SLC X-PERT

Uninterruptible power supplies 80 to 400 kVA

salicru

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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 supply 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 floor area 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.

Features

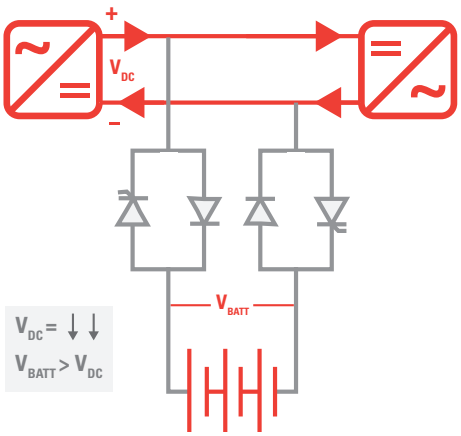
- On-line, double-conversion and DSP control technology.
- Output power factor 1 (VA=W).
- Input current distortion rate (THDi) <3%.
- Double input connection to increase availability.
- Input power factor >0.99.
- High energy efficiency, between 95% and 96% in normal mode and up to 97% in high-efficiency 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.

Efficiency

High-efficiency mode

Dedicated electronic devices and control algorithm, which allow the batteries to be dynamically isolated from the device's DC bus so that the inverter can be powered at a lower DC voltage.

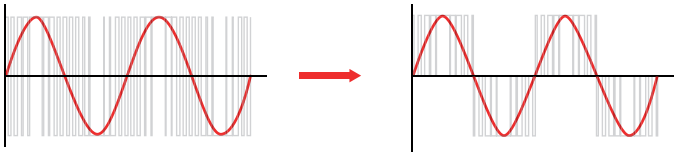
By working at a lower DC voltage, inverter switching losses are drastically reduced, and high energy efficiency of up to 97% is obtained, now from low percentages of output load.



3-L high-efficiency mode (200 kVA to 400 kVA)

3-level inverter added to high-efficiency mode. 3-level switching is based on switching the power IGBTs of the Bus(+) inverter to 0V for the positive half-cycle, and 0V to Bus(-) for the negative half-cycle, instead of classic PWM switching that switches from Bus(+) to Bus(-) at any point in the cycle.

By switching in voltage jumps of half the magnitude, stresses and losses on the IGBTs are reduced, as is the current ripple in the magnetic elements. The total efficiency of the device in double conversion (fully protected loads) can reach a maximum of 97%.



Eco/Mode selection

Selectable operating mode where the loads are powered directly by the static bypass while it is within the acceptable voltage and frequency ranges.

Increased overall efficiency of the system up to 98%.

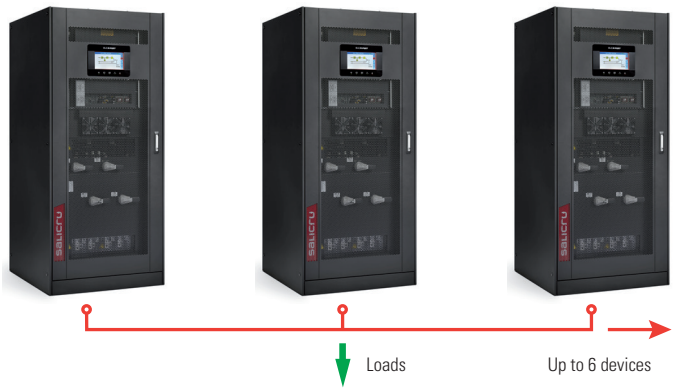
Availability

Paralleling of devices

Ability to parallel systems with up to 6 units (allowing up to 2.4 MW of power to be reached), both for redundant systems, and to increase power capacity.

*N+M redundant systems enable critical loads that should be protected with 'N' devices to have a redundancy of 'M' devices to replace the possible failure of any device, without compromising power supply continuity. Example: a '2+1' **SLC X-PERT** 200 kVA parallel redundant system makes it possible to power a load of up to 400 kVA, which is tolerant to the failure of one of these 3 UPSs, without the need to transfer to static bypass.*

In other cases, the need to parallel devices may be due to increased load, for which it will be possible to add a device(s) to an existing system to increase power capacity.



Paralleling 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.

Increased versatility of the solution, achieving greater adaptability to evolving environments.

Redundant internal power supply

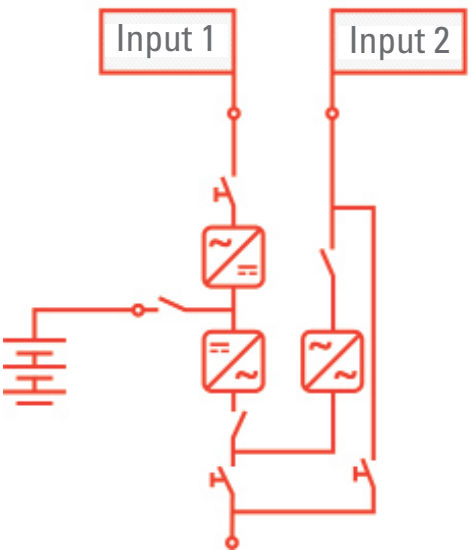
The device has a redundant power supply for control and the static bypass switch. In the event of the failure of the main power supply, the redundant power source keeps the microprocessor of the control panel powered and excitations necessary to maintain the static bypass connected to the output.

Ensure the continuity of power even in the event of failure of the device itself, providing maximum availability.

Dual input

Rectifier and static bypass input power supply separated by default (optional common input).

By feeding the device through two separate lines, the reliability of the system is increased, since the failure of one of the 2 lines, allows the UPS to have at least one power source for the output (either double conversion or static bypass), in addition to the stored power source (batteries).



Very low TCO

Front maintenance

All electronic and electrical components that are susceptible to failure or require preventative maintenance are positioned to enable them to be replaced through the front of the device. For 200 kVA-400 kVA models, no free space on the sides is necessary and the device can be installed in front of a back wall. The cable entry is through the front-bottom of the device.

Enables other cabinets to be positioned totally adjacent to the device, resulting in a saving on floor space inside the room.

Transformerless technology

Transformerless architecture design with high power density.

Reduced dimensions and weight, resulting in a smaller storage footprint in the data centre, as well as lower heat losses, leading to reduced cooling needs.

Output power factor for full rated power (kVA=kW, PF=1)

The UPS is capable of supplying full rated power in the form of kW.

For modern loads with power factor correction, such as servers, it is not necessary to apply a UPS overdimension factor, resulting in lower TCO.

'Clean' power

Input power factor 1, low distortion of input current.

Helps to keep the power of the installation within the correct parameters; does not cause disturbances in devices that share power; current consumption adjusted to what is strictly necessary; cable dimensioning adjusted.

Battery-Care

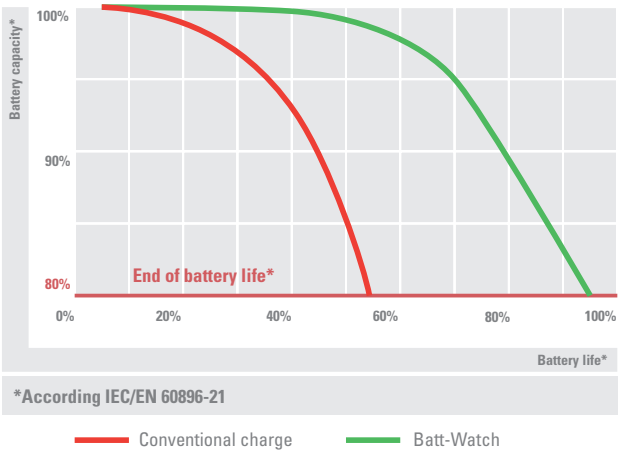
Batt-Watch

Intermittent battery charging; battery insulation with respect to voltage ripple caused by distorting loads; temperature compensation of float voltage; manual and automatic battery test.

Prolongation of battery life. Temperature compensation prevents excessive recharging and unnecessary overheating of the batteries.

Battery test to detect possible failures early and ensure availability.

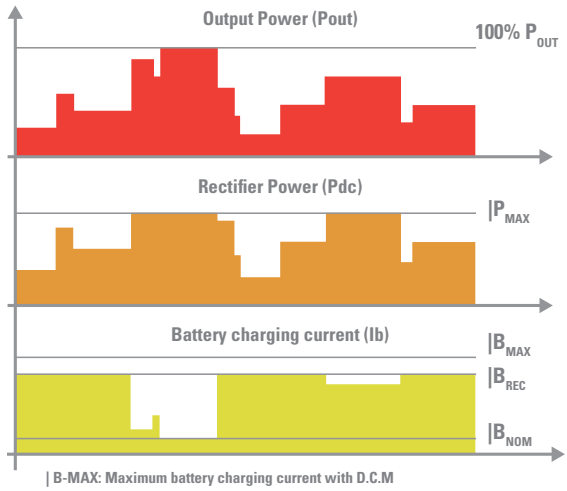
Batt-Watch vs.
Conventional battery charge



Dynamic charging mode

Surplus rectifier power, always prioritising power to the loads, can be used for the recharging of greater battery current.

Allows batteries to be recharged faster in cases of long backup, thereby increasing backup availability.



| B-MAX: Maximum battery charging current with D.C.M
| B-REC: Battery charging current setting
| B-NOM: Maximum battery charging current without D.C.M

Internal batteries

The standard backup of the 80 kVA device is located in the same device cabinet.

Allows the floor area occupied to be reduced, resulting in lower TCO.

Shared battery

Share the battery set between two UPSs connected in parallel.

Have available full autonomy even with one of the two UPSs out of service. Results in lower TCO. Savings on the total footprint of the system (space) and financial.

Compatible with all types of battery

Allows the charging of different battery types: sealed and open lead, gel, low maintenance and ultra-low maintenance NiCd, Li-Ion, etc. It also calculates backup in the event of prolonged power cuts.

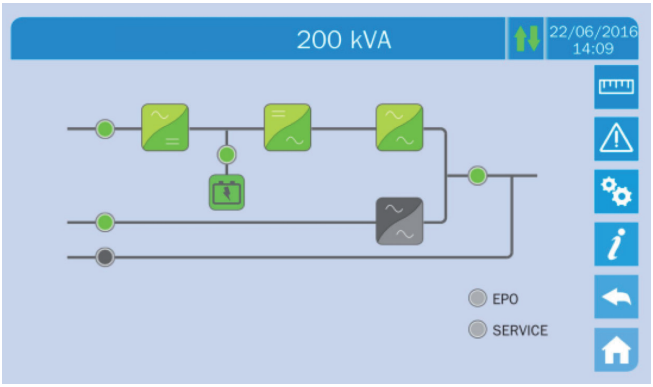
Compatibility of the device with any type of application related to backup, for example, daily cyclic backups.

Open to the world

10” touch screen

10”colour touch screen containing all information about the device’s measurements, alarm situations and operating states. With schematic diagram of operation. Choice of 8 languages.

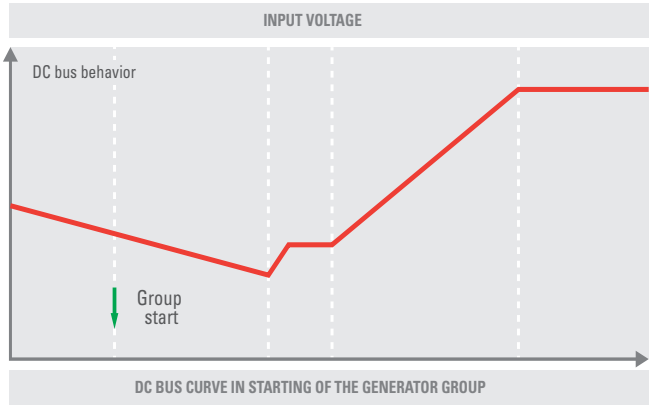
Ease of handling, complete information.

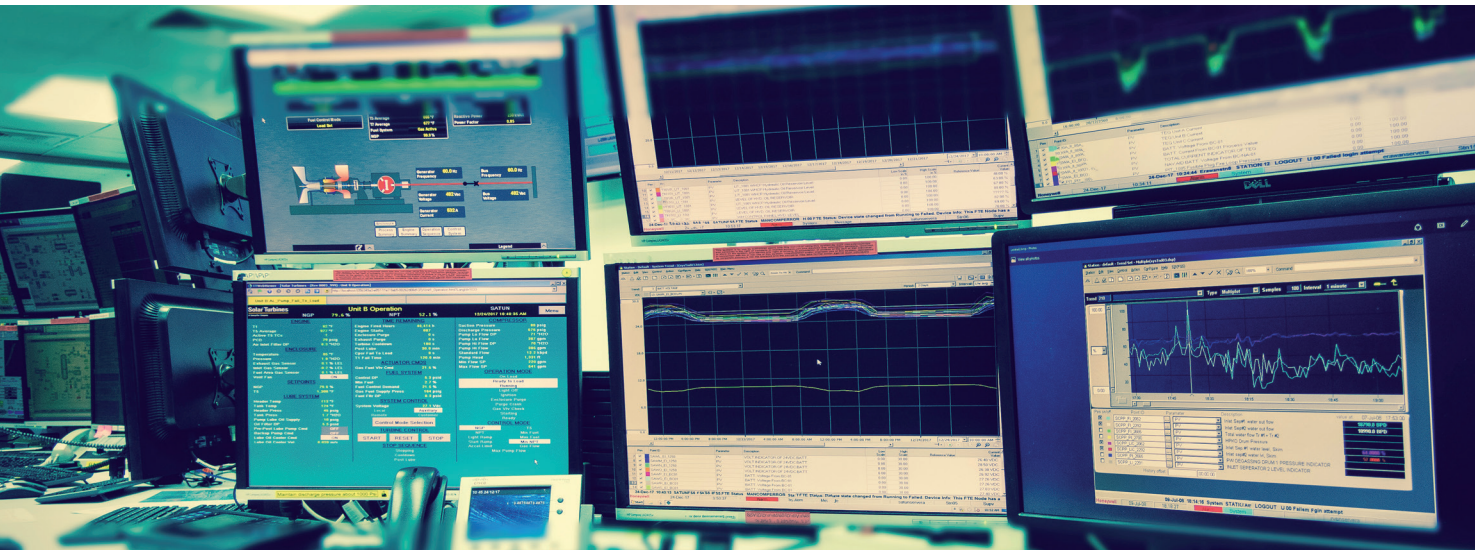


Compatibility with power generators

The UPS’s peak startup currents can be reduced with different settings: sequential startup of the two internal stages (thyristors and PFC), as well as sequential startup in parallel systems (configurable startup time), programmable soft startup time (walk-in time), deactivation of battery charging and delay of quick battery charging activation.

Reducing the peak startup current of the UPS makes it possible to decrease the size of the generator units that supply the devices in case of emergency. This results in lower TCO.





Optional extras

Parallel/redundant kit

Kit for installations with growth needs in power or redundancy in the power supply, enabling the interconnection of different units/systems.

Ethernet/SNMP adapter

SNMP adapter, which enables the device to be integrated into a computer network using an IP address. Includes adapter, CD containing programming software, configuration cable, Management Information Base (MIB) and user manual. Available in card or box format.

MODBUS protocol

Public and industrial communications protocol that allows the device to be controlled and monitored. With communication through an RS-485 port.

External manual bypass

External manual bypass to perform maintenance operations, electrically isolating the device. Make-before-break bypass.

Top cable entry

To facilitate suspended ceiling, cable tray or aerial electrical installations, the power cable entry is on the top of the device.

Isolation transformer

Electrical device that allows galvanic isolation between input and output, as well as adapting voltages.

Backfeed protection

Backfeed protection provides additional protection to the input in the event that the bypass thyristors suffer a short circuit. Use of the internal backfeed contactor in the bypass line provides security in fault situations occurring in the static bypass line and prevents power from rising in the input.

Battery modules

For backup requirements greater than standard, one or several battery modules connected to the UPS can be installed.

Common rectifier/bypass input

For installations where only one electricity connection is available to power the UPS, it is possible to connect both inputs (rectifier and bypass) using a cable jumper.

NIMBUS adapter for remote management

The NIMBUS adapter has two versions:

- SNMP adapter version, which enables the device to be integrated into a computer network using an IP address. Management Information Bases (MIB) are provided for correct integration into the system.

- Remote maintenance service through an Internet connection, making it possible to know the state of a complete system of devices at all times and to overcome possible device faults, and providing a constant global view of the installation and all kinds of graphics and statistics.

External output voltage synchronism.

The Load Sync option enables the output of the UPS to be synchronised when working in the inverter phase with an external power supply. Two versions available: Load Sync for single devices and Load Sync for parallel systems. Load Sync for single devices synchronises the inverters of two or more separate devices, while Load Sync for parallel systems performs the same function but between two UPS systems consisting of several devices in parallel.

Battery temperature sensor

The temperature sensor enables compensation of the float voltage of the batteries according to the temperature of where the batteries are installed, either in a separate room or in cabinets completely separate from the UPS.

Range

MODEL	CODE	POWER (VA / W)	NO. CABINETS (UPS + BATT)	DIMENSIONS (D x W x H mm)	WEIGHT (Kg)	BATT DIMENSIONS (D x W x H mm)	BATT WEIGHT (Kg)
SLC-80-XPERT	695KA000010	80000/80000	1+0	940 × 560 × 1800	441	-	-
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 × 1975	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.

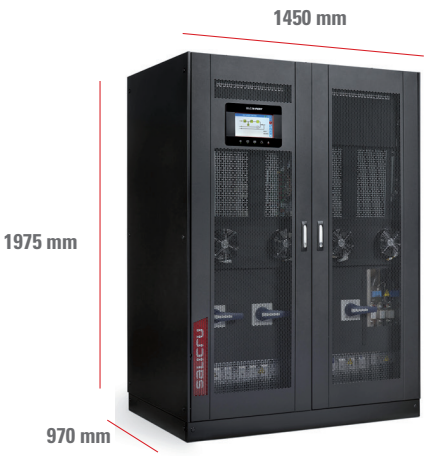
MODEL	CODE	POWER (VA / W)	NO. CABINETS (UPS + BATT)	DIMENSIONS (D x W x H mm)	WEIGHT (Kg)	BATT DIMENSIONS (D x W x H mm)	BATT WEIGHT (Kg)
SLC-250-XPERT	695KA000007	250000/250000	1+1	970 × 880 × 1975	850	695 × 2500 × 2285	2171
SLC-300-XPERT	695KA000008	300000/300000	1+1	970 × 880 × 1975	930	695 × 2500 × 2285	2879
SLC-400-XPERT	695KA000009	400000/400000	1+1	970 × 1450 × 1975	1000	695 × 2500 × 2285	3414

Batteries located in racks.
Nomenclature, dimensions and weights for devices with input voltage 3 x 400 V, output voltage 3 x 400 V and standard backup.

Dimensions

SLC-80÷160-XPERT

SLC-200÷300-XPERT



SLC-400-XPERT

Heat losses

MODEL	HEAT LOSSES AT 100% OF 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

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%
	Permissible overload	125% for 10 min. / 150% for 1 min.
	Crest factor	3 to 1
STATIC BYPASS	Activation type and 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 disappearance
	Frequency range	±10% (selectable)
	Voltage range	±10% (selectable)
	Input	Independent
	Frequency	50 / 60 Hz
	Permissible overload	1000% for 1 cycle
BATTERY	Battery type	Lead acid, sealed, maintenance free(1)
	Type of charge	Type of IU charge (DIN 41773)
COMMUNICATION	Ports	RS-232, USB
	LCD	10” touch screen
GENERAL	Operating temperature	0 ÷ +40°C
	Relative humidity	95% non-condensing
	Maximum operating altitude	2400 masl (2)
	Acoustic noise at 1 metre	<60 dB up to 160 kVA; <65 dB up to 300 kVA; <72 dB up to 400 kVA
STANDARDS	Safety	EN-62040-1-2; EN-60950-1
	Electromagnetic compatibility (EMC)	EN-62040-2
	Operation	EN62040-3 (VFI-SS-111)
	Quality and Environmental Management	ISO 9001 and ISO 14001

(1) Ni-Cd, Li-Ion and other types of battery on request.
(2) Power degradation for higher altitudes up to a maximum of 5,000 masl.

Applications

In today's world, information and the technologies and systems associated with it have high strategic value, but they also have one thing in common: they are all dependent on a high-quality, stable power supply to ensure uninterrupted enjoyment of the benefits they offer. To make this possible, Salicru has the most optimum solutions to ensure its integrity and maximum protection at all times in the different critical sectors of society:

Data centres

The cost of critical elements in data availability (hosting, housing, parcel delivery, airline reservations, etc.) and the cost per hour of power failures are currently at astronomical levels.

IT networks

Information is one of the most important assets for any kind of company. Interruption in the availability of information or, in the worst case, absolute loss, can mean high financial costs in terms of system downtime or recovery. Also noteworthy is that damage caused by power failures is much greater and more extensive than that caused by computer viruses.

Industrial processes

Electrically complicated environments, such as electrical substations or difficult (reactive) loads in many production processes, are just some of the applications that require the added plus of electrical backup and the necessary flexibility to adapt to every circumstance.

Infrastructures

Hospitals: Whose needs range from the protection of all delicate life support machines in ICUs and operating theatres, through testing equipment in laboratories, to ensuring HVAC and emergency lighting.
Airports: Where all flight, control tower and check-in management processes must ensure fail-safe operation and safeguarding against unforeseen circumstances.

Tunnels: Mostly illuminated day and night, properly signposted and ventilated, they must be supported by a first-order system that can deal with any unforeseen event.

Telecommunications

The great rise of telecommunications companies has done nothing but emphasise the need to prevent, by all means possible, power outages that can cut off communication with their subscribers. It is therefore vital to ensure power supply through the management of long backups that can provide coverage during systematic outages due to mains upgrading or maintenance.

Financial services

The online and global operability of financial transactions must have a continuous backup support that ensures uninterrupted operation in all areas (bank branches, ATMs, payment authorisation systems via cards, transactions, continuous listing, etc.), making the electricity supply one of the key aspects to consider in order to achieve this end.

Technical service

Comprehensive service available to customers

The day-to-day running of your business must not be allowed to be interrupted by an incident in your uninterruptible power supply (UPS). **Salicru** puts at your disposal its Technical Service & Support (TSS) department, with its extensive network of qualified technicians who can provide assistance in the event of any eventuality or incident with your device, regardless of location, day or time.

Our goal is your peace of mind and satisfaction, providing you with the reassurance that Salicru will resolve any issues that may arise. A business's productivity and management must never be affected by a failure. Trust us to extend the mean time between failures (MTBF) of your devices and reduce the mean time to repair (MTTR) in the event of a breakdown.

5 good reasons to trust in our service

- Experience of more than 50 years, as a manufacturer of prestige, offering the highest quality of service.
- First-class, fast and efficient technical support capable of carrying out any technical intervention on your device, wherever you are.
- A wide range of maintenance and remote maintenance contracts, designed to meet the technical requirements of your systems according to your needs.
- Ongoing training that will help you to optimise the operation of your systems, recognise situations of potential risk and overcome any setbacks that may arise.
- Checking and monitoring your facility in order to ensure the best results and prolong the life of your devices.

Services

Advisory services and studies:
- Facility energy audits.
- Harmonics study.
- Pre-sales support.
- Device renewal studies.

Technical support:
- Telephone technical support.
- Startup.
- Preventative actions.
- Corrective actions.
- Change of batteries.

Services:
- Maintenance contracts.
- Remote maintenance contracts.
- Communication and device management systems.
- Control, management and monitoring of batteries.
- Training courses.
- Electrical installations.

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