

OUR SOLUTIONS

APRIL 2023



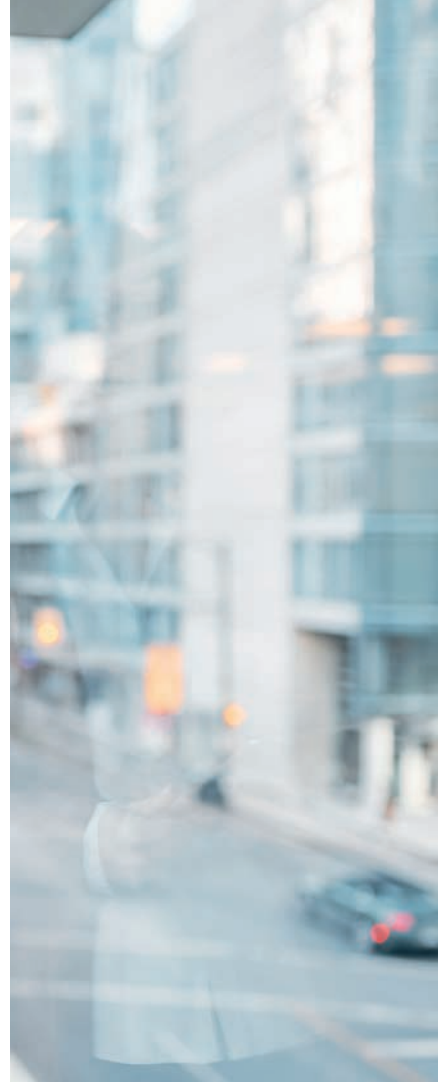
SALICRU



SALICRU

ENERGY EFFICIENT SOLUTIONS

For over 58 years, Salicru has been able to adapt to the evolution of the power electronics market and constantly develop in all of its business areas. This has enabled the company to become a leading centre of technological transfer in the field of security electronics, as a way of responding to the new challenges and needs of society, with the main mission to guarantee a continuous, clean, economical, reliable and ecological electricity supply to its customers.



SOLUTIONS

To ensure this energy availability, Salicru offers the following ranges:

Uninterruptible power supplies (UPS)

Electrical protection with backup for all kinds of critical environments.

Photovoltaic solar inverters

AC voltage generation with mains connection from solar energy.

Variable frequency drives

Efficient control of any application driven by asynchronous motors

DC Systems

Solutions for AC/DC and DC/AC power supply

Transformers and autotransformers

Adjustment of mains voltage level

Voltage stabilisers

Regulation of electricity supply

MARKETS

Salicru offers its products and services to the industrial, electronic, computer, street lighting, telecommunications, energy efficiency and renewable energy markets.

In Spain, among Spanish manufacturers, is the market leader in each of the segments in which it is present. This leadership is especially significant in the UPS market, a segment into which Salicru introduced Spain's first prototype in 1973.

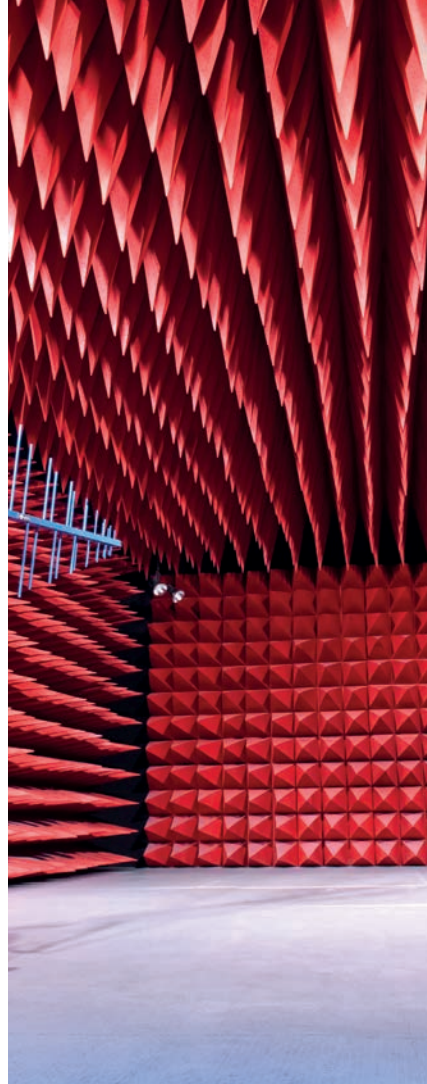
Salicru distributes its products from its headquarters located in Palautordera

(Barcelona) and from offices in Madrid, Valencia, Bilbao, Alicante, Malaga, the Balearic Islands, the Canary Islands, Zaragoza, Galicia, Asturias and Seville.

At international level, its entrepreneurial spirit and strategy of international expansion have led to Salicru currently being present in more than 70 countries, most notably in European, Asian and South American markets. For its expansion strategy abroad, Salicru has ten subsidiaries located in Africa, China, France, Hungary, Mexico, Middle East, Morocco, Peru, Portugal and United Kingdom.

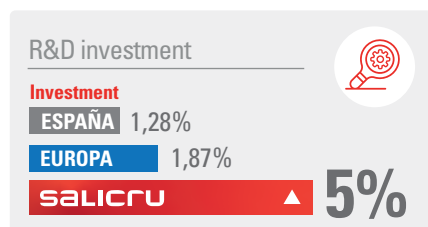
Salicru's consolidation of its international presence, which began in 1978, has led to it becoming a world leader in the design of electricity supply solutions.

+130
COUNTRIES
where has
installed devices



RESEARCH AND INNOVATION

With the goal of continuously offering new solutions and products to its customers, Salicru never ceases to research and innovate. To achieve this, it allocates an average of 5% of its annual turnover to its R&D department, a percentage that is much higher than the 1.28% national average for technology companies and the 1.87% European average.



Salicru is committed to research, development and technological innovation as an industrial growth strategy. Through various lines of action, the company constantly strengthens its activities in this area with the goal of promoting a continuous process of product and service improvement, enhancing new technological capabilities and placing itself at the forefront of its sector.

An example of Salicru's commitment to innovation can be found in its new engineering activities: electric vehicles, variable speed drives, cutting-edge human interfaces and Internet of Things (IoT) devices and platforms.

New resources to enable the company to undertake the full digitisation of its products and offer power electronics engineering solutions to other sectors such as electric mobility, high-speed rail and 3D printing, for which both custom designs and technical/economic feasibility studies are carried out.

The company is persistently improving its Connected Software section to respond to the new competitiveness needs of Industry 4.0.

And, especially, to optimise the connectivity of Salicru's products and offer cloud solutions tailored to the protection and security needs of its customers.

58 YEARS
1965
of industrial activity

14
National offices

10
International subsidiaries

ENERGY EFFICIENCY

Salicru believes that energy efficiency is key to reducing energy consumption while maintaining energy services that, without diminishing comfort and current quality of life, protect the environment and encourage sustainable behaviour in their use.

For the company, energy efficiency is a corporate asset that provides greater competitiveness by contributing to the optimisation of associated processes and facilities, as well as reducing consumption and CO₂ emissions. This is why, after 15 years of success in the utilisation of the energy of street lighting, the company has gone a step further and decisively opted for developing new products that will position it with greater strength in the energy efficiency and renewable energy market.

In addition, as one of the main cornerstones of Salicru's business strategy, all new energy efficiency applications and technologies are also applied to the manufacturing process of its own products.

SERVICE

Salicru makes available to its customers its extensive experience of more than 57 years in the field of power electronics, experience that not only translates into a great variety of products but also extends to a wide range of services.

The most important of these is the company's **Technical Service and Support (SST)**, which is available both nationally and internationally,

and enables us to be closer to customers and respond immediately to their needs.

In addition to this proximity to our customers, Salicru also has a **Remote Management and Supervision System** that offers the possibility of remotely controlling their devices. It is an interactive system that makes it possible to carry out operations on devices and be kept informed of their status, with the resultant savings on resources and costs.

Another service to highlight in this area is our 24/7 Remote Maintenance, which enables customers to focus all of their attention on managing their businesses and let us take care of their electrical protection needs.



REFERENCES

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- Abertis
- ADIF
- AENA
- Air Liquide
- Alstom Power
- Arcelor Mittal
- Axa
- Banc de Sabadell
- Basf
- Bayer
- BBVA
- Boehringer Ingelheim
- Bombardier
- Bouygues Telecom
- CAF
- Carrefour
- CaixaBank
- Cepsa
- China Central TV
- Cisco Systems
- Credit Lyonnais
- Dubai Natural Gas
- EADS
- Ecopetrol
- El Corte Inglés
- Endesa
- E.on
- Ericsson
- Fagor
- FNAC
- Fujitsu
- Gallina Blanca Star
- General Electric
- General Motors
- Hewlett Packard
- Hitachi
- Honeywell
- Iberdrola
- I.B.M.
- Indra
- Ingram Micro
- Intel
- Ikusi
- Lafarge
- Lucent Tech
- Maersk
- Mapfre
- Media Markt
- Motorola
- Naturgy
- Nestlé
- Nokia
- Orange
- Otis
- Pemex
- Pepsico
- Portugal Telecom
- REE
- Renault
- Repsol-YPF
- Roche
- SAP
- Siemens
- Sony
- Stanley
- Star Alliance
- Telefónica
- Texaco
- Thales
- Thomson
- Toshiba
- Unilever
- Universal Studios
- Vodafone
- Yokogawa



UNIQUE PROJECTS

Salicru's prestige and experience have led it to participating in national and international projects which, due to their characteristics, can be considered as unique. Different kinds of projects carried out in collaboration with other customers, notable among which are the following:

- Branches and ATMs of the Bank of Riyadh (Saudi Arabia)
- Protection for the electricity grid of CaixaBank (Spain)
- Energy coverage for new AVE high-speed lines (Spain)
- Emergency power supply for the turbines of the Spanish Navy's F-100 frigates (Spain)
- Photovoltaic power for the 'Galápagos with its own electricity' project, the Galápagos Islands (Ecuador)
- Barcelona Airport's apron flood lights (Barcelona, Spain)
- Power for engine equipment control at Airbus' Bremen plant (Germany)
- Rural mobile telephone access project (Spain)
- Madrid and Bilbao Metro (Spain)
- Video signal protection for television broadcasting in 1st and 2nd division football stadiums (Spain)
- Protection for Barcelona and Zaragoza's traffic light systems (Spain)
- Protection for street lighting in Tunisia's main municipalities (Tunisia)
- Lighting for the access road to the Great Wall of China (Beijing, China)
- Protection for the Termosolar Borges power generation plant (Spain)
- Photovoltaic supply of the company Serpiscolor from Alicante (Spain)
- Photovoltaic supply from the company F. Sola from Almería (Spain)

DATA

+120.000
EQUIPMENTS
production
per year

+2.000.000
EQUIPMENTS
in operation
worldwide

180
MVA/YEAR
safe power
supply

ISO
9001
Quality
SGS

ISO
14001
Environment
SGS

ISO
45001
Safety and
health
SGS

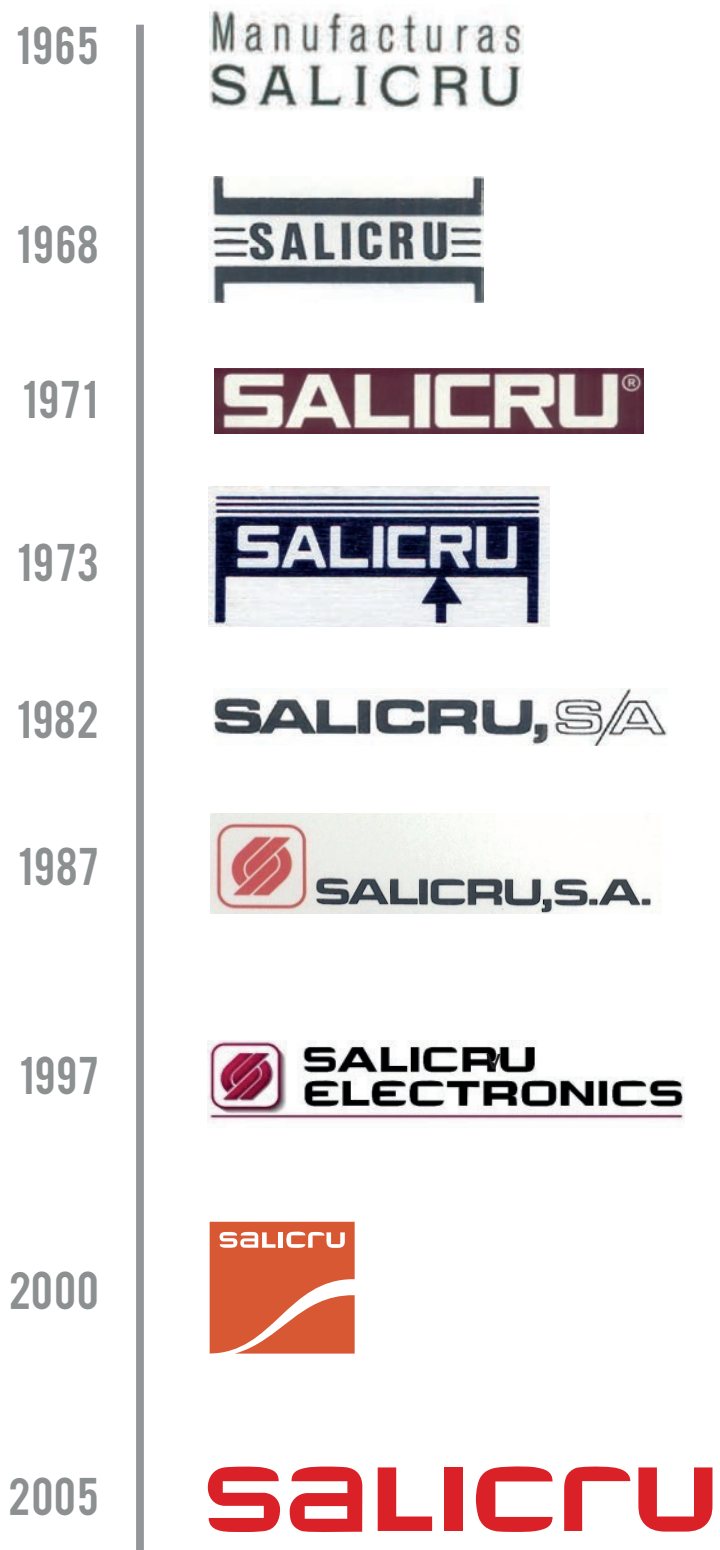
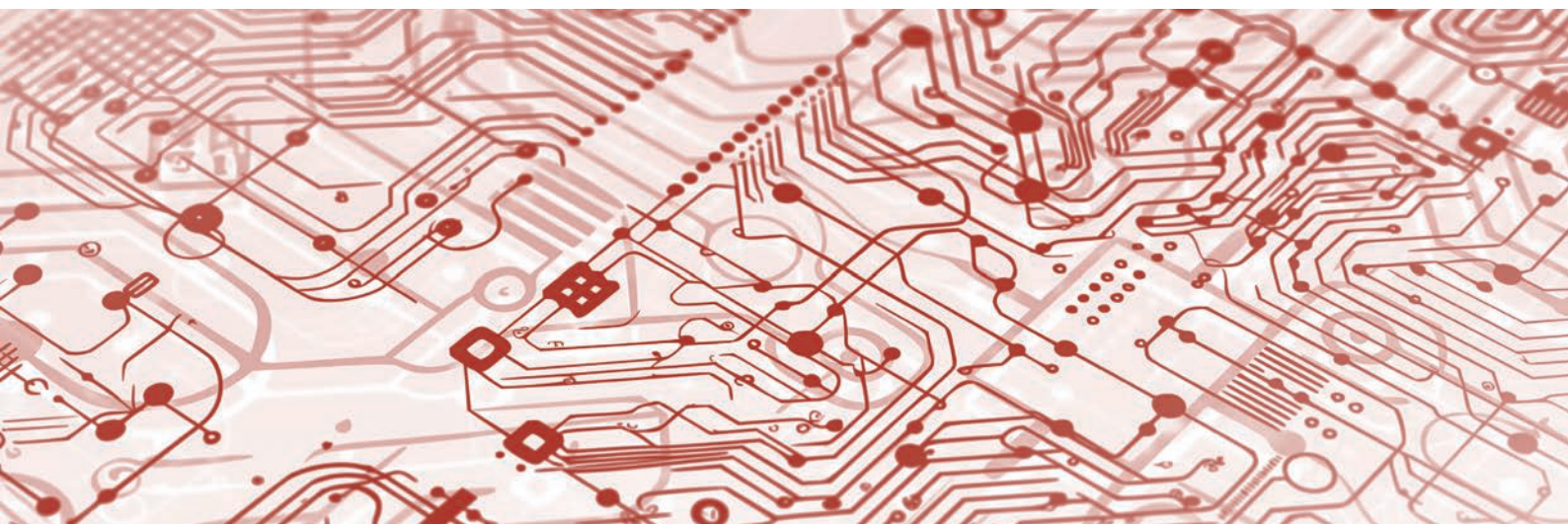


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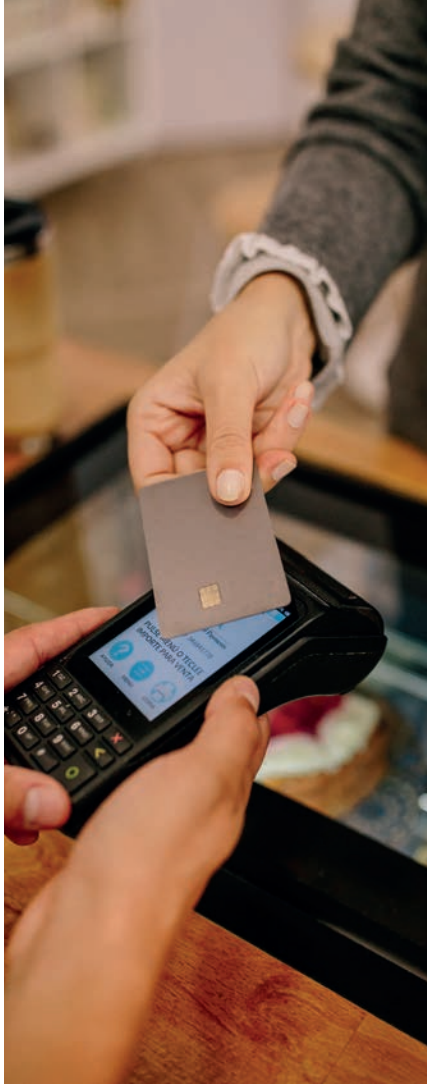




HOMES, OFFICES & SHOPS

ADVANCED AND VERSATILE PROTECTION OF COMPUTER, TELECOMMUNICATIONS AND MULTIMEDIA EQUIPMENT

We live in a society of digital information, in the age of connectivity. In our homes, offices and small businesses, we have numerous computer and audiovisual devices connected to the power supply which we also use to store large amounts of important personal and professional files. These documents, as well as the technologies and systems associated with them, have high strategic value, but they also have one thing in common: they are all dependent on a stable and good-quality power supply to ensure uninterrupted enjoyment of their benefits. To make this possible, Salicru offers optimum solutions to ensure their integrity and maximum protection at all times.



Storms, lightning, excess demand... there are many different causes of electrical disturbances that can affect computer and electronic equipment in the office and home environments.

These power failures can affect computer systems and its vulnerability. In fact, the main factor of data loss in digital environments is power supply disturbances. On top of viruses and cyber attacks, this circumstance causes about half of all data losses. Its economic impact on offices and businesses can be enormous, with an indeterminate duration, and it represents serious implications for customers, suppliers, and workers. It is estimated that 40% of the disturbances cause incidents in the connected loads, including data loss.

Changes in the electrical network can also endanger the integrity of computer, audiovisual or telephone equipments. Nowadays, technologies are more and more precise and the components more complex and with more electrical involvement. A cut of power or an overvoltage reduces the useful life of equipment and in some cases destroys it, increasing investment costs.

Salicru's mission is to ensure optimum energy availability and advanced and versatile protection of equipments in the home and office environments.

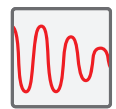
- **Uninterruptible Power Supplies (UPS):** these store energy to ensure continuity of AC supply.
- **Active electrical protectors:** multi-socket power strips for powering and protecting equipment in the office and home.

DISTURBANCES

In home, office and small business environments, these are the most common and harmful electrical disturbances for computer and electronic equipment connected to the power supply.



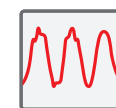
Power cuts and micro-cuts



Undervoltages and voltage gaps



Transient and permanent overvoltages



High frequency disturbances

UNINTERRUPTIBLE POWER SUPPLIES (UPS)

Current storage systems, servers and associated network electronics use miniaturised components that are more sensitive to electrical disturbances than their predecessors from previous generations. This means that prolonged exposure to these disturbances without adequate protection can contribute to reducing the life of electronic components and to causing some of the most common faults, without us being able to perceive them in all of their magnitude.

To prevent these situations, the best solution is an Uninterruptible Power Supply (UPS), synonymous with efficiency and savings for various reasons.

- They are more efficient sources of energy, because the equipment experiences higher performances
- They eliminate the harmonics that come from the loads towards the network, allowing a better power quality
- They eliminate network fluctuations (power outages, surges) and prevent shutdown and restart of systems

Salicru's UPS adapt to the specific needs of each installation, and with a single piece of equipment it is possible to protect the different components that can be found in homes, offices and shops, in single-user or multi-user environments.

ACTIVE ELECTRICAL PROTECTORS

The latest generation multiple bases act against overloads, overvoltages and atmospheric discharges. Some models have technology to prevent vampire or phantom loads, which are those consumptions that some devices have in stand-by mode.

- Wide range of models (3, 5, 6 and 7 sockets)
- Dual USB charger for charging electronic devices
- Orientated sockets for easy connection
- Overvoltage indicator
- EMI/RFI filter for electrical noise reduction
- Master/slave function for energy saving
- Integrated cable winder

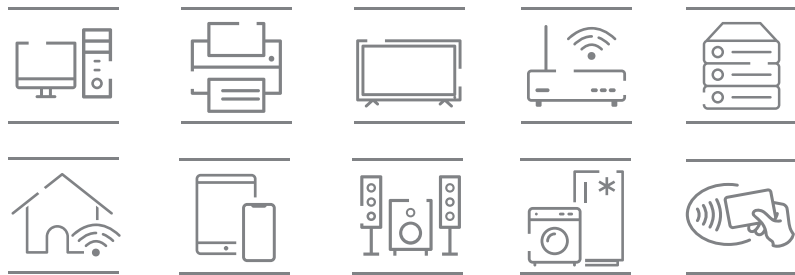
MICROCUTS <1s.

50% of micro outages last less than 1 second and 90% of network failures last less than 5 minutes

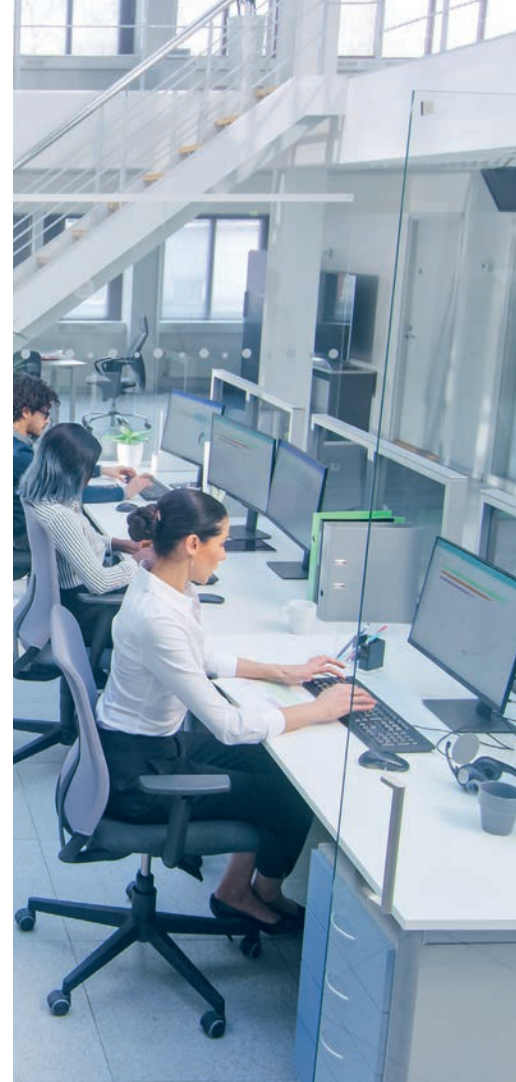
50%

ELECTRICAL DISTURBANCES

APPLICATIONS



Personal Computers are subject to around 1,400 electrical problems a year



SPS SAFE

Active electrical protectors



SPS NET

Compact DC UPS with lithium-ion batteries



SPS HOME

Off-line APFC multi-socket UPS 650VA and 850VA



SPS ONE

Line-interactive UPS 500VA - 2,200VA



SPS SOHO+

Line-interactive UPS 500VA - 2,200VA with dual USB charger



SPS ADVANCE T

Line-interactive sine-wave UPS tower 850VA to 3,000VA

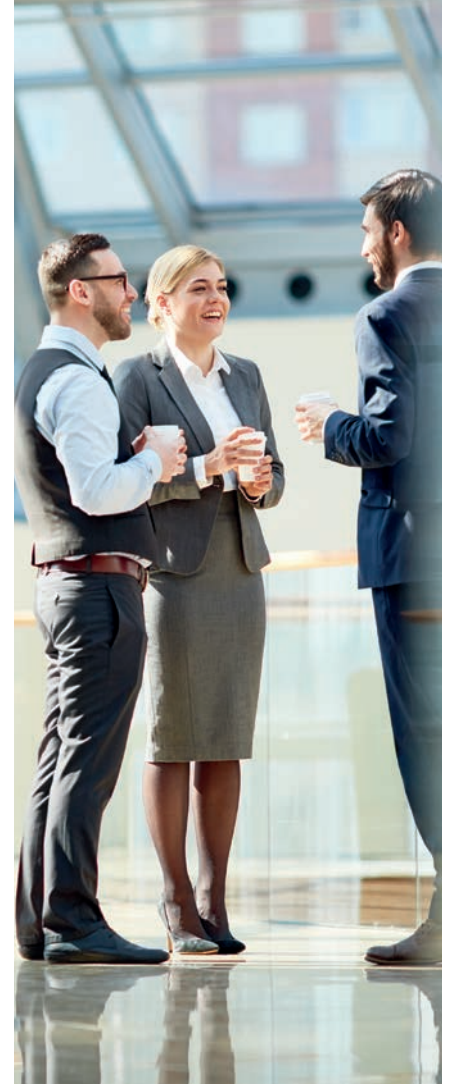




SMES, LARGE CORPORATIONS & PUBLIC SECTOR BODIES

TAILOR-MADE SOLUTIONS TO ENSURE THE
SECURITY OF THE POWER SUPPLY AND PRO-
TECT SENSITIVE INFORMATION

In today's world, both the public and private sectors are committed to security and energy efficiency in their production and information systems. What both have in common is that they need to store and process a large volume of information that requires the utmost security to guarantee absolute confidentiality and continuous availability.



Salicru's uninterruptible power supplies (UPSs) feature the technology and know-how necessary to protect the facilities of SMEs, large corporations and public authorities from all kinds of electrical disturbance.

Today, practically all companies and public authorities, whether medium-sized or large, have some sort of data centre, with the largest even having several. One of the most important factors that influences the creation of centres of this kind is the need to ensure continuity of service to customers, employees, suppliers, citizens and partner companies.

In these environments, physical protection of computer or communications equipment, as well as database servers that may contain critical or sensitive information, by systems that ensure a stable and permanent power supply is very important.

A UPS is a key factor to take into account when making decisions that affect the energy security of data centres. Incorporating them into this kind of centre accounts for approximately 3-5% of total expenditure, a relatively small percentage that could represent a considerable saving by preventing data losses.

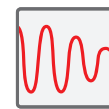
On the other hand, flexibility, scalability and redundancy are rising parameters in the ICT market. Having equipment that adapts to the specific growth needs of a company represents an important economic and operational advantage. Salicru has a **specific range of modular systems**, options that significantly increase the safety of classic systems. These are options that improve power availability, ensure reliability, and offer enhanced protection for data centers.

DISTURBANCES

The electrical network should behave as an ideal source, but in practice there are certain problems derived from electrical disturbances. In this area, these are the electrical disturbances that occur most frequently and that most seriously damage computer and electronic equipment.



Power cuts and micro-cuts



Undervoltages and voltage gaps



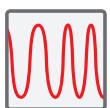
Transient and permanent overvoltages



Harmonics



Voltage oscillation



Frequency fluctuations

MAIN FEATURES

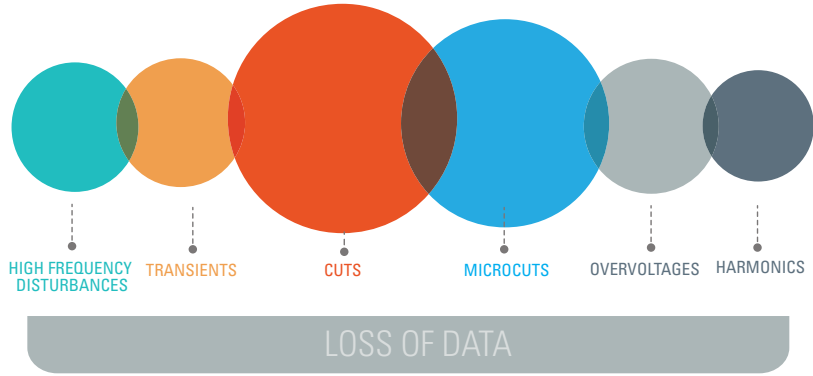
Salicru innovates, and its teams and services associated with them offer a recurring set of functionalities that constantly seek to improve their performance. The most notable are **SLC Greenergy Solution** and **SMART Solutions**, which the company has promoted for several years in the research and development of innovative products to respond to the new protection needs of its customers. The **SLC Greenergy Solution** encompasses highly energy-efficient devices built with more than 80% recyclable materials and incorporating innovative options such as 'eco-mode' and the prioritised output function for the most critical loads.



The **SMART Solution** features devices that have a set of services associated with the product such as management software, connectivity solutions, monitoring, communication encryption in SNMP environments, virtual server management, remote maintenance service and use of DSP processors.



The Remote Management and Supervision System offers the possibility of remote controlling different equipment interactively performing maintenance and setting parameters.



APPLICATIONS

High design specifications coupled with great adaptability (optional extras, growth, communication, etc.) make **Salicru's** UPSs the best protection and security option for applications that require a high level of security against all kinds of electrical disturbances.

- Data centres
- Server farms
- Unified communications (UC)
- Hosting and housing
- Voice and data networks
- Video streaming
- IT networks
- IT servers
- ERP and CRM systems
- Routers and switches
- CAD/CAM
- Business intelligence (BI)
- Hubs
- Document management
- Virtualised servers

REFERENCES



50% of information losses are due to interruptions and disturbances in the power supply.



SPS ADVANCE RT2

Line-interactive sine-wave UPS
800VA to 3,000VA



SLC TWIN PRO2

On-line double-conversion UPS
700VA to 3,000VA



SLC TWIN PRO3

On-line IoT double-conversion UPS
4kVA to 10kVA



SLC TWIN RT3

On-line IoT double-conversion tower/rack UPS
1,000VA to 10kVA PF=1



SLC CUBE4

Uninterruptible power supply with IoT
from 7.5kVA to 80kVA



SLC ADAPT/2

On-line double-conversion modular rack UPS
10kVA to 1,500kVA





| INDUSTRY

MAXIMUM PROTECTION IN THE CORPORATE ENVIRONMENT

The supply of power in the industrial field is basic and essential to ensure maximum profitability. For this reason, ensuring a continuous, reliable, efficient and economical electricity supply in industrial environments is as critical as it is vital to ensure maximum business competitiveness. Salicru has nearly 60 years of service experience in the industrial field and has installed more than 2,000,000 devices around the world. And always with the same maxim: being close to the customer to meet their needs.



Salicru has a wide-ranging portfolio that provides appropriate solutions to every type of problem or electrical disturbance, guaranteeing 24 hours of electrical power for the most sensitive systems in a sector as demanding as the industrial, and offering a continuous, clean, economical, reliable and environmentally friendly electrical supply within a wide range of power ratings, both in alternating and direct current.

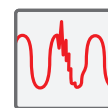
In addition, thanks to the know-how acquired for almost 60 years of industrial activity, it can also offer solutions tailored to specific problems, work that is more typical in many cases of a power electronics engineering firm than a manufacturing company.

The main solutions offered are:

- **Uninterruptible Power Supply Systems (UPS)** store energy to ensure continuity of AC supply.
- **Voltage stabilizers** ensure output voltage stability against voltage variations
- **Variable frequency drives** control the rotating speed of machinery and motors
- **Power supplies** convert altern current voltage into direct current.
- **Control transformers** provide quality and versatility in low-power transformation

DISTURBANCES

The range of possible electrical problems that can affect industry is very extensive and can affect all kinds of industrial processes: continuous manufacturing systems, control-command automations, instrumentation and measurement, supervision and control of processes, safety systems, etc.



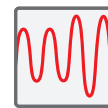
Transients



Power cuts and micro-cuts



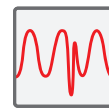
Undervoltages and voltage gaps



Transient and permanent overvoltages



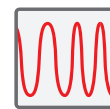
Harmonics



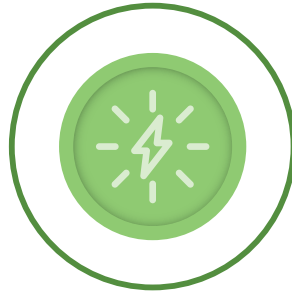
Transient voltage variations



Voltage spikes



Frequency fluctuations



INTERRUPTIONS

According to the Spanish Association of the Electrical Industry, interruptions in the electricity supply cost to Spain's economy around 6.2 billion euros per year.

MAIN FEATURES

Salicru believes in innovation, and its associated services offer a recurring set of functionalities that constantly improve their performance. Aware of the impact of energy expenditure in the industrial sector, Salicru has developed equipment with a high energy efficiency component that enables the equipment connected reduce its consumption and its environmental impact.

Another outstanding functionality is the connectivity of the equipments. Monitoring them remotely means saving on resources and gaining in operability, in addition to having a remote maintenance service that optimizes their conservation to the maximum and that advances any unforeseen event, without specifically dedicated human resources.

APPLICATIONS

The demanding construction specifications and the multiple adaptation capacity (optional equipment, modularity, communication, etc.) make Salicru's UPS the best protection and security option for technologies that require a high level of security against all kinds of electrical disturbances. Uninterruptible power supplies, voltage stabilisers, variable frequency drives and power supplies are some of the most outstanding solutions that Salicru offers today to meet the different needs of a sector as diverse as the industrial. It is a range of solutions that provides maximum reliability in electrical protection, production and control systems and industrial processes that require the use of machinery that is highly sensitive to voltage variations,

- Electric drives and furnaces
- Electrical discharge machines
- Graphic printing equipment
- Lathes and presses
- Lifting devices
- Medical equipment
- Milling machines and polishers
- Numerical controls
- Trimming machines
- TV repeater stations

REFERENCES



The main cause of data loss in the industrial world is not viruses, but the lack of electricity supply, which causes 40% of all losses



SLC TWIN RT2 Lion

Uninterruptible power supply on-line double conversion tower/rack from 1,000VA to 3,000VA with lithium-ion batteries



SLC CUBE4

Uninterruptible power supply with IoT from 7.5kVA to 80kVA



SLC X-PERT

Uninterruptible power supplies 80 to 400kVA



CONTROLVIT

Variable frequency drives from 0.2kW to 500kW



DC POWER-L

Thyristor-controlled rectifiers 10A to 800A



EMI3

Servomotor voltage stabiliser 5 kVA to 1,300kVA





INFRASTRUCTURES & ENERGY

HIGH-PERFORMANCE PROTECTION FOR LARGE CRITICAL APPLICATIONS

Transport, energy or hydraulic infrastructures are basic for social development, and our professional and personal well-being depends to a large extent on their correct functioning. Airports, railways, ports and highways as transport infrastructures; electricity and fuel networks as energy infrastructures, drinking water or drainage networks as hydraulic infrastructures... These facilities constitute a set of networks and services that are very critical for our society. For this reason and because of their ability to influence the development of multiple activities, these large structures need a continuous and stable electricity supply that does not suffer interruptions that affect their normal operation.

What would happen if the air traffic control radars lacked power supply? Or the traffic lights, operation rooms or water treatment plants?



Salicru offers a range of advanced technological solutions at the service of infrastructures as critical as those in this sector. It consists of devices that can work individually or as a complement, depending on the type of facilities to which they are connected, and offer alternating current supply continuity solutions, stability against voltage variations, control of the speed of machinery motors and adjustment of the level of voltage coming from the distribution grid. Salicru has a wide portfolio of appropriate solutions for each type of problem or electrical disturbance, which guarantee 24-hour power supply for the most sensitive systems.

Our main solutions are the **Uninterruptible Power Supplies (UPS)**. These systems store energy to ensure continuity of AC supply.

The **variable frequency drives** control the rotating speed of machinery and motors.

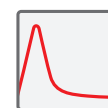
The **DC/AC systems** ensure output voltage stability against voltage variations.

The **Transformers and Autotransformers** adjust the level of voltage coming from the distribution grid.

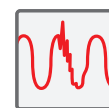
As a consequence of the knowledge acquired in its industrial activity, **Salicru** also offers custom solutions adapted to specific problems, acting as a power electronics engineering instead of a manufacturing company.

DISTURBANCES

A wide range of electrical disturbances, as diverse and varied as the infrastructure sector itself, can affect normal operation. In addition to voltage drops and losses in the conventional distribution system, this collection of infrastructures are subjected to the adverse climatic conditions.



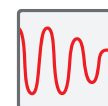
Voltage oscillation



Transients



Power cuts and micro-cuts



Undervoltages and voltage gaps



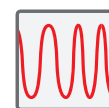
Transient and permanent overvoltages



Transient voltage variations



Voltage oscillation



Frequency fluctuations

MAIN FEATURES

Salicru believes in innovation, its devices and associated services offer a recurring range of outstanding features that constantly seek to improve performance. Remote monitoring means saving on resources and gaining operational capacity, in addition to having a remote maintenance service that fully optimises upkeep. And another of Salicru's outstanding systems is Remote Management and Supervision which offers the possibility of remotely controlling different power equipment.

Aware of the current impact of energy expenditure on the industrial sector, Salicru has developed a number of devices with a high degree of energy efficiency that enable any devices connected to them to reduce both their consumption and environmental impact.

In addition to developing, manufacturing and marketing products, the experience that Salicru has accumulated over its history has led it to also providing engineering and consulting services to its customers to assist them in resolving electricity supply issues.

UPS

Salicru has developed a range of uninterruptible power supplies (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.

They also boast parallel growth capacity or unlimited redundant security, monitoring and remote management options, incident notification, equipment health monitoring and preventive maintenance.

VARIABLE FREQUENCY DRIVES

There are increasingly different types of facilities that need to regulate the speed of their motors in order for them to adapt to changing load needs and for their energy consumption to be reduced. Salicru's variable frequency drives enable simple and efficient control of any application driven by asynchronous motors from 0.2kW to 500kW.

DC/AC SYSTEMS

Ensuring the functioning of all of these infrastructures is essential, and to achieve this, we also offer products that ensure alternative power sources, such as our DC/AC systems, devices that convert alternating into direct current (rectifiers, chargers) or direct into alternating current (inverters). They are specially designed to operate in very harsh and demanding operating environments.

TRANSFORMERS AND AUTOTRANSFORMERS

Salicru's IT series of low-voltage electrical transformers and autotransformers are used as electrical isolation for the reduction of mains disturbances or to adjust the level of voltage coming from the distribution grid. Autotransformers, with their serially-connected coils that do not provide galvanic isolation, have the function of converting one voltage to another, and, as such, are a more economical solution than transformers.

REFERENCES



93% of power supply problems are micro-cuts, which are easily preventable with a UPS



SLC CUBE4

Uninterruptible power supply with IoT from 7.5kVA to 80kVA



SLC X-PERT

Uninterruptible power supplies 80 to 400kVA



DC POWER-S

DC energy systems



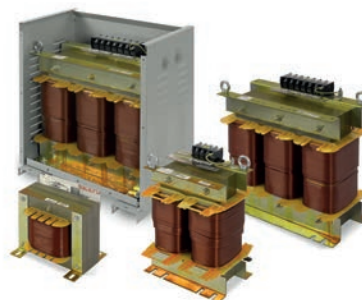
DC POWER-L

Thyristor-controlled rectifiers 10A to 800A



IT

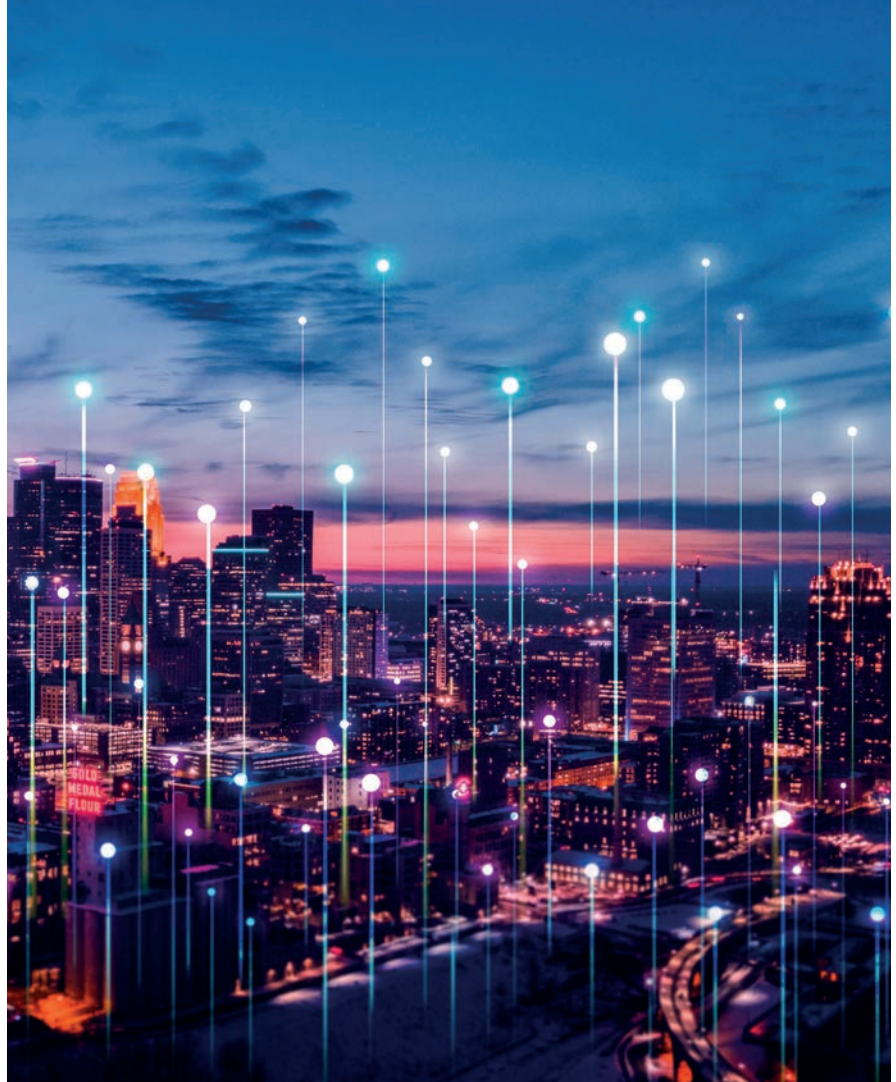
Electrical Transformers and Autotransformers



CONTROLVIT

Variable frequency drives from 0.2kW to 500kW



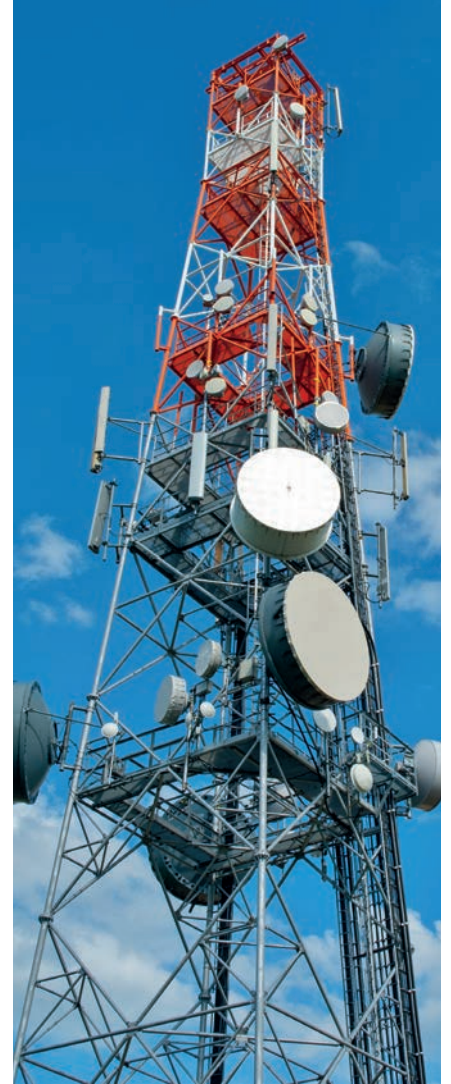
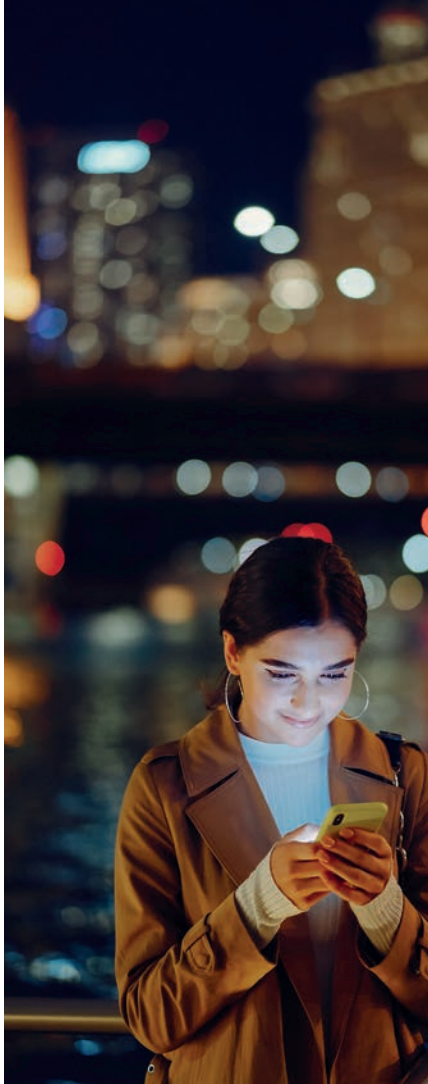


| TELECOM

THE BEST TECHNOLOGY AND PROTECTION FOR A STRATEGIC AND INNOVATIVE SECTOR

In order for telecommunications companies to offer their services, they need a constant and reliable electricity supply. An interruption means the paralysis of communication services -calls, messaging, network access-, corruption or loss of data, damage to equipment and downtime, which affects not only users but also companies.

To prevent this from happening and affecting the competitiveness of our work and wellbeing in our daily lives, uninterruptible power supplies (UPS) have been developed, devices that Salicru started manufacturing for over half a century.



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 and mobile telephones, voice and data networks and the Internet. Certain basic services that, in the event of disruption, can have major consequences for the economy, security, health, transport, etc., not to mention the loss of confidential information stored in data centres.

Therefore, due to their fundamental role in society, these critical infrastructures require very high levels of reliability in their numerous security protocols. And among those security protocols, UPSs play an essential role.

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.

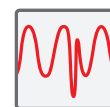
Particularly suited to the telecommunications sector are rectifiers and inverters, which help to provide a high-quality AC power supply from a DC power source.

DISTURBANCES

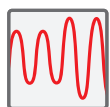
Telecommunications and their infrastructures can be affected by a wide spectrum of electrical disturbances.



Power cuts and micro-cuts



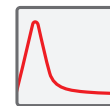
Undervoltages and voltage gas



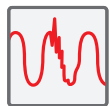
Transient and permanent overvoltages



Harmonics



Voltage oscillation



Transients

MODULAR TECHNOLOGY: THE LATEST EVOLUTION IN UPS

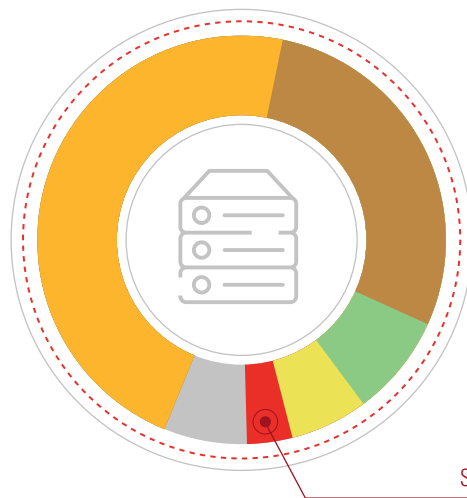
Salicru is firmly committed to modular UPS systems, devices that combine efficiency, flexibility, scalability, redundancy and reliability. These are devices that incorporate the most advanced technology, significantly improving the availability of energy and substantially increasing the security of classic power systems.

Modular technology offers an especially important advantage in data centre level and tier classification, enabling data centres to obtain high ratings (Tier III or Tier IV). And this is possible not only because of the strict specifications of the UPS used, but also because of the complete design of the DC environment, cooling system and electrical distribution to the critical loads.

- High reliability from manufacturing identical modules
- Redundancy and high availability
- Greater scalability
- Improved module performance
- Redundant static bypass
- Intelligent system management
- Drastic reduction of MTTR

- Adaptability to any kind of facility
- Optimisation of power converters
- Cycling to equalise the operation of all modules
- Improves total cost of ownership (TCO) and operational expenses (OPEX)

INVESTMENT IN DATA CENTER



SAI/UPS 3=5%

REFERENCES



The installation of a UPS in a completely new data centre represents between 3 and 5% of total expenditure



DC POWER-S

DC energy systems



SPS ADVANCE R

Line-interactive sine-wave UPS 1U rack
750VA to 1,500VA



SPS ADVANCE RT2

Line-interactive sine-wave UPS
800VA to 3,000VA



SLC TWIN RT3

UPS On-line de conversão dupla torre/rack
de 1,000 VA a 10kVA com FP=1



SLC X-PERT

Uninterruptible power supplies
80 to 400kVA



SLC ADAPT2

On-line double-conversion modular rack UPS
10kVA to 1,500kVA





ENERGY EFFICIENCY & RENEWABLES

COMMITMENT TO SUSTAINABILITY AS A CORPORATE VALUE

Society in general and industry in particular demand equipment that, in addition to responding to their business needs, reduce energy consumption, save on economic costs and promote sustainable use to protect the environment.

For many years, as a corporate value to provide greater competitiveness, **Salicru** has been committed to renewable energy and the most advanced technology applied to energy efficiency through its **SLC Greenergy Solutions** line, which includes a wide range of products and services.



In addition to guaranteeing a stable, continuous, reliable and economic electricity supply to its customers, **Salicru's** mission is also to ensure an efficient and ecological electricity supply.

With this new range of products within its **SLC Greenergy Solutions** line, **Salicru** has reinforced its commitment to the implementation of 'clean' technologies in electrical equipment and systems and has expanded its market to new industrial and professional areas, offering its customers increasingly sustainable and competitive solutions.

Why? Because of the enormous advantages that this brings, such as efficient energy consumption, energy and economic savings, reduced production and maintenance costs, increased service lives of electrical and electronic equipment by reducing the risk of breakdowns, etc., not to mention reduced CO₂ emissions and decreased use of natural resources.

As one of the main cornerstones of **Salicru's** business strategy, all new energy efficiency applications and technologies are also applied to the manufacturing process of our products. This involves the integration of a range of parameters that allow us to obtain higher performance with less energy consumption and calorific detachment.

PHOTOVOLTAIC INVERTERS

EQUINOX is **Salicru's** series of solar inverters for transformerless mains connections characterised by being lightweight, compact and highly reliable, and whose installation and use have been facilitated to the maximum for greater operational convenience.

Thanks to its innovative technology, backed by the company's extensive experience in the power electronics market, these devices offer high performance in indoor and outdoor photovoltaic plants, ranging from small powers to large facilities through parallel inverters, obtaining configurations that provide a higher degree of reliability due to their modular design. The **EQUINOX** range includes powers in connection to single-phase or three-phase grid.

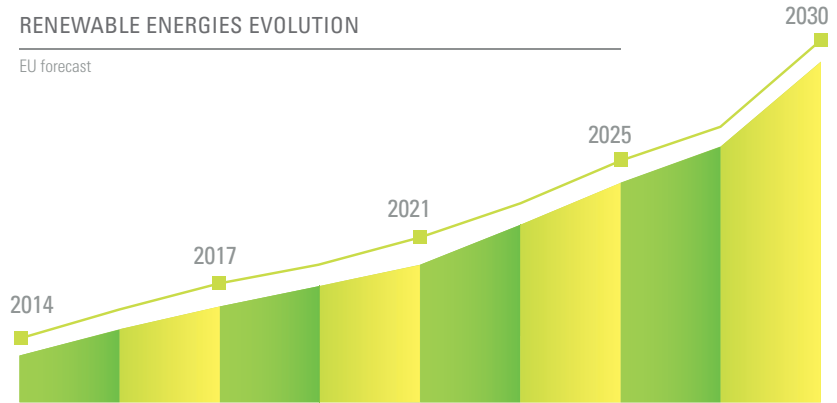
VARIABLE FREQUENCY DRIVES

Among Salicru's variable frequency drives is the **Controlvit CV30-PV** series. Its main function is to pump water using the radiation captured by solar panels as an energy source. The solar light energy obtained is transformed into direct current which powers the drive, and this in turn powers a submersible pump using alternating current, thus enabling water from the ground to be extracted. The extracted water can be stored in a tank or reservoir for subsequent use, or it can be used for direct irrigation, depending on the needs of the farm.

This functionality is extremely useful in locations that need a reliable, cost-effective water supply with a long service life and low maintenance costs. It is also environmentally friendly as it does not cause pollution or noise.

RENEWABLE ENERGIES EVOLUTION

EU forecast



REFERENCES

- Aguascalientes Photovoltaic Park, Mexico
- Al-Muntazah Street Extension, Qatar
- Barcardine Solar Farm, Australia
- Borges Thermosolar Plant, Spain
- 'Galapagos with its own electricity' project, Galapagos, Ecuador
- Tempoku Wind Farm, Japan
- Uribe Photovoltaic Solar Plant, Chile



European countries consume less energy than 10 years ago, mainly thanks to increased energy efficiency



EQUINOX2 S/SX

Single-phase solar power inverters for mains connection from 2 to 10kW



EQUINOX2 T

Solar power inverters for three-phase mains connection from 4 to 100kW



EQUINOX2 HSX

Single-phase hybrid solar inverters from 3 to 8kW



EQUINOX2 HT

Three-phase hybrid solar inverters from 4 to 12kW



CV30-PV

Variable frequency drives for solar-powered water pumping from 0.4 kW to 75kW



ACV30-PV

Complete solution for solar pumping installations



SPS NET

Compact DC UPS with lithium-ion batteries



SPS NET: Long battery life in case of power cuts in networking devices

Salicru's **SPS NET** is a compact Uninterruptible Power Supply (UPS) system that is specially designed to supply automated systems, modems and routers (+ONT) for a long period of time when a power failure occurs. **SPS NET** not only protects your equipment against power surges, but also gives you peace of mind in knowing that during a power outage you have enough energy stored in your 7800 mAh Li-Ion battery to keep the devices in your home network connected to the Internet, so you can keep in touch with your loved ones, continue a video conference or end the episode of your favourite series without consuming data on your 4G/5G tariff. **SPS NET** is easy to install and requires no technical knowledge to connect it to network devices such as routers, IP cameras, alarms or home automation systems. It generates no noise or heat and can be installed in any environment within a home or office.

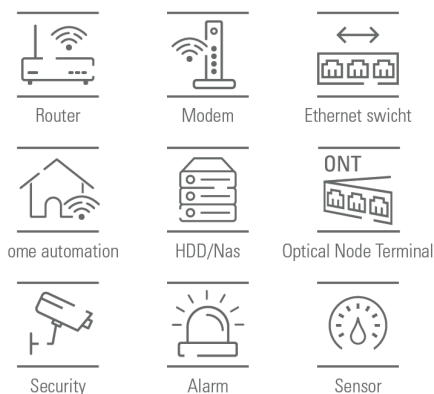
Applications: Staying connected to the Internet has become increasingly important

SPS NET recharges when connected to the mains and is the optimal solution for SMEs and home offices because it is designed to prevent downtime during a power failure. Video conferences, sending critical emails, staying connected to a virtual private network (VPN) or simply enjoying digital entertainment are all susceptible to unexpected Wi-Fi disruption due to a power outage and **SPS NET** provides you with peace of mind by ensuring that you stay connected when you need it most.



Performances

- 7800mAh Li-Ion battery.
- Wide input voltage range (90 V ÷ 265 V).
- 12 V DC output with no need for an external transformer.
- Battery life of up to 4 hours.
- Low self-consumption (<0.8 W).
- Generates zero noise or heat.
- Compact and lightweight design.
- Protection against lightning, surges and voltage peaks.
- LED-bar battery life indicator.
- ON/OFF button.
- Wall mounting possible.
- Dual output cable with connectors and adapters (x2) compatible with the vast majority of routers on the market.



Technical specifications

MODEL		SPS NET
INPUT	Rated voltage	90 V AC ~ 264 V AC
	Rated frequency	50 Hz ~ 60 Hz
OUTPUT	Rated voltage	12 V DC
	Voltage accuracy (battery mode)	± 5%
	Power	12 W (1 A.)
	Maximum power	25 W (2,1 A.)
	Transfer time	0 ms.
	Admissible overloads in battery mode	Yes Output < 11.4 V for 10 s. Output < 10.8 V for 0.4 s.
	Admissible overloads in-line mode	Yes Output < 11.7 V for 10 s.
BATTERY	Battery type	Lithium-Ion
	Rated voltage	3,7 V DC
	Capacity	7,8 Ah (3 × 2600 mAh)
	Charging voltage	4,2 V ± 0,05 V DC
	Recharge time	8 hours, @ 90% of capacity
	Back up time	Up to 4 hours
	No-load consumption	< 0,8 W
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
PROTECTION	Output short circuits	Yes (< 5 V for 3 ms.)
STANDARDS	Safety	EN62368-1
	Electromagnetic compatibility (EMC)	EN55032 Class A / EN61000-3-2 / EN61000-3-3 / EN55035
	Corporate certification	ISO 9001, ISO 14001, ISO 45001
CONTENTS	Contents of the box	1 × SPS NET, 1 × Dual DC cable, 1 × AC input cable, 2 × DC adapters, Quick guide, Warranty
DIMENSIONS	Depth × Width × Height (mm)	40 × 80 × 150
WEIGHT	Weight (kg)	0.33
CODE		658BB000005

Information subject to change without notice.

SPS HOME

Off-line APFC multi-socket UPS 650 VA and 850 VA



SPS HOME: Ideal multi-socket solution for office or home environments

Salicru's **SPS HOME** series UPSs boast off-line technology, are available in 650 and 850 VA powers, feature a 6-socket design and have the capacity to protect loads with active power factor correction (APFC).

All of the 6 sockets feature overvoltage protection and 3 or 4 of them have autonomy backup for power failure situations. All of them are also conveniently orientated for easy connection of power supply transformers and are shuttered for child protection. To complete the protection, they also feature RJ45 sockets to protect telephone/ADSL/Ethernet connections from overvoltages and/or electrical noise.

And to facilitate the management and control of the UPS, the USB interface incorporates the HID protocol, which allows the configuration of parameters and the closing/hibernation of the PC. There is also the option of software packages for the monitoring and orderly closing of files for Windows, Linux and Mac.

Applications: Multiple protection against overvoltages and with backup reserve

In the event of electrical disturbances –outages, micro-cuts, overvoltages and voltage spikes– as a result of various causes – storms, lightning, excessive demand and natural disasters– the best protection for all computer users who depend on a stable and correct power supply in a UPS. Salicru's **SPS HOME** series is, thanks to its multiple sockets, the ideal protection for single-user systems and all of their associated peripherals (HDD, monitor, printer (*), NAS, router/modem/switch, etc.).

(*) Laser printers must only be connected to the overvoltage protection sockets (surge protector).



Performances

- Off-line technology.
- Multiple base design with 6 sockets.
- 3 or 4 sockets with UPS protection; all sockets with over-voltage protection.
- Orientated sockets for easy connection.
- USB interface with HID protocol.
- Downloadable software for Windows, Linux and Mac.
- Telephone line/ADSL + Ethernet network protection 10/100 Mb.
- User-replaceable battery, battery swap function.
- Automatic restart after mains outage or end of backup.
- Cold-start function.
- Backlit On/Off button.
- Auto-detection of operating frequency (50/60 Hz).
- Economic guarantee for connected units up to €70,000. ⁽¹⁾

(1) Only European Union countries



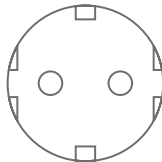
Compatibility with APFC loads

The vast majority of power supplies for electronic devices are switched-mode (SMPS) and they are increasingly being equipped with active power factor correction (APFC) to minimise distortion caused to the electrical line. **SPS HOME** UPSs are compatible with all devices that incorporate these functionalities.

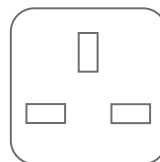
Socket formats available

The **SPS HOME** series is available in two different socket versions. The sockets are directly moulded into the top part of the UPS. The popular Schuko version conforms to the German DIN 49440-1 standard used by the majority of European countries and is also compatible with the standard aviation plugs used in France. The BS version is compatible with the plugs used in the UK and Ireland, among other locations.

SCHUKO



U.K.



USB interface with HID protocol

- Parameter configuration, UPS control and computer shutdown/hibernation through the USB port.
- Available for Windows, Linux and Mac environments.



Software

UPS monitoring and management software for closing files and applications. Compatible with Windows, Linux and Mac.



Range

MODEL SCHUKO	CODE	POWER (VA / W)	NO. OF SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 650 HOME	693CA000001	650 / 360	6 (4 UPS + 2 Prot.)	316 × 121 × 94	2.7
SPS 850 HOME	693CA000002	850 / 490	6 (4 UPS + 2 Prot.)	316 × 121 × 94	3

MODEL UK	CODE	POWER (VA / W)	NO. OF SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 650 HOME UK	693CA000003	650 / 360	6 (3 UPS + 3 Prot.)	316 × 121 × 94	2.7
SPS 850 HOME UK	693CA000004	850 / 490	6 (3 UPS + 3 Prot.)	316 × 121 × 94	3

Dimensions

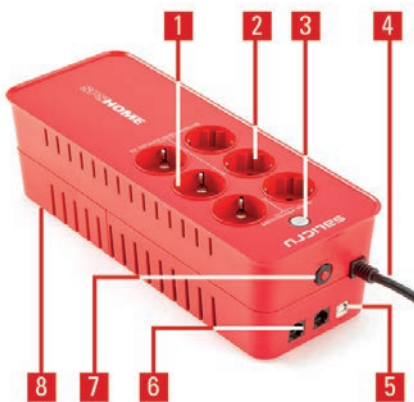


SPS 650/850 HOME UK



SPS 650/850 HOME

Connections



SPS 650/850 HOME



SPS 650/850 HOME UK

1. UPS backup + overvoltage protection sockets.
2. Overvoltage protection sockets.
3. On/Off button.
4. AC input.
5. USB-HID interface.
6. RJ45 telephone/ADSL/Ethernet protection.
7. Resettable protection circuit breaker.
8. Replaceable battery, battery swap.

Technical specifications

MODEL		SPS HOME
TECHNOLOGY		Off-line
FORMAT		Socket design
INPUT	Rated voltage	230 V
	Voltage range	180 ÷ 270 V
	Rated frequency	50 / 60 Hz (auto-detection)
	Protection	Resettable breaker
OUTPUT	Rated voltage	230 V
	Voltage accuracy (battery mode)	±7%
	Waveform (battery mode)	Pseudo sine wave
	Frequency	50/60 Hz (same as input)
	Frequency accuracy (battery mode)	±1Hz
	Transfer time	4 ms (typical)
	Compatibility with APFC loads	Yes
BATTERY	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Recharge time	8 hours to 90%
	User replaceable battery	Yes
COMMUNICATION	Ports	USB (HID protocol)
	Monitoring software	For Windows, Linux and Mac
INDICATIONS	Type	LED
	Audible	Every 30 s for battery operation / Every 0.5 s for overload / Continuous for failure
OTHER FUNCTIONS	Self-charge	Yes, even with the device switched off
	Cold start (start-up from batteries)	Yes
	Automatic restart	Yes, after end of backup
	ADSL/fax/modem transient protector	Yes, 2 × RJ45 for tel/fax, Internet ADSL + Ethernet network 10/100 Mb
GENERAL	Operating temperature	0° C ÷ 40° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2,400 masl
	Acoustic noise at 1 metre	<40 dB
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN 62040-2
	Operation	EN 62040-3
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

Information subject to change without notice.

SPS ONE

Line-interactive UPS 500 to 2000 VA

SPS ONE: The best electrical protection for home and professional office

An uninterruptible power supply (UPS) in a mini tower format with Line-interactive topology, Salicru's **SPS ONE** series provides battery backup (with pseudo sine wave inverter output) and overload protection. During power failures, **SPS ONE** devices provide battery backup to enable computer systems to shut down properly and protect against data loss and electronics damage. Operation through automatic voltage regulation (AVR) to correct small voltage fluctuations without having to use the battery, thus extending its life. The AVR function is essential in areas where voltage fluctuations occur frequently.

It features a UPS/PC communication interface via USB with HID protocol, which allows parameter setting, UPS control and shutdown or hibernation of the computer through the USB port. Compatible with Windows, Linux and Mac operating systems. UPS management and monitoring software is also available for closing files/applications for Windows, Linux and Mac families. Free and downloadable from www.salicru.com.

The **SPS ONE** series is available in 500, 700, 900, 1100, 1500 and 2000 VA power ratings.



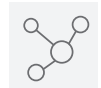
Applications: Essential security to ensure the continuity of typical office computing tasks.

The numerous computer and multimedia devices we have in our homes, offices and small businesses hold large amounts of personal and professional files and data. All of these systems, however, are highly dependent on one thing: a good quality, stable power supply to ensure that they can be used and enjoyed without interruption. The best solution to prevent interruptions, damage or data loss is the protection provided by a UPS from Salicru's **SPS ONE** series.



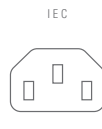
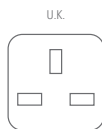
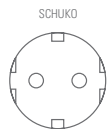
Performances

- Line-interactive technology.
- Backup battery for power supply interruptions.
- Overvoltage protection for sensitive devices.
- Automatic voltage stabilisation (AVR)
- Pseudo sine wave output voltage.
- USB interface with HID protocol for all models.
- Management and monitoring software for Windows, Linux and Mac.
- A single on/off button for ease of use.
- LED status indications.
- Automatic restart when power supply restored.
- Compact mini tower format.
- Protection against overloads, short circuits and transients.
- Economic guarantee for connected devices (EU countries only).
- SLC Greenergy solution.



Socket formats available

The **SPS ONE** is available in three different socket versions. The sockets are located at the rear of the UPS. The popular Schuko version conforms to the German DIN 49440-1 standard used by the majority of European countries and is also compatible with the standard aviation plugs used in France. The IEC C14 version is widely used to connect computing devices, while the BS version is compatible with the plugs used in the UK and Ireland, among other locations.



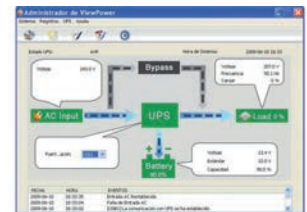
USB interface with HID protocol

- Parameter configuration, UPS control and computer shutdown/hibernation through the USB port.
- Available for Windows, Linux and Mac environments.



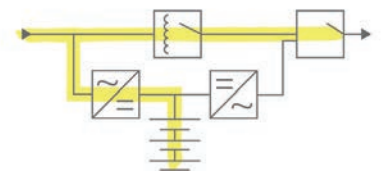
Software

- UPS monitoring and orderly closing of files/ applications for Windows, Linux and Mac families.
- Free and downloadable from www.salicru.com.



Line-interactive technology

Ideal for office environments. It combines Off-line technology with an internal voltage stabiliser for better compensation of the voltage fluctuations and to avoid a greater use of the batteries and so prolong their life time.



Range

MODEL SCHUKO	CODE	POWER (VA / W)	NO. OF SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 500 ONE	662AF000001	500 / 240	2	300 × 101 × 142	3.5
SPS 700 ONE	662AF000002	700 / 360	2	300 × 101 × 142	4.5
SPS 900 ONE	662AF000003	900 / 480	2	300 × 101 × 142	4.9
SPS 1100 ONE	662AF000004	1100 / 600	4	320 × 130 × 182	8.2
SPS 1500 ONE	662AF000005	1500 / 900	4	320 × 130 × 182	10.4
SPS 2000 ONE	662AF000006	2000 / 1200	4	320 × 130 × 182	11

MODEL IEC	CODE	POWER (VA / W)	NO. OF SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 500 ONE IEC	662AF000013	500 / 240	4	300 × 101 × 142	3.5
SPS 700 ONE IEC	662AF000014	700 / 360	4	300 × 101 × 142	4.5
SPS 900 ONE IEC	662AF000015	900 / 480	4	300 × 101 × 142	4.9
SPS 1100 ONE IEC	662AF000016	1100 / 600	6	320 × 130 × 182	8.2
SPS 1500 ONE IEC	662AF000017	1500 / 900	6	320 × 130 × 182	10.4
SPS 2000 ONE IEC	662AF000018	2000 / 1200	6	320 × 130 × 182	11

MODEL UK	CODE	POWER (VA / W)	NO. OF SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 500 ONE UK	662AF000007	500 / 240	2	300 × 101 × 142	3.5
SPS 700 ONE UK	662AF000008	700 / 360	2	300 × 101 × 142	4.5
SPS 900 ONE UK	662AF000009	900 / 480	2	300 × 101 × 142	4.9
SPS 1100 ONE UK	662AF000010	1100 / 600	4	320 × 130 × 182	8.2
SPS 1500 ONE UK	662AF000011	1500 / 900	2	320 × 130 × 182	10.4
SPS 2000 ONE UK	662AF000012	2000 / 1200	2	320 × 130 × 182	11

Dimensions



SPS 500÷900 ONE (UK/IEC)

SPS 1100 ONE (UK/IEC)

Technical specifications

MODEL		SPS ONE
TECHNOLOGY		Line-interactive
FORMAT		Tower
INPUT	Rated voltage	220 V / 230 V / 240 V AC
	Voltage range	Until 162 V ÷ 290 V
	Stabiliser	AVR Buck / Boost
	Rated frequency	50 / 60 Hz
	Auto-detection of frequency	Yes
	Protection	Thermal re-arm or fuse (depending on model)
OUTPUT	Rated voltage	220 V / 230 V / 240 V AC
	Voltage accuracy (battery mode)	±10%
	Waveform (battery mode)	Simulated sinewave
	Frequency	50 / 60 Hz ± 1 Hz ⁽¹⁾
	Transfer time	2 / 6 ms
	Socket type	Schuko (DIN), english (UK) or IEC
BATTERY	Battery type	Enclosed batteries Pb-Ca without maintenance, sealed, design life 3-5 years
	Recharge time	4-6 hours until 90% capacity
	User replaceable battery	Yes
	Back up time	Up to 20 minutes
	Battery replacement alarm	Yes
COMMUNICATION	Ports	USB HID
	Monitoring software	Compatible with Windows, Linux, Unix and Mac
	Downloadable from	support.salicru.com
INDICATIONS	Type	LED
	Operating modes	Normal / Stabilisation (AVR) / Battery
	Mains present	Green LED
	Alarm	Output battery mode, low battery (back up time), charger failure and overload
	Audible	Every 10 s for battery operation. Every 1 s for low battery. Every 0.5 s for overcharge. Continuous for fault 2 s for battery replacement.
	Failure	Red LED
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Automatic restart	Yes, after the end of back up time
GENERAL	Operating temperature	0° C ÷ + 40° C
	Relative humidity	Uptill 90%, without condensation
	Maxium operating altitude	2,400 masl
	Acoustic noise at 1 metre	< 40 dB
STANDARDS	Safety	EN IEC 62040-1
	Electromagnetic compatibility (EMC)	EN IEC 62040-2
	Operation	EN IEC 62040-3
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001

(1) Battery mode

Information subject to change without notice.

SPS SOHO+

Line-interactive UPS 500 VA - 2200 VA with dual USB charger



SPS SOHO+: Optimum electrical protection for office environments and systems

Salicru's **SPS SOHO+** series UPS systems stand out for their Line-interactive technology, compatibility with APFC (active power factor correction) loads and their dual USB charger on the front – all in a power range from 500 to 2,200 VA and versions with Schuko or IEC sockets.

Line-interactive systems use AVR (buck-boost) automatic voltage regulators to reduce possible fluctuations in input voltage, thereby lowering battery use, extending battery life and providing maximum backup if necessary.

They also feature a USB interface with HID protocol for control, parameter setting and computer shutdown/hibernation. Also available is a software package for the management and monitoring of associated environments, including virtualised systems.

The range consists of models with the following power ratings: 500, 650, 850, 1,200, 1,600 and 2,200 VA.

Applications: Electrical security when doing business

Salicru's **SPS SOHO+** series UPS systems are ideal for the protection of computer/office environments from single-user management, design or communications stations to small networks composed of one server, various workstations and all associated peripherals. At the same time, they allow the charging of mobile devices through the two built-in USB ports. They are therefore suitable for shops, self-employed professionals, small offices, franchises, dealers, etc.



Performances

- Line-interactive technology.
- Dual USB charger on the front (max. 2 Amp).
- Compatible with APFC (active power factor correction) loads.
- Complete LCD display with all information.
- Permanent stabilisation (AVR).
- USB communication interface with HID protocol.
- Monitoring software for Windows, Linux and Mac.
- Schuko or IEC sockets available.
- Resettable input thermal protection.
- Cold start function for start-up without mains.
- Automatic restart when power restored.
- Automatic frequency detector 50 or 60 Hz.
- Protection against overloads and short circuits.
- SLC Greenergy solution.



USB interface with HID protocol

- Parameter configuration, UPS control and computer shutdown/hibernation through the USB port.
- Available for Windows, Linux and Mac environments.



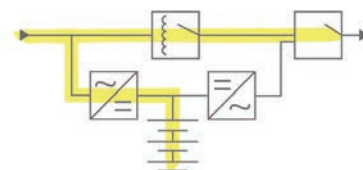
Display

1. Battery level available (25-50-75-100% and end of backup).
2. Connected load level (25-50-75-100% and overload).
3. Input voltage.
4. Output voltage.
5. Normal operation.
6. AVR operation (stabilisation).
7. Battery operation (power cut CA).
8. Device fault.



Line-interactive technology

Ideal for office environments. It combines Off-line technology with an internal voltage stabiliser for better compensation of the voltage fluctuations and to avoid a greater use of the batteries and so prolong their life time.



Dual USB charger on the front

They allow the charging of mobile devices through the two built-in USB ports.



Range

MODEL SCHUKO	CODE	POWER (VA / W)	NO. OF SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 500 SOHO+	647CA000001	500 / 300	2	290 × 100 × 143	4.4
SPS 650 SOHO+	647CA000002	650 / 360	2	290 × 100 × 143	4.4
SPS 850 SOHO+	647CA000003	850 / 480	2	290 × 100 × 143	5.2
SPS 1200 SOHO+	647CA000004	1200 / 720	4	364 × 139 × 195	10.4
SPS 1600 SOHO+	647CA000005	1600 / 960	4	364 × 139 × 195	10.7
SPS 2200 SOHO+	647CA000006	2200 / 1200	4	364 × 139 × 195	11

MODEL IEC	CODE	POWER (VA / W)	NO. OF SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 500 SOHO+ IEC	647CA000007	500 / 300	3 batt + 1 prot	290 × 100 × 143	4.4
SPS 650 SOHO+ IEC	647CA000008	650 / 360	3 batt + 1 prot	290 × 100 × 143	4.4
SPS 850 SOHO+ IEC	647CA000009	850 / 480	3 batt + 1 prot	290 × 100 × 143	5.2
SPS 1200 SOHO+ IEC	647CA000010	1200 / 720	4 batt + 2 prot	364 × 139 × 195	10.4
SPS 1600 SOHO+ IEC	647CA000011	1600 / 960	4 batt + 2 prot	364 × 139 × 195	10.7
SPS 2200 SOHO+ IEC	647CA000012	2200 / 1200	4 batt + 2 prot	364 × 139 × 195	11

Dimensions

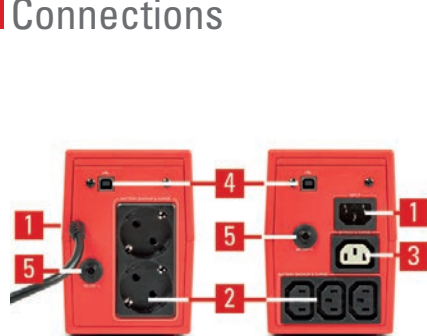


SPS 500-850 SOHO+ (IEC)

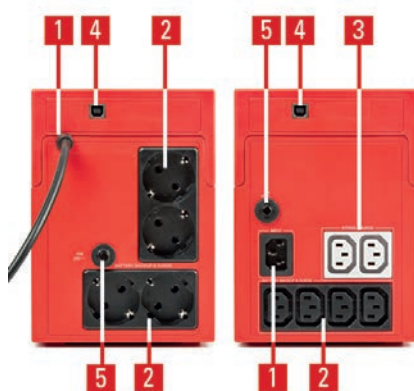


SPS 1200-2200 SOHO+ (IEC)

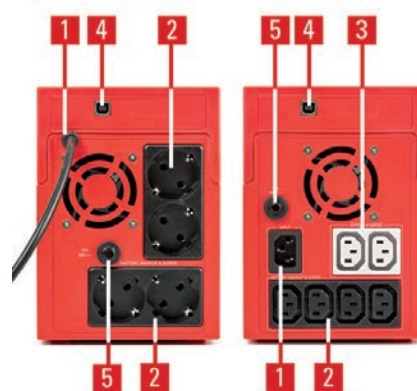
Connections



SPS 500-850 SOHO+ (IEC)



SPS 1200 SOHO+ (IEC)



SPS 1600/2200 SOHO+ (IEC)

1. AC input.
2. UPS sockets.
3. Sockets with surges protection.
4. USB port.
5. Thermal rearmable input.

Technical specifications

MODEL		SPS SOHO+
TECHNOLOGY		Line - interactive
FORMAT		Tower
INPUT	Rated voltage	230 V
	Voltage range	162 ÷ 290 V
	Stabiliser	AVR (Buck & Boost)
	Rated frequency	50 / 60 Hz (auto-detection)
	Protection	Resettable thermal cutoff
OUTPUT	Rated voltage	230 V
	Voltage accuracy (battery mode)	±10%
	Waveform (battery mode)	Pseudo sine wave
	Frequency	50 / 60 Hz (auto-detection)
	Frequency accuracy (battery mode)	±1Hz
	Compatibility with APFC loads	Yes
	Socket type	Schuko or IEC
BATTERY	Protection	Against deep discharge, against short circuit by means of fuse
	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Recharge time	2-4 hours to 90%
COMMUNICATION	Ports	USB (HID protocol)
	Monitoring software	For Windows, Linux and Mac
INDICATIONS	Type	LCD
	Values	Input and output voltage / Input and output frequency / Battery voltage / % of load
	Levels	Connected load / Overload / Battery / Low battery
	Operating modes	Normal / Stabilisation (AVR) / Battery / Fault
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Automatic restart	Yes, after end of backup
USB CHARGER	Quantity	2 ports
	Voltage	5 Vdc
	Maximum current	2,0 A
GENERAL	Operating temperature	0° C ÷ +40° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2400 m.a.s.l.
	Acoustic noise at 1 metre	<40 dB ⁽¹⁾
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN-62040-2
	Operation	EN-62040-3
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) <45 dB for 1600 and 2200 VA models

Information subject to change without notice.

SPS ADVANCE T

Line-interactive sine-wave UPS tower 850 VA to 3000 VA

SPS ADVANCE T: Reliable protection in tower format for computer rooms

Salicru's **SPS ADVANCE T** series offers, as a UPS solution, optimum levels of efficiency and reliability for all critical devices that require power supply continuity and dependability. They come in a very compact tower format to save space in server and computer rooms. They also feature line-interactive technology to combat any fluctuations in the mains supply together with an output voltage that is always sine-wave, the highest quality possible to power all sensitive loads.

For easier and more convenient use, they feature a display that shows all necessary information on the operation of the device and power supply (input/output voltage, % load, % battery, etc.) and a wide range of communication options through the USB interface with HID protocol, monitoring and management software (downloadable) and integrated smart slot (SNMP).

Also noteworthy is their compatibility with current APFC (active power factor correction) power supplies.

The power range for the **SPS ADVANCE T** series is: 850, 1,000, 1,500, 2,000 and 3,000 VA.



Applications: Reliable electrical backup with high availability

Salicru's **SPS ADVANCE T** series UPSs provide an optimum combination of features to protect all computer room equipment, from entry-level servers, through routers, switches, hubs, network devices and access points, to backup systems.



Performances

- Line-interactive technology with sine-wave output.
- Permanent AVR stabilisation (buck-boost).
- Compact tower format.
- RS-232 and USB-HID communication interfaces.
- Monitoring and management software for Windows, Linux and Mac.
- Smart slot for SNMP adapter.
- Compatible with APFC power supplies.
- Possibility of backup extension.⁽¹⁾
- Complete display showing all operating information.
- IEC output sockets.
- Automatic battery test on each start-up.
- Cold-start function for start-up from batteries.
- SLC Greenergy solution.

(1) Through additional modules, except for 850 VA model.

LINE
INTER
ACTIVE

AVR

TOWER

SLC

SNMP
SLOT

SNMP
SLOT

ON

ON

APFC
READY

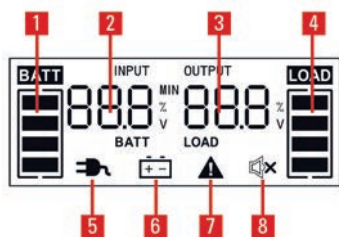
SOFT

SOFT

SOFT

Display

1. Level of battery available.
2. Values for input/battery/backup.
3. Values for output/charging.
4. Level of load connected.
5. Normal operation.
6. Battery operation (power cut).
7. Device fault.
8. Audible alarm and alarm cancellation.



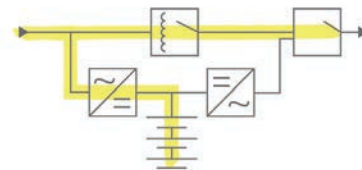
Communications

- USB interface with HID protocol: Parameter configuration, UPS control and computer shutdown/hibernation through the USB port. Available for Windows, Linux and Mac.
- UPS management and monitoring software for closing files/applications for Windows, Linux, Unix and Mac. Free and downloadable from www.salicru.com.
- Smart slot for the connection of SNMP environment integration cards and signal cards via potential-free contacts or Modbus protocol.



Line-interactive technology

Ideal for office environments. It combines Off-line technology with an internal voltage stabiliser for better compensation of the voltage fluctuations and to avoid a greater use of the batteries and so prolong their life time.



Range

MODEL	CODE	POWER (VA / W)	NO. OF OUTPUT SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 850 ADV T	6A0EA000001	850 / 595	6 × IEC C13	327 × 140 × 191	11.3
SPS 1000 ADV T	6A0EA000002	1000 / 700	6 × IEC C13	327 × 140 × 191	11.4
SPS 1500 ADV T	6A0EA000003	1500 / 1050	6 × IEC C13	327 × 140 × 191	13.3
SPS 2000 ADV T	6A0EA000004	2000 / 1400	6 × IEC C13	327 × 140 × 191	14.2
SPS 3000 ADV T	6A0EA000005	3000 / 2100	4 × IEC C13 + terminals	416 × 196 × 342	29.7

Dimensions and weights for devices with standard backup

Dimensions

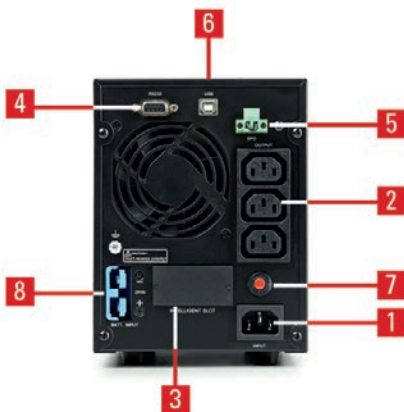


SPS 850-2000 ADV T

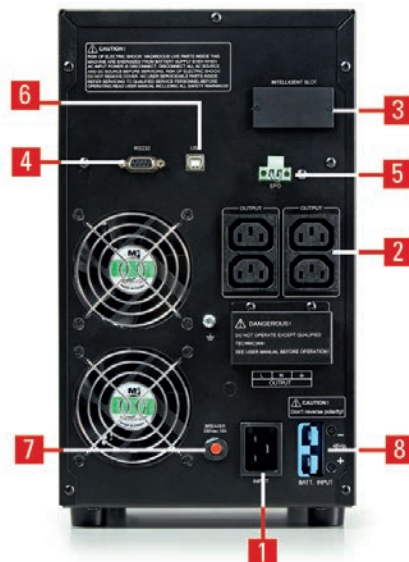


SPS 3000 ADV T

Connections



SPS 850-2000 ADV T



SPS 3000 ADV T

1. Socket input.
2. Socket IEC output.
3. Intelligent slot for SNMP/web adapter.
4. RS-232 interface.
5. Emergency stop (EPO).
6. USB interface.
7. Thermal rearmable input.
8. Connection for battery module (only in models with extra charger).

Technical specifications

MODEL		SPS ADVANCE T
TECHNOLOGY		Line-interactive
FORMAT		Tower
INPUT	Rated voltage	230 V
	Voltage range 100% load	165 ÷ 290 V
	Stabiliser	AVR (Buck & Boost)
	Rated frequency	50 / 60 Hz (auto-detection)
	Frequency range	±5 Hz
	Protection	Resettable breaker
OUTPUT	Rated voltage	230 V
	Voltage accuracy (battery mode)	±10%
	Total harmonic distortion (THDv)	<5%
	Waveform (battery mode)	Pure sine wave
	Frequency	50/60 Hz (same as input)
	Frequency accuracy (battery mode)	±1 Hz
	Compatibility with APFC loads	Yes ⁽¹⁾
	Performance Stabiliser mode (AVR)	>92%
	Performance Battery mode	>80%
	Admissible overloads in battery mode	110% for 1 min / >130% immediate
	Admissible overloads in-line mode	110% 1min / 120% immediate
	Socket type	IEC C13
BATTERY	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Charge type	I/U (constant current/constant voltage)
	Recharge time	4 hours to 90%
	Battery test	Automatic on each start-up + manual
COMMUNICATION	Ports	RS-232 / USB (HID)
	Intelligent slot	Slot for SNMP/potential-free contacts/ MODBUS
	Monitoring software	For Windows, Linux and Mac
INDICATIONS	Type	LCD + keypad
	Values	Input and output voltage / % load / % battery / backup
	Levels	Connected load / overload / battery / low battery
	Alarm	Battery / low battery / overload / failure
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Emergency stop (EPO)	Yes
GENERAL	Operating temperature	0° C ÷ 40° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2,400 masl
	Acoustic noise at 1 metre	<45 dB ⁽²⁾
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN 62040-2
	Operation	EN 62040-3
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) Power degradation of 20%

(2) <50 dB for 3000 VA mode

SPS ADVANCE R

Line-interactive sine-wave UPS 1U rack 750 VA to 1500 VA



SPS ADVANCE R: High-density security in 1U rack format

Salicru's **SPS ADVANCE R** series UPSs feature line-interactive technology (AVR stabilisation with buck-boost regulation) and pure sine-wave output to power all kinds of critical load.

This technology enables a high level of efficiency to be achieved, providing significant savings in the total consumption of the rack. Also noteworthy is their compatibility with current APFC (active power factor correction) power supplies.

In terms of communications, the options are through the RS-232 interface and management and monitoring software for Windows, Linux and Mac systems, or through the available adapters (SNMP/ Web adapter) to be inserted into the smart slot that the devices incorporate.

The series is available in powers of 750, 1,000 and 1,500 VA, all in 19" rack format and with a height of 1U. The depth is 216 mm for the 750 VA model and 485 mm for the 1,000 and 1,500 VA models.

Applications: High-performance compact solution

Specially designed for installation on racks with high occupancy density, Salicru's **SPS ADVANCE R** series UPSs, thanks to their height of only one U, enable space to be freed up for other devices. In addition, their IEC sockets facilitate the connection of all computing environment elements.



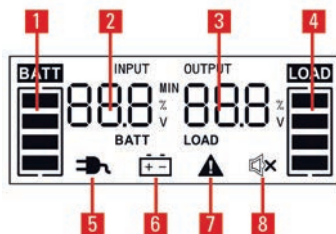
Performances

- Line-interactive technology with AVR stabilisation(buck-boost).
- Pure sine wave.
- Ultra-compact 1U rack format.
- Efficiency of up to 98%.
- Compatible with APFC power supplies.
- LCD display + keys for operation and information.
- Smart slot for SNMP/potential-free contacts/Modbus.
- RS-232 communication interface.
- Downloadable monitoring and management software for Windows, Linux and Mac.
- IEC output sockets.
- Automatic battery test on each start-up.
- Cold-start function for start-up from batteries.
- SLC Greenergy solution.



Display

1. Level of battery available.
2. Values for input/battery/backup.
3. Values for output/charging.
4. Level of load connected.
5. Normal operation.
6. Battery operation (AC power outage).
7. Device fault.
8. Audible alarm and alarm cancellation.



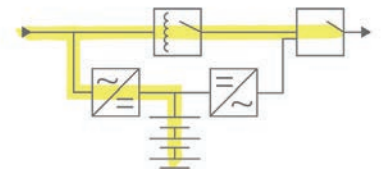
Software

UPS monitoring and management software for closing files and applications. Compatible with Windows, Linux and Mac.



Line-interactive technology

Ideal for office environments. It combines Off-line technology with an internal voltage stabiliser for better compensation of the voltage fluctuations and to avoid a greater use of the batteries and so prolong their life time.



Range

MODEL	CODE	POWER (VA / W)	NO. OF OUTPUT SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 750 ADV R	6A0DA000001	750 / 450	4 × IEC C13	216 × 433 × 44	8.8
SPS 1000 ADV R	6A0DA000002	1000 / 600	4 × IEC C13	485 × 433 × 44	14.2
SPS 1500 ADV R	6A0DA000003	1500 / 900	4 × IEC C13	485 × 433 × 44	15.8

It's recommended to keep a front distance of 35mm, parallel to the fixing plane of the ears on the rack cabinet. This distance is not included in the "Depth" total dimension.

Dimensions



SPS 750 ADV R



SPS 1000/1500 ADV R

Connections



SPS 750 ÷ 1500 ADV R

1. Input socket with fuse.
2. Output sockets (4 x IEC C13).
3. Intelligent slot for SNMP/web adapter.
4. RS-232 interface.
5. Emergency power off (EPO).

Technical specifications

MODEL		SPS ADVANCE R
TECHNOLOGY		Line-interactive
FORMAT		Rack 1U
INPUT	Rated voltage	230 V
	Voltage range 100% load	165 ÷ 290 V
	Stabiliser	AVR (Buck & Boost)
	Rated frequency	50 / 60 Hz (auto-detection)
	Frequency range	±5 Hz
	Protection	Fuse
OUTPUT	Rated voltage	230 V
	Voltage accuracy (battery mode)	±10%
	Total harmonic distortion (THDv)	<5% linear load / <10% non-linear load
	Waveform (battery mode)	Pure sine wave
	Frequency	50/60 Hz (same as input)
	Frequency accuracy (battery mode)	±1 Hz
	Compatibility with APFC loads	Yes ⁽¹⁾
	Performance Stabiliser mode (AVR)	>92%
	Performance Battery mode	>80%
	Admissible overloads in battery mode	110% for 1 min / 130% immediate
	Admissible overloads in-line mode	110% for 1 min / 130% immediate
	Socket type	IEC C13
BATTERY	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Charge type	I/U (constant current/constant voltage)
	Recharge time	4 hours to 90%
	User replaceable battery	Yes
	Battery test	Automatic on each start-up + manual
COMMUNICATION	Ports	RS-232 / DB9
	Intelligent slot	Slot for SNMP/potential-free contacts/ MODBUS
	Monitoring software	For Windows, Linux and Mac
INDICATIONS	Type	LCD + keypad
	Values	Input and output voltage / % load / % battery / backup
	Levels	Connected load / overload / battery / low battery
	Alarm	Battery / low battery / overload / failure
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Emergency stop (EPO)	Yes
GENERAL	Operating temperature	0° C ÷ 40° C
	Relative humidity	Up to 95%, non-condensing
	Maxium operating altitude	2,400 masl
	Acoustic noise at 1 metre	<40 dB
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN 62040-2(C2)
	Operation	EN 62040-3
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001

(1) Power degradation of 20%

Information subject to change without notice.

SPS ADVANCE RT2

Line-interactive sine-wave UPS 800 VA to 3000 VA

SPS ADVANCE RT2: Effective protection for entry-level servers and IT equipment

Salicru's **SPS ADVANCE RT2** series is a range of UPS featuring line-interactive technology with sine-wave output voltage and convertible tower/rack format, the height being only 2U for all power ratings. In addition, its output power factor of 0.9 and compatibility with APFC (active power factor correction) type loads make it the best option for any type of load that requires protection.

In terms of communications, it features an RS-232/USB interface (compatible with HID protocol) and a smart slot that can optionally hold an SNMP card, MODBUS or potential-free contacts; also available are software packages for local or virtual monitoring and management of protected devices.

And other outstanding features include: solutions for applications with long backup (by means of equipment with extra chargers and additional battery modules), swivel mount display and adapters (pedestal and lugs) for placing in tower or rack formats and programmable outputs (critical/non-critical loads) to extend the available backup.

The power range for the **SPS ADVANCE RT2** series is: 800, 1,100, 1,500, 2,000 and 3,000 VA.



Applications: Flexibility and versatility in the protection of IT environments

The features of the **SPS ADVANCE RT2** series make it a versatile solution for protecting a wide range of IT equipment such as basic servers, routers, switches, hubs and point-of-sale with high power density requirements and/or rack installation of servers/communications.



Performances

- Line-interactive technology with sine-wave output.
- Permanent AVR stabilisation.
- Output power factor PF=0.9.
- Control panel with swivel mount LCD display and keypad.
- Convertible tower/rack format (2U).
- Includes pedestal (pedestal mount) and lugs (rack mount).
- Backup extensions available for all power ratings.
- UPS models with extra charger for backup extensions.
- RS-232/USB-HID interface.
- Downloadable monitoring software for Windows, Linux and Mac.
- Smart slot for SNMP/potential-free contacts/MODBUS.
- ADSL/fax/modem protection.
- EPO – emergency power off.
- Programmable outputs for critical/non-critical loads.
- Manual and automatic battery test.
- Smart battery charger to shorten average recharging times.
- Battery recharging with device turned off.
- SLC Greenergy solution.

LINE
INTER
ACTIVE

AVR

OPF =
0.9

2U



SNMP
SLOT

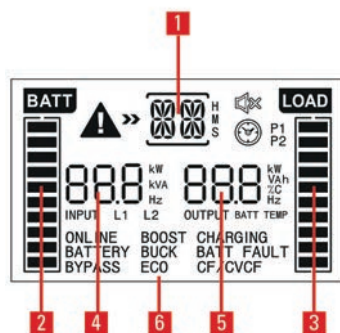


SOFT



Display

1. Configuration values, fault codes and remaining backup.
2. Level of battery available.
3. Level of load connected.
4. Input values (current, voltage and frequency).
5. Output and battery values (current, voltage and frequency).
6. Operating mode.



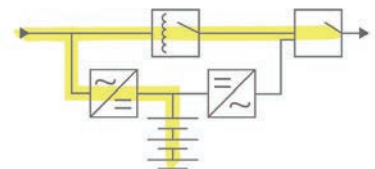
Communications

- USB interface with HID protocol: Parameter configuration, UPS control and computer shutdown/hibernation through the USB port. Available for Windows, Linux and Mac.
- UPS management and monitoring software for closing files/applications for Windows, Linux, Unix and Mac. Free and downloadable from www.salicru.com.
- Smart slot for the connection of SNMP environment integration cards and signal cards via potential-free contacts or Modbus protocol.



Line-interactive technology

Ideal for office environments. It combines Off-line technology with an internal voltage stabiliser for better compensation of the voltage fluctuations and to avoid a greater use of the batteries and so prolong their life time.



Range

MODEL	CODE	POWER (VA / W)	NO. OF OUTPUT SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SPS 800 ADV RT2	6A0CA000001	800 / 720	8 × IEC C13	410 × 438 × 88	12.9
SPS 1100 ADV RT2	6A0CA000002	1100 / 990	8 × IEC C13	410 × 438 × 88	13.4
SPS 1500 ADV RT2	6A0CA000003	1500 / 1350	8 × IEC C13	510 × 438 × 88	19.5
SPS 2000 ADV RT2	6A0CA000004	2000 / 1800	8 × IEC C13	510 × 438 × 88	21.5
SPS 3000 ADV RT2	6A0CA000005	3000 / 2700	8 × IEC C13 + 1 × IEC C19	630 × 438 × 88	29.3

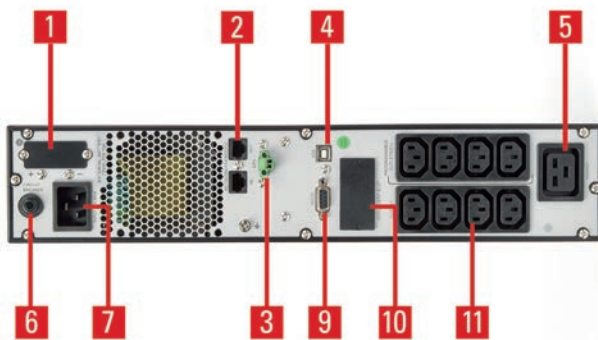
Frontal protuberance, from the fixing plane of the ears on the rack cabinet: 35mm. This distance is not included in the "Depth" total dimension.
Dimensions and weights for devices with standard backup

Dimensions



SPS 800-3000 ADV RT2

Connections



SPS 800-3000 ADV RT2

1. Connection for battery module (only in models with extra charger).
2. ADSL/fax/modem transient protector.
3. Emergency stop (EPO).
4. USB interface.
5. Socket IEC C19 (only for 3000 VA model).
6. Resettable thermal cutoff (fuse for 800 and 1100 VA models).
7. Plug (IEC C14 for 800, 1100 and 1500 VA models; IEC C20 for 2000 and 3000 VA models).
8. Fan.
9. RS-232 interface.
10. Smart slot for SNMP/potential-free contacts/ MODBUS.
11. Sockets (8 x IEC C13), programmable critical (x4) / non-critical (x4).

Technical specifications

MODEL		SPS ADVANCE RT2
TECHNOLOGY		Line-interactive with sine-wave output
FORMAT		Convertible tower/rack (2U)
INPUT	Rated voltage	208 / 220 / 230 / 240 V
	Voltage range 100% load	170 ÷ 280 V
	Stabiliser	AVR (Buck & Boost)
	Rated frequency	50 / 60 Hz (auto-detection)
	Frequency range	±5 Hz
	Protection	Fuse (800/1100) or resettable thermal cutoff (1500/2000/3000)
OUTPUT	Power factor	0.9
	Rated voltage	208 / 220 / 230 / 240 V
	Voltage accuracy (battery mode)	±1.5%
	Total harmonic distortion (THDv)	< 2% linear load / < 5% non-linear load
	Waveform (battery mode)	Pure sine wave
	Frequency	50/60 Hz (same as input)
	Frequency accuracy (battery mode)	±0.1Hz
	Admissible overloads in battery mode	< 120% off at 1 min / < 150% off at 10 s
	Admissible overloads in-line mode	< 120% off at 5 min / < 150% off at 10 s / >150 %: 1 s
	Programmable sockets	Yes, for critical / non-critical loads (4/4)
BATTERY	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Charge type	I/U (constant current/constant voltage)
	Recharge time	4 hours to 90%
	Battery test	Automatic on every start + one × week
CHARGER	Temperature voltage compensation	Yes
COMMUNICATION	Ports	RS-232/USB-HID
	Intelligent slot	Slot for SNMP/potential-free contacts/ MODBUS
	Monitoring software	For Windows, Linux and Mac
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Emergency stop (EPO)	Yes
	ADSL/fax/modem transient protector	Yes
	Green-function	Yes, automatic stop in battery mode with load <5%
	Smart fan speed	Yes, smart control of fan speed
	Site wiring fault	Yes, error detection of phase-neutral rotation and/or absence of earth
GENERAL	Operating temperature	0° C ÷ 40° C
	Relative humidity	Up to 95%, non-condensing
	Maxium operating altitude	2,400 masl (power degradation up to 5,000 m)
	Acoustic noise at 1 metre	< 45dB
STANDARDS	Safety	EN IEC 62040-1
	Electromagnetic compatibility (EMC)	EN IEC 62040-2 (C2)
	Operation	EN IEC 62040-3
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001

SLC TWIN PRO2

On-line double-conversion UPS 700 VA to 3000 VA

SLC TWIN PRO2: Advanced on-line protection for sensitive and critical loads

Salicru's **SLC TWIN PRO2** series is a UPS range in a tower format equipped with on-line double-conversion technology and the latest features to make it an advanced protection system for sensitive and critical loads. High output power factor (PF=0.9) to ensure availability to all types of loads.

Full control through status information via LCD display and keypad. And extensive monitoring and communication options via the built-in USB HID interface, an intelligent slot for SNMP cards or relays and a wide range of software packages available – free monitoring version downloadable for Windows, Linux, Unix or Mac and packages available for multi servers or virtualised systems. For facilities that require more back-up time, there is a possibility of backup extensions using UPSs with extra charger and additional battery modules. Also notable is the possibility of Eco-mode operation to improve the efficiency of the device, EPO (emergency power off) functions, operation as a frequency converter and built-in battery test.

Salicru's **SLC TWIN PRO2** range is available in power ratings of 700, 1000, 1500, 2000 and 3000 VA.



Applications: High-performance features for single-phase environments of up to 3 kVA

Power supply failures in IT systems can cause losses as a result of downtime and the time taken to restore the system to normal operation, and damage to network hardware. Many other disturbances (micro power outages, voltage fluctuations, frequency variations, harmonics, transients, etc.) can also cause IT environments to malfunction.



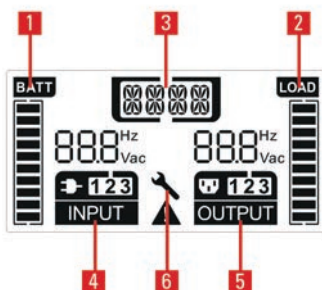
Performances

- On-line double-conversion technology.
- Output power factor PF=0.9.
- Control panel with LCD screen and keypad.
- Tower format.
- Backup extensions available for all power ratings.
- UPS models with extra charger for backup extensions.
- USB HID interface for all models as standard.
- Downloadable monitoring software for Windows, Linux, Unix and Mac.
- Intelligent slot for SNMP/relays.
- Eco-mode operation.
- Automatic frequency detector.
- Frequency conversion function.
- EPO – emergency power off.
- Schuko or IEC sockets available.
- Manual and/or automatic programmable battery test.
- Smart battery charger to shorten average recharging times.
- Battery recharging with device turned off.
- SLC Greenergy solution.



Display

1. Level of battery available.
2. Level of load connected.
3. Operation/alarm/fault status.
4. Input voltage and frequency.
5. Output voltage and frequency.
6. Settings mode.



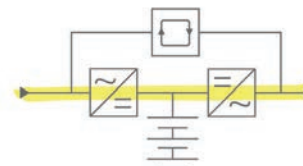
Communications

- **USBID UPS:** Enables control, parameter configuration and computer shutdown/hibernation via the USB port. Available with Windows, Linux for Mac.
- UPS monitoring and management software for closing files/applications in Windows, Linux, Unix and Mac environments. Free and downloadable from www.salicru.com.
- Intelligent slot for connecting SNMP or optocoupler cards.



Online double-conversion

Maximum reliability, the loads are fed from the UPS output by a quality voltage isolated from possible fluctuations thanks to the unit's internal double conversion (AC-DC DC-AC).



Range

MODEL SCHUKO	CODE	POWER (VA / W)	NO. OF SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-700-TWIN PRO2	699CA000001	700 / 630	3	356 × 144 × 228	9.2
SLC-1000-TWIN PRO2	699CA000003	1000 / 900	3	356 × 144 × 228	10.2
SLC-1500-TWIN PRO2	699CA000005	1500 / 1350	4	399 × 190 × 327	17.4
SLC-2000-TWIN PRO2	699CA000007	2000 / 1800	4	399 × 190 × 327	18.4
SLC-3000-TWIN PRO2	699CA000009	3000 / 2700	4	399 × 190 × 327	22.7

MODEL IEC	CODE	POWER (VA / W)	NO. OF SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-700-TWIN PRO2 IEC	699CA000011	700 / 630	4xC13	356 × 144 × 228	9.2
SLC-1000-TWIN PRO2 IEC	699CA000013	1000 / 900	4xC13	356 × 144 × 228	10.2
SLC-1500-TWIN PRO2 IEC	699CA000015	1500 / 1350	4xC13	399 × 190 × 327	17.4
SLC-2000-TWIN PRO2 IEC	699CA000017	2000 / 1800	4xC13	399 × 190 × 327	18.4
SLC-3000-TWIN PRO2 IEC	699CA000019	3000 / 2700	4xC13 + 1xC19	399 × 190 × 327	22.7

Dimensions and weights for devices with standard backup

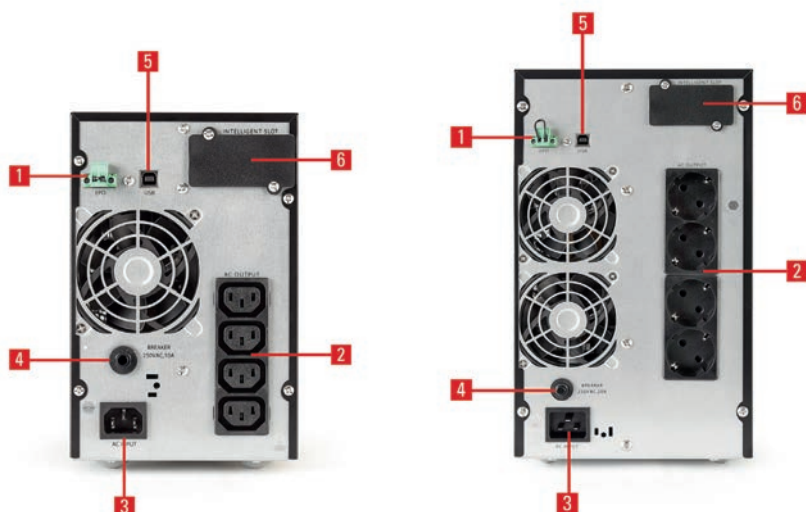
Dimensions



SLC 700/1000 TWIN PRO2 (IEC)

SLC 1500÷3000 TWIN PRO2 (IEC)

Connections



SLC 700/1000 TWIN PRO2 (IEC)

SLC 1500÷3000 TWIN PRO2 (IEC)

1. Emergency stop (EPO).
2. Socket AC output (SCHUKO / IEC).
3. Socket AC input.
4. Thermal rearmable input.
5. USB HiD interface.
6. Intelligent slot for SNMP/relays.

Technical specifications

MODEL		SLC TWIN PRO2
TECHNOLOGY		On-line double-conversion
FORMAT		Tower
INPUT	Rated voltage	220 / 230 / 240 V
	Voltage range 100% load	176 ÷ 300 V
	Voltage range 40% load	100 ÷ 300 V
	Rated frequency	50 / 60 Hz
	Frequency range	±10%
	Power factor	≥0.99
	Protection	Resettable circuit breaker
OUTPUT	Power factor	0.9
	Waveform	Pure sine wave
	Rated voltage	220 / 230 / 240 V
	Voltage accuracy	±1%
	Total harmonic distortion (THDv)	<2%
	Synchronised frequency	±10%
	Free running frequency	±0.05 Hz
	Synchronous speed	1 Hz/s
	On-line performance	>89%÷92%
	Eco-mode performance	>98%
	Admissible overloads in battery mode	105% constant / 130% for 10 s / 150% for 1 s
	Admissible overloads in bypass mode	130% constant / 180% for 60 s
	Admissible overloads in-line mode	105% constant / 130% for 60 s / 150% for 10 s / >150% for 300ms
	Available socket formats	Schuko (DIN) o IEC
BATTERY	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Charge type	I/U (constant current/constant voltage)
	Recharge time	4 hours to 90%
	Battery test	Manual and/or automatic programmable
COMMUNICATION	Ports	USB HID
	Intelligent slot	Slot for SNMP/relays
	Monitoring software	For Windows, Linux and Mac
OPERATING MODES	On-line double-conversion	Yes
	Eco-mode	Yes
	Frequency converter (CVCF)	Yes ⁽¹⁾
GENERAL	Operating temperature	0° C ÷ 40° C
	Relative humidity	Up to 95%, non-condensing
	Maxium operating altitude	2,400 masl (power degradation up to 5,000 m)
	Acoustic noise at 1 metre	≤49 dB (100% load) / ≤41 dB (60% load)
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN 62040-2
	Operation	VFI-SS-11 (EN-62040-3)
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001

(1) up to 60% of the load

Information subject to change without notice.

SLC TWIN PRO3 4-10 kVA

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

SLC TWIN PRO3 4-10 KVA: Robustness, energy efficiency and extended connectivity: the best combination to protect your productive environment

Salicru's **SLC TWIN PRO3** series of uninterruptible power supplies (UPSs) is the successor to the prestigious **SLC TWIN PRO2** family, offering improved functionality and representing a step forward in terms of technology. The range starts at 4 kVA and includes 5, 6, 8 and 10 kVA models. There are also specific B1 versions for extended backup, available in 6 and 10 kVA power ratings.

The power factor of 1, increased energy efficiency and multiple operating modes give the **SLC TWIN PRO3** a high level of added value in technical terms.

It is the fourth incarnation of the **SLC TWIN** series and represents a consolidation of the on-line single-phase double conversion UPSs we have been offering to the market for over 12 years. This latest edition maintains the series' characteristic robustness while adding cutting-edge technology in the form of complete connectivity that will meet the technological expectations of even the most demanding users.

Its versatility in terms of communication deserves particular mention. The smart slot is joined by direct connections to the native Ethernet, USB and RS-232 ports or a Wi-Fi dongle. This broad spectrum of connectivity is complemented by the NIMBUS app and website access, which offer multiple options for monitoring and interacting with the connected devices, thereby enabling simultaneous viewing of all of the connected Salicru devices (even if they are from different series).



Applications: Critical and sensitive loads that require close supervision

Salicru's **SLC TWIN PRO3** series is the best option for ensuring continuity with constant and precise monitoring. Critical environments that maintain highly productive structures, such as ERP systems, Business Intelligence (BI), CRM solutions, networks, etc. need to be backed by the kind of energy security provided by the **SLC TWIN PRO3** series, which also protects them against frequency and voltage variations and other types of disturbances that can affect the network.



Performances

- On-line double conversion and DSP technology.
- Output power factor PF=1.
- Tower format with a reduced footprint to save space.
- Eco-mode operation for increased efficiency.
- Up to 3 devices can be connected in parallel (optional).
- Backup extensions available.
- Automatic detection of external battery modules via RJ-45.
- Frequency converter function (with and without batteries).
- Programmable automatic and manual battery test.
- Choice of 10 languages.
- Native Ethernet port for NIMBUS IoT, USB and RS-232 interfaces as standard on all models.
- Monitoring software for Windows, Linux, Unix and Mac (downloadable).
- Smart slot for SNMP/RS-485/MODBUS cards.
- Optional Wi-Fi dongle with the NIMBUS app.



Flexibility at the user's fingertips

The **SLC TWIN PRO3** series gives users the option of configuring the device as a frequency converter (annulling the no-battery alarm), while also enabling full configuration of the charger and battery voltage as well as operating as an output transformer. Users can even take advantage of this adaptability after the device has been installed, thereby enabling them to reconfigure its functionality when needed.

Increased battery life expectancy

Beyond the quality of their electronic components, the success of our uninterrupted protection and supply systems lies in the intelligent and optimised use of the charge and discharge cycles of the energy storage units, which can result in an increased battery life expectancy of up to 50% under optimum operating conditions.

Unlike other UPSs that subject their batteries to short and frequent charges, the **SLC TWIN PRO3** series is able to optimise battery use through "rest periods" in which the battery does not receive any current at all, provided it has enough charge to guarantee the provision of backup.

Vigilant protection and connectivity

The inclusion of an Ethernet port and the optional Wi-Fi device enables the **SLC TWIN PRO3** series to be integrated into an IoT environment. Through the cloud, our **NIMBUS** app and the website, developed wholly within SALICRU's Connected Software department, users can monitor the status of their devices in full, receive information and alarms, carry out remote battery tests, and much more.

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

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



Options

- Wi-Fi dongle
- NIMBUS SNMP card
- NIMBUS AS400 card
- NIMBUS RS-485 MODBUS card
- Parallel kit
- Additional IEC-type output cables
- Warranty extension
- Isolation transformers



Range

MODEL	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-4000-TWIN PRO3	6B5AB000001	4000/4000	492 × 225 × 589	51
SLC-5000-TWIN PRO3	6B5AB000002	5000/5000	492 × 225 × 589	52
SLC-6000-TWIN PRO3	6B5AB000003	6000/6000	492 × 225 × 589	53
SLC-8000-TWIN PRO3	6B5AB000004	8000/8000	492 × 225 × 589	58
SLC-10000-TWIN PRO3	6B5AB000005	10000/10000	492 × 225 × 589	60

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

Dimensions

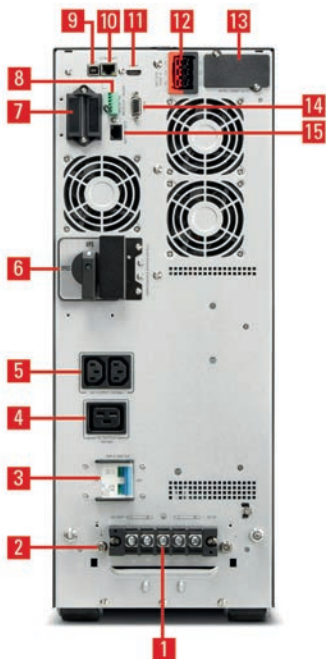


SLC 4000÷10000 TWIN PRO3



EBM - SLC TWIN PRO3

Connections



SLC 4000÷10000 TWIN PRO3

1. Input/output connection terminals.
2. Earth cable connection.
3. Input circuit breaker.
4. Auxiliary IEC C19 output.
5. Auxiliary IEC C13 outputs.
6. Manual bypass.
7. Parallel port.
8. Digital E/S and emergency power-off (EPO).
9. USB interface.
10. Ethernet port for CLOUD.
11. HDMI port for NIMBUS dongle.
12. Battery module connection.
13. Smart slot for SNMP/AS400/RS-485-Modbus.
14. RS-232 interface.
15. Battery module communication port.

Technical specifications

MODEL		SLC TWIN PRO3 4-10 kVA
TECHNOLOGY		On-line double-conversion
FORMAT		Tower
INPUT	Rated voltage	220/230/240 V
	Voltage range	110 ÷ 276 V ⁽¹⁾
	Rated frequency	50 / 60 Hz (auto-detection)
	Frequency range	50 ±5 Hz/60 ±6 Hz
	Total harmonic distortion (THDi)	<3 % linear load / <5 % non-linear load
	Power factor	≥0,99
OUTPUT	Power factor	1
	Rated voltage	220/230/240 V
	Voltage accuracy	±1 %
	Total harmonic distortion (THDv)	< 1% linear load / < 5% non-linear load
	Synchronised frequency	50 ±5 Hz/60 ±6 Hz
	Eco-mode performance	98 %
	Total performance in On-line mode	95 %
	Admissible overloads in battery mode	105 ÷ 125 % for 1 min/125 ÷150 % for 30 s/>150 % for 500 ms
	Admissible overloads in bypass mode	105 ÷ 125 % for 30 s/>150 % for 5 min/>150 % for 500 ms
	Admissible overloads in-line mode	105 ÷ 125 % for 10 min/125 ÷150 % for 30 s/>150 % for 500 ms
	Parallel	Yes, up to 3 units
BATTERY	Protection	Against overvoltages, undervoltages and overheating
	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Charge type	Smart charge with 3 modes
	Recharge time	3 hours to 90%
	Maximum no. of EBMs	6
CHARGER	Temperature voltage compensation	Yes
	Charging current	Adjustable 0 ÷ 4 A (0 ÷ 12 A for B1 devices)
COMMUNICATION	Ports	USB-HID/RS-232/RJ-45/HDMI for dongle wifi
	Intelligent slot	For SNMP/AS400/Modbus
	Monitoring software	Software for Windows, Linux and Mac/app for iOS and Android/web portal
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Emergency stop (EPO)	Yes
OPERATING MODES	Eco-mode	Yes
	Frequency converter (CVCF)	Yes ⁽²⁾ , operates with or without batteries
GENERAL	Operating temperature	0° C ÷ +50° C ⁽³⁾
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	3.000 masl ⁽⁴⁾
	Acoustic noise at 1 metre	<55 dB ÷ <60 dB at full load/<50 dB ÷ <55 dB at 75% load
STANDARDS	Safety	EN IEC 62040-1
	Electromagnetic compatibility (EMC)	EN 62040-2 (C3)
	Operation	VFI-SS-11 (EN 62040-3)
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

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

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

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

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

SLC TWIN RT3 1-3 kVA

On-line double conversion tower/rack IoT UPS from 1000 VA to 3000 VA with PF=1

SLC TWIN RT3 1-3 KVA: High performance on-line security

The **SLC TWIN RT3** series, rated from 1000 VA to 3000 VA, represents the perfect balance of features and performance: efficient operation as a double conversion UPS, optimised battery charging system, power density, high levels of connectivity (and the consequent immediacy of information), the flexibility offered by the multi-function output sockets (identified by colour), the automatic detection system for external battery modules, the beauty of its floating-prism design with high-quality finishes... in short, **Salicru** has gone the extra mile, in view of the critical nature of the systems this series is designed to protect.

As has become common practice for **SLC TWIN RT** devices, they come in a 2U rack format (easily converted to tower format) with adjustable display and keypad, ensuring easy adaptation to the needs of the installation.

The system's extended backup requirements are amply met, thanks to the additional battery modules and the devices equipped with an improved 8A charger. Notably, the charger offers a "rest" mode during which no current is sent to the batteries, thereby reducing stress and extending the unit's useful life.



Applications: Protection for priority systems in a compact format

Salicru's **SLC TWIN RT3** series offers a high level of security in the event of any type of electrical disturbance, while guaranteeing continuity of operation for IT servers, voice and data networks, CAD/CAM, document management, unified communications (UC) and video streaming.



Performances

- On-line double conversion technology.
- Output power factor PF=1.
- 2U convertible tower/rack format.
- Control panel with adjustable keypad and dot matrix display.
- Backup extensions available.
- Automatic detection of external battery modules via RJ-45.
- Eco-mode operation for increased efficiency.
- Programmable outputs for critical/non-critical loads.
- Optimised charger designed to extend battery life.
- Frequency converter function (with and without batteries).
- Choice of 10 languages.
- Native Ethernet port, USB and RS-232 interfaces as standard on all models.
- Programmable automatic and manual battery test.
- Monitoring software for Windows, Linux, Unix and Mac (downloadable).
- Optional Wi-Fi dongle with the NIMBUS app and smart slot for SNMP/AS400/MODBUS.



Advanced internal temperature management

The **SLC TWIN RT3** devices rated 1500 VA and over are equipped with two sets of variable-speed fans, in order to optimise thermal conditions inside the device. The front set acts as a pump, while the rear set extracts the air immediately. The resultant improvement in thermal conditions has a positive impact on the lifespan of the components, while creating a suitable working environment that enables the device to operate at full performance.

Multi-function rotating display

When you first use the device display, it will guide you through the initial configuration process. Once it is working, the display will alternate between three information screens. The dot matrix technology enables the information to be displayed clearly and without altering its layout. The alarm and status icons, as well as the numerical values, are displayed in large format in the centre of the screen.



Options

- Wi-Fi dongle
- Telescopic rack guides
- Rackable external bypass
- NIMBUS SNMP card
- NIMBUS AS400 card
- NIMBUS RS-485 MODBUS card
- Additional IEC-type output cables
- Warranty extension
- PDU (power distribution unit)

Internet of Things

All of the models in the **SLC TWIN RT3** range come with a native Ethernet port as standard and an optional Wi-Fi device. Whether via a cabled or wireless connection, this series of UPSs can be integrated into the IoT environment and managed through the cloud, our **NIMBUS** app and the web portal. This offers a wide range of benefits from both an operational perspective (optimisation, prevention, analysis, maintenance) and in terms of reliability (early fault detection, remote alarm management, records of operation, etc.).



Range

MODEL	CODE	POWER (VA / W)	NO. OF OUTPUT SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-1000-TWIN RT3	6B4AA000001	1000/1000	8 × IEC C13	445 × 438 × 86	14.0
SLC-1500-TWIN RT3	6B4AA000002	1500/1500	8 × IEC C13	445 × 438 × 86	15.6
SLC-2000-TWIN RT3	6B4AA000003	2000/2000	8 × IEC C13	600 × 438 × 86	22.9
SLC-3000-TWIN RT3	6B4AA000004	3000/3000	8 × IEC C13 + 1 × IEC C19	600 × 438 × 86	25.5

Front protrusion from the mounting surface in the rack cabinet: 35 mm. This distance is not included in the dimensions quoted for "depth". Dimensions and weights for devices with standard backup. Please visit www.salicru.com for extended backup with additional EBM modules. Height in rack units of the listed equipment: 2U.

Dimensions

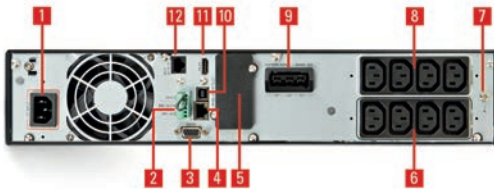


SLC 1000-3000 TWIN RT3

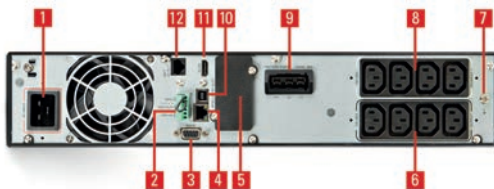


EBM - SLC TWIN RT3

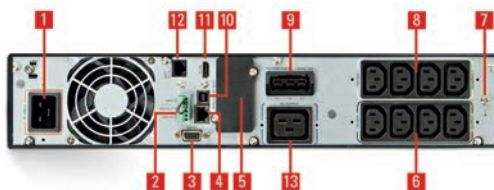
Connections



SLC 1000-1500 TWIN RT3



SLC 2000 TWIN RT3



SLC 3000 TWIN RT3

1. Inlet (IEC C14 for 1000 and 1500 VA models; IEC C20 for 2000 and 3000 VA models).
2. Digital E/S and emergency power-off (EPO).
3. RS-232 interface.
4. Ethernet port for NIMBUS CLOUD.
5. Smart slot for SNMP/potential-free contacts/MODBUS.
6. Output sockets for non-critical loads (x4).
7. Earth cable connection.
8. Output sockets for critical loads (x4).
9. Battery module connection.
10. USB interface.
11. HDMI port for NIMBUS dongle.
12. Battery module communication port.
13. IEC C19 output socket (3000 VA model only).

Technical specifications

MODEL		SLC TWIN RT3 1-3 kVA
TECHNOLOGY		On-line double-conversion
FORMAT		Convertible tower/rack with rotating display
INPUT	Rated voltage	200/208/220/230/240 V
	Voltage range	110 ÷ 300 V ⁽¹⁾
	Rated frequency	50 / 60 Hz (auto-detection)
	Frequency range	50 ±5 Hz/60 ±6 Hz
	Total harmonic distortion (THDi)	<5 %
	Power factor	≥0.99
OUTPUT	Power factor	1
	Rated voltage	200/208/220/230/240 V ⁽²⁾
	Voltage accuracy	±1%
	Total harmonic distortion (THDv)	<1 % linear load / <5 % non-linear load
	Synchronised frequency	50 ±5 Hz/60 ±6 Hz
	On-line performance	≥89 ÷ 93 %
	Eco-mode performance	≥96 ÷ 97 %
	Admissible overloads in battery mode	105 ÷ 125 % for 2 min/125 ÷150 % for 10 s/>150 % for 500 ms
	Admissible overloads in bypass mode	105 ÷ 125 % for 10 min/125 ÷150 % for 5 min/>150 % for 500 ms
	Admissible overloads in-line mode	105 ÷ 125 % for 5 min/125 ÷150 % for 30 s/>150 % for 500 ms
	Programmable sockets	Yes, for critical/non-critical loads (4/4) ⁽³⁾
BATTERY	Battery type	Pb-Ca sealed, AGM, maintenance-free
	Charge type	Smart charge with 3 modes
	Recharge time	3 hours to 90%
	Maximum no. of EBMs	4
CHARGER	Temperature voltage compensation	Yes
	Charging current	1.5 A (8 A for B1 devices)
COMMUNICATION	Ports	USB-HID/RS-232/RJ-45/HDMI for dongle wifi
	Intelligent slot	For SNMP/AS400/MODBUS
	Monitoring software	Software for Windows, Linux and Mac/app for iOS and Android/web portal
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Emergency stop (EPO)	Yes
OPERATING MODES	Eco-mode	Yes
	Frequency converter (CVCF)	Yes ⁽⁴⁾ , operates with or without batteries
GENERAL	Operating temperature	0° C ÷ +50° C ⁽⁵⁾
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	3.000 masl ⁽⁶⁾
	Acoustic noise at 1 metre	<45 dB ÷ <50 dB at full load/<36 dB ÷ <46 dB at 70% load
STANDARDS	Safety	EN IEC 62040-1
	Electromagnetic compatibility (EMC)	EN IEC 62040-2(C2)
	Operation	VFI-SS-31 (EN 62040-3)
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

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

(2) Power derating at 80% for 200 V and 90% for 208 V

(3) The 3 kVA model has an additional fifth non-programmable IEC C19 output

(4) Power derating at 60%

(5) Power derating of 4% for each degree >40°C

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

SLC TWIN RT2 LION

On-line double conversion tower/rack UPS, 1000-3000 VA, with lithium-ion batteries

SLC TWIN RT2 LION: Maximum protection density

Salicru's **SLC TWIN RT2 LION** series are uninterruptible power supply (UPS) systems that offer the most reliable on-line double conversion technology on the market, with output power factor PF=0.9, a format that adapts to suit any tower/rack environment, lithium-ion batteries and a wide range of options for communication.

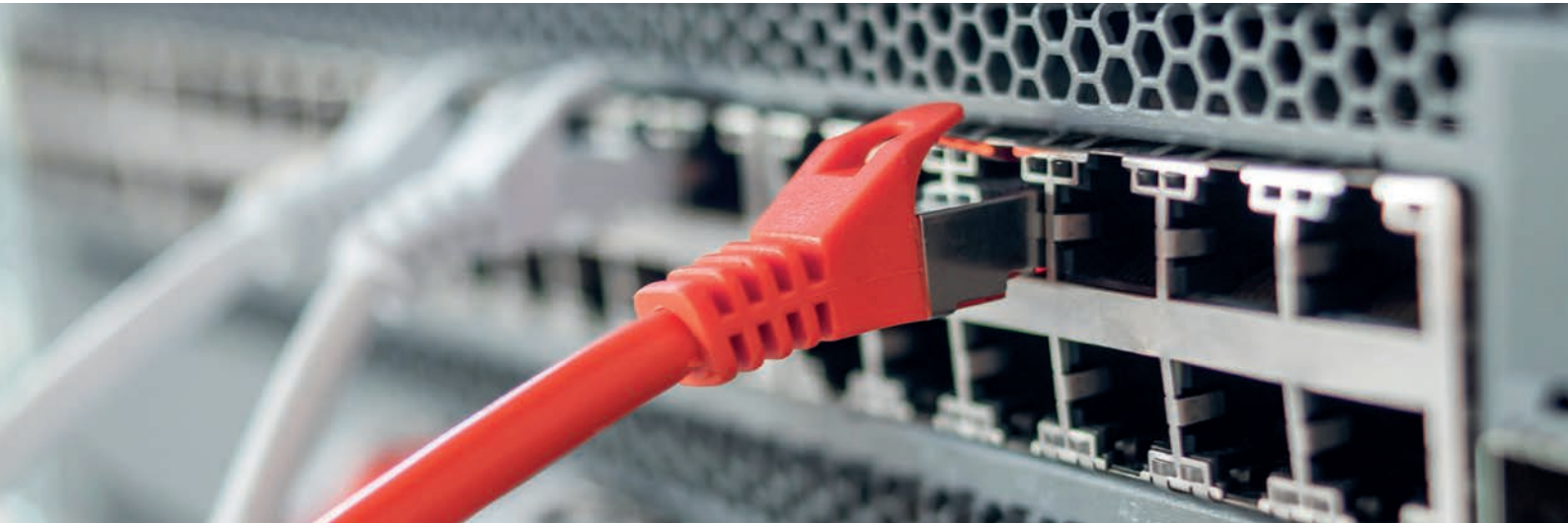
The use of lithium-ion batteries as a backup power source has numerous advantages over traditional valve-regulated lead acid (VRLA) batteries: their lifespan is more than double, they can accommodate up to 10 times more discharge cycles, their rate of self-discharge is four times lower, they can maintain their level of performance at high temperatures (40°C), they offer reduced weight and volume, and they can be recharged up to four times faster (among other advantages).

With regard to TCO, lithium-ion batteries have a longer useful life than the estimated working life of the UPS (10 years), meaning that unlike VRLA batteries, they do not need to be replaced. Consequently, a slightly higher initial investment is converted into a significant saving by the time the system reaches the end of its life.



Applications: Better performance and lower TCO for protecting edge environments

Adaptable to any edge computing environment, Salicru's **SLC TWIN RT2 LION** series offers top-level security in a compact format with a wide range of communication options for IT servers, voice and data networks, video streaming, unified communications, document management and CAD/CAM.



Performances

- On-line double conversion technology.
- Output power factor PF= 0.9.
- Convertible tower/rack format.
- Control panel with swivel mount LCD display and keypad.
- Includes pedestal (pedestal mount) and lugs (rack mount).
- Lithium-ion batteries with over 2000 discharge cycles.
- RS-232 and USB-HID communication interfaces.
- Downloadable monitoring software for Windows, Linux and Mac.
- Smart slot for SNMP/potential-free contacts/MODBUS.
- ADSL/fax/modem line protection.
- Can operate in Eco Mode.
- Programmable outputs for critical/non-critical loads.
- Frequency conversion function.
- SLC Greenergy solution.



Comparison between lithium-ion and valve-regulated lead acid batteries (VRLA)

Parameter	VRLA	Lithium-ion	Advantage
Energy density	Medium	High	Longer range in the same volume
Discharge cycles	200-400	2000	5-10x more discharge cycles available
Weight	Height	60% less	Ease of handling and installation
Useful service life at 25°C	4 years	10 years	2-3x longer lifespan
Battery changes over 10 years	2-3	0	Zero maintenance concerns
Recharge time (90%)	8 hours	2 hours	4x faster recharge time
Max temp. at 100% performance	25° C	40° C	Better adaptation to hostile environments
CapEx (initial investment)	Medium	50% higher	Requires a higher initial outlay
OpEx (installation and running costs)	Height	60% less	Costs less over the product's useful life
TCO after 10 years (total cost)	Medium	40% less	Highly favourable TCO over 10 years

Communications

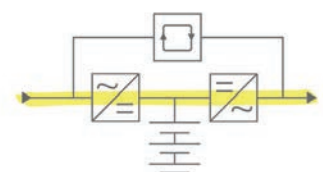
- **USBHID UPS:** Enables control, parameter configuration and computer shutdown/ hibernation via the USB port. Available with Windows, Linux for Mac.
- UPS monitoring and management software for closing files/applications in Windows, Linux, Unix and Mac environments. Free and downloadable from www.salicru.com.
- Intelligent slot for connecting SNMP or optocoupler cards.

Easy to install

Convertible tower/rack thanks to the accessories included (rack handles, tower pedestal), swivel mount display. Intuitive LCD for operation and configuration, with optical and audible warning devices. Easy segmentation of sockets between critical/non-critical loads.

Online double-conversion

Provides the highest level of security and reliability for protected critical loads, owing to the double conversion between the input and output and from AC to DC and DC to AC, thereby supplying a pure, stable, clean sine-wave voltage at the output, without any outages.



Range

MODEL	CODE	POWER (VA / W)	NO. OF OUTPUT SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-1000-TWIN RT2 LION	698LA000001	1000 / 900	8 × IEC C13	410 × 438 × 88	10.8
SLC-1500-TWIN RT2 LION	698LA000002	1500 / 1350	8 × IEC C13	410 × 438 × 88	11.6
SLC-2000-TWIN RT2 LION	698LA000003	2000 / 1800	8 × IEC C13	510 × 438 × 88	15.2
SLC-3000-TWIN RT2 LION	698LA000004	3000 / 2700	8 × IEC C13 + 1 × IEC C19	630 × 438 × 88	20.5

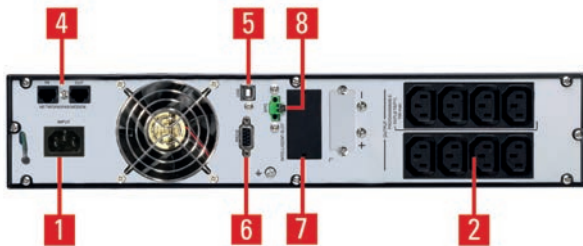
Frontal protuberance, from the fixing plane of the ears on the rack cabinet: 35mm. This distance is not included in the "Depth" total dimension.

Dimensions

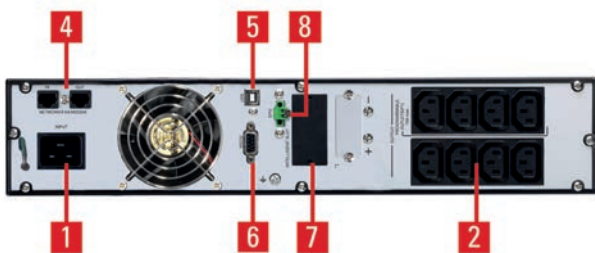


SLC-1000÷3000-TWIN RT2 LION

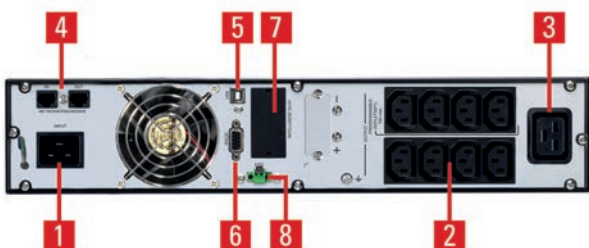
Connections



SLC-1000/1500-TWIN RT2 LION



SLC-2000-TWIN RT2 LION



SLC-3000-TWIN RT2 LION

1. Plug (IEC C14 for 1000 and 1500 VA models; IEC C20 for 2000 and 3000 VA models).
2. Sockets (8 x IEC C13), programmable critical (x4) / non-critical (x4).
3. Socket IEC C19 (only for 3000 VA model).
4. ADSL/fax/modem transient protector.
5. USB interface.
6. RS-232 interface.
7. Smart slot for SNMP/potential-free contacts/ MODBUS.
8. Emergency stop (EPO).

Technical specifications

MODEL		SLC TWIN RT2 LION
TECHNOLOGY		On-line double-conversion
FORMAT		Convertible tower/rack
INPUT	Rated voltage	230 V
	Voltage range	110 ÷ 300 V ⁽¹⁾
	Rated frequency	50 / 60 Hz (auto-detection)
	Frequency range	±10 Hz
	Total harmonic distortion (THDi)	≤5%
OUTPUT	Power factor	0.9
	Rated voltage	200 / 208 / 220 / 230 / 240 V ⁽²⁾
	Voltage accuracy	±1%
	Total harmonic distortion (THDv)	< 2% linear load / < 4% non-linear load
	Synchronised frequency	±3 Hz
	Free running frequency	±0,1 Hz
	On-line performance	≥90 ÷ 91%
	Eco-mode performance	≥96 ÷ 97%
	Admissible overloads	< 130% for 5 min / < 140% for 30 s / < 150 % for 1.5 s / 150 % for 100 ms
	Programmable sockets	Yes, for critical / non-critical loads (4/4)
BYPASS	Rated voltage	230 V
	Frequency range	50/60Hz ±3 Hz
BATTERY	Battery type	LiFePO4
	Charge type	I/U (constant current/constant voltage)
	Recharge time	3 hours to 100%
COMMUNICATION	Ports	USB-HID / RS-232
	Intelligent slot	Slot for SNMP/potential-free contacts/ MODBUS
	Monitoring software	For Windows, Linux and Mac
OTHER FUNCTIONS	Cold start (start-up from batteries)	Yes
	Emergency stop (EPO)	Yes
	ADSL/fax/modem transient protector	Yes
OPERATING MODES	Frequency converter (CVCF)	Yes ⁽³⁾
GENERAL	Operating temperature	0° C ÷ 40° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2,400 masl (power degradation up to 5,000 m)
	Acoustic noise at 1 metre	50 dB
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN 62040-2(C2)
	Operation	VFI-SS-11 (EN-62040-3)
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) Depending on load percentage

(2) 90% power reduction for 200 or 208 V devices

(3) 78% power reduction

SLC TWIN RT3 4-10 kVA

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

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

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

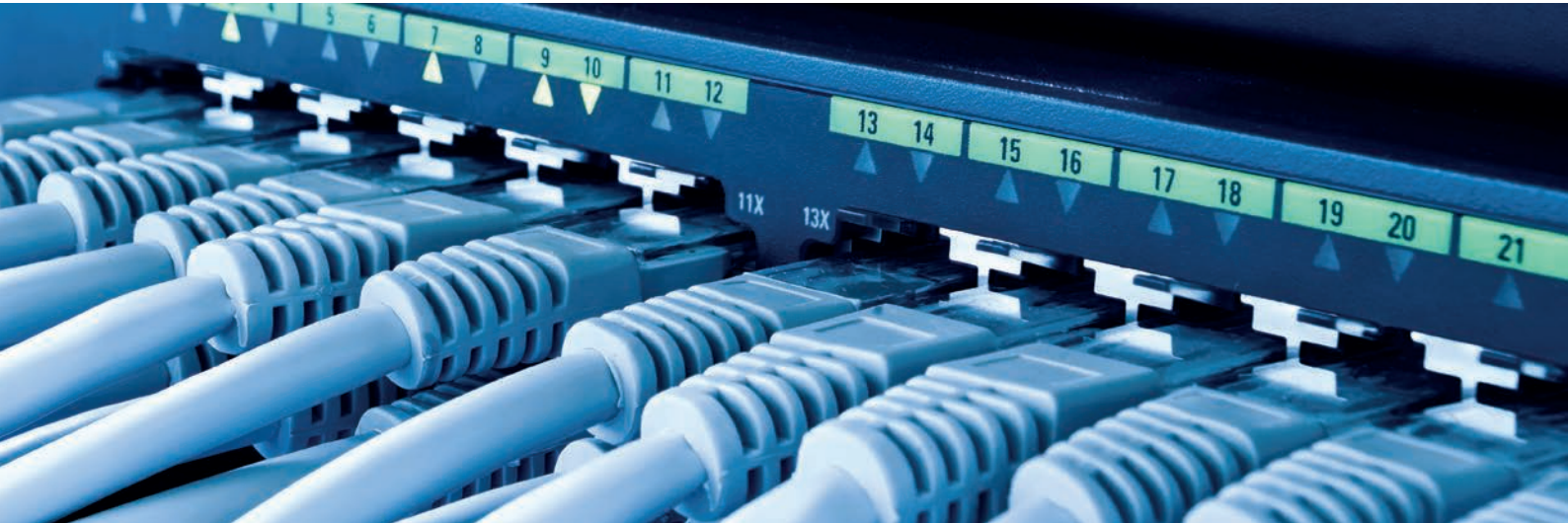
Users interact directly with the device via a dot matrix display that highlights important information by placing it in the centre of the screen, unlike traditional LCD screens.

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



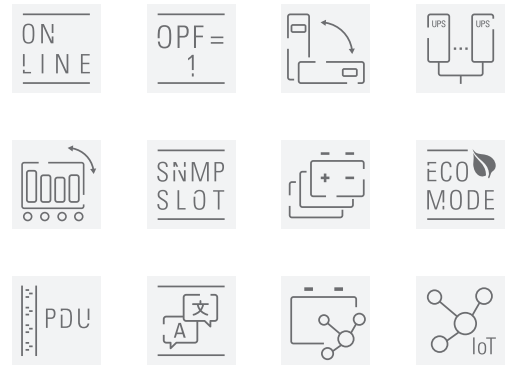
Applications: Reliability for IT environments

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



Performances

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



Objective: battery conservation

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

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



Options

- Wi-Fi dongle.
- Telescopic rack guides.
- Rackable external bypass.
- NIMBUS SNMP card.
- NIMBUS AS400 card.
- NIMBUS RS-485 MODBUS card.
- Parallel kit.
- Additional IEC-type output cables.
- Warranty extension.

Vigilant protection and connectivity

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

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

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



Improved length

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



Multiple output options

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

Range

MODEL	CODE	POWER (VA / W)	NO. OF OUTPUT SOCKETS	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-4000-TWIN RT3	6B4AC000001	4000/4000	Terminales + PDU	570 × 438 × 220	55,6
SLC-5000-TWIN RT3	6B4AC000002	5000/5000	Terminales + PDU	570 × 438 × 220	55,6
SLC-6000-TWIN RT3	6B4AC000003	6000/6000	Terminales + PDU	570 × 438 × 220	55,6
SLC-8000-TWIN RT3	6B4AC000004	8000/8000	Terminales + PDU	570 × 438 × 220	64,5
SLC-10000-TWIN RT3	6B4AC000005	10000/10000	Terminales + PDU	570 × 438 × 220	64,5

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

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

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

Dimensions

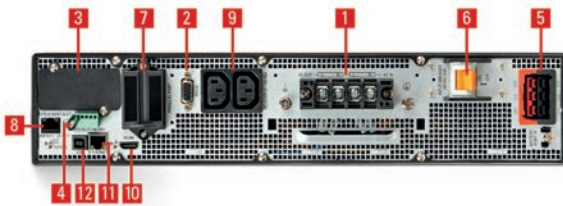


SLC 4000÷10000 TWIN RT3

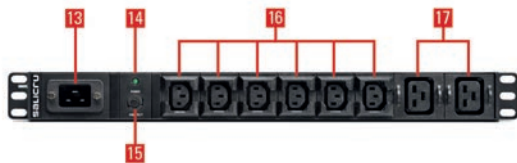


EBM - SLC TWIN RT3

Connections



SLC 4000÷10000 TWIN RT3



PDU

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

Technical specifications

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

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

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

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

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

SLC CUBE4

Uninterruptible Power Supplies with IoT from 7.5 to 80 kVA

SLC CUBE4: The most advanced continuity protection on the market

Salicru's **SLC CUBE4** Uninterruptible Power Supplies (UPS) are the most cutting-edge security solution for all critical systems and sensitive loads. They have a Nimbus cloud connection as standard for equipment monitoring and remote management options, incident notification, equipment health monitoring and preventive maintenance.

With three-level on-line technology and quad-core DSP control, they are three-phase input/output systems that offer a range of first-class features, including unity power factor (kVA=kW), very low input distortion (THDi <3%) and performance in excess of 96% in On-line Mode and 99% in Eco Mode. They also boast parallel growth capacity or unlimited redundant security⁽¹⁾.

Across the entire range, the batteries are included in the same cabinet, meaning the floor area occupied is reduced by up to 40%. They are compatible with all types of battery (including lithium-ion) and incorporate the Batt-Watch battery care system to maximise battery life and availability.

(1) For models up to 20 kVA. Maximum of four devices in parallel.



Applications: Maximum quality in protection

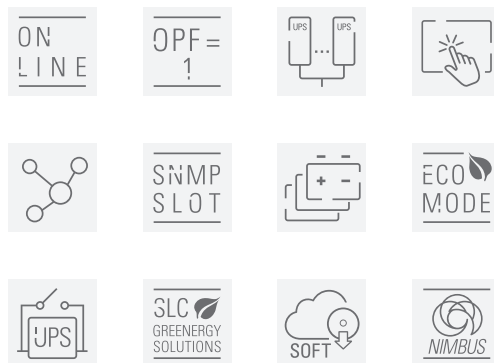
The protection offered by Salicru's **SLC CUBE4** UPS will optimise the security performance of medium-power edge computing solutions with virtualised environments, along with all of the associated critical processes: not only for IT applications, but also for industrial processes, telecommunications and infrastructure.



Performances

- On-line double conversion technology with three-level topology.
- State-of-the-art quad-core DSP control.
- Output power factor 1 (kVA=kW).
- Input power factor >0.99.
- Input current distortion rate (THDi) <3%.
- Nimbus IoT as standard connection for monitoring, through the free NIMBUS App and the web portal .
- High energy efficiency (over 96% in On-line mode and up to 99% in Eco mode).
- Unlimited parallel system⁽¹⁾ for redundancy or capacity purposes.
- Single/single and three/single configurations only for up to 20 kVA.
- Batt-Watch battery care and management system.
- Batteries included on standard models throughout the range.
- Compatible with all battery types, including lithium-ion.
- Compatible with power generators.
- 5" touch screen for all models.
- USB, RS-232 and RS-485 interfaces, plus relays.
- Wide range of options available.
- SLC Greenergy solution.

(1) For models up to 20 kVA. Maximum of four devices in parallel.



Continuous surveillance Remote maintenance

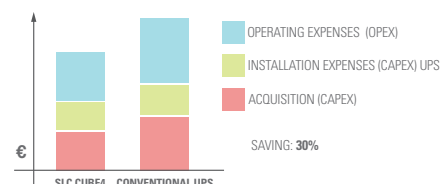
By integrating the equipment as a standard feature of Salicru's Nimbus-cloud, it is permanently monitored and provides a continuous analysis of the level of protection provided.

There are multiple remote maintenance options through the Nimbus Services connections, both in modalities and response, allowing immediate actions in case of incidents or advances on anomalous situations.



Very low TCO

The total cost of ownership (TCO) for an SLC CUBE4 has been carefully calculated in order to obtain a very low investment ratio over the operational lifetime of the UPS, leading to a saving of 30%.



Range

MODEL	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-7,5-CUBE4	6B3AA000001	7.500 / 7.500	689 × 250 × 827	88
SLC-10-CUBE4	6B3AA000002	10.000 / 10.000	689 × 250 × 827	98
SLC-15-CUBE4	6B3AA000003	15.000 / 15.000	689 × 250 × 827	118
SLC-20-CUBE4	6B3AA000004	20.000 / 20.000	689 × 250 × 827	132
SLC-30-CUBE4	6B3AC000001	30.000 / 30.000	910 × 380 × 1045	229
SLC-40-CUBE4	6B3AC000003	40.000 / 40.000	910 × 380 × 1045	334
SLC-50-CUBE4	6B3AD000002	50.000 / 50.000	920 × 560 × 1655	450
SLC-60-CUBE4	6B3AD000003	60.000 / 60.000	920 × 560 × 1655	450
SLC-80-CUBE4	6B3AD000001	80.000 / 80.000	920 × 560 × 1655	540

Nomenclature, dimensions and weights for devices with input voltage of 3 x 400 V, output voltage of 3 x 400 V and standard backup.
This code corresponds only to the UPS module. Consult code for battery module.

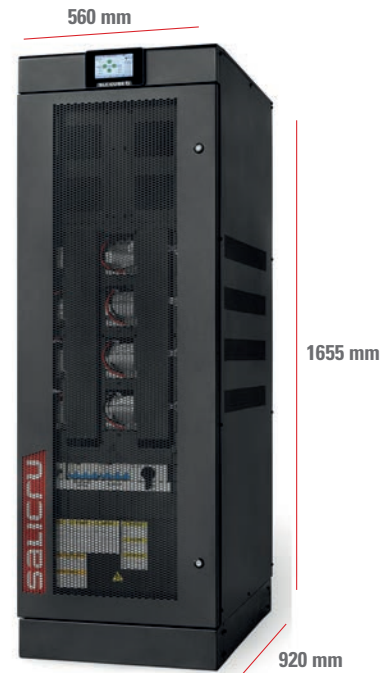
Dimensions



SLC-7.5-20-CUBE4

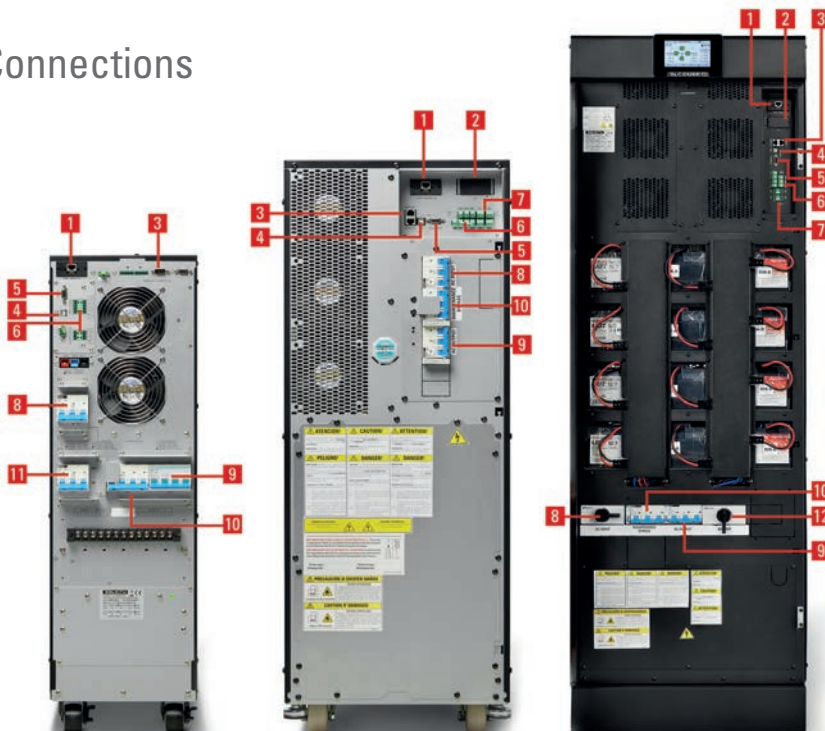


SLC-30-40-CUBE4



SLC-50-80-CUBE4

Connections



1. Nimbus cloud card
2. Free communications slot
3. Parallel port
4. USB interface
5. RS-232/(485) interface
6. Digital Inputs
7. Relay indicators
8. Input circuit breaker/disconnector
9. Output circuit breaker
10. Manual bypass circuit breaker
11. Bypass circuit breaker
12. Battery disconnector

SLC-7.5-20-CUBE4

SLC-30-40-CUBE4

SLC-50-80-CUBE4

Technical specifications

MODEL		SLC CUBE4
TECHNOLOGY		On-line, double conversion, HF, DSP control
INPUT	Rated voltage	Three-phase 3 × 380 / 3 × 400 / 3 × 415 V (3F + N) ⁽¹⁾
	Voltage range	7.5÷20 kVA: 110÷300 V (F-N) / 30÷80 kVA: 115÷265 V (F-N)
	Rated frequency	50 / 60 Hz
	Frequency range	7.5÷20 kVA: 46÷54 Hz / 56÷64 Hz / 30÷80 kVA: 46÷64 Hz
	Total harmonic distortion (THDi)	<3%
	Power factor	7.5÷20 kVA: ≥0.99 / 30÷80 kVA: 1 from 10% load
	Rectifier topology	Three-phase IGBT full wave, soft start, PFC, transformerless
OUTPUT	Power factor	1
	Rated voltage	Three-phase 3 × 380 / 3 × 400 / 3 × 415 V (3F + N) ⁽²⁾
	Dynamic accuracy	±2%
	Static accuracy	±1%
	Frequency	50 / 60 Hz
	Total performance in On-line mode	>96% ⁽²⁾
	Performance in Smart Eco-mode	>99%
	Admissible overloads	125% for 10 min / 150% for 60 s / >150% for 20 ms
Crest factor	3:1	
MANUAL BYPASS	Type	Uninterrupted
STATIC BYPASS	Type and activation criteria	Solid state
	Transfer times in Smart Eco-mode (ms)	<10 ms
	Transfer to bypass	Immediate, for overloads exceeding 150%
	Retransfer	Automatic, after alarm deactivation
BATTERY	Battery type	Pb-Ca, VRLA, lead acid, gel, Ni-Cd, Li-Ion
	Charging voltage regulation	Batt-Watch
COMMUNICATION	Ports	1x RS232/RS485 + 1xUSB
	Relay interface	7.5÷20 kVA: 6 relays / 30÷80 kVA: 4 relays (programmable)
	Intelligent slot	1, for SNMP/ NIMBUS and relays
	Backlit LCD display	5" colour touch screen
GENERAL	Operating temperature	0° C ÷ +40° C ⁽³⁾
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2,400 masl ⁽⁴⁾
	Acoustic noise at 1 metre	7.5÷10 kVA: <55 dB / 15÷20 kVA: <57 dB / 30÷40 kVA: <54 dB / 50÷80 kVA: <62 dB
STANDARDS	Safety	IEC/EN 62040-1
	Electromagnetic compatibility (EMC)	IEC/EN 62040-2 C3
	Operation	VFI-SS-11 (EN-62040-3)
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

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

(2) According to model

(3) Up to 55°C with power derating

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

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 1.5%), which help to reduce installation and operating costs, and contribute to improving the quality of the electrical grid.

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 98.4% 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.



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...



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 <math><1.5\%</math>).
- 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 98.4%.
- Touch screen 7" color. ⁽³⁾
- Very compact design with minimal footprint.
- Can be integrated into the most advanced IT environments.
- Parallel redundant configuration (N+1) for critical installations. ⁽⁴⁾
- Built with 80% recyclable materials.
- SLC Greenergy solution.

ON
LINE

OPF =
0.9

TOWER



SNMP
SLOT



ECO
MODE



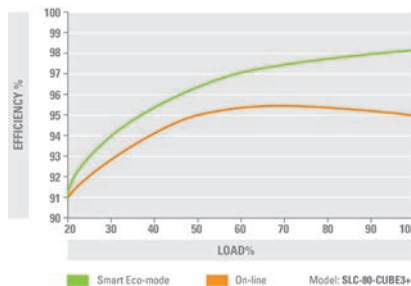
SLC
GREENERY
SOLUTIONS



(1) Single/single, single/three and three/single configurations up to 100 kVA
 (2) Only for three-phase input / output models. PF = 0.8 for other configurations
 (3) According to model
 (4) Up to 4 units.

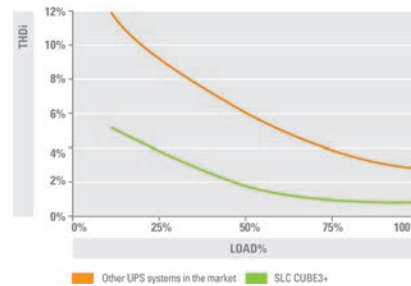
High efficiency

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



Low harmonic distortion

The lowest harmonic distortion in the market.



Options

- Nimbus/Ethernet/SNMP adapter.
- 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.
- Touch screen 7" color. ⁽²⁾
- Single/single, single/three and three/single configurations. ⁽¹⁾
- External manual bypass.
- Temperature and humidity sensors.
- Frequency converter function.
- Backfeed protection.
- Isolation transformer and autotransformer.
- Parallel installation cable.
- Nimbus AS-400 extended relay card.
- Earthquake-proof feet.
- Other levels of protection.
- Batteries in rack.

(1) Up to 100 kVA
 (2) Up to 60 kVA

Technical support and service

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



Range

MODEL	CODE	POWER (VA / W)	N° CABINETS (UPS + BAT)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)	BAT DIMENSIONS (D × W × H mm)	BAT WEIGHT (Kg)
SLC-7,5-CUBE3+	681LA000009	7500 / 6750	1 + 0	770 × 450 × 1100	203	-	-
SLC-10-CUBE3+	681LA000004	10000 / 9000	1 + 0	770 × 450 × 1100	203	-	-
SLC-15-CUBE3+	681LA000017	15000 / 13500	1 + 0	770 × 450 × 1100	205	-	-
SLC-20-CUBE3+	681LA000024	20000 / 18000	1 + 0	770 × 450 × 1100	254	-	-
SLC-30-CUBE3+	681LB000006	30000 / 27000	1 + 0	770 × 450 × 1100	305	-	-
SLC-40-CUBE3+	681LB000010	40000 / 36000	1 + 0	770 × 450 × 1100	403	-	-
SLC-50-CUBE3+	681LC000001	50000 / 45000	1 + 1	770 × 450 × 1100	185	775 × 450 × 1100	295
SLC-60-CUBE3+	681LC000002	60000 / 54000	1 + 1	770 × 450 × 1100	185	775 × 450 × 1100	523
SLC-80-CUBE3+	681TD000001	80000 / 72000	1 + 1	880 × 590 × 1320	265	1050 × 650 × 1325	624
SLC-100-CUBE3+	681TD000002	100000 / 90000	1 + 1	880 × 590 × 1320	290	1050 × 650 × 1325	624
SLC-120-CUBE3+	681TD000003	120000 / 108000	1 + 1	880 × 590 × 1320	290	1050 × 650 × 1325	750
SLC-160-CUBE3+	681TE000001	160000 / 140000	1 + 1	850 × 900 × 1900	540	850 × 1305 × 1905	1595
SLC-200-CUBE3+	681TE000002	200000 / 180000	1 + 1	850 × 900 × 1900	550	850 × 1305 × 1905	1918

Nomenclature, dimensions and weights for units with input voltage 3 x 400 V, output voltage 3 x 400 V and standard backup time. This code corresponds only to the UPS module. Consult code for battery module.

Dimensions



SLC-7,5-60-CUBE3+

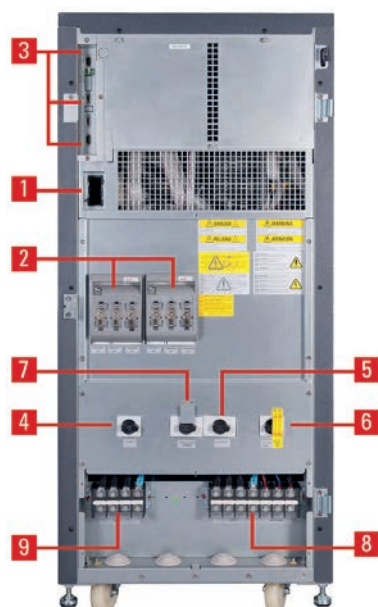


SLC-80-120-CUBE3+



SLC-160/200-CUBE3+

Connections



SLC-7,5-200-CUBE3+

1. Slot for card (option).
2. Internal protection fuses. 80 kVA equipments only.
3. Communication interfaces.
4. Circuit breaker switch / Input switch.
5. Output switch.
6. Fuse holder / switch power.
7. Manual bypass.
8. Output terminals.
9. Input and output terminals.

Technical specifications

MODEL		SLC CUBE3+
TECHNOLOGY		On-line, double conversion, HF, DSP control
INPUT	Rated voltage	Single-phase 220 / 230 / 240 V ⁽¹⁾ / Three-phase 3 × 380 / 3 × 400 / 3 × 415 V (3P + N)
	Voltage range	+15% / -20% (configurable)
	Rated frequency	50 / 60 Hz
	Total harmonic distortion (THDi)	100% load: <1.5% / 50% load: <2.5% / 10% load: <6.0%
	Power factor	1 from 10% load
	Rectifier topology	Three-phase IGBT full wave, soft start, PFC, transformerless
OUTPUT	Power factor	0.9 ⁽²⁾
	Rated voltage	Single-phase 220 / 230 / 240 V ⁽¹⁾ / Three-phase 3 × 380 / 3 × 400 / 3 × 415 V (3P + N)
	Dynamic accuracy	± 2% dynamic
	Static accuracy	± 1% steady
	Response time accuracy	20 ms for load steps 0% ÷ 100% and voltage drop up to -5%
	Total harmonic distortion (THDv)	<0.5% linear load / <1.5% (EN-62040-3) non-linear load
	Synchronised frequency	50/60 Hz ±5 Hz (selectable)
	Free running frequency	50/60 Hz ±0,05%
	Synchronous speed	From 1 Hz/s to 10 Hz/s (programmable)
	Total performance in On-line mode	7.5÷60 kVA: 92.0%÷93.0% / 80÷200 kVA: 94.0%÷95.0%
	Performance in Smart Eco-mode	Up to 98.4%
	Admissible overloads	125% for 10 min / 150% for 60 s / >150% for 20ms
	Crest factor	>3:1
MANUAL BYPASS	Type	No breaks
STATIC BYPASS	Type and activation criteria	Solid state, controlled by microprocessor
	Transfer times in Smart Eco-mode (ms)	4 ms (typical)
	Transfer times in On-line	Nil
	Transfer to bypass	Immediate, for overloads exceeding 150%
	Retransfer	Automatic, after alarm deactivation
BATTERY	Battery type	Lead acid, sealed, maintenance free
	Charging voltage regulation	Batt-Watch
COMMUNICATION	Ports	1 × RS232/RS485 + 1xUSB, with Modbus protocol
	Relay interface	4 × AC failure, bypass, low battery and general
	Intelligent slot	1, for SNMP
	Display from 80 kVA	Touch screen 7" color
	Display up to 60 kVA	LCD display, LEDs and keyboard
GENERAL	Operating temperature	0° C ÷ +40° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2,400 masl ⁽³⁾
	Acoustic noise at 1 metre	<52 dB(A) ⁽⁴⁾
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN-62040-2
	Operation	VFI-SS-11 (EN-62040-3)
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) Up to 60 kVA.

(2) Only for three-phase input / output models. FP = 0.8 for other configurations.

(3) Power derating for higher altitudes up to 5000 masl.

(4) <65 dB(A) for 80 to 120 kVA models / <70 dB(A) for 160 to 200 kVA models.

SLC X-PERT

Uninterruptible power supplies 80 to 400 kVA



SLC X-PERT: High critical power facilities protected by high functionalities

Salicru's **SLC X-PERT** series consists of three-phase UPSs that combine very low total cost of ownership (TCO) with very high efficiency and compact design, providing high-quality uninterruptible power for all critical applications. The technology incorporated offers one of the highest efficiencies on the market in VFI mode and 100% of expected battery life.

The **SLC X-PERT** series maximises the use of the surface occupied thanks to its high power density design. Models from 200 kVA have complete front access, precluding the need for side or rear space, making them easy to maintain and installable side by side, back to back or against a wall. The common battery option further enhances the ability of the **SLC X-PERT** series to deliver low footprint solutions, freeing space for other equipment.

Applications: Guaranteed energy for all environments

Data centres: Ensures the functionality of environments and prevents losses caused by net failures.

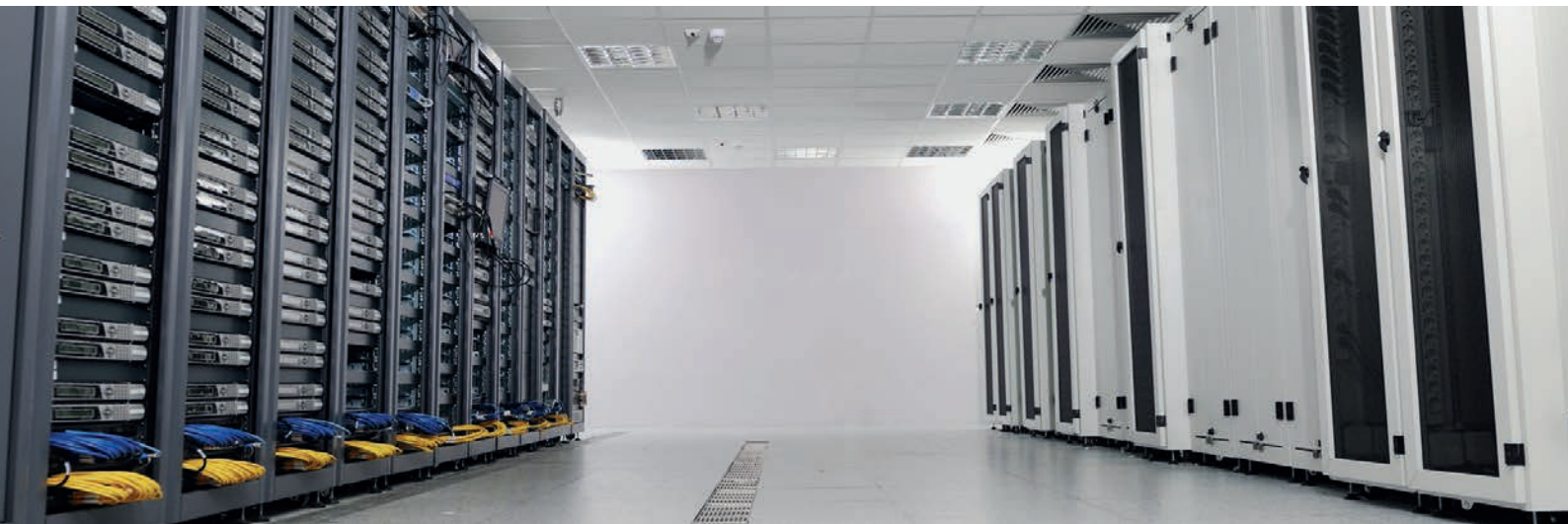
IT-Networks: Prevent costs due to service interruptions or loss of information.

Financial services: Maintains online operability of financial transactions and operations.

Industrial processes: Protects productivity in electrically complicated environments.

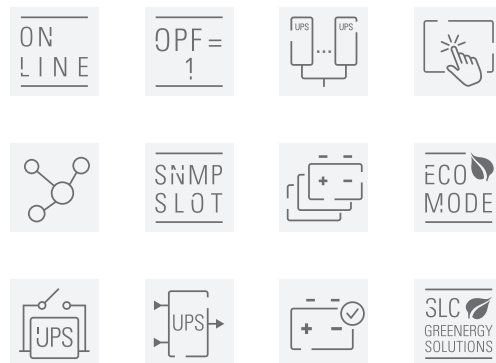
Telecommunications: Prevents supply failures that can suspend communication between subscribers.

Infrastructures: Safeguards the instruments/equipment and ensures the proper management of the systems.



Performances

- On-line, double-conversion and DSP control technology.
- Output power factor 1 (VA=W).
- Input current distortion rate (THDi) <3%.
- Double input connection to increase availability.
- Input power factor >0.99.
- High energy efficiency, between 95% and 96% in normal mode and up to 97% in high-efficiency mode.
- No transformer in the inverter, compact design and less weight.
- Parallel system for redundancy or capacity purposes.
- Monitoring and care of batteries with Batt-Watch and longer life in high-efficiency mode.
- Compatible with power generators.
- 10" touch screen for all models.
- Selectable on-line/eco-mode operation.
- Calculation of the backup available in the event of lengthy power cuts.
- Extended life for consumables.
- Wide range of options available.
- SLC Greenergy solution.



High-efficiency mode

High-efficiency operating mode disconnects the DC bus battery when it is fully charged, enabling the DC voltage to be lowered to achieve performance of up to 97% working in on-line mode and in turn protecting and extending the life of the batteries.

Parallel systems featuring UPSs with different powers

For cases in which there is only one UPS and, due to expansion needs, it is necessary to install another device in parallel, the **SLC X-PERT** series enables two devices with different powers to parallel each other in parallel systems of 2 units. For example, a power of 125 kVA with a 100 kVA device.

Options

- Parallel/redundant kit.
- Extended backup times.
- Common rectifier/bypass input.
- SNMP adapter.
- NIMBUS adapter for remote management.
- External output voltage synchronism.
- Backfeed protection.
- Transformer.
- Battery temperature sensor.
- Top cable entry.
- External maintenance bypass.
- Modbus protocol.



Technical support and service

- Pre- and after-sales service.
- Commissioning.
- Telephone technical support.
- Preventative/corrective intervention.
- Maintenance contracts.
- Remote maintenance contracts.
- Training courses.

Heat loss

MODEL	HEAT LOSS 100% LOAD	COOLING
SLC-80-XPERT	4.20 kW	1000 m ³ /h
SLC-100-XPERT	5.30 kW	1200 m ³ /h
SLC-125-XPERT	6.60 kW	1200 m ³ /h
SLC-160-XPERT	8.40 kW	1500 m ³ /h
SLC-200-XPERT	9.40 kW	1800 m ³ /h
SLC-250-XPERT	11.80 kW	2200 m ³ /h
SLC-300-XPERT	14.10 kW	2300 m ³ /h
SLC-400-XPERT	17.50 kW	4500 m ³ /h

Range

MODEL	CODE	POWER (VA / W)	N° CABINETS (UPS + BAT)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)	BAT DIMENSIONS (D × W × H mm)	BAT WEIGHT (Kg)
SLC-80-XPERT	695KA000023	80000/80000	1+0	940 × 560 × 1500	300	-	-
SLC-100-XPERT	695KA000012	100000/100000	1+1	940 × 560 × 1800	320	855 × 1305 × 1905	829
SLC-125-XPERT	695KA000013	125000/125000	1+1	940 × 560 × 1800	360	855 × 1305 × 1905	829
SLC-160-XPERT	695KA000014	160000/160000	1+1	940 × 560 × 1800	380	855 × 1305 × 1905	1550
SLC-200-XPERT	695KA000006	200000/200000	1+1	970 × 880 × 1978	720	855 × 1305 × 1905	1862

Batteries located in cabinets.

Nomenclature, dimensions and weights for devices with input voltage 3 x 400 V, output voltage 3 x 400 V and standard backup. This code corresponds only to the UPS module. Consult code for battery module.

MODEL	CODE	POWER (VA / W)	N° CABINETS (UPS + BAT)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)	BAT DIMENSIONS (D × W × H mm)	BAT WEIGHT (Kg)
SLC-250-XPERT	695KA000007	250000/250000	1+1	970 × 880 × 1978	850	695 × 2500 × 2285	2171
SLC-300-XPERT	695KA000008	300000/300000	1+1	970 × 880 × 1978	930	695 × 2500 × 2285	2879
SLC-400-XPERT	695KA000009	400000/400000	1+1	970 × 1430 × 1978	1000	695 × 2500 × 2285	3414

Batteries located in banks.

Nomenclature, dimensions and weights for devices with input voltage 3 x 400 V, output voltage 3 x 400 V and standard backup. This code corresponds only to the UPS module. Consult code for battery module.

Dimensions



Technical specifications

MODEL		SLC X-PERT
TECHNOLOGY		On-line, double-conversion, DSP control
INPUT	Rated voltage	Three-phase 3 × 380 V / 3 × 400 V / 3 × 415 V (3P+N)
	Voltage range	+15% / -20% (@ 3 × 400 V)
	Rated frequency	50 / 60 Hz (45-65 Hz)
	Frequency range	±10%
	Total harmonic distortion (THDi)	<3%
	Power factor	>0.99
OUTPUT	Power factor	1
	Rated voltage	Three-phase 3 × 380 V / 3 × 400 V / 3 × 415 V (3P+N)
	Total harmonic distortion (THDv) Non linear load	<5%
	Synchronised frequency	±2 Hz
	Frequency	50 / 60 Hz
	High-efficiency performance	Up to 97%
	Eco-mode performance	≥98%
	Admissible overloads	125% for 10 min / 150% for 1 min
	Crest factor	3 a 1
STATIC BYPASS	Type and activation criteria	Solid state, microprocessor controlled
	Voltage (V)	Three-phase 3 × 380 V / 3 × 400 V / 3 × 415 V (3P+N)
	Transfer time	Nil
	Transfer to bypass	Immediate, for overloads exceeding 150%
	Retransfer	Automatic after alarm discontinuation
	Frequency range	±10% (selectable)
	Voltage range	±10% (selectable)
	Input	Independent
	Frequency	50 / 60 Hz
	Admissible overloads	1000% for 1 cycle
BATTERY	Battery type	Lead acid, sealed, maintenance free ⁽¹⁾
	Charge type	Type of charge IU (DIN 41773)
COMMUNICATION	Ports	RS-232, USB
	Backlit LCD display	10" touch screen
GENERAL	Operating temperature	0 ÷ +40°C
	Relative humidity	95% non-condensing
	Maximum operating altitude	2400 m.a.s.l. ⁽²⁾
	Acoustic noise at 1 metre	<60dB up to 160kVA; <65dB up to 300kVA; <72dB for 400kVA
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN-62040-2
	Operation	VFI-SS-11 (EN-62040-3)
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) Ni-Cd, Li-Ion and other types of battery available on request.

(2) Power degradation up to 5,000 masl.

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.

Applications: Guaranteed energy for all environments

Data centres: Ensures the functionality of environments and prevents losses caused by net 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.

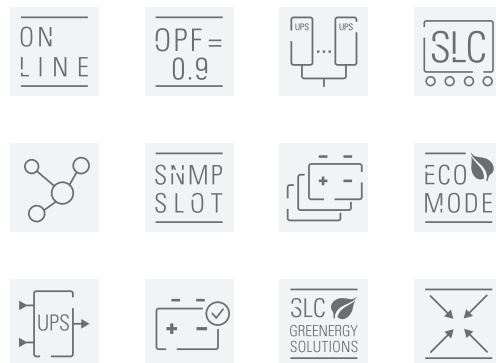
Telecommunications: Prevents supply failures that can suspend communication between subscribers.

Infrastructures: Safeguards the instruments/equipment and ensures the proper management of the systems



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%.
- Efficiency between 95% and 96%.
- Zig-zag transformer on the output inverter.
- Parallel for redundancy or increase the power capacity.
- Compatible with generating sets.
- Inverter manual operation/Smart Eco-mode.
- Prepared to bear computer 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.



Options

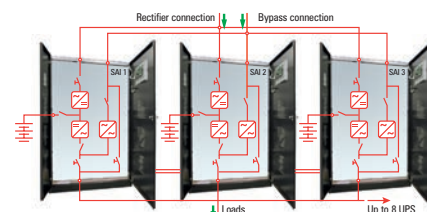
- Parallel/redundant kit.
- Extended autonomies.
- NiCd Batteries.
- BACS II.
- MODBUS protocol + RS-485 interface.
- Platform for remote telemanagement.
- Ethernet / SNMP adapter or GPRS modem.
- Monitoring, management and shutdown software.
- Common input connection.
- Top cable input.
- External manual bypass.

Technical support and service

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

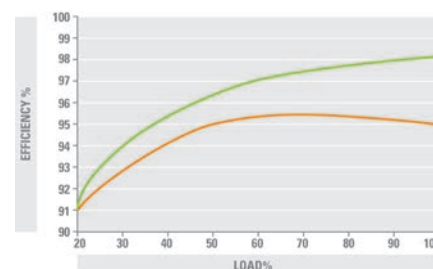
Parallel growth

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, y compris dans des conditions transitoires.



High 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).



Range

MODEL	CODE	POWER (VA / W)	N° CABINETS (UPS + BAT)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)	BAT DIMENSIONS (D × W × H mm)	BAT WEIGHT (Kg)
SLC-100-XTRA	695AA000002	100000 / 90000	1 + 1	825 × 815 × 1670	630	855 × 1305 × 1905	875
SLC-125-XTRA	695AA000003	125000 / 112500	1 + 1	825 × 815 × 1670	662	855 × 1305 × 1905	1370
SLC-160-XTRA	695AA000004	160000 / 144000	1 + 1	825 × 815 × 1670	720	855 × 1305 × 1905	1370
SLC-200-XTRA	695AA000005	200000 / 180000	1 + 1	855 × 1220 × 1905	870	855 × 1305 × 1905	1550
SLC-250-XTRA	695AA000006	250000 / 225000	1 + 1	855 × 1220 × 1905	1020	855 × 1305 × 1905	1800
SLC-300-XTRA	695AA000007	300000 / 270000	1 + 2	855 × 1220 × 1905	1200	855 × 1305 × 1905	1370
SLC-400-XTRA	695AB000001	400000 / 360000	1 + 2	950 × 1990 × 1920	1820	855 × 1305 × 1905	1800
SLC-500-XTRA	695AB000002	500000 / 450000	1 + 2	950 × 2440 × 2020	2220	855 × 1305 × 1905	1800
SLC-600-XTRA	695AB000003	600000 / 540000	1 + 2	950 × 2440 × 2020	2400	855 × 1305 × 1905	2125
SLC-800-XTRA	695AB000004	800000 / 720000	1 + 3	950 × 3640 × 1920	3600	855 × 1305 × 1905	1925

Nomenclature, dimensions and weights for units with input voltage 3 x 400 V, output voltage 3 x 400 V and standard backup time.
This code corresponds only to the UPS module. Consult code for battery module.

Dimensions



Technical specifications

MODEL		SLC X-TRA
TECHNOLOGY		On-line, double conversion, DSP control
INPUT	Rated voltage	Three-phase 3 × 380 V / 3 × 400 V / 3 × 415 V (3Ph+N)
	Voltage range	+15% / -20% (@ 3 × 400 V)
	Rated frequency	50 / 60 Hz (45-65 Hz)
	Total harmonic distortion (THDi)	<3%
	Power factor	>0.99
OUTPUT	Rated voltage	Three-phase 3 × 380 V / 3 × 400 V / 3 × 415 V (3Ph+N)
	Accuracy	±1% Steady state; ±5% Dynamic state (100% unbalanced) < 20 ms recovery time
	Total harmonic distortion (THDv) Linear load	<1%
	Total harmonic distortion (THDv) Non linear load	<5%
	Frequency	50 / 60 Hz
	On-line performance	95% - 96%
	Eco-mode performance	>98%
	Admissible overloads	125% for 10 min. / 150% for 1 min / 200% for 10 s / >200% for 100ms
MANUAL BYPASS	Type	Without interruption
	100–300 kVA	Seriell
STATIC BYPASS	Type and activation criteria	Solid state, control by microprocessor
	Voltage (V)	Three-phase 3 × 380 / 3 × 400 / 3 × 415 V (3Ph + N)
	Transfer time	Nil
	Transfer to bypass	Immediate for overloads of over 150%
	Retransfer	Automatic after alarm disappearance
	Input	Independent
	Admissible overloads	1000% for 1 cycle
RECTIFIER	Structure	Three-phase IGBT complete wave, soft start and PFC
	Protection	Against transitory overvoltages
BATTERY	Battery type	Lead acid, sealed, maintenance free ⁽¹⁾
	Recharge time	4 hours, @ 80% of capacity
	Charging voltage regulation	Batt-Watch
	Battery test	Manual + Automatic
COMMUNICATION	Ports	RS-232, USB, Emergency Power Off (EPO), Port for monitoring battery switch
	Backlit LCD display	LCD + LED block diagram
GENERAL	Operating temperature	0° C ÷ +40° C
	Relative humidity	Up to 95%, non-condensing
	Maxium operating altitude	< 2,400 m.s.n.m.
	Acoustic noise at 1 metre	< 60 dB
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN-62040-2
	Operation	VFI-SS-11 (EN-62040-3)
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001

(1) Ni-Cd under request.

Information subject to change without notice.

SLC ADAPT2

On-line double-conversion modular rack UPS with IoT and modules 10 and 15 kVA

SLC ADAPT2: Modularity, optimisation and efficiency in electrical safety for data centres

Salicru's **SLC ADAPT2** series UPSs are on-line double-conversion modular solutions for superior electrical protection, featuring DSP control and three-level IGBT technology.

Modularity: The range of modules available -10 and 15 kW- together with the different configurable systems -2, 3, 4 and 6 modules per system- enables adaptation to any environment, with the option of paralleling systems to achieve greater protection or increased power. Preventative diagnosis and frontal extraction of the modules drastically reduces intervention times (MTTR) and increases the availability of the system.

Optimisation: High power density, modules occupying only 2U of height require less space in data centres and reduce installation and working costs (TCO). Moreover, expenditure can be optimised by simply adding new modules in line with the pace of growth of the data centre.

Efficiency: The modules with a unity output power factor (kVA = kW) operate with an efficiency > 96% and a very flat performance curve for all working modes, resulting in less exertion when cooling and significant energy savings. They also feature various operating modes (Eco-mode, Hibernation, Smart-Efficiency, etc.), which further increase the performance and efficiency of the system.

IoT communication: They have a standard Nimbus cloud connection for equipment monitoring and remote management options, incident notification, equipment health monitoring and preventive maintenance.



Applications: Scalable protection for better adaptation to growing needs

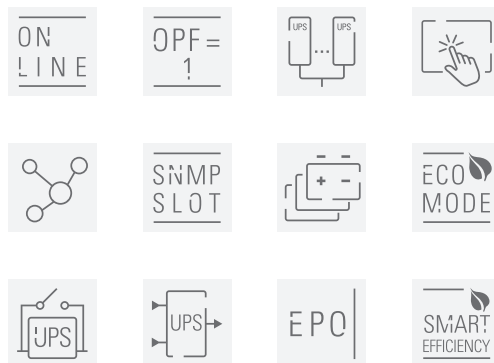
Salicru's **SLC ADAPT2** series modular solutions ensure reliability, quality and continuity and provide improved protection for small and medium-power data centres, both modular and virtualised, as well as IT infrastructures and applications for associated critical processes, avoiding the enormous costs resulting from interruptions in the operation of data centres.



Performances

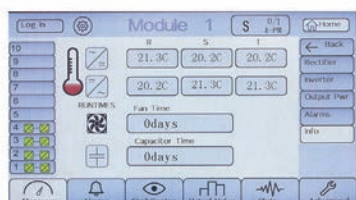
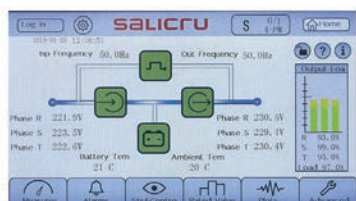
- Modular on-line double-conversion UPS solutions.
- Output power factor PF=1 (kVA=kW).
- High power density with 10 and 15 kVA modules occupying only 2U of height.
- Maximum flexibility with 2, 3, 4 and 6 module systems.
- Parallel growth, up to 450 kVA.
- Hot-pluggable and swappable plug & play modules.
- Input power factor >0.99.
- Flexible configurations 1/1, 1/3, 3/1 and 3/3.⁽¹⁾
- Standard Nimbus IoT connection for monitoring.
- 7" LCD colour touchscreen, LEDs an keypad.
- On-line mode module efficiency > 96%.
- Eco-mode operation for improved efficiency.
- Smart hibernation mode to extend the life of the modules.
- Smart charger of up to 20% of the power of the system.
- USB, RS-232, RS-485 and potential-free contact communication channels.
- SNMP/ Ethernet and relays, as options.
- Multi-platform management and monitoring software.
- SLC Greenergy solution.

(1) For systems with 10 kW modules.



Display

- 7" colour touchscreen.
- Large touchpanel display that provides status information and useful records.



Built-in cabinet

Possibility of assembling the module systems in 1100/1600/2000 mm high cabinets with or without batteries included. Batteries can also be installed in additional cabinets.



Continuous surveillance

By integrating the equipment as a standard feature of Salicru's Nimbus-cloud, it is permanently monitored and provides a continuous analysis of the level of protection provided.



Remote maintenance

There are multiple remote maintenance options through the Nimbus Services connections, both in modalities and response, allowing immediate actions in case of incidents or advances on anomalous situations.



Range

MODULES	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC ADAPT2 10	694AB000008	10000 / 10000	590 × 436 × 85	15.3
SLC ADAPT2 15	694AB000009	15000 / 15000	590 × 436 × 85	15.5

SYSTEMS	CODE	NO. MODULES (#)	MAX. POWER PER SYSTEM (kVA)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-#/2 ADAPT2 30	694RA000221	1 to 2 × 10 kVA/1 to 2 × 15 kVA	20/30	612 × 485 × 309	57
SLC-#/4 ADAPT2 45	694RA000222	1 to 4 × 10 kVA/1 to 3 × 15 kVA	40/45	612 × 485 × 485	66
SLC-#/6 ADAPT2 90	694RA000223	1 to 6 × 10 kVA/1 to 6 × 15 kVA	60/90	751 × 485 × 1033	100

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

Replace # with the number of system modules.

19" rack format for 2, 3 and 4 slot systems.

Batteries located in additional cabinets.

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

Dimensions



SLC ADAPT2 10
SLC ADAPT2 15



SLC-#/2 ADAPT2 30



SLC-#/4 ADAPT2 45



SLC-#/6 ADAPT2 90

Technical specifications

MODEL		SLC ADAPT2	
Module power (VA/W)		10000 / 10000	15000 / 15000
TECHNOLOGY		On-line double-conversion, HF, DSP control	
INPUT	Rated single phase voltage	220 / 230 / 240 V	Not available
	Rated three-phase voltage (3P+N)	3 × 380 / 400 / 415 V	
	Voltage range	-40% +15% ⁽¹⁾	
	Frequency range	40 - 70 Hz	
	Total harmonic distortion (THDi)	≤3%	
	Power factor	>0.99	
OUTPUT	Power factor	1	
	Single phase rated voltage	220 / 230 / 240 V	Not available
	Rated three-phase voltage (3P+N)	3 × 380 / 400 / 415 V	
	Static accuracy	±1%	
	Total harmonic distortion (THDv)	≤1% linear load; <5.5% non-linear load	
	Frequency	50 / 60 Hz	
	Module performance (On-line)	> 96%	
	Performance in Smart Eco-mode	98%	
	Admissible overloads	<110% for 1 hour / <125% for 10 min / <150% for 1 min / >150% for 200 ms	
	Crest factor	3:1	
MANUAL BYPASS	Type	Uninterrupted (optional) ⁽²⁾	
STATIC BYPASS	Type	Static thyristor	
	Transfer time	0 ms	
	Admissible overloads	<110% permanent / <150% for 1 min	
BATTERY	Battery type	Pb-Ca, VRLA, lead acid, gel, Ni-Cd, Li-Ion	
	Charger bus voltage	Configurable between +/-192 and +/-264 VDC	
	Charger maximum power (W)	20% of total system power	
COMMUNICATION	Display	7" touchscreen, LEDs and keypad	
	Ports	USB, RS-232, RS-485 and relays	
	Intelligent slot	1 × Nimbus SNMP / 1 × Nimbus extended relays	
	IoT	Included; Nimbus service	
GENERAL	Operating temperature	0° C ÷ +55° C ⁽³⁾	
	Relative humidity	Up to 95%, non-condensing	
	Maximum operating altitude	2,400 masl ⁽⁴⁾	
	Acoustic noise at 1 metre	< 54 dB(A) ⁽⁵⁾	
SYSTEMS	Maximum no. modules per system	2, 4, or 6	2, 3, or 6
	Maximum power per system	20, 40, 60 kVA	30, 45, 90 kVA
	Maximum no. modules systems	30	
	Maximum power per parallel system	300 kVA	450 kVA
STANDARDS	Safety	EN IEC 62040-1	
	Railway	EN 50121-4 / EN50121-5	
	Electromagnetic compatibility (EMC)	EN IEC 62040-2	
	Operation	VFI-SS-11 (EN 62040-3)	
	Corporate certification	ISO 9001, ISO 14001, ISO 45001	

(1) Depending on charge.

(2) Not included in subracks. Excellent for cabinet systems.

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

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

(5) According to number of modules.

SLC ADAPT2

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

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

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

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

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

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



Applications: Redundant protection for critical applications

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



Performances

- On-line double conversion technology with modular architecture.
- 25 and 50 kVA modules with DSP control and three-level PWM technology.
- 8, 10 or 12-module systems (up to 500 kVA per system).
- Possibility of parallel/redundant operation up to 1500 kVA.
- Hot-pluggable and swappable plug & play modules.
- Input power factor >0.99.
- Input current distortion (THDi) <3%.
- Three-phase input / output voltages.⁽¹⁾
- Output power factor = 1 (kVA = kW).
- Control and management by means of LCD display, LEDs and keypad.
- Over 96% efficiency of modules in Online mode.
- 99% performance in Eco-mode operation.
- USB, RS-232, RS-485 and potential-free contact communication channels.
- Smart slots for extended relays and SNMP/Nimbus.
- Smart-efficiency mode to optimize system performance.
- Improved return on investment (ROI).
- Compact design to save space in server rooms.
- SLC Greenergy solution.

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



Display

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



Options

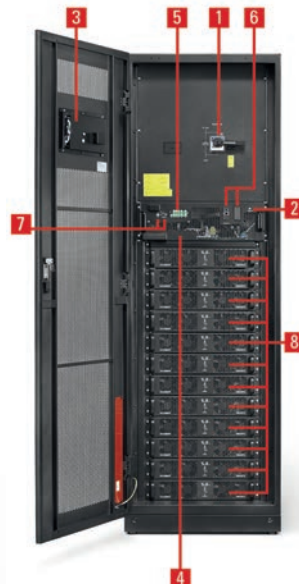
- Extended relays and SNMP/Nimbus adapter.
- Extended back-up times.
- Kit for parallel systems (Included in systems with 25 kW modules).
- Frequency converter operation.

Technical support and service

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

(1) Ask for local conditions

Connections



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



Range

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

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

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

Replace # with the number of system modules.

Batteries located in additional cabinets.

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

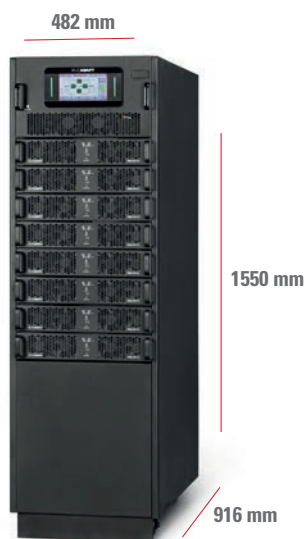
Dimensions



SLC ADAPT2 25



SLC ADAPT2 50



SLC-#/8 ADAPT2 200



SLC-#/12 ADAPT2 300



SLC-#/10 ADAPT2 500

Technical specifications

MODEL		SLC ADAPT2	
Module power (VA/W)		25000 / 25000	50000 / 50000
TECHNOLOGY		On-line double conversion, three-level PWM, DSP control	
INPUT	Rated three-phase voltage (3P+N)	3 × 380 / 400 / 415 V ⁽¹⁾	
	Voltage range	-43% +20% ⁽²⁾	
	Rated frequency	50 / 60 Hz	
	Frequency range	40 - 70 Hz	
	Total harmonic distortion (THDi)	≤3%	
	Power factor	>0.99	
OUTPUT	Power factor	1	
	Rated three-phase voltage (3P+N)	3 × 380 / 400 / 415 V ⁽¹⁾	
	Accuracy	±1%	
	Total harmonic distortion (THDv)	≤1%	
	Frequency	50 / 60 Hz	
	Module performance (On-line)	>96%	
	Performance in Smart Eco-mode	99%	
	Admissible overloads	125% for 10 mins / 150% for 1 min	
	Crest factor	3:1	
MANUAL BYPASS	Type	Uninterrupted	
STATIC BYPASS	Type	Static thyristor	
	Three-phase voltage (V)	3 × 380 / 400 / 415 (3P + N)	
	Admissible overloads	<110% permanent / <150% for 1 min	
BATTERY	Battery type	Pb-Ca, VRLA, lead acid, gel, Ni-Cd, Li-Ion	
	Charging voltage regulation	Batt-watch	
	Charger maximum power (W)	20% of total system power	
COMMUNICATION	Display	7" touchscreen, LEDs and keypad	
	Ports	RS-232, RS-485, relays and USB	
	Intelligent slot	1 × Nimbus SNMP	
GENERAL	Operating temperature	0° C ÷ +55° C ⁽³⁾	
	Relative humidity	Up to 95%, non-condensing	
	Maximum operating altitude	2,400 masl ⁽⁴⁾	
	Acoustic noise at 1 metre	<65 dB(A)	<72 dB(A)
SYSTEMS	Maximum no. modules per system	8 or 12	10
	Maximum power per system	200 / 300 kVA	500 kVA
	Maximum no. modules systems	30	
	Maximum power per parallel system	750 kVA	1500 kVA
STANDARDS	Safety	EN IEC 62040-1	
	Railway	EN 50121-4 / EN 50121-5	
	Electromagnetic compatibility (EMC)	EN IEC 62040-2	
	Operation	VFI SS-11 (EN 62040-3)	
	Corporate certification	ISO 9001, ISO 14001, ISO 45001	

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

(2) Depending on load percentage.

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

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

Information subject to change without notice.

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 grid.

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.



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,...



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).
- Very low output voltage distortion rate (THDv even lower than 0.5%).
- Efficiency of up to 95%.
- Touch screen 7" color. ⁽²⁾
- Very compact design with minimal footprint.
- Can be integrated into the most advanced IT environments
- Built with 80% recyclable materials.
- SLC Greenergy solution.

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

(2) According to model

ON
LINE

OPF =
0.9



SNMP
SLOT



EPO

SLC
GREENERY
SOLUTIONS



Technical support and service

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

Options

- Ethernet/SNMP adapter.
- Adapter for remote management.
- 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⁾
- Touch screen 7" color. ⁽¹⁾
- External manual bypass.
- Temperature and humidity sensors.
- External display.

(1) Up to 60 kVA

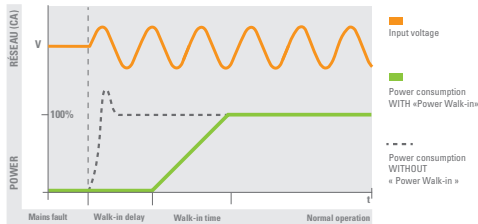


Range

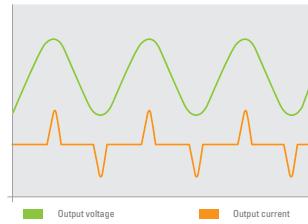
MODEL	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
CF-7,5-CUBE3+	681LM000001	7500 / 6750	775 × 450 × 1100	100
CF-10-CUBE3+	681LM000003	10000 / 9000	775 × 450 × 1100	100
CF-15-CUBE3+	681LM000005	15000 / 13500	775 × 450 × 1100	102
CF-20-CUBE3+	681LM000008	20000 / 18000	775 × 450 × 1100	105
CF-30-CUBE3+	681LM000009	30000 / 27000	775 × 450 × 1100	150
CF-40-CUBE3+	681LM000011	40000 / 36000	775 × 450 × 1100	175
CF-50-CUBE3+	681LM000013	50000 / 45000	775 × 450 × 1100	185
CF-60-CUBE3+	681LM000015	60000 / 54000	775 × 450 × 1100	185
CF-80-CUBE3+	681TK000004	80000 / 72000	880 × 590 × 1325	265
CF-100-CUBE3+	681TK000001	100000 / 90000	880 × 590 × 1325	290
CF-120-CUBE3+	681TK000005	120000 / 108000	880 × 590 × 1325	290
CF-160-CUBE3+	681TK000006	160000 / 144000	850 × 900 × 1905	540
CF-200-CUBE3+	681TK000003	200000 / 180000	850 × 900 × 1905	550

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

Power walk-in

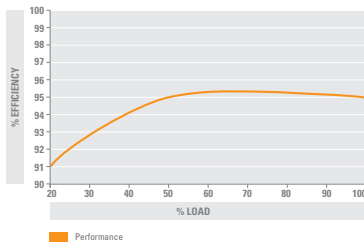


Excellent THDv output distortion



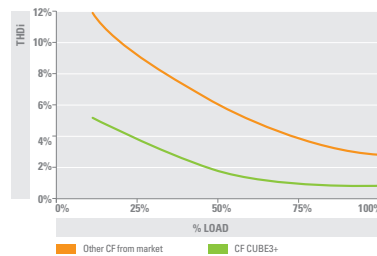
High efficiency

High performance.



Low harmonic distortion

The lowest harmonic distortion in the market.



Technical specifications

MODEL		CF CUBE3+
TECHNOLOGY		On-line, double conversion, HF, DSP control
INPUT	Rated voltage	Single-phase 120 / 127 / 220 / 230 / 240 V ⁽¹⁾ / Three-phase 3 × 208 / 3 × 220 / 3 × 380 / 3 × 400 / 3 × 415 V (3P + N) ⁽¹⁾
	Voltage range	+15% / -20% (configurable)
	Rated frequency	50 / 60 Hz
	Total harmonic distortion (THDi)	100% load: <1.5% / 50% load: <2.5% / 10% load: <6.0%
	Power factor	1 from 10% load
	Rectifier topology	Three-phase IGBT full wave, soft start, PFC, transformerless
OUTPUT	Power factor	0.9
	Rated voltage	Single-phase 120 / 127 / 220 / 230 / 240 V ⁽¹⁾ / Three-phase 3 × 208 / 3 × 220 / 3 × 380 / 3 × 400 / 3 × 415 V (3P + N) ⁽¹⁾
	Dynamic accuracy	± 2% dynamic
	Static accuracy	± 1% steady
	Response time accuracy	20 ms for load steps 0% ÷ 100% and voltage drop up to -5%
	Total harmonic distortion (THDv) Linear load	<0.5%
	Total harmonic distortion (THDv) Non-linear load	<1.5% (EN-62040-3)
	Frequency	50/60 Hz ±0.05%
	Total performance in On-line mode	7.5÷60 kVA: 92.0%÷93.0% / 80÷200 kVA: 94.0%÷95.0%
	Admissible overloads	125% for 10 min / 150% for 60 s / >150% for 20ms
	Crest factor	>3:1
	BATTERY	Battery type
Charging voltage regulation		Batt-Watch
COMMUNICATION	Ports	1 × RS232/RS485 + 1xUSB, with Modbus protocol
	Relay interface	4 × AC failure, bypass, low battery and general
	Intelligent slot	1, for SNMP
	Monitoring software	For Windows, Linux and Mac
GENERAL	Operating temperature	0° C ÷ +40° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2,400 masl ⁽³⁾
	Acoustic noise at 1 metre	52 dB(A) ⁽²⁾
STANDARDS	Safety	EN-IEC 62040-1
	Electromagnetic compatibility (EMC)	EN-62040-2
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

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

(3) Power derating for higher altitudes up to 5000 masl.

Information subject to change without notice.

SOFTWARE USB/RS-232

Management, monitoring and ordered closure

SOFTWARE USB/RS-232: UPS-PC communication

The main function that we require from an Uninterruptible Power Supply (UPS) to protect a computer, is that in case of any electrical problem, power cut, peak voltage or line drop, the UPS protects us and continues to supply power to our computer either from the batteries or by voltage regulation.

However, the autonomy of the batteries is limited in time, so our computer will shut down abruptly when battery storage capacity has run out. This autonomy will depend on the power of our UPS and the load that supports it, therefore, we need to shut down/suspend our computer correctly before this occurs. The complete discharge of the batteries can occur at 8 minutes or 2 hours depending on the load that supports the UPS or battery capacity that we have.



What do we have to do and how do we turn our computer off/suspend it before the batteries run out?

First, connect the USB cable between UPS and Computer. If our UPS has a USB UPSHID function, this will recognise the UPS as if our computer had a battery fully integrated with the operating system, enabling its power functions without requiring any type of software. Therefore, if we only need the computer to be shut down/suspended according to the power configuration of our operating system, this is the best choice.

However, if we want to have additional features, such as sending alerts via e-mail, having an event log, or recording measurements, adjusting UPS parameters, etc., software must be installed for our particular UPS model.



FEATURES

USB UPSHID WINPOWER VIEWPOWER POWERMASTER

FEATURES	USB UPSHID	WINPOWER	VIEWPOWER	POWERMASTER
Graphic monitoring of the UPS status	—	●	●	●
Recording of events and measures	—	●	●	●
WEB application	—	●	●	●
Ordered closure/suspension of the UPS due to battery time	●	●	●	●
Ordered closure/suspension of the UPS due to remaining battery level %	●	●	●	●
Scheduled on/off of the UPS	—	●	●	●
Sending of alerts and notifications by e-mail (or SMS via GSM modem)	—	●	●	●
Network computers switched off (master/slave)	—	●	●	●
Multi-language	●	●	●	●
Support for virtual environments	—	●	●	●

(●) Included (-) Not included

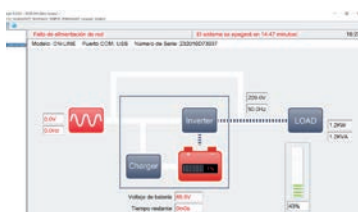
Information subject to change without notice.

Software Winpower

Winpower is a powerful UPS monitoring software, which provides an easy-to-use graphical interface to monitor and control the UPS device. The software provides complete protection for the computer system during a power failure. With this software, users can monitor the status of the UPS in the same LAN. Any UPS can also perform controlled shutdown of other computers in the same LAN.

Series: SPS SOHO+, SLC TWIN PRO2, SLC TWIN PRO3, SLC TWIN RT3

Available operating systems: MAC / Windows / Linux / VMware / Citrix XenServer



WINPOWER

Software Viewpower

Viewpower is an advanced software for the administration and management of the UPS. It allows remote monitoring and remote administration of one to several UPS devices in a network environment, either LAN or internet. It also provides statistical information on events and measures. **Viewpower** is the solution for managing the controlled shutdown of our computer system and preventing the loss of data.

Series: SPS ONE / SPS ADVANCE RT2/SLC TWIN RT2 LION / SLC CUBE3+ / SLC CUBE4 (≤20 KVA)

Available operating systems: MAC/Windows/Linux/VMware

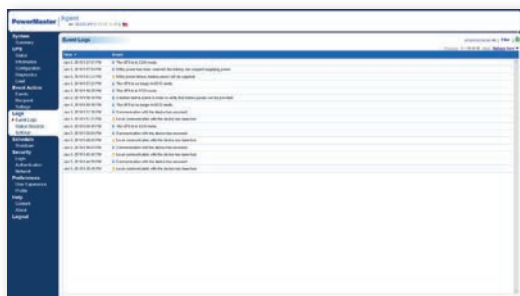


VIEWPOWER

Powermaster

UPS monitoring software, **Powermaster** is ideal for IT professionals to supervise and manage their UPS. It provides an orderly and unattended shutdown of network computers connected to the UPS during a power failure. Power alert notifications can be sent by e-mail. This software allows users remote access (from any PC in the local network with a web browser).

Series: SPS HOME / SPS ADVANCE T / SPS ADVANCE R
Available operating systems: MAC / Windows / Linux



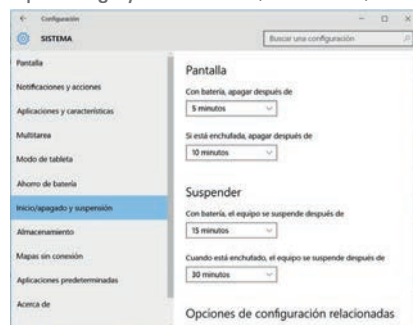
POWERMASTER

USB UPSHID

This function is incorporated in the operating system and detects the UPS as an additional battery to our computer system, allowing management from the operating system's power menu. Allowing you to turn off the computer or hibernate it after x minutes if you are working in battery mode.

Series: SPS ONE, SPS SOHO+, SPS HOME, SPS ADVANCE T, SPS ADVANCE RT2, SLC TWIN RT3, SLC TWIN PRO2, SLC TWIN PRO3, SLC TWIN RT2 LION

Available operating systems: MAC / Windows / Linux



USB UPSHID

ETHERNET/SNMP/NIMBUS CLOUD NETWORK CARDS

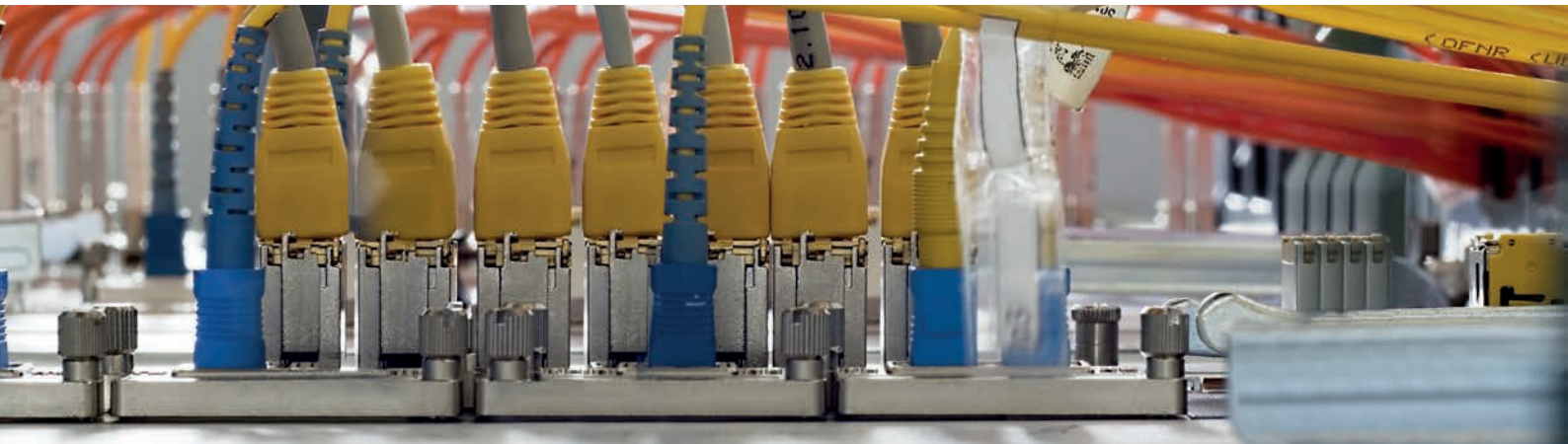
Ordered closure of servers / MQTT IOT

NIMBUS cloud / Ethernet / SNMP Network Cards: The best add-ons to protect your computer network

In case of any electrical problem - supply cut, voltage peak or line drop - the main function of an Uninterruptible Power Supply (UPS) is to protect the connected loads and continue supplying power to your computer network, either from the batteries or by voltage regulation. New IoT technologies, based on communications through MQTT channels, allow us to have a WEB application in the CLOUD so we can manage our equipment from anywhere with an Internet connection.

It is very important to monitor the UPS to see whether it is working properly at all times, so that it can notify us of its correct operation and/or manage the complete and ordered closure of our private computer network. This is why the installation of a local Ethernet Network card in the UPS or a NIMBUS Card is necessary, so that it can autonomously manage the different functions required by our computer network.

Salicru offers a complete range of Ethernet/SNMP/NIMBUS network cards to meet our customers' requirements.

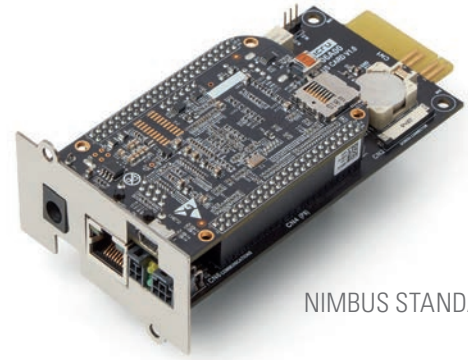


Nimbus Ethernet Adapter / SNMP web adapter

Salicru's **NIMBUS** cards are designed and developed to offer different communication services to Salicru's customers. Its Linux Embedded operating system allows simultaneous management of 'Panel Web, Telemonitoring, SNMP, Modbus TCP and Server Shutdown' services.

It includes the following features:

- **Remote upgrade:** to manage new UPS models and additional services.
- **Panel Web:** visualisation of the available measurements, variables and alarms using a block diagram.
- **Telemonitoring:** Salicru's cloud connection functionality.
- **SNMP:** compatibility with UPS in accordance with the RFC1628 standard, for monitoring via Nagios software, Zabbix, etc.
- **MODBUS TCP:** display of measurements, variables and alarms for connection to PLC or SCADA software.
- **Server shutdown:** sending shutdown orders, using RCCMD` (optional) software.



NIMBUS STANDARD



NIMBUS MINI



Ethernet Adapter / SNMP WEB Adapter

The functions incorporated in these cards will be able to satisfy the most demanding requirements of IT administrators. They are quick to configure, which facilitates your work, have extensive options for monitoring and personalisation of events, complete off/on options (wake on lan) of our physical or virtual server farm, SNMP (v2, v3) and MODBUS gateway (tcp), special mention in the field of security allowing the use of SSL through digital certificates belonging to the client.

They also allow the connection and management of temperature / humidity probes, SMS sending via a GSM modem, and management of voltage-free contacts.



ETHERNET ADAPTER
STANDARD



ETHERNET ADAPTER
MINI

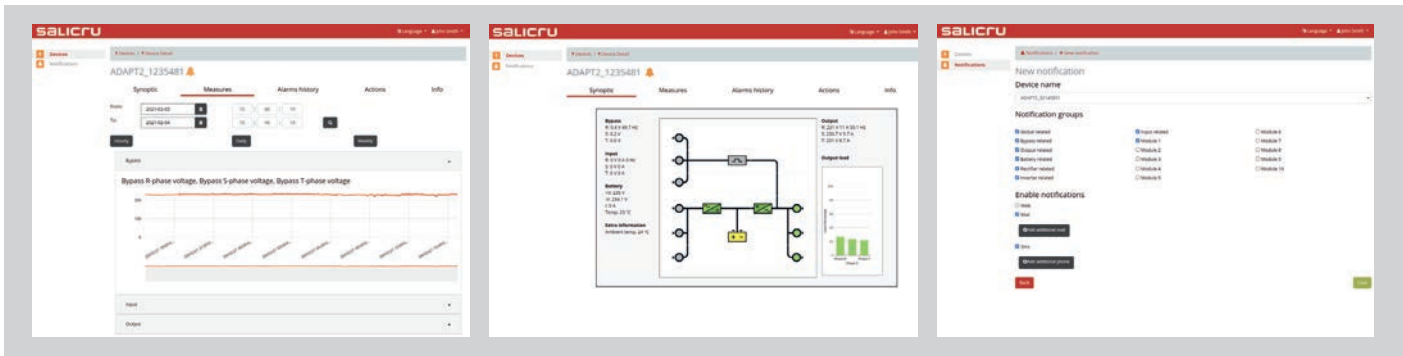
Nimbus Cloud, remote monitoring system, with 24/7 availability

Modern companies run their systems 365 days a year, and therefore require total electrical protection. Salicru equipment featuring the **NIMBUS** remote monitoring service offers a perfect complement to the service of the most demanding customers.

The **NIMBUS** remote monitoring system is comprised of 3 systems: the Nimbus Card (Embedded Linux Systems) housed inside the Salicru equipment and connected to the Internet either via the customer's corporate network or optionally via 3G/4G router; the Nimbus Cloud, a

system that collects, organises and distributes the sensors and alarms sent by the Salicru equipment; and Salicru's team of Technical Support Service engineers who offer a 24/7 service providing answers to any questions that the customer may have.

The Nimbus Card is based on the latest IoT technologies, featuring channel connection via MQTT and historical data collection via InfluxDB.



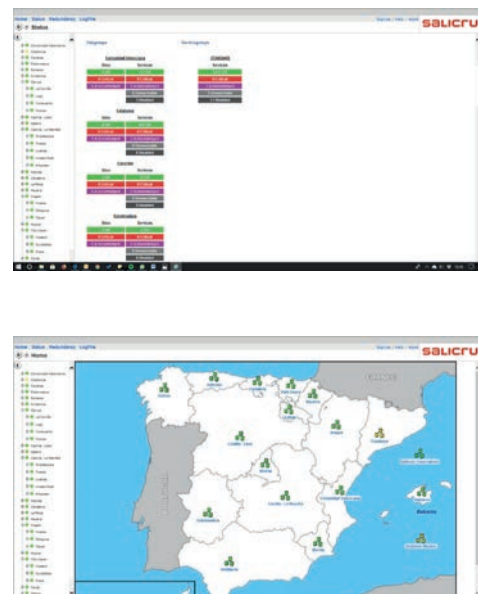
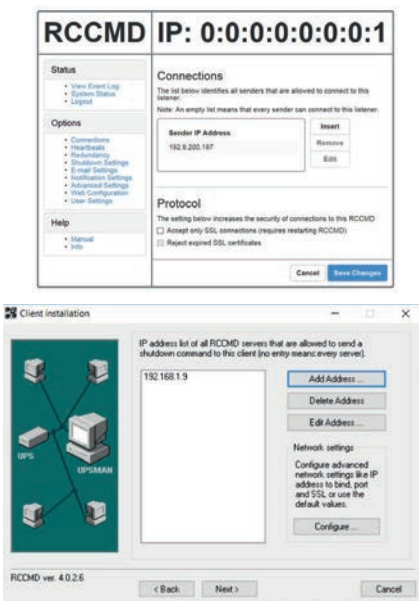
RCCMD: Remote shutdown application

Software agent for most physical/virtual operating systems. The different actions (shutdown, message, action) are executed by customisable scripts, after receiving the order from the Ethernet Adapter / SNMP WEB Adapter. Compatible with most operating systems, including virtual systems (vmware, citrix and hyperv).

Software licensed by a physical server to be managed. Each adapter includes a license. For more servers, additional licenses must be purchased. It offers the SSL security option.

UNMS II: Unlimited Salicru's UPS management

Software for centralised monitoring of a large fleet of UPS installed in our company. The **UNMS II** is installed as a WEB service to facilitate monitoring and management. The **UNMS II** is a scalable software that has different licensing levels according to the equipment to be monitored, from the basic and free level, of 9 UPS devices, to installations of more than 2,500.



DESCRIPTION	NIMBUS ETHERNET ADAPTER/ SNMP WEB ADAPTER	ETHERNET ADAPTER / SNMP WEB ADAPTER
Compatible with all series featuring Salicru slots	According to the lower compatibility list	Yes
Easy configuration assistant	Self configurable	Yes
Data visualisation	Graph, block diagram	Graph, block diagram
Connection to the Salicru Cloud (IoT – MQTT)	Yes, for SLC CUBE4 and SLC ADAPT2 series	No
Ordered shutdown of servers	Yes, due to power failure and low battery alarm via RCCMD (optional) Software, for most physical / virtual Operating Systems	Yes, event activation by RCCMD software for most physical / virtual operating systems
SMTP configuration	No	Configurable, enables encryption, port customisation
Email notifications	Automatic, non-customizable text / message	Automatic and/or allows for customisation of alerts to be sent, and at what time
SMS notifications	Yes (SMS sending via the cloud)	Yes (via optional modem)
Push notifications	Yes (Webserver)	No
Customisable events according to UPS values / measurements	No	Yes
SNMP compatibility	SNMP V2	SNMP V2 and V3
MIB file compatibility	RFC1628, and private MIBs	RFC1628, and private extensions
History of events and measurements	Events and measures in graphical table, exportable to excel for DC power-S	Customisable, viewing of text and graphs, allows export to Excel
API REST protocol	Yes	Yes
MODBUS protocol	TCP and RS232	TCP and RS232
BACnet protocol	No	Yes
IEC61850 protocol	Yes (DCS only)	No
LonWork, ProfiBus protocol	No	Optional
Remote SysLog	No	Yes
Secure access	2 levels of access, Engineer, Guest, SSH secure access	Via Configurable Login and Password
Manageable relays option	No	Yes
Optional Temperature / Humidity Probe	No	Yes
Firmware Upgrade	Yes	Yes
Remote Firmware Upgrade	Yes	No

Information subject to change without notice.

COMPATIBILITY BY SERIES	MODEL	NIMBUS ETHERNET ADAPTER/ SNMP WEB ADAPTER	ETHERNET ADAPTER / SNMP WEB ADAPTER
SPS ADVANCE R / SPS ADVANCE T	MINI	–	●
SPS ADVANCE RT2	MINI	–	●
SLC TWIN PRO2	MINI	●	●
SLC TWIN PRO3	MINI	●	●
SLC TWIN RT2 LION	MINI	●	●
SLC TWIN RT3	MINI	●	●
SLC CUBE3+	STANDARD	●	●
SLC CUBE4	MINI	●	●
SLC X-PERT	STANDARD	● ⁽¹⁾	●
SLC X-TRA	STANDARD	● ⁽¹⁾	●
SLC ADAPT2	MINI	●	●
DC POWER S / DC POWER L	STANDARD	●	–
EMI3	STANDARD	●	–

● Compatible – No compatible

(1) Optional RS485 required

SPS PDU

Power distribution unit



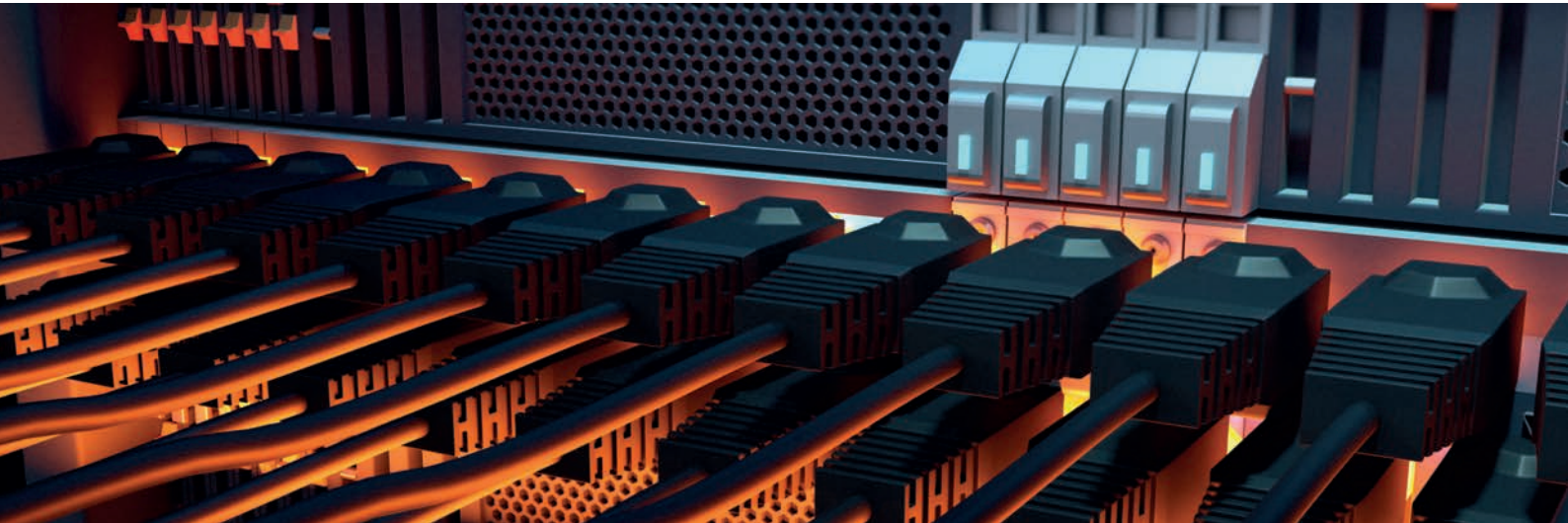
SPS PDU: Power supply to IT equipment on 19" rack

Salicru's power distribution units (SPS PDU) are designed to distribute power coming from an uninterruptible power supply (UPS), generator or the mains to multiple devices, such as network and server racks in data centres and computer rooms.

SPS PDU models incorporate an on/off switch with illumination and protective cover to prevent unwanted actions. The multi-position system allows the installation of fixing brackets in multiple combinations, both in depth (6 positions) and in inclination (5 positions). The entire range is in 1U 19" format and offers horizontal or vertical rack installation options.

Performances

- 1U - 19" aluminium profiles.
- Ease of installation and connection.
- Multiple depth positions (6 positions).
- Multiple inclination positions (90° / 45° / 0° / -45° / -90°).
- Illuminated on/off switch.
- Power supply at 250 V AC - 50/60 Hz.
- Schuko, UK, IEC and combined sockets available.
- On/off switch protective cover.
- Other configurations available on request.
- Vertical or horizontal installation.
- Connection quality and maximum socket safety.



Depth adaptation

Choice of up to 6 different installation depths to suit needs.



Inclination adaptation

Selection of different degrees of inclination to optimise the connection of the devices to be powered.



Switch protection

A removable cover protects the on/off switch from possible unwanted actions.



Range

MODEL	CODE	SOCKET INPUT TYPE	SOCKET OUTPUT TYPE	NO. OF OUTPUT SOCKETS
SPS 12F PDU C13/C14	680CA000002	C14	C13	12
SPS 8F PDU SCH/SCH	680CA000003	SCH	SCH	8
SPS 6F PDU UK/UK	680CA000004	UK	UK	6
SPS 3F+6F PDU UK+C13/C14	680CA000005	C14	UK + C13	3 + 6
SPS 4F+6F PDU SCH+C13/C14	680CA000006	C14	SCH + C13	4 + 6

Technical specifications

MODEL	SPS 12F PDU C13/C14	SPS 8F PDU SCH/SCH	SPS 6F PDU UK/UK	SPS 3F+6F PDU UK+C13/C14	SPS 4F+6F PDU SCH+C13/C14
Rated current (A)	10	16	13	10	
Rated voltage / frequency	100 / 250 V AC - 50 Hz / 60 Hz				
Socket input type	C14	SCH	UK	C14	
Socket type and quantity	C13 (12)	SCH (8)	UK (6)	UK (3) + C13 (6)	SCH (4) + C13 (6)
On/off switch	Yes				
Length of power cable	1.5				
Child protection in the sockets	Yes				
INDICATIONS LED type	Yes				
GENERAL Operating temperature	0° C ÷ 50° C				
Storage temperature	-15° C ÷ 60° C				
Relative humidity	Up to 95%, non-condensing				
Maxium operating altitude	2,400 masl (power degradation up to 5,000 m)				
Degree of protection	IP20				
Installation	Fixing brackets in 3 positions 0° o ±45°				
STANDARDS RoHS	Yes				
Plugs, power strips and sockets	IEC 60884-1; UNE 20315-1-1; EN 60320-1; EN 60320-3	IEC 60884-1; BS 1363-1; BS 1363-2	IEC 60884-1; UNE 20315-1-1; EN 60320-1; EN 60320-3		
Safety	IEC 60950 ; DIN EN 50525-2-11 ; IEC 61058-1:2002/A2:2008				
Corporate cerification	ISO 9001, ISO 14001, ISO 45001				
DIMENSIONS Depth × Width × Height (mm)	51 × 443 × 44				
WEIGHT Weight (kg)	0.8				

BM-R

Maintenance bypass 16, 40 or 63 A

BM-R: Continuity of supply during maintenance operations

Salicru's **BM-R** series maintenance bypasses enable users to disconnect the Uninterrupted Power Supply (UPS) completely without interrupting the supply of power to the loads. They are essential for maintenance and repair work that, for reasons of safety, requires the elimination of any voltage present in the device. The **BM-R** series is available in current ratings of 16, 40 and 63 A, covering UPSs in the 0.7 to 10 kVA power range with single-phase input and output.

The BM-R 63 A+ boasts exceptional functionality and, in combination with the **SLC TWIN RT3** and **SLC TWIN PRO3** ranges, offers two groups of programmable outputs (combining IEC C13 and C19 formats) and automatic battery detection, along with supports incorporating a rotating device that allows the **BM-R** to be lowered 90° without the need for disassembly when carrying out system maintenance.

The 40 and 63 A models enable switching without passing through zero, thanks to an auxiliary contact that links them to the UPS (provided it has a digital signal port designed for this purpose) and allows them to turn the device on or not, as applicable. In the case of the **BM-R 63 A+**, the same operation is managed via the RJ45 communication cable for the battery detection system, which is available on the **SLC TWIN RT3** and **SLC TWIN PRO3**.



Performances

- Maintenance bypass in rack/wall format.
- Enables loads to operate during UPS maintenance or replacement.
- Simple operation via switch.
- Manual UPS-mains and mains-UPS switching.
- Easy installation and connection.
- Suitable for single-phase devices from 0.7 to 10 kVA.
- Inputs and outputs via IEC sockets for 16 A and 63 A+ models.
- Inputs and outputs via terminals for 40 A, 63 A and 63 A+ models.
- Option to transfer from UPS to bypass. ⁽¹⁾
- Switching without passing through zero. ⁽²⁾
- 2 groups of programmable outputs. ⁽³⁾
- RJ45 connection for the smart battery management system. ⁽³⁾

(1) For the 40 A, 63 A and 63 A+ models

(2) Except the 16 A model

(3) 63 A+ model, only in combination with the SLC TWIN PRO3 and the SLC TWIN RT3



Technical specifications

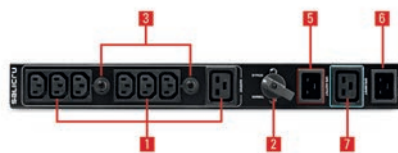
MODEL		BM-R 16 A	BM-R 40 A	BM-R 63 A	BM-R 63 A+	
FORMAT		19" rack / Wall / Attached to the device				
INPUT	Rated voltage	208 / 220 / 230 / 240 V				
	Rated frequency	50 / 60 Hz				
	Rated current (A)	16	40	63		
OUTPUT	Rated voltage	208 / 220 / 230 / 240 V				
	Rated current (A)	16	40	63		
	Rated frequency	50 / 60 Hz				
CONNECTIONS	Input	1 × IEC C20		Terminals		
	UPS input	1 × IEC C19		Terminals		
	Output	1 × IEC C19 + 6 × IEC C13		Terminals	Terminals + 2 × IEC C19 + 4 × IEC C13	
	UPS output	1 × IEC C20		Terminals		
	Recommended cables	-	6 mm ²	10 mm ²		
GENERAL	Operating temperature	0°C ÷ +45°C				
	Relative humidity	Up to 95%, non-condensing				
	Maximum operating altitude	2,400 masl				
STANDARDS	Safety	EN-60950-1				
	Corporate certification	ISO 9001, ISO 14001, ISO 45001				
DIMENSIONS	Depth × Width × Height (mm)	80 × 438 × 50	123 × 438 × 86	80 × 440 × 85		
WEIGHT	Weight (kg)	1.5	3	2.4		
CODE		6B40P000005	6980P000022	6980P000023	6B40P000002	

Information subject to change without notice.

Dimensions



Connections



BM-R 16A



BM-R 40/63A



BM-R 63 A+

1. IEC connections or output terminals .
2. Manual bypass.
3. Thermal rearmable.
4. Manual bypass signal auxiliary contact for signalling.
5. Socket output.
6. AC power supply IEC connector or input terminals.
7. AC input.
8. Input and output terminals AC.
9. Input circuit breaker switch (6 and 10 kVA models only).
10. Terminal strip to connect with the EBMS signal of the UPS.

SPS ATS

Automatic transfer system



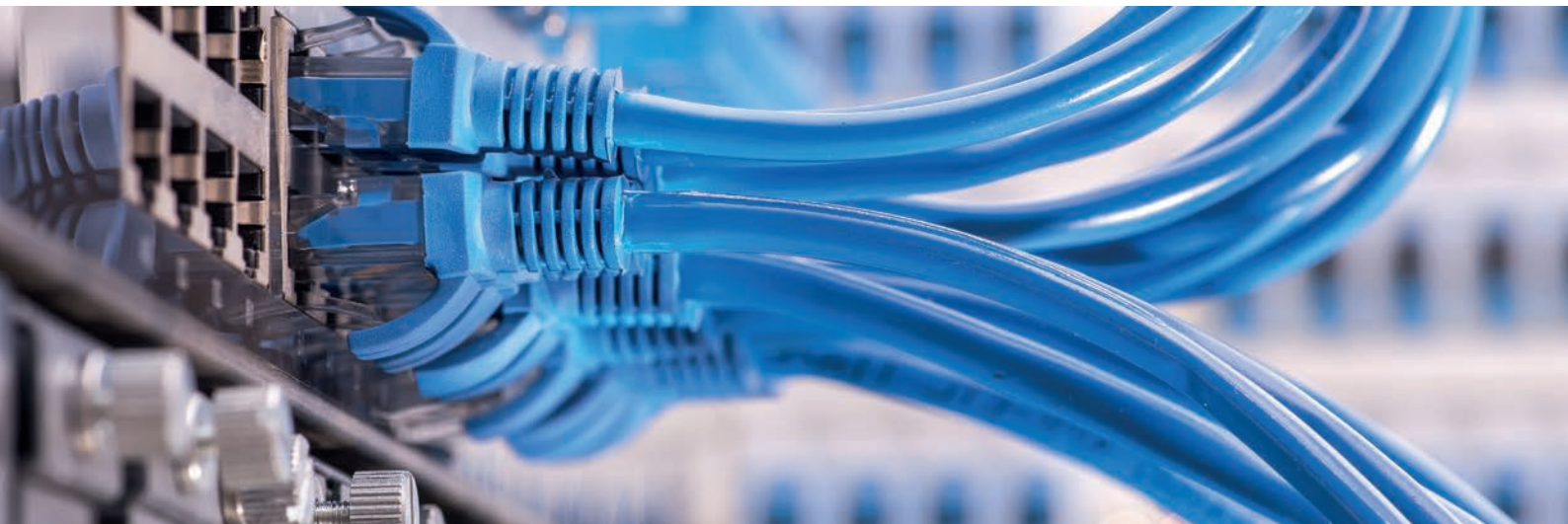
SPS ATS: An ideal solution for powering critical loads through two UPSs

Salicru's **SPS ATS** series is an automatic switch between two single-phase AC power lines which, starting from two sine-wave current power lines, supplies output voltage to the load(s). The switching can be automatic or manual. The LCD display and status LEDs continually report the status of the device, working mode and values of the main measurements.

It has extensive communication possibilities through integrated USB, RS-232 and potential-free contact interfaces, or optional inclusion on an SNMP platform. In addition, by means of the parameter-setting software available, parameters such as delays, overload levels, voltage and frequency ranges, line sensitivity, potential-free contacts, etc., can be set.

Performances

- Redundant energy system with two input sources.
- Manual or automatic switching between power lines.
- Extensive programming options for automatic switching.
- LCD display + LEDs for operation and control.
- IEC output connections.
- Easy installation on 19" rack.
- USB, RS-232 and potential-free contact interfaces.
- Parameter-setting and control software (for Windows OS).
- Smart slot for SNMP card.



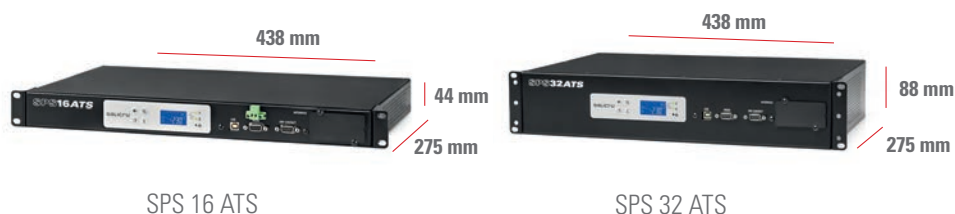
Technical specifications

MODEL		SPS 16 ATS	SPS 32 ATS
INPUT	Rated voltage	200 / 208 / 220 / 230 / 240 V	
	Voltage range	150 ÷ 300 Vac	
	Rated frequency	50 / 60 Hz	
OUTPUT	Rated voltage	200 / 208 / 220 / 230 / 240 V	
	Rated current (A)	16 A	32 A
	Performance	>99%	
COMMUNICATION	Interface	RS-232, USB and potential-free contacts	
	Intelligent slot	For SNMP	
INDICATIONS	Information	Source A, source B, failure, overload, alarm, audible alarm silencer	
	Monitoring software	Yes, for Windows OS	
	Type	LCD + LEDs	
	Values	Voltage, current, frequency, % load, error code	
CONNECTIONS	Input	2 × IEC C20	Terminals
	Output	8x IEC C13 + 1x IEC C19	16x IEC C13 + 2x IEC C19
GENERAL	Operating temperature	0°C ÷ +40°C	
	Relative humidity	Up to 95%, non-condensing	
	Maximum operating altitude	2,400 masl	
STANDARDS	Safety	IEC-60950-1	
	Electromagnetic compatibility (EMC)	EN-55022; EN-55024	
	Corporate certification	ISO 9001, ISO 14001, ISO 45001	
DIMENSIONS	Depth × Width × Height (mm)	275 × 438 × 44	275 × 438 × 88
WEIGHT	Weight (kg)	4	6
CODE		658CB000001	658CB000002

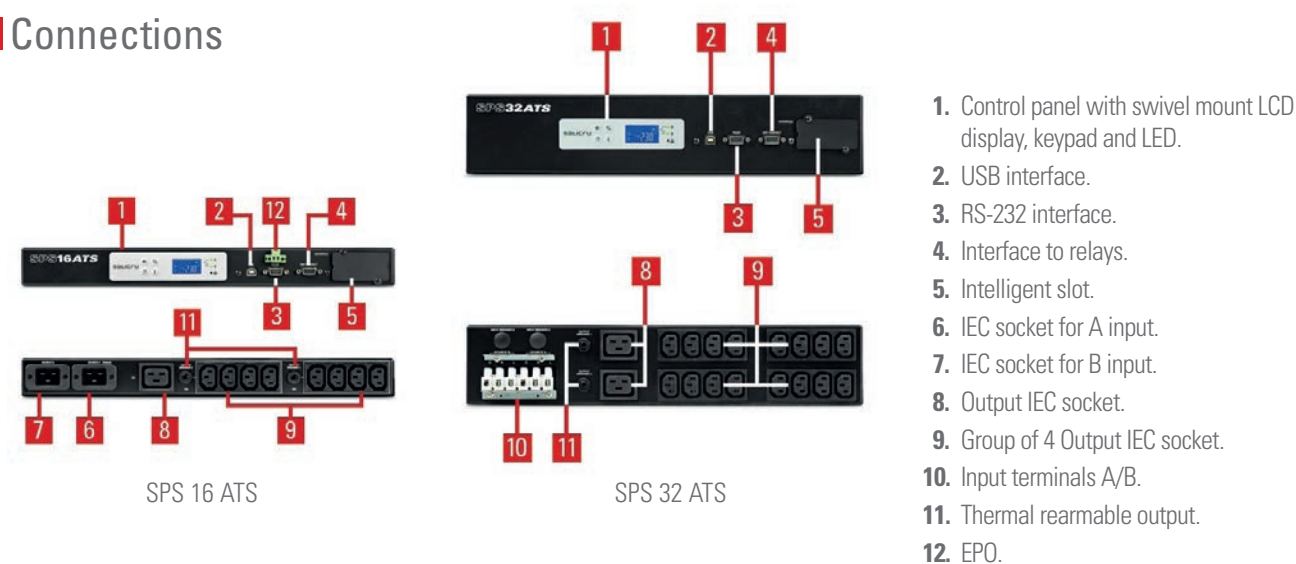
Information subject to change without notice.

It's recommended to keep a front distance of 35mm, parallel to the fixing plane of the ears on the rack cabinet. This distance is not included in the "Depth" total dimension.

Dimensions



Connections



UBT

Rechargeable AGM battery 4.5 Ah - 7 Ah - 9 Ah - 12 Ah - 17 Ah / 12 V



UBT: Powerful and reliable back-up storage

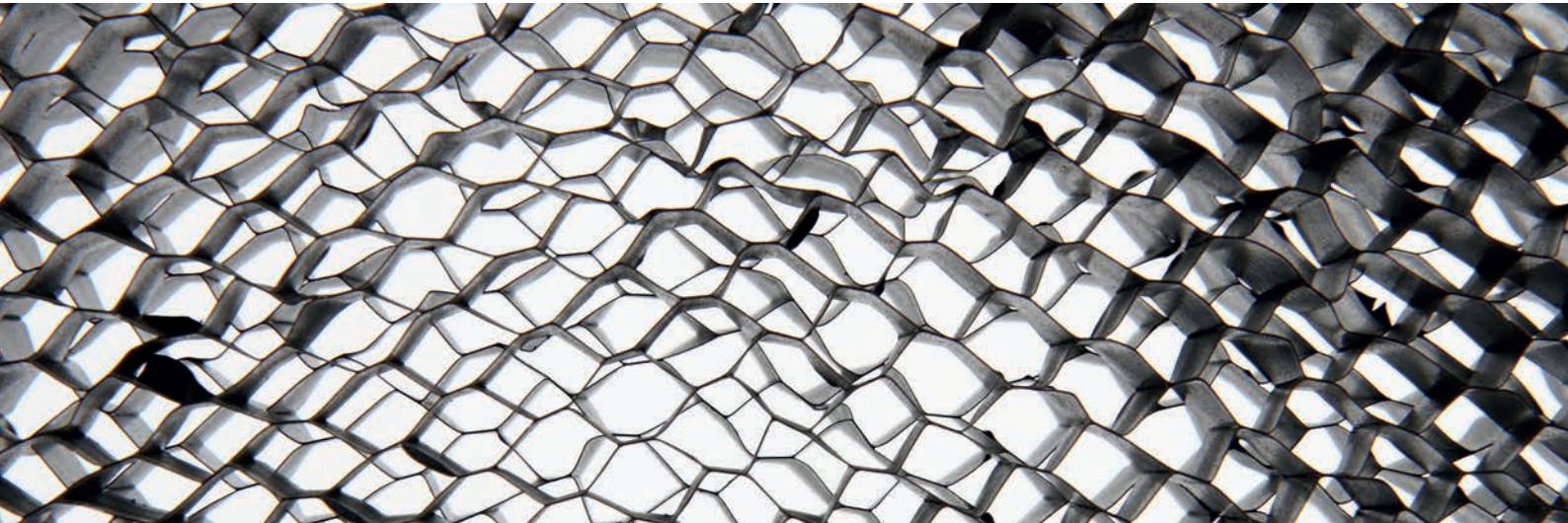
Salicru's **UBT** series batteries are extremely powerful and compact rechargeable lead-lead dioxide energy accumulators particularly suitable for UPSs and other security systems that require reliable and high-quality energy back-up.

Salicru's **UBT** battery range includes 4.5 Ah, 7 Ah, 9 Ah, 12 Ah and 17Ah models, all at 12 V.

The sulphuric acid electrolyte is absorbed by the separators and plates. And these in turn immobilised. They are designed using gas recombination technology which eliminates the need for the regular addition of water by controlling the evolution of hydrogen and oxygen during charging. The battery is completely sealed and watertight and therefore maintenance free, enabling it to be used in any position. If the battery is accidentally overcharged, resulting in the production of hydrogen and oxygen, a number of special one-way valves allow the gases to escape to avoid interior overpressure.

Applications:

Uninterruptible power supply systems (UPS), emergency lighting systems, signalling systems, communications and electrical equipment, broadcasting systems, lift automation panels, electronic cash registers, etc.

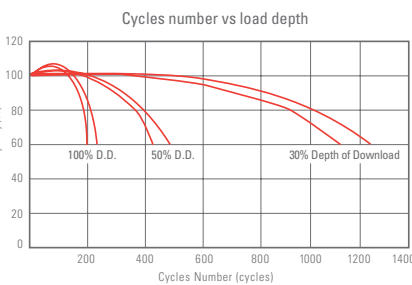
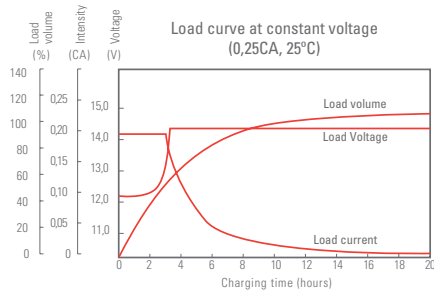
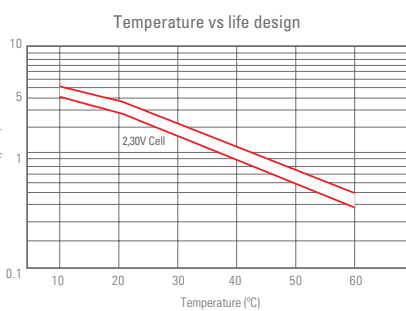
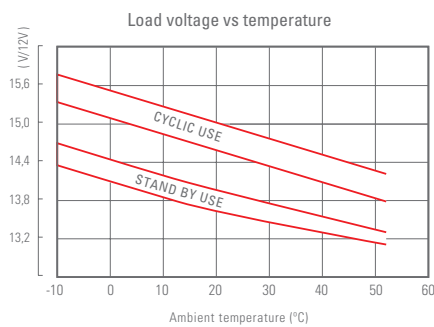


Performances

- AGM technology for efficient gas recombination of up to 99% and free of maintenance or adding water.
- No restrictions for air transport, compliance with IATA/ICAO Special Provision A67.
- Can be mounted in any position.
- Lead designed by computer with calcium/tin alloy rack for high energy density.
- Long service life in both float and cyclic applications.
- Maintenance-free.
- Low self-discharge.



Behaviour charts



Battery construction

COMPONENT	RAW MATERIAL
Positive plate	Lead dioxide
Negative plate	Lead
Container	ABS
Lid	ABS
Safety valve	Rubber
Terminal	Copper
Separator	AGM
Electrolyte	Sulphuric acid



Battery compatibility vs series

	UBT 12/4.5	UBT 12/7	UBT 12/9	UBT 12/12	UBT 12/17
SPS Home	●	-	-	-	-
SPS One	-	●	●	-	-
SPS Soho+	-	●	●	-	-
SPS Advance T	-	●	●	-	-
SPS Advance R	-	-	-	-	-
SPS Advance RT2	-	●	●	-	-
SLC Twin PRO2 0-3 kVA	-	●	●	●	-
SLC Twin PRO2 4-20 kVA	-	●	●	-	-
SLC Twin RT2 0-3 kVA	-	●	●	-	-
SLC Twin RT2 4-10 kVA	-	●	●	-	-
SLC Cube4	-	●	●	-	-
SLC Cube3+	●	●	●	●	-
SLC Adapt / 2	●	●	●	●	●

Dimensions



Technical specifications

MODEL		UBT 12/4.5	UBT 12/7	UBT 12/9	UBT 12/12	UBT 12/17
Nominal voltage (V)		12				
Number of cells		6				
Rated capacity at 25°C	20 hours	4.5 Ah(0.23 A, 10.5 V)	7.0 Ah (0.35 A, 10.5 V)	9.0 Ah (0.45 A, 10.5 V)	12 Ah (0.6 A, 10.5 V)	17 Ah (0.85 A, 10.5 V)
	10 hours	4.2 Ah(0.42 A, 10.5 V)	6.5 Ah (0.65 A, 10.5 V)	8.4 Ah (0.84 A, 10.5 V)	11 Ah (1.12 A, 10.5 V)	16 Ah (1.59 A, 10.5 V)
	5 hours	3.85 Ah(0.77 A, 10.5 V)	6 Ah (1.2 A, 10.5 V)	7.7 Ah (1.54 A, 10.5 V)	10.25 Ah (2.05 A, 10.5 V)	14.55 Ah (2.91 A, 10.5 V)
	1 hour	27 Ah(2.95 A, 10.5 V)	4.2 Ah (4.59 A, 9.6 V)	5.4 Ah (5.9 A, 9.6 V)	7.2 Ah (7.86 A, 9.6 V)	10.5 Ah (11.1 A, 9.6 V)
Internal resistance		≤30 mΩ ⁽¹⁾	≤25 mΩ ⁽¹⁾	≤19 mΩ ⁽¹⁾		≤17 mΩ ⁽¹⁾
Self-discharge		3% ⁽²⁾				
Operating temperature range	Discharge	-15°C ÷ +50°C				
	Charge	-10°C ÷ +50°C				
	Storage	-20°C ÷ +50°C				
Maximum discharge current		68 A (5s)	105 A (5s)	135 A (3s)	180 A (5s)	225 A (5s)
Short-circuit current		400A	480A	630A		710A
Dimensions	Depth	70 mm ±1 mm	65 mm ±1 mm		98 mm ±1 mm	77 mm ±1 mm
	Width	90 mm ±1 mm	151 mm ±1 mm			181 mm ±1 mm
	Height	101 mm ±1 mm	94 mm ±1 mm		95 mm ±1 mm	167 mm ±1 mm
Overall dimensions (with connectors)	Height	107 mm ±1 mm	100 mm ±1 mm		101 mm ±1 mm	167 mm ±1 mm
Weight		1,5 Kg	2,1 Kg	2,50 Kg	3,4 Kg	5,00 Kg
CODE		013BS000006	013BS000001	013BS000002	013BS000003	013BS000004

(1) Fully charged battery at 25°C

(2) Reduction of capacity per month at 20°C (average)

Information subject to change without notice.

EQUINOX2 S/SX

On-grid single-phase solar inverters from 2 to 10 kW

EQUINOX2 S/SX: Technology and design for a greener world

The new solar power inverters in Salicru's **EQUINOX2 S/SX** series are an excellent option for generating photovoltaic power in homes and commercial premises, allowing users to capture clean, cheap energy from the roof of their building.

Their stand out for their compact size, ease of installation and optimal heat dissipation. Internally, the device is equipped with the highest quality components and state-of-the-art technology (SiC). The **EQUINOX2** range offers exceptional advantages such as high efficiency and compatibility with any type of roof and panel configuration.

The S range includes 2, 3, 4, 5, 6, 8 and 10 kW devices, making them suitable for a wide range of projects. In addition, their wide input voltage range enables different numbers and types of photovoltaic modules to be connected, allowing for a flexible string design. **EQUINOX2 S/SX** devices can be monitored easily and intuitively via various communication interfaces (WiFi and LAN), the web portal and the free EQUINOX app for smartphones and tablets.

The high protection afforded by their epoxy-coated die-cast aluminium housing makes them suitable for indoor and outdoor use, and installation is fast and easy due to their compact, lightweight design, ease of grip and well-spaced connections in the lower part of the unit to facilitate operability.



Applications: Self-consumption in homes and businesses

Salicru's **Equinox2 S/SX** series has been specially designed for private energy production in homes and businesses. Installations of this type allow you to produce your own electrical power, reducing electricity bills and dependence on the conventional power grid by using the sun's energy, the cleanest and most ecological source of energy.



Performances

- Made from aluminium and coated with epoxy paint to guarantee optimum corrosion resistance.
- Compact and lightweight design to facilitate installation by a single operator.
- Excellent thermal design extends the life of the device.
- Integrated DC disconnecter.
- Components of the highest quality and cutting-edge SiC technology; OLED display with advanced features.
- 7 power ratings. Can be fitted to any kind of home or premises.
- 2 MPPT Trackers with a wide voltage range, adaptable to most roofs.⁽¹⁾
- High conversion efficiency and input current adapted to high-performance panels.
- Low start-up voltage of 60 Vdc.⁽²⁾
- Function to limit surpluses to the integrated network.
- Admits 30% of input power in DC, above the nominal voltage.
- Possibility of delivering 10% more power in addition to the nominal.
- Installation supervision via the web and the free EQUINOX app.⁽³⁾
- 10-year warranty, extendable to 20 years.



(1) Except models EQX-2001-S and EQX-3001-S, which have 1 MPPT tracker.
 (2) 60V for 1 MPPT models, 80V for SX models and 120V for 2 MPPT S models.
 (3) 24-hour data (generation, network and consumption): **485/WIFI 24H EQX** communication module and **ESM1 EQX** energy meter.

High efficiency

The new **Equinox2 S/SX** series is one of the most efficient on the market, which, when added to the wide voltage range, provides exceptional system performance levels.

Silent operation

The operating noise level of the **Equinox2 S/SX** inverters is minimum (less than 25 dB), since they do not use cooling fans, and this guarantees the users' well-being and comfort.

Monitoring from app and website

Both the free **EQUINOX** app and the web portal, consulting historical data and monitoring in real time the photovoltaic power produced, that consumed by loads, and that consumed by the mains or injected into it. The App also provides data on the cost savings achieved and the total reduction in CO2. **EQUINOX** allows you to activate the zero reinjection mode in your installation.

Power meter

The **ESM1 EQX** is a network analyser that enables bidirectional metering of the energy flow of energy without requiring the installation of external transformers.



Communication modules

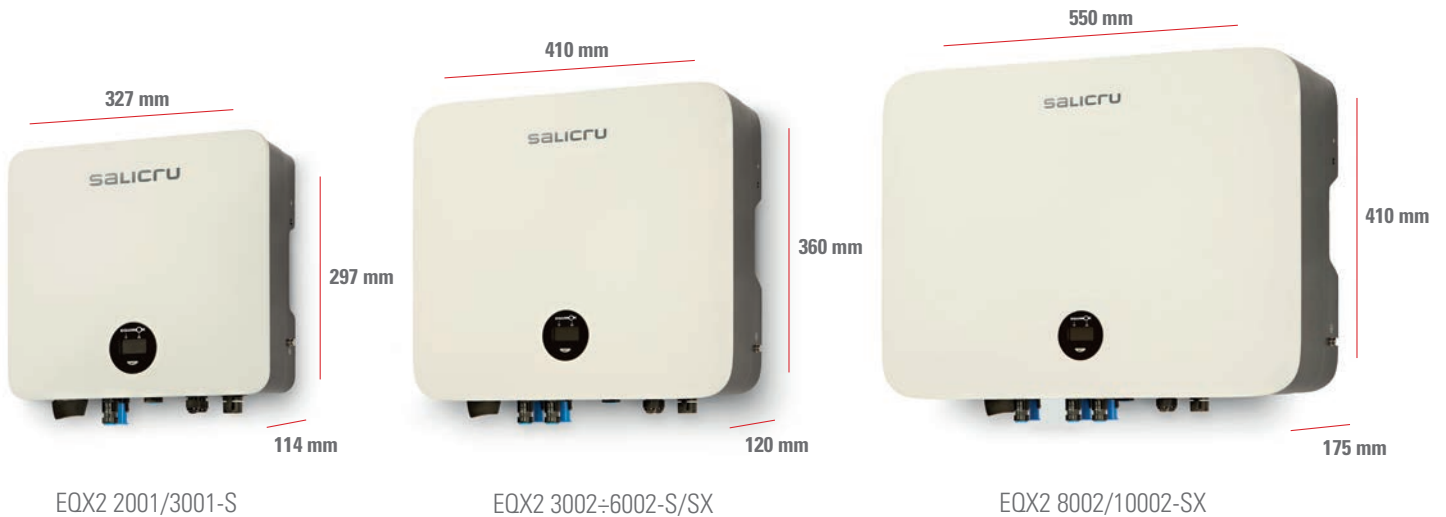
The **485/...EQX2** communication modules transmit the inverter data to the cloud, for subsequent use by the **EQUINOX** App and the web portal. Two types of assembly are available: on the inverter itself (optionally, only PV panel power, generation, consumption and discharge) or on a DIN rail on an AC panel, complete 24-hour data.



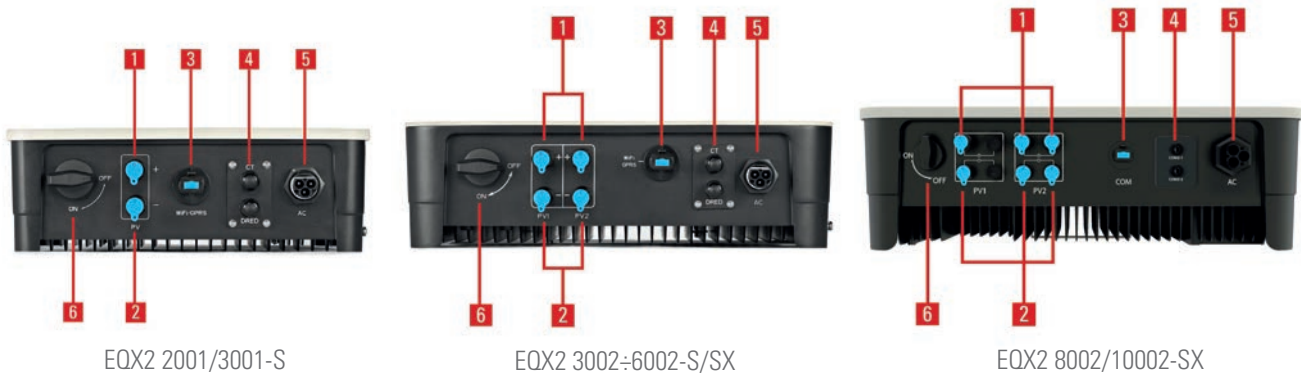
Range

MODEL	CODE	MAXIMUM DC INPUT POWER (W)	MAXIMUM POWER (W)	MAXIMUM APPARENT OUTPUT POWER (VA)	OUTPUT CURRENT (A)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EQX2 2001-S	6B2AB000001	2600	2000	2200	8.7	114 × 327 × 297	6.5
EQX2 3001-S	6B2AB000002	3900	3000	3300	13	114 × 327 × 297	6.5
EQX2 3002-S	6B2AB000003	3900	3000	3300	13	120 × 410 × 360	13
EQX2 3002-SX	6B2AB000007	3900	3000	3300	13	120 × 410 × 360	13
EQX2 4002-S	6B2AB000004	5460	4200	4620	18.3	120 × 410 × 360	13
EQX2 4002-SX	6B2AB000008	5460	4200	4620	18.3	120 × 410 × 360	13
EQX2 5002-SX	6B2AB000009	6500	5000	5500	21.7	120 × 410 × 360	13
EQX2 6002-SX	6B2AB000010	7800	6000	6600	26.1	120 × 410 × 360	13
EQX2 8002-SX	6B2AB000020	10400	8000	8800	34.8	175 × 550 × 410	24
EQX2 10002-SX	6B2AB000021	13000	10000	11000	43.5	175 × 550 × 410	26

Dimensions



Connections



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

Technical specifications

MODEL		EQX2 2001/3001-S	EQX2 3002/4002-S	EQX2 3002÷6002-SX	EQX2 8002/10002-SX
INPUT	Maximum DC input voltage (Vdc)	500	600		
	Working-out rank (Vdc)	80 ÷ 450	100 ÷ 550		80 ÷ 550
	Inputs per MPPT	1	1/1		1/2
	Max. short-circuit current per MPPT	15 A	15 A/15 A	20 A/20 A	20 A/40 A
	Starting voltage (Vdc)	60	120	80	
	Nr. MPP trackers	1	2		
	Input maximum current per tracker (A)	12.5	12,5/12,5	15/15	15/30 ⁽¹⁾
OUTPUT	Power factor	0.8 inductive...0.8 capacitive			
	Network voltage	230 V Single-phase (L, N, PE) ⁽²⁾			
	Voltage ranges	195,5 ÷ 253 V according to UNE 217002			
	Total harmonic distortion (THDi)	<3%			
	Frequency	50 Hz (45,5 ÷ 55 Hz) / 60 Hz (55 ÷ 65 Hz)			
	Performance EU	97,0%	97,5%		97,60%
	Maximum performance	97,5%	98,1%		
	MPPT performance	99,9%			
COMMUNICATION	Ports	RS485, WiFi/LAN (optional)			
INDICATIONS	Type	2 LED states, OLED display			
PROTECTION	Input DC disconnecter	Included			
	Integrated in the device	Inverse polarity DC, Residual Current, DC disconnecter, Over-voltage, Over-temperature, Differential, Islanding operation, AC short-circuit, Over-voltage AC			
	Over-voltage protection category	PV: II / AC: II			
GENERAL	Contamination level	PD2/PD3			
	Self-consumption (at night)	<1 W			
	Operating temperature	-30°C ~ +60°C (de-rate for temperature >45°C)			
	Relative humidity	0 ~ 100%			
	Maximum operating altitude	3,000 masl (power degradation up to 4,000 m)			
	Degree of protection	IP65			
	Isolation	Transformerless			
	Cooling	Natural convection (no fans) ⁽³⁾			
	Acoustic noise at 1 metre	≤25 dB ⁽³⁾			
	Terminal type	MC4			
	Installation	Indoor and outdoor installation / Wall support			
	Topology	Mains connection (On grid)			
STANDARDS	Certificate	EN 61000-6-2/3 ⁽⁴⁾			
	Safety / EMC	IEC 62109-1/2 / EN 61000-6-2/3			
	Energy efficiency	IEC EN UNE 61683			
	Environmental tests	IEC EN UNE 60068-2-1/2/14/30			
	Operation / Protection	UNE EN 62116:2014, IEC 61727:2004, UNE 217002:2020, UNE 217001:2020			
Corporate certification	ISO 9001, ISO 14001, ISO 45001				

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

(2) For 2 x 230 V two-phase voltages, ask

(3) For EQX2 10002-SX smart fan cooling and ≤40 dB

(4) Consult available regulations for other countries

Information subject to change without notice.

EQUINOX2 T

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

EQUINOX2 T: Energy at the service of productivity

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

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

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

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



Applications: Self-consumption for small and medium businesses

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



Performances

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



(1) 200V for 100kW model.

(2) To obtain 24-hour data (generation, network and consumption): a **485/WIFI 24H EQX** communication module and an **ESM3T 90D24 EQX2 / ESM3T 300D50 EQX2** energy meter are required, depending on the model.

Quad Core

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

Communication modules

The **485/...EQX2** communication modules transmit the inverter data to the cloud, for subsequent use by the free **EQUINOX** app and the web portal. Two types of assemblies are available: on the inverter itself (only data generation) or on a DIN rail on an AC board (24-hour data: generation, network, and consumption).



High Flexibility

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

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

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

Monitoring from app and website

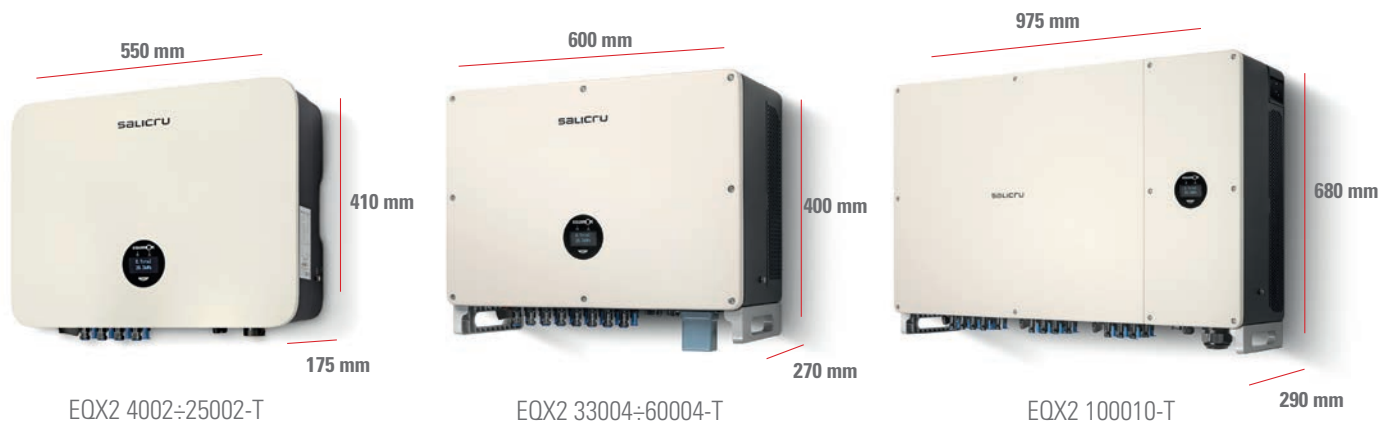
The free **EQUINOX** app and the website allow monitoring of the current status of the photovoltaic installation to consult log data and monitor in real time the photovoltaic power produced: consumed by load, consumed by the mains, or injected into it. The app also provides data regarding the cost savings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



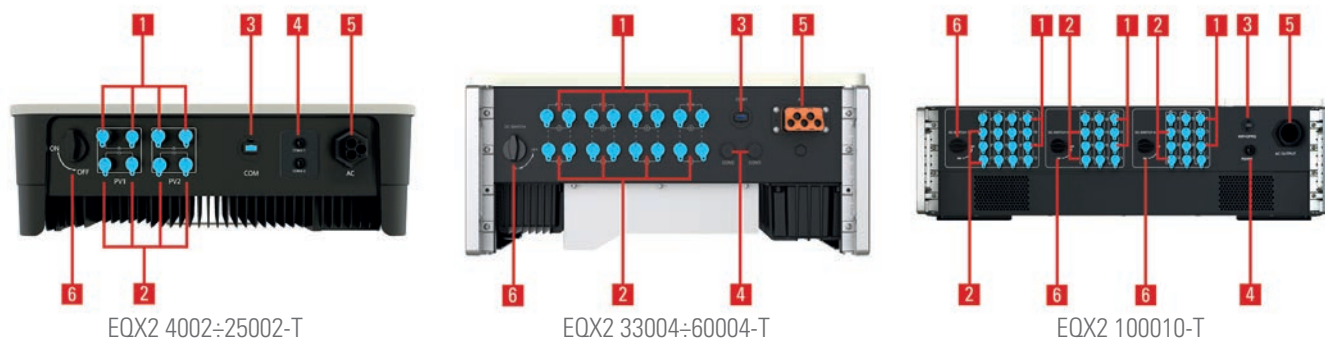
Range

MODEL	CODE	MAXIMUM DC INPUT POWER (W)	MAXIMUM POWER (W)	MAXIMUM APPARENT OUTPUT POWER (VA)	OUTPUT CURRENT (A)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EQX2 4002-T	6B2AB000018	6400	4000	4400	5.8	175 × 550 × 410	23
EQX2 5002-T	6B2AB000019	8000	5000	5500	7.3	175 × 550 × 410	23
EQX2 6002-T	6B2AB000011	9600	6000	6600	8.7	175 × 550 × 410	23
EQX2 8002-T	6B2AB000012	12800	8000	8800	11.6	175 × 550 × 410	23
EQX2 10002-T	6B2AB000013	16000	10000	11000	14.5	175 × 550 × 410	23
EQX2 12002-T	6B2AB000014	19200	12000	13200	17.4	175 × 550 × 410	23
EQX2 15002-T	6B2AB000015	24000	15000	16500	21.7	175 × 550 × 410	26
EQX2 17002-T	6B2AB000026	27200	17000	18700	24.6	175 × 550 × 410	29
EQX2 20002-T	6B2AB000016	32000	20000	22000	29	175 × 550 × 410	29
EQX2 25002-T	6B2AB000017	40000	25000	27500	36.2	175 × 550 × 410	29
EQX2 33004-T	6B2AB000022	52800	33000	36300	47.8	270 × 600 × 400	42
EQX2 40004-T	6B2AB000023	64000	40000	44000	58	270 × 600 × 400	42
EQX2 50004-T	6B2AB000024	80000	50000	55000	72.5	270 × 600 × 400	42
EQX2 60004-T	6B2AB000034	96000	60000	66000	87	270 × 600 × 400	42
EQX2 100010-T	6B2AB000033	160000	100000	110000	144.3	290 × 975 × 680	82

Dimensions



Connections



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

Technical specifications

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

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

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

(3) For models from EQX2 17002-T (inclusive) Smart fan cooling and ≤ 40 dB

(4) Consult available regulations for other countries

EQUINOX2 HSX

Single-phase hybrid solar inverters from 3 to 8 kW

EQUINOX2 HSX: Maximum energy availability

The **EQUINOX2 HSX** range of single-phase hybrid solar inverters makes maximum use of energy generated for self-consumption.

On the one hand, like the On-Grid models of the **EQUINOX2 S/SX/T** series, high-energy efficiency continues to be an important factor for **EQUINOX2 HSX**. However, the extreme versatility is an even more crucial factor.

The **EQUINOX2 HSX** devices have up to 6 operating modes. Peak Shaving mode, surplus energy graded management: load/batteries/grid, time-slot discrimination mode, automatic backup mode, isolated mode and operating mode without batteries.

In the characteristic back-up mode, the system functions as a UPS capable of supplying 100% of the nominal power of the inverter to the loads, and all with an automatic transfer less than 10 ms in case of a mains supply outage. In this regard, our **EQUINOX2 BATT** storage system allows scaled growth according to autonomy time and the loads that you want to supply with power. The wide voltage range accepted by the **EQUINOX2 HSX** and **EQUINOX2 HT** hybrid inverters makes it possible to connect batteries in series of up to 10 stackable modules, which provide 25.6kWh at a voltage of 512V.

The operating mode without batteries ensures that photovoltaic energy is still available even when the batteries are in poor condition, disconnected for replacement or even if the user decides to acquire them at a future date and initially operates the system without storage.



Applications: Domestic self-consumption up to 8kW with high sustainability

Whenever, whether in a domestic or small business environment, you want to ensure a high degree of independence from the grid or when consumption is concentrated in times outside those of maximum radiation, and the income from the sale of energy to the grid does not sufficiently compensate the expenditure item for energy from the conventional grid. **EQUINOX2 BATT** perfectly completes the hybrid solution.



Performances

- High conversion efficiency and input current adapted to high-performance panels.
- Two 15 A MPPT trackers without current penalty by the battery connection.⁽¹⁾
- Very low start-up voltage of 80 Vdc and battery charging capacity with low solar radiation.
- Admits +60% of input power in DC, above the nominal voltage.
- Possibility of delivering 10% more power in addition to the nominal.
- Fast charging/discharging of up to 30 A. Fast battery charging (1 hour).
- Back-up of up to 100% of nominal power, in battery mode.
- Made from aluminium and coated with epoxy paint to guarantee optimum corrosion resistance.
- Reduced dimensions and weight.
- Excellent thermal design extends the life of the device.
- Integrated DC disconnecter.
- Plug & Play connection, with start-up and installation supervision through the free EQUINOX App, the web portal or the OLED screen.
- Incorporated meter and instrument transformers.
- Long battery life: 6000 cycles @ 80% DOD.
- Maximum energy efficiency:



(1) Except the 3 kW model which has 1 MPPT.

Peak Shaving

One of the 6 operating modes of the **EQUINOX2 HSX** is Peak Shaving. When we activate this inverter mode, we see that whenever the solar radiation is insufficient to satisfy a particular demand or the user has decided to limit grid consumption to a level less than the specific load demand, it will activate the batteries and complete the necessary power using the energy previously stored in the batteries. Thus, there is no need to consume additional energy from the grid and, therefore, there is no additional cost. Obviously, this will only happen if the power demanded is not greater than that of the inverter.



Work under minimum radiation conditions

The low start-up voltage is a characteristic common to all the **EQUINOX2** series. In other words, the solar radiation necessary for our system to start generating energy is minimal, only 80Vdc being required.

If the **EQUINOX2 HSX** hybrid inverters are also surprisingly under the threshold from which the batteries start to charge; the amortisation of the investment is ensured even under unfavourable conditions, whether by energy storage or direct consumption.

Autonomy adaptability

The **EQUINOX2 HSX** series is compatible with several battery models available on the market, although the **EQUINOX2 BATT** batteries complement it in the best way, with scalable modular configuration, maximum adaptation to the desired autonomy and in line with the investment capacity of the user.



Range

MODEL	CODE	MAXIMUM DC INPUT POWER (W)	MAXIMUM POWER (W)	MAXIMUM APPARENT OUTPUT POWER (VA)	OUTPUT CURRENT (A)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EQX2 3001-HSX	6B2AB000027	4800	3000	3300	13	175 × 550 × 410	26
EQX2 4002-HSX	6B2AB000028	6720	4200	4620	18.3	175 × 550 × 410	26
EQX2 5002-HSX	6B2AB000029	8000	5000	5500	21.7	175 × 550 × 410	26
EQX2 6002-HSX	6B2AB000030	9600	6000	6600	26.1	175 × 550 × 410	26
EQX2 8002-HSX	6B2AB000031	12800	8000	8800	34.8	175 × 550 × 410	26

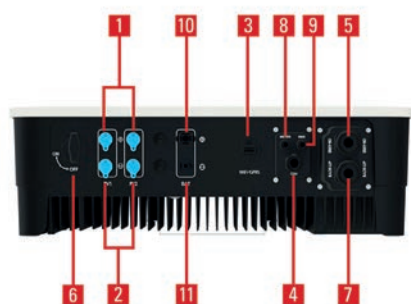
Batteries selection

MODEL	BASE CODE	BMS CODE	BATTERY CODE	DIMENSIONS (F × AN × AL mm)	WEIGHT (kg)	RATED CAPACITY (kWh)	RATED VOLTAGE (V)
EQX2 Li-Ion BATT 5 kWh	6B20P000015	6B2AC000001	1 x 6B2AC000002	315 x 708 x 425	78.6	5.1	102.4
EQX2 Li-Ion BATT 7 kWh	6B20P000015	6B2AC000001	2 x 6B2AC000002	315 x 708 x 562	110.9	7.7	153.6
EQX2 Li-Ion BATT 10 kWh	6B20P000015	6B2AC000001	3 x 6B2AC000002	315 x 708 x 699	143.2	10.2	204.8
EQX2 Li-Ion BATT 12 kWh	6B20P000015	6B2AC000001	4 x 6B2AC000002	315 x 708 x 836	175.5	12.8	256.0
EQX2 Li-Ion BATT 15 kWh	6B20P000015	6B2AC000001	5 x 6B2AC000002	315 x 708 x 973	207.8	15.4	307.2
EQX2 Li-Ion BATT 18 kWh	6B20P000015	6B2AC000001	6 x 6B2AC000002	315 x 708 x 1110	240.1	17.9	358.4
EQX2 Li-Ion BATT 20 kWh	6B20P000015	6B2AC000001	7 x 6B2AC000002	315 x 708 x 1247	272.4	20.5	409.6
EQX2 Li-Ion BATT 23 kWh	6B20P000015	6B2AC000001	8 x 6B2AC000002	315 x 708 x 1384	304.7	23.0	460.8
EQX2 Li-Ion BATT 25 kWh	6B20P000015	6B2AC000001	9 x 6B2AC000002	315 x 708 x 1521	337.0	25.6	512.0

Dimensions



Connections



EQX2 3001-8002-HSX

1. Positive photovoltaic input terminals
2. Negative photovoltaic input terminals
3. Main communication port (communication module connection).
4. Auxiliary communication port (optional).
5. AC / mains terminal.
6. DC disconnecter.
7. Output connection for critical loads.
8. Connection port for current metering.
9. Communication port with batteries.
10. Positive battery connection terminal.
11. Negative battery connection terminal.

Technical specifications

MODEL		EQX2 3001-HSX	EQX2 4002-8002-HSX
INPUT	Maximum DC input voltage (Vdc)	600	
	Working-out rank (Vdc)	100 ÷ 550	
	Inputs per MPPT	1/1	
	Max. short-circuit current per MPPT	20	20/20
	Starting voltage (Vdc)	80	
	Nr. MPP trackers	1	2
	Input maximum current per tracker (A)	15	15/15
OUTPUT	Power factor	0.8 inductive...0.8 capacitive	
	Network voltage	230 V Single-phase (L, N, PE) ⁽¹⁾	
	Voltage ranges	195.5 ÷ 253 V according to UNE 217002	
	Total harmonic distortion (THDi)	<3%	
	Frequency	50 Hz (45.5 ÷ 55 Hz) / 60 Hz (55 ÷ 65 Hz)	
	Performance EU	97,0%	
	Maximum performance	97,6%	
COMMUNICATION	Ports	RS485, WiFi	
INDICATIONS	Type	3 LED states, LED bar for battery level, OLED display	
PROTECTION	Input DC disconnecter	Included	
	Integrated in the device	Inverse polarity DC, Residual Current, DC disconnecter, Over-voltage, Over-temperature, Differential, Islanding operation, AC short-circuit, Over-voltage AC	
	Over-voltage protection category	PV: II / AC: II	
GENERAL	Contamination level	PD2/PD3	
	Self-consumption (at night)	<1 W	
	Operating temperature	-30°C ~ +60°C (de-rate for temperature >45°C)	
	Relative humidity	0~100%	
	Maximum operating altitude	3,000 masl (power degradation up to 4,000 m)	
	Degree of protection	IP65	
	Isolation	Transformerless	
	Cooling	Natural convection (no fans)	
	Acoustic noise at 1 metre	<25 dB	
	Terminal type	MC4	
	Installation	Indoor and outdoor installation / Wall support	
	Topology	Hybrid	
STANDARDS	Certificate	EN 61000-6-2/3 ⁽²⁾	
	Safety / EMC	IEC 62109-1/2 / EN 61000-6-2/3	
	Energy efficiency	IEC EN UNE 61683	
	Environmental tests	IEC EN UNE 60068-1/2/14/30	
	Operation / Protection	UNE EN 62116:2014, IEC 61727:2004, UNE 217002:2020, UNE 217001:2020	
	Corporate certification	ISO 9001, ISO 14001, ISO 45001	

(1) For 2 x 230 V two-phase voltages, ask

(2) Consult available regulations for other countries

EQUINOX2 HT

Three-phase hybrid solar inverters from 4 to 12 kW

EQUINOX2 HT: Versatility with three-phase renewable energy

The **EQUINOX2 HT** three-phase hybrid solar inverters retain the features of the single-phase EQUINOX2 HSX range, for application in installations with 3 x 380 V / 3 x 400 V.

As such, we can continue to speak of maximum versatility. The **EQUINOX2 HT** has up to six operating modes: general or automatic mode, peak load mode, isolated mode, UPS mode, economy mode (allowing users to program battery charging/discharging and usage times via the app, web or display) and a mode for operation without batteries.

The mode for operation without batteries ensures that photovoltaic energy is still available even when the batteries are in poor condition, disconnected for replacement or even if the user decides to acquire them at a future date and initially operates the system without storage. Although this function is usually temporary, it helps to enhance the already comprehensive availability of the installation.

The UPS function is also of particular note. Thanks to technological advances, our inverter boasts a transfer speed of just 10 ms, thereby ensuring the continued operation of connected devices in the event of an unexpected power outage and without requiring any manual intervention.



Applications: Self-consumption up to 12 kW

The **EQUINOX2 HT** offers a high degree of independence from the electricity network, with a three-phase installation. It is the ideal solution for facilities with low- and medium-power equipment, such as workshops, small production facilities, food retailers, catering establishments, etc.



Performances

- Input current adapted for high-performance panels.
- Two 13 A MPPT trackers, without current penalty by the battery connection.
- Very low start-up voltage of 150/180 VDC (depending on the model) and the ability to charge the batteries even with low solar radiation.
- Admits +60% of input power in DC, above the nominal level.
- Battery transfer time of less than 10 ms.
- Option of delivering 10% more power in addition to the nominal.
- Fast charging/discharging of up to 25 A. Fast battery charging (1 hour).
- Back-up of up to 100% of nominal power, in battery mode.
- Wide battery voltage range: 135-750 V.
- Reduced dimensions and weight.
- Excellent fanless thermal design extends the life of the device and provides longer MTBF.
- Integrated DC disconnecter.
- Plug & Play connection, with start-up and supervision of the installation via the free EQUINOX app, web portal or OLED screen.
- Meter and instrument transformers included.
- Useful life of the battery: 6,000 cycles @ 80% DOD.
- Maximum energy efficiency (up to 98.2%).



Fast charging and discharging

The **EQUINOX2 HT** enables a one-off delivery of current of up to 30 A, in the event that, in UPS or peak load mode, and on an exceptional basis, it is necessary to supply a load that exceeds the nominal power. In UPS mode, while using the batteries, a 12 kW unit can supply up to 20 kW on an exceptional basis.

Additionally, users can force fast battery charging to ensure full availability of power after just one hour.

Thanks to these features, the **EQUINOX2** hybrid series takes energy availability to the maximum level.

Maximum energy production

All of the models in the **EQUINOX2** series stand out for their low start-up voltage, which translates to maximum exploitation of solar radiation and a substantial increase in the number of production hours compared to our competitors' products. This increase is even more important in winter, when the number of hours of good solar radiation is significantly lower.



Smart energy management

The connection panel for our hybrid inverters allows users to discriminate between the connections for priority loads and those for secondary loads. Consequently, in the event of an interruption to the mains power supply, only the priority loads will be supplied by the energy stored in the batteries and the secondary loads will be ignored, thereby optimising the use of the previously stored energy.

In generation mode, the inverter distributes the photovoltaic energy in accordance with a scale of priorities, supplying the priority loads as a first preference, storing power as a second preference, and supplying power to the secondary circuit as a third preference (whether to supply secondary loads or send excess power to the mains network, as desired).

Range

MODEL	CODE	MAXIMUM DC INPUT POWER (W)	MAXIMUM POWER (W)	MAXIMUM APPARENT OUTPUT POWER (VA)	OUTPUT CURRENT (A)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EQX2 4002-HT	6B2AB000035	6400	4000	4400	6.7	175 × 550 × 410	26
EQX2 5002-HT	6B2AB000036	8000	5000	5500	8.3	175 × 550 × 410	26
EQX2 6002-HT	6B2AB000037	9600	6000	6600	10	175 × 550 × 410	26
EQX2 8002-HT	6B2AB000038	12800	8000	8800	13.3	175 × 550 × 410	28
EQX2 10002-HT	6B2AB000039	16000	10000	11000	16.5	175 × 550 × 410	28
EQX2 12002-HT	6B2AB000040	19200	12000	13200	20	175 × 550 × 410	28

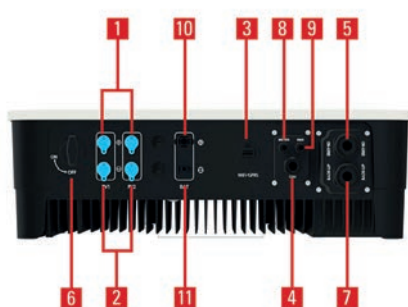
Batteries selection

MODEL	BASE CODE	BMS CODE	BATTERY CODE	RATED CAPACITY (kWh)	RATED VOLTAGE (V)	POWER INVERTER
EQX2 Li-Ion BATT 7 kWh	6B20P000015	6B2AC000001	2 x 6B2AC000002	7.7	153.6	≤6 kW
EQX2 Li-Ion BATT 10 kWh	6B20P000015	6B2AC000001	3 x 6B2AC000002	10.2	204.8	4 a 12 kW
EQX2 Li-Ion BATT 12 kWh	6B20P000015	6B2AC000001	4 x 6B2AC000002	12.8	256.0	4 a 12 kW
EQX2 Li-Ion BATT 15 kWh	6B20P000015	6B2AC000001	5 x 6B2AC000002	15.4	307.2	4 a 12 kW
EQX2 Li-Ion BATT 18 kWh	6B20P000015	6B2AC000001	6 x 6B2AC000002	17.9	358.4	4 a 12 kW
EQX2 Li-Ion BATT 20 kWh	6B20P000015	6B2AC000001	7 x 6B2AC000002	20.5	409.6	4 a 12 kW
EQX2 Li-Ion BATT 23 kWh	6B20P000015	6B2AC000001	8 x 6B2AC000002	23.0	460.8	4 a 12 kW
EQX2 Li-Ion BATT 25 kWh	6B20P000015	6B2AC000001	9 x 6B2AC000002	25.6	512.0	4 a 12 kW

Dimensions



Connections



EQX2 4002-12002-HT

1. Positive photovoltaic input terminals.
2. Negative photovoltaic input terminals.
3. Main communication port (communication module connection).
4. Auxiliary communication port (optional).
5. AC / mains terminal.
6. DC disconnector.
7. Output connection for critical loads.
8. Connection port for current metering.
9. Communication port with batteries.
10. Positive battery connection terminal.
11. Negative battery connection terminal.

Technical specifications

MODEL		EOX2 4002/5002-HT	EOX2 6002-HT	EOX2 8002-12002-HT
INPUT	Maximum DC input voltage (Vdc)	1000		
	Working-out rank (Vdc)	150 ÷ 850	200 ÷ 850	
	Inputs per MPPT	1/1		
	Max. short-circuit current per MPPT	18/18		
	Starting voltage (Vdc)	150	180	
	Nr. MPP trackers	2		
	Input maximum current per tracker (A)	13/13		
	OUTPUT	Power factor	0.8 inductive...0.8 capacitive	
Network voltage		3x400 V Three-phase (3L, N, PE)		
Voltage ranges		195.5 ÷ 253 V (F-N) according to UNE 217002		
Total harmonic distortion (THDi)		<3%		
Frequency		50 Hz (45.5 ÷ 55 Hz) / 60 Hz (55 ÷ 65 Hz)		
Performance EU		97,3%	97,4%	
Maximum performance		98,1%	98,2%	
COMMUNICATION		Ports	RS485, WiFi	
INDICATIONS	Type	3 LED states , LED bar for battery level, OLED display		
PROTECTION	Input DC disconnecter	Included		
	Integrated in the device	Inverse polarity DC, Residual Current, DC disconnecter, Over-voltage, Over-temperature, Differential, Islanding operation, AC short-circuit, Over-voltage AC		
	Over-voltage protection category	PV: II / AC: II		
GENERAL	Contamination level	PD2/PD3		
	Self-consumption (at night)	<1 W		
	Operating temperature	-30°C ~ +60°C (de-rate for temperature >45°C)		
	Relative humidity	0~100%		
	Maximum operating altitude	3,000 masl (power degradation up to 4,000 m)		
	Degree of protection	IP65		
	Isolation	Transformerless		
	Acoustic noise at 1 metre	<25 dB		
	Terminal type	MC4		
	Installation	Indoor and outdoor installation / Wall support		
	Topology	Hybrid		
STANDARDS	Certificate	EN 61000-6-2/3 ⁽¹⁾		
	Safety / EMC	IEC 62109-1/2 / EN 61000-6-2/3		
	Energy efficiency	IEC EN UNE 61683		
	Environmental tests	IEC EN UNE 60068-1/2/14/30		
	Operation / Protection	UNE EN 62116:2014, IEC 61727:2004, UNE 217002:2020, UNE 217001:2020		
	Corporate certification	ISO 9001, ISO 14001, ISO 45001		

(1) Consult available regulations for other countries

Information subject to change without notice.

EQUINOX2 BATT

Modular batteries for solar inverters

EQUINOX2 BATT: Energy storage

Without a doubt, the perfect solution to accompany our hybrid inverters is the **EQUINOX2 BATT** series of lithium-ion batteries.

In keeping with the aesthetics of our solar inverters, the **EQUINOX2 BATT** series combines a neutral colour palette with the sobriety of the black LED data display and the eye-catching colours of the logo and buttons.

Our storage system enables scaled growth in line with the client's needs with regard to backup or power availability. The wide voltage range accepted by the **EQUINOX2 HSX** and **EQUINOX2 HT** hybrid inverters makes it possible to connect batteries in series of up to 10 stackable modules, which provide 25.6 kWh of power at a voltage of 512 V.

Safety is an essential element in the design of our equipment. For this reason, the **EQUINOX2 BATT** series has a base with adjustable threaded supports, which ensure the unit is perfectly level while also keeping it raised off the floor (essential in the event of small floods or liquid spills). It also comes with a robust telescopic system for attaching the unit to the wall, in order to prevent the battery stack from accidentally falling in the event of incorrect handling.



Applications: Joint installation with the EQUINOX2 HSX/HT

The potential applications for the batteries are closely linked to those for the hybrid inverter. As such, the use cases include installations where the user wants to ensure a high level of independence from the mains, or where the hours of consumption do not match those of generation and it would be more convenient to store the energy generated rather than sell it. Batteries can also meet an occasional need for more power than the amount contracted (these circumstances normally arise in certain industrial settings).



Performances

- Made from aluminium and coated with epoxy paint to guarantee optimum corrosion resistance.
- Excellent aesthetic design.
- IP54 protection rating.
- Integrated DC disconnecter.
- Modular expansion up to 10 batteries in series.
- Wide range of voltages: 102.4 ÷ 512 V.
- Wall attachment.
- Multi-coloured LED status indicator.
- Long battery life: 6,000 cycles @ 80% DOD.
- Discharge current of up to 50 A.
- The modules dock together, reducing installation costs.
- Fast battery charging (up to just 1 hour).
- Adjustable base height.



Easy to install

While stacking the modules it is easy to connect them to one another, and to the BMS, using the quick connector and mechanical guide bolts to ensure perfect adjustment. The battery group is connected to the inverter using the easily accessible quick connectors on the side panel of the BMS.



Autonomy adaptability

The **EQUINOX2 HSX** and **EQUINOX2 HT** hybrid series are the perfect solution for self-consumption in combination with the scalable modular configuration of the **EQUINOX2 BATT** battery system. The system's modular nature ensures optimal adjustment to the user's energy backup requirements, while adapting fully to their capacity for investment.



Complete and instant indications

The module housed in the BMS (Battery Management System) has two status lights: one in the centre of the decorative black polycarbonate plate and the other surrounding the "On" button. Additionally, full compatibility with the **EQUINOX2** system makes it possible to view precise battery status information on the display of our **EQUINOX2** hybrid inverters.



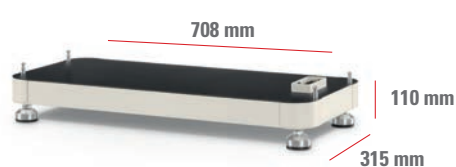
Range

MODEL	CODE	DESCRIPTION	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EQX2 BATT BASE	6B20P000015	Base with adjustable feet for installing up to a maximum of 9 batteries + 1 BMS	315 × 708 × 110	10
EQX2 BATT BMS	6B2AC000001	Monitoring module for EQX2 BATT batteries. Includes an internal 2.56 kWh lithium-ion battery	315 × 708 × 178	36.3
EQX2 BATT	6B2AC000002	2.56 kWh lithium-ion battery with modular configuration, scalable up to 9 units + 1 BMS	315 × 708 × 137	32.3

Batteries selection

MODEL	BASE CODE	BMS CODE	BATTERY CODE	RATED CAPACITY (kWh)	RATED VOLTAGE (V)	COMPATIBILITY
EQX2 Li-Ion BATT 5 kWh	6B20P000015	6B2AC000001	1 x 6B2AC000002	5.1	102.4	HSX
EQX2 Li-Ion BATT 7 kWh	6B20P000015	6B2AC000001	2 x 6B2AC000002	7.7	153.6	HSX, HT ≤6 kW
EQX2 Li-Ion BATT 10 kWh	6B20P000015	6B2AC000001	3 x 6B2AC000002	10.2	204.8	HSX, HT
EQX2 Li-Ion BATT 12 kWh	6B20P000015	6B2AC000001	4 x 6B2AC000002	12.8	256.0	HSX, HT
EQX2 Li-Ion BATT 15 kWh	6B20P000015	6B2AC000001	5 x 6B2AC000002	15.4	307.2	HSX, HT
EQX2 Li-Ion BATT 18 kWh	6B20P000015	6B2AC000001	6 x 6B2AC000002	17.9	358.4	HSX, HT
EQX2 Li-Ion BATT 20 kWh	6B20P000015	6B2AC000001	7 x 6B2AC000002	20.5	409.6	HSX, HT
EQX2 Li-Ion BATT 23 kWh	6B20P000015	6B2AC000001	8 x 6B2AC000002	23.0	460.8	HSX, HT
EQX2 Li-Ion BATT 25 kWh	6B20P000015	6B2AC000001	9 x 6B2AC000002	25.6	512.0	HSX, HT

Dimensions



EQX2 BATT BASE



EQX2 BATT



EQX2 BATT BMS

Connections



EQX2 BATT BMS

1. Output DC disconnecter.
2. Main communication port (inverter connection).
3. Service port.
4. Positive batteries terminal.
5. Negative batteries terminal.
6. Earth connection.

Technical specifications

MODEL		EQX2 BATT BMS	EQX2 BATT
BATTERY	Rated voltage	51,2 V	
	Capacity	2,56 Kwh / 50 Ah	
	Maximum charge/discharge current	50 A	
	Recommended charge/discharge current	25 A	
	Discharge cycles	6,000 cycles @ 80% DOD	
COMMUNICATION	Ports	RJ45	
	Protocol	CAN	
INDICATIONS	Type	2 LED states	
GENERAL	Operating/charging temperature	0 ~ 45 °C	
	Operating/discharging temperature	-10 ~ 45 °C	
	Module connection	Quick connector with positioners	
	Installation method	Stackable	
	Relative humidity	5 ~ 95% (non-condensing)	
	Maxium operating altitude	2,000 masl	
STANDARDS	Safety / EMC	IEC UNE 62619 / UN 38.3	
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001	
DIMENSIONS	Depth × Width × Height (mm)	315 × 708 × 178	315 × 708 × 137
WEIGHT	Weight (kg)	36.3	32.3
CODE		6B2AC000001	6B2AC000002

Information subject to change without notice.

EQUINOX2 Accessories and Options

Range of optional and accessory devices for the entire **EQUINOX2** series



EQUINOX2: Accessories and Options

By means of the additional devices, **EQUINOX2** inverters can be monitored at all times and details obtained with regard to the energy generated, consumed, and - provided the installation has this functionality - exported to the mains. The accessories that are included with the equipment, along with the optional ones offered by SALICRU, cover a wide range of possibilities.

The devices are designed to enable the measurement and management of data and to transfer that data from the inverter to the cloud, so that it can subsequently be viewed and analysed using the **EQUINOX** app or the web portal.

Applications: Managing and monitoring the inverter

In conjunction with the monitoring platform, our devices offer the following features:

- Real-time data viewing
- Grouping of historical data (by day, month or year)
- Information on the financial savings achieved
- Total CO2 reduction achieved
- Level of self-consumption (i.e. the extent to which you make use of your solar installation)
- Level of self-sufficiency (i.e. the degree of your installation's independence from the mains)
- Alarm management
- Management of several installations simultaneously (special feature for installers)



Communication modules | Energy meters

The 485/... EQX2 communication modules can be mounted in two ways:

- On the inverter: For three-phase and single-phase non-hybrid models, the **485/WIFI DIURNAL EQX2** antenna obtains data on generation, consumption and exportation while photovoltaic generation is taking place. For hybrid models, complete round-the-clock data is provided. Its IP65 protection rating allows for outdoor use.
- On a DIN rail on the AC board: The **485/WIFI EQX2** or **485/WIFI EQX2-T** in conjunction with an ESM energy meter (single-phase or three-phase, depending on the installation), makes it possible to obtain round-the-clock data on generation, exportation and consumption.

The **ESM... EQX** smart meters are network analysers that enable energy flow to be measured bidirectionally.

Designed for non-hybrid systems, they must be installed along with the DIN-rail communication module if you wish to obtain round-the-clock data via the **EQUINOX** app on the energy generated, consumed/exported to the mains, and consumed by the loads.

For installations with a single three-phase solar inverter, zero-export operation is permitted, as certified by the UNE217001 standard.



MODEL	CODE	EAN CODE	DESCRIPTION	DIMENSIONS (F x AN x AL mm)	TRANSFORMER DIMENSIONS (F x AN x AL mm)
485/WIFI DIURNAL EQX2	6B20P000020	8436584873907	Wi-Fi communication module. Installed directly in the inverter and provides data on generation while solar power generation is taking place.	30 x 51 x 155	-
LAN MODULE EQX2	6B20P000022	8436584874362	LAN communication module. Direct installation in the inverter. Provision of generation data via cable.	30 x 51 x 116	-
90D24 EQX2	-	-	Single-phase 90 A transformer, internal diameter 24 mm, cabling (1.5 m)* plus connector, for measuring current.	-	43 x 43 x 52
485/WIFI EQX2	6B20P000014	8436584873754	Wi-Fi communication module. DIN-rail mounting on the AC board. 230 VAC single-phase supply. Provides round-the-clock data on generation, mains exportation/consumption and the installation's own consumption. An ESM1 EQX smart meter is required.	65 x 30 x 105	-
485/WIFI EQX2-T	6B20P000018	8436584873761	Wi-Fi communication module. DIN-rail mounting on the AC board. 230 VAC single-phase supply. Provides round-the-clock data on generation, mains exportation/consumption and the installation's own consumption. A smart meter is required, in accordance with the installation's current.	65 x 30 x 105	-
ESM1 EQX	6B20P000008	8436584871774	Single-phase smart meter (energy meter). Maximum 40 A and 10 mm ² cross-sectional cable area. Direct measurement without a transformer.	76 x 18 x 91	-
ESM1 90D24 EQX2	6B20P000019	8436584873747	Single-phase smart meter (energy meter). Includes 1 single-phase 90 A transformer, internal diameter 24 mm, cabling (2 m)* plus connector, for measuring current.	73 x 52 x 84	43 x 43 x 52
ESM3T 90D24 EQX2	6B20P000017	8436584873686	Three-phase smart meter (energy meter). Includes 3 90 A current transformers, internal diameter 24 mm, cabling (2 m)* plus connector, for measuring current.	73 x 52 x 84	43 x 43 x 52
ESM3T 300D50 EQX2	6B20P000016	8436584873679	Three-phase smart meter (energy meter). Includes 3 300 A current transformers, internal diameter 50 mm, cabling (2 m)* plus connector, for measuring current.	73 x 52 x 84	60 x 78 x 115

(*) The transformers can operate at distances of up to 60 metres, using an extension connected to the built-in cable.

MODEL	EQUINOX2 S/SX		EQUINOX2 T		EQUINOX2 HSX	EQUINOX2 HT
	G/C/V PV ⁽¹⁾	24 H	GEN. PV ⁽²⁾	24 H	24 H	24H
485/WIFI DIURNAL EQX	✓	-	✓	-	✓	✓
LAN MODULE EQX2	OP	-	OP	-	OP	OP
90D24 EQX2	✓	-	-	-	-	-
485/WIFI EQX2	-	OP	-	-	-	-
485/WIFI EQX2-T	-	-	-	OP	-	-
ESM1 EQX	-	OP	-	-	-	-
ESM1 90D24 EQX2	-	-	-	-	✓	-
ESM3T 90D24 EQX2	-	-	-	OP	-	✓
ESM3T 300D50 EQX2	-	-	-	OP	-	OP

(OP): Optional / (✓): included / (-): non-usable

(1): Data on generation, consumption and mains exportation only while photovoltaic generation is taking place.

(2): Data on photovoltaic generation only.

SLC ENERGY MANAGER

Smart energy meter

SLC ENERGY MANAGER: Efficient energy management

Every solar facility requires responsible and efficient management of the energy that it generates: not only in order to help the environment, but also to enable a rapid return on investment.

Optimising energy use involves bringing the consumption and generation curves closer together, whether by storing electricity or heat, or by bringing the demand curve closer to the generation curve by activating loads during the times when maximum generation is taking place.

From a purely economic point of view there are also other options, such as injecting power into the mains, or setting the system to prioritise the power supply or the chosen storage option. If the most economically advantageous option is always selected, this will have a direct impact on the return on investment.

In other cases, it is the regulatory environment that creates special management needs. Nowadays, zero-injection systems are fairly widespread. The **SLC ENERGY MANAGER** enables optimum management of the process of blocking the injection of surplus energy. The functions of measurement, regulation, decision-making, communication and monitoring analytical data are combined in a single device.

Likewise, for larger facilities requiring management of various inverters connected in parallel, a single device will be able to manage all of the connected equipment via our app or website.

The **SLC ENERGY MANAGER** is able to manage Salicru EQUINOX2 devices as well as those made by other approved manufacturers.



Performances

- Measurement capacity and Wi-Fi connectivity integrated in a single device.
- Access to the EQUINOX app and web portal.
- Zero-injection management of surplus energy.
- Savings achieved through smart management of generation devices and loads.
- High degree of compatibility with existing systems.
- Complete solution option with current transformers included.
- DIN-rail mounting.



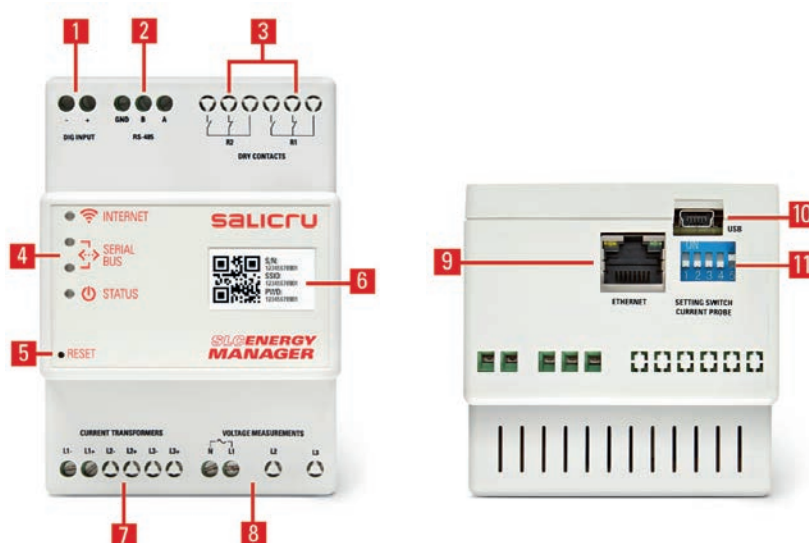
Technical specifications

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

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

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

Connections



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

VR EQX

Bidirectional voltage regulator for self-consumption

VR EQX: Solution for mains voltage problems in photovoltaic installations

Salicru's **VR EQX** range of voltage regulators for mains-connected photovoltaic installations prevent outages due to over/under voltage in the power line.

Most regulations governing this type of system's connection to the grid require solar inverters to shut down if their voltage exceeds certain limits.

In unstable networks, this causes unwanted stoppages in the photovoltaic installation, with the consequent loss of power generation and a decrease in the useful life of solar inverters.

Since, in the vast majority of cases, the surplus energy generated is injected into the grid (in return for compensation), traditional unidirectional voltage stabilisers are unsuitable because they can't carry reverse current. Given that it constitutes a breach of regulations and exposes the loads to serious danger, manipulating the inverter is not a viable solution to the problem either.

These regulators record and manage the grid voltage at all times, responding with quick and precise voltage jumps during the short period of time it may be required for the vast majority of national grids. Both single-phase and three-phase models are available, the latter providing independent regulation for all three phases.



Applications:

The **VR EQX** range is predominantly designed for grid-connected solar photovoltaic self-consumption installations when the main power line is liable to a certain amount of voltage instability. Regardless of the inverter brand, they ensure the viability of these systems, which are all subject to the same regulation.

Advance studies of the electrical network are generally difficult to carry out for various reasons, making these bidirectional voltage regulators indispensable for companies dedicated to offering these types of installations.



Performances

- Bidirectional voltage regulator.
- Fast, electronically-controlled recording and processing of electrical data from the network, allowing for high-speed regulation.
- Available in single-phase and three-phase models.
- Simple connection via an external terminal block.
- Circuit-breaker protection included.
- The three-phase models are unaffected by imbalances thanks to independent phase regulation.
- Does not generate and is not affected by harmonics in the line.
- Maintenance-free thanks to its optimal mechanical design.
- The lightweight and compact single-phase models are suitable for one-person handling.
- Interior wall installation and optional exterior wall installation.
- Suitable for all mains-connected solar inverters.
- Guarantees an input voltage within the minimum and maximum margins established.



Bidirectional

Ensures optimal voltage quality.

Independent regulation

Independent phase regulation in three-phase models, ensuring optimal overall voltage.

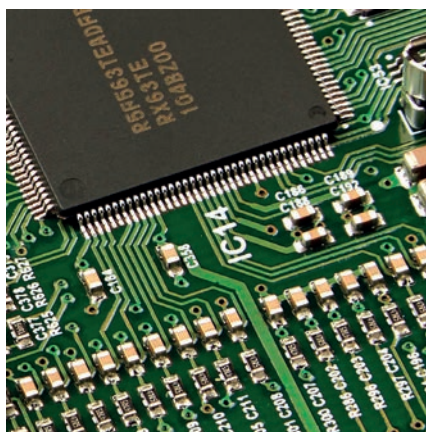
Compatibility

Compatible with all brands and models of inverters on the market.

(*) Check available powers and voltages.

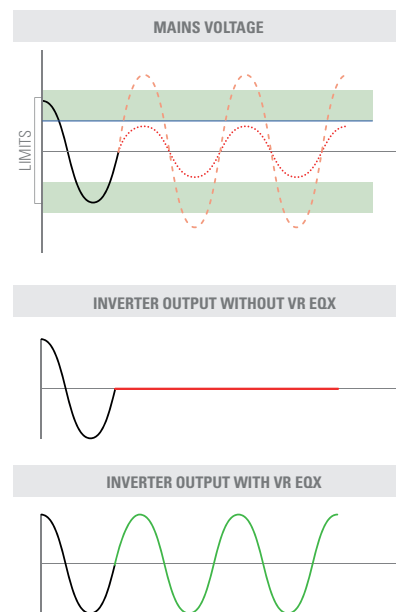
Quick-response

Electronic management ensures a quick response to undesirable mains voltage variations, establishing an immediate and quality energy supply.



Guaranteed generation

In both the single and three-phase models, our inverter will prevent disconnection in the event of mains voltage variations. Guaranteeing continual power generation.



Dimensions

361 / 640 / 605 / 361 mm



444 / 753 / 1315 /
514 mm

VR EQX

250 / 255 /
625 / 250 mm

Range

UNDERVOLTAGE REGULATORS	CODE	POWER (VA / W)	RATED VOLTAGE (V)	MINIMUM INPUT VOLTAGE (V)	MAXIMUM INPUT VOLTAGE (V)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
VR-2000-EQX-SL	6B2ST000001	2000	230	172.5	-	250 × 361 × 444	20
VR-3000-EQX-SL	6B2ST000002	3000	230	172.5	-	250 × 361 × 444	23
VR-4000-EQX-SL	6B2ST000003	4000	230	172.5	-	250 × 361 × 444	23
VR-5000-EQX-SL	6B2ST000004	5000	230	172.5	-	250 × 361 × 444	25
VR-6000-EQX-SL	6B2ST000005	6000	230	172.5	-	250 × 361 × 444	27
VR-5000-EQX-TL	6B2ST000006	5000	3x400	3x300	-	250 × 361 × 514	31
VR-8000-EQX-TL	6B2ST000007	8000	3x400	3x300	-	250 × 361 × 514	39
VR-10000-EQX-TL	6B2ST000008	10000	3x400	3x300	-	250 × 361 × 514	51
VR-15000-EQX-TL	6B2ST000009	15000	3x400	3x300	-	250 × 361 × 514	56
VR-20000-EQX-TL	6B2ST000010	20000	3x400	3x300	-	250 × 361 × 514	62
VR-30000-EQX-TL	6B2ST000011	30000	3x400	3x300	-	250 × 361 × 514	69
VR-40000-EQX-TL	6B2ST000039	40000	3x400	3x300	-	625 × 605 × 1315	127

Highers powers upon request.

OVERVOLTAGE REGULATORS	CODE	POWER (VA / W)	RATED VOLTAGE (V)	MINIMUM INPUT VOLTAGE (V)	MAXIMUM INPUT VOLTAGE (V)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
VR-2000-EQX-SH	6B2ST000012	2000	230	-	276	250 × 361 × 444	20
VR-3000-EQX-SH	6B2ST000013	3000	230	-	276	250 × 361 × 444	23
VR-4000-EQX-SH	6B2ST000014	4000	230	-	276	250 × 361 × 444	23
VR-5000-EQX-SH	6B2ST000015	5000	230	-	276	250 × 361 × 444	25
VR-6000-EQX-SH	6B2ST000016	6000	230	-	276	250 × 361 × 444	27
VR-5000-EQX-TH	6B2ST000017	5000	3x400	-	3x478	250 × 361 × 514	31
VR-8000-EQX-TH	6B2ST000018	8000	3x400	-	3x478	250 × 361 × 514	39
VR-10000-EQX-TH	6B2ST000019	10000	3x400	-	3x478	250 × 361 × 514	51
VR-15000-EQX-TH	6B2ST000020	15000	3x400	-	3x478	250 × 361 × 514	56
VR-20000-EQX-TH	6B2ST000021	20000	3x400	-	3x478	250 × 361 × 514	62
VR-30000-EQX-TH	6B2ST000022	30000	3x400	-	3x478	250 × 361 × 514	69
VR-40000-EQX-TH	6B2ST000040	40000	3x400	-	3x478	625 × 605 × 1315	127

Highers powers upon request.

UNDER/OVER VOLTAGE REGULATORS	CODE	POWER (VA / W)	RATED VOLTAGE (V)	MINIMUM INPUT VOLTAGE (V)	MAXIMUM INPUT VOLTAGE (V)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
VR-2000-EQX-SLH	6B2ST000023	2000	230	172.5	276	250 × 361 × 444	28
VR-3000-EQX-SLH	6B2ST000024	3000	230	172.5	276	250 × 361 × 444	36
VR-4000-EQX-SLH	6B2ST000025	4000	230	172.5	276	250 × 361 × 444	35
VR-5000-EQX-SLH	6B2ST000026	5000	230	172.5	276	250 × 361 × 444	40
VR-6000-EQX-SLH	6B2ST000027	6000	230	172.5	276	250 × 361 × 444	44
VR-5000-EQX-TLH	6B2ST000028	5000	3x400	3x300	3x478	255 × 640 × 753	60
VR-8000-EQX-TLH	6B2ST000029	8000	3x400	3x300	3x478	255 × 640 × 753	76
VR-10000-EQX-TLH	6B2ST000030	10000	3x400	3x300	3x478	640 × 604 × 1315	171
VR-15000-EQX-TLH	6B2ST000031	15000	3x400	3x300	3x478	640 × 604 × 1315	181
VR-20000-EQX-TLH	6B2ST000032	20000	3x400	3x300	3x478	640 × 604 × 1315	193
VR-30000-EQX-TLH	6B2ST000033	30000	3x400	3x300	3x478	640 × 604 × 1315	207
VR-40000-EQX-TLH	6B2ST000037	40000	3x400	3x300	3x478	625 × 605 × 1315	250

Highers powers upon request.

Technical specifications

MODEL		Model -SL	Model -SH	Model -SLH	Model -TL	Model -TH	Model -TLH
INPUT	Rated frequency	50Hz					
	Protection	1-pole breaker			3-pole breaker		
OUTPUT	Rated voltage	230 V			3x400+N V		
	Response time	< 100 ms					
	Voltage surge	+23 V	-23 V	±23 V	+23 V	-23 V	±23 V
	Total harmonic distortion (THDv)	Nule					
	Frequency	50Hz					
	Performance	> 97 %					
WORKING RANGES	Rated voltage	230 V			3x400V+N		
	Voltage surge	23 V					
	Lower limit RD244/2019	195,5 V	Not applicable	195,5 V	3x338V+N	Not applicable	3x338V+N
	Minimum compensation voltage	172,5 V	Not applicable	172,5 V	3x299V+N	Not applicable	3x299V+N
	RD244/2019 upper limit	Not applicable	253 V		Not applicable	3x438V+N	
	Maximum voltage with compensation	Not applicable	276 V		Not applicable	3x478V+N	
	Margin over nominal	-25%	-20%	-25% / -20%	-25%	-20%	-25% / -20%
GENERAL	Ambient temperature	-10~50°C					
	Relative humidity	Up to 95%, non-condensing					
	Number of transformers	1 unit			3 units		
	Maxium operating altitude	2,400 masl					
	Degree of protection	IP20					
	Cooling	Natural					
	Acoustic noise at 1 metre	< 25dB					
	STANDARDS	Safety	IEC-62103				
Electromagnetic compatibility (EMC)		EN 61000-6-4; EN-6100-6-2					
Corporate cerification		ISO 9001, ISO 14001, ISO 45001					

(1) Highers powers upon request.

Information subject to change without notice.

CV10

Variable frequency drives from 0.2 kW to 2.2 kW



CV10: Compact, flexible and easy-to-use single-phase input drives

Salicru's **Controlvit CV10** variable frequency drive series offers the most competitive solution for a wide range of applications. With a single-phase input voltage, it is designed to operate with low-power motors and has very complete hardware that features, among other things, a removable keypad with built-in potentiometer, dynamic braking unit, RS-485 Modbus communication and natural cooling in equipment of up to 0.75 kW.

Boasting an optimised and elegant design, it has advanced functions that are not typical in its segment, such as automatic energy-saving, PID control, shutdown by operating time, 16-speed multi-step control and basic sleep/wake mode.

In addition to all of this, also notable is Salicru's service, particularly its technical support during commissioning, and its two-year warranty, which includes immediate replacement in the event of fault.

Applications:

The **CV10** is suitable for use with low-power motors of up to 2.2 kW which can be supplied with 230 Vac three-phase voltage. Its most common applications are: fans, extraction hoods, belt conveyors, pumps, agitators, mixers, saws, vibrators, dispensers, separators, blowers, industrial dryers, mobile advertising, high-speed doors, barriers, mobile trolleys and machinery in general.



Performances

- V/f control.
- Built-in potentiometer.
- Remote control with removable keypad.
- Optional EMC filter with easy connection.
- Advanced PID process control.
- Automatic energy saving.
- Built-in dynamic braking unit.
- DC braking.
- Simple sleep/wake function for control of one pump.
- 16-speed multi-step control.
- RS485 Modbus RTU communication.
- Natural cooling (without fan) for power ratings 0.2 ÷ 0.75 kW. Fans with on/off control and easy replacement for 1.5 and 2.2 kW.
- Automatic torque boost.
- Possibility of increasing/decreasing operation speed with external push buttons. (Up down operation).
- Shutdown by operating time.
- Dynamic current limitation.
- Optimised size.
- Intuitive parameter setting by keypad and using VITdrive software.
- SLC Greenergy solution.



Display

1. Indication of inverter status.
2. Indication of magnitude that appears on the display.
3. 5-digit LED display.
4. Potentiometer: enables setpoint to be changed.
5. Enter function codes / Confirm.
6. Enables movement between menus or digits.
7. Stops operation / Reset in the event of fault.
8. Increase/decrease data or raise/lower a function code.
9. Enables programming mode entry and exit.
10. Selectable function: JOG speed, spin reversal, change of operation method.
11. Enables start-up command to be given.



Software

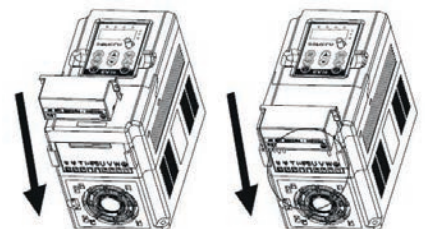
- Allows parameter setting of the equipment and facilitates commissioning and maintenance.
- Local and remote monitoring.

Technical support and service

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

EMC Filters

Easy installation of category C3 EMC filter



Keypad and potentiometer always included

Regardless of the model, all drives in the range feature a keypad as standard (removable or film type, depending on the model) and analogue or digital potentiometer.



Range

MODEL	CODE	POWER (kW)	INPUT CURRENT (A)	OUTPUT CURRENT (A)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
CV10-002-S2	6B1AA000001	0.2	4.9	1.6	134 × 85 × 145	1.4
CV10-004-S2	6B1AA000002	0.4	6.5	2.5	134 × 85 × 145	1.4
CV10-008-S2	6B1AA000003	0.75	9.3	4.2	153 × 85 × 145	1.7
CV10-015-S2	6B1AA000004	1.5	15.7	7.5	153 × 100 × 170	1.7
CV10-022-S2	6B1AA000005	2.2	24	10	153 × 100 × 170	1.7

Power supply voltage: Single-phase 230 V

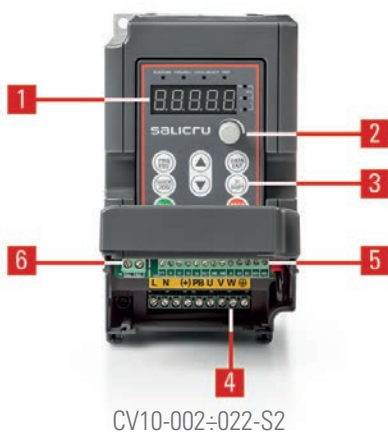
EMC Filters - Category C3

MODEL	VOLTAGE (V)	INVERTER	DIMENSIONS (F × AN × AL mm.)
IPF-EMC-CV10-008-S2	Single-phase 230 V	CV10...-S2 (0.2 ÷ 0.75 kW)	32 x 70 x 29
IPF-EMC-CV10-022-S2		CV10...-S2 (1.5 ÷ 2.2 kW)	32 x 81 x 32

Dimensions



Connections



1. LED display.
2. Built-in potentiometer.
3. Operation keys.
4. Power terminal.
5. control terminal.
6. Output relay.

Technical specifications

MODEL		CV10
INPUT	Rated voltage	Single-phase 220 V (-15%) ÷ 240 V (+10%)
	Rated frequency	50/60 Hz / Allowed range: 47 ÷ 63 Hz
OUTPUT	Rated voltage	Three-phase, 0 ÷ 100% of input voltage
	Frequency	0 ÷ 400 Hz
	Admissible overloads	150% for 1 min; 180% for 10 s; 200% for 1s
	Maximum distance	<50 m without filter / between 50 and 100 m install chokes / >100 m sine wave filter
CONTROL SPECIFICATIONS	Type of motor	Asynchronous
	Method of control	V/f
	V/f characteristics	Linear and user defined
	Degree of control	1% of maximum output frequency
	Speed fluctuation	±5%
	Braking unit	Built-in
INPUT SIGNALS	Digital	4/5 programmable inputs, NPN logic, selectable polarity, virtual activation by communication, on/off delay times
	Analogue	1 input, 0 ÷ 10 V / 0 ÷ 20 mA. Built-in potentiometer
OUTPUT SIGNALS	Relay	1 multifunction output. Selectable standby mode (NO or NC) Maximum 3 A / 250 VAC, 1 A / 30 VDC. On/off delay
	Power Supply	24 V (±10%) 100 mA
	Analogue	1 selectable output 0 ÷ 10 V / 0 ÷ 20 mA, proportional to frequency, current, speed, voltage, torque, etc.
	Digital	1 multifunction open collector output (50 mA / 30 V) Selectable polarity and on/off delay
	Communication port	RS-485 Modbus-RTU
OPERATION	Method	Keypad (removable up to 5 m), control terminal and communication
	Frequency setting	Digital, analogue, multi-step, PID, Modbus communication
	Protection	Overcurrent, overvoltage, low voltage, inverter overheating, phase loss, overload, underload, etc.
FILTERING	EMC filter	Category C3 with easy connection as option
GENERAL	Ambient temperature	-10 ÷ 50°C (1% derating per degree exceeding 40°C)
	Degree of protection	IP20
	Cooling	0.2 ÷ 0.75 kW: Natural by radiator / 1.5 and 2.2 kW: Forced by fan
	Installation	Wall mounting
STANDARDS	Safety	EN 61800-5-1
	Electromagnetic compatibility (EMC)	EN 61800-3 C3
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

Information subject to change without notice.

CV30

Variable frequency drives from 0.4 kW to 7.5 kW



CV30: General-purpose vector variable frequency drives

Salicru's **Controlvit CV30** variable frequency drive series stands out for its design, reliability, compact size and ease of use. The high quality of its components, advanced features and versatility make it the ideal variable frequency drive for the actuation of low-power motors (0.4 kW to 7.5 kW) in the vast majority of applications, being available for both single-phase (230 VAC) and three-phase (400 VAC and 230 VAC) supply voltages.

Its advanced sensorless vector control, which has two different algorithms depending on the required performance, ensures high torque even when working at very low speeds. In addition to all of this, it features an automatic energy-saving function which achieves significant consumption reductions, mainly in ventilation, water treatment and irrigation applications.

Applications:

The **CV30** can be incorporated into the vast majority of machinery, and can control pumps and fans. Some of its common applications are: belt conveyors, agitators, compressors, hoists, saws, vibrators, presses, polishers, barriers and high-speed doors, centrifugal and submersible pumps, blowers, separators, industrial washing machines, mobile trolleys, positioners, ornamental fountains, dispensers, air extraction equipment, fans, advertising and mobile stages, meat, textile and packaging machinery, etc.



Performances

- Selectable control: V/f, sensorless vector or torque control.
- EMC filter, built-in or optional for easy connection (depending on model).
- Automatic motor tuning (static and dynamic).
- 150% torque at 0.5 Hz.
- Advanced PID process control.
- Simple sleep/wake function for control of one pump.
- Simple PLC (automatic cycle) and 16-speed multi-step control.
- RS485 Modbus RTU communication.
- Built-in potentiometer.
- Remote control with removable or optional keypad (depending on model).
- Intuitive parameter setting.
- Compact size and side-by-side installation (depending on model).
- DIN rail mounting (depending on model).
- Built-in dynamic braking unit.
- DC braking.
- Automatic energy saving and kWh meter.
- Pulse train input (max. 50 kHz).
- Fly-start function.
- Numerous inputs/outputs (4/5 digital inputs, 1 pulse input, 2 analogue inputs and 2 analogue outputs, 2 relay outputs, 1 transistor output).
- Cooling fans with On/Off control and easy replacement.
- Monitoring and parameter setting using VITdrive software.
- SLC Greenergy solution.



Keypad and potentiometer always included

Regardless of the model, all drives in the range feature a keypad as standard (removable or film type, depending on the model) and analogue or digital potentiometer.

Built-in energy meter

The **CV30** and **CV50** series are equipped with a meter to measure the kWh consumed by the drive. This metering can be stopped in the event of testing, setting an initial value, resetting and accessing it via Modbus communication.

Technical support and service

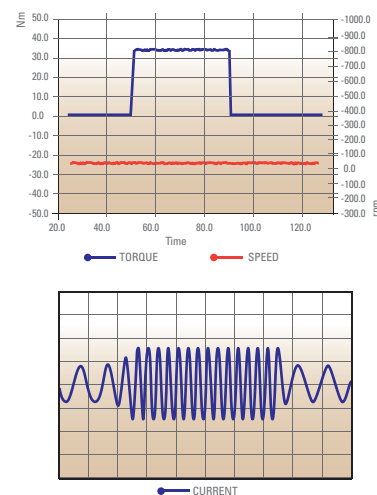
- Pre- and after-sales service.
- Commissioning.
- Telephone technical support.
- Training courses.
- Online registration at www.salicru.com.

Software

- Allows parameter setting of the equipment and facilitates commissioning and maintenance.
- Local and remote monitoring.

Advanced vector control

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



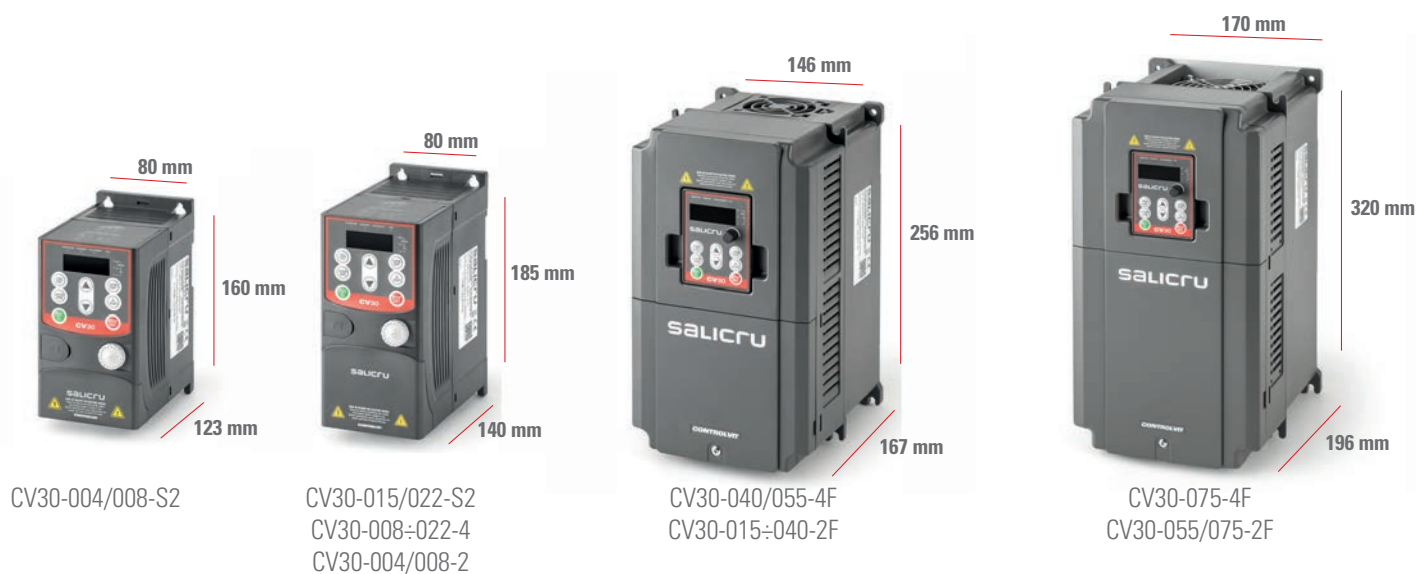
Range

MODEL	CODE	POWER SUPPLY VOLTAGE	POWER (kW)	INPUT CURRENT (A)	OUTPUT CURRENT (A)	DIMENSIONS (D x W x H mm)	WEIGHT (Kg)
CV30-004-S2	6B1BA000001	Single phase 230 V	0.4	6.5	2.5	123 x 80 x 160	1.3
CV30-008-S2	6B1BA000002	Single phase 230 V	0.75	9.3	4.2	123 x 80 x 160	1.3
CV30-015-S2	6B1BA000003	Single phase 230 V	1.5	15.7	7.5	140 x 80 x 185	1.6
CV30-022-S2	6B1BA000004	Single phase 230 V	2.2	24	10	140 x 80 x 185	1.6
CV30-008-4	6B1BC000001	Three-phase 400 V	0.75	3.4	2.5	140 x 80 x 185	1.4
CV30-015-4	6B1BC000002	Three-phase 400 V	1.5	5	4.2	140 x 80 x 185	1.4
CV30-022-4	6B1BC000003	Three-phase 400 V	2.2	5.8	5.5	140 x 80 x 185	1.4
CV30-040-4F	6B1BC000004	Three-phase 400 V	4	13.5	9.5	167 x 146 x 256	3.9
CV30-055-4F	6B1BC000005	Three-phase 400 V	5.5	19.5	14	167 x 146 x 256	3.9
CV30-075-4F	6B1BC000006	Three-phase 400 V	7.5	25	18.5	196 x 170 x 320	6.5
CV30-004-2	6B1BB000001	Three-phase 230 V	0.4	3.7	2.5	140 x 180 x 185	1.4
CV30-008-2	6B1BB000002	Three-phase 230 V	0.75	5	4.2	140 x 180 x 185	1.4
CV30-015-2F	6B1BB000003	Three-phase 230 V	1.5	7.7	7.5	167 x 146 x 256	3.9
CV30-022-2F	6B1BB000004	Three-phase 230 V	2.2	11	10	167 x 146 x 256	3.9
CV30-040-2F	6B1BB000005	Three-phase 230 V	4	17	16	167 x 146 x 256	3.9
CV30-055-2F	6B1BB000006	Three-phase 230 V	5.5	21	20	196 x 170 x 320	6.5
CV30-075-2F	6B1BB000007	Three-phase 230 V	7.5	31	30	196 x 170 x 320	6.5

EMC Filters - Category C3

MODEL	VOLTAGE (V)	INVERTER	DIMENSIONS (F x AN x AL mm.)
IPF-EMC-CV30-022-S2	Single phase 230 V	CV30...-S2 (0.4 ÷ 2.2 kW)	38 x 69 x 31
IPF-EMC-CV30-022-2/4	Three-phase 400 V Three-phase 230 V	CV30...-4 (0.75 ÷ 2.2 kW) CV30...-2 (0.4 ÷ 0.75 kW)	

Dimensions



Technical specifications

MODEL		CV30
INPUT	Rated voltage	Single phase 220 V (-15%) ÷ 240 V (+10%) / Three-phase 380 V (-15%) ÷ 440 V (+10%) / Three-phase 220 V (-15%) ÷ 240 V (+10%)
	Rated frequency	50/60 Hz / Allowed range: 47 ÷ 63 Hz
OUTPUT	Rated voltage	Three-phase, 0 ÷ 100% of input voltage
	Frequency	0 ÷ 400 Hz
	Admissible overloads	150% for 1 min; 180% for 10 s; 200% for 1s
	Maximum distance	<50 m without filter / between 50 and 100 m install chokes / >100 m sine wave filter
CONTROL SPECIFICATIONS	Type of motor	Asynchronous
	Method of control	V/f, sensorless vector control, torque control
	V/f characteristics	Linear, quadratic (3 types), user defined
	Degree of control	1% of maximum output frequency
	Speed fluctuation	±0.3% (in vector control mode)
	Braking unit	Built-in
INPUT SIGNALS	Digital	4/5 programmable inputs, PNP or NPN logic, pulse input, maximum frequency 50 kHz, selectable polarity, virtual activation, on/off delay times
	Analogue	2 inputs, AI2: 0 ÷ 10 V / 0 ÷ 20 mA and AI3: -10 ÷ 10 V Built-in potentiometer
OUTPUT SIGNALS	Relay	2 multifunction NO/NC switching outputs Maximum 3 A / 250 VAC, 1 A / 30 VDC. Selectable polarity and on/off delay
	Power Supply	24 V (±10%) 200 mA
	Analogue	2 selectable outputs 0 ÷ 10 V / 0 ÷ 20 mA, proportional to frequency, current, speed, voltage, torque, etc.
	Digital	1 multifunction open collector output (50 mA / 30 V) Selectable polarity and on/off delay
	Communication port	RS-485 Modbus-RTU
OPERATION	Method	Keypad, control terminal and communication. Removable keypad up to 30 m for models 3Ø 380 ≥ 4 kW and 3Ø 230 ≥ 1.5 kW. For other models, remote keypad (up to 30 m) as optional extra.
	Frequency setting	Digital, analogue, pulse train, multi-step, simple PLC, PID, Modbus communication
	Protection	Overcurrent, overvoltage, low voltage, inverter overheating, phase loss, overload, underload, etc.
FILTERING	EMC filter	Category C3 built-in for 3Ø 380 V ≥ 4 kW and 3Ø 230 V ≥ 1.5 kW inverters. Category C3 with easy connection for others as option
GENERAL	Ambient temperature	-10 ÷ 50°C (1% derating per degree exceeding 40°C)
	Degree of protection	IP20
	Cooling	By easy-to-maintain fans
	Installation	Side-by-side type on DIN rail or wall mounting for 1Ø 230 V / 3Ø 380 V ≤ 2.2 kW and 3Ø 230 V ≤ 0.75 kW inverters. Wall of cabinet or flange mounting for other inverters.
STANDARDS	Safety	EN 61800-5-1
	Electromagnetic compatibility (EMC)	EN 61800-3 C3
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

CV50

Variable frequency drives from 0.75 kW to 500 kW



CV50: High-performance multifunction vector frequency drives

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

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

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

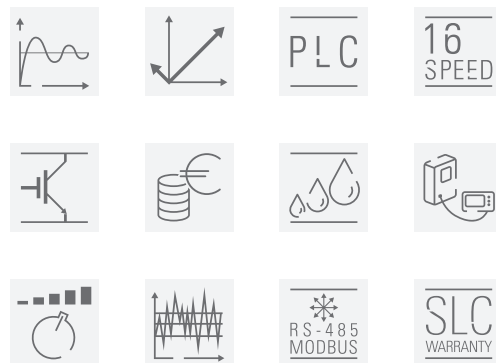
Applications:

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



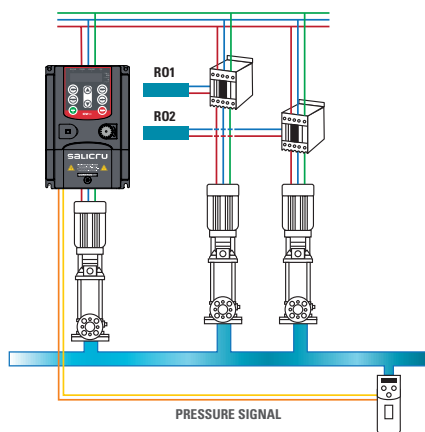
Performances

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



Pumping systems

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



Advanced vector control

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

Technical support and service

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



Range

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

Power supply voltage: Three-phase 400 V

Dimensions



CV50-040/055-4F



CV50-075÷150-4F



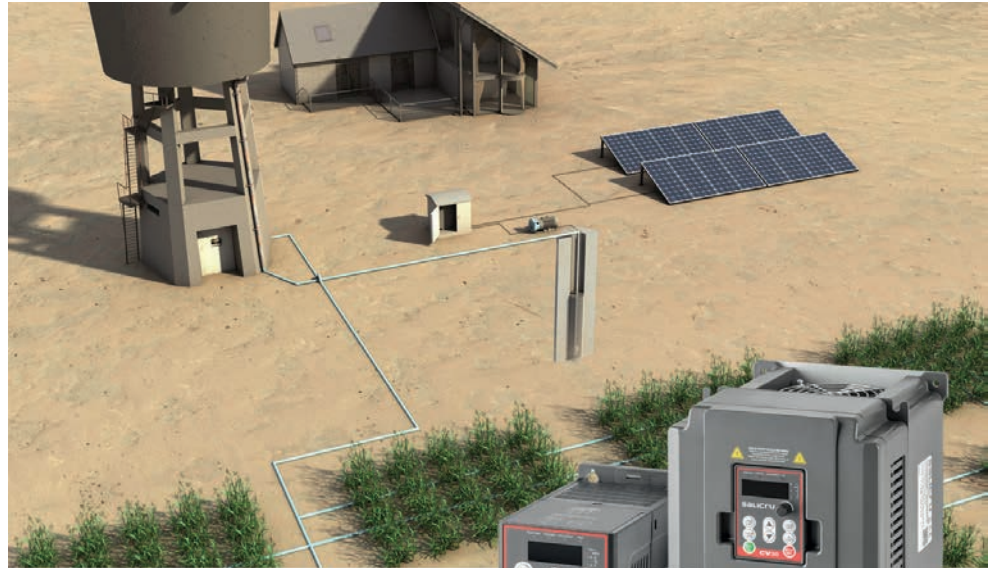
CV50-220/300-4F

Technical specifications

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

CV30-PV

Variable frequency drives for solar water pumping systems from 0.4 kW to 75 kW



CV30-PV: Variable frequency drives for solar water pumping systems

The **CV30-PV** drive allows water to be pumped using the radiation captured by solar panels as an energy source. The solar light energy obtained is transformed into direct current which powers the drive, and this in turn powers a submersible pump using alternating current, thus enabling water from the ground to be extracted. The extracted water can be stored in a tank or raft of storage for subsequent use, or it can be used for direct irrigation, depending on the needs of the farm.

This system is highly useful in locations that need a reliable, cost-effective water supply with a long service life and low maintenance costs. It is also environmentally friendly as it does not cause pollution or noise.

Applications:

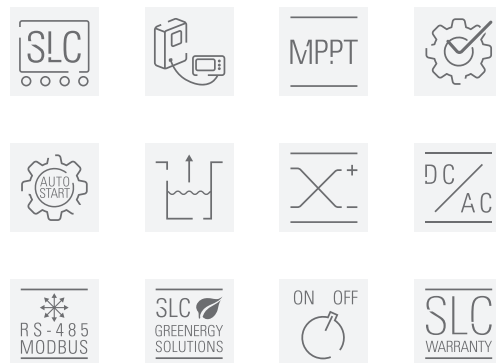
The main application of the **CV30-PV** drive is agricultural irrigation, either by accumulating water in a tank for subsequent use or by direct irrigation from a well.

Other applications include domestic consumption in isolated areas, livestock water supply, fish farming, municipal and forestry irrigation, and desert control.



Performances

- Integrated advanced MPPT algorithm: Maximum power point tracking of solar panels and 99% efficiency.
- Automatic start and stop depending on the solar radiation.
- Easy configuration: It is only necessary to set a few parameters.
- Optimum functioning at all times, adapting to environmental conditions.
- Multiple protections: Particularly notable are its overvoltage protection and warning against reverse polarity in the photovoltaic input, and automatic overtemperature derating.
- Detection of dry well and full tank.
- Considerable reduction in the number of solar panels required thanks to the optional booster module (up to 2.2 kW).
- Possibility of isolated and switched power supply (mains or diesel generator) through the installation of an optional module.



Booster module

The BOOST MOD-320-PV module enables the number of solar panels required to power the system to be greatly reduced, resulting in considerable financial savings and simplified installation. It also allows automatic switching to the mains or a power generator. It can be used in drive models of up to 2.2 kW.



Automatic switching module

ATS MOD-...-4PV modules enable an automatic switching installation to be carried out. When the energy available in the solar panels is insufficient to power the drive, the system switches to the mains or generator, and switches back when the energy is sufficient.



Advanced vector control

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

Technical support and service

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

Range

MODEL	CODE	POWER (kW)	DIMENSIONS (D × W × H mm)	SOLAR PANEL CONFIGURATION (MODULES PER STRING * NUMBER OF STRINGS)					
				Power: 425-450 Wp 144 Cells		Power: 480-505 Wp 150 Cells		Power: 510-550 Wp 110 Cells	
				Without BOOSTER	With BOOSTER	Without BOOSTER	With BOOSTER	Without BOOSTER	With BOOSTER
CV30-008-S2 PV	6B1DA000001	0.75	123 × 80 × 160	8*1	3*1	8*1	3*1	8*1	3*1
CV30-015-S2 PV	6B1DA000003	1.5	140 × 80 × 185	8*1	6*1	8*1	5*1	8*1	3*1

DC power supply voltage: 200 ÷ 400 V / Mains supply voltage: Single-phase 230 V

MODEL	CODE	POWER (kW)	DIMENSIONS (D × W × H mm)	SOLAR PANEL CONFIGURATION (MODULES PER STRING * NUMBER OF STRINGS)					
				Power: 425-450 Wp 144 Cells		Power: 480-505 Wp 150 Cells		Power: 510-550 Wp 110 Cells	
				Without BOOSTER	With BOOSTER	Without BOOSTER	With BOOSTER	Without BOOSTER	With BOOSTER
CV30-008-4 PV	6B1DC000011	0.75	140 × 80 × 185	14*1	3*1	14*1	3*1	14*1	3*1
CV30-015-4 PV	6B1DC000010	1.5	140 × 80 × 185	14*1	6*1	14*1	5*1	14*1	5*1
CV30-022-4 PV	6B1DC000001	2.2	140 × 80 × 185	14*1	8*1	14*1	7*1	14*1	7*1
CV30-040-4F PV	6B1DC000002	4	167 × 146 × 256	14*1	N/D	14*1	N/D	14*1	N/D
CV30-055-4F PV	6B1DC000003	5.5	167 × 146 × 256	14*2	N/D	14*2	N/D	14*1	N/D
CV30-075-4F PV	6B1DC000004	7.5	196 × 170 × 320	14*2	N/D	14*2	N/D	14*2	N/D
CV30-110-4F PV	6B1DC000012	11	196 × 170 × 320	18*3	N/D	15*3	N/D	14*2	N/D
CV30-150-4F PV	6B1DC000005	15	196 × 170 × 320	14*4	N/D	14*3	N/D	14*3	N/D
CV30-220-4F PV	6B1DC000006	22	184 × 200 × 340	14*6	N/D	14*4	N/D	14*4	N/D
CV30-300-4F PV	6B1DC000014	30	202 × 250 × 400	18*8	N/D	15*8	N/D	14*5	N/D
CV30-370-4F PV	6B1DC000007	37	202 × 250 × 400	14*9	N/D	14*8	N/D	14*6	N/D
CV30-550-4F PV	6B1DC000008	55	238 × 282 × 560	14*12	N/D	14*11	N/D	14*8	N/D
CV30-750-4F PV	6B1DC000009	75	238 × 282 × 560	14*16	N/D	14*15	N/D	14*11	N/D

DC power supply voltage: 300 ÷ 750 V / Mains supply voltage: Three-phase 400 V
N/A: Not available

Dimensions



CV30-015/022-S2 PV
CV30-008-022-4 PV

CV30-220-4F PV

CV30-550/750-4F PV

Technical specifications

MODEL		S2 models	4 / 4F models
PHOTOVOLTAIC INPUT	Recommended DC input	200 ÷ 400 V	300 ÷ 750 V
	Recommended MPPT voltage	330 V	550 V
	Maximum DC voltage	440 V	800 V
	Starting voltage	200 V (80 V with booster)	300 V (80 V with booster)
	Minimum DC voltage	150 V (70 V with booster)	250 V (70 V with booster)
MAINS INPUT	Voltage	Single-phase 220 V (-15%) ÷ 240 V (+10%)	Three-phase 380 V (-15%) ÷ 440 V (+10%)
	Frequency	50/60 Hz Permitted range: 47 ÷ 63 Hz	
OUTPUT	Rated voltage	Three-phase, 0 ÷ 100% of the input voltage.	
	Admissible overloads	150% for 1 min; 180% for 10 s; 200% for 1s	
	Maximum distance	<50 m without filter / between 50 and 100 m install chokes / >100 m sine-wave filter.	
INPUT SIGNALS	Digital	5 programmable inputs, PNP or NPN logic. Selectable polarity, on/off delay times.	
OUTPUT SIGNALS	Relay	Drives ≤ 2.2 kW: 1 multifunction NO/NC switching output / Drives ≥ 4 kW: 2 multifunction NO/NC switching outputs Maximum 3 A / 250 Vac, 1 A / 30 Vdc	
	Analogue	Drives ≤ 2.2 kW: Not available / Drives ≥ 4 kW: 2 selectable outputs 0 ÷ 10 V / 0 ÷ 20 mA	
	Digital	Drives ≤ 2.2 kW: Not available / Drives ≥ 4 kW: 1 multifunction open collector output (50 mA / 30V)	
	Communication port	Drives ≤ 2.2 kW: 1 RS-485 Modbus RTU port + 1 RS-422 port / Drives ≥ 4 kW: 1 RS-485 Modbus RTU port	
SPECIFIC PROTECTIONS	Faults	Overvoltage, undervoltage, overcurrent, reverse polarity connection, communication failure with the booster module, broken hydraulic sensor.	
	Alarms	Weak light, underload, full tank.	
FILTERING	EMC filter	Drives ≤ 2.2 kW: Category C3 with easy connection as option / Drives ≥ 4 kW: Category C3 integrated	
GENERAL	Ambient temperature	- 10 ~ 50°C (1% derating per degree exceeding 40°C).	
	Degree of protection	IP20	
STANDARDS	Safety	EN 61800-5-1	
	Electromagnetic compatibility (EMC)	EN 61800-3 C3	
	Corporate certification	ISO 9001, ISO 14001, ISO 45001	

Information subject to change without notice.

ACV30-PV

Solar-powered pumping cabinets

ACV30-PV: Complete solution for solar-powered pumping facilities

The **ACV30-PV** cabinets offer a fully finished solution for solar-powered pumping facilities that use pumps of up to 5.5 kW. Depending on the model, they can be mounted indoors or outdoors, and offer the option of isolated systems (powered solely by solar panels), systems with automatic switchover to the power generator or mains, and systems with manual switchover.

They incorporate the **CV30-PV** drive, which is specifically designed for solar-powered pumping, and depending on the model they also include the **BOOST MOD-320-PV** booster module, which significantly reduces the number of panels required. They are equipped with the necessary protection at the solar panel input (DC circuit breaker and over-voltage protector) and, where applicable, the AC input (circuit breaker and contactor). As the distance between the drive and the pump can be considerable, all models are fitted with an output ferrite in order to prevent potential pump breakdowns; moreover, for particularly long distances (usually over 100 metres), the option of cabinet-mounted sine-wave filters is available.

To ensure full control of the system, the cabinets also include a water level sensor and digital clock/timer. This can be used to protect the pump against dry operation, and to set the system's operating times. Without a doubt, it is a solution that offers installers tremendous convenience and reliability, owing to the fact that potential issues with mounting and configuration are reduced to a minimum.



Applications:

The main application of the **ACV30-PV** solar-powered pumping cabinets is agricultural irrigation, either via the accumulation of water in a tank or feeder pool for subsequent use or via direct irrigation from a well.

Other applications include domestic consumption in isolated areas, livestock water supply, fish farming, municipal and forestry irrigation, and desert control.



Performances

- Simple to install and configure.
- Indoors or outdoors mounting.
- Isolated power supply or with automatic/manual switchover.
- Optional booster module.
- DC circuit breaker.
- AC circuit breaker for models with switchover to the generator or mains.
- DC over-voltage protector (Type II, 1,000 VDC).
- 24 VDC water level sensor + weights.
- Clock/timer for ON/OFF control.
- Control console and ON/OFF switch on the cabinet door (indoor mounting).
- Status indicator lights and ON/OFF switch on the cabinet door (outdoor mounting).
- Output ferrite.
- ATS automatic switchover module (>2.2 kW models with switchover).
- Optional cabinet-mounted sine wave filter, recommended for systems where the distance between the drive and the pump is over 100 metres.



Indoor mounting model

For added convenience, these models incorporate a control console mounted on the door of the cabinet. Thanks to this design feature, users do not need to open the cabinet in order to change the parameters or check the status of the system. Moreover, ample space has been set aside to incorporate additional control elements, in accordance with the needs of each facility.



Outdoor mounting model

For these models, the ON/OFF control and system status indicators are accessed via buttons on the door of the cabinet, thereby maintaining a high level of protection. The cabinet also includes a rain canopy to provide even more protection against inclement weather.



Dimensions



Range

MODEL	CODE	MOUNTING	TYPE OF SYSTEM	BOOSTER	PUMP VOLTAGE (V)	MAXIMUM PUMP POWER (kW)
ACV30-015-S2 PV IAB	6B1BS000001	Indoor	Isolated	Yes	3 × 230	1.5
ACV30-022-4 PV IAB	6B1BS000002	Indoor	Isolated	Yes	3 × 400	2.2
ACV30-015-S2 PV IAD	6B1BS000003	Indoor	Isolated	No	3 × 230	1.5
ACV30-022-S2 PV IAD	6B1BS000004	Indoor	Isolated	No	3 × 230	2.2
ACV30-022-4 PV IAD	6B1BS000005	Indoor	Isolated	No	3 × 400	2.2
ACV30-055-4F PV IAD	6B1BS000006	Indoor	Isolated	No	3 × 400	5.5
ACV30-015-S2 PV IGB	6B1BS000007	Indoor	Automatic switchover to the generator	Yes	3 × 230	1.5
ACV30-022-S2 PV IGB	6B1BS000008	Indoor	Automatic switchover to the generator	Yes	3 × 230	2.2
ACV30-022-4 PV IGB	6B1BS000009	Indoor	Automatic switchover to the generator	Yes	3 × 400	2.2
ACV30-055-4F PV IGD	6B1BS000010	Indoor	Automatic switchover to the generator	No	3 × 400	5.5
ACV30-015-S2 PV IRB	6B1BS000011	Indoor	Automatic switchover to mains power	Yes	3 × 230	1.5
ACV30-022-S2 PV IRB	6B1BS000012	Indoor	Automatic switchover to mains power	Yes	3 × 230	2.2
ACV30-022-4 PV IRB	6B1BS000013	Indoor	Automatic switchover to mains power	Yes	3 × 400	2.2
ACV30-055-4F PV IRD	6B1BS000014	Indoor	Automatic switchover to mains power	No	3 × 400	5.5
ACV30-015-S2 PV IMB	6B1BS000015	Indoor	Manual switchover	Yes	3 × 230	1.5
ACV30-022-S2 PV IMB	6B1BS000016	Indoor	Manual switchover	Yes	3 × 230	2.2
ACV30-022-4 PV IMB	6B1BS000017	Indoor	Manual switchover	Yes	3 × 400	2.2
ACV30-055-4F PV IMD	6B1BS000018	Indoor	Manual switchover	No	3 × 400	5.5
ACV30-015-S2 PV EAB	6B1BS000019	Outdoor	Isolated	Yes	3 × 230	1.5
ACV30-022-4 PV EAB	6B1BS000020	Outdoor	Isolated	Yes	3 × 400	2.2
ACV30-015-S2 PV EAD	6B1BS000021	Outdoor	Isolated	No	3 × 230	1.5
ACV30-022-S2 PV EAD	6B1BS000022	Outdoor	Isolated	No	3 × 230	2.2
ACV30-022-4 PV EAD	6B1BS000023	Outdoor	Isolated	No	3 × 400	2.2
ACV30-055-4F PV EAD	6B1BS000024	Outdoor	Isolated	No	3 × 400	5.5
ACV30-015-S2 PV EGB	6B1BS000025	Outdoor	Automatic switchover to the generator	Yes	3 × 230	1.5
ACV30-022-S2 PV EGB	6B1BS000026	Outdoor	Automatic switchover to the generator	Yes	3 × 230	2.2
ACV30-022-4 PV EGB	6B1BS000027	Outdoor	Automatic switchover to the generator	Yes	3 × 400	2.2
ACV30-055-4F PV EGD	6B1BS000028	Outdoor	Automatic switchover to the generator	No	3 × 400	5.5
ACV30-015-S2 PV ERB	6B1BS000029	Outdoor	Automatic switchover to mains power	Yes	3 × 230	1.5
ACV30-022-S2 PV ERB	6B1BS000030	Outdoor	Automatic switchover to mains power	Yes	3 × 230	2.2
ACV30-022-4 PV ERB	6B1BS000031	Outdoor	Automatic switchover to mains power	Yes	3 × 400	2.2
ACV30-055-4F PV ERD	6B1BS000032	Outdoor	Automatic switchover to mains power	No	3 × 400	5.5
ACV30-015-S2 PV EMB	6B1BS000033	Outdoor	Manual switchover	Yes	3 × 230	1.5
ACV30-022-S2 PV EMB	6B1BS000034	Outdoor	Manual switchover	Yes	3 × 230	2.2
ACV30-022-4 PV EMB	6B1BS000035	Outdoor	Manual switchover	Yes	3 × 400	2.2
ACV30-055-4F PV EMD	6B1BS000036	Outdoor	Manual switchover	No	3 × 400	5.5

Technical specifications

MODEL		3x230 pumps	3x400 pumps
PHOTOVOLTAIC INPUT	Recommended DC input	200 ÷ 400 V	300 ÷ 750 V
	Recommended MPPT voltage	330 V	550 V
	Maximum DC voltage	440 V	800 V
	Starting voltage	200 V (80 V with booster)	300 V (80 V with booster)
	Minimum DC voltage	150 V (70 V with booster)	250 V (70 V with booster)
	DC protection	DC circuit breaker and overvoltage protector (Type II, 1,000 VDC)	
MAINS INPUT	Voltage	Single-phase 220 V (-15%) ÷ 240 V (+10%)	Three-phase 380 V (-15%) ÷ 440 V (+10%)
	Frequency	50/60 Hz Permitted range: 47 ÷ 63 Hz	
	AC protection	AC circuit breaker and contactor (for models with automatic switchover to the mains)	
OUTPUT	Rated voltage	Three-phase, 0 ÷ 100% of the input voltage.	
	Admissible overloads	150% for 1 min; 180% for 10 s; 200% for 1 s	
	Maximum distance	Install a sine wave filter if the distance between the drive and pump is > 100 m	
INPUT SIGNALS	Digital	5 programmable inputs, PNP or NPN logic. Selectable polarity, on/off delay times.	
OUTPUT SIGNALS	Relay	Drives ≤ 2.2 kW: 1 multifunction NO/NC switching output / Drives ≥ 4 kW: 2 multifunction NO/NC switching outputs Maximum 3 A / 250 Vac, 1 A / 30 Vdc	
	Analogue	Drives ≤ 2.2 kW: Not available / Drives ≥ 4 kW: 2 selectable outputs 0 ÷ 10 V / 0 ÷ 20 mA	
	Digital	Drives ≤ 2.2 kW: Not available / Drives ≥ 4 kW: 1 multifunction open collector output (50 mA / 30V)	
	Communication port	Drives ≤ 2.2 kW: 1 RS-485 Modbus RTU port + 1 RS-422 port / Drives ≥ 4 kW: 1 RS-485 Modbus RTU port	
OPERATION	Method	Indoor mounting: control console on the door of the cabinet and ON/OFF control via switch or clock/timer. Outdoor mounting: buttons on the door of the cabinet and clock/timer.	
	Pump protection	24 VDC water level sensor	25 VDC water level sensor
	Types of system	Isolated (powered solely by solar panels) Automatic switchover to the generator Automatic switchover to the mains Manual switchover (to the power generator or mains)	
SPECIFIC PROTECTIONS	Faults	Overvoltage, undervoltage, overcurrent, reverse polarity connection, communication failure with the booster module, broken hydraulic sensor.	
	Alarms	Weak light, underload, full tank.	
FILTERING	EMC filter	Drives ≤ 2.2 kW: Category C3 with easy connection as option / Drives ≥ 4 kW: Category C3 integrated	
GENERAL	Ambient temperature	- 10 ~ 50°C (1% derating per degree exceeding 40°C).	
	Degree of protection	Indoor and outdoor versions	
STANDARDS	Safety	EN 61800-5-1	
	Electromagnetic compatibility (EMC)	EN 61800-3 C3	
	Corporate certification	ISO 9001, ISO 14001, ISO 45001	

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 and 125 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 3, 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, an NiCd electrolyte level detection input and six additional relays.

Applications: Redundant protection for critical applications

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



Performances

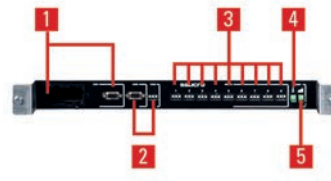
- Maximum power per system up to 81 kW.
- Flexible, scalable and N+n redundant systems, configurable for current demand and future expansion.
- High power density in the modules, up to 27 W/in³.
- High efficiency, up to 95% even with low load.
- Option of single or three-phase power supply.
- DC systems 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).



Communications

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

(1) Only extended version.



SMART mode

Load sharing in normal operation.



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



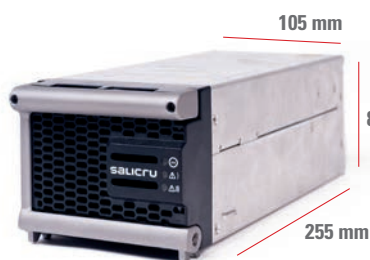
Options

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

Range

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

Dimensions



POWER MODULE

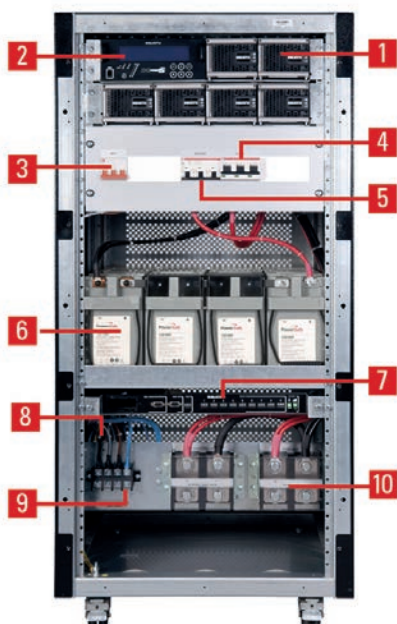


CONTROL MODULE



2 SUBRACK MODULES

Connections



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

Technical specifications

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

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

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

(3) Without batteries

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

DC POWER-L

Thyristor rectifiers 10 A - 800 A



DC POWER-L: Charging systems for stationary batteries

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

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

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

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

Applications: Efficient, reliable and robust solutions

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



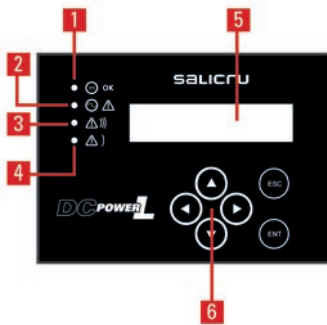
Performances

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



Display

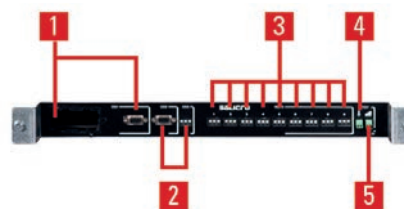
1. Output voltage indicator.
2. Input voltage fault indicator.
3. Urgent alarm indicator (customisable).
4. Non-urgent alarm indicator (customisable).
5. LCD display with multiple languages.
6. Navigation keys.



Communications

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

(1) Only extended version.

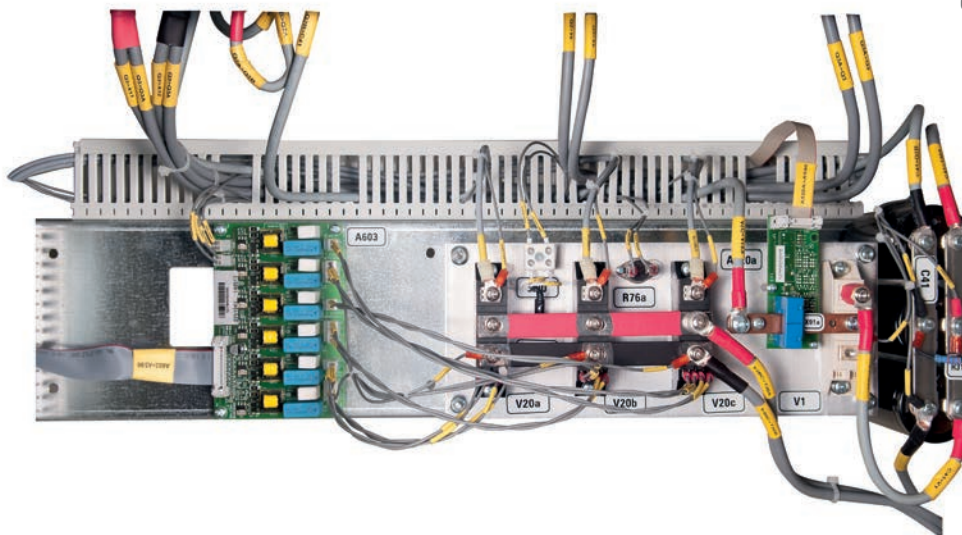


Options

- 12-pulse rectifier with isolation transformer.
- Voltage drop diodes.
- TCP/IP interface.
- Heater.
- Output diodes for parallel operation.
- Different types of batteries (SLA, lead acid, nickel cadmium, etc.).
- Other degrees of protection.
- Other input voltages on request.
- Top cable entry.
- Schuko outlet socket.
- Colour cabinet RAL9005.

Technical support and service

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

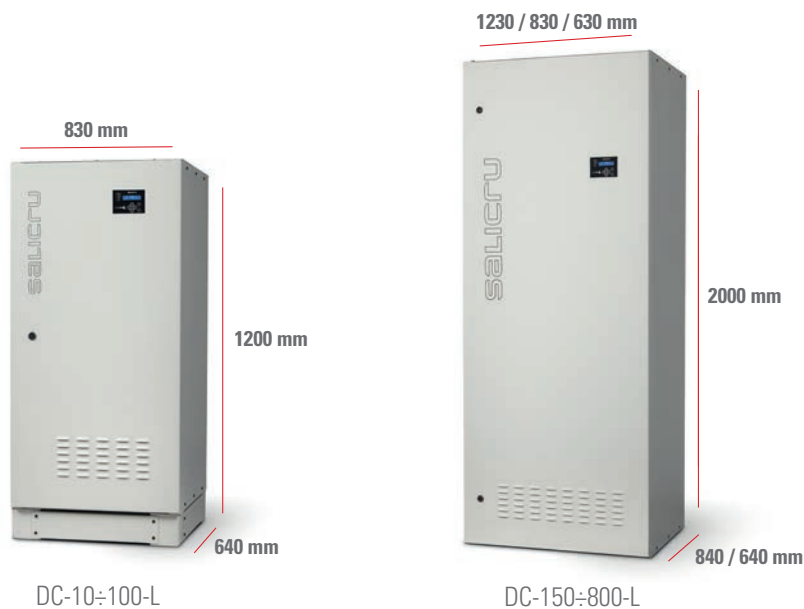


Range

MODEL	OUTPUT CURRENT (A)	INPUT VOLTAGE (VAC)	OUTPUT VOLTAGE (VDC)
DC-10-L	10	120 / 230	24 / 48 / 110 / 120 / 125 / 220
DC-20-L	20	120 / 230	24 / 48 / 110 / 120 / 125 / 220
DC-30-L	30	120 / 230	24 / 48 / 110 / 120 / 125 / 220
DC-50-L	50	120 / 230	24 / 48 / 110 / 120 / 125 / 220
DC-25-L	25	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-50-L	50	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-75-L	75	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-100-L	100	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-150-L	150	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-200-L	200	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-250-L	250	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-300-L	300	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-350-L	350	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-400-L	400	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-450-L	450	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-500-L	500	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-600-L	600	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-700-L	700	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220
DC-800-L	800	3 × 208 / 3 × 220 / 3 × 400	24 / 48 / 110 / 120 / 125 / 220

Check for other output currents.

Dimensions



Technical specifications

MODEL		DC POWER-L
TECHNOLOGY		Thyristor
INPUT	Rated voltage	120 / 230 V (F + N); 3 × 208 / 3 × 220 / 3 × 400 V (3F + N)
	Voltage range	±15%
	Rated frequency	50/60 Hz
	Frequency range	±5%
	Power factor	0.85
	Performance	>85%
OUTPUT	DC nominal voltage	24 V, 48 V, 110 V, 120 V, 125 V, 220 V
	Float voltage	2.27 V/cell (Pb) / 1.4 ÷ 1.45 V/eI (NiCd)
	Fast charging voltage	2.5 V/cell (Pb) / 1.5 V/eI (NiCd)
	Exceptional charging voltage/formation	2.7 V/cell (Pb) / 1.65 V/eI (NiCd)
	Accuracy	±1%
	Ripple	<1% ⁽¹⁾
	Single phase current	10 / 20 / 30 / 50 A ⁽²⁾
	Three phase current	25 / 50 / 75 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 / 600 / 700 / 800 A ⁽²⁾
BATTERY	Protection	Against overvoltage and undervoltage
	Battery type	PbCa (sealed or open) or NiCd
	Charge type	IU constant as per DIN 41773
	Recharge time	Up to 80% in 4 hours (0.2 C)
	Voltage/temperature compensation	Yes, customisable as per battery specifications (mV / °C)
	No. of cells Pb	12 (24 V) / 24 (48 V) / 55 (110 V) / 60 (120 V) / 62 (125 V) / 110 (220 V)
	No. of elements NiCd	19 (24 V) / 38 ÷ 39 (48 V) / 81 ÷ 86 (110 V) / 88 ÷ 94 (120 V) / 92 ÷ 96 (125 V) / 161 ÷ 173 (220 V)
COMMUNICATION	Ports	RS-232/485 - 6 Dry contacts
	Intelligent slot	Yes, one / Optional
	Protocol	MODBUS Yes
PROTECTION	Input and output	Circuit breaker
	Battery	Fuses
	Soft start	Yes
GENERAL	Operating temperature	-10° C ÷ +55° C ⁽³⁾
	Storage temperature	-20° C ÷ +70° C ⁽⁴⁾
	Relative humidity	Up to 95% non-condensing
	Maxium operating altitude	Up to 3000 m.a.s.l. ⁽⁵⁾
	Colour	RAL7035
	Dielectric strength (Input - Output)	2500 V @1 min
	Degree of protection	IP20
	Cooling	Natural
STANDARDS	Safety	IEC/EN 61204-7, IEC 60146-1-1
	Electromagnetic compatibility (EMC)	IEC/EN 61204-3 class A
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001

(1) Premium version

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

(3) Power degradation from +40°C

(4) Without batteries

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

DC POWER-L 12P

Thyristor rectifiers 25 A - 800 A

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

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

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

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



Applications: Efficient, reliable and robust solutions

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



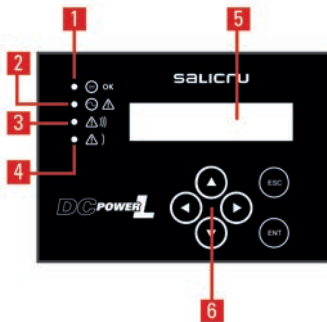
Performances

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



Display

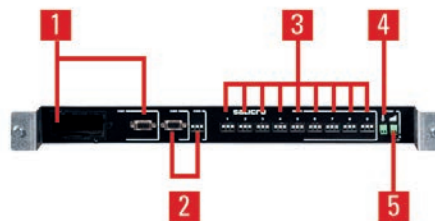
1. Correct input voltage indicator.
2. Charger in operation indicator.
3. Indications state of the battery
4. Correct output voltage indicator.
5. LCD display with multiple languages.
6. Navigation keys.



Communications

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

(1) Only extended version.

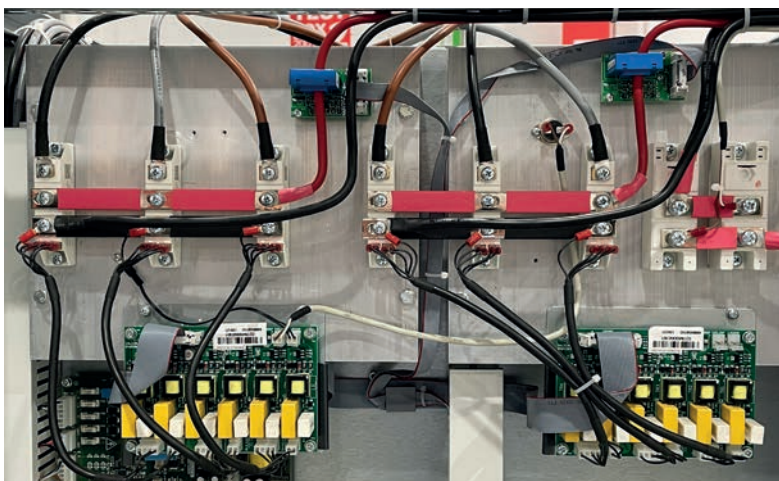


Options

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

Technical support and service

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

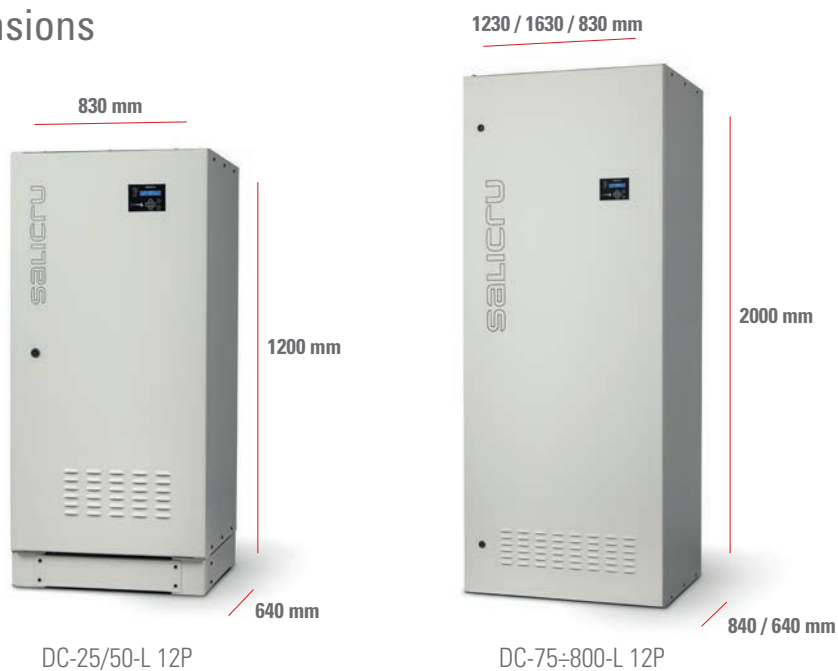


Range

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

Check for other output currents.

Dimensions



Technical specifications

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

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

(2) Power degradation from +40°C

(3) Without batteries

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

Information subject to change without notice.

CS-IS

DC power converters



CS-IS: High performance DC/AC industrial converters

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

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

Applications: Energy conversion for industrial plants

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



Performances

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

Options

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

Technical support and service

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

Range

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

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

Technical specifications

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

Information subject to change without notice.

CS WAVE MDL

Power converters 48Vdc to 230Vac



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.

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,...).



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.

Options

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

Technical support and service

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



Range

MODEL	CODE	POWER (VA)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
CS 1000-WAVE MDL 48/230	651AA000000	1000	270 × 215 × 44	2.5
CS 1500-WAVE MDL 48/230	651AA000001	1500	270 × 215 × 44	3

Technical specifications

MODEL		CS WAVE MDL
TECHNOLOGY		DSP; All Master
INPUT	Rated voltage	40.5 Vdc ÷ 58 Vdc
	Psophometric noise	≤1 mV
OUTPUT	Rated voltage	230 Vac
	Power (VA)	1000 / 1500
	Frequency	50 / 60 Hz
	Performance	> 89%
	Admissible overloads	150% for 20 seconds
MANUAL BYPASS	Type	Distribution: 2 × 20 A + 1 × 32 A + 1 × 50 A / 5 position selector
STATIC BYPASS	Transfer time (ms)	< 5 ms
	Voltage range	176 ÷ 276 Vac
COMMUNICATION	Ports	RS-232, RS-485, USB, SNMP and free contacts
INDICATIONS	Type	LCD Display (Input / Output / Alarms / General)
SYSTEMS	Maximum no. modules per system	15 × 1500 VA or 24 × 1000 VA
	Maximum power per system (kVA)	22,5 k VA × 1500 VA / 24 kVA × 1000 VA
STANDARDS	Safety	IEC 62368-1
	Electromagnetic compatibility (EMC)	EN 61000-6-3; EN 61000-6-1
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

Information subject to change without notice.

IT

Electrical transformers and autotransformers



IT: Simple concepts, effective solutions

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

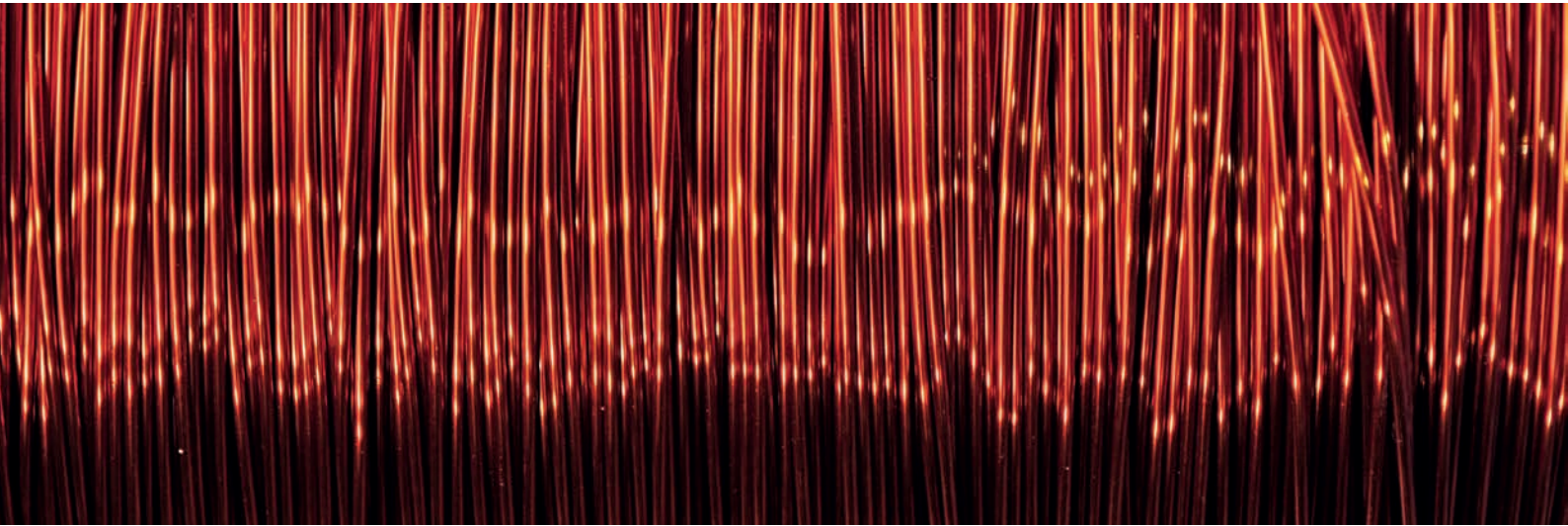
Single-phase and three-phase transformers are used as electrical isolation for reducing mains disturbances or adjusting the level of voltage coming from the grid. Autotransformers, on the other hand, with their serially-connected coils that do not provide galvanic isolation, have the function of converting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

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

Applications: Adaptation and/or filtering of the supply voltage

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

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



Range

MODEL	TYPE	POWER (kVA / kW)	VOLTAGE	PRESENTATION
IT-T	Transformer	1 ÷ 100	Single-phase / Single-phase	Panel mounting
IT-T	Transformer	1 ÷ 100	Single-phase / Single-phase	Box
IT-T	Transformer	1 ÷ 300	Three-phase / Three-phase	Panel mounting
IT-T	Transformer	1 ÷ 300	Three-phase / Three-phase	Box
IT-ATR	Autotransformer	1 ÷ 300	Three-phase / Three-phase	Panel mounting
IT-ATR	Autotransformer	1 ÷ 300	Three-phase / Three-phase	Box

For other powers and versions, please enquire.

Technical specifications

MODEL		IT	
ELECTRICAL	Input/Output	Single-phase	Three-phase
	Power range	1 ÷ 100 kVA	1 ÷ 300 kVA
	Power factor	1	
	Connection group	li0	Dyn11 ⁽¹⁾
INPUT	Rated voltage	100 ÷ 750 V	3 × 190 ÷ 750 V
	Rated frequency	50 / 60 Hz	
	Magnetising current	< 6 In	
OUTPUT	Rated voltage	100 ÷ 750 V	3 × 190 ÷ 750 V
	Voltage drop (100% load)	< 4%	< 5%
	Frequency	50 / 60 Hz	
	Performance	> 95%	
	Short-circuit voltage	< 2.6%	< 3.1%
MANUFACTURE	Insulators	Class 155 (F)	
	Windings	Class 180 (H)	
	Windings material	Aluminium	
	Impregnation	Unsaturated polyester imide resin, low emission	
	Ventilation	ANAN	
GENERAL	Operating temperature	-25°C ÷ +40°C (climate class C2)	
	Storage temperature	-25°C ÷ +75°C	
	Relative humidity	Up to 95% non-condensing	
	Maxium operating altitude	2,400 masl	
	Version	Panel mounting or metal box	
	Colour (box version)	RAL 7035	
	Eye bolts for elevation	Yes, on units weighing more than 15 kg	
	Degree of protection	IP00 panel mounted version - IP23 boxed version	
	Heat loss (100% load)	< 4.5%	< 5%
	Vacuum heat loss	< 1.5%	
	Isolation voltage	3000 V input/output for 1 minute	
	Terminal type	Screw terminals	
	OPTIONAL	K factor	K-4 / K-13 / K-20
Windings material		Copper	
Wheels		For devices in box version	
Isolation		Class 2 (Double isolation)	
STANDARDS	Safety	EN 61558-2-4 / EN 60076-11	
	Corporate cerification	ISO 9001, ISO 14001, ISO 45001	

(1) Others available on request

RE3

Electronic voltage stabilisers from 300 VA to 250 kVA



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

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

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

Applications: Assured industrial processes

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



Performances

- Power range, single and three-phase, up to 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⁾
- Communication slot. ⁽²⁾
- Overtemperature detection. ⁽²⁾
- Do not introduce harmonics, or alter the power factor of the installation.
- Unaffected by line voltage harmonics; stabilisation based on true RMS.
- Stable operation in the event of load and/or voltage variations.
- Highly robust and reliable (high MTBF).
- Overvoltage surge suppression protection.
- More than 80% recyclable materials.

(1) Option

(2) For models with LCD display



Display

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



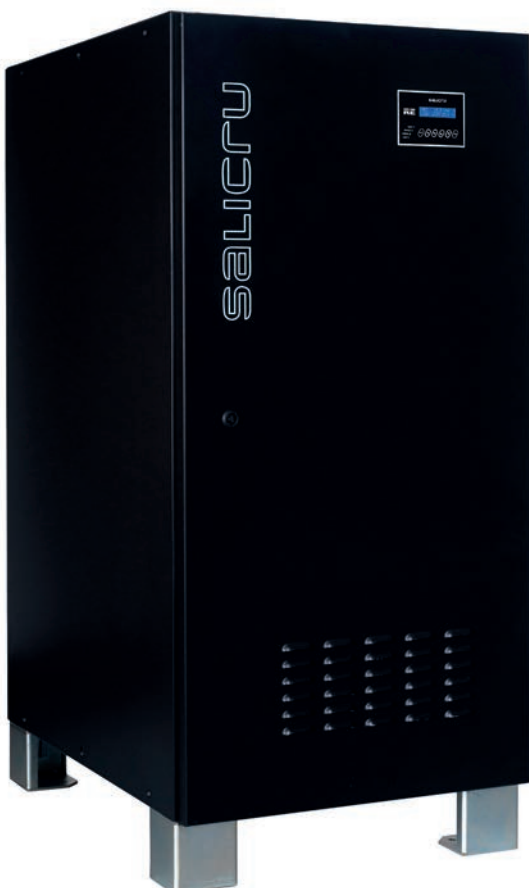
Options

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

(1) Models with display

Technical support and service

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



Range

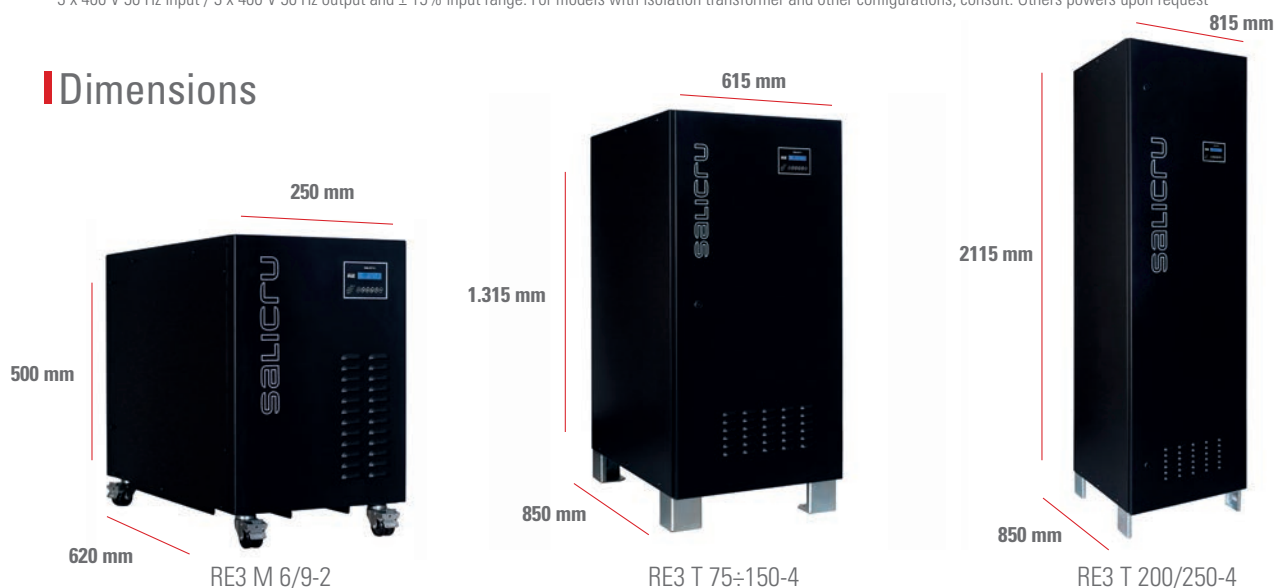
MODEL	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
RE-309-2	606AY000390	300	280 × 210 × 185	6
RE-609-2	606BY000390	600	280 × 210 × 185	6
RE-1009-2	606CY000390	1000	280 × 210 × 185	9
RE-2009-2	606EG000390	2000	390 × 250 × 195	19
RE-3009-2	606EY000390	3000	390 × 250 × 195	22
RE-4509-2	606FW000390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

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

MODEL	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
RET 3-4	606EY050390	3000	680 × 340 × 240	32
RET 6-4	606GU050390	6000	680 × 340 × 240	61
RET 9-4	606IA050390	9000	630 × 390 × 520	68
RE3 T 15-4	6A3BA000001	15000	905 × 460 × 705	80
RE3 T 20-4	6A3BA000002	20000	905 × 460 × 705	117
RE3 T 30-4	6A3BA000003	30000	905 × 460 × 705	164
RE3 T 45-4	6A3BA000004	45000	905 × 460 × 705	225
RE3 T 60-4	6A3BA000005	60000	905 × 460 × 705	260
RE3 T 75-4	6A3BA000006	75000	850 × 615 × 1315	317
RE3 T 100-4	6A3BA000007	100000	850 × 615 × 1315	343
RE3 T 125-4	6A3BA000018	125000	850 × 615 × 1315	438
RE3 T 150-4	6A3BA000015	150000	850 × 615 × 1315	650
RE3 T 200-4	6A3BA000016	200000	850 × 815 × 2115	850
RE3 T 250-4	6A3BA000050	250000	850 × 815 × 2115	1050

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

Dimensions



Technical specifications

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

(1) Ask for other setting

(2) Other ranges under request

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

Information subject to change without notice.

EMi3

Servomotor voltage stabiliser 5 kVA - 2500 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.

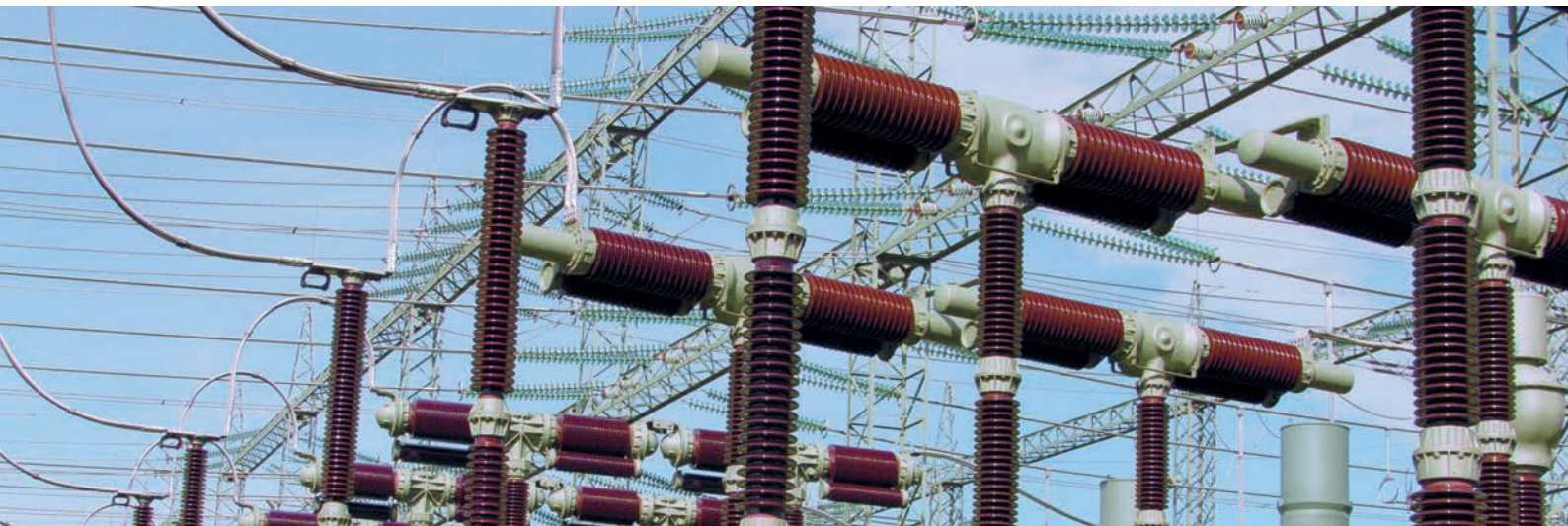
Moreover, in the event of drops in the total consumption of a power line, voltage tends to rise, causing overconsumption in the equipment that remains connected. By using a stabiliser, overconsumption can be eliminated, thereby producing significant cost savings and ensuring that connected loads function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

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



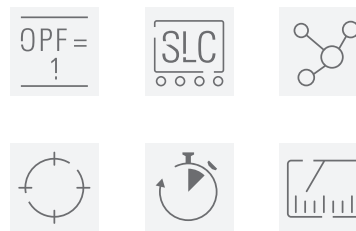
Applications: Effective protection for all types of critical load

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



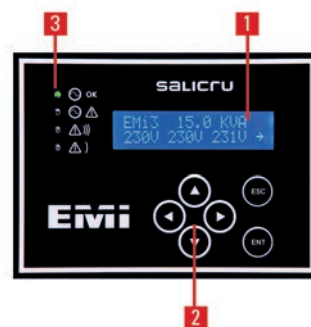
Performances

- Power range, single and three-phase, up to 2500 kVA.
- Fast and efficient toroidal autotransformers for the entire power range.
- Output accuracy better than 1% (adjustable).
- In three-phase units, independent regulation per phase, unaffected by imbalances.
- Input regulation 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.
- Overvoltage surge supresion protection.
- More than 80% recyclable materials.



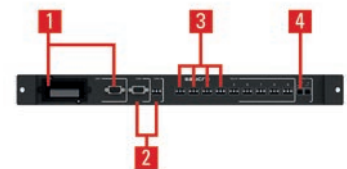
Display

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



Communications

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



Options

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

Range

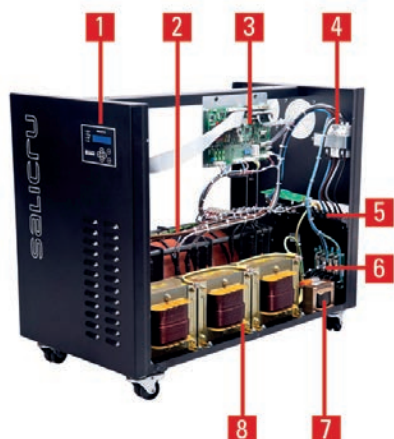
MODEL	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EMi3 M 5-2	6A5DA000001	5000	580 × 340 × 580	45
EMi3 M 7,5-2	6A5DA000002	7500	580 × 340 × 580	59
EMi3 M 10-2	6A5DA000003	10000	580 × 340 × 580	60
EMi3 M 15-2	6A5DA000004	15000	895 × 460 × 705	115
EMi3 M 20-2	6A5DA000005	20000	895 × 460 × 705	119
EMi3 M 25-2	6A5DA000006	25000	895 × 460 × 705	196
EMi3 M 30-2	6A5DA000007	30000	895 × 460 × 705	209
EMi3 M 40-2	6A5DA000008	40000	895 × 460 × 705	325
EMi3 M 50-2	6A5DA000009	50000	640 × 604 × 1315	450

Nomenclature, dimensions and weights for models: Input 230 V 50 Hz / Output 230 V 50 Hz and input range +/-15%.
Others powers and/or other input ranges on request.

MODEL	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
EMi3 T 15-4F	6A5FA000002	15000	895 × 460 × 705	131
EMi3 T 20-4F	6A5FA000003	20000	895 × 460 × 705	174
EMi3 T 35-4F	6A5FA000004	35000	895 × 460 × 705	229
EMi3 T 55-4F	6A5FA000005	55000	640 × 604 × 1315	379
EMi3 T 70-4F	6A5FA000006	70000	640 × 604 × 1315	500
EMi3 T 90-4F	6A5FA000007	90000	840 × 604 × 2115	538
EMi3 T 110-4F	6A5FA000008	110000	840 × 604 × 2115	582
EMi3 T 140-4F	6A5FA000009	140000	840 × 604 × 2115	857
EMi3 T 175-4F	6A5FA000010	175000	840 × 1204 × 2115	1159
EMi3 T 220-4F	6A5FA000011	220000	840 × 1204 × 2115	1227
EMi3 T 275-4F	6A5FA000012	275000	840 × 1204 × 2115	1298
EMi3 T 330-4F	6A5FA000013	330000	840 × 1204 × 2115	1450
EMi3 T 375-4F	6A5FA000016	375000	840 × 1604 × 2115	1642
EMi3 T 450-4F	6A5FA000022	450000	840 × 1604 × 2115	1870
EMi3 T 500-4F	6A5FA000023	500000	840 × 1604 × 2115	2820
EMi3 T 600-4F	6A5FA000024	600000	840 × 1604 × 2115	3600
EMi3 T 800-4F	6A5FA000025	800000	840 × 3204 × 2115	3900
EMi3 T 1000-4F	6A5FA000026	1000000	840 × 3204 × 2115	4350
EMi3 T 1300-4F	6A5FA000027	1300000	840 × 3204 × 2115	5610

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

Connections



1. 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

Technical specifications

MODEL		EMi3
INPUT	Single phase voltage	120 / 220 / 230 / 240 V
	Three-phase voltage	3x208 / 3x220 / 3x380 / 3x400 / 3x415 V (3F+N) ⁽¹⁾
	Regulation range	± 15% ⁽²⁾
	Frequency range	47.5 ÷ 63 Hz
OUTPUT	Single phase rated voltage	120 / 220 / 230 / 240 V
	Three-phase rated voltage	3x208 / 3x220 / 3x380 / 3x400 / 3x415 V (3F+N) ⁽¹⁾
	Accuracy	± 3% (adjustable between 1% ÷ 5%)
	Output voltage setting	± 10%
	Total harmonic distortion (THDv)	<0.2%
	Frequency	48 ÷ 63 Hz
	Regulation speed	Up to 70 V/s
	Performance	Between 96.5% and 97.5%
	Voltage disconnection value	Adjustable ⁽³⁾
	Admissible overloads	Up to 200% for 20 s
	Possible load variation	0 ÷ 100%
	Power factor influence	Independent
	COMMUNICATION	Ports
Intelligent slot		One ⁽⁴⁾
INDICATIONS	Type	LCD display (2x16 characters) + 4 status LEDs
GENERAL	Ambient temperature	-10° C ÷ +55° C ⁽²⁾
	Storage temperature	-20° C ÷ +85° C
	Relative humidity	Up to 95%, non-condensing
	Maximum operating altitude	2,400 m.a.s.l.
	Cooling	Natural or forced depending on power rate ⁽⁵⁾
	Acoustic noise at 1 metre	<45 dB(A) ⁽⁶⁾
	Mean time between failures (MTBF)	60,000 hours
	Mean time to repair (MTTR)	30 minutes
STANDARDS	Safety	IEC/EN 61558-2-14
	Electromagnetic compatibility (EMC)	IEC/EN 62041
	Corporate certification	ISO 9001, ISO 14001, ISO 45001

(1) Ask for other settings

(2) Other ranges available on request

(3) With optional voltage maximum-minimum

(4) Mutually exclusive ports

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

(6) <65 dB(A) for models with forced ventilation

Information subject to change without notice.

BACS

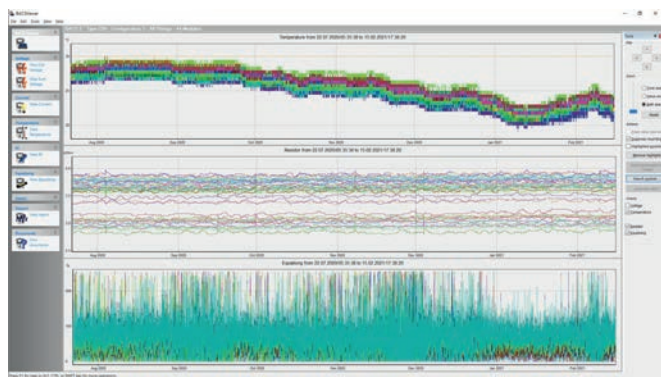
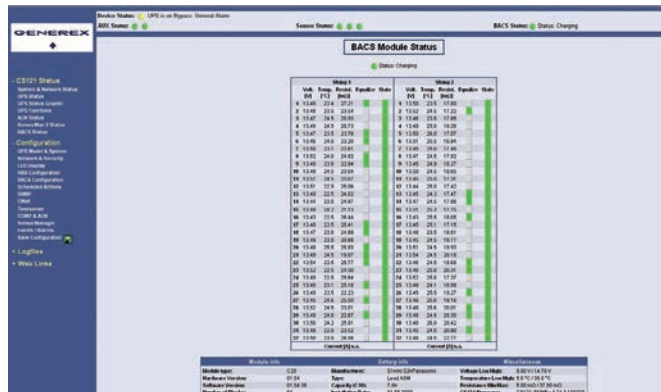
Battery analysis and care system

BACS: the 3rd generation of the battery management system

Monitoring, regulation and alarm system for lead-acid batteries. Ensuring full battery system operability, preventing unexpected or unnoticed faults caused by defective batteries, extending the lifetime of the batteries and helping to presence system reliability.

The 3rd generation of the Battery Analysis and Care System, **BACS**, is a network-integrated battery monitoring and management system. It regularly checks the internal resistance, temperature and voltage of each individual battery. It is also possible to adjust the charging voltage of each battery and manage environmental measurements (temperature, humidity, hydrogen gas content) and applications (UPS systems, rectifiers, DC systems, inverters and other devices). This ensures that the batteries always remain in optimum operating conditions. The system's ability to constantly monitor and individually control the charging voltages for each battery ensures battery availability at all times - making the so-called Achilles heel of UPS systems (or any other power device) a thing of the past.

BACS is suitable for all lead-based (AGM, gel, sealed and open lead-acid), nickel-based and lithium-ion batteries.

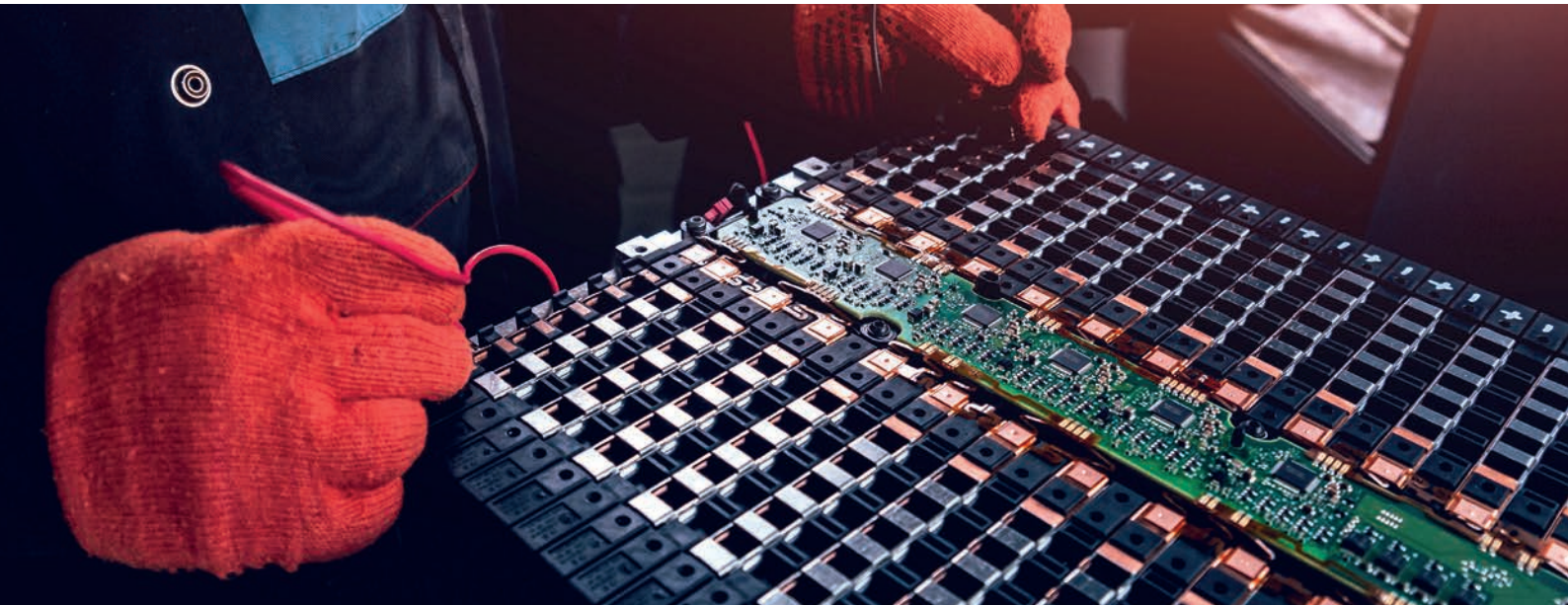
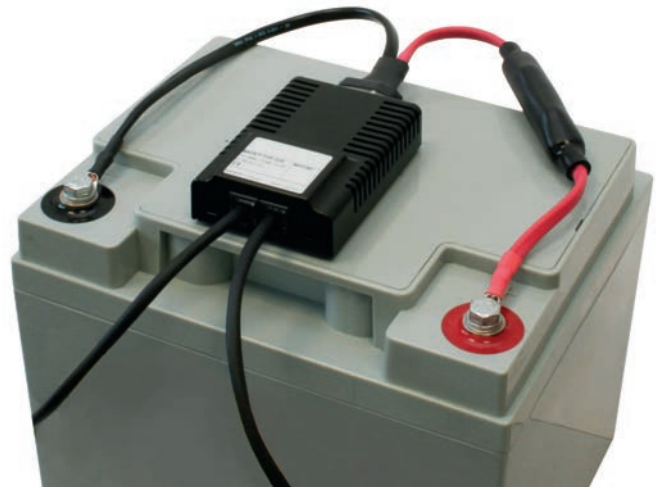


Monitoring software



Technology

- The system is designed to monitor and control batteries individually or in battery blocks, providing a symmetrical charging process.
- Individual voltage regulation: even distribution of the voltage supplied by the charger.
- Protection against any unexpected individual overcharging (gassing), drying out or full discharge of batteries.
- Sulphation problems are prevented through visualisation and communication of sulphation levels.
- Protection for nearby batteries against charging voltage faults in one battery.
- Through its equalising system, it ensures optimum capacity for battery systems throughout their lifetimes.
- Intensive and comprehensive analysis in one battery of the power supply system.
- Available for sealed lead batteries (2, 6, 12 and 16 V) and Ni-Cd, Ni-MH, lithium-ion batteries (1.2 to 3 V) with capacities ranging from 7 Ah to 5000 Ah.



Advantages

- Increased durability and battery pack capacity.
- Replacement of full battery packs as a precautionary measure is not necessary.
- Batteries can be used up until the end of their useful lives.
- Costly monitoring and maintenance routines are no longer required.
- Unexpected or unnoticed battery faults are avoided.
- Optimisation of battery capacity.
- Cheaper monitoring per battery.



Technical specifications

MODEL	WEBMANAGER
PROCESSOR AND MEMORY	32-Bit RISC processor, 32 MB storage / 64 MB RAM
POWER CONSUMPTION	At 24 V / 100 mA for BACS module +10 mA
INTERFACE	3 x RS-232 interfaces, including 1 for the battery bus 1 x RJ10 for the battery bus converter 1 battery bus converter included 1 x RJ45, 10/100 Mbit Ethernet connector
DIMENSIONS	Housing: 69 x 30 x 126 mm (L x W x H) Card: 60 x 20 x 130 mm (L x W x H) (slot format)
WEIGHT	Housing: 110 g Card: 90 g
TEMPERATURE	0-60°C, maximum humidity 90% non-condensing

MODEL	BATTERY MODULE
POWER CONSUMPTION	30 mA en modo normal < 8 mA en Modo Sleep (Rev 1.4) < 1 mA en Modo Sleep (Rev 1.6)
MEASUREMENT TOLERANCE	Internal resistance <10% Voltage <0.1% Temperature <5%
INTERFACES	2 x RJ10 for BACS battery bus Internal RS-232 interface 1 x button for addressing Temperature sensor -10 to 100°C Measurement value (depending on type) 1.3V - 16V LED display (green LED)
HOUSING	ABS housing (UL certified, cooling by non-flammable fins)
DIMENSIONS	80 x 55 x 27 mm (L x W x H)
WEIGHT	75 g
TEMPERATURE	0-60°C, maximum humidity 90% non-condensing
PROTECTION DEGREE	IP30

Webmanager

- **BACS WEBMANAGER** manages up to 330 BACS modules in 10 series/strings of batteries.
- Each battery is managed individually.
- The power supply voltage range is 9-30 V.
- It fully replaces the UPS' SNMP adapter.
- Simple DIN rail installation.
- Relay alarms for use in the network.

Battery modules

- Individual monitoring of batteries in a 7 to 5000 Ah range.
- Pb-Ca batteries: 2, 6, 12 and 16V.
- Ni-Cd, Ni-MH, Litium- Ion batteries: 1.2 to 3V.
- "Equalising" principle: even distribution of charging voltage across all batteries, up to 150 mA for each one.
- Efficient uniformity of voltage levels in batteries of up to 300 Ah.
- Minimal heat dissipation at the highest voltage regulation.



Technical specifications

MODELO	BUS CONVERTER 2 (standard)
CONSTRUCTION	Conversion and galvanic separation of the BACS battery bus to the WEBMANAGER
POWER CONSUMPTION	Wall wart 12 V/ 800 mA (default for up to 160 modules) Optional 12 V/ 1400 mA for up to 256 modules
INTERFACES	2 x RJ10 for BACS battery bus 1 x RJ12 for COM3 of the WEBMANAGER 1 x MiniDin8 interface/RS-232 for serial connection to PC For CONVERTER 3, an adapter is required (see below) 1 x DC connector for mains power supply

MODEL	BUS CONVERTER 3 (optional)
CONSTRUCTION	The same as CONVERTER 2, but with an additional LED display, acoustic alarm with acknowledge button and potential-free contacts (2-pole screw terminals for maximum 1 mm ² cross section, 125 Vac, 60 Vdc and 1 A). Also included is a second RJ10 bus for the BACS battery bus (ring)
OPCIONAL	Adapter from mini-8 to RS-232 with 1.5 m mini-8 connection cable
HOUSING	Grey polystyrene housing
DIMENSIONS	Measurements: 91.5 x 67 x 25 mm (L x W x H)
WEIGHT	120 g
TEMPERATURE	0-60°C, maximum humidity 90% non-condensing

Information subject to change without notice.

Bus coupling

- Easy installation through rapid connection of bus cables with Velcro fastening.
- Cables with special crimping are not necessary.
- Pre-assembly of the measurement cables prior to the installation of the batteries.
- Easy and rapid reinstallation of modules.



Bus cable



Measurement cable

The background features a complex network of thin red lines connecting various points, creating a web-like or molecular structure. The lines are of varying lengths and orientations, forming a series of interconnected triangles and polygons. The overall color palette is a light, warm red or pinkish hue, giving it a modern and technical feel.

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PRODUCT RANGE

Uninterruptible Power Supply Systems (UPS)
Solar inverters
Variable Frequency Drives
DC Systems
Transformers and Autotransformers
Voltage Stabilisers
Electric Active Protectors
Batteries

