

Brochure

Edition
03/2022

SITOP POWER SUPPLIES

SITOP DC UPS

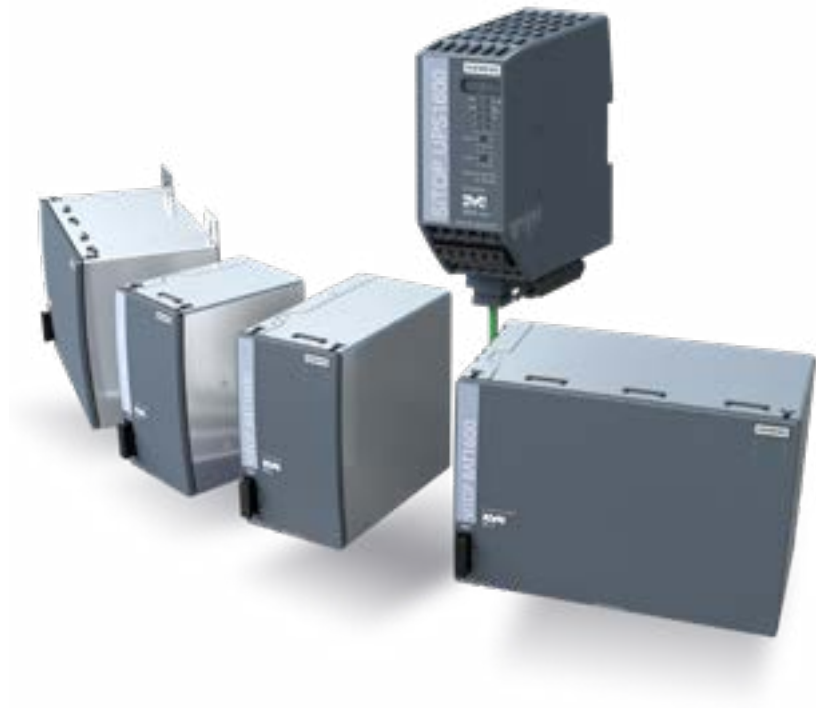
24 V buffering solutions for automation
[siemens.com/sitop-ups](https://www.siemens.com/sitop-ups)

SIEMENS

24 V nonstop – even when the power fails **SITOP DC UPS**

Uninterruptible 24 V power supplies for any application

A reliable power supply is essential for guaranteeing the productivity of automated processes and machines. The SITOP switched-mode power supplies already offer maximum reliability in this respect. But in order to protect 24 V loads from longer power failures as well, the power supplies can be upgraded with DC UPS modules. Their various applications differ mainly in terms of energy storage. Temperature-insensitive capacitors buffer the 24 V supply for a few seconds or minutes, while battery modules can bridge periods of up to several hours.



Overview of the SITOP DC UPS

Find the right SITOP DC UPS and battery modules for your application: The selection chart offers an overview to give you quick guidance with the selection.

SITOP DC UPS in practical application

Even power failures lasting seconds can disrupt sensitive processes. Discover a range of use cases, including our device recommendations for maintaining a stable 24 V.

Overview of applications and devices

Find the right device combination

1. What do you need the DC UPS for?

- a) To shut down your IPC or system in a controlled plant in the event of a mains failure
- b) To bridge a mains failure so that your machines continue to run

2. What loads should the DC UPS protect?

- a) Up to 10 A
- b) Up to 40 A

3. What requirements should the DC UPS satisfy?

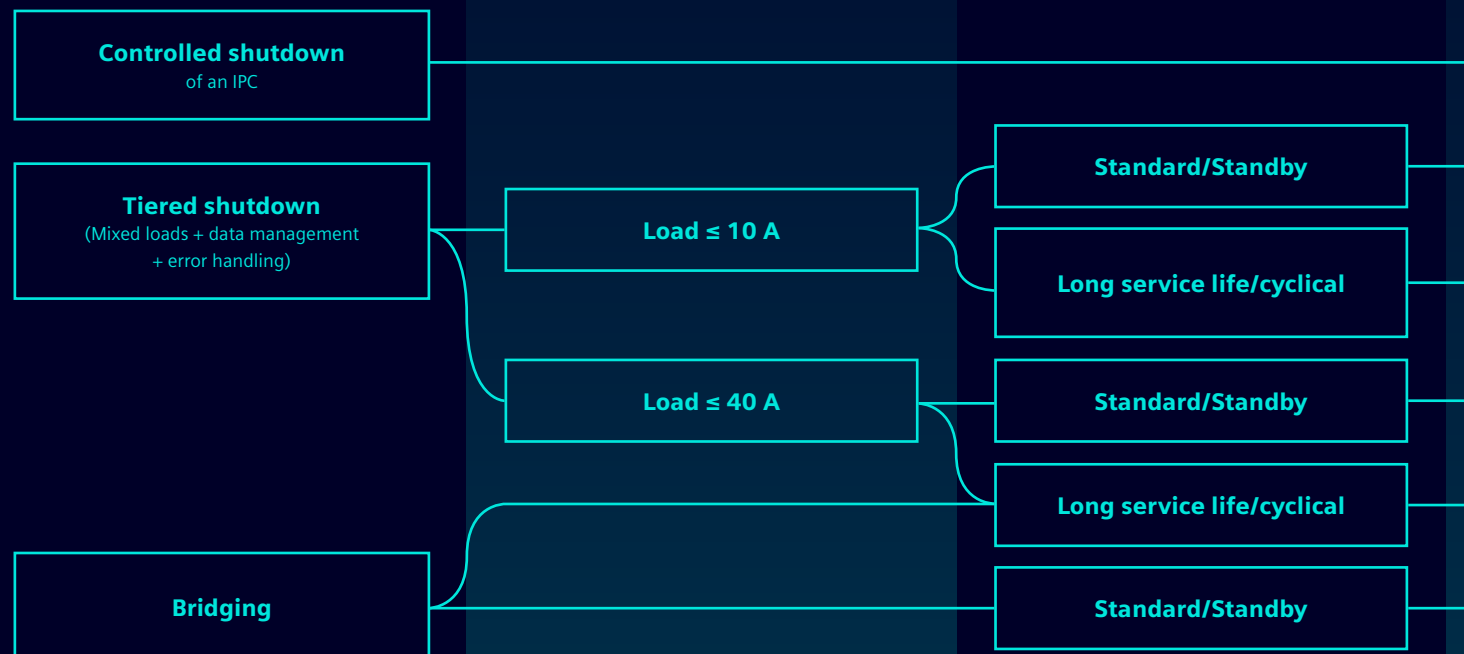
- a) A standard device for continuous stand-by mode is sufficient
- b) A long service life and a high number of charge/discharge cycles are required

4. Our recommendation to suit your requirements

The SITOP DC UPS and SITOP battery modules to suit your needs

Click to go to directly to the appropriate product group:

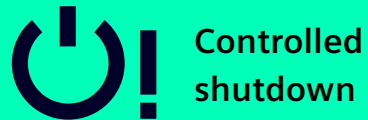
Shutdown procedure:



Use cases

Fully prepared for any situation

Even power failures lasting seconds can disrupt sensitive processes. Controlled shutdowns are best for your systems and machinery in order to avoid data losses and product damage, or alternatively bridge power failures for a period of minutes or even days in order to avoid production losses. SITOP offers the right DC UPS and battery modules for every situation.



PC-based automation environments are susceptible to uncontrolled shutdowns. Consequential damage from power outages is relatively easy to avoid. A short-term power buffer is usually enough to ensure a safe and controlled shutdown.



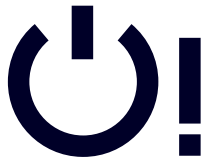
Depending on the machine and PC-based automation solution, it's important that not all systems be shut down simultaneously when a power failure occurs. Instead, there needs to be a power reserve that will enable a tiered shutdown of the different control elements, communication participants, and plant sections.



When a power outage occurs or it becomes necessary to shut down a plant remotely, high-capacity energy storage units are needed to continue to power processes, record measured data, keep communication channels open, and prevent data losses or damage to files.

Controlled shutdown

Back up data and shut down the PC



In many PC-based automation solutions, more serious damage from a power failure can be prevented by bringing the plant to a defined state. The backing up of operating data necessary for this purpose and the subsequent controlled shutdown of the PC generally takes about a minute.

The SITOP UPS500S is the right DC UPS for this situation. With its totally maintenance-free, high-capacitance, double-layer capacitors (Ultracaps), it supplies sufficient energy to shut down PC-based systems safely.

In addition, short recharging times quickly restore the buffering capability of the SITOP UPS500S following a power failure.



Because it can be expanded to as high as 20 kW, the SITOP UPS500S also enables reliable shutdowns in a matter of minutes under various load currents.

SITOP UPS500S
2.5–20 kW

Tiered shutdown

Tiered shutdown of machines and plants



Whether it's a matter of backing up databases, issuing alarms, or properly logging off of data connections to cloud services: Depending on the machine and PC-based automation solution, it can be important to ensure particular control elements, communication participants, and plant sections are shut down in a defined sequence.

A tiered shutdown requires adequate power reserves, such as the SITOP UPS1600 DC UPS modules, as well as lithium and lead-acid batteries from the BAT1600 product line, for a buffering time ranging from 5 minutes to a period of hours.

Intelligent battery management ensures optimal battery charging in this connection. Active battery monitoring even tests the age of the battery, making a precautionary battery replacement unnecessary.

Bridging Bridge power failures to ensure operational continuity



Whether in the process industry, waterworks, wind energy plants, or the food and beverage industry, power must still be supplied to critical processes when a power outage occurs or it becomes necessary to shut down a plant remotely. The need to record measured data, keep communication channels open, and prevent data losses or damage to files must also be assured.

SITOP UPS1600 and with its maintenance-free lead and lithium batteries in the BAT1600 battery modules provide the perfect solution. Thanks to their long buffering times, they can continue to supply energy to keep critical processes operating for up to a period of days, depending on battery capacity and power demand. They also provide unique opportunities for diagnostics and system integration.

Sophisticated battery management ensures optimal battery charging. Active battery monitoring even tests the age of the battery, making a preventive battery and device replacement unnecessary.

Long service life/cyclical



SITOP UPS1600



SITOP BAT1600
7.5 Ah Li (7.5–45 Ah)

Standard/Standby



SITOP UPS1600



SITOP BAT1600
38 Ah Pb (38–228 Ah)

Ready for all situations **SITOP DC UPS systems for every purpose**

Different applications call for different levels of protection – especially in the event of voltage dips or power failures.
The SITOP DC UPS portfolio offers the ideal solution for every requirement.

SITOP UPS500S



SITOP UPS1600



SITOP BUF1200



SITOP PSE201U



SITOP BAT1600

The maintenance-free,
parallel-switchable
battery modules for
tiered shutdowns



2.5 Ah Li



3.2 Ah Pb



7.5 Ah Li (7,5–45 Ah)



12 Ah Pb



38 Ah Pb (38–228 Ah)



Up to six **battery modules** of the same
type can be switched in parallel

The ideal complement to SITOP power supplies

SITOP DC UPS and buffer modules

Bridging for a period of minutes with Ultracaps

SITOP UPS500S (DC UPS up to 15 A)



Bridge power outages to allow a controlled shutdown of your systems

Use case:

Bridging for a period of hours with a lead-acid or lithium battery module

SITOP UPS1600 (DC UPS up to 40 A)



Bridge power outages to keep your system running and allow a controlled shutdown

Use case:

Bridging for a period of seconds with electrolytic capacitors

SITOP BUF1200 (buffer module up to 40 A)

SITOP PSE201U (buffer module up to 40 A)



- Bridging short-term voltage dips
- Support for your power supply unit for brief increases in power demand

SITOP BUF1200

SITOP PSE201U

Energy reserves for the SITOP UPS1600

SITOP BAT1600 battery modules

Battery module with lithium batteries for a power reserve up to a period of hours

SITOP BAT1600 (2.5 Ah Li)



Battery module for tiered shutdown at loads of up to 10 A

Use case:

Battery module with lead batteries for an power reserve up to a period of hours

SITOP BAT1600 (3.2 Ah Pb)



Battery module for tiered shutdown at loads of up to 10 A

Use case:

Battery module with lithium batteries for a power reserve up to a period of hours

SITOP BAT1600 (7.5 Ah Li)*



Battery module for tiered shutdown at loads of up to 40 A or for bridging to enable operations to continue

Use case:

* 7.5–45 Ah

Energy reserves for the SITOP UPS1600

SITOP BAT1600 battery modules

Battery module with lithium batteries for an power reserve for a period of hours to days

SITOP BAT1600 (12 Ah Pb)



Battery module for tiered shutdown at loads of up to 40 A or for bridging to enable operations to continue

Use case:

Battery module with lead batteries for an energy reserve for a period of hours to days

SITOP BAT1600 (38 Ah Pb)**



Battery module for bridging to enable operations to continue

Use case:

**38–228 Ah

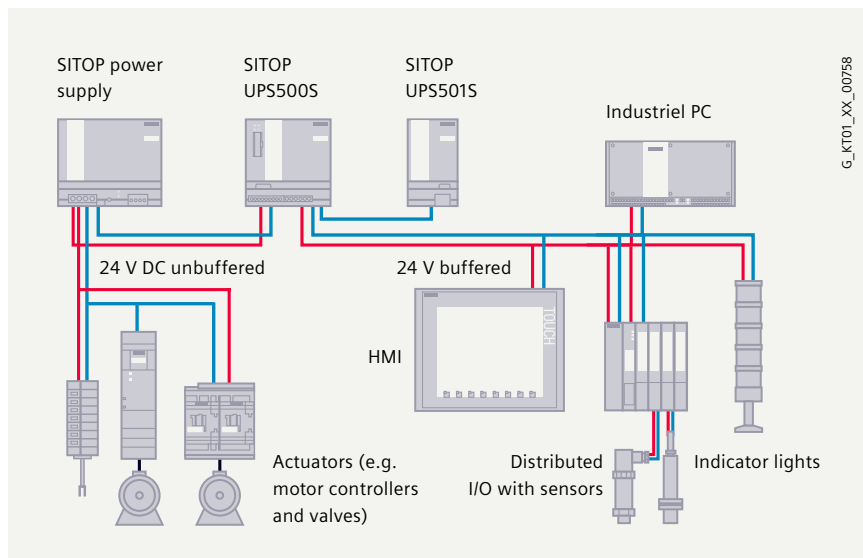
SITOP UPS500S – DC UPS with maintenance-free double-layer capacitors: 24 V buffering for up to a period of minutes



In many PC-based automation solutions, more serious damage from a power failure can be prevented by bringing the plant to a failsafe state. The backing up of operating data necessary for this purpose and the subsequent controlled shutdown of the PC generally takes about a minute. The totally maintenance-free and high-capacitance ultracaps of the SITOP UPS500S provide sufficient power for this. Communication with the automation computer can be easily implemented thanks to correction to signaling via LEDs already submitted.

Your benefits with the SITOP UPS500S

- Bridging for periods up to several minutes depending on the load current and DC UPS configuration
- SITOP UPS500S 24 V/15 A standard rail units, energy storage can be combined with up to 3 UPS501S expansion modules
- Totally maintenance-free ultracaps
- Short charging times for quick recovery of backup readiness
- Long service life eliminates the need to replace devices: After 8 years, the ultracaps still have 80% of rated capacity at 50°C ambient temperature
- No ventilation of the mounting location required
- Diagnostics via signaling contacts and USB
- USB interface for PC communication
- Easy PC connection with free SITOP Manager engineering and monitoring tool



SITOP UPS1600 – DC UPS with battery modules

24 V buffering for a period of hours to days



High-capacity energy storage units are required for applications in which processes must continue to be supplied with power in the event of a power failure, e.g. in order to continue recording measurement data or to maintain communication channels. The SITOP DC UPSs with maintenance-free lead-acid or lithium battery modules offer a long buffering time for a high level of security during power failures. Depending on the power requirements, they can supply power for up to a period of hours to days. They also provide unique opportunities for diagnostics and system integration. The SITOP UPS1600 PN/USB offers extensive functions and can communicate via USB, Ethernet/PROFINET, as well as OPC UA.

Complete integration into the TIA Portal affords convenient engineering. If no SIMATIC S7 controllers are protected from power failure but PCs are, for example, the SITOP Manager facilitates engineering and monitoring.

The new State-of-Health (SOH) display on the battery module ensures high system availability. With these, the lifetime and the state of health of the batteries of the associated battery module can be visually recorded.

Your benefits with the SITOP UPS1600

- Compact DC UPS modules SITOP UPS1600 24 V/10 A, 20 A and 40 A with digital inputs and outputs, optionally with USB or Ethernet/PROFINET interfaces with 2 ports
- Intelligent battery management with automatic detection of battery modules and temperature-controlled charging characteristics. Monitoring of operational readiness, battery feed and charge level
- All diagnostic data and alarms available via USB and Ethernet/PROFINET
- High dynamic overload capacity
- High charging currents
- Remote monitoring with integrated web server
- Integrated OPC UA server
- Free SITOP Manager for parameterizing and diagnosis of all power supplies within a network
- Complete integration in TIA Portal

Use case:

SITOP UPS1600 – Diagnostics and setting options

Signaling via LED and signaling contacts:

- O.K./BAT: Normal operation/buffer mode
- BAT>85%: Battery charge > 85%
- ALARM: Buffer readiness
- BAT STATUS: Status of battery incl. State of Health
- SF, RUN: For PROFINET-specific diagnostic displays
- P1, P2: Connection status Ethernet Port 1 and Port 2

Settings by means of rotary coding switch:

- Connection threshold for buffering: 21 ... 25 V DC in 0.5 V increments
- Mains buffering: 0.5, 1, 2, 5, 10, 20 min, max. buffer time
- REN (Remote enabled): loaded remote settings apply to connection threshold as well as buffer time



Open interfaces and convenient software for transparent DC UPS diagnostics

In addition to the standard equipment with status LEDs and signaling contacts, the UPS1600 modules with USB or Industrial Ethernet/PROFINET interface enable even more detailed diagnostics options and settings. The Industrial Ethernet/PROFINET interface with 2 ports also offers integration in different networks. During engineering and visualization the SITOP Manager provides support for PC connections, and the TIA Portal with SITOP communication components during SIMATIC integration. The integrated web and OPC UA servers enable completely platform-independent integration.

Diagnostics options over interfaces/software

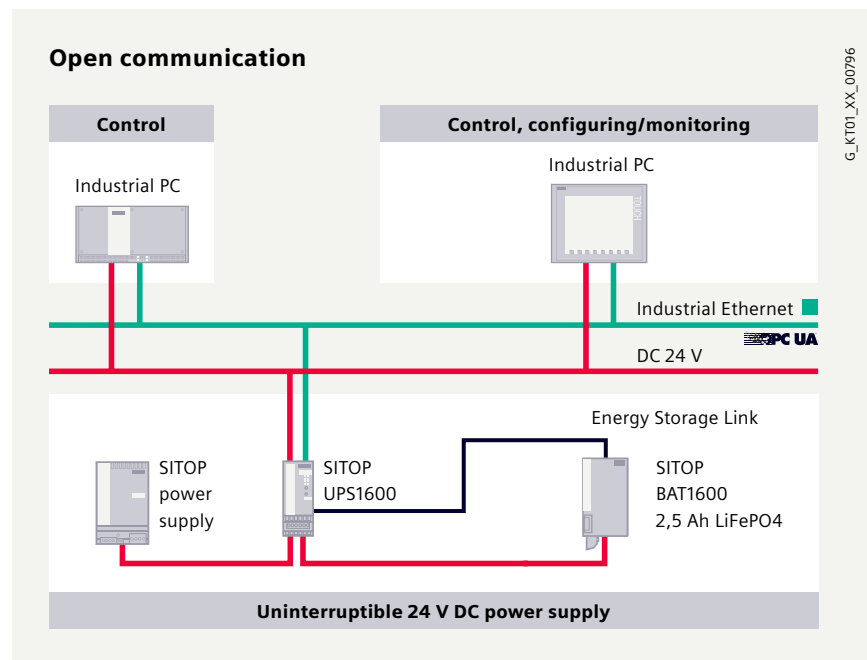
- Hardware configuration
- Normal operation or buffer mode
- Battery charge status, buffer readiness, achievable buffer time
- Active alarms
- Alarm sequence
- Load and charging current
- Input and output voltage
- Battery voltage
- Battery temperature

Setting options over interfaces

- All options, including rotary switches
- Simultaneous and targeted shut-down of multiple PCs
- Opening or closing of software applications with SITOP Manager
- End-of-charging voltage for non-coded batteries

SITOP UPS1600 – can be integrated into any automation solution

Whether open or system-integrated, the communication capable DC UPS can be integrated into any automation solution. Fully flexible data communication is performed via USB and Industrial Ethernet/PROFINET. The SITOP Manager provides support during configuration and visualization for easy integration of the DC UPS in PC-based systems. The integrated web and OPC UA servers enable completely platform-independent integration. The integration of the DC UPS in Industrial Ethernet enables a defined shutdown of multiple PCs in the event of a power failure.



Integration of SITOP UPS1600 in PC-based systems

- Connection via USB or Ethernet
- Vendor-neutral system integration via certified OPC UA server
- Remote monitoring via integrated web server
- Easy configuration and monitoring with the SITOP Manager

SITOP Manager – The PC software for SITOP power supplies with communications capability

- Online and offline engineering, commissioning and diagnostics of multiple SITOP PSU8600, UPS1600 and UPS500S
- Continuous monitoring of SITOP UPS1600
- Monitoring and controlled shutdown of multiple PCs in the event of a power failure, for example, by starting batch files and closing software applications
- Online functions, such as firmware updates
- Executable on Windows 7, Windows 10 and SIMATIC Industrial OS operating systems
- Easy operation via web-based user interface with automatic scaling to window width
- Remote access possible via mobile devices

SITOP BAT1600 – maintenance-free battery module for the SITOP UPS1600



2.5 Ah Li



7.5 Ah Li



3.2 Ah Pb



12 Ah Pb



38 Ah Pb



Up to six **battery modules of the same type** can be switched in parallel

The intelligent battery management system in the UPS1600 charges the BAT1600 based on the ideal temperature-controlled battery characteristics, and uses Energy Storage Link (ESL) to monitor the status (operating data and diagnostic information) of the connected battery modules. For longer buffering times, up to six battery modules can be switched in parallel. Can be fitted to a DIN rail or directly wall-mounted.

Your benefits with the SITOP BAT1600 battery modules

- Maintenance-free SITOP BAT1600 battery modules with integrated electronics:
- Five battery modules with different technologies and applications; 2.5 Ah & 7 Ah LiFePO, 3.2 Ah to 38 Ah lead gel batteries
- Parallel connection of the battery modules increases the capacity, it can be extended with up to 6 modules (e.g. with SITOP BAT1600 38Ah Pb up to 228 Ah)
- Smart communication (Energy Storage Link – ESL) is responsible for battery management to achieve optimum performance
- Three-color status LED for easier commissioning
- Visualization of the service life and aging status of the batteries in the associated battery module via the State-of-Health (SOH)

SITOP BUF1200 – Buffer module with electrolytic capacitors: based on the SITOP PSU6200 design



The compact SITOP BUF1200 buffer module in a sturdy metal housing bridges short power failures for up to a period of seconds. Depending on the load current, it will bridge 300 ms (for 40 A), 600 ms (for 20 A) or 1,200 ms (for 10 A). Up to five SITOP BUF1200 buffer modules can be switched in parallel in order to extend bridging periods further.

The BUF1200 buffer module can be combined with all SITOP product families and the SITOP RED1200 redundancy modules, SITOP SEL1200/SEL1400 selectivity modules, and all other SITOP add-on modules.

Your benefits with the SITOP BUF1200

- Low-cost bridging of short-term power failures up to a period of seconds
- Totally maintenance-free capacitors as energy storage units
- Fast charging time
- Up to 5 buffer modules can be switched in parallel
- Rapid rail mounting and easy wiring using push-in terminals
- High load current up to 40 A, additional support for power supply during overload
- Connection to power supply via only 2 cables
- Signaling (LED): 3 buffering capacity status options

SITOP PSE201U – Buffer module with electrolytic capacitors: 24 V buffering for periods up to several seconds



If the network is unstable, short-term power failures can bring your plant to a standstill. The SITOP PSE201U buffer module bridges short interruptions of up to 10 seconds, and can thus significantly improve your system availability. It can be combined with all 24 V power supplies in the SITOP smart, PSU6200, and PSU8200/200M product lines, and is completely maintenance-free thanks to the use of electrolytic capacitors. Buffering times may be multiplied by connecting the buffer modules in parallel.

Your benefits with the SITOP PSE201U buffer module

- Low-cost bridging of short-term power failures up to a period of seconds
- Totally maintenance-free capacitors as energy storage units
- Fast charging time
- Several buffer modules can be switched in parallel
- Fast rail assembly and straightforward wiring
- High load current up to 40 A, additional support for power supply during overload
- Connection to power supply via only 2 cables

SITOP UPS500S – Technical specifications

Buffer and charging times

SITOP	UPS500S – 15 A basic unit	
Power	2.5 kW	5 kW
Article number	6EP1933-2EC41	6EP1933-2EC51
Input voltage	24 V, 22...29 V DC, input SITOP 24 V	
Rated input current	15.2 A + approx. 2.3 A while charging	
Rated output voltage	Buffer mode and normal operation: 24 V DC \pm 3%	
Rated output current	15 A, charging current 1 A or 2 A selectable	
Efficiency at rated values, approx.	97.50%	
Radio interference level (EN 55022)	Class B	
Degree of protection (EN 60529)	IP20	
Ambient temperature	0...+60°C	
Installation	DIN rail	
Dimensions W x H x D in mm	120 x 125 x 125	
Weight, approx.	1.0 kg	
Certifications	CE, cULus, CB, ATEX, cCSAus Class I Div 2, DNV GL, ABS	
SITOP	UPS501 – Expansion module 5 kW	
Article number	6EP1935-5PG01	
Description	Expansion module to extend buffer time, up to 3 units can be connected in parallel with one UPS500S basic unit	
Dimensions W x H x D in mm	70 x 125 x 125	
Weight	approx. 0.7 kg	

Available power	SITOP UPS500S/501S							
Basic units	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 kW
Expansion modules	–	–	1x5 kW	1x5 kW	2x5 kW	2x5 kW	3x5 kW	3x5 kW
Combined	2.5 kW	5 kW	7.5 kW	10 kW	12.5 kW	15 kW	17.5 kW	20 kW
Buffer times								
At charge current ...								
0,5 A	134 s	236 s	390 s	478 s	632 s	748 s	851 s	1007 s
0,8 A	90 s	167 s	266 s	346 s	440 s	527 s	580 s	706 s
1 A	75 s	138 s	219 s	296 s	365 s	414 s	490 s	572 s
2 A	38 s	76 s	122 s	156 s	203 s	230 s	265 s	306 s
3 A	26 s	52 s	82 s	106 s	136 s	159 s	186 s	213 s
4 A	19 s	39 s	61 s	81 s	101 s	120 s	139 s	160 s
5 A	15 s	31 s	49 s	65 s	81 s	95 s	111 s	130 s
6 A	12 s	26 s	40 s	55 s	67 s	80 s	94 s	106 s
7 A	10 s	21 s	34 s	47 s	58 s	69 s	81 s	82 s
8 A	8 s	18 s	29 s	40 s	50 s	59 s	69 s	79 s
10 A	6 s	15 s	23 s	32 s	39 s	47 s	54 s	62 s
12 A	4 s	12 s	19 s	26 s	32 s	38 s	44 s	52 s
15 A	3 s	9 s	14 s	20 s	25 s	30 s	35 s	40 s
Charging times								
At charge current ...								
2 A	54 s	120 s	158 s	223 s	263 s	318 s	355 s	417 s
1 A	110 s	205 s	311 s	425 s	503 s	625 s	695 s	816 s

The technical specifications apply with rated input voltage and +25°C ambient temperature

SITOP UPS1600 – Technical specifications of DC UPS modules

SITOP UPS1600	24 V/ 10 A	24 V/ 20 A	24 V/ 40 A
Article number	6EP4134-3AB00-0AY0	6EP4136-3AB00-0AY0	6EP4137-3AB00-0AY0
– with USB interface	6EP4134-3AB00-1AY0	6EP4136-3AB00-1AY0	6EP4137-3AB00-1AY0
– with 2 Ethernet/PROFINET ports	6EP4134-3AB00-2AY0	6EP4136-3AB00-2AY0	6EP4137-3AB00-2AY0
Input voltage	24 V DC, 22 ... 29 V, input through 24 V SITOP power supply		
Rated input current	Approx. 14 A for max. charging current (3 A)	Approx. 25 A for max. charging current (4 A)	Approx. 46 A for max. charging current (5 A)
Connectable batteries	– Coded Siemens types SITOP BAT1600 (max. 6 over Energy Storage Link) – 3rd party manufacturers		
Output voltage in normal operation	24 V DC (primary SITOP device or battery), charging voltage: 27.0 V		
Output voltage in buffer mode	27 V DC (no load); 24 V DC (50% rated battery current); 22 V DC (100% rated battery current); 18.5 V DC (exhaustive discharge protection)		
End-of-charge voltage	Automatic temperature-controlled setting with SITOP BAT1600 battery modules, otherwise adjustable from 24 to 30 volts		
Charging current	Automatic setting with SITOP BAT1600 battery modules, otherwise adjustable		
Rated output current	10 A, charging current: max. 3 A	20 A, charging current: max. 4 A	40 A, charging current: max. 5 A
– Overload behavior (power boost for 30 ms)	30 A	60 A	120 A
– Overload behavior (extra power for 5 s/min)	15 A	30 A	60 A
Efficiency at rated values, approx.	> 97.7 %	> 98.2 %	> 98.8 %
Overload and short-circuit protection	Yes, restart in normal operation		
Radio interference level (EN 55022)	Class B		
Degree of protection (EN 60529)	IP20		
Ambient temperature	-25...+70°C (derating from +60°C)		
Installation	DIN rail		
Dimensions W x H x D in mm	50 x 125 x 125	50 x 125 x 125	70 x 125 x 150
Weight, approx.	0.38 kg/0.4 kg/0.44 kg	0.39 kg/0.41 kg/0.45 kg	0.65 kg/0.5 kg/0.7 kg
Certifications	CE, cULus, CB, ATEX, IECEx, cCSAus Class I Div 2, DNV GL, ABS		

The technical specifications apply with rated input voltage and +25°C ambient temperature

SITOP DC UPS or 24 V buffering

	UPS500S	UPS1600	
Energy storage units			
24 V buffering	Minutes	Hours	
Storage medium	Ultracaps	Lead-acid batteries	Lithium batteries
Battery service life dependent on temperature	++	+	++
Application area (temperature, degree of protection, ventilation)	++	+	++
UPS module/electronics			
Max. rated output current	15 A	40 A	
Overload capacity	+	++	
Interfaces	I/O, serial, USB	I/O, USB, Industrial Ethernet/PROFINET	
Information about operation and diagnostics via			
– Signaling contact	Yes	Yes	
– OPC UA server, Web server	–	Yes	
– Shutdown of multiple PCs/PLCs	–	Yes	
Starting from the battery, without supply voltage (stand-alone mode)	–	Yes	
Engineering via software tool (PC)	Yes	Yes	
Engineering via TIA Portal	–	Yes	
SITOP library	–	Yes	

SITOP BAT1600 – Technical specifications

SITOP BAT1600	2.5 Ah Li	3.2 Ah Pb	7.5 Ah Li	12 Ah Pb	38 Ah Pb
Article number	6EP4132-0JA00-0AY0	6EP4133-0GA00-0AY0	6EP4134-0JA00-0AY0	6EP4135-0GE00-0AY0	6EP4137-0GE00-0AY0
Output					
Rated current value I _{out} rated	10 A	20 A	40 A	40 A	40 A
Permissible charging current, max.	3 A	0,8 A	3 A	3 A	9 A
Rated voltage U _{out} rated DC	24 V	24 V	24 V	24 V	24 V
Operating data note					
Ambient temperature					
– during operation	-10 ... +50 °C	-15 ... +50 °C	-10 ... +50 °C	-10 ... +50 °C	-15 ... +50 °C
– during transport	-30 ... +70 °C	-20 ... +50 °C	-30 ... +70 °C	-20 ... +50 °C	-30 ... +70 °C
– during storage	-20 ... +35 °C	-20 ... +40 °C	-20 ... +35 °C	-20 ... +40 °C	-20 ... +40 °C
Relative temporary capacity loss at 20°C per month, typical	1 %	3 %	1 %	3 %	3 %
Service life of the energy storage unit					
– Typical note	Capacity falls to 80% of original capacity (according to EUROBAT)	Capacity falls to 80% of original capacity (according to EUROBAT)	Capacity falls to 80% of original capacity (according to EUROBAT)	Capacity falls to 80% of original capacity (according to EUROBAT)	Capacity falls to 80% of original capacity (according to EUROBAT)
– at 20°C typical	11 y	4 y	11 y	4 y	10 y
– at 30°C typical	11 y	2 y	11 y	2 y	5 y
– at 40°C typical	8 y	1 y	8 y	1 y	2,5 y
– at 50°C typical	6 y	0,5 y	6 y	0,5 y	1,25 y
Mechanical components					
Connection system	Push-in with screw-type terminals	Push-in with screw-type terminals	Push-in with screw-type terminals	Push-in with screw-type terminals	Push-in with screw-type terminals

SITOP BAT1600 – Technical specifications

SITOP BAT1600	2.5 Ah Li	3.2 Ah Pb	7.5 Ah Li	12 Ah Pb	38 Ah Pb
– Width of enclosure	89 mm	89 mm	225 mm	225 mm	332 mm
– Height of enclosure	156 mm	156 mm	156 mm	156 mm	197 mm
– Depth of enclosure	135 mm	135 mm	135 mm	135 mm	214 mm
Installation width	89 mm	89 mm	225 mm	225 mm	331 mm
Installation height	256 mm	256 mm	256 mm	256 mm	197 mm
Required spacing					
– top	50 mm	50 mm	50 mm	50 mm	50 mm
– bottom	50 mm	50 mm	50 mm	50 mm	50 mm
– left	0 mm	0 mm	0 mm	0 mm	0 mm
– right	0 mm	0 mm	0 mm	0 mm	0 mm
Fastening method					
Wall mounting	Optionally with wall mounting set	Optionally with wall mounting set	Optionally with wall mounting set	Yes	No
Standard rail mounting	Yes	Yes	Yes	No	No
S7 rail mounting	Yes	Yes	Yes	No	No
Mechanical accessories	BAT1600 Wall mounting set 6EP4990-0MK00-0XU0	BAT1600 Wall mounting set 6EP4990-0MK00-0XU0	BAT1600 Wall mounting set 6EP4990-0MK00-0XU0	–	–
Weight, approx.	2 kg	3.8 kg	4 kg	9.8 kg	28.4 kg
Number of cells	1	2	3	2	2
Storage capacity	2.5 Ah	3.2 Ah	7.5 Ah	12 Ah	38 Ah

SITOP BAT1600 – Buffer time

SITOP BAT1600	2.5 Ah Li	3.2 Ah Pb	7.5 Ah Li	12 Ah Pb	38 Ah Pb
Load current	Buffer time *				
1 A	2 h 9 min	1 h 40 min	6 h 28 min	8 h 30 min	30 h
2 A	1 h 13 min	50 min	3 h 39 min	4 h 20 min	16 h 40 min
3 A	51 min	30 min	2 h 33 min	2 h 40 min	11 h 20 min
4 A	39 min	20 min	1 h 57 min	1 h 50 min	8 h
6 A	27 min	10 min	1 h 20 min	1 h 20 min	5 h
8 A	20 min	6 min	61 min	50 min	3 h 40 min
10 A	16 min	4 min	49 min	40 min	2 h 50 min
12 A	–	2 min	41 min	30 min	2 h
14 A	–	1 min	35 min	25 min	1 h 50 min
16 A	–	< 1 min	31 min	20 min	1 h 40 min
20 A	–	–	25 min	15 min	1 h 15 min
30 A	–	–	17 min	6 min	45 min
40 A	–	–	13 min	3 min	30 min

SITOP buffer modules – Technical specifications

	SITOP BUF1200 buffer module	SITOP PSE201U buffer module
Article number	6EP4231-7HB00-0AX0	6EP1961-3BA01
Rated input voltage – Range	24 V DC 24...30 V DC	24 V DC SITOP PSU8200, PSU6200 or smart 24 ... 28.8 V DC
Rated output current	40 A	40 A
Parallel switching	Yes	Yes
Electronic short-circuit protection	Yes	Yes
Radio interference level (EN 55022)	Class B	Class B
Degree of protection (EN 60529)	IP 20	IP 20
Ambient temperature	-25...+70 °C	-25...+70 °C
Installation	DIN rail	DIN rail
Dimensions W x H x D in mm	70 x 135 x 155	70 x 125 x 125
Weight, approx.	1.5 kg	1.2 kg
Certifications	CE, cULus, CB, SEMI F47, ATEX, CCC, in preparation: cCSAus Class I Div 2, DNV GL, ABS	CE, UL, CSA, ATEX, CCC, IECEx, UL Class I Div 2, DNV GL, ABS

Buffer time for a buffer module with load current ...		
5 A	2.4 s	1.6 s
10 A	1200 ms	800 ms
20 A	600 ms	400 ms
40 A	300 ms	200 ms
Note	Multiplication possible by switching in parallel	Multiplication possible by switching in parallel, max. buffer time 10 s. In combination with 6EP1 437-3BA10 buffer time is reduced by 100 ms. In combination with 6EP1 336-2BA10 max. buffer time 100 ms (with load current 20 A)

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