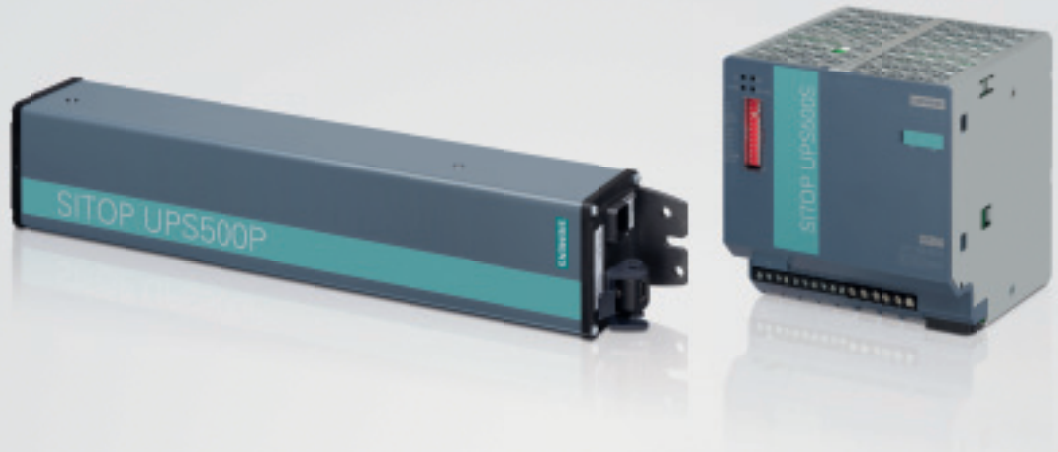


Maintenance-free UPS does away with battery replacement

New uninterruptible DC power supply with capacitor technology



Uninterruptible power supplies usually store electrical energy in rechargeable lead-acid batteries. The temperatures inside a control cabinet, however, shorten the service life of the battery substantially, making battery replacement a routine necessity – for instance, once a year at a cabinet temperature of 40 °C. Not so in the case of the innovative DC UPS from SITOP. Capacitors with a long service life mean you don't have to replace batteries, which is how the totally maintenance-free UPS pays for itself within a short time. As no hydrogen is emitted even in the event of a fault, there is no need for ventilation of the site. The much shorter charging times also mean fast availability following a power failure. The 24 V DC UPS comes in degree of protection IP65 for distributed use, and in IP20 for DIN-rail mounting. This means it is possible to back up data after a power failure, and to safely shut down a PC-based control application, for example.

The advantages at a glance

Totally maintenance-free DC UPS with high-capacity double-layer capacitors

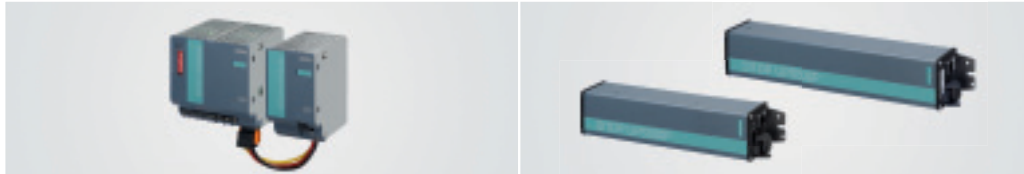
- Modularly cascadable for DIN-rail mounting: SITOP UPS500S basic unit 24 V/15 A with integral 2.5 or 5 kW energy storage, combinable with up to 3 UPS501S expansion modules (5 kW)
- SITOP UPS500P 24 V/7 A with 5 or 10 kW in degree of protection IP65 for distributed use, e.g. on support arms
- Long-life capacitors eliminate battery replacement: After 8 years, the UPS500 still has 80% of its rated capacity at an ambient temperature of 50°C
- Totally maintenance-free
- No ventilation of the mounting location is necessary (VDE 0510 Part 2 / EN 50272-2)
- Backup is available again quickly
- Safe shutdown and correct restart of SIMATIC PCs
- Software tool supports further processing and response of the PC: www.siemens.com/sitop-ups

SITOP UPS500

Answers for industry.

SIEMENS

Technical data



SITOP	UPS500S – basic units 15 A	UPS500P – basic unit 7 A, IP65
Order Nos.	2.5 kW: 6EP1 933-2EC41, 5 kW: 6EP1 933-2EC51	5 kW: 6EP1933-2NC01, 10 kW: 6EP1933-2NC11
Input data		
Input voltage $U_{e \text{ rated}} / \text{range}$	DC 24 V / 22 ... 29 V	DC 24 V / 22.5 ... 29 V
Connection threshold for backup	22.5 V DC \pm 0.1 V (factory setting), UPS500S adjustable in range 22 to	25.5 V DC (in 0.5 V steps)
Input current $I_{e \text{ rated}}$	15.2 A + approx. 2.3 A in charge mode	7A + approx. 2 A in charge mode
Mains buffering		
Range adjustable via DIP switches	5, 15, 25, 35, 45, 55, etc. to 315 seconds (in 10 s steps) or max. backup time	–
Response to return of input voltage after the set buffer time	Interruption of U_e for 5 s for automatic restart of PCs or optionally no interruption	
On/Off control current circuit (via external floating NO contacts)	Backup mode is terminated by opening the control current circuit	–
Output data		
Output voltage (backup and standard mode) $U_{a \text{ rated}} / \text{range}$	24 V DC \pm 3%	24 V DC \pm 3%
Output current I_a	0 ... 15 A	0 to 7 A
Charging current	1 A (factory setting) or 2 A, selectable	2 A
Efficiency (rated operation) / power losses	97.5% / 9 W	96.9% / 5.2 W
Protection and monitoring		
Polarity reversal protection	Against reversed input voltage	
Overload/short-circuit protection	Yes, restart	
Standard mode	LED green (o.k.) and floating changeover switch	LED green (o.k.)
Backup mode	LED yellow (Bat) and floating changeover switch	LED yellow (Bat)
Alarm (not ready for backup)	LED red (Alarm) and floating changeover switch	LED red (Alarm)
Capacitor charging (over 85% charged)	Second LED green (Bat > 85%) and floating NO contact	Second LED green (Bat > 85%)
Control signals		
On/Off control signal via floating NO contact	Backup mode is terminated by opening the control current circuit	--
"Remote timer start" via USB interface	Starts mains buffering for the set backup time	Starts mains buffering for the set backup time
USB interface	Output of all alarm signals and receipt of the signal "Remote timer start"	
Specification 2.0 with Full Speed, i.e. 2 Mbit/s	Supply + 5V from DC UPS („self powered“)	Supply + 5V from PC („bus powered“)
Connection to PC:	Commercially available 4-core shielded cable, 90 ohms, max. 5 m, USB series „B“ connector to DC UPS	
General data		
Radio interference level (EN 55022) / immunity	Class B / immunity to EN 61000-6-2	Class B / immunity to EN 61000-6-2
Protection class	Class III (ext. circuit and power supply unit: SELV voltage to EN 60950 necessary)	Class III (ext. circuit and power supply unit: SELV voltage to EN 60950 necessary)
Degree of protection (EN 60529)	IP20	IP65
Ambient temperature during operation / Transport and storage temperature	0 to +60 °C (UPS500P: 0 ... +55 °C) for natural convection climate class	3K3 to EN 60721 / –40 to +70 °C
Dimensions (W x H x D) in mm	120 x 125 x 125 (free space required 50 mm above and 50 mm below)	5 kW: 400 (without connector) x 80 x 80, 10 kW: 470 (without connector) x 80 x 80
Weight	2.5 kW: approx. 1.0 kg, 5 kW: approx. 1.2 kg	5 kW: approx. 1.9 kg, 10 kW: approx. 2.2 kg
Mounting	Snapped onto standard DIN rail EN 50022-35x15/7.5	Screw-mounted in all installation positions
Approvals	CE, UL 508 / CSA C22.2, File E197259	CE

	SITOP UPS501S expansion module 5 kW	Connector set for SITOP UPS500P
Order No.	6EP1935-5PG01	6EP1975-2ES00
Description	Expansion module to extend the backup time, up to 3 units can be connected in parallel with a basic unit via connecting cable	Connector for input and output, and preassembled USB cable in 2 m length
Dimensions (W x H x D) in mm	70 x 125 x 125	--
Weight	Approx. 0.7 kg	--

Backup and charging times

Configurations SITOP UPS500S/501S										UPS500P	
Basic module	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 kW	5 kW	10 kW	
Expansion modules	–	–	1 x 5 kW	1 x 5 kW	2 x 5 kW	2 x 5 kW	3 x 5 kW	3 x 5 kW	–	–	
Total energy	2.5 kW	5 kW	7.5 kW	10 kW	12.5 kW	15 kW	17.5 kW	20 kW	5 kW	10 kW	
Backup current	Backup times										
0.5 A	134 sec	236 sec	390 sec	478 sec	632 sec	748 sec	851 sec	1007 sec	284 sec	647 sec	
0.8 A	90 sec	167 sec	266 sec	346 sec	440 sec	527 sec	580 sec	706 sec	190 sec	435 sec	
1 A	75 sec	138 sec	219 sec	296 sec	365 sec	414 sec	490 sec	572 sec	153 sec	351 sec	
2 A	38 sec	76 sec	122 sec	156 sec	203 sec	230 sec	265 sec	306 sec	80 sec	152 sec	
3 A	26 sec	52 sec	82 sec	106 sec	136 sec	159 sec	186 sec	213 sec	53 sec	108 sec	
4 A	19 sec	39 sec	61 sec	81 sec	101 sec	120 sec	139 sec	160 sec	40 sec	84 sec	
5 A	15 sec	31 sec	49 sec	65 sec	81 sec	95 sec	111 sec	130 sec	30 sec	68 sec	
6 A	12 sec	26 sec	40 sec	55 sec	67 sec	80 sec	94 sec	106 sec	25 sec	57 sec	
7 A	10 sec	21 sec	34 sec	47 sec	58 sec	69 sec	81 sec	82 sec	21 sec	49 sec	
8 A	8 sec	18 sec	29 sec	40 sec	50 sec	59 sec	69 sec	79 sec	–	–	
10 A	6 sec	15 sec	23 sec	32 sec	39 sec	47 sec	54 sec	62 sec	–	–	
12 A	4 sec	12 sec	19 sec	26 sec	32 sec	38 sec	44 sec	52 sec	–	–	
15 A	3 sec	9 sec	14 sec	20 sec	25 sec	30 sec	35 sec	40 sec	–	–	
Charging current	Charging times										
2 A	54 sec	120 sec	158 sec	223 sec	263 sec	318 sec	355 sec	417 sec	130 sec	360 sec	
1 A	110 sec	205 sec	311 sec	425 sec	503 sec	625 sec	695 sec	816 sec	–	–	

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