	10 ÷ 300	2,4 ÷ 74

Dimensions



POWER MODULE

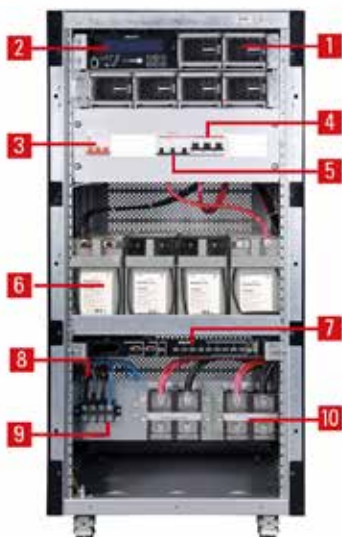


CONTROL MODULE



2 SUBRACK MODULES

Connections



1. Rectifier module
2. Centralised control
3. Input protection
4. Output distribution
5. Batteries protection (Batteries are not supported for 60 V output voltage option)
6. Batteries
7. Extended communication
8. Surge protector
9. Input terminals
10. Output terminals

Technical specifications

MODEL		DC POWER-S
INPUT	Rated voltage	120 / 127 / 220 / 230 / 240 V; 3x208 / 220 / 380 / 400 / 415 V (3F+PE)
	Voltage range	90 ÷ 290 Vac
	Rated frequency	50/60 Hz
	Total harmonic distortion (THDi)	<5%
	Power factor	>0.99 (PFC)
	Performance	Up to 95.5%
	OUTPUT	DC nominal voltage
Accuracy		±1%
Output voltage setting		-15% +25% ⁽¹⁾
Maximum power (W)		30 / 60 / 81 kW
Rectifier module power		1000 / 2000 / 2700 W
Psophometric noise		<2 mV
Load sharing between modules		Active parallel
Maximum number of parallel modules		30
BATTERY	Protection	Against overvoltage, undervoltage and overload ⁽²⁾
	Battery type	PbCa or NiCd
	Charge type	Constant I/U in accordance with DIN 41773
	Recharge time	Up to 80% in 4 hours (0.2C)
	Voltage/temperature compensation	Yes, customisable (mV/°C)
	Electrolyte level detection (NiCd battery)	Optional
COMMUNICATION	Ports	RS-232/485 - 7 relays
	Intelligent slot	Yes, one / Optional
PROTECTION	Input and output	Circuit breakers
	Battery	Fuses + switch ⁽²⁾
GENERAL	Operating temperature	-20°C ÷ +55°C ⁽²⁾
	Storage temperature	-40°C ÷ +70°C ⁽³⁾
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	3,000 masl ⁽⁴⁾
	Dielectric strength (Input - Output)	2000V @1 minuto para 24, 48 Vdc / 4000 V @ 1 minuto para 110, 125, 220 Vdc
	Degree of protection	IP20
	Cooling	Forced
	Acoustic noise at 1 metre	<55 dB(A)
	Mean time between failures (MTBF)	250,000 hours
	Mean time to repair (MTTR)	5 minutes
STANDARDS	Safety	EN IEC 61204-7
	Electromagnetic compatibility (EMC)	EN IEC 61204-3
	Seismic (Optional)	IEC 60068-3-3:2019/COR1:2021 / UBC1997 Zone3 & Zone 4 Ip 1.5
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) -9% + 25% for voltages 110 Vdc

(2) Batteries are not supported for 60 Vdc output

(3) Power degradation for temperatures higher than 45°C.

(4) Without batteries

(5) Power degradation from 2000 m.a.s.l.

DC POWER-SD

DC/DC power systems



DC POWER-SD: Power supply systems for stable direct current supply

DC Power-SD systems are supplied as an integrated solution housed in a closed cabinet, with the option of incorporating batteries. The system consists of rectifier modules, housing subracks, a DC distribution unit, a control and monitoring system, and a dedicated communications module.

The rectifiers are available in power ratings of 900, 1000, 1800, 2000 and 2700 W, and support output voltages of 24, 48, 60, 110 or 125 Vdc. Thanks to their modular architecture, it is possible to install 2 or 4 modules in a 19" 2U subrack, achieving high power density in a reduced footprint.

The control and monitoring system supervises input and output electrical parameters, controls battery charging currents, manages priority and non-priority loads, and handles the different external communication channels. This electronics platform allows systems of up to 21.6 kW to be configured, with the option of implementing N+n redundancy schemes.

The communications module includes three programmable relays, a battery temperature sensor and an RS-232/485 channel. In the extended version, it also adds a slot for a Nimbus Ethernet/SNMP adapter, an input for detecting electrolyte level in Ni-Cd batteries, and six additional relays.

Applications: redundant protection for critical facilities

Designed for environments where direct current power supply is critical, **DC Power-SD** systems are an ideal solution for applications in railway infrastructure, power utilities and substations, as well as in signalling, control, telecommunications, protection and auxiliary service systems. Their ability to guarantee a stable, efficient and highly available power supply makes them a key element in industrial and energy installations that require maximum reliability, service continuity and adaptability to different DC voltage levels. They allow the use of a charger/rectifier with battery at the input to operate with different output voltages depending on the application.



Performances

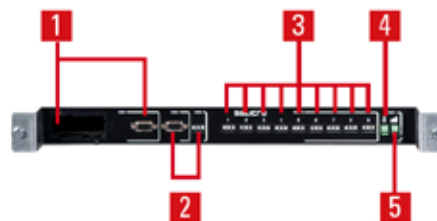
- Maximum power per system up to 21,6 kW.
- Flexible, scalable and N+n redundant systems, configurable for current demand and future expansion.
- High power density in the modules, up to 12 W/in³.
- High efficiency, up to 85% even with low load.
- Option of single or three-phase power supply.
- DC systems with output voltages of 24, 48, 60, 110 or 125 Vdc.
- Wide operating temperature range from -20° C to +55° C.
- Wide input voltage range from 90 Vdc to 290 Vdc with power derating.
- Modular design of the rectifiers and control system.
- Output current sharing between rectifiers.
- Front access for easy installation and maintenance.
- Hot-swap and hot-plug functions with automatic adjustment for module connection/disconnection.
- Full local control and monitoring system with LCD backlit (4x40 characters).
- Communication unit for remote monitoring.
- Monitoring software via Ethernet/Nimbus SNMP.
- Smart-mode to maximise MTBF (Mean Time Between Failures).



Communications

1. Slot for the telemetry or RS-232 interface.
2. RS-485 serial ports. MODBUS communication protocol.
3. Programmable relay (x9) interface.
4. Battery temperature measurement input.
5. NiCd electrolyte level detection input.⁽¹⁾

(1) Extended version only.



SMART mode

Load sharing in normal operation.



Load sharing and cycling of rectifiers in Smart-mode operation.



Options

- Surge protector.
- Positive, negative or isolated output voltages.
- Sealed or open PbCa batteries, NiCd, etc.
- Extended communications module.
- Other degrees of IP protection.
- Conformal coating (tropicalization).
- Non priority loads disconnecter.

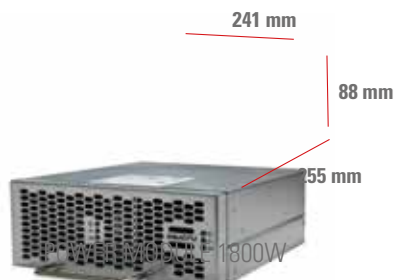
Range

MODEL	CODE	POWER (W)	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (A)
DC-33-SD 24/90-290Vdc	6A2AG000003	900	90 ÷ 290	24	33
DC-41-SD 24/176-290Vdc	6A2AH000005	1000	200 ÷ 290	24	41
DC-66-SD 24/90-290Vdc	6A2AH000006	1800	90 ÷ 290	24	66
DC-70-SD 24/176-290Vdc	6A2AH000007	2000	200 ÷ 290	24	70
DC-18-SD 48/90-290Vdc	6A2AG000004	900	90 ÷ 290	48	18
DC-20-SD 48/176-290Vdc	6A2AH000008	1000	200 ÷ 290	48	20
DC-36-SD 48/90-290Vdc	6A2AH000009	1800	90 ÷ 290	48	36
DC-41-SD 48/176-290Vdc	6A2AH000010	2000	200 ÷ 290	48	41
DC-50-SD 48/176-290Vdc	6A2AH000011	2700	200 ÷ 290	48	50
DC-15-SD 60/90-290Vdc	6A2AH000012	900	90 ÷ 290	60	15
DC-16-SD 60/176-290Vdc	6A2AH000013	1000	200 ÷ 290	60	16
DC-30-SD 60/90-290Vdc	6A2AH000014	1800	90 ÷ 290	60	30
DC-32-SD 60/176-290Vdc	6A2AH000015	2000	200 ÷ 290	60	32
DC-45-SD 60/176-290Vdc	6A2AH000016	2700	200 ÷ 290	60	45
DC-9-SD 110/176-290Vdc	6A2AH000017	1000	200 ÷ 290	110	9
DC-18-SD 110/176-290Vdc	6A2AH000018	2000	200 ÷ 290	110	18
DC-22-SD 110/176-290Vdc	6A2AH000019	2700	200 ÷ 290	110	22
DC-8-SD 125/176-290Vdc	6A2AH000020	1000	200 ÷ 290	125	8
DC-16-SD 125/176-290Vdc	6A2AH000021	2000	200 ÷ 290	125	16
DC-20-SD 125/176-290Vdc	6A2AH000022	2700	200 ÷ 290	125	20

Dimensions



POWER MODULE 900/1000/2000/2700W



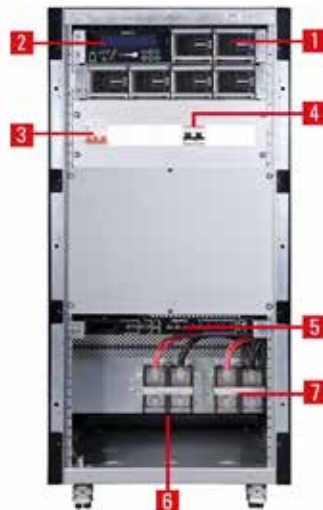
POWER MODULE 1800W



CONTROL MODULE

Connections

1. Power module
2. Centralised control
3. Input protection
4. Output distribution
5. Extended communication
6. Input terminals
7. Output terminals



Technical specifications

MODEL		DC POWER-SD
INPUT	Voltage range	90 ÷ 290 Vdc (depending on model)
	Performance	Up to 85%
OUTPUT	DC nominal voltage	24, 48, 60, 110, 125 V
	Accuracy	±1%
	Output voltage setting	-15% +25% ⁽¹⁾
	Maximum power (depending on model)	7,2kW ÷ 21,6 kW
	Rectifier module power	900 / 1000 / 1800 / 2000 / 2700 W
	Psophometric noise	<2 mV
	Load sharing between modules	Active parallel
	Maximum number of parallel modules	8 ⁽²⁾
BATTERY (Optional)	Protection	Against overvoltage, undervoltage and overload
	Battery type	PbCa or NiCd ⁽³⁾
	Charge type	Constant I/U in accordance with DIN 41773
	Recharge time	Up to 80% in 4 hours (0.2C)
	Voltage/temperature compensation	Yes, customisable (mV/°C)
	Electrolyte level detection (NiCd battery)	Optional
COMMUNICATION	Ports	RS-232/485 - 9 relays
	Intelligent slot	Yes, one / Optional
PROTECTION	Input and output	Circuit breakers
	Battery	Fuses + switch ⁽³⁾
GENERAL	Operating temperature	-20°C ÷ +55°C ⁽⁴⁾
	Storage temperature	-40°C ÷ +70°C ⁽⁵⁾
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	3,000 masl ⁽⁶⁾
	Dielectric strength (Input - Output)	3500 V for 1 minute (input-earth) / 2000 V for 1 minute (output-earth) / 4000 V for 1 minute (input-output)
	Degree of protection	IP20
	Cooling	Forced
	Acoustic noise at 1 metre	<60 dB(A)
	Mean time between failures (MTBF)	485.000 hours (power module)
	Mean time to repair (MTTR)	5 minutes
STANDARDS	Safety	EN IEC 61204-7
	Electromagnetic compatibility (EMC)	EN IEC 61204-3
	Seismic (Optional)	IEC 60068-3-3:2019/COR1:2021 / UBC1997 Zone3 & Zone 4 Ip 1.5
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) Other margins for voltages of 60 Vdc and 110 Vdc

(2) Maximum of 5 modules for 1800W power

(3) Batteries are not supported for 60Vdc output

(4) Power degradation for temperatures higher than 45°C.

(5) Without batteries

(6) Power degradation from 2000 m.a.s.l.

DC POWER-L

Thyristor rectifiers 10 A - 800 A

DC POWER-L: Charging systems for stationary batteries

Salicru's **DC power-L** range of rectifiers/battery chargers, based on microprocessor-controlled thyristor technology, provides high-quality and reliable protection for critical DC loads.

The **DC power-L** series covers the range between 10 A and 800 A with outputs from 24 to 220 Vdc. The output accuracy is better than +/- 1% and the system is designed to charge open or sealed lead acid and nickel cadmium batteries.

All alarms, monitoring and status indicators (via display and LEDs) are managed through a digital control system. Each type of battery requires special charging characteristics, which are managed by the controller. The systems are completely customisable to the specific characteristics and needs of each client and application.

The robust design ensures that the installation requires low maintenance and can work for long periods without special attention.



Applications: Efficient, reliable and robust solutions

DC power-L 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.



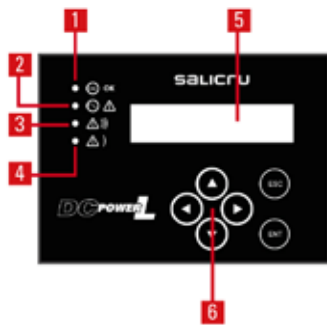
Performances

- Microprocessor-controlled thyristor technology.
- Galvanic isolation between input and output via transformer.
- Complete six-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 redundant 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

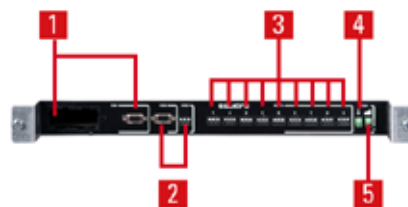
1. Output voltage indicator.
2. Input voltage fault indicator.
3. Urgent alarm indicator (customisable).
4. Non-urgent alarm indicator (customisable).
5. LCD display with multiple languages.
6. Navigation keys.



Communications

1. Slot for the telemagement or RS-232 interface.
2. RS-485 serial ports. MODBUS communication protocol.
3. Programmable relay (x6) interface.
4. Battery temperature measurement input.
5. NiCd electrolyte level detection input. ⁽¹⁾

(1) Only extended version.

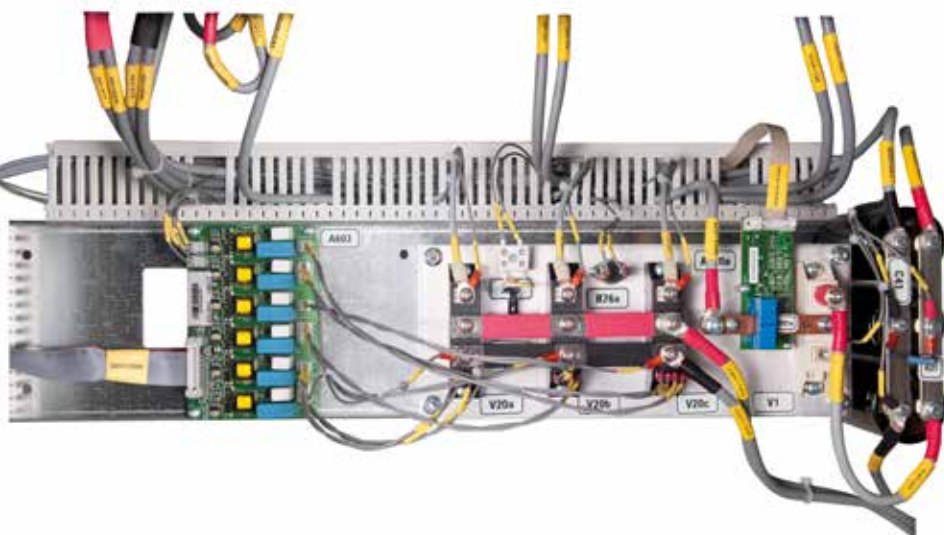


Options

- 12-pulse rectifier with isolation transformer.
- 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.
- Colour cabinet RAL9005.

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-10-L	10	120 / 230	24 / 48 / 110 / 120 / 125 / 220
DC-20-L	20	120 / 230	24 / 48 / 110 / 120 / 125 / 220
DC-30-L	30	120 / 230	24 / 48 / 110 / 120 / 125 / 220
DC-50-L	50	120 / 230	24 / 48 / 110 / 120 / 125 / 220
DC-25-L	25	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-50-L	50	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-75-L	75	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-100-L	100	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-150-L	150	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-200-L	200	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-250-L	250	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-300-L	300	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-350-L	350	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-400-L	400	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-450-L	450	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-500-L	500	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-600-L	600	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-700-L	700	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-800-L	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
TECHNOLOGY		Thyristor
INPUT	Rated voltage	120 / 230 V (F + N); 3 × 208 / 3 × 220 / 3 × 400 V / 3 × 480 V (3F + PE)
	Voltage range	±15%
	Rated frequency	50/60 Hz
	Frequency range	±5%
	Power factor	0.85
	Performance	>85%
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	2.7 V/cell (Pb) / 1.65 V/el (NiCd)
	Accuracy	±1%
	Ripple	<1% ⁽¹⁾
	Single phase current	10 / 20 / 30 / 50 A ⁽²⁾
	Three phase current	25 / 50 / 75 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 600 / 700 / 800 A ⁽²⁾
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 - 6 Dry contacts
	Intelligent slot	Yes, one / Optional
	Protocol	MODBUS Yes
PROTECTION	Input and output	Circuit breaker
	Battery	Fuses
	Soft start	Yes
GENERAL	Operating temperature	-10° C ÷ +55° C ⁽³⁾
	Storage temperature	-20° C ÷ +70° C ⁽⁴⁾
	Relative humidity	Up to 95% non-condensing
	Maxium operating altitude	Up to 3000 m.a.s.l. ⁽⁵⁾
	Colour	RAL7035
	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
	Seismic (Optional)	IEC 60068-3-3:2019/COR1:2021 / UBC1997 Zone3 & Zone 4 Ip 1.5
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001

(1) Premium version

(2) Includes battery charging current (I_{bat}). In Premium, I_{bat} version. can power loads

(3) Power degradation from +40°C

(4) Without batteries

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

DC POWER-L

Thyristor rectifier 25 - 900 A

DC POWER-L: Charging systems for stationary batteries

Salicru's **DC power-L** are battery rectifier-chargers designed for highly critical direct current applications, using microprocessor-controlled thyristor technology to ensure a high level of supply reliability and protection.

The system incorporates a digital controller that centralises equipment monitoring, alarm management and the display of operating status via a screen and LEDs. This controller precisely adjusts charging parameters according to the specific characteristics of each battery type, ensuring optimal performance in every installation.

Thanks to their fully configurable approach, the units can be adapted to the specific requirements of each customer and application. In addition, their robust construction minimises maintenance tasks, enabling continuous and stable operation over long periods without the need for constant attention.

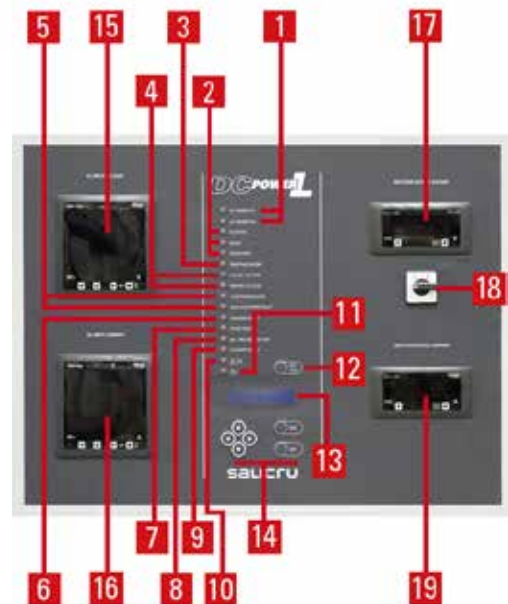


Display

- | | |
|-----------------------------|--|
| 1. AC Power status. | 11. Non-urgent alarm. |
| 2. Charging type. | 12. Led test button. |
| 3. Drop diodes active. | 13. LCD display with multiple languages. |
| 4. Abnormal DC voltage. | 14. Navigation keys. |
| 5. Temperature fault. | 15. AC input voltage. |
| 6. Charger fault. | 16. AC input current. |
| 7. Diode fault. | 17. Rectifier output voltage. |
| 8. Battery protection trip. | 18. DC measuring selection switch. |
| 9. DC earth fault. | 19. Rectifier output current. |
| 10. Urgent alarm. | |

Options

- 12-pulse rectifier with isolation transformer.
- Voltage drop diodes.
- TCP/IP interface.
- 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.
- Electrolyte level detection for NiCd batteries
- Forced cooling.
- Low Voltage Disconnection (LVD)
- Slot for telemanagement or RS-232 interface.



Technical support and service

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

Technical specifications

MODEL		DC POWER-L
TECHNOLOGY		Thyristor
INPUT	Available Rated voltages	120 V / 230 V (F + N) 3 × 208 V / 3 × 220 V / 3 × 400 V / 3 × 480 V (3F + N)
	Voltage range	±10%
	Rated frequency	60 Hz
	Frequency range	±5%
	OUTPUT	DC nominal voltage
	Float voltage	Vnom -10/+30% (adjustable)
	Fast charging voltage	Vnom -10/+30% (adjustable)
	Exceptional charging voltage/formation	Vnom -10/+30% (adjustable)
	Accuracy	±0.5%
	Ripple	<2%
	Current	25 A to 900 A ⁽¹⁾
	Blocking diode	Included
BATTERY	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	Included
	No. of cells Pb	24 (48 V) / 62 (125 V)
	No. of elements NiCd	38 ÷ 40 (48 V) / 88 ÷ 96 (125 V)
	Low Voltage Disconnect (LVD)	Optional
COMMUNICATION	Ports	RS-232/485 - 13 Dry contacts
	Intelligent slot	Optional
	Protocol	MODBUS Yes
PROTECTION	Input and output & Battery	MCCB
	Soft start	Yes
GENERAL	Operating temperature	0° C ÷ +40° C ⁽²⁾
	Storage temperature	-20° C ÷ +70° C ⁽³⁾
	Relative humidity	Up to 95% non-condensing
	Maximum operating altitude	Up to 3000 m.a.s.l.
	Colour	RAL7038
	Dielectric strength (Input - Output)	2500 V @1 min
	Degree of protection	IP41
	Cooling	Natural
	Anticondensation heater	Included
	Dimensions DxWxH (mm)	Depends on model
STANDARDS	Safety	IEC/EN 61204-7, IEC 60146-1-1
	Electromagnetic compatibility (EMC)	IEC/EN 61204-3 class A
	Quality and environmental management	ISO 9001 & ISO 14001
	SEC standards (125 Vdc)	46-TMSS-02 Rev.02 / 01-TMSS-01- Rev.03
	SEC standards (48 Vdc)	46-TMSS-05 Rev.01 / 01-TMSS-01- Rev.03

(1) Includes the current used for battery charging (Ibat).

(2) Power derating over +40° C

(3) Batteries not included

Information subject to change without notice.

CS-IS

DC power converters



CS-IS: High performance DC/AC industrial converters

Salicru's **CS IS** series DC/AC converters are based on technically advanced solutions such as PWM technology and digitally controlled servo systems so as to obtain: high performance, low distortion (THDv < 2%) and elevated stability. Moreover, they offer excellent tolerance to short-circuits, polarity inversion protection and the possibility of operating in Eco-mode.

The line is available in power ranges between 1000 and 20000 VA, with admissible continuous incoming voltage from 48 Vdc to 220 Vdc nominal input.

Applications: Energy conversion for industrial plants

Salicru's **CS IS** series provides quality AC power from a DC power source (normally batteries) for the most varied of industrial applications such as cogeneration and biomass plants, gas generators, water distributors, power stations and substations, telecommunications, etc..



Performances

- Polarity inversion protection DC.
- Availability in a wide range of voltages and outgoing power.
- Broad range of input voltage variation.
- LCD display comes standard.
- Communication through relay interface and RS-232 / RS-485.
- Excellent dynamic behavior.
- Automatic restart to re-establish incoming power.
- Ramp start.
- 19" rack or box casing.

Options

- Static bypass.
- EMI filters.
- Isolation transformer on the bypass line.
- Psofometric filter.
- Anti-harmonic filter.

Technical support and service

- Pre-sales and post-sales consultation service.
- Several maintenance and remote maintenance methods.

Range

MODEL	POWER (VA / W)	INPUT VOLTAGE (VDC)	DIMENSIONS (D × W × H mm)		WEIGHT (Kg)
			BOX	RACK	
CS 1000-IS	1000 / 1000	48,110,120,125,220	385 × 440 × 180	385 × 483 × 4U	28
CS 2000-IS	2000 / 2000	48,110,120,125,220	385 × 440 × 180	385 × 483 × 4U	30
CS 3000-IS	3000 / 3000	48,110,120,125,220	385 × 440 × 180	385 × 483 × 4U	32
CS 4000-IS	4000 / 4000	110,120,125,220	600 × 440 × 270	600 × 483 × 6U	63
CS 5000-IS	5000 / 5000	110,120,125,220	600 × 440 × 270	600 × 483 × 6U	68
CS 6000-IS	6000 / 6000	110,120,125,220	640 × 630 × 1310	-	84
CS 8000-IS	8000 / 8000	110,120,125,220	640 × 630 × 1310	-	120
CS 10000-IS	10000 / 10000	110,120,125,220	640 × 630 × 1310	-	135
CS 15000-IS	15000 / 15000	220	640 × 630 × 1310	-	150
CS 20000-IS	20000 / 20000	220	640 × 630 × 1310	-	170

Dimensions and weights for models without bypass nor filters and 230 Vac output voltage. Ask for another power needs and/or configurations.
Dimensions for power models 1000, 2000 and 3000 with voltages ≥ 110 Vdc.

Technical specifications

MODEL	CS IS	
INPUT	Rated voltage	48 V, 110 V, 120 V, 125 V, 220 V
	Voltage range	- 17%, + 20%
OUTPUT	Power factor	1
	AC nominal voltage	120 V, 220 V, 230 V, 240 V
	Accuracy	$\pm 2\%$
	Synchronised frequency	0.1 Hz ÷ 9.9 Hz in increments of 0.1 Hz
	Free running frequency	$\pm 0.05\%$
	Frequency	50 / 60 Hz
	Synchronous speed	1 Hz/s
	Performance	Up to 92%
GENERAL	Admissible overloads	150% for 30 seconds / 125% for 45 seconds
	Operating temperature	- 10° C ÷ + 40° C
	Relative humidity	Up to 95%, non-condensing
	Maxium operating altitude	2400 m.a.s.l
STANDARDS	Cooling	Forced
	Safety	EN IEC 61204-7
	Electromagnetic compatibility (EMC)	EN IEC 61204-3
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

Information subject to change without notice.

EMi3

Servomotor voltage stabiliser 450 kVA - 5 MVA



EMi3: Constant stabilisation and savings in overvoltages

Issues such as the constant variation of loads connected to the mains, interference generated by the loads themselves, possible failures in distribution lines, voltage drops due to the length of the lines and problems caused by lightning make it impossible to have an electricity supply with a stable voltage. Salicru's **EMi3** servomotor voltage stabilisers are the ideal solution to protect sensitive equipment from constant voltage fluctuations in the power supply.

Moreover, in the event of drops in the total consumption of a power line, voltage tends to rise, causing overconsumption in the equipment that remains connected. By using a stabiliser, overconsumption can be eliminated, thereby producing significant cost savings and ensuring that connected loads function within the voltage range for which they were designed.

The operating principle is based on regulation, by means of a control circuit, of the variable autotransformer that supplies the voltage for the booster transformer in series, either in phase or in phase opposition, to achieve the rated value of the output voltage.

Applications: Effective protection for all types of critical load

Actions and operations in electrical substations, electric ovens, numerical controls, lifts, graphic printing equipment, production lines, medical equipment, TV repeater stations, machine tools (milling machines, trimming machines, presses, lathes, polishing machines, electrical discharge machines, etc.) are some of the applications, because of their power, extremely reactive nature and high sensitivity to voltage variations.



Performances

- Power range, single and three-phase, up to 5000 kVA.
- Fast and efficient toroidal or column-type autotransformers for the entire power range.
- Output accuracy better than 1% (adjustable).
- In three-phase units, independent regulation per phase, unaffected by imbalances.
- Input regulation ranges of $\pm 15\%$ standard, $\pm 20\%$, $\pm 25\%$ and $\pm 30\%$ optional. ⁽¹⁾
- High efficiency, up to 97.5%.
- High speed regulation, up to 70 V/s.
- Full LCD display for stabiliser control and monitoring.
- Guaranteed output stability through a MosFET servo control.
- Unaffected by line voltage harmonics; stabilisation based on true RMS.
- Stable operation in the event of load and/or voltage variations.
- Wide operating temperature range (-10°C to +55°C).
- Dry contact interface (2 standard and up to 11 optional).
- No harmonics injection.
- Mechanically-optimised design, easier maintenance.
- Transient overloads of up to 1000% of the rated admissible.
- Highly robust and reliable (high MTBF).
- Quiet operation.
- Overvoltage surge suppression protection.
- Suitable for regenerative loads.

(1) Depending on the model.



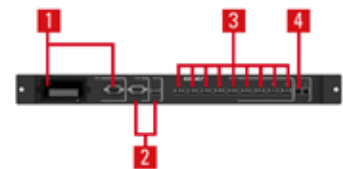
Display

1. LCD 2x16 characters.
2. Navigation keys.
3. LEDs (alarm, bypass, normal operation and communications).



Communications

1. Slot for remote management or RS-232 interface.
2. RS-485 serial ports. MODBUS communications protocol.
3. Programmable dry contact interface (x9).
4. Digital input.



Options

- Output current, power and overload measurement.
- Maximum and minimum output voltage protection.
- Manual and automatic bypass.
- Overload contactor.
- Communications and relay module.
- Other regulation ranges.
- Galvanic isolation transformer.
- Output circuit breaker.
- Extended ambient operating temperature from -20°C.

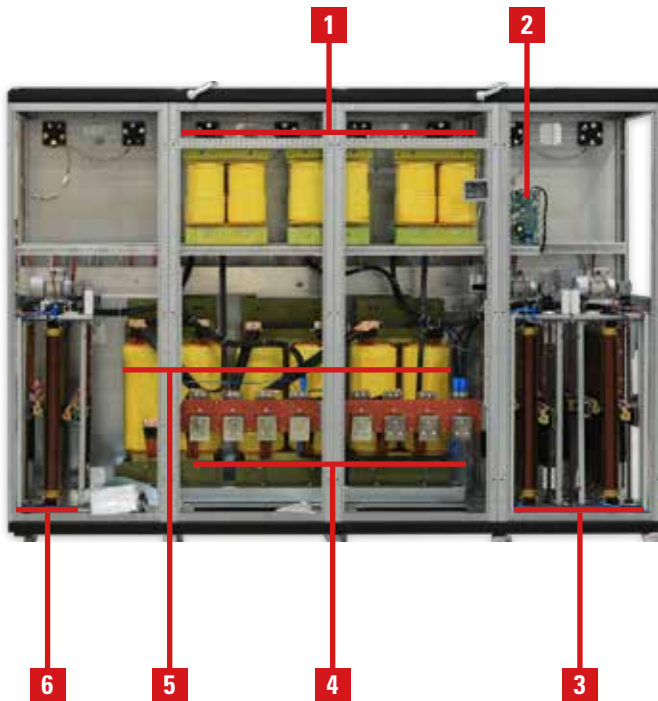


Range

MODEL	CODE	POTENCIA (kVA / W)	NUMBER OF CABINETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EMi3 T 450-4F	6A5FA000022	450	1	840 × 1604 × 2240	1223
EMi3 T 500-4F	6A5FA000023	500	1	840 × 1604 × 2240	1275
EMi3 T 600-4F	6A5FA000024	600	1	840 × 1604 × 2240	1503
EMi3 T 800-4F	6A5FA000025	800	1	840 × 1604 × 2240	1946
EMi3 T 1000-4F	6A5FA000026	1000	1	840 × 3204 × 2240	2400
EMi3 T 1300-4F	6A5FA000027	1300	1	840 × 3204 × 2240	3120
EMi3 T 1600-4F	6A5FA000090	1600	1	1225 × 5613 × 2240	3772
EMi3 T 2000-4F	6A5FA000091	2000	1	1225 × 5613 × 2240	4675
EMi3 T 2500-4F	6A5FA000092	2500	1	1225 × 5613 × 2240	5805
EMi3 T 3200-4F	6A5FA000093	3200	3	840 × 3204 × 2240	3 x 2400
EMi3 T 4000-4F	6A5FA000094	4000	3	840 × 3204 × 2240	3 x 3120
EMi3 T 5000-4F	6A5FA000095	5000	3	1225 × 5613 × 2240	3 x 3772

Nomenclature, dimensions and weights for models: Input 3x400 V 50 Hz / Output 3x400 V 50 Hz, input range +/-15% and independent regulation per phase.
Others powers and/or other input ranges on request.

Connections



1. Autotransformers - phase 1 / 2 / 3
2. Control board
3. Continuous regulation autotransformer - phase 2 / 3
4. Input and output terminals
5. Booster transformers
6. Continuous regulation autotransformer - phase 1

Technical specifications

MODEL		EMi3
INPUT	Three-phase voltage	3x208 / 3x220 / 3x400 / 3x480 V (3Ph+N+PE) ⁽¹⁾
	Regulation range	±15% ⁽²⁾
	Frequency range	47.5 ÷ 63 Hz
OUTPUT	Three-phase rated voltage	3x208 / 3x220 / 3x400 / 3x480 V (3Ph+N+PE) ⁽¹⁾
	Accuracy	± 3% (adjustable between 1% ÷ 5%)
	Output voltage setting	± 10%
	Total harmonic distortion (THDv)	<0.2%
	Frequency	48 ÷ 63 Hz
	Regulation speed	Up to 70 V/s
	Performance	Between 96.5% and 97.5%
	Voltage disconnection value	Adjustable ⁽³⁾
	Admissible overloads	Up to 200% for 20 s
	Possible load variation	0 ÷ 100%
	Power factor influence	Independent
COMMUNICATION	Ports	2 Dry contacts / RS-232 ⁽⁴⁾
	Intelligent slot	One ⁽⁴⁾
INDICATIONS	Type	LCD display (2x16 characters) + 4 status LEDs
GENERAL	Ambient temperature	-10° C ÷ +55° C ⁽²⁾
	Storage temperature	-20° C ÷ +85° C
	Relative humidity	Up to 95%, non-condensing
	Maxium operating altitude	2,400 m.a.s.l. ⁽⁵⁾
	Cooling	Forced convection
	Acoustic noise at 1 metre	<45 dB(A)
	Mean time between failures (MTBF)	60,000 hours
Mean time to repair (MTTR)	30 minutes	
STANDARDS	Safety	IEC/EN 61558-2-14
	Electromagnetic compatibility (EMC)	IEC/EN 62041
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001

(1) Ask for other settings

(2) Other ranges available on request

(3) With optional voltage maximum-minimum

(4) Mutually exclusive ports

(5) Up to 5,000 masl with power degradation

Information subject to change without notice.

RE3

Electronic voltage stabilisers from 300 VA to 200 kVA

RE3: The fastest and the most accurate electronic regulation system of the market

In today's electronic environment, saturated and highly unstable, where fluctuations in the power supply voltage are more than frequent, voltage stabilisers play a very important role in guaranteeing stable voltage to loads more sensitive to such variations.

The **Salicru RE** series of electronic stabilisers, based on a completely static structure of high efficiency, fast reply speed and excellent output precision, are made in single phase or three phase configuration and in a range of powers from 300 VA to 200 kVA.

The three-phase units are conceived with a completely phase-independent regulation in order to avoid possible regulation problems due to imbalance in the loads. Moreover, the units include a static bypass to guarantee the power supply in the event of a possible fault.



Applications: Assured industrial processes

Many are the industrial processes where voltage stability is essential: from a wide range of applications where the numerical control processors and automatons are entrusted with guaranteeing the final result, up to all kinds of calculation centres, computer peripherals, transmission and communications equipment, laboratory equipment, etc.



Performances

- Power range, single and three-phase, up to 200 kVA.
- Ultra-fast regulation: reply speed under 100 ms.
- Digital control and parameters setting independent per phase.
- Entirely static structure, without moving elements, greater reliability.
- Static bypass, loads always supplied.
- In three-phase units, independent regulation per phase, immune to imbalances.
- Output precision better than $\pm 2\%$.
- $\pm 15\%$ input regulation margins standard.
- Efficiency $> 97\%$.
- Isolation transformer or ultra-isolation on unit output. ⁽¹⁾
- LCD Display, as standard, from 6 kVA single-phase or 15 kVA three-phase.
- Detection of voltage input or output (max/min) out of margins, as standard. ⁽²⁾
- Communication slot. ⁽²⁾
- Overtemperature detection. ⁽²⁾
- Do not introduce harmonics, or alter the power factor of the installation.
- Unaffected by line voltage harmonics; stabilisation based on true RMS.
- Stable operation in the event of load and/or voltage variations.
- Highly robust and reliable (high MTBF).
- Overvoltage surge suppression protection.
- Suitable for regenerative loads.

(1) Option

(2) For models with LCD display



Display

1. LCD 2x16 characters.
2. Navigation keys.
3. LEDs (alarm, bypass, normal operation and communications).



Options

- Relay interface.
- Manual maintenance bypass. ⁽¹⁾
- Protection of high-low voltage with manual or automatic reset (output voltage disconnection when out of range).
- Isolation transformer (T).
- Ultra-isolation transformer (NS).
- Current transformers for measures of current, power (kVA / kW) and power factor.
- Overload protection. ⁽¹⁾
- Telemangement card. ⁽¹⁾
- Extended communications module. ⁽¹⁾
- Extended ambient operating temperature from -20°C .
- Input & output circuit breaker.

(1) Models with display

Technical support and service

- Pre-sale and after sales advisory service.
- Numerous maintenance and remote maintenance options.



Range

MODEL	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
RE-309-2	606AY000390	300	280 × 210 × 185	6
RE-609-2	606BY000390	600	280 × 210 × 185	6
RE-1009-2	606CY000390	1000	280 × 210 × 185	9
RE-2009-2	606EG000390	2000	390 × 250 × 195	19
RE-3009-2	606EY000390	3000	390 × 250 × 195	22
RE-4509-2	606FW000390	4500	460 × 300 × 220	35
RE3 M 6-2	6A3AA000001	6000	620 × 250 × 500	44
RE3 M 9-2	6A3AA000002	9000	620 × 250 × 500	58
RE3 M 12-2	6A3AA000003	12000	590 × 340 × 580	67
RE3 M 15-2	6A3AA000004	15000	590 × 340 × 580	69
RE3 M 20-2	6A3AA000005	20000	590 × 340 × 580	103
RE3 M 25-2	6A3AA000006	25000	905 × 460 × 705	127
RE3 M 30-2	6A3AA000007	30000	905 × 460 × 705	154
RE3 M 40-2	6A3AA000008	40000	905 × 460 × 705	170
RE3 M 50-2	6A3AA000009	50000	905 × 460 × 705	186

230 V 50 Hz input / 230 V 50 Hz output and ± 15% input range. For models with isolation transformer and other configurations, consult. Others powers upon request.

MODEL	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
RET 3-4	606EY050390	3000	680 × 340 × 240	32
RET 6-4	606GU050390	6000	680 × 340 × 240	61
RET 9-4	606IA050390	9000	630 × 390 × 520	68
RE3 T 15-4	6A3BA000001	15000	905 × 460 × 705	80
RE3 T 20-4	6A3BA000002	20000	905 × 460 × 705	117
RE3 T 30-4	6A3BA000003	30000	905 × 460 × 705	164
RE3 T 45-4	6A3BA000004	45000	905 × 460 × 705	225
RE3 T 60-4	6A3BA000005	60000	905 × 460 × 705	260
RE3 T 75-4	6A3BA000006	75000	850 × 615 × 1315	317
RE3 T 100-4	6A3BA000007	100000	850 × 615 × 1315	343
RE3 T 125-4	6A3BA000018	125000	850 × 615 × 1315	438
RE3 T 150-4	6A3BA000015	150000	850 × 815 × 1315	650
RE3 T 200-4	6A3BA000016	200000	850 × 815 × 2115	850

3 x 400 V 50 Hz input / 3 x 400 V 50 Hz output and ± 15% input range. For models with isolation transformer and other configurations, consult. Others powers upon request

Dimensions



Technical specifications

MODEL		RE3
INPUT	Single phase voltage	120 V, 220 V, 230 V, 240 V
	Three-phase voltage	3 × 208 V / 3 × 220 V / 3 × 380 V / 3 × 400 V / 3 × 415 V (3F + N) ⁽¹⁾
	Regulation range	±15% ⁽²⁾
	Frequency range	47.5 ÷ 63 Hz
OUTPUT	Single phase rated voltage	120 V, 220 V, 230 V, 240 V
	Three-phase rated voltage	3 × 208 V / 3 × 220 V / 3 × 380 V / 3 × 400 V / 3 × 415 V (3F + N) ⁽¹⁾
	Accuracy	Better than ± 2%
	Total harmonic distortion (THDv)	Nil
	Frequency	48 ÷ 63 Hz
	Response time	<100 ms
	Performance	> 97%
	Admissible overloads	200% for 1 minute
BYPASS	Type	Static
GENERAL	Ambient temperature	-10° C ÷ + 45° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2400 m.a.s.l.
	Cooling	Natural or forced depending on power rate
	Acoustic noise at 1 metre	< 45 dB(A) ⁽³⁾
	Mean time between failures (MTBF)	60,000 hours
	Mean time to repair (MTTR)	30 minutes
	Electrical noise attenuation on common mode	With isolation transformer > 40 dB / With ultra-isolation transformer > 120 dB
STANDARDS	Safety	UNE EN IEC 61558-2-12; UNE EN IEC 61558-2-13
	Electromagnetic compatibility (EMC)	UNE EN IEC 62041
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) Ask for other setting

(2) Other ranges under request

(3) <65 dB(A) for models with forced ventilation

Information subject to change without notice.

IT

Electrical transformers and autotransformers

IT: Simple concepts, effective solutions

Salicru has been designing and manufacturing low voltage electrical transformers and autotransformers for more than 50 years, for use as **IT series** standalone solutions, or integrated within its wide range of power electronics solutions (uninterruptible power supplies, voltage stabilisers, rectifiers, etc.). At the same time, we have continuously improved our own production methods and processes in order to meet the needs of our customers and also for special requirements.

Single-phase and three-phase transformers are used as electrical isolation for reducing mains disturbances or adjusting the level of voltage coming from the grid. Autotransformers, on the other hand, with their serially-connected coils that do not provide galvanic isolation, have the function of converting one voltage to another, and, as such, are a more economical solution than transformers.

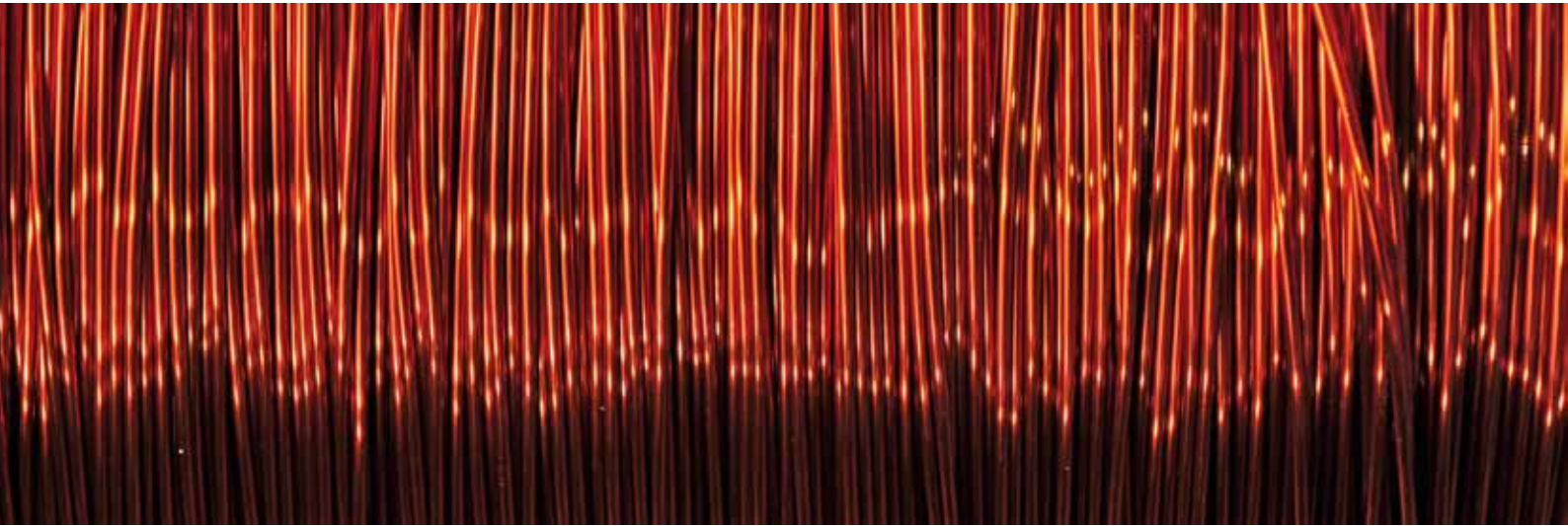
The transformers and autotransformers from **Salicru's IT series** are of the dry variety, made from low-loss magnetic plate and windings impregnated with class-H resin, and connected by means of clamp terminals or screws for pressure terminals. They can be manufactured with other voltages, regulation sockets, additional electrostatic screens, heat shields, etc., on request.



Applications: Adaptation and/or filtering of the supply voltage

Transformers are used in different types of industry, construction, energy technology and marine applications, such as electric motors, compressors, converters, cooling systems, UPSs and IT/TN networks. On the request of the customer, transformers can be manufactured for different voltages and frequencies, and feature, for example, an electrostatic screen between the primary and secondary windings, different finishes, wheels or other attachments.

And autotransformers are used for adapting the voltage of the mains supply to the voltage required to power all kinds of load and machinery.



Range

MODEL	TYPE	POWER (kVA / kW)	VOLTAGE	PRESENTATION
IT-T	Transformer	3,15 ÷ 20	Single-phase / Single-phase	Panel mounting
IT-T	Transformer	3,15 ÷ 20	Single-phase / Single-phase	Box
IT-T	Transformer	5 ÷ 200	Three-phase / Three-phase	Panel mounting
IT-T	Transformer	5 ÷ 200	Three-phase / Three-phase	Box
IT-ATR	Autotransformer	5 ÷ 40	Three-phase / Three-phase	Panel mounting
IT-ATR	Autotransformer	5 ÷ 40	Three-phase / Three-phase	Box

For other powers and versions, please enquire.

Technical specifications

MODEL		IT	
ELECTRICAL	Input/Output	Single-phase	Three-phase
	Power range	3,15 ÷ 20 kVA	5 ÷ 200 kVA
	Power factor	1	
	Connection group	li0	Dyn11 ⁽¹⁾
	INPUT	Rated voltage	230 V ⁽¹⁾
	Rated frequency	50 / 60 Hz	
	Magnetising current	< 6 I _n	
OUTPUT	Rated voltage	230 V ⁽¹⁾	3 × 400 V ⁽¹⁾
	Voltage drop (100% load)	< 4%	< 5%
	Frequency	50 / 60 Hz	
	Performance	> 95%	
	Short-circuit voltage	< 2.6%	< 3.1%
MANUFACTURE	Insulators	Class 155 (F)	
	Windings	Class 180 (H)	
	Windings material	Aluminium	
	Impregnation	Unsaturated polyester imide resin, low emission	
	Ventilation	ANAN	
GENERAL	Operating temperature	-25°C ÷ +40°C (climate class C2)	
	Storage temperature	-25°C ÷ +75°C	
	Relative humidity	Up to 95% non-condensing	
	Maximum operating altitude	2,400 masl	
	Version	Panel mounting or metal box	
	Colour (box version)	RAL 7035	
	Eye bolts for elevation	Yes, on units weighing more than 15 kg	
	Degree of protection	IP00 panel mounted version - IP23 boxed version	
	Heat loss (100% load)	< 4.5%	< 5%
	Vacuum heat loss	< 1.5%	
	Isolation voltage	3000 V input/output for 1 minute	
	Terminal type	Screw terminals	
	OPTIONAL	K factor	K-4 / K-13 / K-20
Windings material		Copper	
Wheels		For devices in box version	
Isolation		Class 2 (Double isolation)	
STANDARDS	Safety	EN 61558-2-4 / EN 60076-11	
	Corporate certification	ISO 9001, ISO 14001, ISO 45001	

(1) Others available on request

Information subject to change without notice.

SLC ADAPT2

Modular On-line double conversion UPS with modules 25 and 50 kVA

SLC ADAPT2: Flexibility, availability and reliability in superior electrical protection

Salicru's **SLC ADAPT2** series consists of modular On-line double conversion uninterruptible power supply (UPS) solutions with DSP control and three-level IGBT inverter technology.

Flexibility: It enables solutions to be configured from 25 kVA to 1500 kVA, thanks to the range of modules available (25 and 50 kVA), different configurable systems (8, 10 or 12 modules) and the parallel/redundant option of up to three 500 kVA systems. It also provides increased protection as needs grow - pay as you grow - thereby improving total cost of ownership (TCO).

Availability: Its hot-swap modules can be added or replaced during operation, thereby improving mean time to repair (MTTR) and reducing maintenance costs. In addition, the system's remote management, which can be integrated into any platform, also facilitates operation. And the extensive back-up options available, along with intelligent battery charging, ensure continuous operation of the protected critical loads.

Reliability: Its DSP control, based on three-level PWM technology, improves response effectiveness and, along with shared load redundancy, significantly extends the mean time between failures (MTBF).



Applications: Redundant protection for critical applications

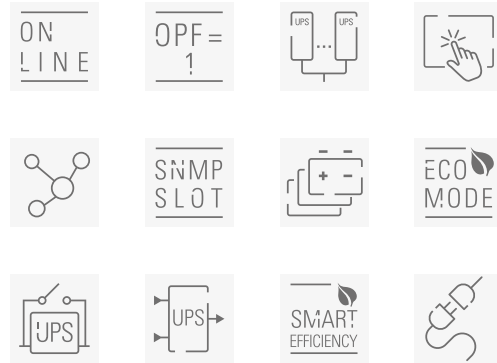
Data centres with all capacities, IT infrastructures, modular and virtualised data centres and applications for critical processes are some of the services that require high-level electrical protection to ensure reliable, continuous and high-quality operation, such as that provided by Salicru's **SLC ADAPT2** series systems.



Performances

- On-line double conversion technology with modular architecture.
- 25 and 50 kVA modules with DSP control and three-level PWM technology.
- 8, 10 or 12-module systems (up to 600 kVA per system).
- Possibility of parallel/redundant operation up to 1500 kVA.
- Hot-pluggable and swappable plug & play modules.
- Input power factor >0.99.
- Input current distortion (THDi) <3%.
- Three-phase input / output voltages.⁽¹⁾
- Output power factor = 1 (kVA = kW).
- Control and management by means of LCD display, LEDs and keypad.
- Up to 96% efficiency of modules in Online mode (depending on model).
- 99% performance in Eco-mode operation.
- USB, RS-232, RS-485 and potential-free contact communication channels.
- Smart slots for extended relays and SNMP/Nimbus.
- Smart-efficiency mode to optimize system performance.
- Improved return on investment (ROI).
- Compact design to save space in server rooms.
- SLC Greenergy solution.

(1) 1/1, 1/3 and 3/1 options with power derating (under request).



Display

Display consisting of operation keys, status LEDs and touch screen detailing all functions, measurements and alarms.



Options

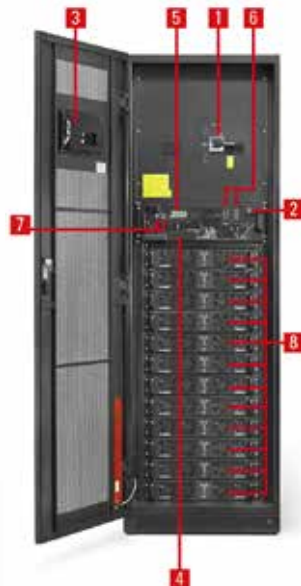
- Extended relays and SNMP/Nimbus adapter.
- Extended back-up times.
- Kit for parallel systems (Included in systems with 25 kW modules).
- Frequency converter operation.

Technical support and service

- Pre-sales and after-sales advice.
- Start-up.⁽¹⁾
- Technical support by telephone.
- Preventive/corrective services.
- Maintenance contracts.⁽¹⁾
- Training courses.

(1) Ask for local conditions

Connections



1. Manual bypass.
2. Start-up from batteries (Cold Start).
3. LCD display.
4. Bypass module.
5. Dry contacts.
6. Extended relays and SNMP / Nimbus slot.
7. USB, RS-232 and RS-485 interfaces.
8. Power modules.



Range

MODULES	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC ADAPT2 25	694AB000010	25000 / 25000	677 × 436 × 85	18
SLC ADAPT2 50	694AB000016	50000 / 50000	700 × 510 × 178	45

SYSTEMS	CODE	NO. MODULES (#)	MODULE POWER (VA / W)	MAX. POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-#/8 ADAPT2 200	694RA000249	1 to 8	25000 / 25000	200000 / 200000	916 × 482 × 1550	178
SLC-#/12 ADAPT2 300	694RA000250	1 to 12	25000 / 25000	300000 / 300000	1100 × 650 × 2000	230
SLC-#/10 ADAPT2 500	694RA000251	1 to 10	50000 / 50000	500000 / 500000	1100 × 1300 × 2000	945
SLC-#/12 ADAPT 600	694OQ000125	1 to 12	50000 / 50000	600000 / 600000	1100 × 1300 × 2000	945

Nomenclature, dimensions and weights for devices with input voltage 3 x 400 V, output voltage 3 x 400 V.

Replace # with the number of system modules.

Batteries located in additional cabinets.

The weight shown corresponds only to the system, without modules.

Dimensions



SLC ADAPT2 25



SLC ADAPT2 50



SLC-#/8 ADAPT2 200



SLC-#/12 ADAPT2 300



SLC-#/10 ADAPT2 500
SLC-#/12 ADAPT 600

Technical specifications

MODEL		SLC ADAPT2	
Module power (VA/W)		25000 / 25000	50000 / 50000
TECHNOLOGY		On-line double conversion, three-level PWM, DSP control	
INPUT	Rated three-phase voltage (3P + N + E)	3 × 380 / 400 / 415 V ⁽¹⁾	
	Voltage range	-27% +25% (Depending on charge) ⁽³⁾	-40% +25% (Depending on charge) ⁽³⁾
	Rated frequency	50 / 60 Hz	
	Frequency range	40 - 70 Hz	
	Total harmonic distortion (THDi)	≤3%	
	Power factor	>0.99	
	OUTPUT	Power factor	1
Rated three-phase voltage (3P + N + E)		3 × 380 / 400 / 415 V ⁽¹⁾	
Accuracy		±1%	
Total harmonic distortion (THDv)		≤1%	
Frequency		50 / 60 Hz	
Module performance (On-line)		96% ⁽²⁾	
Performance in Smart Eco-mode		99%	
Admissible overloads		≤110% for 1 hour / ≤125% for 10 min / ≤150% for 1 min / ≥150% for 200 ms	
Crest factor		3:1	
MANUAL BYPASS	Type	Uninterrupted	
STATIC BYPASS	Type	Static thyristor	
	Three-phase voltage (V)	3 × 380 / 400 / 415 (3P + N)	
	Admissible overloads	≤110% constant / ≤130% for 1 hour / ≤150% for 1 minute / ≥150% for 5 seconds	
BATTERY	Battery type	Pb-Ca, VRLA, lead acid, gel, Ni-Cd, Li-Ion	
	Charging voltage regulation	Batt-watch	
	Charger maximum power (W)	20% of total system power	
COMMUNICATION	Display	7"/10" touchscreen and LEDs	
	Ports	RS-232, RS-485, relays and USB	
	Intelligent slot	1 × Nimbus SNMP/1 × Nimbus extended relays	
GENERAL	Operating temperature	0° C ÷ +55° C ⁽⁴⁾	
	Relative humidity	Up to 95%, non-condensing	
	Maximum operating altitude	2,400 masl ⁽⁵⁾	
	Acoustic noise at 1 metre	<65 dB(A)	<72 dB(A)
SYSTEMS	Maximum no. modules per system	8 / 12	10 / 12
	Maximum power per system	200 / 300 kVA	500 / 600 kVA
	Maximum no. modules systems	30	
	Maximum power per parallel system	750 kVA	1500 kVA
STANDARDS	Safety	EN IEC 62040-1	
	Railway	EN 50121-4 / EN 50121-5	
	Electromagnetic compatibility (EMC)	EN IEC 62040-2	
	Operation	VFI SS-11 (EN 62040-3)	
	Seismic	IEC 60068-3-3:2019/COR1:2021 / UBC1997 Zone3 & Zone 4 Ip 1.5	
	Corporate certification	ISO 9001, ISO 14001, ISO 45001	

(1) 1/1, 1/3 and 3/1 options with power derating (under request).

(2) Depending on model.

(3) Linear % load derating: For 25 kVA from -20% to -27% and for 50 kVA from -20% to -40%.

(4) Power derating for higher altitudes up to +40°C.

(5) Power degradation for temperature altitudes, up to a maximum of 5,000 masl.

SLC TWIN RT3 4-10 kVA

On-line double conversion tower/rack IoT UPS from 4 kVA to 10 kVA with PF=1

SLC TWIN RT3 4-10 KVA: Efficiency and reliability for the protection of critical data

Salicru's **SLC TWIN RT3** series of uninterruptible power supplies (UPS) ranges from 4 to 10 kVA and offers excellent electrical protection performance for critical server environments. Although the devices are designed to be incorporated into rack cabinets, they include all of the accessories and can be adapted for use in tower format. The models with a rating of 4 kVA and over include a power strip that can be rack-mounted or attached to the body of the UPS if the vertical format is chosen. This strip (also known as a power distribution unit or PDU) maximises the device's electrical connectivity and enables the rapid connection/disconnection of the loads that are to be protected.

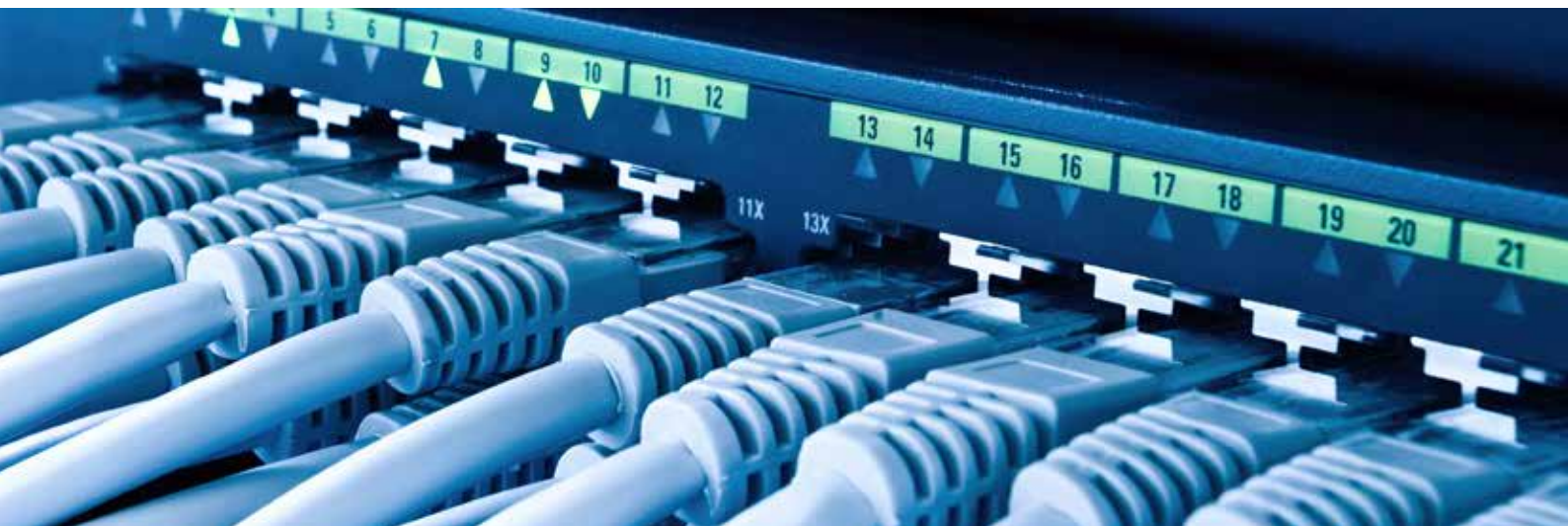
Users interact directly with the device via a dot matrix display that highlights important information by placing it in the centre of the screen, unlike traditional LCD screens.

Reliability, power density and immediacy of information are three of the key features that define the **SLC TWIN RT3** series, as they make the biggest contribution to satisfying the demands of today's users.



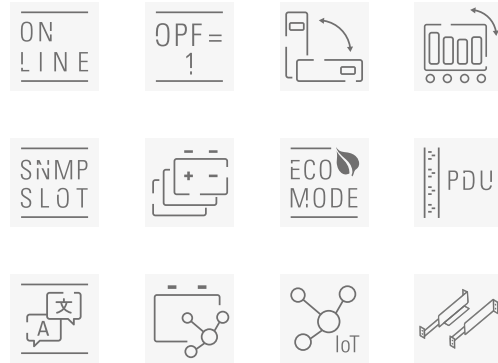
Applications: Reliability for IT environments

The perfect mode for ensuring productivity in data management. The **SLC TWIN RT3** series provides reliable continuity of operation for IT systems, offering protection for server environments, voice and data networks, ERP systems, CRM solutions, document management, and more.



Performances

- On-line double conversion technology.
- Output power factor PF=1.
- Convertible tower/rack format.
- Control panel with adjustable keypad and dot matrix display.
- Backup extensions available.
- Automatic detection of external battery modules via RJ-45.
- Eco-mode operation for increased efficiency.
- Parallel operation for up to 3 units (optional).
- PDU strip included for distribution of output loads.
- 2x 10 A IEC auxiliary outputs.
- Frequency converter function (with and without batteries).
- Choice of 10 languages.
- Native Ethernet port, USB and RS-232 interfaces as standard on all models.
- Monitoring software for Windows, Linux, Unix and Mac (downloadable).
- Rack rails for 400~1000 mm deep cabinets included.
- Smart slot for SNMP/AS400/MODBUS.



Objective: battery conservation

Our devices boast an innovative new system that optimises battery charging. With the aim of extending and ensuring a productive life for the accumulators, and in contrast to most other devices (which subject them to constant charging), the **SLC TWIN RT3** has a “rest period” function during which the batteries will only receive charging current at certain intervals and under specific status conditions.

The connectors for additional battery modules include an RJ45 communication port that is in constant communication with the UPS in order to verify the correct status of the energy storage system.



Options

- Rackable external bypass.
- NIMBUS SNMP card.
- NIMBUS AS400 card.
- NIMBUS RS-485 MODBUS card.
- Parallel kit.
- Additional IEC-type output cables.
- Warranty extension.

Vigilant protection and connectivity

The inclusion of an Ethernet port enables the **SLC TWIN RT3** series to be integrated into an IoT environment. Through the cloud, our NIMBUS app and the website, developed wholly within SALICRU’s Connected Software department, users can monitor the status of their devices in full, receive information and alarms, carry out remote battery tests, and much more.

The immediacy offered by the system’s connectivity directly ensures the continuity of the connected loads, and consequently the continuity of the productive activities associated with them.

In terms of hardware, the over-voltage cut-off device (OVCD), fan-block detection system, overheating sensor, overload alarm and external-battery detection system ensure constant automated monitoring of the overall system.



Improved length

In many cases, the depth of 19” rack-type cabinets is a significant factor. Consequently, when designing the **SLC TWIN RT3** range we made sure to reduce its dimensions along the Z axis, while continuing to maintain a front height of 2U x 19” for our UPSs. The result is a range that offers high power density in a format that is just 600 mm deep. The corresponding batteries are supplied in a 3U format whose depth has also been reduced.



Multiple output options

The **SLC TWIN RT3** series boasts a variety of options for connecting loads. The devices rated 4 kVA and over provide not only two IEC C13 quick-connection outputs and an input/output terminal block, but also a rackable strip with eight additional outputs (6x IEC C13 + 2x IEC C19). The strip comes with safety clips to enable secure fastening of the electrical connectors, and can also be mounted on the side of the UPS using the accessories provided.

Range

MODEL	CODE	POWER (VA / W)	NO. OF OUTPUT SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-4000-TWIN RT3	6B4AC000001	4000/4000	Terminals + PDU	592 × 438 × 220	55.6
SLC-5000-TWIN RT3	6B4AC000002	5000/5000	Terminals + PDU	592 × 438 × 220	55.6
SLC-6000-TWIN RT3	6B4AC000003	6000/6000	Terminals + PDU	592 × 438 × 220	55.6
SLC-8000-TWIN RT3	6B4AC000004	8000/8000	Terminals + PDU	592 × 438 × 220	64.5
SLC-10000-TWIN RT3	6B4AC000005	10000/10000	Terminals + PDU	592 × 438 × 220	64.5

Front protrusion from the mounting surface in the rack cabinet: 35 mm. This distance is not included in the dimensions quoted for "depth".

Dimensions and weights for devices consisting of two modules with standard backup. Please visit www.salicru.com for extended backup with additional EBM modules.

Height in rack units of the listed equipment: 2U (device) + 3U (battery cabinet).

Dimensions

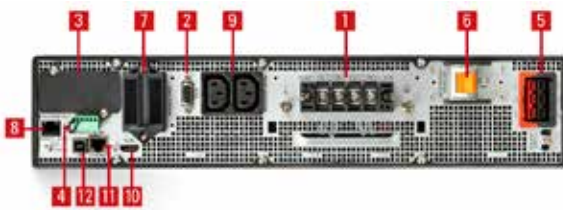


SLC 4000÷10000 TWIN RT3

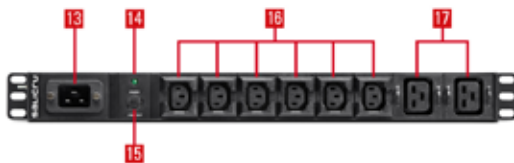


EBM - SLC TWIN RT3

Connections



SLC 4000÷10000 TWIN RT3



PDU

1. Input, output and earth terminals.
2. RS-232 interface.
3. Smart slot for SNMP/potential-free contacts/MODBUS.
4. Digital E/S and emergency power-off (EPO).
5. Battery module connection.
6. Input circuit breaker.
7. Parallel port.
8. Battery module communication port.
9. Auxiliary IEC outputs.
10. HDMI port for NIMBUS dongle.
11. Ethernet port for NIMBUS.
12. USB port.
13. C20 input to supply the PDU.
14. Pilot light.
15. Protection reset.
16. C13 outputs.
17. C19 outputs.

Technical specifications

MODEL		SLC TWIN RT3 4-10 kVA
TECHNOLOGY		On-line double-conversion
FORMAT		Convertible tower/rack with rotating display
INPUT	Rated voltage	220/230/240 V
	Voltage range	110 ÷ 276 V ⁽¹⁾
	Rated frequency	50 / 60 Hz (auto-detection)
	Frequency range	50 ±5 Hz/60 ±6 Hz
	Total harmonic distortion (THDi)	<3 % linear load / <5 % non-linear load
	Power factor	≥0.99
OUTPUT	Power factor	1
	Rated voltage	220/230/240 V
	Voltage accuracy	±1%
	Total harmonic distortion (THDv)	< 1% linear load / < 5% non-linear load
	Synchronised frequency	50 ±5 Hz/60 ±6 Hz
	On-line performance	95%
	Eco-mode performance	98%
	Admissible overloads in battery mode	105 ÷ 125 % for 1 min/125 ÷ 150 % for 30 s/>150 % for 500 ms
	Admissible overloads in bypass mode	105 ÷ 125 % for 30 s/>150 % for 5 min/>150 % for 500 ms
	Admissible overloads in-line mode	105 ÷ 125 % for 10 min/125 ÷ 150 % for 30 s/>150 % for 500 ms
Parallel	Yes, up to 3 units	
MANUAL BYPASS	Type	External smart manual bypass module with groups of programmable outputs (optional)
BATTERY	Protection	Against power surges, undervoltages and alternating current components
	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Charge type	Smart charge with 3 modes
	Recharge time	3 hours to 90%
	Maximum no. of EBMs	6
CHARGER	Temperature voltage compensation	Yes
	Charging current	Adjustable 0 ÷ 4 A (0 ÷ 12 A for B1 devices)
COMMUNICATION	Ports	USB-HID/RS-232/RJ-45/HDMI for dongle wifi
	Intelligent slot	Smart slot for SNMP / potential-free contacts / MODBUS
	Monitoring software	Software for Windows, Linux and Mac/app for iOS and Android/web portal
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Emergency stop (EPO)	Yes
OPERATING MODES	Eco-mode	Yes
	Frequency converter (CVCF)	Yes ⁽²⁾ , operates with or without batteries
GENERAL	Operating temperature	0° C ÷ +50° C ⁽³⁾
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	3.000 masl ⁽⁴⁾
	Acoustic noise at 1 metre	<55 dB ÷ <60 dB at full load/<50 dB ÷ <55 dB at 75% load
STANDARDS	Safety	EN IEC 62040-1
	Electromagnetic compatibility (EMC)	EN 62040-2 (C3)
	Operation	VFI-SS-11 (EN 62040-3)
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) 110 ÷ 160 V with linear derating of load at 50%.

(2) Power derating of 60% in frequency converter mode.

(3) Power derating of 50% from 40°C to 50°C.

(4) Power derating of 1% for each additional 100m over 1000 MASL.

SLC ENERGY MANAGER

Smart energy meter



SLC ENERGY MANAGER: Efficient energy management

The **SLC ENERGY MANAGER** stands out for its straightforward installation process and user-friendly method of configuring the system's basic parameters via cable or WiFi, ensuring no unnecessary time is wasted during the system startup. Additionally, the Energy Manager includes a range of advanced features that optimise performance and efficiency in solar photovoltaic installations, making it an invaluable ally for your solar projects.

One of the most recently integrated functions simplifies the installation process to avert potential complications when aligning the phase supply with the toroidal in three-phase equipment while verifying the orientation of the clamp meter in single-phase installations. It is the only device on the market that offers **automatic current transformer configuration**, enabling faster connections without metering errors.

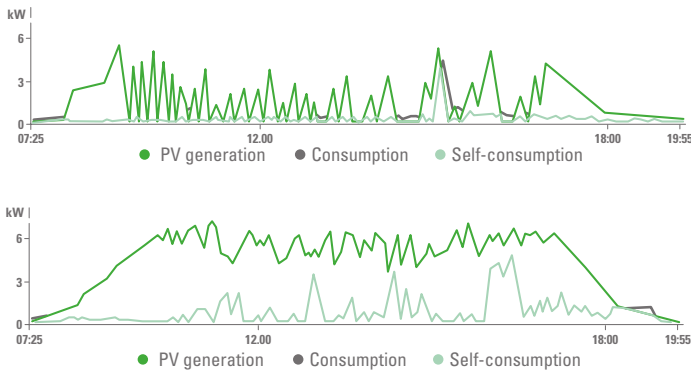
Performances

- Autoconfiguration of current transformers.
- Dynamic injection control.
- Programmable dry contact.
- Measurement capacity and Wi-Fi connectivity integrated in a single device.
- Access to the **EQUINOX APP** and web portal.
- Zero-injection management of surplus energy.
- Savings achieved through smart management of generation devices and loads.
- High degree of compatibility with existing systems.
- Complete solution option with current transformers included.



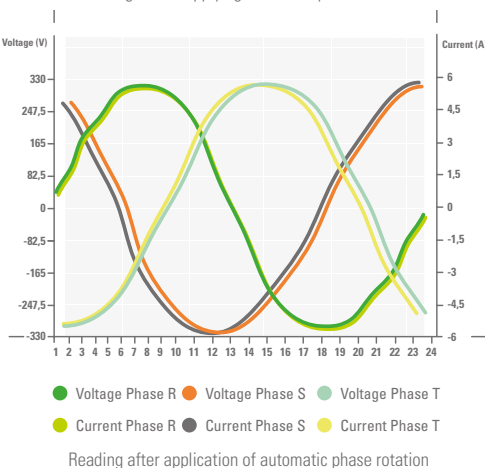
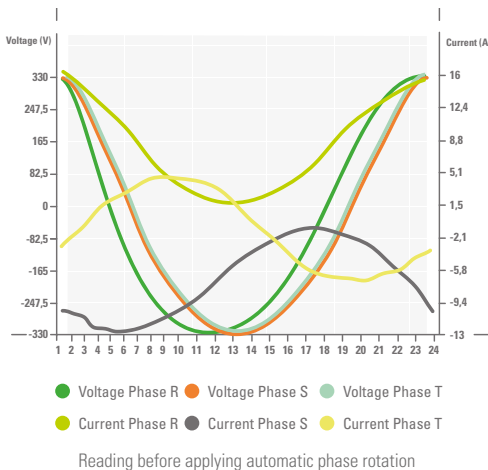
Dynamic feed-in control

Say goodbye to issues with inverter line surges caused by inadequate grid installations. Our device features dynamic feed-in control, which continuously regulates the energy fed into the grid, generating up to 80% more energy. This ensures safe and stable operation while preventing the system from exceeding safety thresholds. This is essential for working within the safe voltage range of the indoor installation and extending the lifetime of the electronic devices.



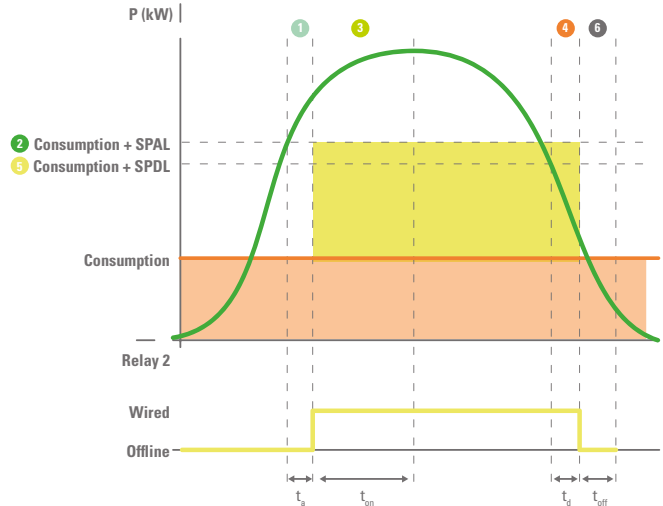
Energy community

An energy community can be created by installing and integrating different **SLC Energy Manager** devices in the homes or at the consumption points that form the community. Each user can view their energy consumption alongside their proportional share of the community's energy generation as if it were an individual photovoltaic system.



Programmable dry contact

An integrated programmable dry contact allows surplus energy to be redirected to systems such as air-source heat pumps or resistive loads. This not only maximises the utilisation of the energy generated but also enhances the overall efficiency of the installation.



You can also configure up to ten weather probes to collect precise data on solar radiation, ambient temperature, and cell temperature. This allows for more accurate control of the plant and improved management of the generated energy.

Up to 30 devices in parallel

The system can handle up to 30 devices simultaneously for grid inverters and up to 4 devices for hybrid inverters, including zero feed-in capability. This feature is crucial for complying with specific regulations and ensuring that no excess power is released into the grid.

For more advanced users, it supports the connection of any transformer with a secondary current of 5 A, offers full configuration options for grid-related issues, and enables interaction with the device via API for integration into existing proprietary systems.

European servers

All data is stored on European servers, and the device is compatible with inverter equipment from other brands.

Additionally, it can be fully upgraded remotely, allowing you to continuously receive updates and enjoy new features without needing to replace the equipment.

Together, these features make the **SLC ENERGY MANAGER** an intelligent and efficient solution for advanced solar energy management, optimising both the performance and profitability of installations.

SLC ENERGY MANAGER Range

MODEL	CODE	EAN CODE	DESCRIPTION
SLC ENERGY MANAGER Lite 80D16	6B20R000005	8436584874867	Single-phase Energy Manager with 80 A ⁽¹⁾ transformer and without relay output or WIFI antenna
SLC ENERGY MANAGER 80D16	6B20R000001	8436584874829	Single-phase Energy Manager with 80 A ⁽¹⁾ transformer and with relay output
SLC ENERGY MANAGER Lite 300D50	6B20R000006	8436584874874	Single-phase Energy Manager with 300 A ⁽²⁾ transformer and without relay output or WIFI antenna
SLC ENERGY MANAGER 300D50	6B20R000002	8436584874836	Single-phase Energy Manager with 300 A ⁽²⁾ transformer and with relay output
SLC ENERGY MANAGER ../5	6B20Q000035	8436584874799	Single-phase Energy Manager without transformer and with relay output
SLC ENERGY MANAGER T 80D16	6B20R000003	8436584874843	Three-phase Energy Manager with 80 A ⁽¹⁾ transformer and with relay output
SLC ENERGY MANAGER T 300D50	6B20R000004	8436584874850	Three-phase Energy Manager with 300 A ⁽²⁾ transformer and with relay output
SLC ENERGY MANAGER T ../5	6B20Q000036	8436584874805	Three-phase Energy Manager without transformer and with relay output

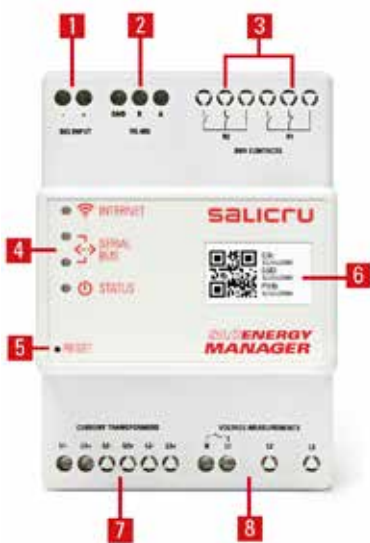
(1) Current measuring transformer 80 A/100 mA clamp type for cables with a maximum diameter of 16 mm. included (x1 for single-phase / x3 for three-phase).

(2) Current measuring transformer 300 A/100 mA clamp type for cables with a maximum diameter of 50 mm. included (x1 for single-phase / x3 for three-phase).

For codes 6B20Q000035 / 6B20Q000036 the current transformer is not included. Compatible with CT for the following primary currents: 100/300/400/600/1000/1500/2000 A.

Lite models do not include WiFi connectivity.

Connections



1. Digital signal input.
2. RS-485 output.
3. Relay outputs.
4. LED status indicators.
5. Hidden reset button.
6. Device configuration code.
7. Terminals for current transformers.
8. Device supply and voltage measurement.
9. Ethernet port.
10. USB port.
11. DIP switch for configuration.

Technical specifications

MODEL		SLC ENERGY MANAGER Lite Single-phase	SLC ENERGY MANAGER Single-phase	SLC ENERGY MANAGER Three-phase
INPUT	Rated voltage	110 - 240 Vac		
	Voltage range	± 10%		
	Rated frequency	50/60 Hz		
	Rated current	0,05 A		
VOLTAGE MEASUREMENT	Voltage range	110 - 265 Vac	3 × (190 - 458 Vac) + N	
	Frequency range	50/60 Hz		
	Accuracy	1%		
CURRENT MEASUREMENT	Output current	100 mA ⁽¹⁾ o 5 A ⁽²⁾		
	Overcurrent	120% I _n		
	Accuracy	1%		
COMMUNICATION	Ports	RS-485 / Voltage sensor / CT sensor / LAN	RS-485 / Voltage sensor / CT sensor / LAN / Wifi	
	Interface	Embedded URL		
	Protocol	Modbus		
RELAYS	Amount	-	2 ⁽³⁾	
	Rated voltage	-	250 Vac	
	Rated current	-	6 A	
INPUT SIGNALS	Digital	-	5 Vdc	
GENERAL	Operating temperature	0 - 50 °C		
	Relative humidity	95% (without condensation)		
	Maxium operating altitude	3,000 masl		
	Degree of protection	IP20		
STANDARDS	Safety	UNE EN IEC 61010-1:2011/A1:2020, 61010-2-030		
	Electromagnetic compatibility (EMC)	UNE EN IEC 61326-1		
	Zero-injection	UNE 217001:2020		
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001		
DIMENSIONS	Depth × Width × Height (mm)	70.5 × 70 × 101		

(1) Compatible with CT with the following primary currents: 80/200/300/400/600/1000/2000 A.

(2) Compatible with CT with the following primary currents: 100/300/400/600/1000/1500/2000 A. Check for other currents.

(3) One relay is for a zero-injection contactor, and the other is fully programmable.

Information subject to change without notice.

EQUINOX2 T

On-grid three-phase solar inverters from 4 to 100 kW

EQUINOX2 T: Energy at the service of productivity

EQUINOX2 T solar inverters present a complete three-phase range, with competitively priced high performance, without sacrificing the slightest bit of quality.

The exceptional design, focused above all on functionality and reduction of thermal stress of the equipment, ensures ease of assembly, minimal installation space, durability, and constant performance. Aesthetically, it has been decided to follow the line of the **EQUINOX2 S/SX** single-phase family, with well-defined shapes and neutral colours, applied with a level of finish consistent with the high quality of the product. The control panel has a large integrated OLED display, offering optimal visibility.

Salicru's primary objective is to always offer cutting-edge technology in all its equipment. Consequently, the selection of components has the most advanced technology (SiC) and the seal of guarantee from the best manufacturers on the planet. The **EQUINOX2 T** series also offers monitoring of the photovoltaic installation through the web portal and the free **EQUINOX** app for smartphones and tablets.

The three-phase range starts at 4kW and goes up to 100kW. With complete and consistent power scaling and selection of MPPTs suited to the most common use cases, the **EQUINOX2 T** series is a great fit for the vast majority of projects.



Applications: Self-consumption for small and medium businesses

The **EQUINOX2 T** series is generally designed to be used both in small (such as small shops or offices) and in larger premises (workshops, supermarkets, medium-sized companies) that decide to take a big step towards green energy thus gaining autonomy of electricity supply, reducing in turn the cost of energy.

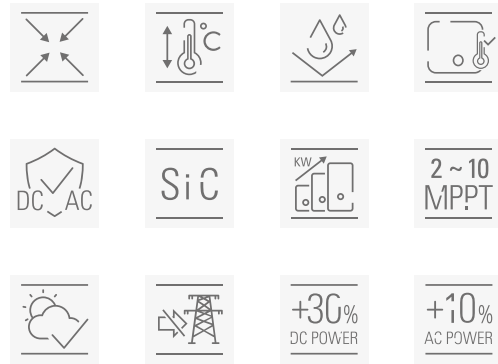


Performances

- Reduced dimensions and weight.
- Wide operating temperature.
- Optimum resistance to corrosion.
- Layout of components oriented to thermal optimization, ensuring longer equipment life.
- Integrated surge protection for DC and AC.
- High-tech components made of Silicon Carbide.
- Scaling of fourteen powers. Adaptable to any type of project.
- From 2 to 10 MPPT trackers (depending on power) with a wide voltage range, adaptable to most roofs and/or surfaces.
- High conversion efficiency and input current adapted to high-performance panels.
- Low start-up voltage: 180 Vdc.⁽¹⁾
- Function to limit surpluses to the integrated network.
- Admits 30% of input power in DC, above the nominal voltage.
- Possibility of delivering 10% more power in addition to the nominal.
- Supervision of the installation via the web and the free EQUINOX app.⁽²⁾
- 10-year warranty, extendable to 20 years.

(1) 200V for 100kW model.

(2) To obtain 24-hour data (generation, grid, and consumption), the optional communication device **SLC Energy Manager** is required.



Quad Core

Quad Core processing, offering a 200 MHz frequency main module and a high-frequency communication module, with embedded high-speed access memories; all high end features at the heart of our three-phase inverters.

Communication modules

The standard inverter includes a module for monitoring generation hours only. To monitor consumption 24 hours a day, the optional communication device **SLC Energy Manager** must be purchased.



High Flexibility

As the power in a photovoltaic installation increases, the number of panels required also increases. Faced with this greater need for space, the lack of availability gives rise to a multitude of variables that complicate the configuration of the strings (differences in orientation, projected shadows, uneven slopes, etc).

The resulting diversity requires greater definition for the differentiated management of each panel group in order to get the most out of the installation.

Accordingly, our **EQUINOX2 T** series offers a greater number of MPPTs (Maximum Power Point Tracker) in relation to the power of the equipment. Reaching up to 10 MMPTs in the 100kW model.

Monitoring from app and website

The free **EQUINOX** app and the website allow monitoring of the current status of the photovoltaic installation to consult log data and monitor in real time the photovoltaic power produced: consumed by load, consumed by the mains, or injected into it. The app also provides data regarding the cost savings achieved as well as the total reduction in CO2. Having the required options, **EQUINOX** allows you to activate the zero reinjection mode in your installation.



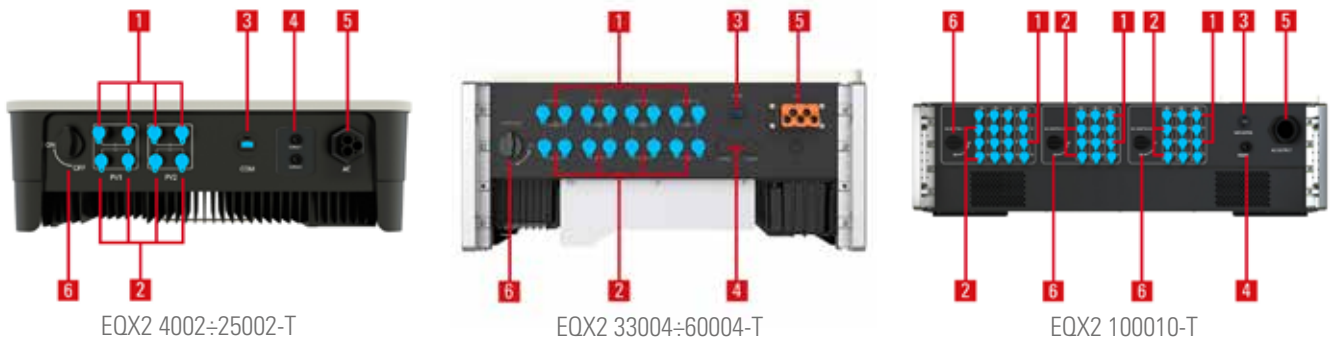
Range

MODEL	CODE	MAXIMUM DC INPUT POWER (kW)	RATED POWER (kW)	MAXIMUM APPARENT OUTPUT POWER (kVA)	OUTPUT CURRENT (A)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EQX2 4002-T	6B2AB000018	6.4	4	4.4	5.8	175 × 550 × 410	23
EQX2 5002-T	6B2AB000019	8	5	5.5	7.3	175 × 550 × 410	23
EQX2 6002-T	6B2AB000011	9.6	6	6.6	8.7	175 × 550 × 410	23
EQX2 8002-T	6B2AB000012	12.8	8	8.8	11.6	175 × 550 × 410	23
EQX2 10002-T	6B2AB000013	16	10	11	14.5	175 × 550 × 410	23
EQX2 12002-T	6B2AB000014	19.2	12	13.2	17.4	175 × 550 × 410	23
EQX2 15002-T	6B2AB000015	24	15	16.5	21.7	175 × 550 × 410	26
EQX2 17002-T	6B2AB000026	27.2	17	18.7	24.6	175 × 550 × 410	29
EQX2 20002-T	6B2AB000016	32	20	22	29	175 × 550 × 410	29
EQX2 25002-T	6B2AB000017	40	25	27.5	36.2	175 × 550 × 410	29
EQX2 33004-T	6B2AB000022	52.8	33	36.3	47.8	270 × 600 × 400	42
EQX2 40004-T	6B2AB000023	64	40	44	58	270 × 600 × 400	42
EQX2 50004-T	6B2AB000024	80	50	55	72.5	270 × 600 × 400	42
EQX2 60004-T	6B2AB000034	96	60	66	87	270 × 600 × 400	42
EQX2 100010-T	6B2AB000033	160	100	110	144.3	290 × 975 × 680	82

Dimensions



Connections



1. Positive photovoltaic input terminals
2. Negative photovoltaic input terminals
3. Main communication port (communication module connection).
4. Auxiliary communication port (optional).
5. AC / mains output terminal.
6. DC isolator switch.

Technical specifications

MODEL		EQX2 4002÷12002-T	EQX2 15002-T	EQX2 17002÷25002-T	EQX2 33004÷60004-T	EQX2 100010-T
INPUT DC	Starting voltage (V)	180				200
	Max. short-circuit current - I _{sc} PV (A)	20/20 A	20/40 A	40/40 A	4*40 A	10*40 A
	Inputs per MPPT	1/1	1/2	2/2	2	
	Inputs per MPPT	2			4	10
	MPPT voltage range (VDC)	160 ÷ 1000			180 ÷ 1000	200 ÷ 950
	Maximum input voltage (V _{dc})	1100				
	Input maximum current per tracker (A)	15/15 ⁽¹⁾	15/30 ⁽¹⁾	30/30 ⁽¹⁾	4*26 ⁽¹⁾	10*26 ⁽¹⁾
	MPPT performance	99,9%				
OUTPUT	Power factor	0.8 inductive...0.8 capacitive				
	Network voltage	3x400 V Three-phase (3L, N, PE) ⁽²⁾				
	Voltage ranges	195.5 ÷ 253 V (Ph-N) according to UNE 217002				
	Max. total harmonic distortion (THD)	<3%				
	Frequency	50 Hz (45.5 ÷ 55 Hz) / 60 Hz (55 ÷ 65 Hz)				
	Performance EU	97,9% ÷ 98,2%			98,3%	
	Maximum performance	98,1% ÷ 98,6%			98,8%	
COMMUNICATION	Ports	RS485, WiFi				
INDICATIONS	Type	2 LED states, OLED display				
PROTECTION	Input DC disconnecter	Included				
	Integrated in the device	Inverse polarity DC, Residual Current, DC disconnecter, Over-voltage, Over-temperature, Differential, Islanding operation, AC short-circuit, Over-voltage AC				
	Over-voltage protection category	PV: II / AC: II				
GENERAL	Contamination level	PD2/PD3				
	Self-consumption (at night)	<1 W				
	Operating temperature	-30°C ~ +60°C (de-rate for temperature >45°C)				
	Relative humidity	0 ~ 100%				
	Maximum operating altitude	3,000 masl (power degradation up to 4,000 m)				
	Degree of protection	IP65				
	Cooling	Natural convection (no fans) ⁽³⁾				
	Acoustic noise at 1 metre	≤25 dB ⁽³⁾				
	Terminal type	MC4				
	Installation	Indoor and outdoor installation / Wall support				
	Topology	Transformerless Non-isolated (On grid)				
STANDARDS	Safety / EMC	IEC 62109-1/2 / EN 61000-6-2/3				
	Energy efficiency	IEC EN UNE 61683				
	Environmental tests	IEC EN UNE 60068-2-1/2/14/30				
	Operation / Protection	UNE EN 62116:2014, IEC 61727:2004, UNE 217002:2020, UNE 217001:2020				
	Corporate certification	ISO 9001, ISO 14001, ISO 45001				

(1) For PV inverters with more than 1 string per MPPT, please enquire about potential current restrictions

(2) For three-phase voltages without a neutral (triangle), ask

(3) For models from EQX2 17002-T (inclusive) Smart fan cooling and ≤ 72 dB

(4) Consult available regulations for other countries

Information subject to change without notice.

EQUINOX2 HT+

Three-phase hybrid solar inverters from 15 to 50 kW

EQUINOX2 HT+: Maximize power with three-phase renewable energy

The **EQUINOX2 HT+** series of three-phase hybrid solar inverters improves the features and increases the power of the three-phase HT range, for application in installations with 3 x 380 V / 3 x 400 V.

As such, we can continue to speak of maximum versatility. By increasing the power of the hybrid inverter range, the **EQUINOX2 HT+** can be adapted to suit a wider range of scenarios and possibilities in more industrial settings. The power rating of the **EQUINOX2 HT+** goes up to 50 kW, while the inverters stand out for their high level of efficiency (98.8%). They boast batteries with a charge and discharge capacity of up to 100 A, an input current capacity of up to 30 A per string, and can work with unbalanced loads and phases, reaching levels of up to 110%. Like the EQUINOX2 HT range, they have a full backup function built into the device itself.

The mode for operation without batteries ensures that photovoltaic energy is still available even when the batteries are in poor condition, disconnected for replacement or even if the user decides to acquire them at a future date and initially operates the system without storage. Although this function is usually temporary, it helps to enhance the already comprehensive availability of the installation. It should also be noted that, for installations with very unbalanced phases, Salicru's hybrid range is an excellent solution for ensuring correct use of solar power.

The backup function for critical loads is also worth highlighting. Thanks to technological advances, the **EQUINOX2 HT+** boasts a transfer speed of just 20 ms, thereby ensuring the continued operation of connected devices in the event of an unexpected power outage and without requiring any manual intervention.



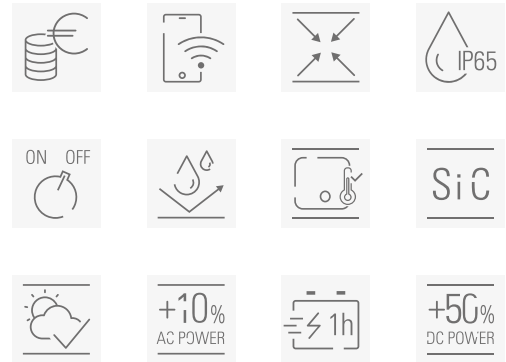
Applications: Self-consumption up to 50 kW

The **EQUINOX2 HT+** range offers a high degree of independence from the electricity grid, with a three-phase installation. It is the ideal solution for commercial facilities with low- and medium-powered machinery, such as garages, production centres, retail food outlets, the hospitality industry, etc. The devices also allow production processes to be scaled upwards without the need to increase the contracted power, thereby offering users direct savings on their monthly energy bills.



Performances

- Input current adapted for high-performance panels.
- 4 MPPT trackers with dual 30 A input.
- Very low start-up voltage of 200 VDC and battery charging capacity with low solar radiation.
- Admits DC input power 50% above the nominal level.
- Battery transfer time of less than 20 ms.
- Option of delivering 10% more power in addition to the nominal.
- Fast charging/discharging of up to 100 A. Fast battery charging (1 hour).
- Backup of up to 110% of nominal power, in battery mode.
- Wide battery voltage range: 135-750 V.
- Capacity to work with 110% unbalanced loads.
- 120% maximum output overload for 60 s in backup mode.
- Built-in DC disconnecter.
- Plug & Play connection, with start-up and supervision of the installation via the free EQUINOX app, online platform or OLED screen.
- Meter and instrument transformers included.
- IP 65 rating for indoor and outdoor installations.
- Maximum energy efficiency (up to 98.8%).



Fast charging and discharging

The **EQUINOX2 HT+** enables a one-off delivery of current of up to 100 A, in the event that, in UPS or peak shaving mode (and on an exceptional basis), it is necessary to supply a load that exceeds the nominal power. The backup output can deliver up to 20% more power than the inverter's nominal power, for a period of 60 s.

Additionally, users can force fast battery charging to ensure full availability of power after just one hour. Thanks to these features, the **EQUINOX2** hybrid series take energy availability to the maximum level.

Maximum energy production

All of the models in the **EQUINOX2** series stand out for their low start-up voltage, which translates to maximum exploitation of solar radiation and a substantial increase in the number of production hours compared to our competitors' products.

This increase is even more important in winter, when the number of hours of good solar radiation is significantly lower.



Smart energy management

Thanks to the different operating modes (general, economy, peak shaving, UPS and isolated), the system can be adapted to suit different scenarios and applications, allowing users to discriminate between priority and secondary loads and to manage the charging and discharging of the battery.

The **EQUINOX2 HT+** hybrid solar inverters enable users to discriminate between two types of load: priority loads (those connected to the backup output) and secondary loads (those connected to the mains output). Thus, in the event of an interruption to the mains power supply, the energy stored in the batteries and solar panels will only be delivered to the priority loads, while the secondary loads will be ignored, thereby optimising the use of previously stored and/or generated energy.

Range

MODEL	CODE	MAXIMUM DC INPUT POWER (kW)	RATED POWER (kW)	MAXIMUM APPARENT OUTPUT POWER (kVA)	OUTPUT CURRENT (A)	DIMENSIONS (D x W x H mm)	WEIGHT (Kg)
EQX2 15002-HT+	6B2AE000012	23	15	16.5	21,7	210 x 534 x 418	31
EQX2 20002-HT+	6B2AE000013	30	20	22	29	210 x 534 x 418	31
EQX2 25004-HT+	6B2AE000014	38	25	27.5	38	300 x 800 x 620	72
EQX2 30004-HT+	6B2AE000015	45	30	33	43,5	300 x 800 x 620	72
EQX2 40004-HT+	6B2AE000016	60	40	44	60	300 x 800 x 620	72
EQX2 50004-HT+	6B2AE000017	75	50	55	75	300 x 800 x 620	72

Battery selection

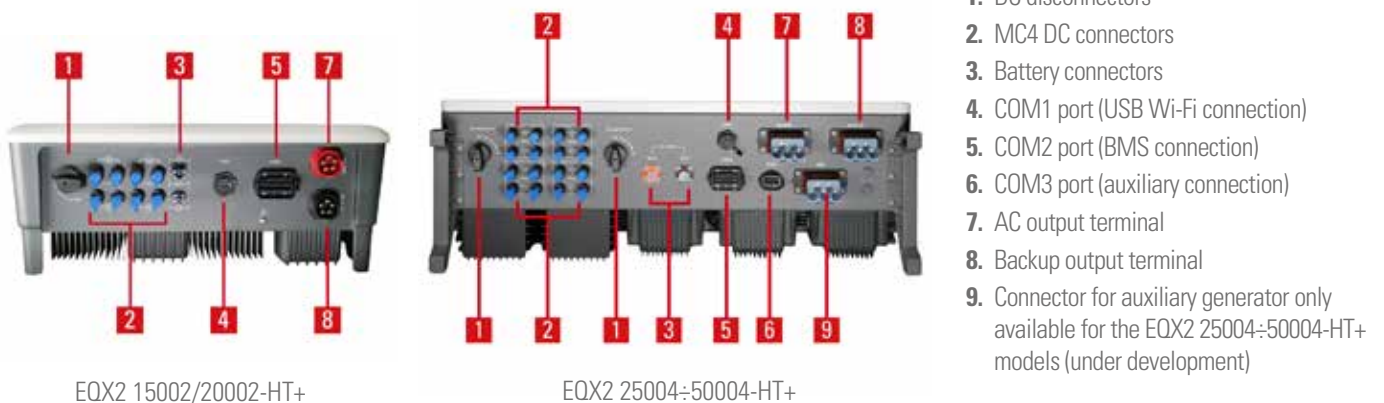
MODEL	CODE	RATED CAPACITY (kWh)	RATED VOLTAGE (V)	DIMENSIONS (D x W x H mm)	WEIGHT (kg)	COMPATABILITY
SUNWODA Industrial 25 kWh	6B2EA000000	25	256	410 x 480 x 104	248	HSX, HT, HT+
SUNWODA Industrial 30 kWh	6B2EA000001	30	307.2	410 x 480 x 121	294	HSX, HT, HT+
SUNWODA Industrial 35 kWh	6B2EA000002	35	358.4	410 x 1180 x 700	340	HSX, HT, HT+
SUNWODA Industrial 40 kWh	6B2EA000003	40	409.6	410 x 1180 x 870	386	HSX, HT, HT+
SUNWODA Industrial 45 kWh	6B2EA000004	45	460.8	410 x 1180 x 870	432	HSX, HT, HT+
SUNWODA Industrial 50 kWh	6B2EA000005	50	512	410 x 1180 x 1040	478	HSX, HT, HT+
SUNWODA Industrial 55 kWh	6B2EA000006	55	563.2	410 x 1180 x 1040	524	HSX, HT, HT+
SUNWODA Industrial 60 kWh	6B2EA000007	60	614.4	410 x 1180 x 1210	570	HSX, HT, HT+
SUNWODA Industrial cabinet 60 kWh	6B2AC000005	60	614.4	750 x 1200 x 2160	880	HSX, HT, HT+

You can configure up to 6 towers/cabinets in parallel, reaching a maximum of 360 kWh.
For isolated installations, we recommend installing at least twice the rated power of the inverter.
To learn about additional capacity options, please refer to the data sheets of the corresponding batteries.

Dimensions



Connections



1. DC disconnectors
2. MC4 DC connectors
3. Battery connectors
4. COM1 port (USB Wi-Fi connection)
5. COM2 port (BMS connection)
6. COM3 port (auxiliary connection)
7. AC output terminal
8. Backup output terminal
9. Connector for auxiliary generator only available for the EQX2 25004-50004-HT+ models (under development)

Technical specifications

MODEL		EQX2 15002/20002-HT+	EQX2 25004÷50004-HT+
INPUT DC	Rated voltage	620	
	Starting voltage (V)	236	
	Max. short-circuit current - I _{sc} PV (A)	40/40	
	Inputs per MPPT	2	
	Inputs per MPPT	2	4
	MPPT voltage range with battery	236 ÷ 850	
	MPPT voltage range (VDC)	200 ÷ 950	200 ÷ 850
	Input maximum current per tracker (A)	30	
OUTPUT	Power factor	0.8 inductive...0.8 capacitive	
	Network voltage	3x400 V Three-phase (3L, N, PE)	
	Voltage ranges	195.5 ÷ 253 V (F-N); adjustable depending on the country	
	Max. total harmonic distortion (THD)	<3 %	
	Frequency	50 Hz / 60 Hz; margins adjustable depending on the country	
	Performance EU	97,5%	98,3%
	DCI	<0,5 % I _n	
	Maximum performance	98,4%	98,8%
OUTPUT Back-up	Transfer time (ms)	<20	
BATTERY	Battery type	Lithium with BMS	
	Voltage range	135 ÷ 750 V	
	Maximum charge/discharge current	40 A	100 A
COMMUNICATION	Ports	CAN, RS485, WiFi/LAN (optional)	
INDICATIONS	Type	OLED & LED	
PROTECTION	Input DC disconnecter	Bipolar. Load break	
	Integrated in the device	DC reverse polarity, battery input connection reversal, insulation resistance, DC overvoltage, temperature, residual current, island operation, AC overvoltage, overload, AC short circuit, GFCI	
	Over-voltage protection category	PV: II / AC: III	
GENERAL	Contamination level	PD2/PD3	
	Self-consumption (at night)	<15 W	
	Operating temperature	-30°C ~ +60°C (de-rate for temperature >45°C)	
	Relative humidity	0~100%	
	Maximum operating altitude	3,000 masl (power degradation up to 4,000 m)	
	Degree of protection	IP65	
	Cooling	Smart fan	
	Acoustic noise at 1 metre	<40 dB	<50 dB
	Terminal type	MC4	
	Installation	Indoor and outdoor installation / Wall support	
STANDARDS	Topology	Transformerless hybrid	
	Safety / EMC	IEC 62109-1/2 / EN 61000-6-2/3	
	Energy efficiency	IEC EN UNE 61683	
	Environmental tests	IEC EN UNE 60068-1/2/14/30	
	Operation / Protection	UNE EN 62116:2014, IEC 61727:2004, UNE 217002:2020, UNE 217001:2020 ⁽²⁾	
Corporate certification	ISO 9001, ISO 14001, ISO 45001		

(1) With minimum power of 250 W

(2) Consult the regulations available for other countries

Information subject to change without notice.

INDUSTRIAL BATTERIES (25-60 kWh)

Modular batteries with a capacity of up to 360 kWh



INDUSTRIAL BATTERIES FROM 25 TO 60 KWH

The best solution to complement our hybrid inverters is undoubtedly the battery series from the renowned manufacturer SUNWODA.

SUNWODA is a global leader in energy storage solutions using Lithium Iron Phosphate (LiFePO₄). With more than 50,000 employees worldwide, it has established itself as a Tier-1 manufacturer recognised for its excellence and innovation.

This storage system stands out for its versatility and adaptability. Thanks to its rack-type design, it can be configured from 25 kWh to 60 kWh, increasing in 5 kWh increments with a single management unit, and reaching up to 360 kWh when combining six units. It's the perfect solution for industrial facilities of any size, especially those with limited space, as its modular design allows for customisation to meet any energy requirement.

We also offer an option designed for outdoor use: a 60 kWh cabinet with climate control and fire protection systems. The included wall-mounting bracket for the inverter and compact design facilitate installation and ensure optimal use of the available space.

Uses: Joint installation with the EQUINOX2 HSX/HT/HT+

A specific firmware has been developed to maximise the performance of the batteries and meet the requirements of both the entire EQUINOX2 hybrid range and the needs of our customers. The system is primarily geared towards large installations that require high storage capacity, either to cover peaks in energy demand that cannot be met by solar panels or to store surplus energy for use during periods when there is no production. It's also ideal for large-scale isolated installations that require high battery capacity.



Technical specifications

MODEL		INDUSTRIAL BATTERIES
BATTERY	Rated voltage	256 ÷ 615
	Rated capacity (kWh)	25 ÷ 60
	Rated charge/discharge power (kW)	12.5 ÷ 30
	Maximum charge/discharge current (A)	100
	Discharge cycles	6,000 cycles @ 25°C 0.5C 90% DOD, EOL 70%
GENERAL	Connections	Quick connectors / RJ45
	Level of protection	IP20 / IP5
	Communication interface	CAN 2.0 / RS485 / WIFI / LAN
	Operating temperature range	Charge: 0°C~50°C / Discharge -20°C~55°C / -30°C~50°C
	Cooling	Natural cooling/Air conditioning cooling
	Relative humidity	5 ~ 95% (non-condensing)
	Maximum operating altitude	2400 mas ⁽¹⁾
STANDARDS	Safety / EMC	CE / UN38.3 / IEC62619 / VDE-AR-N 4105 / IEC 6210
	Corporate certifications	ISO 9001, ISO 14001, ISO 45001
DIMENSIONS	Depth × Width × Height (mm)	410 ÷ 750 x 480 ÷ 1180 x 104 ÷ 2160
WEIGHT	Weight (kg)	248 ÷ 880

Information subject to change without notice.

(1) Power degradation up to a maximum of 5000 metres above sea level.



CV50

Variable frequency drives from 0.75 kW to 500 kW



CV50: High-performance multifunction vector frequency drives

Salicru's **Controlvit CV50** variable frequency drive series covers power ratings that range from 0.75 kW to 500 kW. They are suitable for both constant and variable torque applications (power duality), and therefore allow the costs of the system to be optimised by adapting to the type of load to be regulated.

They stand out for their design, reliability, ease of use and versatility, being suitable both for low-power applications, where it is necessary to have good control precision, and high-power applications, where it is important to maintain the appropriate torque and ensure continuity of operation.

Thanks to their automatic energy-saving function, they achieve significant consumption reductions, mainly in ventilation, water treatment and irrigation applications.

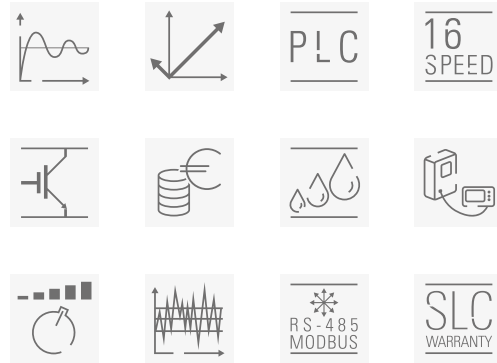
Applications:

The **CV50** is a dual inverter, meaning that it can work in constant and variable torque applications. For this reason, they are suitable for use in the following applications: pumps, fans, HVAC applications, compressors, extruders, mills, presses, mining industry and machinery in general.



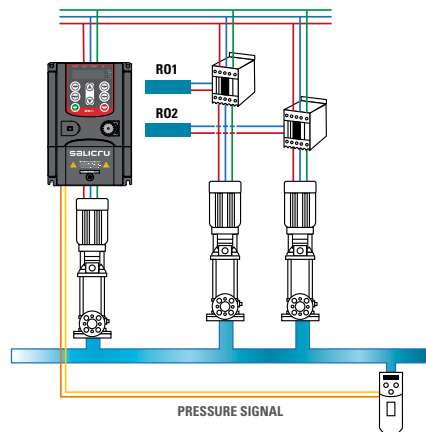
Performances

- Selectable control: V/f, sensorless vector or torque control.
- Built-in EMC filter.
- Power duality: constant torque / variable torque.
- Advanced sleep/wake function for control of up to 3 pumps.
- Motor auto-tuning motor tuning (static and dynamic).
- 150% torque at 0.5 Hz.
- Advanced PID process control.
- Simple PLC (automatic cycle) and 16-speed multi-step control.
- RS485 Modbus RTU communication.
- Built-in potentiometer.
- Remote control with removable or optional keypad.
- Intuitive parameter setting.
- Compact size.
- Built-in dynamic braking unit (≤ 30 kW).
- DC braking.
- Automatic energy saving and kWh meter.
- Pulse train input (max. 50 kHz).
- Fly start function.
- Numerous inputs/outputs (8 digital inputs, 1 pulse input, 2 analogue inputs and 2 analogue outputs, 2 relay outputs, 1 transistor output, 1 pulse output).
- Cooling fans with On/Off control and easy replacement.
- Monitoring and parameter setting using VITdrive software.
- SLC Greenergy solution.



Pumping systems

- The CV50 inverter enables the creation of a pressure unit with up to three pumps (main pump + two fixed auxiliary pumps).
- By means of a signal provided by the transducer, automatic PID pressure control is performed.
- The setpoint can be set via keypad, an analogue signal or RS485 Modbus communication.
- Features two level parameter setting modes for sleep or wake: % of sensor pressure or by frequency.



Advanced vector control

In the event of a sudden change in load with the motor running at 0.5 Hz, the speed remains constant and the assembly is capable of providing the torque demanded at full load.

Technical support and service

- Pre- and after-sales service.
- Telephone technical support.
- Maintenance contracts.
- Training courses.
- Online registration at www.salicru.com.



Range

MODEL	CODE	CONSTANT TORQUE			VARIABLE TORQUE			DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
		POWER (kW)	CURRENT INPUT (A)	CURRENT OUTPUT (A)	POWER (kW)	CURRENT INPUT (A)	CURRENT OUTPUT (A)		
CV50-008-4F	6B1CA000001	0.75	3.4	2.5	-	-	-	175 × 126 × 186	2.5
CV50-015-4F	6B1CA000002	1.5	5	3.7	-	-	-	175 × 126 × 186	2.5
CV50-022-4F	6B1CA000003	2.2	5.8	5	-	-	-	175 × 126 × 186	2.5
CV50-040-4F	6B1CA000004	4	13	9	5.5	19.5	14	181 × 146 × 256	4.1
CV50-055-4F	6B1CA000005	5.5	19.5	14	7.5	25	18.5	181 × 146 × 256	4.1
CV50-075-4F	6B1CA000006	7.5	25	18.5	11	32	25	216 × 170 × 320	7.4
CV50-110-4F	6B1CA000007	11	32	25	15	40	32	216 × 170 × 320	7.4
CV50-150-4F	6B1CA000008	15	40	32	18.5	47	38	216 × 170 × 320	7.4
CV50-185-4F	6B1CA000009	18.5	47	38	22	56	45	216 × 230 × 342	9
CV50-220-4F	6B1CA000010	22	56	45	30	70	60	245 × 255 × 407	11
CV50-300-4F	6B1CA000011	30	70	60	37	80	75	245 × 255 × 407	11
CV50-370-4F	6B1CA000012	37	80	75	45	94	92	325 × 270 × 555	32
CV50-450-4F	6B1CA000013	45	94	92	58	128	115	325 × 270 × 555	32
CV50-550-4F	6B1CA000014	55	128	115	75	160	150	325 × 270 × 555	32
CV50-750-4F	6B1CA000015	75	160	150	90	190	180	365 × 325 × 680	67
CV50-900-4F	6B1CA000016	90	190	180	110	225	215	365 × 325 × 680	67
CV50-1100-4F	6B1CA000017	110	225	215	132	265	260	365 × 325 × 680	67
CV50-1320-4F	6B1CA000018	132	265	260	160	310	305	360 × 500 × 870	110
CV50-1600-4F	6B1CA000019	160	310	305	185	345	340	360 × 500 × 870	110
CV50-1850-4F	6B1CA000020	185	345	340	200	385	380	360 × 500 × 870	110
CV50-2000-4F	6B1CA000021	200	385	380	220	430	425	360 × 500 × 870	110
CV50-2200-4F	6B1CA000022	220	430	425	250	485	480	380 × 750 × 1410	165
CV50-2500-4F	6B1CA000023	250	485	480	280	545	530	380 × 750 × 1410	165
CV50-2800-4F	6B1CA000024	280	545	530	315	610	600	380 × 750 × 1410	165
CV50-3150-4F	6B1CA000025	315	610	600	350	625	650	380 × 750 × 1410	165
CV50-3500-4F	6B1CA000026	350	625	650	400	715	720	560 × 620 × 1700	450
CV50-4000-4F	6B1CA000027	400	715	720	-	-	-	560 × 620 × 1700	450
CV50-5000-4F	6B1CA000028	500	890	860	-	-	-	560 × 620 × 1700	450

Power supply voltage: Three-phase 400 V

Dimensions



Technical specifications

MODEL		CV50
INPUT	Rated voltage	Three-phase 380 V (-15%) ÷ 440 V (+10%)
	Rated frequency	50/60 Hz / Allowed range: 47 ÷ 63 Hz
OUTPUT	Rated voltage	Three-phase, 0 ÷ 100% of input voltage
	Frequency	0 ÷ 400 Hz
	Admissible overloads	Constant torque: 150% for 1 min; 180% for 10 s; 200% for 1 s Variable torque: 120% for 1 min
	Maximum distance	<50 m without filter / between 50 and 100 m install chokes / >100 m LC filter
CONTROL SPECIFICATIONS	Type of motor	Asynchronous
	Method of control	V/f, sensorless vector control, torque control
	V/f characteristics	Linear, quadratic (3 types), user defined
	Degree of control	1% of maximum output frequency
	Speed fluctuation	±0.3% (in vector control mode)
	Braking unit	Built-in for ≤30 kW, external (optional) for ≥37 kW
INPUT SIGNALS	Digital	8 programmable inputs, PNP or NPN logic, pulse input, maximum frequency 50 kHz, selectable polarity, virtual activation, On/Off delay times
	Analogue	2 inputs, AI2: 0 ÷ 10 V / 0 ÷ 20 mA and AI3: -10 ÷ 10V Built-in potentiometer
OUTPUT SIGNALS	Relay	2 multifunction NO/NC switching outputs Maximum 3 A / 250 VAC, 1 A / 30 VDC Selectable polarity and on/off delay
	Power Supply	24 V (±10%) 200 mA
	Analogue	2 selectable outputs 0 ÷ 10 V / 0 ÷ 20 mA, proportional to frequency, current, speed, voltage, torque, etc
	Digital	1 multifunction open collector output (200 mA / 30 V) 1 selectable output between pulses (max. 50 kHz) and open collector Selectable polarity and on/off delay
	Communication port	RS-485 Modbus-RTU
OPERATION	Method	Keypad, control terminal and communication Removable keypad up to 200 m for models ≥ 18.5 kW For other models, remote keypad (up to 200 m) as optional extra
	Frequency setting	Digital, analogue, pulse train, multi-step, simple PLC, PID, Modbus communication
	Protection	Overcurrent, overvoltage, low voltage, inverter overheating, phase loss, overload, underload, etc
FILTERING	EMC filter	Built-in. Category C3
	DC reactor	Installable in inverters ≥37 kW
GENERAL	Ambient temperature	-10° ÷ 50°C (3% derating per degree exceeding 40°C)
	Degree of protection	IP20
	Cooling	By easy-to-maintain fans
	Installation	Wall, flange and floor mounting for ≥ 220 kW
STANDARDS	Safety	EN 61800-5-1
	Electromagnetic compatibility (EMC)	EN 61800-3 C3
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

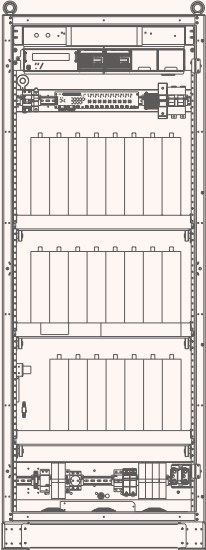
Information subject to change without notice.

CUSTOM SOLUTIONS

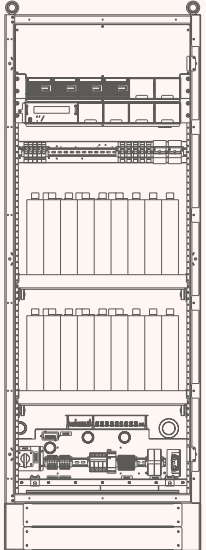
Every installation is different. Every solution should be too.



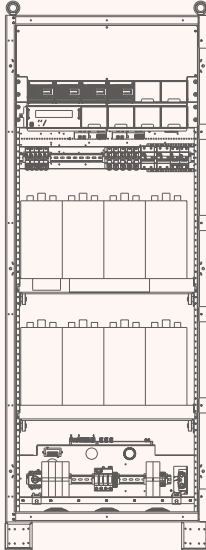
The presence of custom solutions is essential in critical environments. Customisation offers protection adapted to suit the specific needs of each customer, ensuring the seamless continuity and safety of each of their operations.



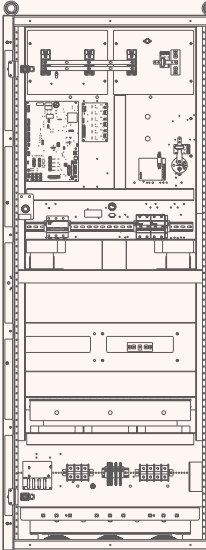
ENEL



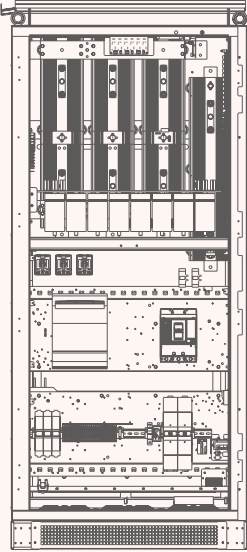
EDP



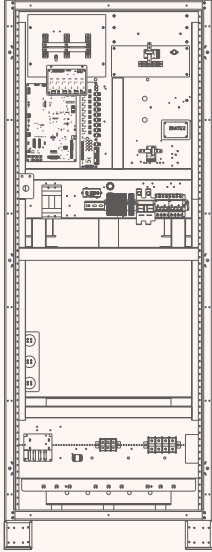
REE



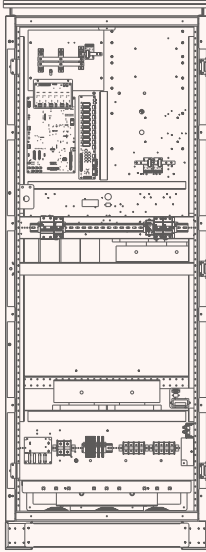
EVN



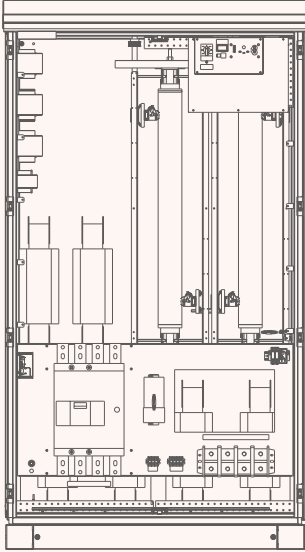
SEC



CFE



IME



REE/ENEL



In a world that depends fully on electricity, having systems that ensure an uninterrupted power supply is essential to prevent losses and damages. We understand these needs thanks to more than six decades of experience, and we provide our engineering team to design solutions and respond to the most demanding market challenges. For this reason, our custom solutions are designed to perfectly adapt to the specific requirements of each project, allowing us to offer our customers unparalleled peace of mind.

At Salicru we adopt flexibility as one of our principles, offering custom solutions based on standard series technologies. The solutions always include in-house developments, as those existing on the market do not normally meet all the needs of each company, and they pass the strictest quality controls to ensure the solutions offered meet the needs and expectations of its customers. There are two custom solution models, developing solutions from scratch or through equipment customisation.

DC Systems are devices that convert alternating current into direct current (rectifiers, chargers) or direct current into alternating current (inverters). These systems can store power in an accumulator battery, enabling a continuous supply of DC or AC (through an inverter), without interruptions. When the rectifier elements, chargers and inverters are integrated into a single unit, they form what is known as a DC System, allowing both AC and DC-powered loads to be connected. The parameters and communication ports of these systems can be configured for communicating with the outside world, allowing them to be included in management software and, therefore, keeping the user informed of the device's status/alerts/events/measurements through remote management.

DC Systems ensure seamless operation with no unexpected outages in the power supply to equipment. Some are modular and grow in line with requirements, optimising the Total Cost of Ownership (TCO).

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Product Range

Uninterruptible Power Supplies (UPS)
Solar Inverters
Variable Frequency Drives
DC Systems
Transformers and Autotransformers
Voltage Stabilisers
Protective Power Strips
Batteries



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SMART
SOLUTIONS

