

## **SLC ELITE and SLC ELITE MAX series**



**Uninterruptible Power  
Supply UPS.  
From 60 to 300 kVA.**



# SLC ELITE / SLC ELITE MAX series

## The experience of a great manufacturer

Along the last four decades, **SALICRU** has bet for the permanent investment in strategic areas like R&D or Proximity and Service to the client. The extended product range 'designed to cover a lot of applications' has been and is the benefit of this effort, the know-how or the manufacturing quality together with the leadership for new products, or a service and a technical support of first class, everything always made to provide the best quality in the electric power supply.

The new **SLC ELITE** and **SLC ELITE MAX** series join the last technology advances to protect your most sensitive devices.

## More than 500000 equipments endorse us

This figure was reached the last year and it means the quality and innovation of the manufactured product, which becomes the perfect complement for critical applications with great availability.

## Ready for the challenge

The new **SLC ELITE** and **SLC ELITE MAX** series, on-line double conversion with THF technology (Transformerless High Frequency), with power rate range between 60 and 300 kVAs, are positioned in the top of the **SALICRU** UPS range and they are one step more in protection and quality of the three phase power supply of high efficiency.

### **Energy of high quality and availability:**

For the effective protection of the current critical loads, either Data Process Centre, telecommunication facilities or industrial process complexes, it is always essential to have the energy available and with high quality, because the consequences of an electric mains fault in these applications are always serious and with unforeseeable reaching.



SLC ELITE

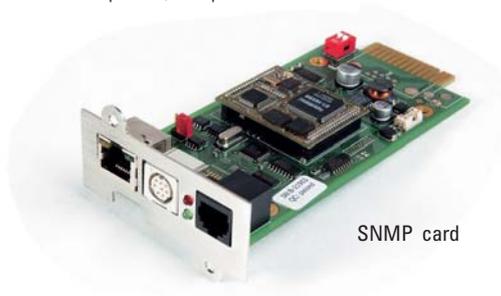


SLC ELITE MAX



**SALICRU**, aware of this reality, endows to its new high power product range with the required features to guarantee these quality performances.

- On-line double conversion operating with possibility of parallel connection.
- THF inverter technology.
- Digital control through programmable logic.
- Independent voltage regulation per phase.
- Static and maintenance bypass, as standard in all the equipments.
- RS-232, RS-485, AS-400 communication ports and automatic closing files.
- SNMP environment integration.
- Redundant and parallel version up to 8 equipments.
- Intelligent battery charging through the Batt-Watch control.
- Permissible overload of 125% (10')
- User interface through alphanumeric LCD programmable to several languages.
- New heat dissipation system that consists in the circulation of high efficiency transport fluid (**SLC ELITE MAX** series).
- Input power factor > 0,95.
- Excellent power / footprint ratio.



#### Flexibility:

A really flexible system has the capacity to be adapted to the necessary and unavoidable changes of the future: more power requirement, critical loads changing, electric mains that modify its parameters, etc. The modularity, parallel capacity up to 8 equipments, available autonomies or options of the new **SLC ELITE** and **SLC ELITE MAX** series facilitates this adaptation to its environment.

#### Operability:

The responsables of their exploitation will appreciate this virtue in the moment to face the equipment through its digital Control of programmable logic (PLD) or its ergonomic and intuitive alphanumeric and programmable LCD panel.

#### Low cost:

High efficiency, due to its high level design, the suitable integration with the installation environment or functions like ECO-MODE allow reducing the never worthless exploitation costs.

#### Reliability:

Anything of the above mentioned has special relevance without the essential reliability and tolerance to the failure.

The redundant architecture with tolerance to the faults of the new **SLC ELITE** and **SLC ELITE MAX** series contributes in a decisive way to get this end.

### We also manufacture

As professionals in safe power supply into a lot of applications, **SALICRU** also has:

- Line Interactive UPSs from 400 to 3000 VA.
- Single phase on-line UPSs from 700 to 40 kVA.
- Three phase on-line UPSs from 5 kVA.
- Rectifiers-chargers and switch mode power supplies from 300 W to 170 kW.
- Inverters from 500 VA to 20 kVA.
- Static and servomotor stabilisers from 300 VA to 1500 kVA.
- Light flow dimmer stabilizers from 3,5 to 120 kVA.

### Proximity and capacity

With headquarters in Barcelona and 16 Delegations distributed around all the national country, **SALICRU** guarantees a first class proximity to the client. Besides **SALICRU** is also present, through its branches and dealers, in more than 40 countries.

# SLC ELITE / SLC ELITE MAX series

## Distinctive specifications

### HIGH QUALITY PERFORMANCES

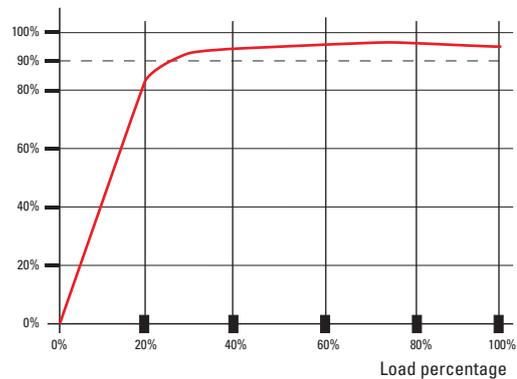
The new **SLC ELITE** and **ELITE MAX** series benefits from the last advances and developments in the power electronic field, becoming them in equipments with high quality performances ready to supply a voltage free of any electric perturbation.

- **Constant output voltage stabilization, with very low distortion (THDv <2%) and high accuracy ( $\pm 1\%$ ):** rebound in a better operating and long life of the connected loads.
- **Pure performance:** On-line double conversion with PLD control, walk-in or soft start rectifier, wide input range that means a smaller use of the battery, high overload capacity, etc.
- **High efficiency:** Higher than 95% thanks to use of the Fluid-Cooling refrigeration<sup>(1)</sup> that means an important energy consumption saving.
- **HarmonicLess:** Low harmonic re-injection rate: THDi lower than 5%. It will avoid polluting, from UPS upstream, the electrical mains. It means to save in cable and protection sizing.
- **Generator compatibility:** It is completely essential because they are the energy power supplies during blackouts and breaks of long duration. The soft start up of the walk-in rectifier or its high input power factor contributes in a decisive way to the mentioned compatibility.

· **Full transformerless:** Up to 300 kVA.

· **Parallel kit:** included as standard.

Efficiency



120 kVA SLC ELITE UPS efficiency

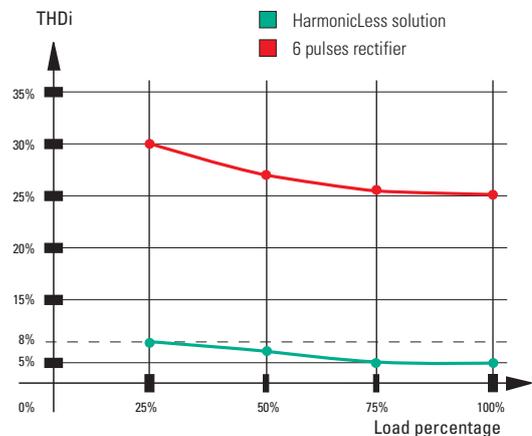
Euros



Estimated saving with Fluid-Cooling= 2600 €/year

Period: 1 year    kWh price: 0,08 €    Power: 240 kW

THDi



Input current harmonic distortion

(1) SLC ELITE MAX series



Battery cabinet

## HIGH AVAILABILITY OF THE ENERGY

The professional and critical nature of the loads to feed in Telecommunication Data Centers or Industrial Plants, require a constant availability of the energy in order to make front to both sudden supply breaks and fluctuations in the electrical mains. This is why, the battery of the system takes a decisive role to assure this energy, needing a powerful management of itself: Batt-Watch controls, recharges quickly, supervises and takes extreme cares.

- **Batt-Watch recharges quickly:** With the purpose of having the battery ready after a discharge as soon as possible, it is necessary to reduce the recharging time to the shortest. Thanks to Batt-Watch, this time is reduced to 4 hours (80% of the capacity).
- **Batt-Watch takes care of the batteries:** The always critical end of autonomy voltage is fixed to those values that guarantee a higher battery life expectancy and maximum autonomy to the loads. The charging according to the ambient temperature, the connected loads or the battery type, are other parameters that the system keeps in mind when manage them, as well.
- **Batt-Watch always supervises:** Everything would only be possible with a careful management of the battery and all the electric parameters involved in their activity.
- **10 years desing lifetime batteries as standard**



· Design lifetime >10 years



· Maintenance free



· Valve Regulated Lead Acid

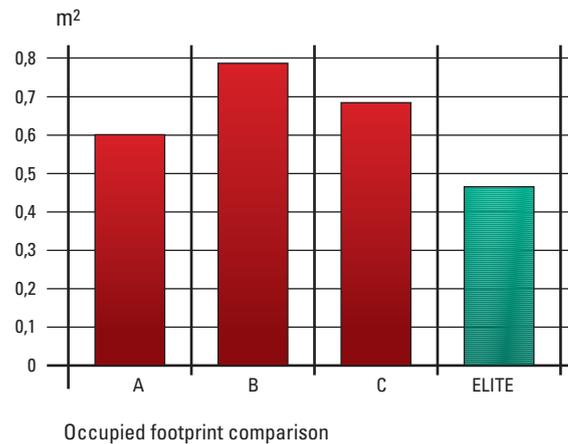


# SLC ELITE / SLC ELITE MAX series

## EASY INSTALLATION AND LOCATION

The **SLC ELITE** and **SLC ELITE MAX** series make easy their installation and occupy a small footprint regarding to their power rate, which means lower costs.

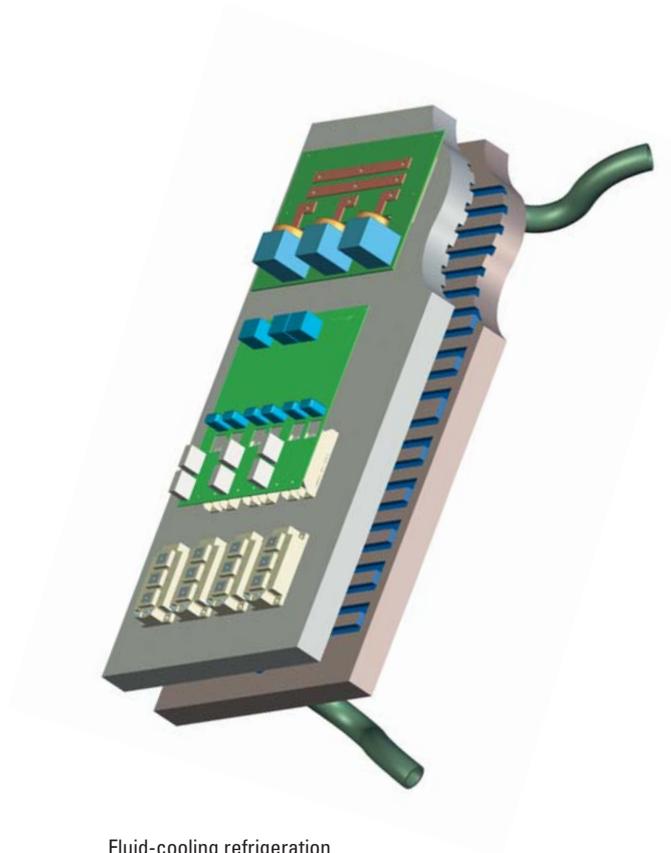
- **Power factor close to the unity.** It contributes to make easier the installation, because it requires smaller sizes of cables and protections.
- **The best power/footprint ratio of the market,** become them into the most compact equipment of their category.
- **Lower weight,** thanks to their THF technology.
- **Low acoustic noise < 65dB,** which make them suitable for silent environments like hospitals, offices, etc.



## LOW EXPLOITATION COSTS

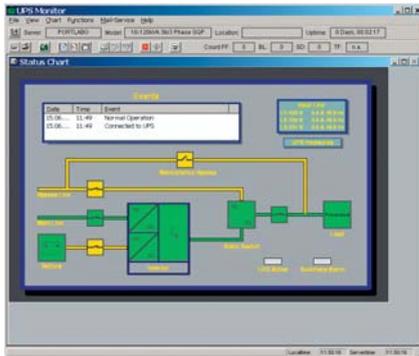
Achieved thanks to different performance keys:

- **High efficiency:**  
The advanced On-Line double conversion architecture with PLD control of the **SLC ELITE** and **SLC ELITE MAX** series, based on the use of IGBTs of last generation with low switching losses and the Fluid-Cooling refrigeration<sup>(1)</sup>, means to have an efficiency higher than the competition: > 90% starting from 25% of the connected loads only. As it doesn't consume big quantities of energy, it generates less heat losses.
- **ECO-MODE function as standard:**  
For those applications with less exigency, the ECO-MODE operating allows reaching efficiencies close to 100%, because the loads are direct fed from mains. In case of mains fault, the system shifts to inverter mode.
- **Lower costs:**  
Thanks to the special configuration of the power semiconductors (IGBTs), which redound in a lower replacement cost in case of damaging.

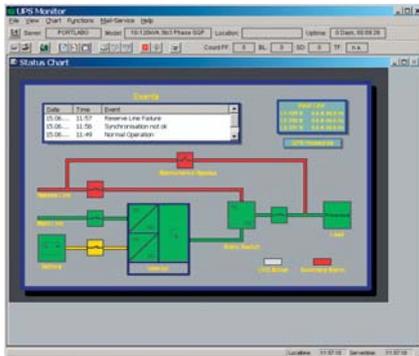


(1) SLC ELITE MAX series

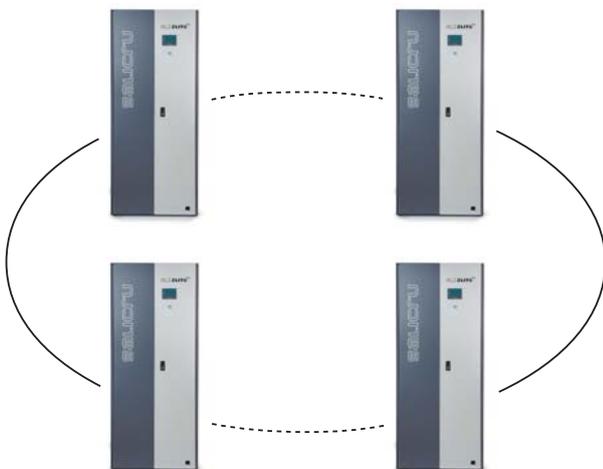




Normal operating



Bypass operating



Ring topology

## COMMUNICATIONS

- RS-232 and AS-400 as standard.
- Monitoring and managing software.
- Dry contacts.
- Remote panel.

## FLEXIBILITY

Parallel capacity up to 8 units, which allows reaching power rates up to 2400kVA.

Selectable bypass range: starting from  $\pm 10\%$  (preset value) to  $\pm 20\%$ .

No current during the start up thanks to the walk-in rectifier.

## RELIABILITY

Anything serves to have the best equipment without a reliability out of failures, which makes the needed tranquillity to the clients. This is why the **SLC ELITE** and **SLC ELITE MAX** series have been designed to have a great tolerance to the failure.

### · Limit situations operating:

No power de-rating for relative humidity up to 95% and operating temperatures between  $0^{\circ}$  and  $+ 40^{\circ}$  C, thanks to the heat refrigeration of transport fluid of high efficiency (Fluid-Cooling – **SLC ELITE MAX**), it makes these series the reference to operate in hostile environments.

### · Architecture with fault tolerance:

The power supply to the client is guaranteed, although there is any malfunctioning.

### · Static and manual bypass:

They assure the power supply to the loads under any fault or overload situation.

### · Ring topology for redundant configurations:

This topology shows evident reliability advantages in front of the conventional systems, because the ring, made by all the UPSs, can be broken until twice and the system stills feeds the loads. The first break in the ring, the system will continue working without any change. If a second break happens, the system will react by transferring the load to Bypass.

# SLC ELITE / SLC ELITE MAX series

## COMPATIBILITY AND ADAPTABILITY TO THE ENVIRONMENT

Compatibility and adaptability to the environment with the electrical mains, loads, generators, battery type, etc.

· **Rectifier mains without neutral:**

The **SLC ELITE** and **SLC ELITE MAX** series do not require isolation transformer when the equipments have to be supplied from two lines.

· **High capacity operation with reactive loads:**

Up to 0,8, as well with lagging loads as leading ones.

· **Generators**

Excellent input frequency range, from 40 to 70Hz, low THDi and high power factor, these parameters make these equipments the suitable ones to operate with generators.

· **Batteries:**

The **SLC ELITE** and **SLC ELITE MAX** series are ready to be adapted to any type of battery: Pb-Ca, Ni-Cd, etc.

## Available Options

### HarmonicLess solutions

Several possibilities to reduce the harmonic re-injection to values below 5%.

### Extended autonomies

#### Isolation transformer

Commonly used to have galvanic isolation between input/output and neutral creation.

#### External manual bypass

It will facilitate the electrical isolation of the UPS, for maintenance works, repairing, etc.

#### SNMP

Acronym of Single Network Management Protocol.

It is a tool very used to communicate it with a Local Ethernet Network.

#### MODBUS communication protocol

### SICRES

Telemanagement platform via Internet whose functions are to supervise all the parameters, UPS statuses information and detection of eventual anomalies with automatic warning to the maintenance service.

### Monitoring and management software

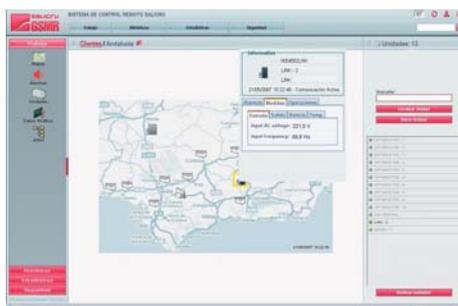
The interactive communication software allows communicating the UPS with a PC or IT network, which have Windows, Novell and Linux as operating systems.

### 2nd RS-232 port

This card provides dry contacts, which shows the UPS statuses and allows controlling any kind of device.

### Remote panel

Allows displaying the UPS operating mode, the alarms through LEDs and activating an alarm remotely.



SICRES telemanagement

# Technical specifications

## SLC ELITE

## SLC ELITE MAX

### Technology

On-line, double conversion, PLD control

### Input

Voltage	3 x 380 / 400 / 415 V (3P + N)	
Voltage range	3 x 330 ÷ 480 + N	3 x 320 ÷ 480 + N
Frequency	40 ÷ 70 Hz	
Rectifier	walk-in type	
Power factor	> 0,99 <sup>(1)</sup>	> 0,96
Harmonic distortion (THDi)	< 5% <sup>(1)</sup>	

### Output

Voltage	3 x 380 / 400 / 415 V (3P + N)	
Accuracy at steady state	± 1%	
at dynamic state	± 4% <sup>(2)</sup>	± 5% <sup>(3)</sup>
Synchronised frequency	± 1%, ± 2%, ± 5% and ± 10% selctable	
Frequency on free running	± 0'005%	± 0'0001%
Maximum slew rate	± 1 Hz/s	
Efficiency	> 92%	> 95%
Total harmonic distortion (THDv)	< 2%	
Response time	50 ms	
Permissible overload 125%	10 minutes	
150%	5 seconds	Immediate

### Static Bypass

Type and activation criteria	Solid state, PLD control	
Transfer time	Nil	
Voltage	3 x 380 / 400 / 415 V (3P + N)	
Frequency	50 or 60 Hz	
Re-transference	Automatic by alarm situation disappearing	
Permissible overload	1000% for 100 ms	
Transfer of Bypass	Immediate, for overloads higher than 150%	

### Manual Bypass

Transference type	Manual	
Voltage	3 x 380 / 400 / 415 V (3P + N)	
Frequency	50 or 60 Hz	

### Batteries

Type	Pb-Ca, maintenance free, gas recombination	
Recharging time	From end of autonomy to 80% of the capacity, 4 hours	
Protection	Against overvoltages, under voltages and alternating current	
Charging voltage control	Batt-Watch control	

### Communication

RS-232 and AS-400 ports as standard

### Generals

Operating temperature	0°C ÷ + 40°C	
Relative humidity	Up to 95% non-condensing	
Operating altitude	2400 m.a.s.l.	

### Standards

Safety	EN-62040 -1-2 / EN-60950-1	
Electromagnetic compatibility (EMC)	EN-62040-2	
Operating	VFI in accordance with EN-62040-3	
Marking	CE	
Manufacturing	ISO - 9001 TÜV	

### Dimensions (mm)

UPS	730 x 710 x 1800	800 x 1240 x 1800
Batteries (standard autonomies)	830 x 790 x 1800	830 x 1400 <sup>(4)</sup> x 1800

(1) With HarmonicLess option

(2) For 50% load steps

(3) For 100% load steps

(4) 790 mm for 160 kVA SLC ELITE MAX

# SLC ELITE / SLC ELITE MAX series

## Applications

### Data Centers

The technological advances and the current business of information centers suit in calling them “data centers of critical mission”, since they are taking conscience that the data are their most powerful value. So it means to make big efforts to assure their availability, safety and redundancy.

The critical elements for data availability (credit card authorizations, package shipping, airlines booking, wireless telephones activation, etc.) and the cost per hour of mains faults are located at astronomical levels, so far.

The companies that, as **SALICRU**, give goods and equipments for data centers are sensitive to this fact and they make big efforts to offer viable solutions to this problem. The parallel and redundancy capacities of the new **SLC ELITE** and **SLC ELITE MAX** series respond with effectiveness to these requests.

### Industrial processes

If we would have to give an appropriate epithet to the energy necessities of many industrial processes, it would be very possible that the idea “energy safe in difficult environments” were the first one that would come to our mind.

Environments electrically complicated, like power substations or difficult loads (inductance ones) in many chemical processes, are only some applications that require an important bonus of the electrical back up equipments, as well as the needed flexibility of adaptation to each case. **SALICRU**, thanks to his extensive industrial vocation, is used to study and implement suitable solutions for each application.

### Telecommunications

The great peak of the Telecommunication companies has not made another thing that to impact in the necessity of avoiding mains faults that can break the communication within their subscribers. Therefore, it is vital to guarantee the power supply by managing long autonomies, which are able to back up during the systematic mains faults or maintenance. **SALICRU** cooperates to this respect with powerful chargers that allow recharging the batteries quickly, multiple solutions with telemanagement level and global support 7x24.

### INFRASTRUCTURES

#### · Hospitals

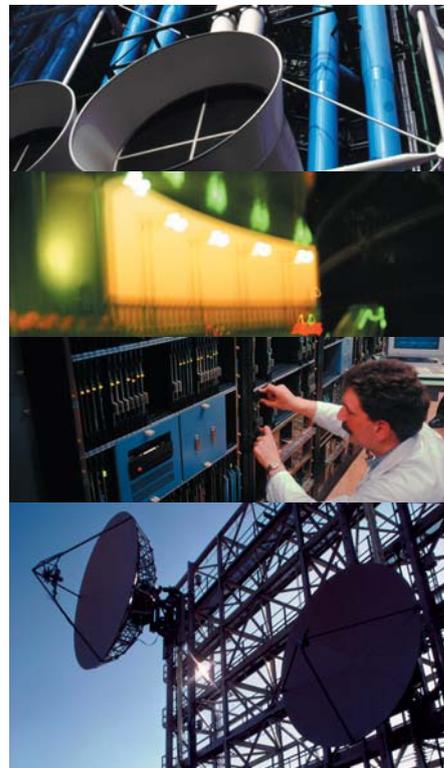
Whose needs go from the protection of all the delicate vital instruments in ICUs, CCUs, operating theatres and analysis and laboratory equipments, until to keep running the air conditioning or the emergency lights.

#### · Airports

Where the complete flight processes management, control towers or check in should guarantee an operation free from errors and accidents.

#### · Tunnels

Most of them night and day illuminated, properly signalled and cooled, this is why they have to be supported by a system of first magnitude that can make front to any mains fluctuation.



## Service

**SALICRU**, essentially, understands as service the proximity to the client. Physical proximity through 16 Delegations and STS (Service and Technical Support) distributed along the national geography.

Also proximity through all the commercial and technician staff of our headquarters, which advise, inform, make quotes that are adapted to the client needs and technical studies of customer's installation, coordination of the street staff and programmed interventions.

### · Start up

All the equipments of **SLC ELITE** and **SLC ELITE MAX** have included the start up. The technicians of the authorised services of **SALICRU** go to the installation place to check the wiring, to start up the equipment and to make a training course to the end users.

### · Maintenance contracts

**SALICRU** has a wide offer with multiple modalities that adapt them to each particular case: preventive or corrective maintenances, with different attention schedules (up to 7x24) and with different covering options (manpower, spare parts, batteries,...)

## e-Maintenance

Remote monitoring service, called **SICRES**, ready to give a customized treatment to the client. This telemanagement system with permanent supervision 7x24, by the Technical Service of **SALICRU**, detects any anomaly in the same moment that it happens, so it allows reacting immediately by notifying it to the client and acting in consequence.

### · Telemaintenance center

- Supervision of all parameters.
- UPS statuses information.
- Detection of unexpected anomalies and alarm sending.

## Global Support

### · Global Support

**SALICRU** puts to the client's disposal a technical advising service, so much before-sales as after-sales, able to make viability studies, simulations, adapted special offers, study and modification of installations, etc.

### · Training

To train the end-users in the knowledge of operation the analysis of the equipments, **SALICRU** proposes training courses in handling and repairing our products. The courses are made, either in the client's facilities or in the training center of **SALICRU**, by the Service and Technical Support department (S.T.S.).



# SALICRU

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## DELEGATIONS, SERVICE and TECHNICAL SUPPORT (STS)

MADRID	MURCIA
BARCELONA	PALMA DE MALLORCA
BADAJOS	PAMPLONA
BILBAO	SAN SEBASTIAN
GIJON	SANTA CRUZ DE TENERIFE
LA CORUÑA	SEVILLE
LAS PALMAS DE GRAN CANARIA	VALENCIA
MALAGA	ZARAGOZA

## BRANCHES

FRANCE	CHINA
PORTUGAL	SINGAPORE
HUNGARY	MEXICO

## REST OF WORLD

UNITED KINGDOM	EMIRATES ARABS UNITED
DENMARK	JORDAN
GREECE	KUWAIT
RUSSIA	TUNISIA
CHILE	INDONESIA
COLOMBIA	MALAYSIA
URUGUAY	AUSTRALIA
SAUDI ARABIA	

## Product Range

Uninterruptible Power Supplies (UPS)  
Voltage stabilizers and Power Line conditioners  
Switch Mode Power Supplies  
Industrial Power Supplies  
Light Flow dimmer-stabilizers (ILUEST)  
Static inverters  
Continuous regulation autotransformers



## Note:

Salicru can offer other power electronic solutions depending on the application or technical specifications.

Data liable to changes without prior notice.

