



SLC CUBE3+

Uninterruptible Power Supplies (UPS) from 7.5 to 200 kVA

salicru

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Energy efficiency with superior electrical protection

Salicru's **SLC CUBE3+** series is an Uninterruptible Power Supplies (UPS) range featuring high-performance, On-line double conversion technology (VFI) that provides a reliable, high-quality power supply while achieving significant energy and financial savings in terms of installation and operating costs.

Particularly noteworthy is its unity input power factor (PF=1) and its extremely input current 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 electricity mains.

And regarding its output performance, particularly noteworthy is its power factor (PF=0.9), which provides optimum electrical protection to existing IT systems and low output voltage harmonic distortion (THDv down to below 0.5%), capable of protecting any type of linear

load (resistive, inductive or capacitive), non-linear load (electronic equipment, servers, etc.) or combinations of these. In addition, the efficiency achieved (up to 95% in On-line mode or 98.4% in Smart Eco-mode) produces significant energy consumption savings and reduces air conditioning needs.

To achieve a full optimum solution, **SLC CUBE3+** series devices provide maximum adaptability, including, 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 the footprint is minimal.

Performances

- On-line double conversion (VFI) technology with DSP control.
- Input power factor 1, for better performance.
- Very low input current harmonic distortion (THDi as low as <1.5%).⁽¹⁾
- Total flexibility in input/output voltage.⁽¹⁾
- Designed to withstand any type of load.
- Batt-Watch function for monitoring and battery care if required.
- High output power factor (PF=0.9).⁽²⁾
- Very low output voltage distortion rate (THDv even lower than 0.5%).
- 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 a critical installations.⁽⁴⁾
- Built with 80% recyclable materials.
- SLC Greenergy solution.

(1) Single/single, single/three and three/single phase 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.

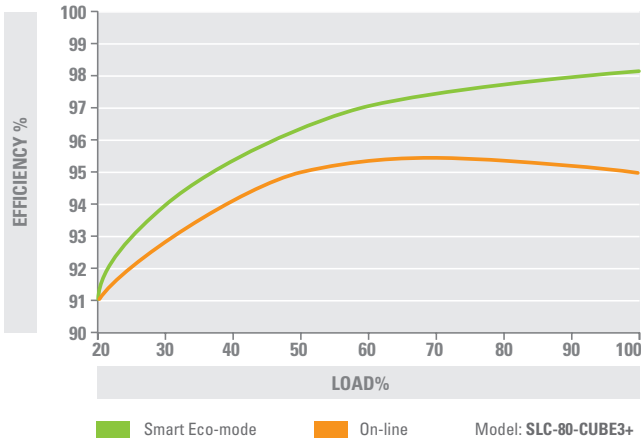


TCO - Total Cost of Ownership

Up to 95% efficiency in On-line double-conversion mode

The technology used enables maximum use of the energy consumed in any power range demanded.

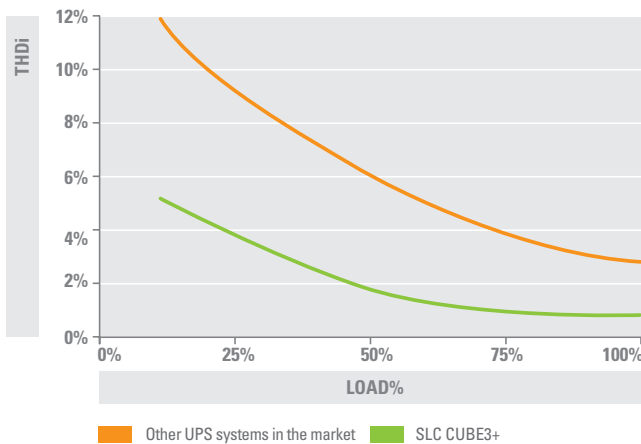
This contributes to significant savings in energy consumption and reduces the need for installation and air conditioning.



The lowest input current distortion THDi in the market

Input current distortion THDi < 1.5% at full load, and even THDi < 5% with only 10% load.

This prevents contamination of upstream mains supply, enables use of smaller power generators, cabling, protections, etc., and contributes to improving the quality of the electricity mains.



Smart Eco-mode with efficiency of up to 98.4%

Loads powered directly from the mains with the inverter in stand by and operating only if a power failure occurs.

This achieves significant energy savings and high system efficiency (up to 98.4%).

Compact design

Maximum power density in the smallest space, including, up to the 40 kVA model, backup batteries in the same cabinet.

Up to 60% space savings.



Unity input power factor

Unity power factor, independently of the load percentage (from 10% load).

This results in less reactive power consumption and reduces operating and installation costs.

Availability

Fourth generation trench gate IGBT technology

Fourth generation insulated-gate bipolar transistors (IGBTs) that allow higher switching frequencies with lower losses.

This reduces acoustic noise while increasing performance.

Control DSP (Digital Signal Processor)

This provides excellent computing power for complex digital control loops, which are responsible for high system performance.

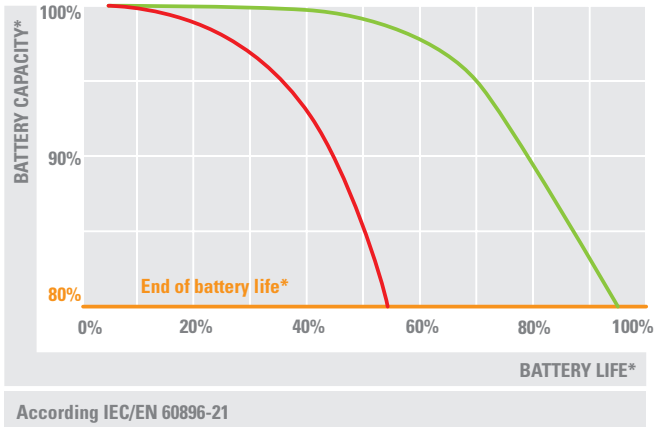
Excellent output current distribution in UPS connected in parallel and high reliability due to current control providing greater immunity.

Battery care and monitoring (Batt-Watch)

Improvement of battery charging functions and monitoring of essential parameters, such as the critical voltage at the end of backup and charging depending on the ambient temperature, connected loads or battery type.

This extends battery life, reduces maintenance costs and recharges batteries quickly.

Batt-Watch vs. Conventional battery charge

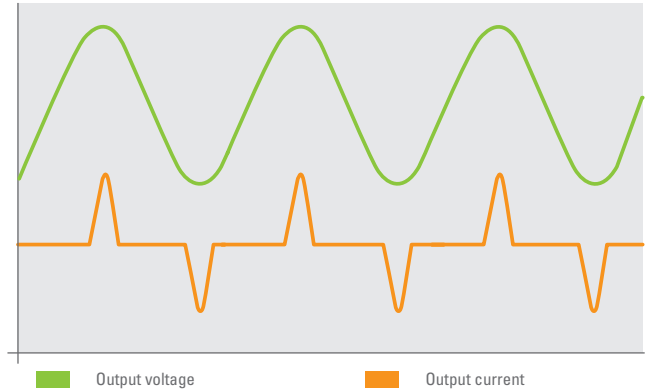


■ Conventional charge ■ Batt-Watch

Excellent THDv output distortion

THDv < 0.5 % at full linear load and THDv < 1.5 % with non-linear load. This provides a perfect sinusoidal supply voltage for high crest factor critical loads with a resultant improvement in functioning and greater longevity.

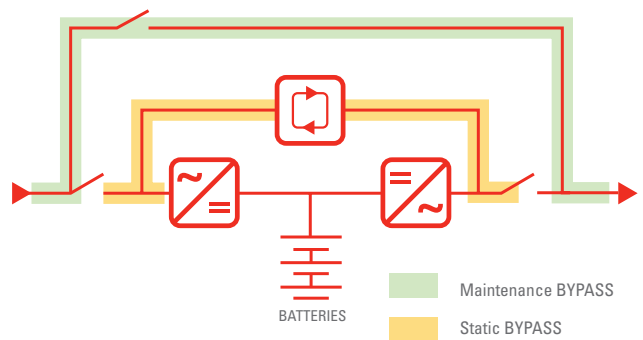
Fully flexible and adaptable to any work environment.



Static and maintenance bypass

Enabling loads to be transferred without interruption directly to the mains in the event of severe overload or for maintenance work.

This provides greater availability of service in abnormal situations (severe overload, short circuit, malfunction, etc.)

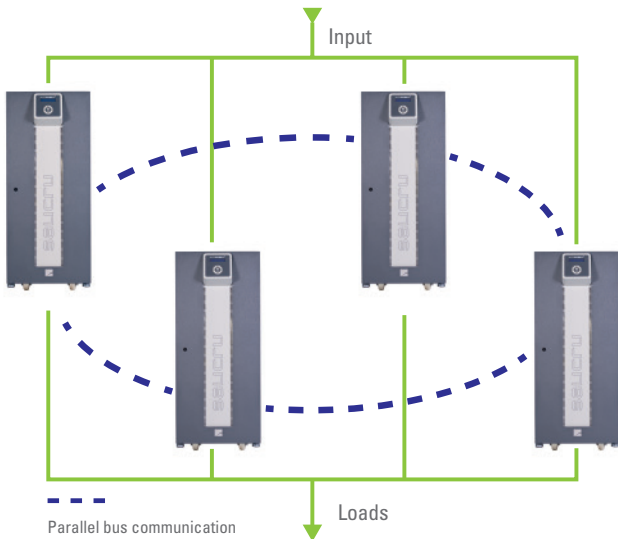


Flexibility and adaptability

Parallel-redundant configuration (N+1)

Designed to connect up to 4 UPS without additional hardware for installations with redundancy objectives and for power increases.

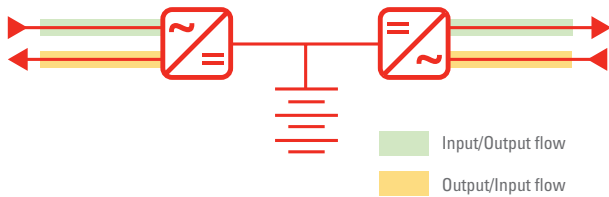
This provides the loads with greater safety and improves system reliability in critical installations.



Bidirectionality

Reversible power electronics platform, allowing bidirectional power flows between input / output or output / input.

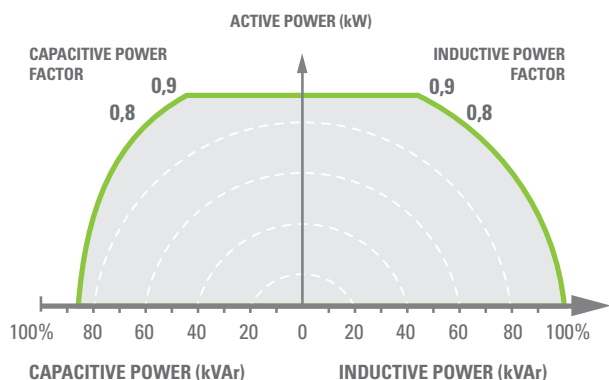
Perfect operation against regenerative loads, such as motors (upstream current generators).



Output power factor = 0,9

Optimum energy protection for existing IT equipment with ac-tive power supplies.

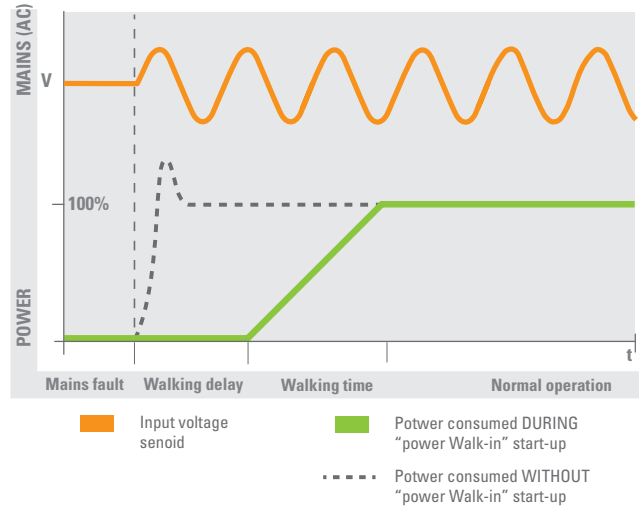
This provides a greater power protection capability and versatility for the type of loads to be protected.



Soft start for power walk-in rectifier

Progressive rectifier start-up based on a pre-set time when the UPS is in battery discharge and the mains is restored.

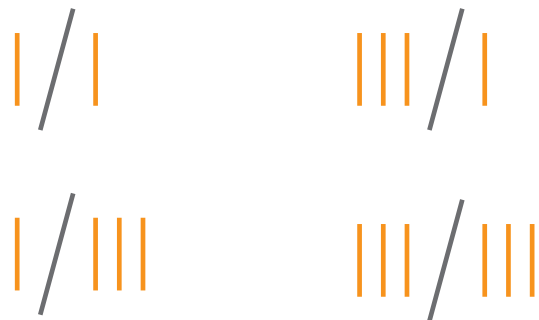
Greater compatibility with power generators.



Input/output configuration flexibility

All voltage input and output combinations (three/three, three/single, single/single, single/three)

Adaptable to electrical and load requirements



Wide range of options available

Extended backup, charger for Ni-Cd and gel batteries, external manual bypass, separate bypass line, humidity and temperature sensors, frequency converter, battery monitoring, common battery set for parallel systems, etc.

Customisation of the UPS according to the needs of each installation.

Easy installation and service

Incorporation of wheels

On models up to 120 kVA, the UPS systems are equipped with wheels as standard.

This makes the device easier to move when installing and during maintenance.

Front access for connections and operations

All electrical and communication connections and operations are carried out from the front of the device.

This facilitates operability, eliminating the need for side or rear access.



Management and communication

Backup calculation

Estimation of remaining backup time in the event of a prolonged mains voltage outage.

Valuable information for decision making in the event of lengthy power outages.

Extensive control and monitoring options

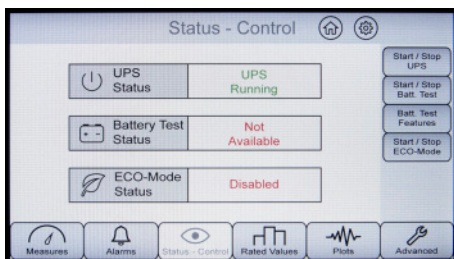
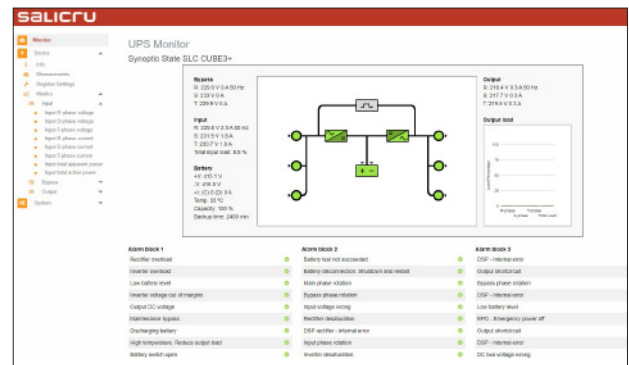
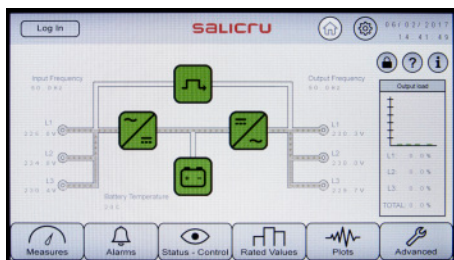
Touch screen 7 "color (standard from 80 kVA, optionally up to 60 kVA) and multiple communication options.

This creates multiple communication channels for efficient and intelligent management.

Communication software

Monitoring, management and shutdown software for closure files / applications, for Windows, Linux / Unix, Mac and virtualized.

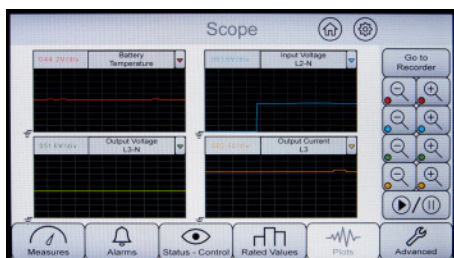
Integration of the team in the environment in which it operates.



Communications channels

The communication elements that **SLC CUBE3+** incorporate as standard make them completely autonomous systems that can report on the status of the system and enable it to carry out pre-set actions:

- Relay interface.
- RS-232/485 port.
- 1 x free slot.
- MODBUS/SEC protocol: To facilitate communication with network management systems.
- 2 x connectors for parallel connection: No need for additional hardware for parallel/redundant operation.



Looking after the environment

More than 80% recyclable materials

Once the UPS life cycle is completed, it is possible to recycle the majority of its components.

Environmentally friendly.

SLC Greenergy solution

A solution designed with criteria of maximum efficiency and energy savings.

Energy efficiency manifested as financial and CO₂ emission savings.

MODEL	HEAT LOSSES 100% load (kW)
SLC-7.5-CUBE3+	0.608
SLC-10-CUBE3+	0.810
SLC-15-CUBE3+	1.148
SLC-20-CUBE3+	1.440
SLC-30-CUBE3+	1.890
SLC-40-CUBE3+	2.340
SLC-50-CUBE3+	2.925
SLC-60-CUBE3+	3.240
SLC-80-CUBE3+	3.600
SLC-100-CUBE3+	4.950
SLC-120-CUBE3+	6.480
SLC-160-CUBE3+	7.200
SLC-200-CUBE3+	9.000



SLC Smart Solution

Designed under parameters of full integration and continuous adaptation to the environments in which it operates.

Greater adaptability to any operating environment.



Range

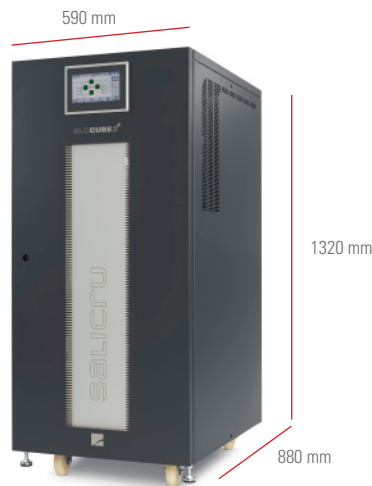
MODEL	CODE	POWER (VA / W)	N° CABINETS (UPS + BAT)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)	BAT DIMENSIONS (D × W × H mm)	BAT WEIGHT (Kg)
SLC-7,5-CUBE3+	681LA000339	7500 / 6750	1 + 0	770 × 450 × 1100	203	-	-
SLC-10-CUBE3+	681LA000340	10000 / 9000	1 + 0	770 × 450 × 1100	203	-	-
SLC-15-CUBE3+	681LA000341	15000 / 13500	1 + 0	770 × 450 × 1100	205	-	-
SLC-20-CUBE3+	681LA000342	20000 / 18000	1 + 0	770 × 450 × 1100	254	-	-
SLC-30-CUBE3+	681LB000006	30000 / 27000	1 + 0	770 × 450 × 1100	305	-	-
SLC-40-CUBE3+	681LB000137	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+

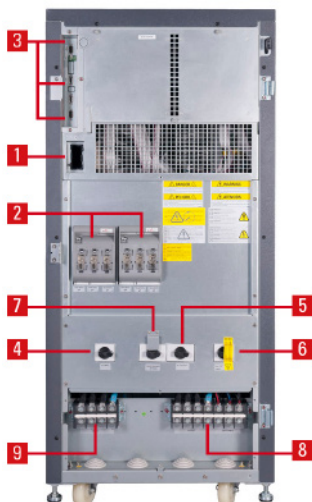


SLC-80÷120-CUBE3+



SLC-160÷200-CUBE3+

Connections



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 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
BYPASS	Type	Without interruption
STATIC BYPASS	Type and activation criteria	Solid state
	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	1x 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
	Maxium 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)
	Quality and Environmental Management	ISO 9001 & ISO 14001

(1) Up to 100 kVA.

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

(3) Power degradation for higher altitudes up to a maximum of 5000 masl.

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

Optionals

Extended backup times: For cases in which greater backup is required, additional battery cabinets are available.



Separate bypass line: For facilities with dual power supply, enabling the separation of inverter and bypass line power supplies.

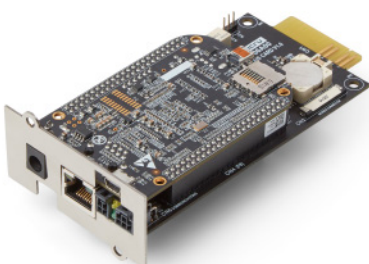
Backfeed protection: Provides additional protection to the input in the event that the bypass thyristors suffer a short circuit.



Temperature and humidity sensors.

1 x additional RS-232/485 serial port.

Nimbus / Ethernet / SNMP adapter: Ethernet adapter for the SNMP network management protocol to integrate the UPS into the IT network completely independently.



Isolation transformer and autotransformer: Electrical device that allows you to adapt the equipment to the voltage of the facility (autotransformer) or which has galvanic isolation between the input and output (isolation transformer).

External manual bypass board: Enables maintenance operations with the UPS fully disconnected.

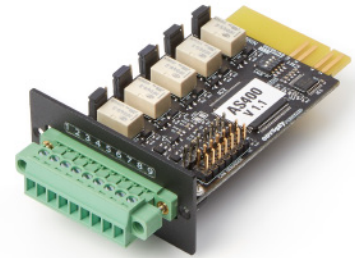


Parallel installation cable: Communications cable for simple or redundant parallel installations.



Tropicalised electronic cards: Treated against external agents such as condensation, humidity and marine environments.

Nimbus AS-400 extended relay card: Relay card.



Other levels of protection: Covers with levels of protection tailored to meet particular specifications.

Earthquake-proof feet: Covers with levels of protection tailored to meet particular specifications.

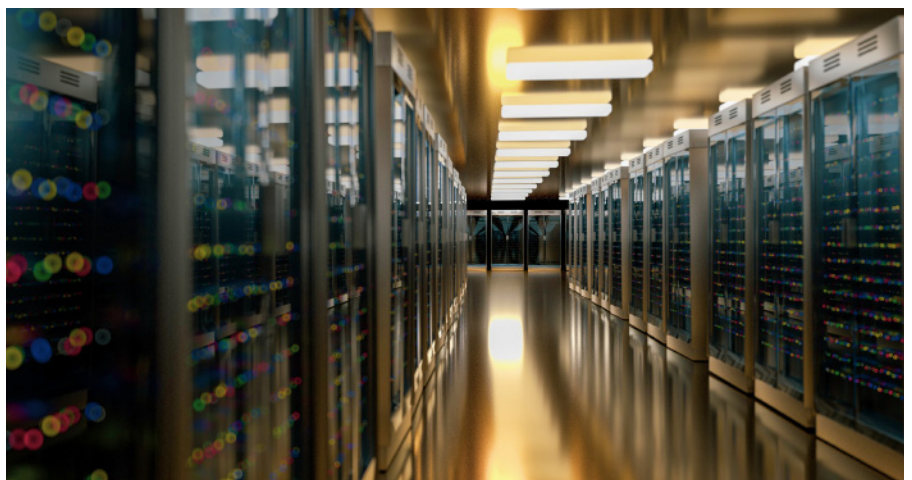
BACS II: Monitoring, regulation and alarm system for lead batteries.

Common battery set for parallel systems.

Dual-level charger for NiCd and gel batteries.

Batteries in rack: Specific mounting of batteries in racks.

Frequency converter: For 50 to 60 Hz or 60 to 50 Hz conversion.



TSS - Technical Support and Service

SALICRU puts at your disposal its **Technical Support & Service (TSS)** department with its extensive network of qualified technicians to provide support in the event of any eventuality or incident, regardless of location, day and time.

Start-up: Cabling checks, start-up and training course.

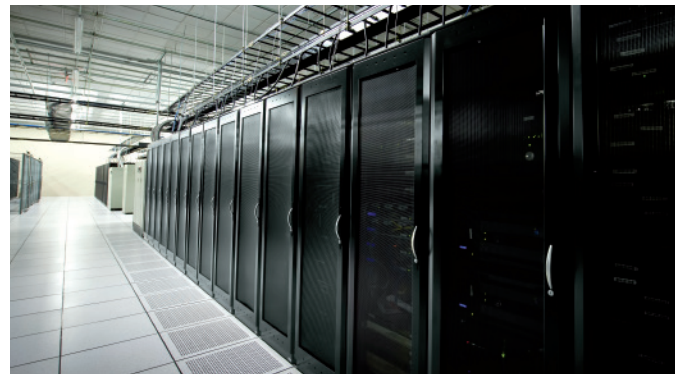
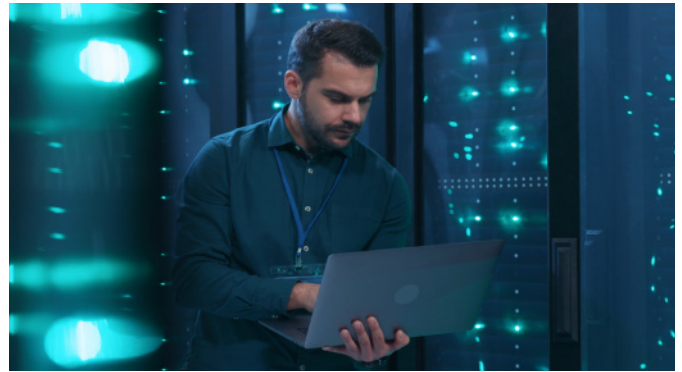
Telephone technical support: Technical support hotline.

Preventative/corrective intervention: In-situ interventions to prevent possible faults (preventative) or repair faults (corrective).

Maintenance contracts: Wide range of options and schedules.

Remote maintenance contracts: 24/7 remote monitoring system.

Training courses: To expand knowledge about the device.



Applications

Data centres: 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: Damage caused by power failures is much greater and more extensive than that caused by computer viruses.

Financial services: The on-line and globalised operability of financial transactions requires continuous backup support to ensure uninterrupted operation in all areas.

Industrial processes: Electrically complicated environments that require the added plus of electrical backup and the necessary flexibility to adapt to every circumstance.

Telecommunications: It is vital to ensure power supply through the management of long backups that can provide coverage during systematic outages due to mains upgrading or maintenance.

Infrastructures: Critical and essential installations for modern communities that must not stop functioning for any reason.



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Product Range

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



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