

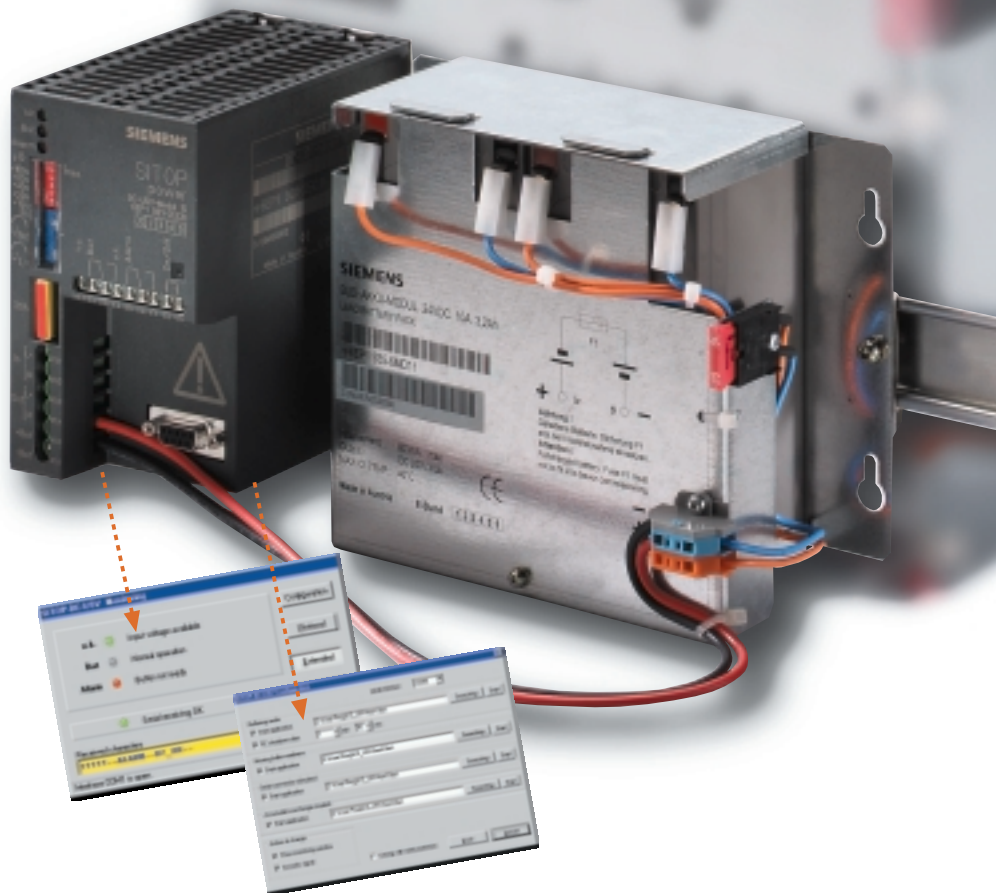
SITOP 15 A DC UPS for 24 V "Non-stop" With diagnostics functions and PC connection

The latest developments: SITOP power

Variations in line voltage or brief power outages can create problems for a control system. An power interruption of about a second or longer often results in loss of valuable production time when the line is shut down. During such an unexpected shut down, tool damage and data loss may occur. Although power outages are unavoidable, the negative consequences are preventable.

The new SITOP power UPS module automatically transfers the load up to 15 A to a battery in the event of a power loss. Standard SITOP power supplies 5 A – 15 A can be coupled with this UPS module and 2.5 Ah, 3.2 Ah, 7 Ah and 12 Ah maintenance-free, rechargeable batteries. The 2.5 Ah battery was designed for -40° C to + 60° C ambient temperatures.

As in the proven, larger 40 A SITOP UPS Module, the new 15 A UPS DIN rail mounted module incorporates the same battery management function that charges the battery to an optimal 27 V. This function maximizes the battery life by using a charging voltage that is independent to the load voltage. Unlike most conventional DC UPS systems that simultaneously deliver 27 V to the battery and load, this module delivers 24 V to the load while delivering 27 V to the battery. This stabile load voltage increases the life of devices that have a maximum 26 V operating range. Depending on the selected activation threshold voltage (18 - 26 V), the UPS module completely switches the load to the battery without interruption during a power outage. The buffer time can be adjusted from 5 to 315 seconds in 10



second increments or until the battery is fully discharged.

Standard features include comprehensive protection and monitoring functions. For example, relay contacts are provided in the module to indicate the status of battery and line power. In addition to the floating contacts, the status of the system is also indicated by LEDs.

This module is also available with a RS 232 interface for PC controlled processes. All relevant monitoring information can be read through this interface. For further information concerning the PC interface, please see the internet web site, www.ad.siemens.de/sitop/index_76.shtml. Free software for this module can be downloaded from this web site for Win 95, 98 and NT operating systems.

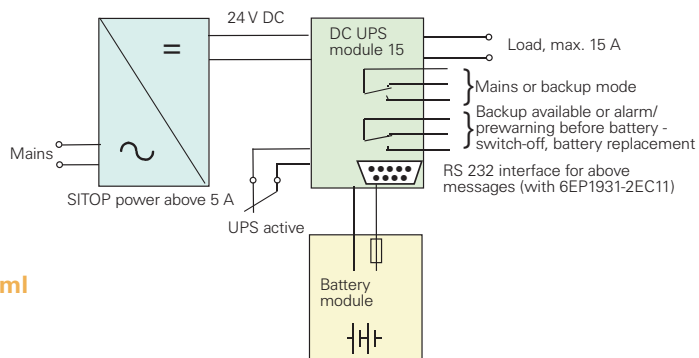
Technical specifications for the SITOP DC UPS module 15 A

Input data	Rated input voltage Activation threshold for battery – factory setting/range Rated input current Mains buffering – With 3.2 Ah battery module at +25 °C – With 7.4 Ah battery module at +25 °C – Range adjustable using DIP switches	24 V (22 ... 27.5 V) DC 22.5 V \pm 0.1 V DC / 18 ... 26 V DC adjustable 15 A + approx. 1 A battery charging > 1 min at 15 A, > 3 min at 10 A, > 13 min at 5 A > 7 min at 15 A, > 14 min at 10 A, 40 min at 5 A 5, 15, 25, 35, 45 etc. up to 315 seconds or max. backup time
Output data	– Rated output voltage during normal mode – Rated output voltage during battery backup mode – Output current +Bat/-Bat output in normal mode – End-of-charge voltage: factory setting/range – Approx. end-of-charge current: factory setting/range Efficiency (rated operation)	24 V DC (SITOP power) approx. 0.5 V 24 V DC (50% rated battery current) / 27 V (no load) 24 V DC (100% rated battery current) / 18.5 V (exhaustive discharge protection) 0 ... 15 A U/I charging characteristic 27.0 V DC / 26.3 ... 29.2 V DC adjustable Approx. 0.7 A / 0.3 ... 0.7 A adjustable Approx. 96.5%
Protection and monitoring	Exhaustive discharge protection Short-circuit and overload protection Open-circuit monitoring for battery circuit Battery service life monitoring	Automatic switching off at battery voltage lower than 18.5 V Yes, line side fuse 20 A, battery fuse 15 A Alarm signal (tested every 20 s) Alarm signal flashing at approx. 1/3 Hz (tested every 4 h)
Displays/signals	Normal mode Battery mode (also during overload for PS support) Alarm (battery backup missing or battery voltage < 20.4 V) Battery service life monitoring	Green LED, floating changeover contact in position "24 V DC OK" Yellow LED, floating changeover contact in position "Bat" Red LED, floating changeover contact in position "Alarm" Red LED flashing at approx. 1/3 Hz, floating changeover contact switching at 1/3 Hz
RS232 interface	(only with 6EP1 931-2EC11) Technical design: SN1 Interface to PC	9600 baud / 8 data bits / 1 stop bit / no parity bit A 9-contact Sub-D extension (monitor) cable is required
RFI Specifications	RI suppression (EN 55022)	Class B
Standards	Protection class (EN 60950) Degree of protection (VDE 0470 Part 1) UL/cUL (CSA) listed	Class III (SITOP power supply, SELV voltage) IP 20 to EN 60529 (DIN VDE 0470 Part 1) UL 50B pending
General data	Ambient temperature Storage and transport temperature Dimensions W x H x D in mm (in) Approx. weight kg (lbs) Order No.	0 to +60 °C –40 °C to 70 °C 75 x 125 x 125 (2.95 x 4.92 x 4.92) 0.4 (0.9), approx. 0.45 (1.0) with RS 232 interface 6EP1931-2EC01; 6EP1931-2EC11 with RS 232 interface

SITOP 24 V battery module	15 A/2.5 Ah high-temp. battery	10 A/3.2 Ah	20 A/7 Ah	25 A/12 Ah
Battery type	Maintenance-free Cyclon battery	Maintenance-free lead gel batteries		
Rec. end-of-charge voltage (standby use)	279 V (20 °C); 272 V (40 °C); 26.4 V (60 °C)	273 V (20 °C); 26.8 V (30 °C); 26.6 V (40 °C)		
Max. permissible charging current	3 A	0.8 A	1.7 A	3 A
Protection class (IEC 536; VDE 0106 Part 1)	Class III			
UL/cUL (CSA) recognized	No (used materials and batteries according to UL)			
Degree of protection (EN 60529; VDE 0470 Part 1)	IP 00			
Short-circuit protection/battery protection	Battery fuse (FKS) / valve control			
Ambient temperature range	–40 ... +60 °C	+5 ... +40 °C	+5 ... +40 °C	+5 ... +40 °C
Transport and storage temperature	–40 ... +60 °C	–20 ... +50 °C	–20 ... +50 °C	–20 ... +50 °C
Self-discharge rate	Approx. 3% per month with battery temperature	20 °C, approx. 15% per month with a battery temperature of 40 °C		
Dimensions (W x H x D) mm	265 x 151 x 91	190 x 151 x 82	186 x 168 x 121	253 x 118 x 31
Weight (including supplied cable) kg (lbs)	Approx. 3.8 (8.4)	Approx. 3.2 (7.1)	Approx. 6 (13.3)	Approx. 9 (20)
Assembly on 35-mm standard rails	DIN EN 50022-35 x 15/7.5	DIN EN 50022-35 x 15/7.5		
Assembly using 4 holes	For hanging onto M4 screws (screws not included in delivery)			
Order No.	6EP1935-6MD31 ¹⁾	6EP1935-6MD11	6EP1935-6ME21 ¹⁾	6EP1935-6MF01 ¹⁾

¹⁾ Start of delivery: July 2000

Power supplies for buffering mains failures Block diagram of DC UPS



http://www.ad.siemens.de/sitop/index_76.shtml

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