

A photograph of a modern building facade with a light-colored stone or brick texture. The word "SALICRU" is mounted on the wall in large, 3D, orange-red letters. Below the letters is a long, narrow window with a black frame, reflecting the sky and surrounding environment. The sky is a clear, pale blue.

SALICRU

PRODUCT RANGE CATALOGUE

APRIL 2015

SALICRU



salicru

Since its founding in 1965, Salicru, S.A. has designed, manufactured and commercialised power electronics products for the key sectors of the energy market.

Salicru's mission is to provide innovative solutions and services to increase our customers' productivity through the provision of high-quality power supplies that will be continuous, clean, affordable, reliable and ecologically-friendly, in both alternating and direct current.

Salicru has the broadest national coverage and 7 international subsidiaries, with sales to over 40 countries worldwide, with over 600,000 units operating and running. The company is ISO-9001 and ISO 14001 certified, and its products are designed and produced in full respect of the Environment.

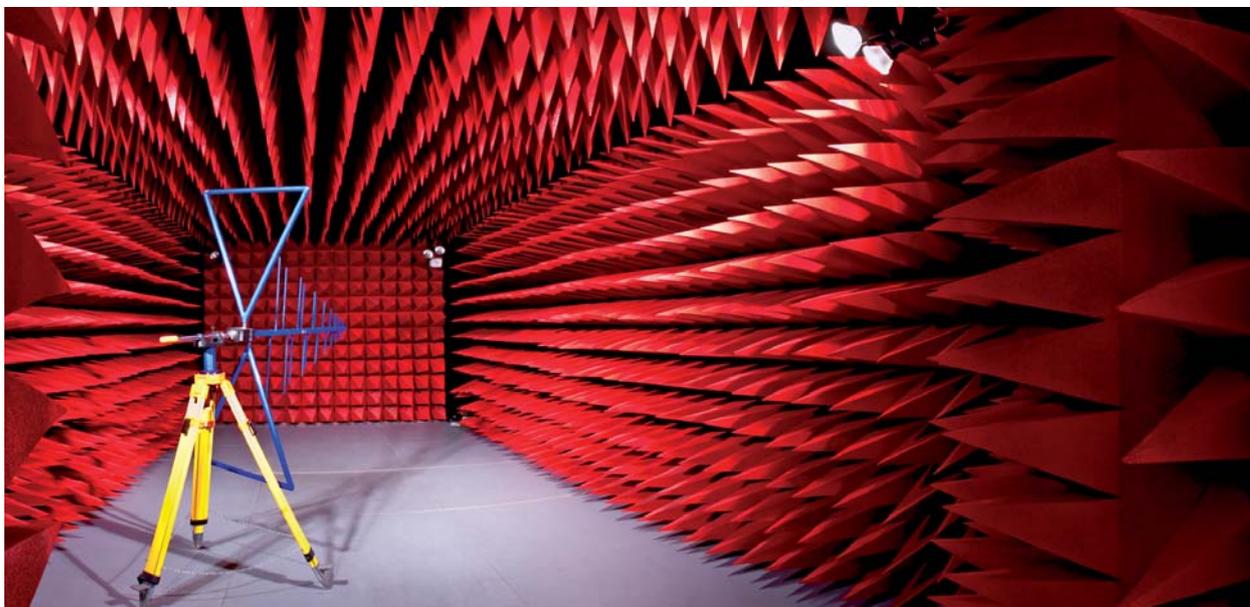
In a technological firm such as ours, research and innovation are essential to maintain our competitive edge and presence on the market. Therefore, we dedicate 4% of our annual turnover to R&D, which is well above the national average of 0.9% or the European average of 1.4%.

The main product lines are:

- UPS (Uninterruptible Power Supplies): Electronic protection with autonomy for all kinds of critical environments, ranging from 400 VA to several MVA.
- Lighting flow dimmer-stabilisers: Energy and CO₂ emission saving for lighting installations.
- DC systems and inverters: Solutions for AC/DC and DC/AC power supplies.
- Photovoltaic solar inverters: Generation of AC grid tied voltage using solar energy.
- Voltage stabilisers: Regulating of the electrical supply.

Protection and continuity solutions

According to different studies, 40% of faults occurring in computer systems are caused by disturbances in the electrical power supply (far more than those caused by computer viruses)





also affecting productivity losses derived from inactivity and the resources needed for restoring the damage caused.

Energy efficiency

Salicru is aware of the gradual fall in the availability of natural resources used to produce energy and also of the growing need to reduce energy consumption while maintaining the same energy services without affecting comfort and quality of life and protecting the Environment and assuring supply while encouraging sustainable behaviour in its use.

Salicru's investment in the Environment is longstanding: since the first lighting flow dimmer-stabiliser (**ILUEST+**) came out in the early 1990s, to the photovoltaic solar inverters (**EQUINOX**), the will of the company has always been to produce equipment that is not only respectful of the Environment but also actively participates in preserving it.

DELEGATIONS AND TECHNICAL SUPPORT & SERVICE (TSS)

- | | |
|--------------------------|------------------------|
| BARCELONA | PALMA DE MALLORCA |
| BILBAO | SAN SEBASTIÁN |
| CORUNNA | SANTA CRUZ DE TENERIFE |
| GIJÓN | SEVILLE |
| LAS PALMAS DE G. CANARIA | VALENCIA |
| MADRID | VALLADOLID |
| MÁLAGA | ZARAGOZA |
| MURCIA | |

SUBSIDIARIES

- | | |
|---------|-----------|
| CHINA | MOROCCO |
| FRANCE | PORTUGAL |
| HUNGARY | SINGAPORE |
| MEXICO | |

REST OF WORLD

- | | |
|----------------|--------------------------|
| ALGERIA | LITHUANIA |
| AUSTRIA | MALAYSIA |
| BELGIUM | NETHERLANDS |
| BRAZIL | NIGERIA |
| BULGARIA | PERU |
| CHILE | PHILIPPINES |
| CUBA | POLAND |
| CZECH REPUBLIC | ROMANIA |
| DENMARK | RUSSIA |
| ECUADOR | SAUDI ARABIA |
| EGYPT | SLOVAKIA |
| ESTONIA | SWEDEN |
| FINLAND | SWITZERLAND |
| GERMANY | THAILAND |
| GREECE | TUNISIA |
| INDONESIA | UAE |
| IRAN | UKRAINE |
| IRELAND | UNITED KINGDOM |
| ITALY | UNITED STATES OF AMERICA |
| JORDAN | URUGUAY |
| KUWAIT | VENEZUELA |
| LATVIA | VIETNAM |



1965 - 2015
First 50 years of our history



Design adaptable to any operating environment



Solutions designed with eco-efficient criteria



ISO 9001:
Quality management



ISO 14001:
Environmental management

MARKETS + DISTURBANCES

DISTURBANCES



Spikes



Burst transients



Dropouts & blackouts



Sags & undervoltages



Surges & overvoltages



HOMES, OFFICES & SHOPS

Advanced and versatile protection of computer, telecommunications and multimedia equipment



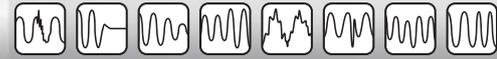
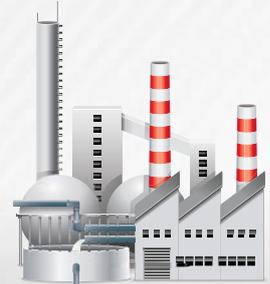
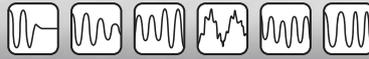
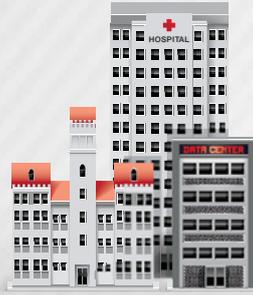
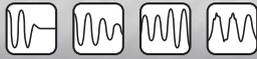
SMES, LARGE CORPORATIONS AND PUBLIC SECTOR BODIES

Tailor-made solutions to ensure the security of the power supply and sensitive information



INDUSTRY

Maximum protection in the corporate environment



SOLUTIONS

SPS HOME

Off-line UPS 400 VA & 600 VA



SPS SOHO+

Line-interactive UPS from 400 VA to 2,000 VA



SPS ADVANCE RT

Sinewave Line-interactive rack/tower UPS from 750 VA to 3,000 VA



SLC TWIN PRO

Single phase parallelable On-line double conversion UPS from 700 VA to 20 kVA



SLC TWIN RT

Single phase rack/tower On-line double conversion UPS from 700 VA to 10 kVA



DC POWER-S

DC power systems from 1 kW to 81 kW



DC POWER-L

Thyristor rectifiers from 25 A to 200 A



CS-IS/CS WAVE MDL

DC/AC inverters from 1 kVA to 24 kVA



CF CUBE3+

Frequency converter from 7.5 kVA to 200 kVA



ARC/IT&NS

Transformers





Harmonics



Notches



Noise waveform distortions



Flickers



Frequency variations



INFRASTRUCTURES & ENERGY

High-performance protection for large critical applications



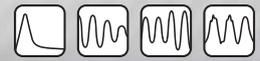
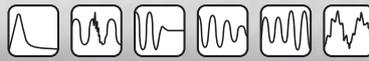
TELECOMMUNICATIONS

The best way to meet the expectations and needs of telecom operators



ENERGY EFFICIENCY & RENEWABLES

Commitment to eco-efficiency and renewable energy as a corporate value



SLC ADAPT

Modular On-line UPS from 10 kVA to 900 kVA



SLC CUBE3+

Three phase On-line UPS from 7.5 kVA to 200 kVA



SLC XTRA

Three phase On-line UPS from 100 kVA to 800 kVA



SICRES

Telemaintenance service



SOFTWARES

Management & monitoring



RE3

Electronic voltage stabilisers from 300 VA to 250 kVA



EMI3

Servomotor voltage stabilisers from 5 kVA to 330 kVA



ILUEST+ CR

Lighting flow dimmer-stabilisers from 7.5 kVA to 45 kVA



ILUEST+ MT

Lighting flow dimmer-stabilisers from 3.5 kVA to 120 kVA



SICRES x ILUEST

Telemaintenance to ILUEST+





HOMES, OFFICES & SHOPS

Advanced and versatile protection of computer, telecommunications and multimedia equipment

The computer systems of companies, regardless of the size of the business, have become nerve centres for information and management, and vital for optimum day-to-day operation. The dependency that they create is proportional to the uses and benefits that IT technologies provide, not to mention their constant evolution, which helps to increase the competitiveness of companies.

The same occurs in the home environment: we live in a society of digital information and technology. In our homes, we have numerous computer and multimedia systems connected to the Internet in which we also store large amounts of files and documents containing personal data that are not in duplicate hard-copy form.

Storms, lightning and excess demand are just some of the many different causes of electrical disturbances (ranging from micro power cuts to overvoltages, or voltage spikes, and electrical interference) that can affect electrical equipment in the office and home environments.



Numerous studies have shown that the main cause of data loss in digital environments is not viruses but, in fact, disturbances in the power supply, which account for almost half of all cases.

The economic impact of such loss on shops and SMEs can be considerable and can have serious repercussions for clients, suppliers and employees. Nor should we forget that these

disturbances can also threaten the very integrity of computer, multimedia and telecommunications equipment by reducing their useful life and, in severe cases, resulting in the need for replacement with the associated increase in costs.



For these two reasons, uninterruptible power supply (UPS) systems have now become essential to ensure a continuous, optimum and stable power supply. Salicru's mission is to ensure optimum energy availability and advanced and versatile protection of computer and multimedia equipment in the home and office environments. To achieve this, it offers a wide range of UPS solutions using existing technologies - stand-by, line- interactive and On-line double conversion - covering power ratings that range from 300 VA to several MW with all communication possibilities - SNMP, remote management, task killers, and all options to suit the specific needs of each installation. This range of solutions is complemented by protective power strips that protect against overloads, overvoltages and lightning.

With their advanced technology and versatile design, it is possible to protect, with a single device, the different components of a computer network such as PCs and all associated peripherals (monitor, printer, external hard drive, router, etc.), multimedia systems (TV, decoder, DVD player, home cinema, HiFi, DTT, etc.), IT systems and servers, and telephone/ADSL connections.

HOMES, OFFICES & SHOPS



Advanced and versatile protection of computer, telecommunications and multimedia equipment

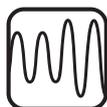
Disturbances



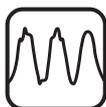
Dropouts & blackouts



Sags & undervoltages



Surges & overvoltages



Noise waveform distortions



References

- AXA
- Banc de Sabadell
- Bank of China
- BBVA
- Carrefour
- Cepsa
- Credit Lyonnais
- El Corte Inglés
- Fnac
- Ikea
- La Caixa
- Mapfre
- Media Markt
- Mercadona
- Paradores de turismo
- Seguros Santa Lucía



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Solutions

SPS AUTO

12 VDC to 230 VAC converter + USB charger



Salicru's **SPS AUTO** units are converters that supply the necessary electrical power in 230 VAC and 5 VDC. The input connection using the car (or ship) lighter socket and the 230 VAC schuko output has a power of 150 W, whereas the 5 VDC output is via USB port with a charge of 2 A.

SPS SAFE

Electric active protector

SPS.SAFE 6+

6 schuko mains with EMI/RFI. Overload + surge + phone protection..

SPS.SAFE 7+

7 schuko mains with EMI/RFI. Cable wrap-organizer device.

SPS.BOOK

Folding design for connection ease. USB 2.0 double charger (1A).

SPS.MASTER

Master / Slave intelligent electric protect. 6 schuko mains (1 Master + 5 Slave)



SPS HOME

Off-line UPS 400 VA & 600 VA



- Off-line technology.
- Multiple base design with 6 schuko sockets.
- 4 sockets with UPS protection; all sockets with overvoltage protection.
- USB port for monitoring and file closing software.
- Telephone / ADSL line protection by RJ-45 port.
- Batteries user replaceable.

SPS SOHO+

Off-line UPS 400 VA - 2,000 VA



- Line-interactive UPS.
- Automatic voltage regulation AVR.
- LCD display with information on all parameters.
- UPS/PC communication via USB port.
- Monitoring software for Windows, Linux, Unix and Mac.
- Cold Start function to allow start-up without mains.
- Automatic restart when mains returns.

SPS ADVANCE RT Sine-wave Line-interactive UPS 750 VA - 3,000 VA



- Line-interactive UPS with sine-wave output.
- Output power factor = 0.9.
- Permanent stabilisation.
- Directable graphic screen.
- Power/rack convertible.
- Rack assembly height of 2U.
- Includes pedestal (tower) and ears (rack).
- Green-mode function.



SMES, LARGE CORPORATIONS AND PUBLIC SECTOR BODIES

Tailor-made solutions to ensure the security of the power supply and sensitive information

The business community is increasingly aware of the need to have at its disposal equipment that enables more efficient use of energy and it does not consider such equipment as an expense, but as an investment for the protection of its productive assets. This is particularly evident in large companies because executives and businesspeople clearly understand that an uninterruptible power supply (UPS) is synonymous with efficiency and savings.



relatively small percentage considering the significant savings it can provide in terms of preventing data loss, resulting in it becoming a strategic advantage for the company.

Moreover, flexibility and scalability are two characteristics that are becoming increasingly important in the ICT market, as having equipment to suit the specific growth needs of a company is a significant economic and operational advantage. This is why innovation is key to Salicru's strategy of offering products that meet clients' current requirements and providing them with rack installation possibilities or the opportunity to expand power capacities.

Salicru has the technology and know-how to offer clients highly-versatile, tailor-made solutions for the protection of these types of facilities in SMEs, public sector bodies and large corporations. Its advanced technology enables monitoring, remote management, modularity and growth in parallel. Rigorous but, at the same time, flexible and agile production processes make Salicru the perfect partner in the search for tailor-made solutions.

From both an economic and social responsibility perspective, there is no doubt that organisations need to commit themselves to security and energy efficiency, especially with regard to critical and large-scale investments and infrastructures or in the storage and processing of large amounts of information, such as in hospitals, universities, public sector bodies and large corporations.

Moreover, virtually all medium-sized and large companies have some sort of data processing centre (DPC), while the largest may even have several. One of the most important factors that influences the creation of centres of this type is the need to ensure continuity of service to clients, employees, citizens, suppliers and business partners. In these areas, physical protection by a UPS system of computer or communications equipment, as well as database servers that can contain critical and/or sensitive information, is essential.

A key factor to consider when making decisions that affect energy security is the fact that the installation of a UPS, as part of a complete installation of a new DPC, only represents approximately 3 to 5% of the total investment, which is a



SMES, LARGE CORPORATIONS AND PUBLIC SECTOR BODIES

Tailor-made solutions to ensure the security of the power supply and sensitive information



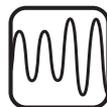
Disturbances



Dropouts & blackouts



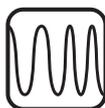
Sags & undervoltages



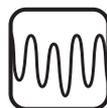
Surges & overvoltages



Harmonics & interharmonics



Frequency variations



Flickers



References

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- Fujitsu
- Hewlett Packard
- Hitachi
- IBM
- Iecisa
- Intel
- Panasonic
- SAP
- Siemens
- Sony
- Stanley
- Thomson
- Toshiba



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Solutions

SPS ADVANCE RT Sine-wave Line-interactive UPS 750 VA - 3,000 VA



- Line-interactive UPS with sine-wave output.
- Output power factor = 0.9.
- Permanent stabilisation.
- Directable graphic screen.
- Power/rack convertible.
- Rack assembly height of 2U.
- Includes pedestal (tower) and ears (rack).

SLC TWIN PRO Double conversion On-line UPS from 700 VA to 20 kVA



- Double conversion On-line UPS.
- Output power factor = 0.9 (up to 3 kVA = 0.8).
- Input current Total Harmonic Distortion (THDi) <5%.
- Control panel with LCD display or graphic display and keyboard.
- Option of parallel up to 4 units.⁽¹⁾
- Eco-mode operation.
- Tower format

⁽¹⁾ From 4 kVA

SLC TWIN RT Rack/tower On-line UPS from 700 to 10.000VA



- Double conversion On-line UPS.
- Output power factor = 0.9.
- Input current Total Harmonic Distortion (THDi) <5%.
- Directable LCD display.
- Convertible between tower and rack.
- Up to 2 units in parallel.⁽¹⁾

⁽¹⁾ From 4 kVA

SLC ADAPT Modular UPS from 10 to 900 kVA



- On line double conversion technology with modular architecture.
- 10, 15, 20, 25 and 30 kVA modules with DSP control and three level PWM technology.
- 3, 6 or 10 module systems (up to 300 kVA per system).
- Hot pluggable and swappable plug & play modules.
- Control and management by means of LCD display, LEDs and keypad.
- Efficiency in On-line mode >95%.

SLC CUBE3+ Uninterruptible power supply from 7.5 kVA to 200 kVA



- On-line double conversion (VFI) technology with DSP control.
- Input power factor 1, for better performance.
- Very low input current harmonic distortion (THDi as low as <1%).
- Total flexibility in input/output voltage.⁽¹⁾
- Designed to withstand any type of load.
- Batt-Watch function for monitoring and battery care.

⁽¹⁾ Single/single, single/three and three/single configurations up to 60 kVA

SLC X-TRA Uninterruptible power supply from 100 kVA to 800 kVA



- On-line, double conversion, DSP control.
- Double input connection to increase the availability.
- Input power factor >0.99.
- Total harmonic distortion of input current (THDi) < 3%.
- High energy efficiency between 95% and 96%.
- Selectable operation inverter/Smart Eco-mode.



INDUSTRY

Maximum protection in the corporate environment

Power supply in industry is basic and essential to ensure maximum corporate profitability. For this reason, ensuring a high-quality power supply in industrial environments is as critical as it is vital.

The range of possible electrical problems that can affect industrial processes - continuous manufacturing and automated command and control systems, instrumentation and measurement, process monitoring and control, safety systems, critical applications, and many more - is extensive and requires appropriate solutions for each type of problem or electrical disturbance.

Voltage spikes, power outages, over/undervoltages, micro power cuts, frequency variations, excess demand, etc., are some of the electrical problems that commonly occur in the industrial field. If any of these factors disturb the power supply of industrial processes and affect productive capacity, economic profitability will inevitably be affected.

To ensure that these processes are not disturbed by these external agents, it is necessary to have security mechanisms in place to guarantee proper operation.

voltage stabilisers, power supplies and, ultimately, thanks to its know-how, tailor-made solutions for specific problems.

It is a set of solutions that provides maximum reliability in electrical protection for production and control systems, and for industrial processes that require the use of machinery that is highly sensitive to variations in voltage, such as milling machines, presses, trimming machines, lathes, polishing machines, electrical discharge machines, as well as electric drives and operations, numerical controls, electric furnaces, lifts, graphic printing equipment, medical equipment and TV repeater stations. This is also the case, for example, for the most advanced technological processes such as ERP systems, CRM platforms and business intelligence tools.



In the case of uninterruptible power supply (UPS) systems and voltage stabilisers, Salicru's solutions cover a wide range of power ratings, extensive communication options via interface and monitoring software, standard backup batteries and expansion options, etc., that suit the qualitative and quantitative growth needs of any type of industrial facility.

Salicru's experience in the industrial field is endorsed by its long track record of service and effective operation of more than 600,000 devices currently installed worldwide.



Salicru has several product lines that can solve the various problems and electrical disturbances that can affect these industrial processes: uninterruptible power supply systems,



Maximum protection in the corporate environment

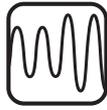
Disturbances



Dropouts & blackouts



Sags & undervoltages



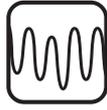
Surges & overvoltages



Notches



Frequency variations



Flickers



Burst transients



Harmonics and interharmonics



References

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- Gallina Blanca Star
- General Electric
- Honeywell
- Lafarge
- Nestle
- Otis
- Pepsico
- Renault
- Repsol
- Roche diagnostics
- Unilever



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Solutions

SLC TWIN PRO Double conversion On-line UPS from 700 VA to 20 kVA



- Double conversion On-line UPS.
- Output power factor = 0.9 (up to 3 kVA = 0.8).
- Input current Total Harmonic Distortion (THDi) <5%.
- Control panel with LCD display or graphic display and keyboard.
- Option of parallel up to 4 units.⁽¹⁾
- Eco-mode operation.

⁽¹⁾ From 4 kVA

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- Input power factor >0.99.
- Total harmonic distortion of input current (THDi) < 3%.
- High energy efficiency between 95% and 96%.
- Selectable operation inverter/Smart Eco-mode.

EMI3 Servomotor voltage stabiliser from 5 kVA to 330 kVA



- Fast and efficient toroidal autotransformers for the entire power range.
- Output accuracy better than 1% (adjustable).
- In three-phase units, common or independent regulation per phase, unaffected by imbalances.
- Input regulation range $\pm 15\%$ standard.
- High efficiency, up to 97.5%.

RE3 Electronic voltage stabiliser from 0.3 kVA to 250 kVA



- Ultra-fast regulation: reply speed under 100 ms.
- Control and test of all parameters by one microprocessor per phase.
- Static bypass, loads always supplied.
- Entirely static structure, without moving elements, greater reliability.
- Output precision better than 2%.
- Efficiency > 97%.

DC POWER-L Thyristor rectifier from 25 A to 200 A



- Microprocessor-controlled thyristor technology.
- Galvanic isolation between input and output via transformer.
- Ventilation by natural convection.
- Complete six-pulse bridge.
- Standard DC output earth fault detection.
- Electrolyte level detection for NiCd batteries (optional).
- Charging states: floating, fast and exceptional.



INFRASTRUCTURES & ENERGY

High-performance protection for large critical applications

Airports, railways, ports and roads are essential infrastructures for carrying out the activities of cities, companies and people. The same is true of power (electricity and fuel networks) and water (drinking water and drain networks) infrastructures.

Our professional and personal wellbeing largely depends on their proper functioning. What would happen, for example, if air traffic control radar, traffic lights or railway signalling lost their power supply?

To prevent these kinds of situations from arising and affecting our wellbeing and the competitiveness of our professional work, uninterruptible power supply (UPS) systems exist. These are devices that not only provide enough power to prevent faults caused by power cuts, but also improve the quality of mains voltage, thus extending the useful life of the electrical, electronic and computer equipment connected to it.



Salicru, in line with its technological commitment, offers various ranges of UPS whose features are ideal for large critical applications such as transport, power and water infrastructures, as they ensure the safeguarding of equipment and the proper management of systems.

These devices are very compact, which greatly facilitates their installation, and made from over 60% recyclable materials.



Ensuring the functioning of all elements of these infrastructures is essential for Salicru, and to achieve this, we also offer products that ensure alternative power sources, such as our DC/AC systems, which are designed to operate in harsh and demanding operating environments such as: power stations, electrical substations, oil and gas pipelines, petrochemical plants, mines, railways, telecommunications facilities, hospitals and industrial plants. DC systems are devices that convert alternating current into direct current (rectifiers, chargers) or direct current into alternating current (inverters). Such DC systems can store power in an accumulator battery, enabling an uninterrupted supply of DC or AC (through an inverter). They also have a control and monitoring system that enables input and output measurements, battery charging currents, control of priority and non-priority loads and communication channels with the outside to be managed.

An array of advanced technological solutions at the service of highly-critical infrastructures.

INFRASTRUCTURES AND ENERGY



High-performance protection for large critical applications

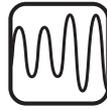
Disturbances



Dropouts & blackouts



Sags & undervoltages



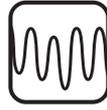
Surges & overvoltages



Notches



Frequency variations



Flickers



Spikes



Burst transients



References

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- . Alstom Power
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- . CAF
- . Dimetronic
- . Dubai Natural Gas
- . E.on
- . Ecopetrol
- . EDP
- . Enagas
- . Endesa
- . Gas natural - Fenosa
- . Gazprom
- . Iberdrola
- . Kuwait Oil Company
- . Pemex
- . REE
- . Repsol
- . Texaco
- . Thales Rail
- . Siemens



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Solutions

SLC TWIN RT

Rack/tower On-line UPS from 700 to 10.000VA



- . Double conversion On-line UPS.
- . Output power factor = 0.9.
- . Input current Total Harmonic Distortion (THDi) <5%.
- . Directable LCD display.
- . Convertible between tower and rack.
- . Up to 2 units in parallel.⁽¹⁾
- . Selectable and priority loads control.⁽²⁾

(1) From 4 kVA (2) Except 10 kVA

SLC ADAPT

Modular UPS from 10 to 900 kVA



- . On line double conversion technology with modular architecture.
- . 10, 15, 20, 25 and 30 kVA modules with DSP control and three level PWM technology.
- . 3, 6 or 10 module systems (up to 300 kVA per system).
- . Hot pluggable and swappable plug & play modules.
- . Control and management by means of LCD display, LEDs and keypad.
- . Efficiency in On-line mode >95%.

SLC CUBE 3+

Uninterruptible power supply from 7.5 kVA to 200 kVA



- . On-line double conversion (VFI) technology with DSP control.
- . Input power factor 1, for better performance.
- . Very low input current harmonic distortion (THDi as low as <1%).
- . Total flexibility in input/output voltage. ⁽¹⁾
- . Designed to withstand any type of load.
- . Batt-Watch function for monitoring and battery care.

(1) Single/single, single/three and three/single configurations up to 60 kVA

SLC X-TRA

Uninterruptible power supply from 100 kVA to 800 kVA



- . On-line, double conversion, DSP control.
- . Double input connection to increase the availability.
- . Input power factor >0.99.
- . Total harmonic distortion of input current (THDi) < 3%.
- . High energy efficiency between 95% and 96%.
- . Selectable operation inverter/Smart Eco-mode.

DC POWER-L

Thyristor rectifier from 25 A to 200 A



- . Microprocessor-controlled thyristor technology.
- . Galvanic isolation between input and output via transformer.
- . Ventilation by natural convection.
- . Complete six-pulse bridge.
- . Standard DC output earth fault detection.
- . Electrolyte level detection for NiCd batteries (optional).
- . Charging states: floating, fast and exceptional.

DC POWER-S

DC power system



- . Maximum power per system up to 81 kW.
- . Flexible, scalable and N+n redundant systems, configurable for current demand and future expansion.
- . Option of single or three-phase power supply.
- . DC systems with output voltages of 24, 48, 110, 125 or 220 Vdc.
- . High power density in the modules, up to 27 W/in³.



TELECOMMUNICATIONS

The best way to meet the expectations and needs of telecom operators

To talk about telecommunications is to talk about a strategic and innovative sector. In fact, few sectors, like that of telecommunications, better reflect the technological progress of recent years and its contribution to the development of the information society.

Because, to talk today about telecommunications is to talk about the technology related to television, radio, landline telephones, mobile telephones, voice and data networks and the Internet.

Telecommunications have become a determining factor in the development of the new digital society, which has also resulted in significant technological dependence.

In order for operators and other telecom companies to be able to offer their equipment and services on an industrial, professional and domestic level, they need a constant and reliable electricity supply without power cuts, disturbances and fluctuations affecting normal operation.

Salicru has a wide range of UPS systems whose features are ideal for large critical applications, such as telecommunications infrastructures, as they safeguard equipment and ensure the proper management of systems. These devices are very compact, which greatly facilitates their installation, and made from over 60% recyclable materials.



In addition to a permanent power supply, current telecommunication systems also need devices that store energy as an alternative, as is the case of DC/AC systems or battery chargers, which also meet the needs of a wide variety of critical loads that have to be correctly powered and protected.

Particularly suited to the telecommunications sector are rectifiers and inverters, which help to provide a high-quality AC power supply from a DC power source.

This extensive product range includes high-performance monitoring and remote-management devices that are essential for the optimisation of infrastructures that are generally widely dispersed.

This is Salicru's way of meeting the expectations and needs of a dynamic sector that is in constant technological evolution, such as that of telecommunications.

To prevent this from happening and affecting our wellbeing in our daily lives, and the competitiveness of our professional work, uninterruptible power supply (UPS) systems exist. These are devices that not only provide power to prevent faults caused by power cuts, but also improve the quality of mains voltage, thus extending the useful life of the technological equipment connected to them.

TELECOMMUNICATIONS



The best way to meet the expectations and needs of telecom operators

Disturbances



Spikes



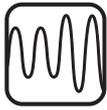
Burst transients



Dropouts & blackouts



Sags & undervoltages



Surges & overvoltages



Harmonics & interharmonics



References

- Abertis
- Bouygues Telecom
- Cable & Wireless
- China Central TV
- Ericsson
- Indra
- Ikusi
- Lucent Technologies
- Motorola
- Nokia
- Nortel
- Orange
- Portugal Telecom
- Siemens
- Telefónica
- Vodafone



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Solutions

DC POWER-S

DC power systems



- Maximum power per system up to 81 kW.
- Flexible, scalable and N+n redundant systems, configurable for current demand and future expansion.
- Option of single or three-phase power supply.
- DC systems with output voltages of 24, 48, 110, 125 or 220 Vdc.
- High power density in the modules, up to 27 W/in³.

CS IS

DC power converters



- Availability in a wide range of voltages and outgoing power.
- Broad range of input voltage variation.
- LCD display comes standard.
- Communication through relay interface or RS-232 / RS-485.
- Excellent dynamic behavior.

CS WAVE MDL

48 DC power converters



- DSP Design (Digital Signal Processor).
- Back-feed protection standard (in configurations with STS).
- Sinoidal output.
- All Master technology for better reliability.
- Hot-Swap.
- High density power.

SLC ADAPT

Modular UPS from 10 to 900 kVA



- On line double conversion technology with modular architecture.
- 10, 15, 20, 25 and 30 kVA modules with DSP control and three level PWM technology.
- 3, 6 or 10 module systems (up to 300 kVA per system).
- Hot pluggable and swappable plug & play modules.
- Control and management by means of LCD display, LEDs and keypad.
- Efficiency in On-line mode >95%.

SLC CUBE3+

Uninterruptible power supply from 7.5 kVA to 200 kVA



- On-line double conversion (VFI) technology with DSP control.
- Input power factor 1, for better performance.
- Very low input current harmonic distortion (THDi as low as <1%).
- Total flexibility in input/output voltage. ⁽¹⁾
- Designed to withstand any type of load.
- Batt-Watch function for monitoring and battery care.

⁽¹⁾ Single/single, single/three and three/single configurations up to 60 kVA

SLC X-TRA

Uninterruptible power supply from 100 kVA to 800 kVA



- On-line, double conversion, DSP control.
- Double input connection to increase the availability.
- Input power factor >0.99.
- Total harmonic distortion of input current (THDi) < 3%.
- High energy efficiency between 95% and 96%.
- Selectable operation inverter/Smart Eco-mode.



ENERGY EFFICIENCY AND RENEWABLES

Commitment to eco-efficiency and renewable energy as a corporate value



Energy efficiency is defined as the reduction of energy consumption while maintaining the same energy services, ensuring continued comfort and quality of life, protecting the environment, guaranteeing supply and promoting sustainable behaviour in its use. Today, society demands equipment that, in addition to responding to its business needs, saves energy and costs, and is environmentally friendly.

Encouraging the development of new technologies that contribute to more responsible energy consumption is, without doubt, one of the cornerstones of Salicru's corporate strategy. For years, it has been firmly committed to renewable energy and the most advanced technology applied to energy efficiency through its SLC Greenergy Solutions line, which includes stabilisers-step-down light dimmers and solar inverters.

The former have become the equipment of choice for street lighting projects as they make it possible to achieve savings of up to 40% on electricity bills. More than two decades ago, Salicru pioneered a new way of accurately regulating street lamps with its range of stabilisers-step-down light dimmers, which make it possible to achieve significant energy and maintenance savings.

In Spain, 15,000 have been installed with total potential annual energy savings of 558,000 MWh, reductions in CO₂ emissions of over 130,000 tons and cost savings of more than 50 million euros.



Salicru's solar inverters, which are designed for domestic and commercial installation, convert direct current from solar modules into the alternating current required for connection to the low-voltage electricity distribution system. Their main competitive advantage is that they make it possible to achieve increases of up to 10% in production.

Their innovative technology, backed up by Salicru's extensive experience in the power electronics market, ensures high performance in low and high-power solar photovoltaic facilities, both indoors and outdoors. A wide range of communication capabilities are also offered: all of the units feature an LCD and/or graphic display screen to facilitate viewing of a facility's data and local or remote communication devices.



Since then, it has installed more than 27,000 devices in countries like Spain, China, France, Poland, Tunisia and Morocco.

ENERGY EFFICIENCY AND RENEWABLES

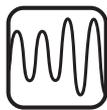
Commitment to eco-efficiency and renewable energy as a corporate value



Disturbances



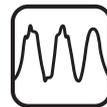
Sags & undervoltages



Surges & overvoltages



Spikes



Noise waveform distortions



References

- Abu Dhabi (UAE)
- Barcelona (Spain)
- Beijing (China)
- Bydgoszcz (Poland)
- Cartago (Tunisia)
- Casablanca (Morocco)
- Gdansk (Poland)
- Guangzhou (China)
- Lyon (France)
- Madrid (Spain)
- Málaga (Spain)
- Rabat (Morocco)
- Reims (France)
- Rennes (France)
- Tunis (Tunisia)
- Shanghai (China)
- Valencia (Spain)

Solutions

ILUEST+ CR

Lighting flow dimmer-stabilisers from 7.5 to 45kVA



- Stabilisation better than $\pm 1\%$ + saving voltage periods = savings > 40%.
- Continuous regulation of the output voltage, no voltage steps; higher lamp lifetime.
- Lineal and programming ramps.
- High response time.
- RS-232 port + MODBUS protocol, as standard.

ILUEST+ MT

Lighting dimmer-flow stabilisers from 3.5 to 120 kVA



- Electronic lighting flow adjustment by static elements and next generation microprocessor control.
- Entirely independent adjustment per phase.
- Automatic bypass per phase, independent operation, manually operation and active by default.
- Protection with automatic programming rearm due to overload and overtemperature.

ILUCOM

Remote management for street lighting



Salicru's **ILUCOM** street lighting management system, which operates in conjunction with the company's **ILUEST+** range of lighting flow dimmer-stabilisers, enables powerful and effective, local or remote, management of any type of control cabinet from any mobile device connected to the Internet, without the need for any major infrastructure and deployment.

SICRES

Telemangement to ILUEST



By incorporating the **SICRES** network card, Salicru offers a telemaintenance service through an Internet connection, which enables the state of the complete fleet of equipment (including cartography) to be known at all times and failures in the equipment and/or the control centres to be anticipated.

EQUINOX

Photovoltaic inverters 2.8 kW - 4 kW - 5 kW - 10 kW



- PWM technology with transformerless electronic insulation.
- Maximum Power Point Tracker system (MPPT).
- High conversion efficiency > 97%.
- Power factor > 0.99.
- Plug & Play connect.
- Multi-string connection choice: 1 to 3 MPPT.
- Indoor and outdoor versions.
- GFCI (Ground Fault Circuit Interruptor) so as to avail grounding leak advanced control.



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SPS HOME

Off-line UPS 400 VA & 600 VA

SPS HOME: Full protection for office and domestic units

The numerous types of electrical disturbances (e.g. mains failures, power cuts, blackouts, over-voltages,...) arising from the various causes (e.g. storms, lightning, excessive demand, natural disasters, accidents etc...) present problems to all electricity users, and a constant challenge to all computer users who depend on a correct and stable power supply to be able to work safely and efficiently. Electrical problems are responsible for the largest number of faults in computer systems, far more even than those caused by computer viruses. The best solution is therefore to seek protection with an Uninterruptible Power Supply.

The Salicru **SPS HOME** series Uninterruptible Power Supply, with Off-line technology, come in power ratings of 400 VA and 600 VA and are the best possible protection for both domestic and professional single-post computer environments.

Each UPS provides 6 output sockets with sufficient capacity for the central unit and all of the associated peripherals. In order to achieve greater total protection, telephone/ADSL protection is provided, preventing the entry of overvoltages and/or electrical noise through the telephone line. Completing the overall protection, the UPS units come complete with monitoring and file closing software to facilitate orderly shutdowns in the event of extended power cuts.

Performance

- Off-line technology.
- Multiple base design with 6 schuko sockets.
- 4 sockets with UPS protection; all sockets with overvoltage protection.
- On/Off multifunction pushbutton.
- Self-detection of 50 or 60 Hz frequency.
- LEDs indicating mains, battery mode and battery failure.
- USB port for monitoring and file closing software.
- Telephone / ADSL line protection by RJ-45 port.
- Batteries user replaceable.
- Cold Start function.
- Enabling self test at startup.
- Anchoring for wall fixture.
- Automatic restart after each power cut and at the end of autonomy.
- Economic guarantee for connected units up to 70,000 €. ⁽¹⁾

(1) Only European Union countries.



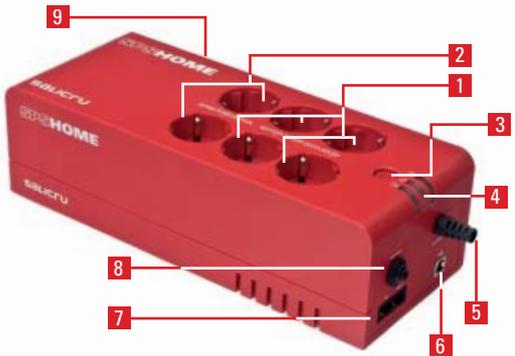
SPS HOME



Applications: Versatile protection for single-post environments

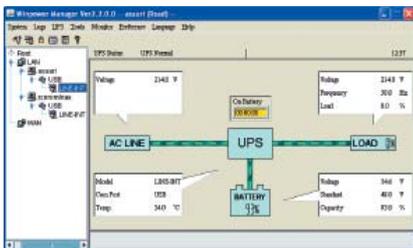
Designed in multiple base format, the **SPS HOME** series UPS have 6 schuko bases duly turned to enable trafo connections and with child protection by obturators, with a capacity in computer systems to protect both the PC and all of its associated peripherals (screen, printer, external hard disk, router, ...)

Description



1. 4 x UPS sockets.
2. 2 x overvoltage protection sockets.
3. On / Off multifunction pushbutton.
4. LED indicators.
5. AC input.
6. USB port.
7. RJ-45 telephone / ADSL protection.
8. Protection breaker.
9. Anchoring for wall fixture.

Software WinPower



- UPS monitoring and management software for closing files/applications.
- Supports Windows, Linux, Unix and Mac.



Complete solution

- **SPS HOME** series UPS.
- UPS / PC USB connection wire.
- Quick start guide.
- Warranty certificate.
- Economic guarantee.

Salicru warranty

- On-line registry at www.salicru.com.
- 2-year warranty.
- Batteries covered by the warranty.



TECHNICAL SPECIFICATIONS

MODEL	SPS HOME	
TECHNOLOGY	Off-line	
INPUT	Nominal voltage	230 V
	Voltage range	Up to 170V – 265V
	Nominal frequency	50 or 60 Hz
	Frequency range	±10%
	Frequency self-detection	Yes
OUTPUT	Voltage	230 V
	Voltage precision ⁽¹⁾	±10%
	Frequency ⁽¹⁾	50 or 60 Hz
	Frequency precision ⁽¹⁾	±1%
	Wave form ⁽¹⁾	Simulated sinewave
	Socket type	Schuko
	No. sockets with autonomy + protection	4
	No. sockets with protection	2
	Transfer time	2/6 ms
PROTECTION	Input	Breaker, user-resettable
	Overload	AC mode and battery mode
	Short-circuit	Immediate interruption
	Protection against peaks	480 joules, 2 ms
	Data line	Tel / Fax, modem, ADSL internet + Ethernet 10/100 Mb
BATTERY	Type	Sealed, lead-calcium, free-maintenance, useful life 3-5 years
	Recharging time	8 hours
	Autonomy	Up to 20 minutes
	Replacement	By the user
	Protection	Against deep discharge Fuse against short-circuit
FUNCTIONS	Cold start	Yes
	Autotest	At each starter
	Automatic restart	Yes
INDICATIONS	Mains present	Green LED
	Battery mode	Yellow LED
	Battery failure	Red LED
ALARMS	Battery mode output	Audible alarm every 5 seconds
	Low battery (end of autonomy)	Audible alarm every second
	Inverter failure	Permanent alarm
COMMUNICATION	Port	USB
	Software	Monitoring and management for the Windows, Linux, Unix and Mac
GENERALS	Maximum altitude	3,500 m.a.s.l.
	Relative humidity	Up to 95% without condensing
	Temperature	0°C ÷ +40°C
	Acoustic noise @ 1 metre	<40 dB
STANDARDS	Safety	EN-62040-1-1; EN-60950-1
	Electromagnetic compatibility (EMC)	EN-62040-2
	Quality and Environmental Management	ISO 9001 and ISO 14001

(1) Battery mode.

Data liable to changes without prior notice.

RANGE

MODEL	UPS POWER (VA / W)	TOTAL POWER (VA / W)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)
SPS.400.HOME	400 / 200	1,150 / 1,150	295 x 120 x 85	3.2
SPS.600.HOME	600 / 300	1,150 / 1,150	295 x 120 x 85	3.5



SPS SOHO+ Line-interactive UPS 400 VA - 2,000 VA

SPS.SOHO+: Full electric protection in office computer environments

Salicru's **SPS SOHO+** series is a Line-interactive UPS that incorporates an automatic voltage regulator (AVR), which attenuates all possible fluctuations in the input voltage and at the same time causes smaller use of the batteries, extending their life and assuring maximum autonomy if necessary.

For better integration in the office computer environment, the **SPS SOHO+** series equipment has a full, rear-lit LCD display that gives all information of the operating state of the units. It also has complete monitoring and management software through the USB communication port, which enables continuous control of the system status and allows controlled computer shutdown in the event of a long blackout when the system is left unattended.

Other outstanding functions include the Cold Start, which allows the system to be started in the absence of mains power; automatic self test performed on the unit every time it is started, and the incorporation of schuko type socket to allow any kind of load to be connected.

Performances

- Line-interactive UPS.
- Automatic voltage regulation AVR.
- LCD display with information on all parameters.
- UPS/PC communication via USB port.
- Monitoring software for Windows, Linux, Unix and Mac.
- Cold Start function to allow start-up without mains.
- Automatic restart when mains returns.
- Resettable input heat protection.
- Schuko type sockets.
- Data/modem line protection.
- Hot Swap function for changing batteries without shutting down.
- Automatic frequency detector 50/60 Hz.
- Self test on unit start-up.
- Protected against overloading, transient and short circuits.
- SLC Greenergy solution.



SPS SOHO+



Applications: Tranquillity and confidence in the power supply

The range of powers available covers 400, 600, 800, 1,000, 1,400 and 2,000 VA, with protection from single post stations to small computer networks comprising a server plus several associated posts, the network electronics and the necessary peripherals.

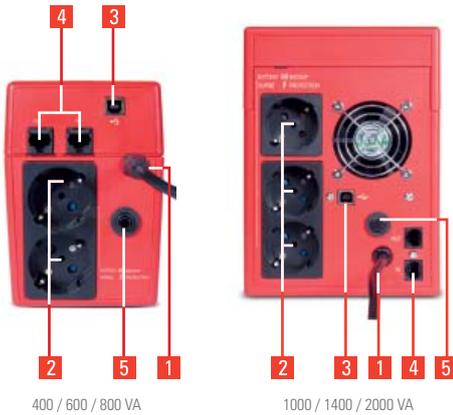
The information stored in the computer systems is the most important value for any company's operation. If it is lost or damaged, it can cause serious harm so optimal protection is essential.

SPS SOHO+



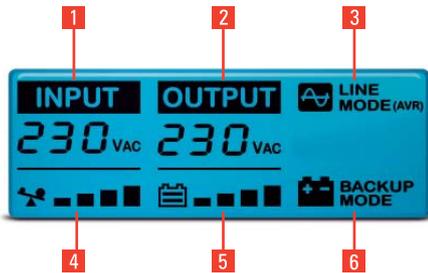
Line-interactive UPS 400 VA - 2,000 VA

Description



1. AC input.
2. Output sockets.
3. USB communication port.
4. Data / ADSL line protection.
5. Thermal input protection.

Display



1. Input voltage.
2. Output voltage.
3. Line mode (AVR stabilisation).
4. Load level.
5. Battery capacity.
6. Autonomy mode.

Control Software

UPS monitoring and management software enabling a controlled computer shutdown in the event of prolonged blackout. Valid for Windows, Unix, Linux and Mac.



TECHNICAL SPECIFICATIONS

MODEL		SPS 400 / 600 / 800 SOHO+	SPS 1000 / 1400 / 2000 SOHO+
TECHNOLOGY		Line - interactive	
INPUT	Nominal voltage	220 V, 230 V, 240 V	
	Voltage range	Up to 162 V ÷ 290 V	
	Nominal frequency	50/60 Hz	
	Frequency auto-sensing	Yes	
	Stabilisation	Buck/Boost	
OUTPUT	Voltage	230 V	
	Voltage accuracy ⁽¹⁾	±10%	± 5% for load < 50% ⁽²⁾
	Frequency ⁽¹⁾	50/60 Hz	
	Frequency accuracy ⁽¹⁾	±1 Hz	
	Wave form ⁽¹⁾	Simulated sinewave	
	Outlet type	Schuko	
	Outlet quantity	2	3
	Transfer time	2 / 6 ms.	
PROTECTION	Input	Rearm thermal	
	Overload	AC and battery modes	
	Short-circuit	Immediate shutdown	
	Data line (RJ-45)	Tel/fax, modem, ADSL internet + Ethernet network 10/100 Mb	
BATTERY	Type	Sealed lead acid, AGM and free maintenance	
	Recharge time	6 - 10 hours up to 90%	
	Autonomy ⁽³⁾	Up to 20 minutes	Up to 40 minutes
	Replacement	By user	
	Protection	Against deep discharge against short-circuit through fuses	
FUNCTIONS	Cold Start	Yes	
	Automatic restart	Yes, after end of autonomy	
INDICATORS	LCD multifunction	Yes	
	Displayed values	Input voltage / output voltage	
	Levels	Connected load / overload / battery capacity	
	Operating modes	Normal / Battery / AVR (stabiliser)	
	ALARMS	Battery mode output	Beep every 10 seconds
Low battery (end of autonomy)		Beep every second	
Battery replacement		Beep every 2 seconds	
Fault		Beep continuously	
Overload		Beep every 0.5 seconds	
COMMUNICA-TION	Port	USB	
	Software	Monitoring and management for Windows, Unix, Linux and Mac	
GENERALS	Maximum altitude	2400 m.a.s.l.	
	Relative humidity	Up to 95%, non-condensing	
	Temperature	0° C ÷ +40° C	
	Acoustic noise at 1 metre	<40 dB	<45 dB
STANDARDS	Safety	EN-62040-1-1; EN-60950-1	
	Electromagnetic Compatibility (EMC)	EN-62040-2	
	Operating	EN-62040-3	
	Quality and Environmental management	ISO 9001 and ISO 14001	

(1) Battery mode
(2) ± 10% for SPS.1000.SOHO+
(3) PC + LCD 15"

Data may change without previous notice.

RANGE

MODEL	POWER (VA / W)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)
SPS.400.SOHO+	400 / 240	330 x 100 x 140	5
SPS.600.SOHO+	600 / 360	330 x 100 x 140	6
SPS.800.SOHO+	800 / 480	330 x 100 x 140	6.5
SPS.1000.SOHO+	1,000 / 600	405 x 145 x 205	9
SPS.1400.SOHO+	1,400 / 840	405 x 145 x 205	9.5
SPS.2000.SOHO+	2,000 / 1,200	405 x 145 x 205	10



SPS ADVANCE RT Sine-wave Line-interactive UPS 750 VA – 3,000 VA

SPS ADVANCE RT: Advanced protection for networks and IT servers

With sine-wave output Line-interactive technology, Salicru's **SPS ADVANCE RT** series is a UPS which provides the best possible performance on the market and comes in formats including the convertible tower/rack format (2U) with directable LCD display to be integrated in any professional computer environment, with an output power factor of 0.9 which, along with sine-wave output form waveform, makes it compatible with all current active PFC IT servers.

Furthermore, the possibilities of communication via RS-232 + USB + SNMP along with the different multiplatform management and monitoring softwares enable the series to be adapted to any computer system. Also outstanding are the EPO (Emergency Power Off) systems for emergency shutdowns, configurable and prioritisable output sockets, the Green-mode function for power saving and the extended autonomy options for applications requiring longer back-up periods.

The powers available are: 750 VA, 1,000 VA, 1,500 VA, 2,000 VA and 3,000 VA.

Performances

- Line-interactive UPS with sine-wave output.
- Output power factor = 0.9.
- Permanent stabilisation.
- Directable graphic screen.
- Tower/rack convertible.
- Rack assembly height of 2U.
- Includes pedestal (tower) and ears (rack).
- Selectable and prioritisable load control.⁽¹⁾
- Green-mode function.
- Series communication (RS-232) and USB interfaces.
- Monitoring software for Windows, Unix, Linux and Mac.
- Smart slot for SNMP/relays.⁽¹⁾
- Data/modem line protection.
- Extended autonomy available.⁽¹⁾
- Automatic frequency detector.
- EPO – Emergency Power Off.⁽¹⁾
- Cold Start function for starting from batteries.
- Self test on every start-up and/or manual.
- Battery replacement warning system.
- SLC Greenergy solution.

⁽¹⁾ For models ≥1,500 VA



SPS ADVANCE RT



Applications: Versatility and integration for computer environments

All of the described performances result in a UPS that is reliable, efficient, flexible and manageable, and is the best option for protecting all kinds of servers, including those with an active PFC power supply. Redundant power solutions are also possible by installing two **SPS ADVANCE RT** units along with a Salicru **SPS.16.STS** automatic transfer system.

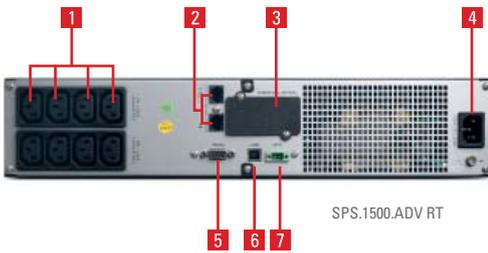
Increased security for all IT applications, such as servers, VoIP telephony, network electronics and associated peripherals.

SPS ADVANCE RT

Sine-wave Line-interactive UPS 750 VA – 3,000 VA

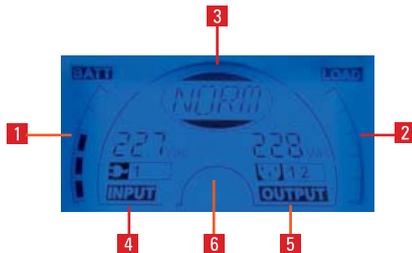


Connections



1. IEC type AC outputs, configurable.
2. Modem/mains active protector.
3. SNMP/relays smart slot.
4. AC input.
5. RS-232 / opto coupler interface.
6. USB port.
7. Emergency Power Off (EPO).

Display



1. Available battery level.
2. Connected load level.
3. UPS status / user adjustments.
4. Voltage / frequency / input bases.
5. Voltage / frequency / output bases.
6. Warning / adjustment indicator.

Output FP = 0,9

Model	Apparent power (VA)	Active power (W)
SPS.750.ADV RT	750	675
SPS.1000.ADV RT	1,000	900
SPS.1500.ADV RT	1,500	1,350
SPS.2000.ADV RT	2,000	1,800
SPS.3000.ADV RT	3,000	2,700

+30% of active power over other UPS with PF=0.7.

Salicru warranty

- Online registry at support.salicru.com.
- 2 year warranty, including batteries.
- Possibility of extending the warranty period.



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TECHNICAL SPECIFICATIONS

MODEL		750 VA	1000 VA	1500 VA	2000 VA	3000 VA	
TECHNOLOGY		Line-interactive with pure sine-wave output					
INPUT	Voltage	220 / 230 / 240 V					
	Voltage range	±20% on Normal mode; -30% +20% on Generator mode ⁽¹⁾					
	Stabiliser	Buck-Boost					
	Frequency range	50 / 60 Hz ±5 Hz on Normal mode; 40-70 Hz on Generator mode ⁽¹⁾					
	Transient absorption capacity	6,5 kA					
OUTPUT	Active power (W)	675	900	1350	1800	2700	
	Power factor	0.9					
	Voltage	220 / 230 / 240 V					
	Voltage accuracy (Bat. mode)	±5% RMS					
	Total Harmonic Distortion (THDv)	<3%					
	Frequency	50 / 60 Hz					
	Frequency accuracy (Bat. mode)	±0.1 Hz					
	Wave form	Pure sine-wave					
	Overload	Line mode	110% shutdown after 3 minutes; 150% shutdown after 200 ms				
		Battery mode	110% shutdown after 30 seconds; 120% shutdown after 100 ms				
	Short-circuits	Yes					
	Output sockets	Type	IEC320 C13			IEC320 C13+ IEC320 C19	
Quantity		4	8		8+1		
Groups		Yes, two groups for priority and non-priority loads ⁽²⁾					
TRANSFER TIME	Inverter-mains	2 ÷ 6 ms					
BATTERY	Type	Sealed lead acid, AGM and free maintenance					
	Typical back up time ⁽³⁾	10 minutes					
	Recharge time at 90%	5 hours		4 hours			
FUNCTIONS	Starting from batteries (Cold Start)	Yes					
	Green-mode	Yes					
INDICATORS		Orientable LCD display					
AUDIBLE ALARMS	Autonomy mode	Beep every 4 seconds					
	Low battery	Beep every second					
	UPS fault	Continuous beep					
	Overload	Beep every second					
	Battery replacement	Continuous beep					
GENERALS	Operating altitude	1500 m.a.s.l.					
	Relative humidity	Up to 95%, non-condensing					
	Operating temperature	0° C ÷ +40° C					
	Acoustic noise @ 1 metre	<40 dB			<45 dB		
INTERFACE	Monitoring software	For Windows, Unix, Linux and Mac					
	RS-232	Yes					
	Opto couplers	No	Yes			Yes	
	USB	Yes					
	SNMP	No	Yes			Yes	
	Emergency Power Off (E.P.O.)	No	Yes			Yes	
	Transient Protection modem/mains	Yes					
STANDARDS	Safety	EN-62040-1-1; EN-60950-1					
	Electromagnetic Compatibility (EMC)	EN-62040-2					
	Operating	EN-62040-3					
	Quality and Environmental management	ISO 9001 and ISO 14001					

(1) Power reduction of 15%

(2) For models ≥1,500 VA

(3) At 75% of load

Data may change without previous notice.

RANGE

MODEL	POWER (VA / W)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)
SPS.750.ADV RT	750 / 675	436 x 438 x 89 (2U)	15
SPS.1000.ADV RT	1,000 / 900	436 x 438 x 89 (2U)	16
SPS.1500.ADV RT	1,500 / 1,350	436 x 438 x 89 (2U)	18.5
SPS.2000.ADV RT	2,000 / 1,800	608 x 438 x 89 (2U)	28
SPS.3000.ADV RT	3,000 / 2,700	608 x 438 x 89 (2U)	29

Dimensions and weights for standar back up



SPS.16.STS Automatic transfer system

SPS.16.STS: Redundancy in power supply sources

The Salicru **SPS.16.STS** is basically an automatic, single phase switch with two input AC lines, which uses two sine-wave power supply sources to provide output voltage to load/s.

The **SPS.16.STS** is factory programmed with mains 1 as priority and mains 2 as reserve. Users can change this using the communication software. Each time the **SPS.16.STS** is started, the system will start up with the criteria established the last time it was programmed.

It is possible to switch from mains 1 to mains 2 or vice versa using the BP2 pushbutton, and this change is recorded in the internal memory. The power supply of the load/s is transferred from one mains to the other if the voltage and/or frequency of the priority source is off-margins.

The LEDs on the control panel report the state of the equipment and operation at all times, and this panel is an easy-to-understand, practical interface for any operator.

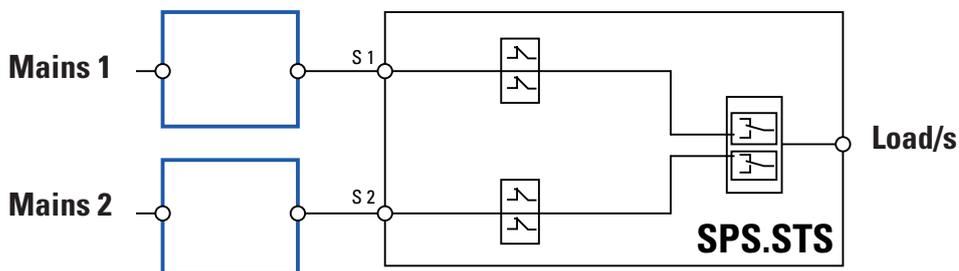
Performances

- Break Before Make.
- Automatic backfeed protection, as per standard EN 62310-1.
- Overloading and short-circuit protection in both mains (using accessible fuses and 10A thermal relays).
- Redundant internal power supply (from mains 1 and 2).
- Alternating current detector (voltage and current detector).
- Output detector (current detector).
- Control panel with LED.
- Auxiliary contact for external RPO.
- IP30 protection index.
- The **SPS.16.STS** can transfer with P/N input wiring error.
- The two system inputs can be different phases of the same three-phase N/R and N/S mains.
- Audible alarm silencer.



SPS.16.STS

Applications: A reliable, cheap and simple solution

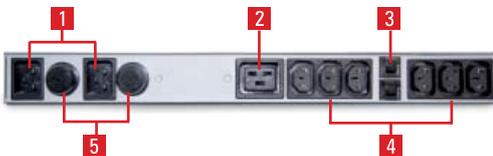


Previous view



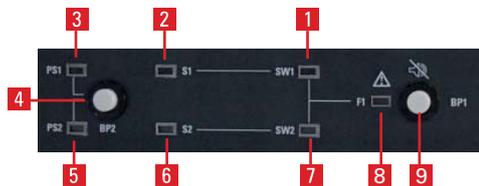
1. LED display.
2. RPO.
3. RS-232.
4. Dry contact interface.

Rear view



1. IEC320-C20 type inputs.
2. IEC320-C19 type outputs.
3. 10A output thermal protection.
4. IEC320-C13 type outputs.
5. Input protection fuses.

Display



1. Load supplied from PS1 priority mains.
2. State of the PS1 mains.
3. PS1 mains selected.
4. PS1 or PS2 mains selector.
5. PS2 mains selected.
6. State of the PS2 mains.
7. Load supplied from PS2 secondary mains.
8. Alarm indication.
9. Alarm silencer.

Services

- Pre-sale and after sale advisory service.
- Telephone technical support.
- Maintenance contracts.
- Training courses.



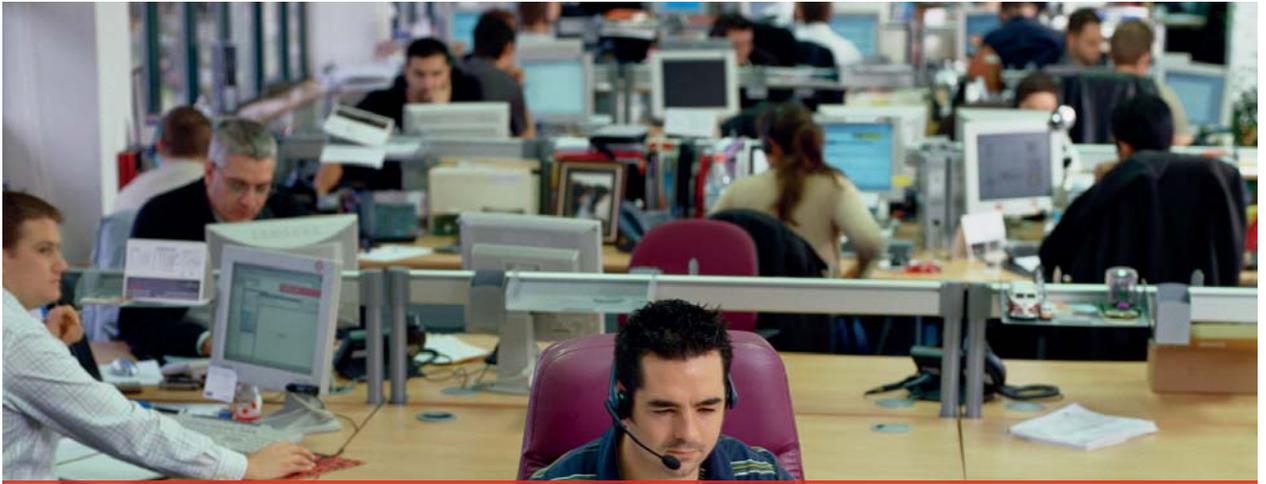
TECHNICAL SPECIFICATIONS

MODEL	SPS.16.STS	
INPUT	Nominal voltage	230 V (220/230/240 V selectable)
	Voltage range	160 ÷ 290 Vac
	Acceptable voltage range	±12% ÷ ±20% (±12% as standard)
	Nominal current	16 A
	Nominal frequency	50/60 Hz (auto selectable)
	Frequency range	±5% ÷ ±15% (±15% as standard)
OUTPUT	Voltage	230 V (220/230/240 V selectable)
	Frequency	50/60 Hz (auto selectable)
	Current	16 A
	Transfer time	<15 ms
	Overload capacity 101% ÷ 125% (20A)	12 s (input relay disconnection)
	Overload capacity 126% ÷ 150% (24A)	8 s (input relay disconnection)
	Overload capacity 151% ÷ 210% (33.6A)	4 s (input relay disconnection)
	Overload capacity 211% ÷ 300% (48A)	2 s (input relay disconnection)
	Short-circuit	Fuse protection
	GENERALS	Operating temperature
Working relative humidity		20% ÷ 85%, non-condensing
Storage temperature		-20° C ÷ 70° C permanent
Storage relative humidity		10% ÷ 90%, non-condensing
Operating altitude		≤1,000 m.s.n.m.
Acoustic noise @ 1 metre		<25 dB
Cooling		Natural
IP protection		IP 30
STANDARDS	Safety	EN-62310-1
	Electromagnetic Compatibility (EMC)	IEC-62310-2
	Quality and Environmental management	ISO 9001 and ISO 14001

Data may change without previous notice.

RANGE

MODEL	CURRENT (A)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)
SPS.16.STS	16	315 x 430 x 44 (1U)	8



SLC TWIN PRO

Double conversion On-line UPS 700 VA - 20 kVA

SLC TWIN PRO: The solution for maximum On-line protection

Covering a wide range of powers from 700 VA to 20 kVA, Salicru's **SLC TWIN PRO** series gives maximum reliability in electrical protection for businesses and industry. With its double conversion On-line technology, the most reliable technology on the market, the **SLC TWIN PRO** series is a single phase output UPS (with single phase input from 700 VA to 20 kVA and three-phase input from 8 kVA to 20 kVA), with an output power factor of 0.9 ⁽¹⁾, broad communication options via interface + monitoring/automatic file closing shutdown software, batteries for standard autonomy integrated in the cabinet itself, option of extending back-up for processes requiring greater available autonomy and options of parallel/redundant operation up to 4 units ⁽¹⁾ for installations growing in qualitative and quantitative demands.

Added performances include the standard static and maintenance bypasses ⁽¹⁾, the low input current distortion (THDi) under 5%, small footprint in both standard and extended autonomies, full information obtained from the LCD/graphic display or the possibility of working in frequency converter mode.

Performances

- Double conversion On-line UPS.
- Output power factor = 0.9 (up to 3 kVA = 0.8).
- Input current Total Harmonic Distortion (THDi) <5%.
- Control panel with LCD display or graphic display and keyboard.
- Tower format.
- Option of parallel up to 4 units. ⁽¹⁾
- Eco-mode operation.
- Series communications (RS-232) ⁽¹⁾ and USB interfaces.
- Monitoring software for Windows, Unix, Linux and Mac.
- Smart slot for SNMP/relays.
- Extended autonomy available.
- Automatic frequency detector.
- Frequency converter function.
- EPO – Emergency Power Off.
- Maintenance bypass. ⁽¹⁾
- Cold Start function for starting from batteries.
- Equipments conversion easy and fast from input three phase to single phase.
- SLC Greenergy solution.

⁽¹⁾ From 4 kVA



SLC TWIN PRO



Aplicaciones: Security and flexibility for single phase systems

The largest information losses from computer and telecommunications systems in more than 45% of cases are caused by disturbances (blackouts, micro cuts, voltage variations, frequency variations,...) in the mains supply. To the information losses we must add the losses caused by the user's inactivity during the recovery time and the expense of restoring damaged equipment and systems.

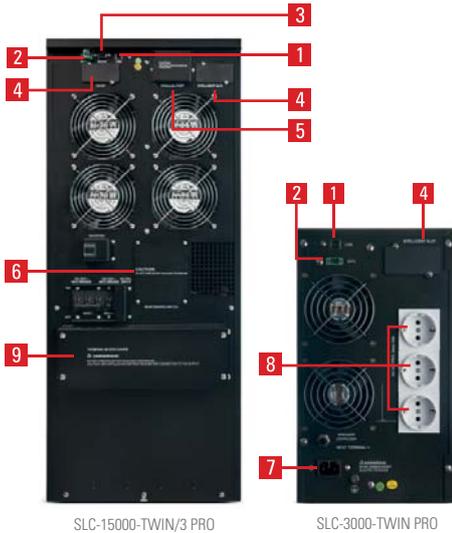
Salicru's **SLC TWIN PRO** series UPS give the best protection for ERP systems, CRM platforms, Business Intelligence (BI), intranets/extranets,...

SLC TWIN PRO



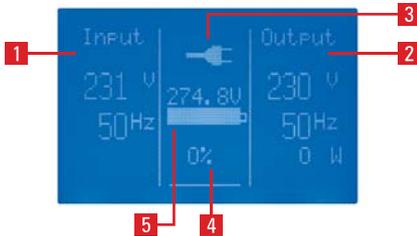
Double conversion On-line UPS 700 VA - 20 kVA

Description



1. USB port.
2. Emergency Power Off (EPO).
3. RS-232 interface.
4. SNMP/AS-400 smart slot.
5. Parallel port.
6. Manual maintenance bypass.
7. AC input.
8. Schuko type AC outputs.
9. AC input/output connection terminals.

Display



1. Input voltage x phase and frequency.
2. Output voltage and frequency.
3. UPS status/user adjustments.
4. Connected load level.
5. Battery status.

Adaptability

- Extended autonomies.
- Single phase/3-phase input.
- Parallel-redundant system >3 kVA.
- Frequency converter.
- Eco-mode operation.

Services

- Pre-sale and after sale advisory service.
- Technical support by phone.
- Preventive/corrective interventions.
- Maintenance contracts.
- Multiple formulae for maintenance and telemaintenance (SICRES).



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TECHNICAL SPECIFICATIONS

MODEL		TWIN PRO 0,7 ÷ 3 kVA	TWIN PRO 4 ÷ 10 kVA	TWIN/3 PRO 8 ÷ 20 kVA ⁽¹⁾	
FORMAT		Tower			
TECHNOLOGY		On-line, double conversion, PFC with double DC bus			
INPUT	Nominal voltage	200 / 208 / 220 / 230 / 240 V ⁽²⁾		3 x 380 / 400 / 415 V	
	Voltage range	110 ÷ 276 V ⁽³⁾		3 x 190÷478+N ⁽³⁾	
	Frequency	50 / 60 Hz			
	Frequency range	±10%			
	Power factor	≥0.99			
	Total Harmonic Distortion (THDi)	<5%			
OUTPUT	Power factor	0.8	0.9		
	Nominal voltage	200 / 208 / 220 / 230 / 240 V ⁽²⁾			
	Voltage accuracy	±2%	±1%		
	Maximum slew rate	1 Hz/s			
	Frequency synchronisation	mains present	±10%		
		free running	±0.2 Hz	±0.1 Hz	±0.05 Hz
	Efficiency	>88%	92%	>93%	
	Total Harmonic Distortion (THDv) ⁽³⁾	≤3% linear load; ≤5% non-linear load (according to EN 62040-3)	≤2% linear load; ≤5% non-linear load (according to EN 62040-3)		
	Admissible overload (normal mode)	Up to 110% during 1 min; 125% during 30 s	Up to 125% during 2 min; 150% during 30 s	Up to 110% during 5 min; 130% during 1 min	
		Crest factor	3 to 1		
BYPASS	Parallel	No	Yes, up to 4 units		
	Nominal voltage	200 / 208 / 220 / 230 / 240 V ⁽²⁾			
Frequency range		50 / 60 Hz ±10 Hz			
MANUAL BYPASS		No	Yes ('make before break' type)		
BATTERY	Type	Sealed lead acid, AGM and free maintenance			
	Protection	Against overvoltages, under voltages and alternating current component			
CHARGER	Charge type	I/U (Constant current/Constant voltage)			
	Recharging time	5 ÷ 8 hours at 90%			
	Temperature compensation	Yes			
COMMUNICATION	Ports	USB	RS-232, USB and relays	RS-232 and USB	
	Monitoring software	For Windows, Unix, Linux and Mac.			
FUNCTION MODES	Eco-mode	Yes, until 98% efficiency			
	Frequency converter	Yes ⁽⁴⁾			
	Starting from batteries (Cold Start)	Yes			
GENERALS	Operating temperature	0° C ÷ +45° C			
	Relative humidity	Up to 95%, non-condensing			
	Operating altitude	1000 m.a.s.l. (with de-rating up to 5000 m.a.s.l.)			
	Acoustic noise @ 1 metre	<50 dB ⁽⁵⁾	<55 dB		
STANDARDS	Safety	EN-62040-1; EN-60950-1; EN-60529			
	Electromagnetic compatibility (EMC)	EN-62040-2			
	Operating	VFI according to EN-62040-3			
Quality and environmental		ISO 9001 and ISO 14001			

(1) Possible monophase input to equipment 12/15/20kVA
(2) Power reduction for 200 V and 208 V versions in single-single units and only for 200 V in three-single

(3) With load at 50%

(4) Power reduction of 40% in single-single models
(5) 8kVA & 10kVA < 55dB

Data may change without previous notice.

RANGE

MODEL	POWER (VA / W)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)	INPUT/ OUTPUT
SLC-700-TWIN PRO	700 / 560	400 x 145 x 220	13	I / I
SLC-1000-TWIN PRO	1,000 / 800	400 x 145 x 220	14	I / I
SLC-1500-TWIN PRO	1,500 / 1,200	460 x 192 x 347	30	I / I
SLC-2000-TWIN PRO	2,000 / 1,600	460 x 192 x 347	31	I / I
SLC-3000-TWIN PRO	3,000 / 2,400	460 x 192 x 347	32	I / I
SLC-4000-TWIN PRO	4,000 / 3,600	560 x 260 x 708	84	I / I
SLC-5000-TWIN PRO	5,000 / 4,500	560 x 260 x 708	85	I / I
SLC-6000-TWIN PRO	6,000 / 5,400	560 x 260 x 708	86	I / I
SLC-8000-TWIN PRO	8,000 / 7,200	560 x 260 x 708	92	I / I
SLC-8000-TWIN/3 PRO	8,000 / 7,200	560 x 260 x 708	92	III / I
SLC-10000-TWIN PRO	10,000 / 9,000	560 x 260 x 708	93	I / I
SLC-10000-TWIN/3 PRO	10,000 / 9,000	560 x 260 x 708	93	III / I
SLC-12000-TWIN/3 PRO	12,000 / 10,800	650 x 350 x 890	181	III / I - I / I
SLC-15000-TWIN/3 PRO	15,000 / 13,500	650 x 350 x 890	182	III / I - I / I
SLC-20000-TWIN/3 PRO	20,000 / 18,000	650 x 350 x 890	183	III / I - I / I

Dimensions and weights for equipments with standard back up with input voltage 230 V or 3x400 V, output voltage of 230 V.



SLC TWIN RT Rack/tower On-line UPS 700 VA a 10,000 VA

SLC TWIN RT: Continuous protection for critical systems

Salicru's **SLC TWIN RT** series is a double conversion On-line UPS with an output power factor of 0.9, which can be turned into tower or rack format and can be set up in parallel ⁽¹⁾. The powers range is from 700 VA to 10 kVA. The rack format is highly compact (with batteries included) and comprises 2U of up to 3 kVA, 3U of 4 to 6 kVA and just 5U for powers of 8 and 10 kVA.

It comes with extensive communications options by graphic display, which can be positioned for the tower or rack formats, and incorporates USB and RS-232 ports, as well as smart slot for SNMP/relays communication. For applications with broader back-up requirements, there is the option of additional battery modules.

Above 4 kVA they include a rear plug-in module for electrical connections and a maintenance bypass to enable work to be done without having to disconnect the loads.

Performances

- Double conversion On-line UPS.
- Output power factor = 0.9.
- Input current Total Harmonic Distortion (THDi) <5%.
- Directable LCD display.
- Convertible between tower and rack.
- Up to 2 units in parallel. ⁽¹⁾
- Includes pedestal (tower) ⁽²⁾ and ears (rack).
- Selectable and priority loads control. ⁽²⁾
- Eco-mode operation.
- Serial communication interfaces (RS-232) and USB.
- Monitoring software for Windows, Unix, Linux and Mac.
- Smart slot for SNMP/relays.
- Data/modem line protection. ⁽³⁾
- Extended back-up available.
- Automatic frequency detector.
- Frequency converter function.
- EPO – Emergency Power Off.
- Cold Start function for starting from batteries.
- Self test on every start up and/or manual.
- SLC Greenergy solution.



SLC TWIN RT

(1) From 4 kVA
 (2) Except 10 kVA
 (3) Up to 3 kVA (included)

Applications: Security and flexibility for single phase applications

The optimal solution for applications requiring the highest possible protection against all kinds of electrical disturbances (blackouts, micro cuts, voltage and/or frequency variations, electric noise,...) in a compact unit with all necessary performances.

Secure power supply for all kinds of IT applications, such as voice and data networks, CAD/CAM, documentary management, unified communications (UC) or video streaming.



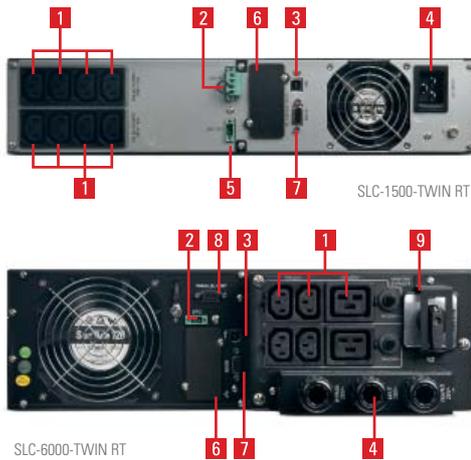
(*) Units ≥ 4 kVA: 1 year warranty

SLC TWIN RT



Rack/tower On-line UPS 700 VA - 10,000 VA

Connections



1. IEC type AC outputs.
2. Emergency Power Off (EPO)/Digital input.
3. USB port.
4. AC input.
5. Dry contacts.
6. SNMP/relays smart slot.
7. RS-232 interface.
8. Parallel port.
9. Maintenance bypass.

Higher output power

Model	Apparent power (VA)	Active power (W)
SLC-700-TWIN RT	700	630
SLC-1000-TWIN RT	1,000	900
SLC-1500-TWIN RT	1,500	1,350
SLC-2000-TWIN RT	2,000	1,800
SLC-3000-TWIN RT	3,000	2,700
SLC-4000-TWIN RT	4,000	3,600
SLC-5000-TWIN RT	5,000	4,500
SLC-6000-TWIN RT	6,000	5,400
SLC-8000-TWIN RT	8,000	7,200
SLC-10000-TWIN RT	10,000	9,000

Power Factor (PF) = 0.9.
+30% of active power over other UPS with FP = 0.7.
+efficiency (98%) with Eco-mode function.

Communications

- RS-232 interface.
- USB interface.
- SNMP/relays smart slot.
- Monitoring and management software for Windows, Linux, Unix and Mac.
- SNMP/web adapter. ⁽¹⁾
- AS-400 card. ⁽¹⁾
- MODBUS protocol. ⁽¹⁾
- Temperature-humidity sensor. ⁽¹⁾

(1) Optional



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TECHNICAL SPECIFICATIONS

MODEL		SLC TWIN RT 0,7 - 3 kVA	SLC TWIN RT 4 - 10 kVA	
FORMAT		Tower / Rack		
TECHNOLOGY		On-line, double conversion, PFC, double DC bus		
INPUT	Nominal voltage	208 / 220 / 230 / 240 V ⁽¹⁾		
	Voltage range	120 ÷ 276 V ⁽²⁾		
	Frequency	50 / 60 Hz		
	Frequency range	±10%		
	Power factor	≥0.99		
	Total Harmonic Distortion (THDi)	<5%		
OUTPUT	Power factor	0.9		
	Nominal voltage	208 / 220 / 230 / 240 V ⁽¹⁾		
	Voltage accuracy	±1%		
	Maximum slew rate	1 Hz/s		
	Frequency synchronization	mains present	±10%	
		free running	±0.2 Hz	±0.1 Hz
	Efficiency	>89% ⁽³⁾	>93%	
	Total Harmonic Distortion (THDv)	<2% linear load; ≤5% non-linear load (according to EN 62040-3)		
	Admissible overload (normal mode)	Up to 130% during 12 s;	Up to 125% during 2 min;	
		150% during 1.5 s	150% during 30 s	
Crest factor	3 to 1			
Parallel	No	Yes, up to 2 units		
BYPASS	Nominal voltage	208 / 220 / 230 / 240 V ⁽¹⁾		
	Admissible frequency range	50 / 60 Hz ±10 Hz		
	Independent bypass line	No	Yes	
MANUAL BYPASS		No	Yes ('make before break' type)	
BATTERY	Type	Sealed lead acid, AGM and free maintenance		
	Protection	Against overvoltages, under voltages and alternating current component		
CHARGER	Charge type	I/U (Constant power/Constant voltage)		
	Recharging time	3 hours at 90%		
	Compensation voltage for temperature	Yes		
COMMUNICATION	Ports	RS-232 and USB		
	Monitoring software	For Windows, Unix, Linux and Mac.		
	Emergency Power Off (E.P.O.)	Yes		
FUNCTION MODES	Eco-mode	Yes, up to 98% efficiency		
	Starting free running (Cold Start)	Yes		
	Frequency converter	Yes ⁽⁴⁾		
INDICATORS	Directable LCD display			
GENERALS	Operating temperature	0° C ÷ +40° C	0° C ÷ +45° C	
	Relative humidity	Up to 95%, non-condensing		
	Operating altitude	1000 m.a.s.l. (degradation power up to 5000 m.a.s.l.)		
	Acoustic noise @ 1 metre	<45 dB ⁽⁵⁾	<55 dB	
STANDARDS	Safety	EN-62040-1; EN-60950-1; EN-60529		
	Electromagnetic compatibility (EMC)	EN-62040-2		
	Operating	VFI according to EN-62040-3		
	Quality and environmental	ISO 9001 and ISO 14001		

(1) Power reduction at 208 V for units ≥ 4 kVA

(2) With 50% of load
(3) For units of 700 and 1000 VA >87%

(4) Power reduction of 30%
(5) Models > 1500 VA is < 50 dB

Data may change without previous notice.

RANGE

MODEL	POWER (VA / W)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)
SLC-700-TWIN RT	700 / 630	435 x 438 x 89 (2U)	14
SLC-1000-TWIN RT	1,000 / 900	435 x 438 x 89 (2U)	15
SLC-1500-TWIN RT	1,500 / 1,350	435 x 438 x 89 (2U)	19
SLC-2000-TWIN RT	2,000 / 1,800	435 x 438 x 89 (2U)	20
SLC-3000-TWIN RT	3,000 / 2,700	608 x 438 x 89 (2U)	29
SLC-4000-TWIN RT	4,000 / 3,600	630 x 438 x 133 (3U)	45
SLC-5000-TWIN RT	5,000 / 4,500	630 x 438 x 133 (3U)	46
SLC-6000-TWIN RT	6,000 / 5,400	630 x 438 x 133 (3U)	47
SLC-8000-TWIN RT	8,000 / 7,200	640 x 438 x 223 (5U)	82
SLC-10000-TWIN RT	10,000 / 9,000	640 x 438 x 223 (5U)	83

Dimensions and weight for standard back-up models



SLC ADAPT

Modular On-line double conversion UPS 10-900 kVA

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

Salicru's **SLC ADAPT** 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 10 kVA to 900 kVA, thanks to the wide range of modules available (10, 15, 20, 25 and 30 kVA), different configurable systems (3, 6 or 10 modules) and the parallel/redundant option of up to three 300 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). Moreover, both the control display and the bypass module can be replaced without affecting the operation of the device.

Performances

- On-line double conversion technology with modular architecture.
- 10, 15, 20, 25 and 30 kVA modules with DSP control and three-level PWM technology.
- 3, 6 or 10-module systems (up to 300 kVA per system).
- Possibility of parallel/redundant operation up to 900 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 = 0.9.
- Control and management by means of LCD display, LEDs and keypad.
- Efficiency in On-line mode >95%.
- 99% performance in Eco-mode operation.
- RS-232, RS-485, relays and USB ⁽²⁾ communication channels.
- Smart slots for extended relays ⁽²⁾ and SNMP.
- Multi-platform management and monitoring software.
- Improved return on investment (ROI).
- Compact design to save space in server rooms.
- SLC Greenergy solution.

⁽¹⁾ Possibility of single-phase input/output up to 20 kVA. And three-phase input and single-phase output up to 40 kVA.
⁽²⁾ Only in systems with 25 and 30 kVA modules.



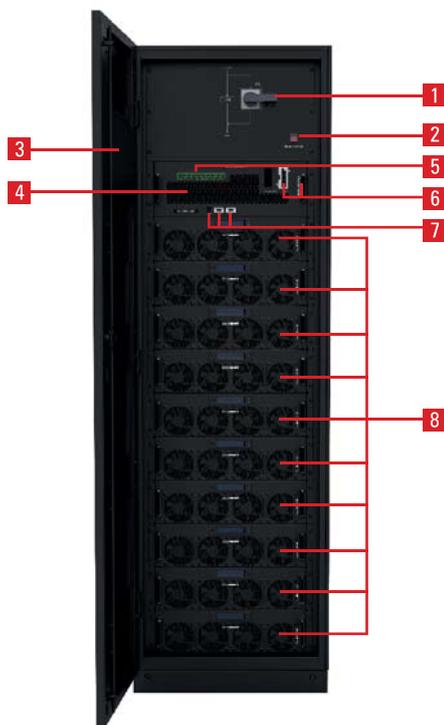
SLC ADAPT

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 ADAPT** series systems.



Modularity



1. Manual bypass.
2. Battery start-up.
3. LCD display.
4. Bypass module.
5. Dry contacts.
6. Extended relays and SNMP slot.
7. RS-232, RS-485 and USB interfaces.
8. Power modules.

Display



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

Options

- Extended relays ⁽¹⁾ and SNMP adapter.
- Extended back-up times.
- Dust filter.
- Kit for parallel systems.
- Frequency converter operation.

(1) Only for 25 and 30 kVA module systems.

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



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SLC ADAPT



Modular On-line double conversion UPS 10-900 kVA

TECHNICAL SPECIFICATIONS

MODEL		SLC ADAPT	
Module power		10 / 15 / 20 kVA	25 / 30 kVA
TECHNOLOGY			
On-line double conversion, three-level PWM, DSP control			
INPUT	Nominal voltage	3 x 380 / 3 x 400 / 3 x 415 V (3Ph + N)	
	Voltage range	-40% +25% ⁽¹⁾	-43% +20% ⁽¹⁾
	Frequency	50 / 60 Hz	
	Total harmonic distortion (THDi)	≤3%	
	Power factor	>0.99	
OUTPUT	Nominal voltage	3 x 380 / 3 x 400 / 3 x 415 V (3Ph + N)	
	Accuracy	±1% (static mode) / ±1.5% (dynamic mode)	
	Frequency	50/60 Hz ±2 Hz ⁽²⁾	50/60 Hz ±3 Hz ⁽²⁾
	Total harmonic distortion (THDv)	≤1.5% for linear loads / ≤5% for non linear loads (EN-IEC 62040-3)	<1% for linear loads <6% for non linear loads (EN-IEC 62040-3)
	Power factor	0.9	
	Crest factor	3:1	
	Total efficiency in On-line mode	>95%	
	Total efficiency in battery mode	>95%	
	Total efficiency in Eco mode	99%	
	Admissible overload	125% for 10 mins / 150% for 1 min	
STATIC BYPASS	Type	Static thyristor	
	Voltage	3 x 380 / 3 x 400 / 3 x 415 V (3FPh + N)	
	Voltage range	±20% (adjustable)	-20% +15% (adjustable)
MANUAL BYPASS	Type	Uninterrupted	
BATTERIES	Type	Lead-acid, sealed, maintenance-free	
	Voltage load regulation	Batt-watch	
	Precision float charger	±1%	
	Charger maximum power	20% of total system power	
COMMUNICATION	Display	Touchscreen, 5.7", LEDs and keypad	Touchscreen, 10.4", LEDs and keypad
	Ports	RS-232, RS-485 and relays	RS-232, RS-485, relays and USB
	Free slots	1 x SNMP	1 x SNMP / 1 x extended relays
GENERAL	Operating temperature	0° C ÷ +40° C	
	Relative humidity	Up to 95%, non-condensing	
	Operating altitude	2,400 masl ⁽³⁾	
	Acoustic noise at 1 metre	<55 dB(A)	<65 dB(A)
SYSTEMS	Maximum no. modules per system	3, 6 or 10	10
	Maximum power per system (kVA)	60, 120, 200	300
	Maximum no. parallel systems	2	3
	Maximum power parallel systems (kVA)	120, 240, 400	900
STANDARDS	Safety	EN-IEC 62040-1	
	Electromagnetic compatibility (EMC)	EN-IEC 62040-2	
	Operation	VFI-SS-111 as per EN-IEC 62040-3	
	Quality and environmental management	ISO 9001 and ISO 14001	

(1) Depending on load percentage.

(2) Selectable range.

(3) 1% derating power every 100 m over 1000 m.

Data may change without previous notice.

RANGE

MODULES	POWER (kVA / kW)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)
SLC ADAPT 10	10 / 9	590 x 440 x 134	20
SLC ADAPT 15	15 / 13.5	590 x 440 x 134	21
SLC ADAPT 20	20 / 18	590 x 440 x 134	22
SLC ADAPT 25	25 / 22.5	790 x 460 x 134	34
SLC ADAPT 30	30 / 27	790 x 460 x 134	34

SYSTEMS	NO. MODULES (#)	MOD. POWER (kVA / kW)	MAX. POWER (kVA / kW)	DIMENSIONS ⁽¹⁾ (D x W x H mm.)	WEIGHT (Kg)
SLC-#/10-ADAPT 30	1 to 3	10 / 9	30 / 27	900 x 600 x 1000	120 ÷ 180
SLC-#/15-ADAPT 45	1 to 3	15 / 13.5	45 / 40.5	900 x 600 x 1000	120 ÷ 183
SLC-#/20-ADAPT 60	1 to 3	20 / 18	60 / 54	900 x 600 x 1000	120 ÷ 186
SLC-#/10-ADAPT 60	1 to 6	10 / 9	60 / 54	900 x 600 x 1600	187 ÷ 270
SLC-#/15-ADAPT 90	1 to 6	15 / 13.5	90 / 81	900 x 600 x 1600	187 ÷ 276
SLC-#/20-ADAPT 120	1 to 6	20 / 18	120 / 108	900 x 600 x 1600	187 ÷ 282
SLC-#/10-ADAPT 100	1 to 10	10 / 9	100 / 90	900 x 600 x 2000	214 ÷ 380
SLC-#/15-ADAPT 150	1 to 10	15 / 13.5	150 / 135	900 x 600 x 2000	214 ÷ 390
SLC-#/20-ADAPT 200	1 to 10	20 / 18	200 / 180	900 x 600 x 2000	214 ÷ 400
SLC-#/25-ADAPT 250	1 to 10	25 / 22.5	250 / 225	1100 x 600 x 2000	200 ÷ 560
SLC-#/30-ADAPT 300	1 to 10	30 / 27	300 / 270	1100 x 600 x 2000	200 ÷ 560

(1) Batteries located in additional cabinets.

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

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SALICRU



SLC CUBE3+ Uninterruptible power supply system from 7.5 to 200 kVA

SLC CUBE3+: Energy efficiency with superior electrical protection

Salicru's **SLC CUBE3+** series is a UPS range featuring high-performance, On-line double conversion (VFI) technology that provides a reliable, high-quality power supply and, at the same time, achieves significant energy and financial savings in terms of installation and operating costs.

Particularly noteworthy is the unit's input power factor (PF=1) and its extremely low distortion rate (THDi even lower than 1%), which help to reduce installation and operating costs, and contribute to improving the quality of the electrical network.

The output power factor (PF=0.9) also stands out, providing optimum electrical protection for computer systems and low harmonic output distortion (THDv even lower than 0.5%), enabling it to protect any type of load (inductive, resistive, capacitive or mixed). In addition, the performance achieved (up to 95% in On-line mode and 98% in Smart Eco-mode) produces significant energy consumption savings and reduces air conditioning needs.

For a full optimum solution, the **SLC CUBE3+** provides maximum adaptability (even with the standard model), the possibility of parallel redundant expansion and extensive communication options. Finally, also worth noting is the unit's lightweight design and reduced dimensions, enabling it to be easily installed and ensuring that footprint is minimal.

Performances

- On-line double conversion (VFI) technology with DSP control.
- Input power factor 1, for better performance.
- Very low input current harmonic distortion (THDi as low as <1%).
- Total flexibility in input/output voltage. ⁽¹⁾
- Designed to withstand any type of load.
- Batt-Watch function for monitoring and battery care.
- High output power factor (PF=0.9). ⁽²⁾
- Very low output voltage distortion rate (THDv even lower than 0.5%).
- On-line mode efficiency of up to 95%.
- Smart Eco-mode efficiency of up to 98%.
- Very compact design with minimal footprint.
- Can be integrated into the most advanced IT environments.
- Parallel redundant configuration (N+1) for critical installations. ⁽³⁾
- Built with 80% recyclable materials.
- Bluetooth application display for Android (up to 10 m).
- SLC Greenergy solution.

(1) Single/single, single/three and three/single configurations up to 60 kVA
 (2) Up to 120 kVA
 (3) Up to 4 units



SLC CUBE3+

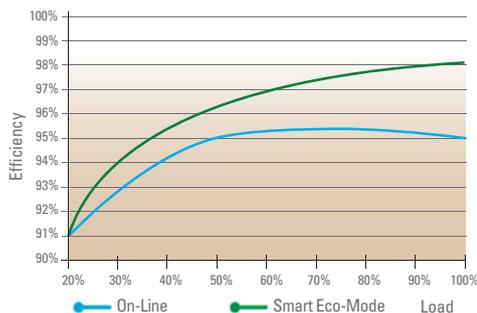


Applications: Designed to protect any type of environment

High-end design features plus great flexibility capacity (options, power upgrading, communications, ...) make **SLC CUBE3+** series the best option to protect and secure a wide range of environments: data-centres, hosting, housing, IT-networks, server farms, voice and data networks,...

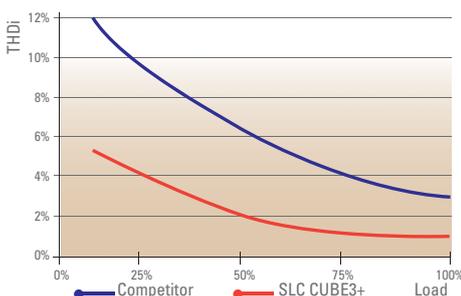
High efficiency

High performance in On-line and Smart Eco-mode operation.



Low harmonic distortion

The lowest harmonic distortion in the market.



Options

- Ethernet/SNMP adapter or GPRS modem.
- SICRES adapter for remote management.
- Android wireless link.
- Monitoring, management and shutdown software.
- 1 x additional RS-232/485 serial port.
- Extended backup times.
- Common battery set for parallel systems.
- BACS II, battery monitoring, regulation and alarms.
- Dual-level charger for NiCd batteries.
- Separate bypass line.
- Single/single, single/three and three/single configurations.⁽¹⁾
- External manual bypass.
- Temperature and humidity sensors.
- External display.
- Frequency converter function.

(1) Up to 60 kVA

Technical support and service

- Pre and post-sales advice.
- Start-up.
- Telephone technical support.
- Preventative/corrective intervention.
- Maintenance contracts.
- SICRES remote maintenance contracts.
- Training courses.



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SLC CUBE3+



Uninterruptible power supply system from 7.5 to 200 kVA

TECHNICAL SPECIFICATIONS

MODEL		SLC CUBE3+	
TECHNOLOGY		On-line, double conversion, HF, DSP control	
INPUT	Nominal voltage ⁽¹⁾	Single-phase 120 / 127 / 220 / 230 / 240 V Three-phase 3 x 208 / 3 x 220 / 3 x 380 / 3 x 400 / 3 x 415 V (3P + N)	
	Voltage margin	+15% / -20% (configurable)	
	Frequency	50 / 60 Hz	
	Total Harmonic Distortion (THDi)	7.5 ÷ 20 kVA	100% load: <1.5% / 50% load: <2.5% / 10% load: <6.0%
		30 ÷ 80 kVA	100% load: <1.0% / 50% load: <2.0% / 10% load: <5.0%
		100 ÷ 200 kVA	100% load: <1.5% / 50% load: <2.0% / 10% load: <6.0%
	Power factor	1 from 10% load	
Rectifier topology	Three-phase IGBT full wave, soft start, PFC, transformerless		
OUTPUT	Nominal voltage ⁽¹⁾	Single-phase 120 / 127 / 220 / 230 / 240 V Three-phase 3 x 208 / 3 x 220 / 3 x 380 / 3 x 400 / 3 x 415 V (3P + N)	
	Accuracy	State	± 1% steady / ± 2% dynamic
		Response time	20 ms for load steps 0% ÷ 100% and voltage drop up to -5%
	Frequency	Synchronised	50/60 Hz ± 5 Hz (selectable)
		Free running	50/60 Hz ± 0.05%
	Maximum synchronisation speed	From 1 Hz/s to 10 Hz/s (programmable)	
	Total Harmonic Distortion (THDv)	Linear load	<0.5%
		Nonlinear load	7.5 ÷ 80 kVA: <1.5% / 100 ÷ 200 kVA: <2% (EN-62040-3)
	Output Power Factor ⁽²⁾	0.9	
	Admissible overload	125% for 10 min / 150% for 60 s	
	Admissible crest factor	>3:1	
Total efficiency in On-line mode	7.5÷60 kVA: 92.0%÷93.0% / 80÷200 kVA: 94.0%÷95.0%		
Efficiency in Smart Eco-mode	Up to 98,4%		
STATIC BYPASS	Type and activation criteria	Solid state, controlled by microprocessor	
	Transfer time	On-line mode	Nil
		Smart Eco-mode	4 ms (typical)
	Transfer to bypass	Immediate, for overloads exceeding 150%	
Retransfer	Automatic, after alarm deactivation		
MANUAL BYPASS	Type	Without interruption	
BATTERIES	Type (standard)	Lead acid, sealed, maintenance free	
	Charge voltage regulation	Batt-Watch	
COMMUNICATION	Ports	1 x RS-232/485, with MODBUS protocol	
	Interface to relays	4 x AC failure, bypass, low battery and general	
	Free slots	1, for SNMP/SICRES	
	Parallel connection	2 x connectors	
GENERAL	Operating temperature	0° C ÷ +40° C	
	Relative humidity	Up to 95%, non-condensing	
	Operating altitude	2,400 masl	
	Acoustic noise at 1 metre	<52 dB(A) ⁽³⁾	
STANDARDS	Safety	EN-62040-1-2; EN-60950-1	
	Electromagnetic Compatibility (EMC)	EN-62040-2	
	Operating	VFI-SS-111 according to EN 62040-3	
	Quality and Environmental Management	ISO 9001 and ISO 14001	

(1) Single-phase 120 / 127 V available up to 30 kVA inclusive and three-phase 3 x 208 / 3 x 220 V available up to 100 kVA inclusive.

(2) Up to 120 kVA inclusive at three/three-phase configurations.

(3) <65 dB(A) for 80 to 120 kVA models / <70 dB(A) for 160 and 200 kVA models.

Information subject to change without notice.

RANGE

MODEL	POWER (kVA / kW)	N° CABINETS (UPS + BAT)	UPS DIMENSIONS (D x W x H mm)	WEIGHT (kg)	BAT DIMENSIONS (D x W x H mm)	WEIGHT (kg)
SLC-7.5-CUBE3+	7.5 / 6.75	1 + 0	775 x 450 x 1100	207	-	-
SLC-10-CUBE3+	10 / 9	1 + 0	775 x 450 x 1100	207	-	-
SLC-15-CUBE3+	15 / 13.5	1 + 0	775 x 450 x 1100	209	-	-
SLC-20-CUBE3+	20 / 18	1 + 0	775 x 450 x 1100	235	-	-
SLC-30-CUBE3+	30 / 27	1 + 0	775 x 450 x 1100	319	-	-
SLC-40-CUBE3+	40 / 36	1 + 0	775 x 450 x 1100	417	-	-
SLC-50-CUBE3+	50 / 45	1 + 1	775 x 450 x 1100	185	775 x 450 x 1100	321
SLC-60-CUBE3+	60 / 54	1 + 1	775 x 450 x 1100	185	775 x 450 x 1100	551
SLC-80-CUBE3+	80 / 72	1 + 1	880 x 590 x 1325	265	1050 x 650 x 1325	1020
SLC-100-CUBE3+	100 / 90	1 + 1	880 x 590 x 1325	290	1050 x 650 x 1325	1020
SLC-120-CUBE3+	120 / 108	1 + 1	880 x 590 x 1325	290	1050 x 650 x 1325	1020
SLC-160-CUBE3+	160 / 128	1 + 1	850 x 900 x 1905	540	850 x 1305 x 1905	1655
SLC-200-CUBE3+	200 / 160	1 + 1	850 x 900 x 1905	550	850 x 1305 x 1905	1690

Nomenclature, dimensions and weights for units with input voltage 3 x 400 V, output voltage 3 x 400 V and standard backup time.

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SALICRU



SLC X-TRA

Uninterruptible Power Supplies from 100 to 800 kVA

SLC X-TRA: High performance protection for major critical applications

The **SLC X-TRA** series is one of the most reliable, high-performance three-phase Uninterruptible Power Supply system (UPS) on the market, and provides protection and quality energy for a wide range of applications. Based on the Voltage and Frequency Independent (VFI) mode of operation, it has been developed using double conversion IGBT technology with DSP control, which gives considerable savings in the costs of operation and installation while it offers maximum protection for the connected loads. This series has been conceived to offer the best guarantees in meeting customers' requirements and needs and has been designed in full respect of the most demanding environmental regulations.

The **SLC X-TRA** series features power range from 100 to 800 kVA in a very compact format for easier installation. Plus, the reliability of the system can be increased with the installation of several redundant units or it can grow in parallel based on the needs of the installation.

Performances

- On-line, double conversion, DSP control.
- Double input connection to increase the availability.
- Input power factor >0.99.
- Total harmonic distortion of input current (THDi) < 3%.
- High energy efficiency between 95% and 96%.
- Zig-zag transformer on the output inverter.
- Parallel for redundancy or increase the power capacity.
- Compatible with generating sets.
- Selectable operation inverter/Smart Eco-mode.
- Efficiency in Smart Eco-mode >98%.
- Prepared to bear loads with FP =0.9.
- Batt-Watch battery monitoring and care.
- Calculates available back-up time in a long-term failure.
- Compact format to save on installation space.
- Easy installation, operation and maintenance.
- A wide range of control and monitoring options.
- Large variety of options available.
- SLC Greenergy solution.

SLC X-TRA 100 kVA



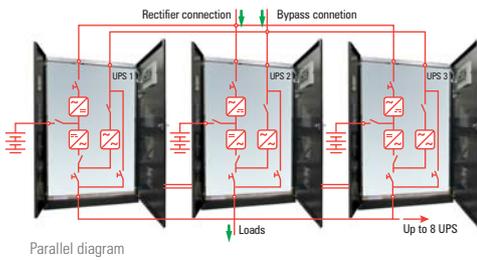
SLC X-TRA 600 kVA



Applications: Guaranteed energy for all environments

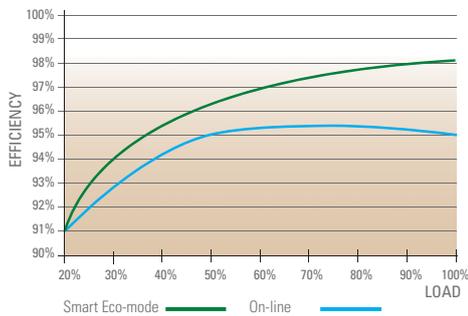
- Data centres:** Ensures the functionality of environments and prevents losses caused by mains failures.
- IT-Networks:** Prevent costs due to service interruptions or loss of information.
- Financial services:** Maintains online operability of financial transactions and operations.
- Industrial processes:** Protects productivity in electrically complicated environments.
- Telecommunications:** Prevents supply failures that can suspend communication between subscribers.
- Infrastructures:** Safeguards the instruments/equipment and ensures the proper management of the systems.

Parallel growth



The parallel UPS can be configured to achieve redundancy or increase the power capacity of the system. Parallel control is fully digital and works for active as well as reactive power in each phase, achieving an exact load distribution between the UPS units in transitory conditions.

High energy efficiency



High performance both On-line mode (between 95% and 96%) and Smart Eco-mode (>98%), reducing operating costs, implementation costs (no need to oversize the wiring), air conditioning costs (without increasing cooling requirements) and working costs (saving energy consumed).

Adaptability

- Parallel/redundant kit.
- Extended autonomies.
- BACS II.
- MODBUS protocol + RS-485 interface.
- SICRES platform for remote telemanagement.
- Ethernet / SNMP adapter or GPRS modem.
- Monitoring, management and shutdown software.
- Common input connection.
- Top cable input.
- External manual bypass.
- Auto-transformers to adapt the voltage.

Total availability

- Advisory service before and after the sale.
- Start up.
- Telephone technical support.
- Preventive / corrective interventions.
- Maintenance contracts.
- Telemaintenance contracts SICRES.
- Training courses.



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SLC X-TRA



Uninterruptible Power Supplies from 100 to 800 kVA

TECHNICAL SPECIFICATIONS

MODEL	SLC X-TRA		
TECHNOLOGY	On-line, double conversion, DSP control		
INPUT	Nominal voltage	Three-phase 3 x 380 V / 3 x 400 V / 3 x 415 V	
	Voltage margin	+15% / -20% (@ 3 x 400 V)	
	Frequency	50/60 Hz (45-65 Hz)	
	Total Harmonic Distortion (THDi)	<3%	
	Power factor	>0.99	
OUTPUT	Nominal voltage	Three-phase 3 x 380 V / 3 x 400 V / 3 x 415 V (3Ph+N)	
	Precision	±1% Steady state; ±5% Dynamic state (100% unbalanced) <20 ms recovery time	
	Frequency	50/60 Hz	
	Total Harmonic Distortion (THDv)	Linear load	<1%
		Non-linear load	<5%
	Efficiency	On-line	95% ÷ 96%
		Smart Eco-mode	>98%
Admissible overload	125% for 10 min. / 150% for 1 min.		
STATIC BYPASS	Type and activation criteria	Solid state, control by microprocessor	
	Input	Independent	
	Voltage	Three-phase 3 x 380 / 3 x 400 / 3 x 415 V (3Ph + N)	
	Frequency	50/60 Hz	
	Transfer time	Nil	
	Transfer to bypass	Immediate for overloads of over 150%	
	Retransfer	Automatic after alarm disappearance	
	Admissible overload	1000% for 1 cycle	
MANUAL BYPASS	Type	Without interruption	
	100 – 300 kVA	As standard	
RECTIFIER	Structure	Three-phase IGBT complete wave, soft start and PFC	
	Protection	Against transitory overvoltages	
BATTERIES	Type ⁽¹⁾	Lead acid, sealed, maintenance free	
	Protection	Against overvoltages and undervoltages	
	Charging time	4 hours, @ 80% of capacity	
	Charge voltage regulation	Batt-Watch	
	Test	Manual + Automatic	
COMMUNICATION	Ports	RS-232, USB, Emergency Power Off (EPO), Port for monitoring battery switch	
	Display	LCD + LED block diagram	
GENERALS	Operating temperature	0° C ÷ +40° C	
	Relative humidity	Up to 95%, non-condensing	
	Operating altitude	<1.000 m.a.s.l.	
	Acoustic noise @ 1 metre	<60 dB	
STANDARDS	Safety	EN-62040-1-2; EN-60950-1	
	Electromagnetic Compatibility (EMC)	EN-62040-2	
	Operating	VFI-SS-111 according to EN-62040-3	
	Quality and Environmental Management	ISO 9001 and ISO 14001	

(1) Ni-Cd under request.

Data may change without previous notice.

RANGE

MODEL	POWER (kVA / kW)	N° CABINETS (UPS + BAT)	UPS DIMENSIONS (D x W x H mm)	WEIGHT (kg)	BAT. DIMENSIONS (D x W x H mm)	WEIGHT (kg)
SLC-100-XTRA	100 / 90	1 + 1	865 x 815 x 1705	630	850 x 1300 x 1900	875
SLC-125-XTRA	125 / 112,5	1 + 1	865 x 815 x 1705	662	850 x 1300 x 1900	1370
SLC-160-XTRA	160 / 144	1 + 1	865 x 815 x 1705	720	850 x 1300 x 1900	1370
SLC-200-XTRA	200 / 180	1 + 1	895 x 1220 x 1905	870	850 x 1300 x 1900	1550
SLC-250-XTRA	250 / 225	1 + 1	895 x 1220 x 1905	1020	850 x 1300 x 1900	1800
SLC-300-XTRA	300 / 270	1 + 2	895 x 1220 x 1905	1200	850 x 1300 x 1900	1370
SLC-400-XTRA	400 / 360	1 + 2	990 x 1990 x 1920	1820	850 x 1300 x 1900	1800
SLC-500-XTRA	500 / 450	1 + 2	990 x 2440 x 2020	2220	850 x 1300 x 1900	1800
SLC-600-XTRA	600 / 540	1 + 2	990 x 2440 x 2020	2400	850 x 1300 x 1900	2125
SLC-800-XTRA	800 / 720	1 + 3	990 x 3640 x 1920	3600	850 x 1300 x 1900	1925

Nomenclature, dimensions and weights for units with input voltage 3 x 400 V, output voltage 3 x 400 V and standard backup time.

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SALICRU



CF CUBE3+ Frequency converter from 7.5 to 200 kVA

CF CUBE3+: Energy efficiency with superior electrical protection

Salicru's **CF CUBE3+** series is a Frequency Converters range featuring high-performance, On-line double conversion (VFI) technology that provides a reliable, high-quality power supply and, at the same time, achieves significant energy and financial savings in terms of installation and operating costs.

Particularly noteworthy is the unit's input power factor (PF=1) and its extremely low distortion rate (THDi even lower than 1%), which help to reduce installation and operating costs, and contribute to improving the quality of the electrical network.

The output power factor (PF=0.9) also stands out, providing optimum electrical protection for computer systems and low harmonic output distortion (THDv even lower than 0.5%), enabling it to protect any type of load (inductive, resistive, capacitive or mixed). In addition, the performance achieved (up to 95%) produces significant energy consumption savings and reduces air conditioning needs.

For a full optimum solution, the **CF CUBE3+** provides maximum adaptability with extensive communication options. Finally, also worth noting is the unit's lightweight design and reduced dimensions, enabling it to be easily installed and ensuring that footprint is minimal.

Performances

- On-line double conversion (VFI) technology with DSP control.
- Input power factor 1, for better performance.
- Very low input current harmonic distortion (THDi as low as <1%).
- Total flexibility in input/output voltage. ⁽¹⁾
- Designed to withstand any type of load.
- Batt-Watch function for monitoring and battery care if required.
- High output power factor (PF=0.9). ⁽²⁾
- Very low output voltage distortion rate (THDv even lower than 0.5%).
- Efficiency of up to 95%.
- Very compact design with minimal footprint.
- Can be integrated into the most advanced IT environments
- Built with 80% recyclable materials.
- Bluetooth application display for Android (up to 17 m).
- SLC Greenergy solution.

(1) Single/single, single/three and three/single configurations up to 60 kVA

(2) Up to 120 kVA



CF CUBE3+

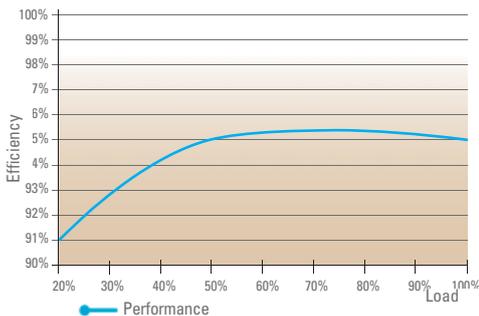


Applications: Designed to protect any type of environment

High-end design features plus great flexibility capacity (options, communications, ...) make **CF CUBE3+** series the best option to protect and secure a wide range of environments: data-centres, hosting, housing, IT-networks, server farms, voice and data networks, ...

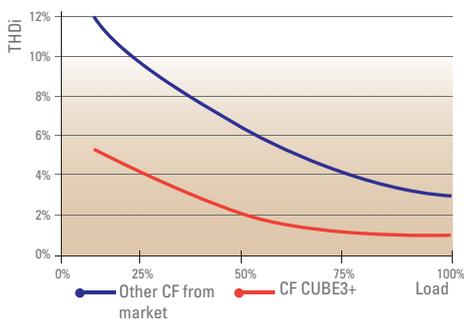
High efficiency

High performance



Low harmonic distortion

The lowest harmonic distortion in the market.



Options

- Ethernet/SNMP adapter or GPRS modem.
- SICRES adapter for remote management.
- Android wireless link.
- Monitoring, management and shutdown software.
- 1 x additional RS-232/485 serial port.
- Extended backup times.
- BACS II, battery monitoring, regulation and alarms.
- Single/single, single/three and three/single configurations.⁽¹⁾
- External manual bypass.
- Temperature and humidity sensors.
- External display.

(1) Up to 60 kVA

Technical support and service

- Pre and post-sales advice.
- Start-up.
- Telephone technical support.
- Preventative/corrective intervention.
- Maintenance contracts.
- SICRES remote maintenance contracts.
- Training courses.



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CF CUBE3+



Frequency converter from 7.5 to 200 kVA

TECHNICAL SPECIFICATIONS

MODEL		CF CUBE3+	
TECHNOLOGY		On-line, double conversion, HF, DSP control	
INPUT	Nominal voltage ⁽¹⁾	Single-phase 120 / 127 / 220 / 230 / 240 V Three-phase 3 x 208 / 3 x 220 / 3 x 380 / 3 x 400 / 3 x 415 V (3P + N)	
	Voltage margin	+15% / -20% (configurable)	
	Frequency	50 / 60 Hz	
	Total Harmonic Distortion (THDi)	75 ÷ 20 kVA	100% load: <1.5% / 50% load: <2.5% / 10% load: <6.0%
		30 ÷ 80 kVA	100% load: <1.0% / 50% load: <2.0% / 10% load: <5.0%
		100 ÷ 200 kVA	100% load: <1.5% / 50% load: <2.0% / 10% load: <6.0%
	Power factor	1 from 10% load	
Rectifier topology	Three-phase IGBT full wave, soft start, PFC, transformerless		
OUTPUT	Nominal voltage ⁽¹⁾	Single-phase 120 / 127 / 220 / 230 / 240 V Three-phase 3 x 208 / 3 x 220 / 3 x 380 / 3 x 400 / 3 x 415 V (3P + N)	
	Accuracy	State	± 1% steady / ± 2% dynamic
		Response time	20 ms for load steps 0% ÷ 100% and voltage drop up to -5%
	Frequency	50/60 Hz ±0.05%	
	Total Harmonic Distortion (THDv)	Linear load	<0.5%
		Nonlinear load	7.5 ÷ 80 kVA: <1.5% / 100 ÷ 200 kVA: <2% (EN-62040-3)
	Output Power Factor ⁽²⁾	0.9	
	Admissible overload	125% for 10 min / 150% for 60 s	
	Admissible crest factor	>3:1	
	Total efficiency in On-line mode	7.5÷60 kVA: 92.0%÷93.0% / 80÷200 kVA: 94.0%÷95.0%	
BATTERIES (Option)	Type	Lead acid, sealed, maintenance free	
	Charge voltage regulation	Batt-Watch	
COMMUNICATION	Ports	1 x RS-232/485, with MODBUS protocol	
	Interface to relays	Yes	
	Free slots	1, for SNMP/SICRES	
GENERAL	Operating temperature	0° C ÷ +40° C	
	Relative humidity	Up to 95%, non-condensing	
	Operating altitude	2,400 masl	
	Acoustic noise at 1 metre	<52 dB(A) ⁽³⁾	
STANDARDS	Safety	EN-62040-1-2; EN-60950-1	
	Electromagnetic Compatibility (EMC)	EN-62040-2	
	Quality and Environmental Management	ISO 9001 and ISO 14001	

(1) Single-phase 120 / 127 V available up to 30 kVA inclusive and three-phase 3 x 208 / 3 x 220 V available up to 100 kVA inclusive.

(2) Up to 120 kVA inclusive at three/three-phase configurations.

(3) <65 dB(A) for 80 to 120 kVA models / <70 dB(A) for 160 and 200 kVA models.

Information subject to change without notice.

RANGE

MODEL	POWER (kVA / kW)	UPS DIMENSIONS (D x W x H mm)	WEIGHT (kg)
CF-7.5-CUBE3+	7.5 / 6.75	775 x 450 x 1100	100
CF-10-CUBE3+	10 / 9	775 x 450 x 1100	100
CF-15-CUBE3+	15 / 13.5	775 x 450 x 1100	102
CF-20-CUBE3+	20 / 18	775 x 450 x 1100	105
CF-30-CUBE3+	30 / 27	775 x 450 x 1100	150
CF-40-CUBE3+	40 / 36	775 x 450 x 1100	175
CF-50-CUBE3+	50 / 45	775 x 450 x 1100	185
CF-60-CUBE3+	60 / 54	775 x 450 x 1100	185
CF-80-CUBE3+	80 / 72	880 x 590 x 1325	265
CF-100-CUBE3+	100 / 90	880 x 590 x 1325	290
CF-120-CUBE3+	120 / 108	880 x 590 x 1325	290
CF-160-CUBE3+	160 / 128	850 x 900 x 1905	540
CF-200-CUBE3+	200 / 160	850 x 900 x 1905	550

Nomenclature, dimensions and weights for units with input voltage 3 x 400 V, output voltage 3 x 400 V and without backup time.

+34 93 848 24 00 WWW.SALICRU.COM

AVDA. DE LA SERRA 100 · 08460 PALAUORDERA (SPAIN) · FAX +34 93 848 11 51 · salicru@salicru.com

SALICRU



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, 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, 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 adapter, a NiCd electrolyte level detection input and six additional relays.

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, 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/SNMP.
- Smart-mode to maximise MTBF (Mean Time Between Failures).



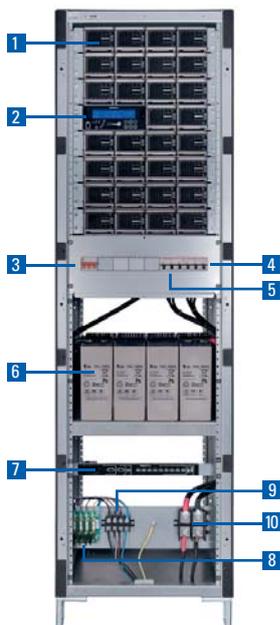
DC power-S



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 optimising the investment. Typical applications include: fixed and mobile communications networks, broadband access networks and data and telecommunications networks.

System description



1. Rectifier module
2. Centralised control
3. Input protection
4. Output protection
5. Batteries protection
6. Batteries
7. Extended communication
8. Surge protector
9. Input terminals
10. Output terminals

SMART mode

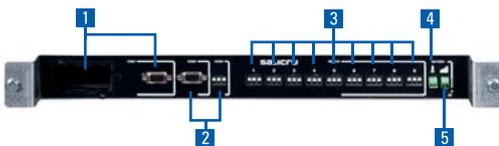
Load sharing in normal operation.



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



Extended communications



1. Slot for SICRES remote management or RS-232 interface.
2. RS-232 or RS-485 serial ports. MODBUS communications protocol.
3. General alarm & programmable (x8) dry contact interface.
4. Battery temperature measurement input.
5. NiCd electrolyte level detection input.

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 disconnecter.

DC POWER-S

DC power systems



TECHNICAL SPECIFICATIONS

MODEL		DC POWER-S	
INPUT	AC voltage	120 / 127 / 220 / 230 / 240 V 3x208 / 220 / 380 / 400 / 415 V (3Ph+N)	
	Range (phase-neutral)	90 ÷ 290 Vac	
	Frequency	50/60 Hz	
	Power factor	>0.99 (PFC)	
	THDi	<5%	
	Efficiency	Up to 95.5%	
OUTPUT	DC voltage	24, 48, 110, 125, 220 V	
	Voltage adjustment range	-15% +25% ⁽¹⁾	
	Accuracy	±1%	
	Psophometric noise	<2 mV	
	Load sharing between modules	Active parallel	
	Rectifier module power	1000 / 2000 / 2700 W	
	Maximum number of parallel modules	30	
	Maximum system power (depending on module)	30 / 60 / 81 kW	
	BATTERIES	Type	PbCa or NiCd
		Charge type	Constant I/U in accordance with DIN 41773
Charging current		0.1C to 0.3C adjustable	
Recharge time		Up to 80% in 4 hours (0.2C)	
Protection		Against overvoltage, undervoltage and overload	
Voltage/temperature compensation		Yes, customisable (mV/°C)	
Electrolyte level detection (NiCd battery)		Optional	
PROTECTION		Input and output	Circuit breakers
	Battery	Fuses + switch	
GENERAL	Dielectric strength (Input - Output)	2000 V @ 1 minute to 24, 48 Vdc / 4000 V @ 1 minute to 110, 125, 220 Vdc	
	Degree of protection	IP20	
	Ventilation	Forced	
	Acoustic noise at 1 metre	<55 dB(A)	
	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	
	Mean time between failures (MTBF)	250,000 hours	
	Mean time to repair (MTTR)	15 minutes	
	SYNOPTIC	Backlit LCD display	Yes (4x40 characters)
		Indicators (LED)	5
	COMMUNICATION	Ports	RS-232/485
Dry contacts		3 relays (expandable to 9)	
SNMP		Optional	
Slot		Yes, one	
STANDARDS	Safety	IEC/EN 61204-7, IEC/EN 60950-1	
	Electromagnetic compatibility (EMC)	IEC/EN 61204-3	
	Quality and environmental management	ISO 9001 and ISO 14001	

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

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

(3) Without batteries

Information subject to change without notice.

RANGE

OUTPUT VOLTAGE (Vdc)	MODULE			CURRENT PER SYSTEM (A)	POWER PER SYSTEM (kW)
	MODEL	POWER (W)	CURRENT (A)		
24	DC-36-S	1000	36	Between 36 and 1080	Between 1 and 30
	DC-70-S	2000	70	Between 70 and 2100	Between 2 and 60
48	DC-18-S	1000	18	Between 18 and 540	Between 1 and 30
	DC-36-S	2000	36	Between 36 and 1080	Between 2 and 60
	DC-50-S	2700	50	Between 50 and 1500	Between 2.7 and 81
110	DC-8-S	1000	8	Between 8 and 240	Between 1 and 30
	DC-16-S	2000	16	Between 16 and 480	Between 2 and 60
	DC-22-S	2700	22	Between 22 and 660	Between 2.7 and 81
125	DC-7-S	1000	7	Between 7 and 210	Between 1 and 30
	DC-16-S	2000	15	Between 15 and 450	Between 2 and 60
	DC-20-S	2700	20	Between 20 and 600	Between 2.7 and 81
220	DC-4-S	1000	4	Between 4 and 120	Between 1 and 30
	DC-8-S	2000	8	Between 8 and 240	Between 2 and 60
	DC-11-S	2700	11	Between 11 and 330	Between 2.7 and 81



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+34 93 848 24 00 WWW.SALICRU.COM

AVDA. DE LA SERRA 100 · 08460 PALAUTORDERA (SPAIN) · FAX +34 93 848 11 51 · salicru@salicru.com

SALICRU



DC POWER-L Thyristor rectifiers 25 A - 200 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 25 A and 200 A with outputs from 110 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.

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.



DC power-L



Applications: Efficient, reliable and robust solutions

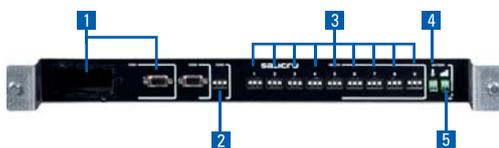
DC power-L systems are designed to protect DC loads of maximum criticality and to operate with nickel cadmium or lead acid batteries in harsh and demanding operating environments, such as power plants, electrical substations, oil and gas pipelines, petrochemical plants, mines, railways, telecommunications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

User interface



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.

Extended communication



1. Slot for the SICRES telemagement 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) Only extended version

Optional

- 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.

Services

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

DC POWER-L

Thyristor rectifiers 25 A - 200 A



THECHNICAL SPECIFICATIONS

MODEL		DC POWER-L			
INPUT	AC voltage	Single Phase	120 / 230 V (P+ N)		
		Three Phase	3 x 208 / 3 x 220 / 3 x 400 V (3 Ph + N)		
	Range	±15%			
	Frequency	50/60 Hz			
	Frequency range	±5%			
	Power factor	0.85			
	Efficiency	>85%			
OUTPUT	Rated DC voltage	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 (with batteries)	±1%			
	Ripple (with batteries)	<1% ⁽¹⁾			
	Current ⁽²⁾	Single Phase	10 / 20 / 30 / 50 A		
		Three Phase	25 / 50 / 75 / 100 / 150 / 200 A		
BATTERIES	Type	PbCa (sealed or open) or NiCd			
	No. of cells Pb	55	60	62	110
	No. of elements NiCd	81 ÷ 86	88 ÷ 94	92 ÷ 96	161 ÷ 173
	Type of charge	IU constant as per DIN 41773			
	Charging current	0.1 to 0.3 C adjustable			
	Recharging time	Up to 80% in 4 hours (0.2 C)			
	Protection	Against overvoltage and undervoltage			
	Voltage/temperature compensation	Yes, customisable as per battery specifications (mV / °C)			
PROTECTION	Input protection / battery	Circuit breaker / fuses			
	Soft start	Yes			
GENERAL	Dielectric strength	2500 V @ 1 minute			
	Degree of protection	IP20			
	Cooling	Natural convection			
	Operating temperature	-10° C to +55° C ⁽³⁾			
	Storage temperature	-20° C ÷ +70° C ⁽⁴⁾			
	Relative humidity	Up to 95% non-condensing			
SYNOPTIC	LCD display	Yes			
	Indicators (LED)	4 (mains power failure, urgent alarm, non-urgent alarm, output OK)			
COMMUNICATION	Ports	RS-232/485			
	Dry contacts	3 Dry contacts (expandable to 9)			
	SNMP	Optional			
	Slots	Yes, one			
ALARMS	Categories	Urgent			
		Non-urgent			
		AC fault			
STANDARDS	Safety standard	IEC/EN 61204-7, IEC/EN 60950-1			
	Electromagnetic compatibility (EMC)	IEC/EN 61204-3 Class A			
	Environmental Quality Management	ISO 9001 and ISO 14001			

(1) Premium version

(3) Power degradation from +40°C

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

(4) Without batteries

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

Data may change without previous notice

RANGE

MODEL	INPUT VOLTAGE (Vac)	OUTPUT VOLTAGE (Vdc)	CURRENT ⁽¹⁾ (A)
DC-10-L	120 / 230	110 / 120 / 125 / 220	10
DC-20-L	120 / 230	110 / 120 / 125 / 220	20
DC-30-L	120 / 230	110 / 120 / 125 / 220	30
DC-50-L	120 / 230	110 / 120 / 125 / 220	50
DC-25-L	3 x 208 / 3 x 220 / 3 x 400	110 / 120 / 125 / 220	25
DC-50-L	3 x 208 / 3 x 220 / 3 x 400	110 / 120 / 125 / 220	50
DC-75-L	3 x 208 / 3 x 220 / 3 x 400	110 / 120 / 125 / 220	75
DC-100-L	3 x 208 / 3 x 220 / 3 x 400	110 / 120 / 125 / 220	100
DC-150-L	3 x 208 / 3 x 220 / 3 x 400	110 / 120 / 125 / 220	150
DC-200-L	3 x 208 / 3 x 220 / 3 x 400	110 / 120 / 125 / 220	200

(1) Check for other output currents.



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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 6000 VA, with admissible continuous incoming voltage from 48 Vdc to 220 Vdc nominal input.

Performances

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

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.

Optional

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

Services

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



CS 4000-IS

TECHNICAL SPECIFICATIONS

MODEL		CS IS	
INPUT	DC nominal voltage	48 V, 110 V, 120 V, 125 V, 220 V	
	Voltage range	- 17%, + 20%	
OUTPUT	AC nominal voltage	120 V, 220 V, 230 V, 240 V	
	Accuracy	± 2%	
	Frequency	50 / 60 Hz	
	Frequency range	Synchronized	0.1 Hz ÷ 9.9 Hz in increments of 0.1 Hz
		Unsynchronized	± 0.05%
	Synchronization speed	1 Hz/s	
Admissible overload	150% for 30 seconds / 125% for 45 seconds		
Efficiency	Up to 92%		
GENERALS	Operating temperature	- 10° C ÷ + 40° C	
	Cooling	Forced	
	Relative humidity	Up to 95%, non-condensing	
	Maximum operating altitude	2400 m.a.s.l.	
STANDARDS	Safety	EN 60950-1	
	Electromagnetic Compatibility (EMC)	EN 61000-6-3; EN 61000-6-1	
	Quality and Environmental management	ISO 9001 and ISO 14001	

Data liable to changes without prior notice.

RANGE

MODEL	POWER (VA)	INPUT VOLTAGE (Vdc)					DIMENSIONS (D x W x H mm)		WEIGHT (Kg)
		48	110	120	125	220	BOX	RACK	
CS 1000-IS	1000	•	•	•	•	•	385 x 440 x 180 (1)	385 x 483 x 4U (1)	36
CS 2000-IS	2000	•	•	•	•	•	385 x 440 x 180 (1)	385 x 483 x 4U (1)	49
CS 3000-IS	3000	•	•	•	•	•	385 x 440 x 180 (1)	385 x 483 x 4U (1)	57
CS 4000-IS	4000		•	•	•	•	600 x 440 x 270	600 x 483 x 6U	63
CS 5000-IS	5000		•	•	•	•	600 x 440 x 270	600 x 483 x 6U	68
CS 6000-IS	6000		•	•	•	•	725 x 440 x 270	-	84

Dimensions and weights for models without bypass nor filters. Ask for another power needs and/or configurations.
(1) For voltages ≥ 110 Vdc.



CS WAVE MDL 48 VDC power converters

CS WAVE MDL: DC/AC converters for telecommunications

Today's telecommunications systems include a large variety of critical loads that must be correctly powered and protected. Salicru's **CS WAVE MDL** is based on the modular architecture that can be adapted to any growth and/or redundancy needs.

The maximum configurations allows up to 24 kVA in models with 1 or 1.5 kVA, which are supplemented by the modules: static bypass (STS), LCD display, communications and/or manual bypass with distribution.



CS WAVE MDL

Performances

- DSP Design (Digital Signal Processor).
- Back-feed protection standard (in configurations with STS).
- All Master technology for better reliability.
- Sinoidal output.
- Hot-Swap.
- High density power.
- Polarity inversion protection.
- Smart ventilation control.

Applications: AC power for Telecom systems

Normally for mobile or land-line telecommunications systems not able to connect to the mains, that need autonomous solutions providing power from back-up elements (batteries, fuel-cell,...).

Optional

- Static bypass up to 12 kVA.
- LCD display.
- Communications interface.
- Manual bypass with distribution.

Services

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



TECHNICAL SPECIFICATIONS

MODEL		CS WAVE MDL
INVERTER	Technology	DSP; All Master
	Modular power	1000 VA / 800 W and 1500 VA / 1200 W
	Maximum no. models x system	15 x 1500 VA or 24 x 1000 VA
	Input voltage	40.5 Vdc ÷ 58 Vdc
	Output voltage	230 Vac
	Output frequency	50 / 60 Hz
	Psometric noise	# 1 mV
	Efficiency	> 89%
STATIC BYPASS (STS)	Power	12 kVA
	Transfer time	< 5 ms
	Synchronism	± 2.5%
LCD DISPLAY	Settings	Input / Output / Alarms / General
INTERFACE	Ports	RS-232, RS-485, USB and free contacts
	Protocol	CANBUS
MANUAL BYPASS	Distribution	2 x 20 A + 1 x 32 A + 1 x 50 A
	5 position selector	Combined Inverter - STS - Manual bypass
STANDARDS	Safety	EN 60950-1
	Electromagnetic Compatibility (EMC)	EN 61000-6-3; EN 61000-6-1
	Quality and Environmental management	ISO 9001 and ISO 14001

Data liable to change without prior notice.

RANGE

MODEL	DESCRIPTION	DIMENSIONS (D x W x H mm)	WEIGHT (Kg)
CS 1000-WAVE MDL 48/230	Inverter 1000 VA	270 x 215 x 1U	2.5
CS 1500-WAVE MDL 48/230	Inverter 1500 VA	270 x 215 x 1U	3
STS-WAVE MDL	Static bypass (STS)	270 x 215 x 1U	3
LCD-WAVE MDL	Display LCD	270 x 90 x 1U	1
COM-WAVE MDL	Communications	270 x 180 x 1U	0.5
BM+DIS-WAVE MDL	Manual bypass + distribution	270 x 483 x 2U	4



RE3 Electronic voltage stabilisers from 300 VA to 250 kVA

RE: 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 250 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.

Performances

- Power range, single and three-phase, up to 250 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⁾
- SICRES 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).
- More than 80% recyclable materials.

(1) Option
(2) For models with LCD display



RE3

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.

Presentation

Electronic voltage stabilisers from 300 VA to 250 kVA



RE3 models



RE models

RE3 models display



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

Options

- Relay interface.
- Manual maintenance bypass.
- 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 SICRES card. ⁽¹⁾
- Extended communications module. ⁽¹⁾

⁽¹⁾ Models with display

Services

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



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TECHNICAL SPECIFICATIONS

MODEL	RE3	
INPUT	Single phase voltage	120 V, 220 V, 230 V, 240 V
	Three-phase voltage	3 x 208 V, 3 x 220 V, 3 x 380 V, 3 x 400 V, 3 x 415 V
	Regulation range	± 15% ⁽¹⁾
	Frequency	48 ÷ 63 Hz
OUTPUT	Single phase voltage	120 V, 220 V, 230 V, 240 V
	Three-phase voltage	3 x 208 V, 3 x 220 V, 3 x 380 V, 3 x 400 V, 3 x 415 V
	Accuracy	Better than ± 2%
	Frequency	48 ÷ 63 Hz
	Harmonic distortion	Nil
	Response time	100 ms
	Efficiency	> 97%
	Permissible overload	200% for 1 minute
BYPASS	Type	Static
GENERALS	Ambient operating temperature	-10° C ÷ +45° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2400 m.a.s.l.
	Mean Time Between Failures (MTBF)	60,000 hours
	Mean Time To Repair (MTTR)	30 minutes
	Acoustic noise level at 1 metre	< 45 dB (A) ⁽²⁾
	Cooling	Natural or forced depending on power rate
	Electrical noise attenuation on common mode	With isolation transformer > 40 dB With ultra-isolation transformer > 120 dB
STANDARDS	Safety	IEC 62103
	Electromagnetic Compatibility (EMC)	EN-61000-6-4; EN-61000-6-2
	Quality and Environmental management	ISO 9001 and ISO 14001

⁽¹⁾ Other ranges under request ⁽²⁾ <65 dB(A) for models with forced ventilation

Information subject to change without notice.

RANGE ⁽³⁾

MODEL	POWER (kVA / kW)	DIMENSION (D x W x H mm)	WEIGHT (Kg)
RE-309-2	0.3	280 x 210 x 185	6
RE-609-2	0.6	280 x 210 x 185	6
RE-1009-2	1	280 x 210 x 185	9
RE-2009-2	2	390 x 250 x 195	19
RE-3009-2	3	390 x 250 x 195	22
RE-4509-2	4.5	460 x 300 x 220	35
RE3 M 6-2	6	600 x 240 x 490	44
RE3 M 9-2	9	600 x 240 x 490	58
RE3 M 12-2	12	580 x 340 x 580	67
RE3 M 15-2	15	580 x 340 x 580	69
RE3 M 20-2	20	895 x 460 x 705	103
RE3 M 25-2	25	895 x 460 x 705	127
RE3 M 30-2	30	895 x 460 x 705	154
RE3 M 40-2	40	895 x 460 x 705	170
RE3 M 50-2	50	895 x 460 x 705	186

Nomenclature, dimensions and weight for models: 230 V 50 Hz input / 230 V 50 Hz output and ± 15% input range

MODEL	POWER (kVA / kW)	DIMENSION (D x W x H mm)	WEIGHT (Kg)
RET 3-4	3	680 x 340 x 240	32
RET 6-4	6	680 x 340 x 240	61
RET 9-4	9	630 x 390 x 520	68
RE3 T 15-4	15	895 x 460 x 705	80
RE3 T 20-4	20	895 x 460 x 705	117
RE3 T 30-4	30	895 x 460 x 705	164
RE3 T 45-4	45	895 x 460 x 705	225
RE3 T 60-4	60	895 x 460 x 705	260
RE3 T 75-4	75	850 x 615 x 1315	317
RE3 T 100-4	100	850 x 615 x 1315	343
RE3 T 125-4	125	850 x 615 x 1315	438
RE3 T 150-4	150	850 x 615 x 1315	650
RE3 T 200-4	200	850 x 815 x 2115	850
RE3 T 250-4	250	850 x 815 x 2115	925

Nomenclature, dimensions and weight for models: 3 x 400 V 50 Hz input / 3 x 400 V 50 Hz output and ± 15% input range

⁽³⁾ For models with isolation transformer and other configurations, consult



EMi3

Servomotor voltage stabiliser 5 kVA - 330 kVA

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.

Salicru's **EMi3** servomotor voltage stabilisers are the culmination of 45 years of experience and development, in which the company has manufactured and installed over 100,000 units worldwide.

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.

Features

- Power range, single and three-phase, up to 330 kVA.
- Fast and efficient toroidal autotransformers for the entire power range.
- Output accuracy better than 1% (adjustable).
- In three-phase units, common or independent regulation per phase, unaffected by imbalances.
- Input regulation range $\pm 15\%$ standard.
- 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.
- More than 80% recyclable materials.



EMi3

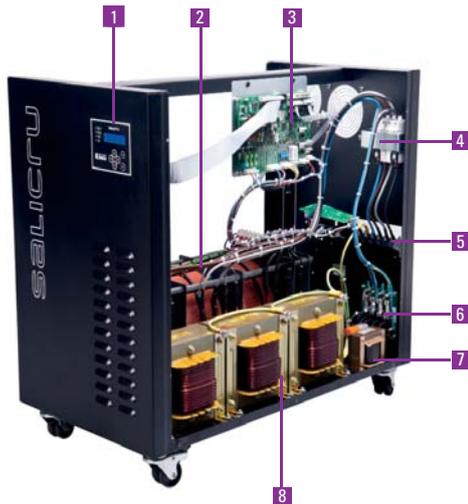
Applications: Effective protection for all types of critical load

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.

Description



Servomotor voltage stabiliser 5 kVA - 330 kVA

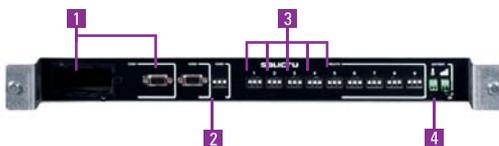


1. Display LCD
2. Variable autotransformer
3. Control PCB
4. Input protection
5. Input and output terminals
6. Surge protection
7. Motor supply transformer
8. Booster transformer

Options

- Output current, power and overload measurement.
- Maximum and minimum output voltage protection.
- Manual bypass.
- Overload contactor.
- Communications and relay module.
- Other regulation ranges.
- Galvanic isolation transformer.

Extended communications



1. Slot for SICRES remote management or RS-232 interface.
2. RS-485 serial ports. MODBUS communications protocol.
3. Programmable dry contact interface (x5).
4. Digital input.

Services

- Numerous maintenance and remote maintenance options (SICRES).



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TECHNICAL SPECIFICATIONS

MODEL	EMI3		
INPUT	Voltage	Single-phase 220 / 230 / 240 V Three-phase 3x380 / 3x400 / 3x415 V (3Ph + N)	
	Range	±15 ⁽¹⁾	
	Frequency	48 ÷ 63 Hz	
OUTPUT	Voltage	Single-phase 220 / 230 / 240 V Three-phase 3x380 / 3x400 / 3x415 V (3Ph + N)	
	Accuracy	± 1% (adjustable between 1% ÷ 5%)	
	Output voltage setting	± 5%	
	Frequency	48 ÷ 63 Hz	
	Regulation speed	Up to 70 V/s	
	Performance	Between 96.5% and 97.5%	
	Injection of voltage harmonic distortion	<0.2%	
	Voltage disconnection value ⁽²⁾	Adjustable	
	Admissible overload	Up to 200% for 20 s	
	Possible load variation	0 ÷ 100%	
	Power factor influence	Independent	
	INDICATORS	Front panel	LCD display (2x16 characters) + 4 status LEDs
	COMMUNICATION	RS-232 ⁽³⁾	Standard
2 Dry contacts		Standard	
Free slot ⁽³⁾		One	
GENERAL	Operating temperature	-10° C ÷ +55° C	
	Storage temperature	-20° C ÷ +85° C	
	Ventilation	Natural convection ⁽⁴⁾	
	Level of acoustic noise at 1 metre	<45 dB(A) ⁽⁵⁾	
	Relative humidity	Up to 95%, non-condensing	
	Maximum operating altitude	2,400 m.a.s.l.	
	Mean time between failures (MTBF)	60,000 hours	
	Mean time to repair (MTTR)	30 minutes	
STANDARDS	Safety	IEC-62103	
	Electromagnetic compatibility (EMC)	EN-61000-6-4; EN-61000-6-2	
	Quality and environmental management	ISO 9001 and ISO 14001	

(1) Other ranges available on request

(2) With optional voltage maximum-minimum

(3) Mutually exclusive ports

(4) Forced from 20 kVA for single phase and 55 kVA for three-phase

(5) <65 dB(A) for models with forced ventilation

Information subject to change without notice.

RANGE

MODEL	POWER (kVA / kW)	DIMENSION (D x W x H mm)	WEIGHT (Kg)
EMI3 M 5-2	5	580 x 340 x 580	45
EMI3 M 7.5-2	7.5	580 x 340 x 580	59
EMI3 M 10-2	10	580 x 340 x 580	60
EMI3 M 15-2	15	895 x 460 x 705	115
EMI3 M 20-2	20	895 x 460 x 705	119
EMI3 M 25-2	25	895 x 460 x 705	196
EMI3 M 30-2	30	895 x 460 x 705	209

Nomenclature, dimensions and weights for models: Input 230 V 50 Hz / Output 230 V 50 Hz and input range +/-15%.

MODEL	POWER (kVA / kW)	DIMENSION (D x W x H mm)	WEIGHT (Kg)
EMI3 T 15-4	15	895 x 460 x 705	126
EMI3 T 20-4	20	895 x 460 x 705	169
EMI3 T 35-4	35	895 x 460 x 705	224
EMI3 T 55-4	55	650 x 615 x 2115	374
EMI3 T 70-4	70	650 x 615 x 2115	495
EMI3 T 90-4	90	850 x 615 x 2115	533
EMI3 T 110-4	110	850 x 615 x 2115	577
EMI3 T 140-4F	140	850 x 1615 x 2115	857
EMI3 T 175-4F	175	850 x 1615 x 2115	1159
EMI3 T 220-4F	220	850 x 1615 x 2115	1227
EMI3 T 275-4F	275	850 x 1615 x 2115	1298
EMI3 T 330-4F	330	850 x 1615 x 2115	1450

Nomenclature, dimensions and weights for models:

- From 15 kVA to 110 kVA: Input 3x400 V 50 Hz / Output 3x400 V 50 Hz, input range +/-15% and common regulation. (Independent regulation per phase available on request).

- From 140 kVA to 330 kVA: Input 3x400 V 50 Hz / Output 3x400 V 50 Hz, input range +/-15% and independent regulation per phase.

+34 93 848 24 00 WWW.SALICRU.COM

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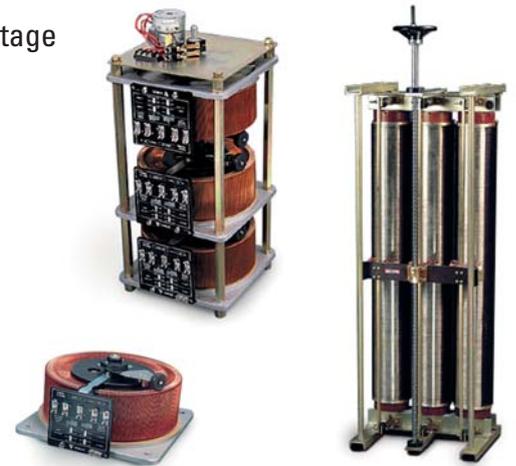
ARC

Continuous regulation self-transformers

ARC: Leaders in continuous regulation of alternating voltage

Salicru offers the **ARC** as a cheaper, safe, stronger means of having regulable alternating voltage with high precision, continuously and without interruptions.

Based on **ARC** (Continuous Regulation Self-transformer) blocks, toroidal or in columns, they may be supplied by single phase or three-phase, and be powers, for control from distance by means of an inertia-free servomotor with double direction turning and instant braking. They may also be made in a frame surround or be portable, and have measuring instruments such as voltmeters and/or ammeters.



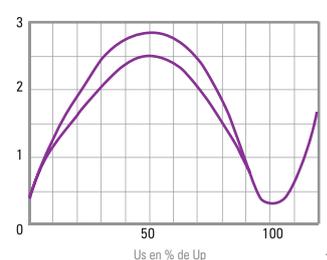
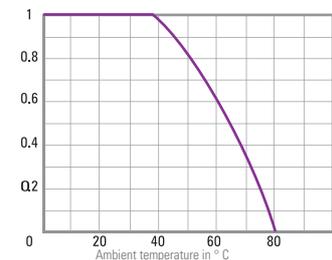
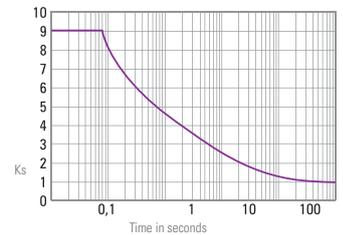
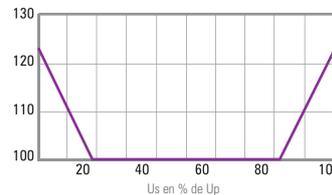
Performances

- Broad margin input and output voltages, single phase and three-phase.
- Possible single or double regulation in the three-phase systems.
- Linear output voltage, with capacity to take values such as the number of coils in the core of the self-transformers.
- Manual or powered regulation.

Applications : Precision regulation in industrial processes

It is in the industrial processes where the most of the **ARC** applications are found. From lighting technique applications, galvanotechnics, galvanoplastia, electrolysis, temperature regulation in electric ovens, speed regulation, electrical tests and controls and voltage regulation, to forming part of practice benches in schools and polytechnic universities; all require precision variation of the output alternating voltage offered by the **ARC**

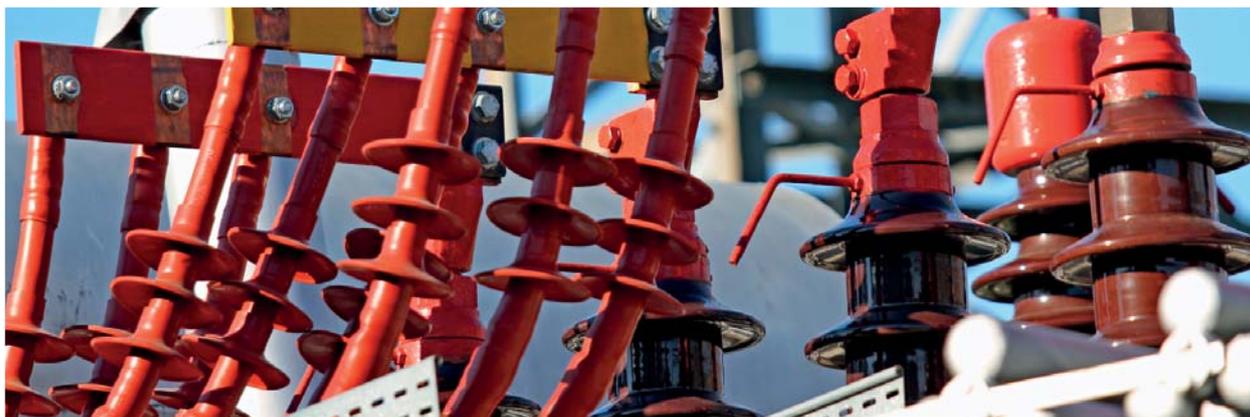
TECHNICAL SPECIFICATIONS



RANGE

MODEL	TYPE	REGULATION	CONNECTION	Vin (V)	Vout (V)	POWER (kVA)
ARC	Toroidal	Simple	-	230	0 ÷ 250	2.5 ÷ 22
3ARC	Toroidal	Simple	Star	3 x 400 + N	3 x 0 ÷ 440 + N	7.5 ÷ 16.5
C3ARC	Column	Simple	Star	3 x 400 + N	3 x 0 ÷ 400 + N	25 ÷ 160
C3ARC	Column	Double	Delta	3 x 230	3 x (230 ÷ 0 ÷ 230)	2 x 25 ÷ 2 x 160
C3ARC	Column	Double	Delta	3 x 400	3 x (400 ÷ 0 ÷ 400)	2 x 45 ÷ 2 x 280





IT & NS

Electrical & ultra-isolation transformers

IT & NS: Simple concepts with effective results

Salicru designs and manufactures low-voltage electrical transformers for more than 45 years, both for its use and independent solution, **IT** series, as integrated inside its wide range of solutions in power electronics (Uninterruptible Power Supplies, voltage stabilisers, rectifiers ...).

On the other hand, **Salicru NS** series transformers solve the problems caused by electrical disturbances originated by machinery, industrial equipment, switching transients, storms, vehicles, ..., so they are able, thanks to the triple shielding feature, to attenuate noises from power supply (up to 140 dB on common mode).

IT series: PERFORMANCES

- Designed for continuous operation at rated load.
- Floorstanding case with IP23 protection degree.
- Inrush current <6 In.
- Cooling by natural convection.
- Single-phase up to 50 kVA and three-phase up to 300 kVA.
- Options: K-4 or K-13 factor, special enclosures and protections.

NS series: PERFORMANCES

- Output exempt from noises.
- Triple screen shielding.
- Low coupling capacity.
- High isolation (1000 MΩ).
- High efficiency.
- Silent.
- Models from 300 to 9,000 VA.

TECHNICAL SPECIFICATIONS IT

MODEL	IT	
ELECTRICAL	Input voltage	Customizable
	Output voltage	Customizable
OUTPUT	Frequency	50/60 Hz
	Efficiency	>95%
	Voltage drop	<4% ⁽¹⁾
	Connections	Dy11 - Dyn11 - Yy - Yyn (others under request)
	Inrush current	<6 In
GENERAL	Isolation voltage	2500 V for 1 min
	Maximum operating altitude	1,000 m.a.s.l.
	Relative humidity	Up to 95%, non-condensing
	Cooling	Natural
MANUFACTURING	Windings	Thermal class H (180° C)
	Isolaters	Thermal class F (155° C)
	Varnish coat	Synthetic and polymerised - oven at 130 °C
	Protection degree	IP 23, in case format
	Lifting eyebolts	In case format only
	Presentation	Frame or RAL7032 epoxy paint metal case
	STANDARDS	Safety
Quality and Environmental management	ISO 9001 and ISO 14001	

(1) <7% up to 7,5 kVA

TECHNICAL SPECIFICATIONS NS

MODEL	NS		
INPUT	Single phase voltage	230 V	
	Frequency range	47 ÷ 53 Hz	
OUTPUT	Single phase voltage	230 V	
	Attenuation on common mode	140 dB	
	Electromagnetic noise @ 50 cm	0.1 Gauss	
GENERALS	Dielectric strength	2,500 V minimum	
	DC Isolation	Input to output	1000 MΩ
		Output to ground	
		Input to ground	
	Permanent permissible overvoltage	110% of nominal	
Shielding	Triple		
STANDARDS	Safety	EN-61558	
	Quality and Environmental management	ISO 9001 and ISO 14001	

RANGE

MODEL	POWER (VA)	DIMENSIONS (D x W x H mm)	WEIGHT (Kg)
NS-3	300	190 x 155 x 155	9
NS-6	600	210 x 155 x 155	11
NS-10	1000	235 x 205 x 155	15
NS-20	2000	290 x 205 x 195	26
NS-30	3000	325 x 205 x 195	33
NS-45	4500	365 x 205 x 195	41
NS-60	6000	385 x 205 x 195	45
NS-90	9000	465 x 305 x 285	100

Data liable to changes without previous notice

RANGE

MODEL	POWER (kVA)	PRESENTATION
Single phase-Single phase	1 ÷ 50	Frame
Single phase-Single phase	1 ÷ 50	Case
Three-phase-Three-phase	1 ÷ 300	Frame
Three-phase-Three-phase	1 ÷ 300	Case





ILUEST+CR Lighting flow dimmer-stabiliser

ILUEST+CR: Regulation + Telemangement = Saving

With today's modern street lighting systems, it's not enough to reduce the voltage to supply the lamps to obtain energy savings. The criteria are different nowadays and the requirements have increased in accordance with the growth of street lighting. Applying the most advanced technology possible is needed as well as telemangement, monitoring and parameterisation of the complete block of units in order to guarantee the sustainability of the lighting system.

The **ILUEST+CR** series of advanced lighting flow dimmer-stabilisers from Salicru, takes over from its highly successful and field-tested predecessor, has vast improvements in critical aspects of modularity, power density, protection and telemangement. As a result, greater flexibility in areas of power growth, maintenance, commissioning and equipment integration can be better realized along with superior reliability and shorter payback periods.

The **ILUEST+CR** series is available in a wide range of powers, has 3 implementation variants - indoor, outdoor and OEM Kit - and several possibilities of monitoring. Used in conjunction with our powerful telemangement **SICRES** technology, the **ILUEST+CR** is now the state-of-the-art reference in lighting regulation and control.

Performances

- Bi-directional 'Buck' converter with IGBTs, electronic, static and transformerless.
- Continuous regulation of the output voltage, no voltage steps; higher lamp lifetime.
- Lineal and programming ramps.
- High response time.
- Stabilisation better than $\pm 1\%$ + saving voltage periods = savings > 40%.
- LCD display, as standard.
- Protections with automatic programming rearm due to overload and overtemperature.
- Protections with fuses ⁽¹⁾ and against lightning arrestors.⁽²⁾
- Automatic bypass per phase, independent operating, manual operating ⁽³⁾, active by default and break before make.
- RS-232 port + MODBUS protocol, as standard.
- SICRES telemangement card built in completely.⁽⁴⁾
- Duty cycle adapted to the warm up curve of the lamp.
- Programming of two saving levels and start voltage via LCD display.
- Average payback of the investment between 6 and 24 months.⁽⁵⁾
- Low weight and dimensions, higher power density.
- No harmonic injection to mains.
- SLC Greenergy solution.



ILUEST+CR



ILUEST+CR module



Applications: Lighting savings and management

The **ILUEST+CR** is suitable for use in many areas, both industrial and commercial e.g. roads and highways, road bridges & tunnels, airports, hospitals, commercial centres, ports, railroads, car parks and many more. The superior supervisory and remote control capability of the **ILUEST+CR** will result in the better and more efficient management of lightings, regardless of their applications.

As an example, our studies have shown that a town of 10,000 inhabitants with 1,700 public lighting points would consume an average of 1,210 MW of electricity per year. By using just 13 units of the **ILUEST+CR** rated 30 kVA each, potential annual savings of 490 MW can be realized, translated to 270 Tm less CO₂ to the atmosphere.

(1) In the equipment. (2) MOV (Metal Oxid Vasistor). (3) Through stated input or keypad. (4) In frontal slot provided for this purpose. (5) Estimated 0.09 €/kWh rate.

Monitoring



LCD Display, LED synoptic panel and PC connection



View of the SICRES card slot

All of the units, regardless of the format, include synoptic panel as standard, comprised of:

LCD panel: It provides input / output voltages, frequency, load and saving percentage levels, output currents, active power, apparent power, power factor, load type and temperature. It includes timer, astronomical clock and event data logger.

Communication ports: RS-232 via RJ-45 connector for local PC monitoring.

MODBUS protocol.

Implementations



Indoor version



Outdoor version



KIT OEM

Available options

- External or internal manual bypass.
- GSM/GPRS modem.
- SICRES card.
- Digital I/O card (digital inputs and outputs).
- Atmospheric gas discharger.

Services

- Customized studies and simulations of the saving and payback.
- Extended warranties (under request).
- Multiple formulae of maintenance and telemaintenance (SICRES).



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ILUEST+CR

Lighting flow dimmer-stabiliser



TECHNICAL SPECIFICATIONS

MODEL		ILUEST+CR
TECHNOLOGY		Bidirectional 'Buck' converter with IGBTs, electronic, static and transformerless
INPUT	Voltage	Single phase: 230 V / Three-phase: 3 x 400 V + N
	Voltage range	+ 25% / - 7% nominal voltage + 25% / - 17% saving voltage HPSV + 25% / - 10% saving voltage MV/MH
	Frequency	48 ÷ 65 Hz
	Module protection	Input/output fuses / electronic for temperature, overload
	Equipment protection per phase	Fuse
OUTPUT	Voltage	Adjustable 215 V to 230 V (220 V as standard)
	Accuracy inside voltage range	Better than ± 1%
	Soft start voltage	Preselectable ⁽¹⁾ and adjustable
	Saving voltage	Adjustable 180 V to 210 V
	Speed ramp setting	From 1 V/minute to 6 V/minute
	Response time	< 40 ms.
	Regulation	Linear and independent per phase
	Efficiency	96% ÷ 98%
	Phase unbalancing	100% permissible
	Selectable saving voltage	Through LCD panel or via SICRES communication
	Permissible overload	150% for 30 seconds; 120% for > 1 minute
BYPASS	Type	No break
	Features	Automatic, reversible, independent per phase, independent operating, input for manual activation
	Activation criteria	Overtemperature, overload, fault, output fault, manual activation
	Rearm	Automatic by alarm cancelling. Quantity of retries: 5; time between retries: 2 minutes
COMMUNICATION	Ports	RS-232 and RS-485 ⁽²⁾
	Monitoring	SICRES system ⁽²⁾
GENERALS	Operating temperature	- 20° C ÷ + 55° C ⁽³⁾
	Relative humidity	Up to 95%, non-condensing
	Maximum altitude	2,400 m.a.s.l.
	Mean Time Between Failures (MTBF)	60,000 hours
	Mean Time To Repair (MTTR)	30 minutes
	Acoustic noise @ 1 metre	<48 dBA (with typical load)
IMPLEMENTATIONS	Indoor	Modules built in assembling base (chassis of sheeted steel at carbon cold) with drills to fix to the wall
	Outdoor	Indoor built in a polyester cabinet
	OEM kit	Modules + Supports + Control wiring + Power Supply
STANDARDS	Safety	EN-60950-1
	Electromagnetic compatibility (EMC)	IEC 62041
	Quality and Environmental management	ISO 9001 and ISO 14001

(1) Depending on type of lamp

(2) Optional

(3) 4% power derating per each degree over 45°C

Data may change without previous notice.

RANGE

MODEL	POWER (kVA)	KIT OEM		
		MODULES NO.	DIMENSIONS PER MODULE (D x W x H mm.)	WEIGHT (Kg)
KIT NET+7.5-4-LCD	7.5	3	200 x 172 x 310	11
KIT NET+10-4-LCD	10	3	200 x 172 x 310	11
KIT NET+15-4-LCD	15	3	200 x 172 x 310	12
KIT NET+20-4-LCD	20	3	200 x 172 x 310	12
KIT NET+25-4-LCD	25	3	200 x 172 x 470	19
KIT NET+30-4-LCD	30	3	200 x 172 x 470	20
KIT NET+45-4-LCD	45	3	200 x 172 x 470	20

MODEL	POWER (kVA)	INDOOR IMPLEMENTATION		OUTDOOR IMPLEMENTATION	
		DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)
NET+ 7.5-4	7.5	240 x 520 x 610	29	320 x 750 x 1105	64
NET+ 10-4	10	240 x 520 x 610	30	320 x 750 x 1105	65
NET+ 15-4	15	240 x 520 x 610	31	320 x 750 x 1105	66
NET+ 20-4	20	240 x 520 x 610	33	320 x 750 x 1105	68
NET+ 25-4	25	240 x 520 x 770	55	320 x 750 x 1105	89
NET+ 30-4	30	240 x 520 x 770	56	320 x 750 x 1105	90
NET+ 45-4	45	240 x 520 x 770	57	320 x 750 x 1105	91

Nomenclature, dimensions and weight for models: 3x400 V / 50 Hz input/output.

+34 93 848 24 00 WWW.SALICRU.COM

AVDA. DE LA SERRA 100 · 08460 PALAUTORDERA (SPAIN) · FAX +34 93 848 11 51 · salicru@salicru.com

SALICRU



ILUEST+MT Lighting flow dimmer-stabilisers

ILUEST+MT: Savings as always with extra control

It is undeniable that regulating street lighting is a common practice for most city governments and the entities responsible for their maintenance as, without a doubt, it leads to obvious significant financial benefits. Moreover, the monitoring and control requirements related to the systems have notably increased in recent times with a demand for more and better remote maintenance and monitoring tools for the units and lighting panels that produce tangible improvements in terms of the quality and optimised management.

The Salicru **ILUEST+MT** series is a next generation lighting flow dimmer-stabiliser designed to optimise the control and management of today's street lighting systems, taking communication capability to a higher level: 1) lighting control via an astronomical clock built into the LCD panel, as a standard, and lighting control in the feeder pillar, and 2) complete telemanagement of a block of units via web interface using an optional **SICRES** card and a GSM/GRPS model, all governed by the **SICRES** control software.

Performances

- Electronic lighting flow adjustment by static elements and next generation microprocessor control.
- Entirely independent adjustment per phase.
- Automatic bypass per phase, independent operation, manually operation and active by default.
- Protection with automatic programming rearm due to overload and overtemperature.
- LCD display with astronomical clock, time programmer and relay to control lighting line head, as standard.
- **SICRES** ⁽¹⁾ card for total control of a block of units using GSM / GPRS ⁽¹⁾ modems and Web interface.
- Efficiency > 97%.
- No harmonic injection to mains or alter the power factor of the installation.
- Instantaneous stabilisation in all operating states.
- Duty cycle adapted to the warm up curve of the lamps.
- Suitable for all kinds of discharge lamps (including metal halide).
- Soft transitions between the nominal and reduced flow states.
- Fine adjustments of all voltage levels and output precision improved by ± 2%.
- Selectable start-up voltage.
- Two levels of saving adjustable via LCD display.
- Easy installation alongside the feeder pillar or inside it.

(1) Option

(2) Estimated 0.09 €/kWh rate



ILUEST+MT

- Additional energy savings through the complete elimination of the night-time overvoltage.
- Significant increase in the life span of the lamps.
- Savings of over 40%.
- Average payback of the investment between 6 and 24 months.⁽²⁾
- Optimised maintenance of the unit.
- SLC Greenergy solution.



Applications: Affordable energy efficiency for lighting

All of these, from urban street lighting (avenues, streets, roads, ring roads, roundabouts, bridges, etc.) to lighting in industrial areas, shopping centres, car parks, hospitals, ports, railway stations or airports, can benefit from the advantages given by the **ILUEST+MT** in such important aspects as rationality in light levels, maintenance and telemaintenance of the installations and electrical consumption.

SICRES: lighting control

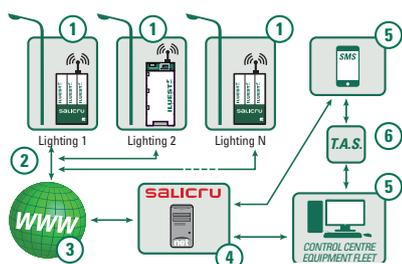


Cartographic map of a park of equipments with SICRES system.

SICRES is an electronic card of communication that makes possible the telemaintenance service through Internet connection.

The functions of the system include:

- Interface for Ethernet networks with TCP-IP and SNMP protocols and GSM/GPRS and RTC modems.
- 10 digital and 17 analogue measurements for the **ILUEST+** family.
- Multiple measurements are available: Active and apparent power, power factor, load level, etc.
- Multiple programming and setting parameters: Time, current day and month, voltage level types of lamp, start voltage, nominal and saving.
- Calibrations.
- Programming and automatic SMS and e-mail sending.
- 7 week days + 10 special days time scheduler.
- Astronomical clock selection and programming is included.



1. Lighting Control Centre: **ILUEST+** with a SICRES card and GSM/GPRS modem.
2. Bidirectional transmission.
3. Control Centre (email/mobile (SMS)).
4. Internet. ⁽¹⁾
5. Internet Server. ⁽²⁾
6. Technical Assistance Service.

⁽¹⁾ Other communication options: PLC, Ethernet, optical fiber, etc.

⁽²⁾ Salicru web server or another owned by the customer.

Available options

- SICRES card.
- GSM/GPRS modem.
- Manual bypass to electrically isolate the unit during maintenance work.
- Automatic bypass by contactors, per phase or common.
- Atmospheric gas discharger.
- Digital I/O card.

Services

- Customized studies and simulations of the saving and payback.
- Extended warranties (under request).



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ILUEST+MT

Lighting flow dimmer-stabilisers



TECHNICAL SPECIFICATIONS

MODEL		ILUEST+MT	
TECHNOLOGY		Static and electronic regulation by microprocessor control	
INPUT	Voltage	Single phase	120 V, 220 V, 230 V, 240 V
		Three-phase	3 x 208 V, 3 x 220 V, 3 x 380 V, 3 x 400 V, 3 x 415 V (+N)
	Voltage range	+ 33% / - 8% nominal voltage + 4% / - 29% saving voltage HPSV + 10% / - 24% saving voltage MV/MH	
		Frequency	48 ÷ 63 Hz
Equipment protection per phase		Single pole MCB	
OUTPUT	Voltage	Single phase	120 V, 220 V, 230 V, 240 V
		Three-phase	3 x 208 V, 3 x 220 V, 3 x 380 V, 3 x 400 V, 3 x 415 V
	Accuracy inside voltage range		Better than ± 2%
	Soft start voltage		Preselectable ⁽¹⁾ and adjustable
	Saving voltage		180 V (phase to neutral) adjustable MV, HPSV, MH and fluorescence
	Speed ramp setting		From 1 V/minute to 6 V/minute
	Response time		< 100 ms.
	Regulation		Independent per phase
	Phase unbalancing		100% permissible
	Efficiency		> 97%
	Selectable saving voltage		Through LCD panel or via SICRES communication
Permissible overload		150% for 30 seconds; 120% for > 1 minute	
BYPASS	Type		Static
	Features		Automatic and independent per phase.
	Activation criteria		Overtemperature, overload, fault, output fault, manual activation
	Rearm		Automatic by alarm cancelling. Quantity of retries: 5; time between retries: 2 minutes
COMMUNICATION	Ports		RS-232 and RS-485 ⁽²⁾
	Monitoring		SICRES system ⁽²⁾
GENERALS	Operating temperature		-40° C ÷ +55° C ⁽³⁾
	Relative humidity		Up to 95%, non-condensing
	Maximum altitude		2,400 m.a.s.l.
	Mean Time Between Failures (MTBF)		60,000 hours
	Mean Time To Repair (MTTR)		30 minutes
	Acoustic noise @ 1 metre		< 35 dBA
IMPLEMENTATIONS	Indoor		Modules built in assembling base (chassis of sheeted steel at carbon cold) with drills to fix to the floor
	Outdoor		Indoor built in a polyester cabinet
STANDARDS	Safety		EN-60950-1
	Electromagnetic compatibility (EMC)		EN 61000-6-2; EN 61000-6-3
	Quality and Environmental management		ISO 9001 and ISO 14001

⁽¹⁾ Depending on type of lamp

⁽²⁾ Optional

⁽³⁾ 4% power derating per each degree over 45°C

Data may change without previous notice.

RANGE

MODEL	POWER (kVA)	INDOOR IMPLEMENTATION		OUTDOOR IMPLEMENTATION	
		DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)
NA+ 3.5-2	3.5	245 x 350 x 380	42	320 x 520 x 1348	72
NA+ 5-2	5	245 x 350 x 380	43	320 x 520 x 1348	73
NA+ 7.5-2	7.5	245 x 350 x 380	45	320 x 520 x 1348	75
NA+ 10-2	10	245 x 350 x 380	46	320 x 520 x 1348	76
NA+ 15-2	15	245 x 350 x 380	50	320 x 520 x 1348	80
NA+ 20-2	20	245 x 350 x 380	67	320 x 520 x 1348	105

Nomenclature, dimensions and weight for models: 230 V / 50 Hz input/output.

MODEL	POWER (kVA)	INDOOR IMPLEMENTATION		OUTDOOR IMPLEMENTATION	
		DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)	DIMENSIONS (D x W x H mm.)	WEIGHT (Kg)
NAT+ 7.5-4	7.5	245 x 350 x 800	60	320 x 520 x 1348	94
NAT+ 10-4	10	245 x 350 x 800	80	320 x 520 x 1348	116
NAT+ 15-4	15	245 x 350 x 800	81	320 x 520 x 1348	117
NAT+ 20-4	20	245 x 350 x 800	82	320 x 520 x 1348	118
NAT+ 25-4	25	245 x 350 x 800	90	320 x 520 x 1348	125
NAT+ 30-4	30	245 x 350 x 800	95	320 x 520 x 1348	130
NAT+ 45-4	45	245 x 350 x 800	139	320 x 520 x 1348	173
NAT+ 60-4	60	355 x 350 x 1100	181	420 x 520 x 1348	221
NAT+ 80-4	80	355 x 350 x 1100	204	420 x 520 x 1348	244
NAT+ 100-4	100	350 x 800 x 1070	214	420 x 1020 x 1348	254
NAT+ 120-4	120	350 x 800 x 1070	225	420 x 1020 x 1348	265

Nomenclature, dimensions and weight for models: 3x400V / 50 Hz output.

+34 93 848 24 00 WWW.SALICRU.COM

AVDA. DE LA SERRA 100 · 08460 PALAUTORDERA (SPAIN) · FAX +34 93 848 11 51 · salicru@salicru.com

SALICRU



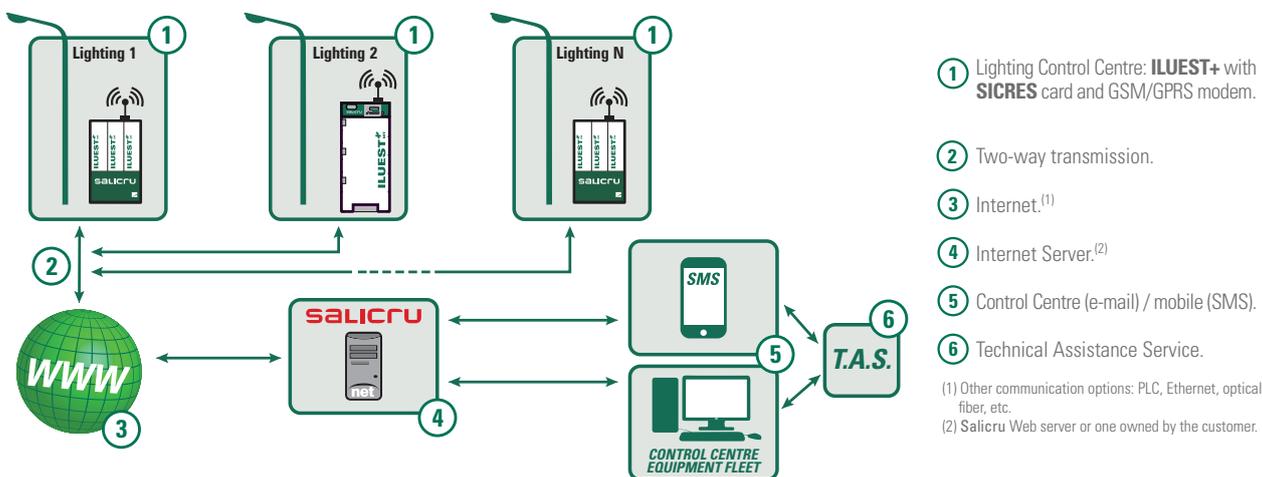
SICRES

Telemangement to ILUEST+

SICRES: Complete lighting telemangement

In any municipality, the lighting control centres are located in the street and away from the technical services, something which makes maintenance enormously more difficult. The cost of lighting maintenance therefore increases significantly and obliges municipalities to have brigades or subcontractors who, even without carrying out any corrective action, make periodic rounds of the streets in order to detect problems. In the best of cases, the installations will be in an operative state and it will not be possible to obtain statistics of faults, graphs on consumption, line quality, etc.

By incorporating the **SICRES** network card, Salicru offers a telemaintenance service through an Internet connection, which enables the state of the complete fleet of equipment (including cartography) to be known at all times and failures in the equipment and/or the control centres to be anticipated. Amongst the many services offered by the system, we might mention: sending of unattended alarms by SMS and/or e-mail, full monitoring of the equipment, control and programming of the different parameters such as the adjustments of the astronomic clock, transitions between states (nominal and economy), the different voltage levels, the types of lamp and a long etc, giving an overall view of the installation at all times and providing all kinds of graphs and statistics.



Flow of data through remote connection SICRES

Advantages & performances

The **SICRES** telemaintenance system provides monitoring, analysis and technical support in real-time 24/7, thus reducing the MTTR in the event of any unexpected incident. While the monitoring is under way, an incident and alarm log is created to enable exhaustive analysis of the equipment, which provides valuable information on the operating tendency and identifies potential future problems. For more important incidents and/or alarms, **SICRES** sends e-mails and SMS to instantly report the incident and to enable suitable corrective action to be taken. **SICRES** facilitates overall lighting maintenance by including cartographic maps with the exact location of the units. By clicking on any of them, we can find out their main parameters and enable their monitoring, control and programming.



Monitoring & control



Location map of the park equipment



Data table



Chart of the different parameters

Personalised screens for perfect equipment location, monitoring, control and programming.

Versions



SICRES Card

SICRES Box

In order to perfectly integrate the **SICRES** system throughout the **ILUEST+** range, both in present and previous equipment, we have two versions of the card:

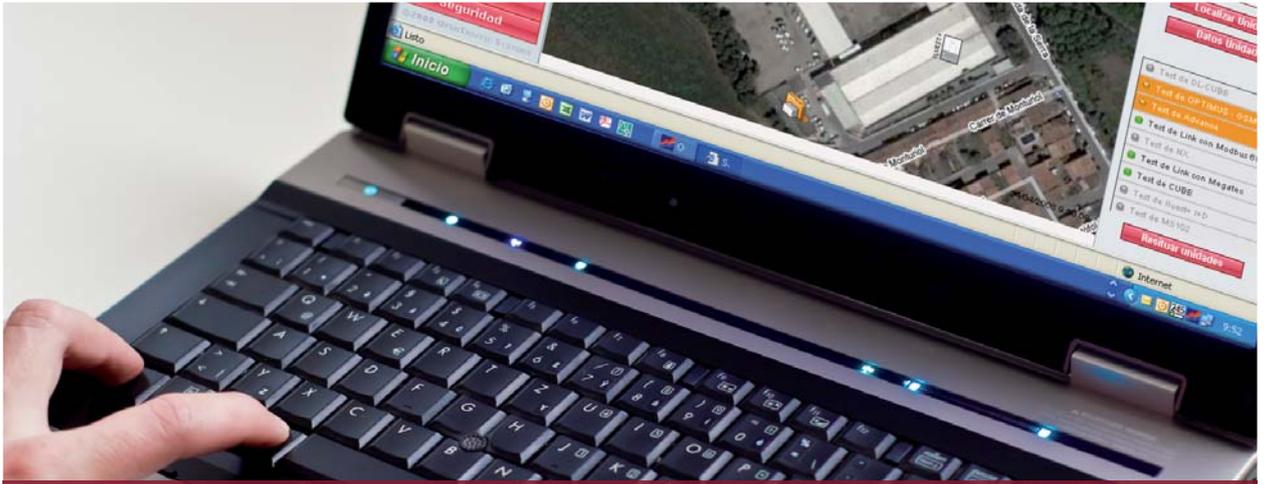
- **SICRES CARD:** For equipment with a slot to insert the **SICRES** card. This avoids having small devices around the unit.
- **SICRES BOX:** When the equipment has no slot, as in the case of the OEM Kits, the **SICRES** can be installed externally.

TECHNICAL SPECIFICATIONS

MODEL		SICRES MODULE & CONTROL CENTRE
HARDWARE PLATFORM FEATURES		"Low Power ARM9" microprocessors 128 Mb RAM RS232 / RS485 communications and Ethernet Storage supports: E2PROM, SPI and SD/MMC S.O. in real-time WCE 5.0 MODBUS/TCP
SICRES MODULE	Functions	Data compilation and incorporation of advanced alarm management functions and logs Remote control and communications via RTC/GSM/GPRS/RS485, LAN/ETHERNET, WIFI/WIMAX and protocols Equipment telemaintenance E-mail automatic sending Configurable SMS depending on the incident Inclusion of native SNMP control Consultation and remote control of the unit values by a Web interface: sending of commands, consultations, alarm management, remote updates, etc.
	Performances	Web explorer monitoring Telnet/Web/FTP configuration Accessed via Ethernet or serial connection Optional access by GPRS, Wifi, Wimax Possibility of third party system connection SNMP protocol support for integration with network administration tools
CONTROL CENTRE	Functions	Monitoring of different ILUEST+ equipment: information centralisation and resending of commands from/to the different SICRES control cards General map of the CC with display of the state of the equipment General screen of a unit Graphs of voltage, output intensity, power and % charge
	Performances	Web user interface Consultation of ILUEST+ units location geographic maps Consultation/programming of specific information concerning the different SICRES control cards Sending of alarm notification by SMS and e-mail Consultation of real-time data Display of the state of the equipment in real-time: alarms, MODBUS table, ... Generation of statistics and consultation of data log

Data may change without previous notice.

MEASUREMENT	ALARMS	
Input voltage by phase	INPUT	Overloading alarm by phase
Output voltage by phase		Voltage down alarm by phase
Charge level by phase		Protections alarm
Output current by phase	OUTPUT	Overloading alarm by phase
Apparent power by phase		Off-margin alarm by phase
Active power by phase		Output protections alarm
Total active power	BYPASS	Manual bypass alarm
Total apparent power		Bypass alarm by phase
Cos ϕ by phase	GENERAL	Overheating alarm sensors 1 and 2
Temperature 1 and 2 of the dissipater by phase		Intrusion alarm
Inducer temperature by phase		ILUEST+ communication failure alarm
Frequency	N MODULES	Overloading alarm
Percentage saving		Bypass alarm
		High and low input voltages alarm
		High and low output voltages alarm
		High temperatures 1 and 2 (dissipater) alarm
		High current in serial and parallel IGBT alarm
		Bypass failure alarm
		Fan failure alarm
		Equipment blocked alarm
		Manual bypass alarm
		General alarm



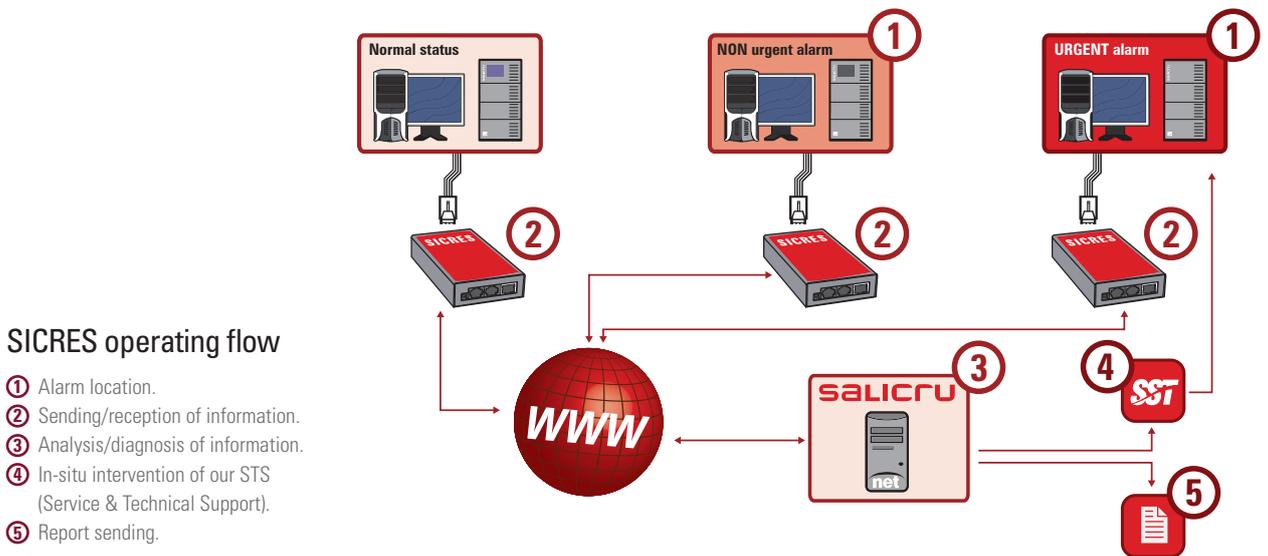
SICRES

Telemaintenance service

SICRES: Complete surveillance of your equipment

The units for protecting and controlling critical loads are normally installed in locations away from the passing or working areas, which prevents information from being obtained on the state and alarms without sending a technician to the place of the installation. Sometimes this lack of information means not having the protection equipment in the best state, causing considerable losses of data, production line downtimes, etc.

To be informed at all times of the state and even anticipate possible faults in the equipment, Salicru offers the **SICRES** solution; the internet telemaintenance service with different forms: **BASIC, MEDIUM, PREMIUM** and **PREMIUM PLUS**, which will allow the customer to be advised in the event of a fault, the equipment to be monitored via web and to be accessed for control, amongst other things, thus avoiding the unnecessary movement of maintenance personnel and reporting and solving problems before the user notices them.



SICRES operating flow

- 1 Alarm location.
- 2 Sending/reception of information.
- 3 Analysis/diagnosis of information.
- 4 In-situ intervention of our STS (Service & Technical Support).
- 5 Report sending.

Advantages & services

With the **SICRES** system, you can concentrate entirely on your business and forget about the surveillance and management of your Salicru protection systems. Leave this responsibility in our hands, and work peacefully.

The **SICRES** telemaintenance allows monitoring, analysis and technical support in real time, 24/7 by Salicru professionals, thus reducing the MTTR (mean time to repair) in any unexpected event.

During the monitoring, an events and alarms log is created that allows exhaustive analysis of the equipment, providing valuable information on the operating tendency and thus identifying potential future problems. Likewise, every month a detailed report is sent on the state of the customer's equipment.

For events and/or alarms that the customer considers more important **SICRES** will send electronic mails and SMS messages to instantly report the incident and start the suitable corrective action at the same time.



Monitoring & control



Equipment location

Personalised screens for perfect unit localisation.



Equipment data

Unit alarms and measurements in real time.

Versions

To perfectly integrate **SICRES** in all products of the Salicru range, both current equipment and the previous series, there are two versions:

- **SICRES CARD:** For product ranges with a slot for the **SICRES** card. This avoids having small units around the equipment.
- **SICRES BOX:** When the unit does not have a slot, the **SICRES** adapter can be installed externally.



SICRES CARD

SICRES BOX

FORMS

MODEL	BASIC	MEDIUM	PREMIUM	PREMIUM+
Monitoring from SALICRU	●	●	●	-
Web Monitoring	-	●	●	●
Telephone support	●	●	●	●
Monthly reports	●	●	●	●
Remote access to the unit	-	-	●	●
Customer-owned system	-	-	-	●
SMS sending	●	●	●	●
Electronic mail	●	●	●	●
Technical support on location	●	●	●	●
Maintenance contract	● ⁽¹⁾	● ⁽¹⁾	● ⁽¹⁾	-
Unit parameter adjustment	-	-	●	●

(●) Included (-) Not Included

(1) Consulting procedures for maintenance contracts.

Data may change without previous notice

REQUIREMENTS

Have a maintenance contract.

SICRES SNMP/WEB ADAPTER compatible with the unit.

Internet connection.

COMPATIBILITY

SERIE	SICRES CARD	SICRES BOX	SICRES+SNMP TH GX
SPS.ADVANCE RT	● ⁽²⁾	●	-
SLC LINK	●	●	-
SLC TWIN	●	●	-
SLC TWIN PRO	●	●	-
SLC TWIN RT	●	●	-
SLC TWIN PRO 33	-	●	-
UPS DL	-	●	-
SLC CUBE	-	●	-
SLC CUBE STR	-	-	●
SLC CUBE3	●	●	-
SLC CUBE3+	●	●	-
SLC ADAPT	-	●	-
SLC ELITE	-	-	●
SLC ELITE MAX	-	-	●
SLC X-TRA	●	-	●
CS IS	-	●	-
DC power-L	●	-	-
DC power-S	●	-	-
EMi3	●	-	-
RE3	●	-	-

(●) Compatible (-) Not compatible

(2) Equipment ≥ 1500 VA



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SOFTWARE - ADAPTERS Management & monitoring

SOFTWARE - ADAPTADORES: The best complements for a full protected installation

An Uninterruptible Power Supply (UPS) is needed to protect electrical installations from disturbance and avoid damage to the loads or losse of data. However, this protection will not be complete until the user has a completely autonomous system that informs them of the status of the UPS and proceeds to perform preconfigured actions.

This system consists of the management and monitoring of the UPS in real time, to allow full remote control of it all times by means of software installed in a PC/Server and/or **Ethernet/SNMP Web adapter**. Salicru offers this complete solution with the: **UNMS II, RCCMD, WINPOWER** and **VIEWPOWER** softwares and the different **Ethernet/SNMP Web adapter** available for each of the UPS series.

Ethernet/SNMP: IP network integration

For the perfect integration of the UPS in the computer network, the best thing is not to depend exclusively on a computer, which is why the **Ethernet/SNMP Web adapter** (SNMP, V1, V2 o V3) enables the UPS to be completely independent without any need to have a PC or server associated.

BOX and **CARD** versions: Allowing the UPS to be integrated in the computer network. Available in box and insertable card version for the intelligent slots of the **Salicru** equipment. There is also the possibility of connecting temperature and humidity sensors and TCP, RS-232 and RS-485 communication with MODBUS protocol.



RCCMD: Remote shutdown application

It becomes virtually impossible to manage and monitor a UPS in heterogeneous computer networks where different system converge, for the less common operating system on the market do not have this software. The **RCCMD** is an application that allows the simultaneous and secure shutdown of the different servers or Workstations of 95% of the existing platforms.

Like the most complete monitoring softwares, the **RCCMD** is capable of launching messages or commands to the diferent clients of the network.

Different actions are executed by customized scripts, when the order from the **SNMP Web adapter** is received. Compatible with all operating systems, even with virtual systems (vmware, citrix and hyperv).



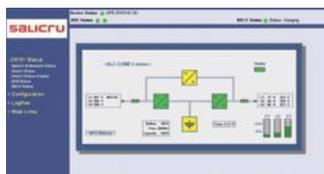
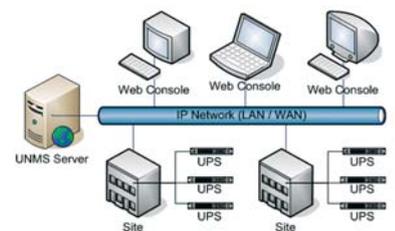
Highlighted functionalities

- Web monitoring of main parameters and status of each equipment (mains failure, mains restored , inverter fault, bypass transference,...).
- Warning electronic mail or SMS sending (depending on the availability of the IT environment).
- Capacity to be integrated in SNMP platforms (Nagios).
- Closing files and servers arranging by means of RCCMD software.
- MODBUS protocol included to be integrated in industrial applications; available by means of TCP, RS-232 or RS-485.

UNMS II: Unlimited UPS management

For networks with more than one UPS to feed the and which require monitoring concentration from a single control post, the **UNMS II** (UPS Network Management System) software is the ideal solution. The **UNMS II** allows the management of multiple installations of all devices that have an **Ethernet/SNMP Web adapter** and/or sensors.

The **UNMS II** has different levels or licences, which depend on the number of UPS to be managed. Except for the basic level, when the UNMS II licence is acquired, a screen can be personalised to make the management of all the UPS much easier and intuitive.

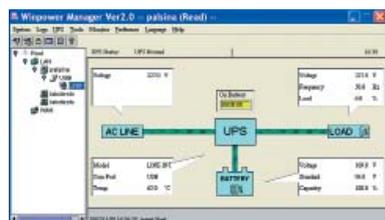


SOFTWARE - ADAPTERS

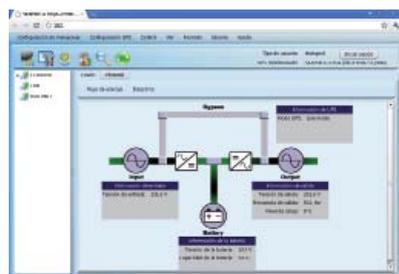
Management & monitoring



WINPOWER y VIEWPOWER: The best UPS control



WINPOWER



VIEWPOWER

When you have a single work station of a small computer network, the UPS used for their protection are single phase low or medium power, which means they have to be implemented in the system management.

The **WINPOWER** and **VIEWPOWER** softwares allow shutdowns to be monitored and controlled in the PCs where they are installed, and electronic mails, SMS messages or broadcasts to be sent, amongst other functions.

Optional

· **SENSORS:** For cases where it is essential to have all the environmental data of the room where the UPS is located, there is a temperature and humidity sensor that allows these data to be included from the monitoring software without resorting to a totally external system. The sensor includes communication cable with the **Ethernet/SNMP Web adapter**.

· **DISPLAY:** The perfect view of the parameters of the UPS from a distance by means of a display that shows any parameter from the **Ethernet/SNMP Web adapter** or **RCCMD** software.



Display size 400 mm x 110 mm.



Display size 1300 mm x 110 mm.



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TECHNICAL SPECIFICATIONS

	SOFTWARE			ETHERNET/SNMP ADAPTERS/SNMP				
	RCCMD	WINPOWER	VIEWPOWER	SNMP/WEB ADAPTER				
				TH BOX GX5	BOX GX5	TH CARD GX5	CARD GX5	TH MINI CARD GX5
Monitoring (software installed in PC)	-	●	●	-	-	-	-	-
Web Browser viewing	-	-	●	●	●	●	●	●
RS-232 Communication port	-	●	●	-	-	-	-	-
USB Communication port	-	●	●	-	-	-	-	-
Ethernet TCP/IP Port	-	-	-	●	●	●	●	●
Ordered shutdown of the PC /server	●	●	●	●	●	●	●	●
Sending electronic mails	-	●	●	●	●	●	●	●
MODBUS Protocol (RS-232 port)	-	-	-	●	-	●	-	●
MODBUS Protocol (TCP)	-	-	-	●	●	●	●	●
Software UPS shutdown	-	●	●	-	-	-	-	-
Location in UPS slot	-	-	-	-	-	●	●	●
Monitoring of the main parameters of the UPS	-	●	●	●	●	●	●	●
Broadcast (window) of warning in the event of alarm	●	●	●	-	-	-	-	-
Different user/administrator levels	-	●	-	●	●	●	●	●
Time synchronisation	-	-	-	●	●	●	●	●
Event log	-	●	●	●	●	●	●	●
Value log	-	●	●	●	●	●	●	●
Temperature and humidity sensor connection	-	-	-	●	-	●	-	●
4 digital inputs / outputs	-	-	-	●	-	●	-	-

Data may change without previous notice.

COMPATIBILITY

	SOFTWARE			ETHERNET/SNMP ADAPTERS				
	RCCMD	WINPOWER	VIEWPOWER	SNMP/WEB ADAPTER				
				TH BOX GX5	BOX GX5	TH CARD GX5	CARD GX5	TH MINI CARD GX5
SPS.HOME 2011	●	●	-	-	-	-	-	-
SPS.ONE	●	-	●	-	-	-	-	-
SPS.SOHO	●	●	-	-	-	-	-	-
SPS.SOHO+	●	●	-	-	-	-	-	-
SPS.ADVANCE	●	●	-	●	●	● ⁽¹⁾	● ⁽¹⁾	-
SPS.ADVANCE RT	●	●	-	●	●	● ⁽¹⁾	● ⁽¹⁾	-
SLC TWIN	●	●	-	●	●	●	●	-
SLC TWIN PRO	●	●	-	●	●	●	●	-
SLC TWIN RT	●	●	-	●	●	●	●	-
SLC TWIN PRO 33	●	-	●	-	-	-	-	●
UPS DL	●	-	-	●	●	-	-	-
SLC CUBE	●	-	-	●	●	-	-	-
SLC CUBE STR	●	-	-	●	●	●	●	-
SLC CUBE3	●	-	-	●	●	●	●	-
SLC CUBE3+	●	-	-	●	●	●	●	-
SLC ADAPT	●	-	-	-	-	-	-	●
SLC ELITE	●	-	-	●	●	●	●	-
SLC ELITE MAX	●	-	-	●	●	●	●	-
SLC X-TRA	●	-	-	●	●	●	●	-

(1) Equipments ≥ 1500VA

SALICRU

Avda. de la Serra 100
08460 Palautordera
BARCELONA - Spain
Tel. +34 93 848 24 00
Fax +34 93 848 11 51
export@salicru.com
SALICRU.COM



@salicru_SA



www.linkedin.com/company/salicru

DELEGATIONS AND TECHNICAL SUPPORT & SERVICE (TSS)

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GIJÓN	SEVILLE
LAS PALMAS DE G. CANARIA	VALENCIA
MADRID	VALLADOLID
MÁLAGA	ZARAGOZA
MURCIA	

SUBSIDIARIES

CHINA	MOROCCO
FRANCE	PORTUGAL
HUNGARY	SINGAPORE
MEXICO	

REST OF WORLD

ALGERIA	ESTONIA	LITHUANIA	SWEDEN
AUSTRIA	FINLAND	MALAYSIA	SWITZERLAND
BELGIUM	GERMANY	NETHERLANDS	THAILAND
BRAZIL	GREECE	NIGERIA	TUNISIA
BULGARIA	INDONESIA	PERU	UAE
CHILE	IRAN	PHILIPPINES	UKRAINE
CUBA	IRELAND	POLAND	UNITED KINGDOM
CZECH REPUBLIC	ITALY	ROMANIA	UNITED STATES OF AMERICA
DENMARK	JORDAN	RUSSIA	URUGUAY
ECUADOR	KUWAIT	SAUDI ARABIA	VENEZUELA
EGYPT	LATVIA	SLOVAKIA	VIETNAM

Product Range

Uninterruptible Power Supplies (UPS)
Lighting Flow Dimmer-Stabilisers
DC Power Systems
Static Inverters
Photovoltaic Inverters
Voltage stabilisers

