SLC ADAPT / 2

Modular Uninterruptible Power Supply (UPS) from 10 to 1,500 kVA

salicru

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Maximum availability and improved energy efficiency

Salicru's **SLC ADAPT** and **SLC ADAPT2** series is a range of modular On-line double-conversion (VFI) UPS systems that provide maximum electrical protection to connected loads and, at the same time, flexibility and adaptability to the growth needs of the facility, yielding substantial financial and energy savings.

The solution consists of power modules with ratings of from 10 to 50 kVA located in cabinets of up to 12 modules which, in turn, can form solutions of up to 30 modules, providing maximum flexibility and scalability in solutions ranging from 10 kVA to 1,500 kVA and configurations in parallel or redundant for greater security of protected loads.

For its part, the 3-level On-line double-conversion technology with IGBT used is the best guarantee for a clean, reliable, continuous and economical output supply. In addition, the high performance achieved in On-line mode (>95%) improves the total cost of ownership (TCO), under the operating expenses (OPEX) heading, and the Smart-efficiency or Eco-mode options, depending on the protection needs of the system, can increase the solution's performance up to 99%.

Finally, the wide range of options available, including numerous communication possibilities and backup adaptable to the needs of the facility, enables full integration of the solution, providing greater availability and reliability.

Modularity

Wide range of power modules available

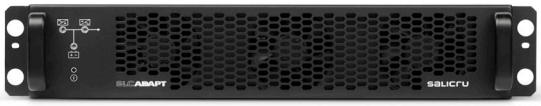
Modules available with power ratings of 10, 15, 25, 30 and 50 kVA, adaptable to any initial power needs and anticipated future growth.

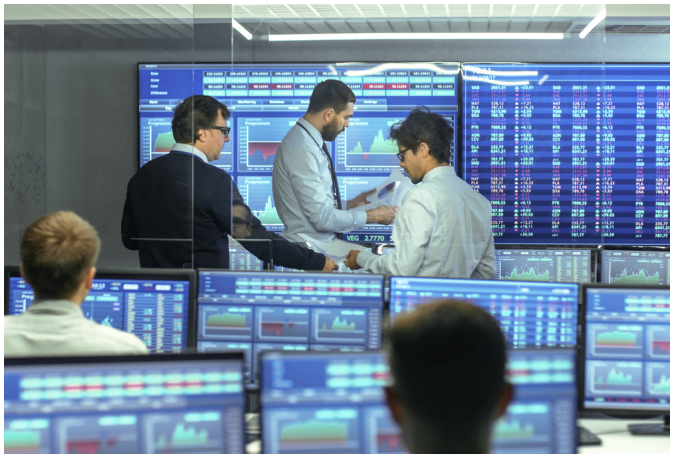
Pay as you grow' planning.

Hot-swap and hot-plug connection

Hot-swap and hot-plug modules that enable the service to remain uninterrupted for operations of expansion/maintenance/replacement of power modules, bypass module or touchscreen display.

Enables adaptation to future needs without interrupting the protection of critical loads, achieving, at the same time, a mean time to repair (MTTR) of less than 10 minutes.





Vertical scalability up to 500 kVA per cabinet

Wide range of configurations in cabinets of 2, 3 or 4 modules or cabinets of 6, 8, 10 or 12 modules, enabling configurations from 1x10 kVA (10 kVA) to 10x50 kVA (500 kVA) in a single cabinet.

The widest range of configurations for medium-sized power solutions.

Modularity up to 500 kVA

Horizontal scalability up to 1,500 kVA per system

Possibility of configuring systems using cabinets in parallel with configurations from 1x10 kVA (10kVA) to 3x500 kVA (1,500 kVA).

More power and flexibility for medium-sized facilities with the need for growth or high power.

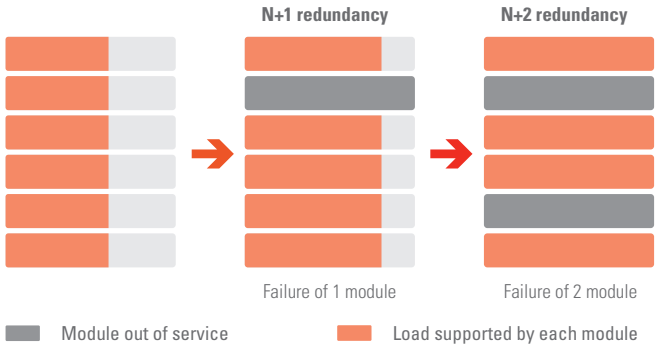
Modularity up to 1,500 kVA

Availability

Configurable redundancy N+1, N+2,…,

Configurable level of redundancy according to the needs of each facility, reaching levels of availability of 99.9999%.

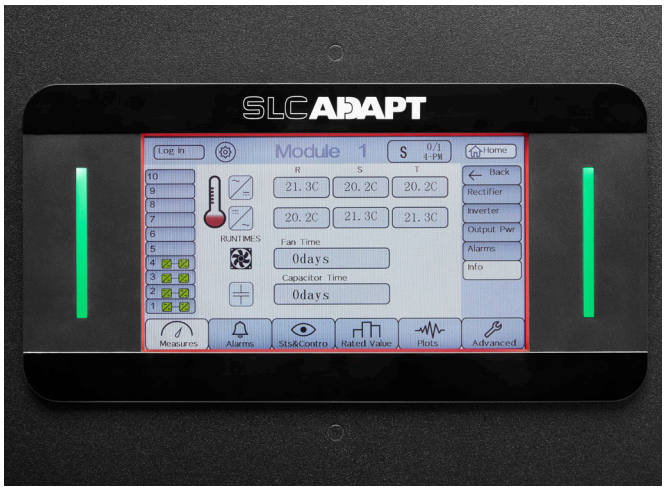
Provides the facility with greater security, as it is a much more competitive solution than the traditional paralleling of UPSs.



Predictive maintenance

The status of the main components can be viewed through the LCD display.

Facilitates maintenance of faulty components or modules.



Cold-start battery (1)

System start-up through batteries when the mains supply is unavailable.

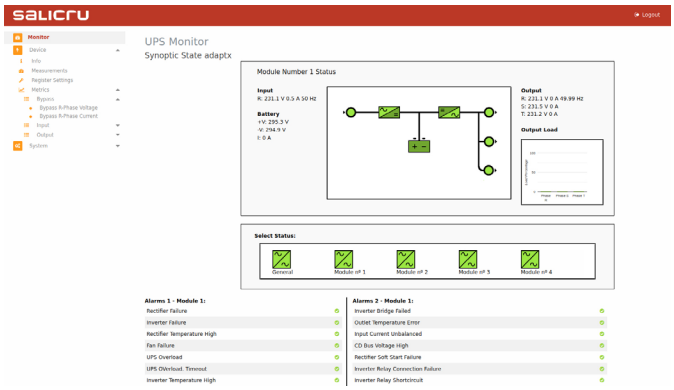
Ensures power supply to loads in situations of high criticality.

(1) Except SLC Adapt 2 cabinets with 10 or 15 kW modules

Continuous surveillance (1)

Equipment is permanently monitored through its standard integration in Salicru's Nimbus-cloud.

It allows a continuous analysis of the level of protection provided.

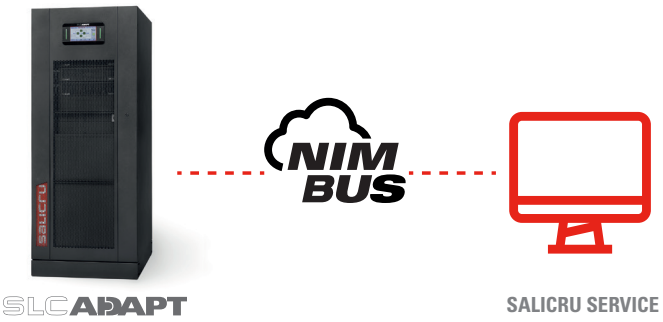


(1) For SLC ADAPT2 models

Remote maintenance (1)

There are multiple remote maintenance options, through connection to Nimbus Services, both in modalities, schedules and response times.

It allows immediate actions in case of incidents or advances on anomalous situations.



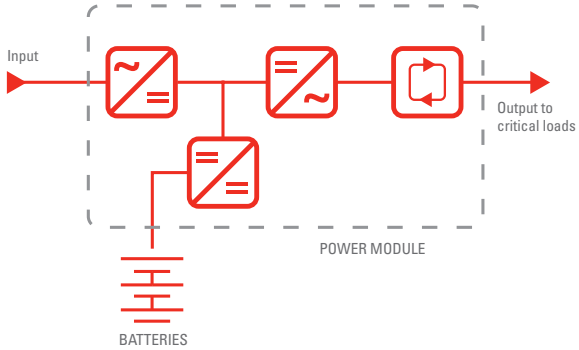
(1) For SLC ADAPT2 models

Reliability

Totally independent modules

Each module incorporates a filter, control, rectifier, battery charger, inverter system and hybrid bypass.

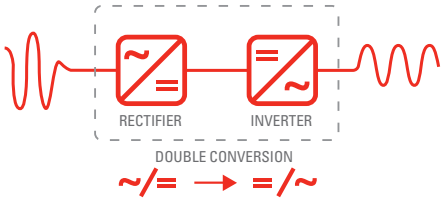
Ease of load distribution, battery charging and maintenance operations.



VFI double-conversion technology

Double conversion between input and output, AC/DC + DC/AC, providing a clean, stable and reliable voltage at output.

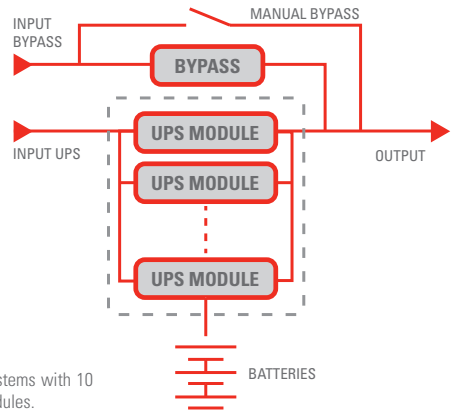
Protects the load from all electrical mains disturbances and supplies it with the highest quality voltage.



Centralised-hybrid bypass system

Each cabinet incorporates a static bypass and a maintenance bypass(1) appropriate for the total power that it can assume.

Equipped for expansion of the total number of power modules without the need to reconfigure the cabinet every time the power is changed.

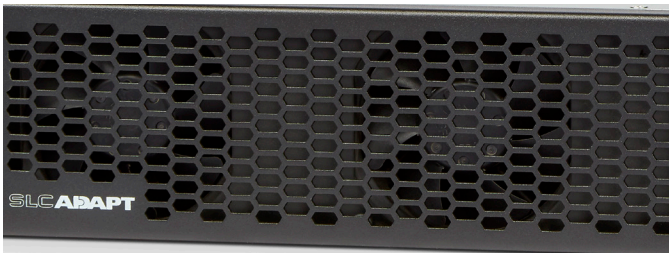


(1) Optional for systems with 10 and 15 kW modules.

Redundant fans

System of redundant fans with separate air flow circuits in each power module's rectifier and inverter systems.

Redundant security in one of the most necessary elements for keeping the modules in optimum operating conditions.



Standardised design

Highly-controlled module electronics design and serial production, thereby reducing manufacturing faults.

Increases mean time between failures (MTBF).

SALICRU experience +55 years

Know-how in electrical continuity and protection solutions accumulated over 55 years of Salicru history.

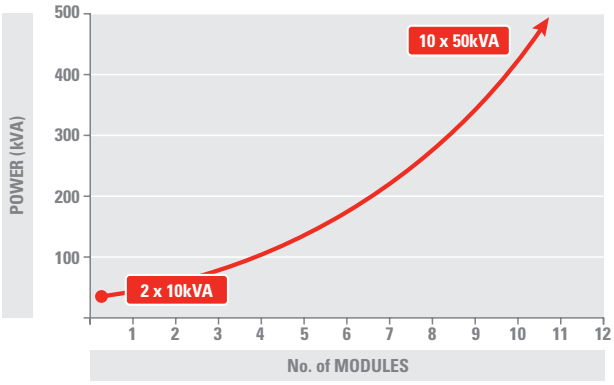
More than 900,000 UPSs sold in more than 130 countries, representing a total power equivalent to more than 5 million protected computers.

Flexibility

Modules of 10 to 50 kVA and cabinets with 2, 3, 4, 6, 8, 10 or 12 power modules

73 possible combinations for the different cabinets and modules available. And up to 1,000 possible combinations for cabinet systems in parallel.

Maximum adaptability to the needs of each facility and its future growth.



Open for communication

Through the various communication interfaces available (RS-232, RS-485, USB [1] or relés) or integration into SNMP platforms and virtualised environments.

Maximum options for communication with the outside world via integration into platforms or through the Internet for management, monitoring and remote maintenance.

(1) According to model.

Wide range of options available

From separate bypass lines to frequency converter functions, the list of options available is extensive.

Achieves full integration into the environment to be protected.

Backup adaptable to growth needs

Installation of batteries in separate or internal cabinets in the same equipment[1], with the possibility of expansion according to the evolution of the facility's power.

Provides adaptability to the requirements of the application.

(1) According to model

Touchscreen display + keypad

Graphic display of (7" or 10.4") + block diagram + LEDS and keypad for full control of the equipment, including graphics, data and messages (depending on the model).

Ease of handling the equipment, its configuration and the receipt of warnings and alarms.

Ease of connection and start-up

Connections at the back with top or bottom cable entry and double back door or back cover to save space.

Optimised to facilitate installation work and commissioning to reduce start-up time.

Compatible with power generators

Sequential turning on of the modules for greater compatibility with power generators.

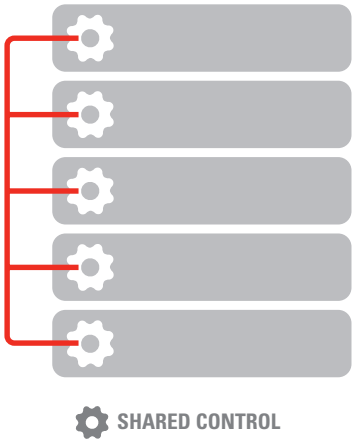
Easy integration into facilities equipped for prolonged outages with supplementary energy sources.

Resilience

Totally decentralised control

Each power module has its own fully independent control without master/slave structure to achieve a completely balanced distribution of loads.

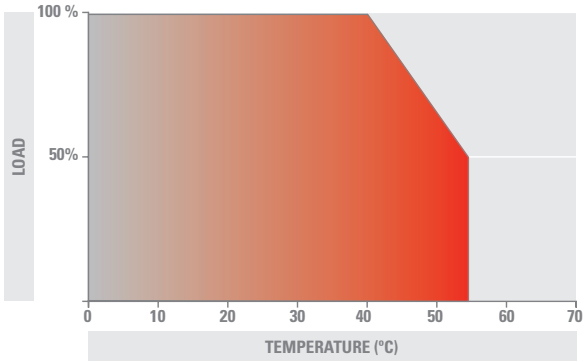
Ensures continued protection of loads with immediate readjustment of their distribution.



Performance unaffected by high temperatures

Designed for continuous use in environments of up to 40°C without power degradation.

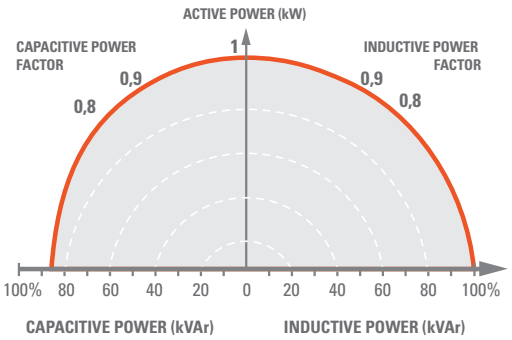
Enables availability in conditions above the standard in computer rooms.



High power factor for any kind of load

For **SLC Adapt 2** models, the Output Power Factor is the unit (PF = 1 / for **SLC Adapt** PF=0.9). Wide power factor range, even in the event of sudden and rapid changes.

Ability to supply loads without degrading power or affecting the protected processes.



EPO - Emergency Power Off

Emergency stop switch to totally isolate the output in emergency situations.

Electrical isolation of outputs to prevent incidents from spreading during emergencies.

Static bypass

Support system for uninterrupted transfer directly to the mains in the event of overload or for maintenance work.

Increases the availability of the solution in situations of short circuit, malfunction or major overload.

Batt-Watch battery care

Monitoring of battery status and regulation of charging according to temperature, connected loads and battery type.

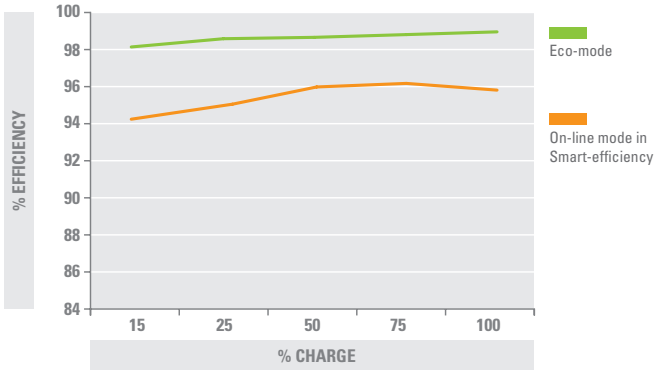
Extends battery life, reduces maintenance costs and recharges batteries quickly.

TCO

High efficiency in double conversion

3-level PWM power modules with integrated IGBT packs.

Reduces cooling costs and improves energy efficiency, bringing down total operating expenses (OpEx).



Eco-mode

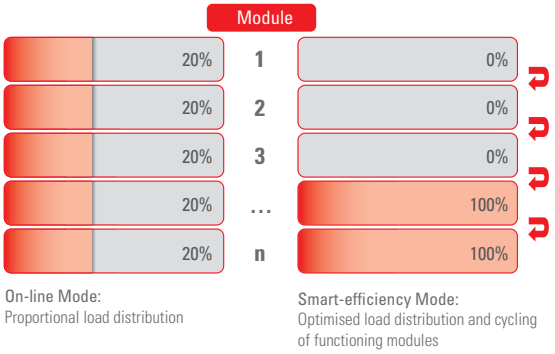
When it is not necessary to improve the quality of the input line, the powering of the loads can be carried out through the bypass, passing to the double-conversion inverter in less than 10 ms if the input conditions exceed the pre-set limits.

Increase in performance up to 99%, thereby bringing down OpEx.

Smart-efficiency mode

In On-line double-conversion mode, the equipment distributes the load among the fewest number of modules possible to find peak operating efficiency.

Improvement in performance without diminishing doubleconversion benefits and redundancy availability in the protection of loads, thereby bringing down OpEx.



Input power factor = 1

Reduced cable cross-selection, protection systems and generator power.

Lower installation and electricity consumption costs, thereby bringing down total capital expenditure (CapEx).

Very low input current harmonic distortion (THDi)

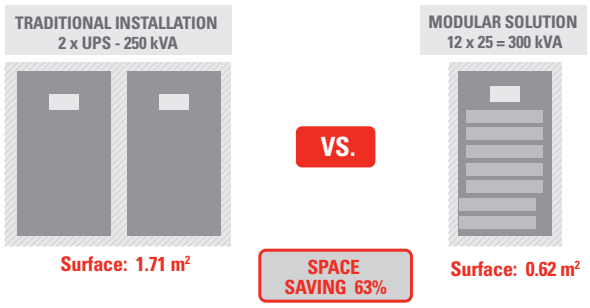
No need to oversize the capacity of the power generator, transformers or power cables.

Brings down total capital expenditure (CapEx).

Reduced space requirement

Up to 300 kVA in 0.66 m2 for greater power density.

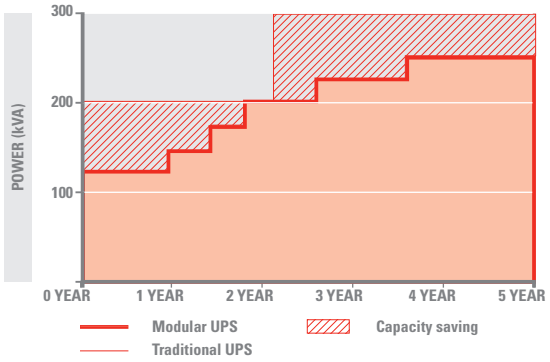
Greater power in the same reduced space, thereby bringing down total capital expenditure (CapEx).



Optimising expenditure

Adaptability to grow at the same rate as the expansion of the data centre, simply with the addition of new power modules.

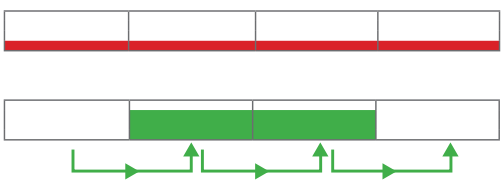
The energy savings achieved with a modular UPS are substantially better than a more traditional solution, thereby bringing down OpEx.



Module cycling

Distribution of loads in normal operation vs distribution of loads and cycling of modules in operation.

Extends the life of the modules and achieves energy savings by optimising module performance.



Normal operation vs module cycling

Applications:

Data centres: Ensuring the operability of environments and preventing losses caused by power outages, whether in modular or virtualised data centres for hosting, housing, computer centres, supercomputers, etc.

Health: Electromedical equipment for analysis, laboratories and vital instruments for ICUs, as well as administration systems, security, medical records, etc.

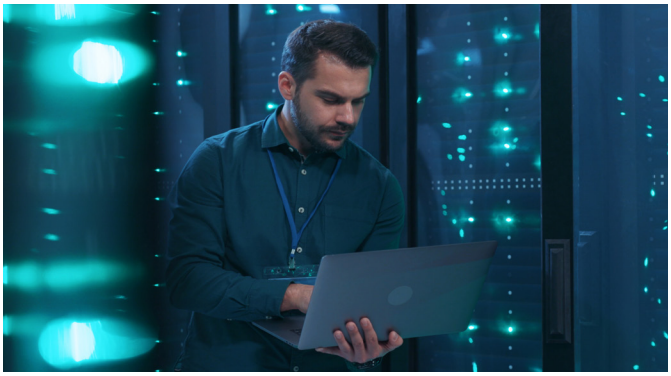
Financial services: Maintaining the online functionality of financial transactions in centralised payment authorisation systems, continued listing, intercommunication between banking networks, etc.

Telecommunications facilities: Preventing power outages which can cause the suspension of services between subscribers in fixed telephone, mobile, UMTS/LTE infrastructures, and transmission equipment, microwave, fibre optics, etc.

Transport systems: Protecting productivity in electrically complicated systems of control, communication and operation.

Infrastructures: Safeguarding instruments and ensuring proper management of systems in airports, tunnels, roads, railways, ports, etc.

IT applications: Avoiding costs caused by interruptions in availability or loss of information in IT networks, server farms, voice and data networks, CAD/CAM, document management, etc.



TSS - Technical Support and Service

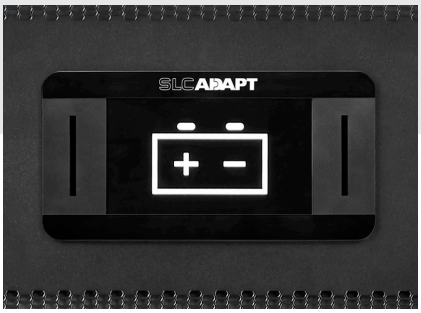
Although the modular design and high-specification features of the **SLC ADAPT** and **SLC ADAPT2** series ensure long MTBFs, **Salicru's** TSS is still on hand to offer a wide range of services associated with the supply of equipment to provide support for any eventuality or incident anywhere and at any time.

The services offered by our extensive network of qualified technicians include:

- Pre-sales support.
- Start-up.
- Maintenance contracts.
- Remote maintenance contracts.
- Preventative intervention.
- Corrective intervention.
- Telephone support.
- Batteries.

Options

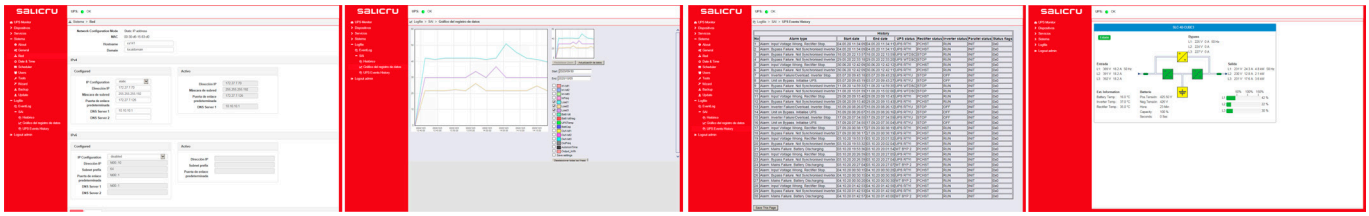
- **Extended backup times:** Additional battery cabinets for facilities that require long backup times.



- **Systems in cabinets:** 10 or 15 kW subracks with 2, 3, 4 or 6 modules can be installed in 1100/1600/2000 mm-high cabinets, with or without batteries included. Batteries can also be installed in additional cabinets.

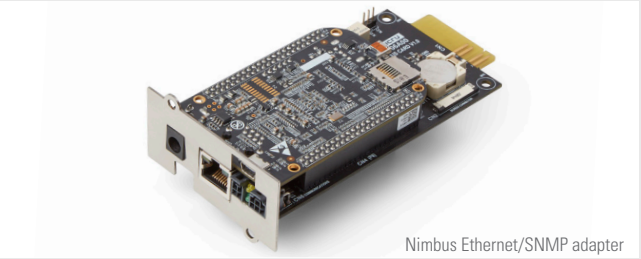
- **Nimbus monitoring and management software:** Sending of warning messages (broadcast, email, SMS), scheduled shutdowns, etc.

- **Shutdown software:** For heterogeneous network systems with different operating systems.

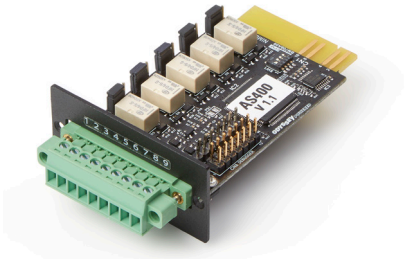


- **Nimbus remote maintenance with/without GPRS modem:** Webbased remote maintenance platform to monitor all system parameters, detect any anomalies and warn/inform the maintenance service.

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

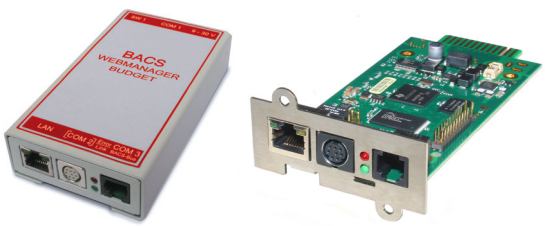

Nimbus Ethernet/SNMP adapter

- **Extended relay Nimbus AS400 card:** 5 output relays.



- **Temperature and humidity sensors:** Obtaining environmental data about the room in which the UPS is located (requires SNMP adapter).

- **BACS II:** Battery monitoring, control and alarm system.



- **Kit for cabinets in parallel:** Kit for interconnecting the cabinets in parellel in order to have up to 30 power modules in one system.

Options

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

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

- **External manual bypass panel:** Enables maintenance operations with the UPS isolated.

- **Protection panel:** Electrical panel equipped with input and output protection.

- **Single-phase output:** With single-phase or three-phase input for installations of up to 200 kVA.

- **LBS (Load Bus Synchronisation):** Optional module to keep synchronized the outputs of two single UPS's two, even if they are fed from a different power supply. (Only for 30 and 50 kVA modules). Facilitates use with STS (Static Transfer Switch) devices.

- **50 A (SLC ADAPT) / 15 A (SLC ADAPT X) charger modules:** Possibility to add extra charger modules in to the free slots of the cabinets in order to allow charging the extended autonomies properly.

- **Single-phase / three-phase input voltage detection:** For railway or similar installations, the UPS itself detects whether the power supply is single-phase or three-phase automatically. Therefore, it avoids the possible errors caused by human actions.

- **Remote control:** Remote panel shows the status of the UPS, in real time, by means of a touch screen, through the RS485 communication port (only for 30 and 50 kVA modules).

- **Compatible with a wide range of batteries:** PbCa, NiCd, floaded wet lead, VRLA with gel electrolyte or Lithium-Ion.

- **Separating transformer or Autotransformer for other voltages:** Electrical device that allows galvanic isolation between input and output (transformer-separator) or adaptation of the equipment to the installation voltages (autotransformer).

Technical specifications

		SLC ADAPT / 2 RANGE
TECHNOLOGY	Type	On-line double-conversion modular solutions
	Technique	Three-level IGBT, DSP control
STATIC BYPASS	Type	Static thyristor
	Transfer time	0 ms
	Frequency	50/60 Hz
	Voltage range	±15% (up to ±25%)
	Admissible overload	<110% permanent / <150% for 1 min
BATTERY	Type	Pb-Ca VRLA, lead acid, gel, Ni-Cd, Li-Ion
	Charging voltage regulation	Batt-watch
	Charger bus voltage	Configurable between +/-192 and +/-264 Vdc
	Charger maximum power	20% of total system power
MECHANICAL	Degree protection	IP20 (1)
	Color	RAL 9005
GENERAL	Operating temperature	0° C ÷ + 55° C (2)
	Relative humidity	Up to 95%, non-condensing
	Maxium operating altitude	2,400 masl (3)
STANDARDS	Safety	EN-IEC 62040-1
	Railway	EN 50121-4 / EN 50121-5
	Electromagnetic compatibility (EMC)	EN-IEC 62040-2
	Operation	VFI-SS-111 (EN-IEC 62040-3)
	Quality and environmental management	ISO 9001 & ISO 14001

(1) Subrack equipment IP00.
(2) Power degradation for higher temperatures up to 40°C.
(3) Power degradation for higher altitudes, up to a maximum of 5,000 masl.

Range

MODULES	CODE	POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC ADAPT2 10	694AB000008	10000 / 10000	590 x 436 x 85	15.3
SLC ADAPT2 15	694AB000009	15000 / 15000	590 x 436 x 85	15.5
SLC ADAPT 25X	694AB000010	25000 / 25000	677 x 436 x 85	18.0
SLC ADAPT 30	694AB000003	30000 / 27000	790 x 460 x 134	34.0
SLC ADAPT 50	694AB000011	50000 / 45000	700 x 510 x 178	45.0

SYSTEMS	CODE	NO MODULES (#)	MODULE POWER (VA / W)	MAX POWER (VA / W)	DIMENSIONS (D × W × H mm)	WEIGHT (Kg)
SLC-#/10-ADAPT2 20	694QQ000046	1 to 2	10000 / 10000	20000 / 20000	612 x 485 x 309	57 ÷ 73
SLC-#/10-ADAPT2 40	694QQ000047	1 to 4	10000 / 10000	40000 / 40000	612 x 485 x 485	66 ÷ 112
SLC-#/10-ADAPT2 60	694QQ000048	1 to 6	10000 / 10000	60000 / 60000	751 x 485 x 1033	100 ÷ 177
SLC-#/15-ADAPT2 30	694QQ000059	1 to 2	15000 / 15000	30000 / 30000	612 x 485 x 309	58 ÷ 73
SLC-#/15-ADAPT2 45	694QQ000060	1 to 3	15000 / 15000	45000 / 45000	612 x 485 x 485	71 ÷ 104
SLC-#/15-ADAPT2 90	694QQ000061	1 to 6	15000 / 15000	90000 / 90000	751 x 485 x 1033	101 ÷ 178
SLC-#/25-ADAPT 200X	694QQ000030	1 to 8	25000 / 25000	200000 / 200000	916 x 482 x 1550	178 ÷ 304
SLC-#/25-ADAPT 300X	694QQ000057	1 to 12	25000 / 25000	300000 / 300000	960 x 650 x 2000	230 ÷ 446
SLC-#/30-ADAPT 180	694QQ000018	1 to 6	30000 / 27000	180000 / 162000	1100 x 600 x 1600	199 ÷ 369
SLC-#/30-ADAPT 300	694QQ000006	1 to 10	30000 / 27000	300000 / 270000	1100 x 600 x 2000	200 ÷ 560
SLC-#/50-ADAPT 500	694QQ000031	1 to 10	50000 / 45000	500000 / 450000	1100 x 1300 x 2000	945 ÷ 1350

Replace # with the number of system modules.
Nomenclature, dimensions and weights for devices with input voltage 3 x 400 V, output voltage 3 x 400 V.
19" rack format for 2, 3 and 4 slot systems.
Batteries located in additional cabinets.

SLC ADAPT2 10 / SLC ADAPT2 15 / SLC ADAPT 25X

SLC ADAPT 30

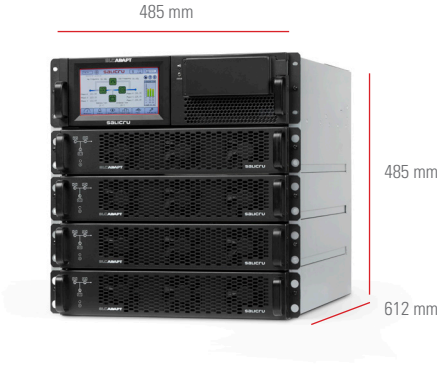
SLC ADAPT 50

Technical specifications **SLC ADAPT2**

MODEL		SLC ADAPT2	
Module power (VA/W)		10000 / 10000	15000 / 15000
INPUT	Rated single phase voltage	220 / 230 / 240 V	Not available
	Rated three-phase voltage (3Ph +N)	3 x 380 / 400 / 415 V	3 x 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 (3Ph +N)	3 x 380 / 400 / 415 V	3 x 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	99%	
	Admissible overloads	<110% for 1 hour/ <125% for 10 min <150% for 1 min / >150% for 200 ms	
	Crest factor	3 : 1	
COMMUNICATION	Display	7" touchscreen and LEDs	
	Ports	RS-232, RS-485 and relays	
	Intelligent slot	1 × Nimbus SNMP/1 × extended relays Nimbus	
MANUAL BYPASS	Type	Uninterrupted(2)	
GENERAL	Acoustic noise at 1 metre	<54 dB(A)(3)	
SYSTEMS	Maximum no. modules per system	2, 4 or 6	2, 3 or 6
	Maximum power per system	20 kW, 40 kW or 60 kW	30 kW, 45 kW or 90 kW
	Maximum no. modules systems	30	
	Maximum power per parallel system	300 kW	450 kW

(1) Depending on charge.
(2) Not included in subracks. Optional for cabinet systems.
(3) According to the number of modules.

SLC-#/10-ADAPT2 20
SLC-#/15-ADAPT2 30



SLC-#/10-ADAPT2 40
SLC-#/15-ADAPT2 45

SLC-#/10-ADAPT2 60
SLC-#/15-ADAPT2 90

Technical specifications **SLC ADAPT**

MODEL		SLC ADAPT		
Module power (VA/W)		25000 / 25000	30000 / 27000	50000 / 45000
INPUT	Rated three-phase voltage (3Ph +N)	3 x 380 / 400 / 415 V		
	Voltage range	-43% +20% (1)		
	Rated frequency	50 / 60 Hz		
	Frequency range	40 ÷ 70 Hz		
	Total harmonic distortion (THDi)	≤3%		
	Power factor	>0.99		
OUTPUT	Power factor	1	0.9	
	Rated three-phase voltage (3Ph +N)	3 x 380 / 400 / 415 V		
	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 min / 150% for 1 min		
	Crest factor	3:1		
COMMUNICATION	Display	Touch panel 7" and LEDs	Touch panel 10.4" and LEDs	
	Ports	RS-232, RS-485 and relays	RS-232, RS-485, USB and relays	
	Intelligent slot	1 x Nimbus/SNMP	1 x Nimbus/SNMP / 1 x extended relays Nimbus	
MANUAL BYPASS	Type	Uninterrupted		
GENERAL	Acoustic noise at 1 metre	<65 dB(A)		<72 dB(A)
SYSTEMS	Maximum no. modules per system	8 or 12	6 or 10	10
	Maximum power per system	200 kW / 300 kW	180 kVA / 300 kVA	500 kVA
	Maximum no. parallel systems	30		
	Maximum power per parallel system	750 kW	900 kVA	1.500 kVA

(1) According to load percentage.

SLC-#/25-ADAPT 200X

SLC-#/25-ADAPT 300X

SLC-#/50-ADAPT 500

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