

SITOP expansion modules
to increase system availability

					
Technical data	Redundancy				
SITOP	SITOP RED1200 redundancy module		SITOP PSE202U redundancy module		
Article No.	6EP4346-7RB00-0AX0	6EP4347-7RB00-0AX0	6EP1964-2BA00	6EP1962-2BA00	6EP1961-3BA21
Rated input voltage – Range	12 V, 24 V, 48 V DC 10...58 V DC	12 V, 24 V, 48 V DC 10...58 V DC	24 V DC 19...29 V DC	24 V DC 19...29 V DC	24 V DC 24...28.8 V DC
Brief description of product/function	Module for redundancy mode and for decoupling power supplies with output voltages from 12 to 48 V, e.g. for series connection to increase voltage to up to 96 V or parallel connection of more than 2 power supplies to enhance performance.		Module for redundancy mode; floating relay contact and green LED for signaling “Infeed 1 and 2 o.k.”, switching threshold adjustable between 20 and 25 V DC		
Possible combinations	Decoupling of two 12 V to 48 V power supplies with output currents up to 10 A or one 20-A power supply per redundancy module	Decoupling of two 12 V to 48 V power supplies with output currents up to 20 A or one 40-A power supply per redundancy module	Decoupling of two 24-V power supplies up to 5 A or one 10-A power supply per redundancy module	Decoupling and limitation of the output to Class-2 limit (100 VA) of two 24-V power supplies 5 to 40 A	Decoupling of two 24-V power supplies 5 A to 20 A or one 40-A power supply per redundancy module
Rated output current	20 A (total output current)	40 A (total output current)	10 A (total output current)	3.5 A ¹⁾	40 A (total output current)
Reverse voltage protection	200 V DC	200 V DC	52 V DC	52 V DC	52 V DC
Efficiency at rated values, approx.	97.5 %	97.5 %	97 %	95 %	97 %
Radio interference suppression (EN 55022)	Class B	Class B	Class B	Class B	Class B
Degree of protection (EN 60529)	IP20	IP20	IP20	IP20	IP20
Terminals	Push-in	Push-in	Screw terminals	Screw terminals	Screw terminals
Ambient temperature	–30...+70 °C	–30...+70 °C	–20...+70 °C	–20...+70 °C	–25...+60 °C
Dimensions (W x H x D) in mm	35 x 135 x 125	45 x 135 x 125	30 x 80 x 100	30 x 80 x 100	70 x 125 x 125
Weight approx.	0.35 kg	0.35 kg	0.125 kg	0.125 kg	0.5 kg
Certification	CE, cULus, CB, pending: DNV GL, ABS		CE, cULus	CE, cULus, NEC Class 2	CE, cULus, DNV GL, ABS
List Price	\$128	\$180	\$85	\$183	\$173

¹⁾ Max. 8 A summation current in fault case in accordance with NEC Class 2
Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

										
Technical data	Monitoring									
SITOP	SITOP SEL1200 selectivity module with switching characteristic			SITOP SEL1400 selectivity module with current limiting characteristic			SITOP PSE200U selectivity module with current limiting characteristic and common signaling contact		SITOP PSE200U selectivity module with current limiting characteristic and single-channel signaling	
Article No.	6EP4437-7FB00-3CX0	6EP4437-7FB00-3DX0	6EP4438-7FB00-3DX0	6EP4437-7EB00-3CX0	6EP4437-7EB00-3DX0	6EP4438-7EB00-3DX0	6EP1961-2BA11	6EP1961-2BA21	6EP1961-2BA31	6EP1961-2BA41
Article No. with NEC Class 2							6EP1961-2BA51	6EP1961-2BA61		
Rated input voltage/range	24 V DC/20.4...30 V DC			24 V DC/20.4...30 V DC			24 V DC/22...30 V DC		24 V DC/22...30 V DC	
Brief product description	Module for distributing the 24-V supply over up to four or eight load circuits and their monitoring for overload; selective shutdown of faulty load circuits, rated current individually adjustable; universal use for all power supplies									
Switch-off characteristic	Switching – for standard protection. Release time depending on overcurrent			Current limiting – for increased safeguarding requirements; current limitation to 150 % (110 % for NEC Class 2 variants) of the set threshold value, then shutdown. Voltage dip below 20 V not possible, therefore also suitable for loads that do not meet the PLC standard						
Status indication per output	3-color LED: green – connected, yellow – manually disconnected, red – disconnected due to overcurrent									
Signal outputs	Diagnostics interface for common signaling or single-channel diagnostics. Analysis of single-channel diagnostics via SIMATIC S7 function block: current, set current threshold value, status (on/off), reason for disconnection (if applicable)						Common signaling contact. Voltage measuring points for current value per output (1 V ± 1 A)		Single-channel signaling for channel-specific analysis via SIMATIC S7-function block. Voltage measuring points for current value per output (1 V ± 1 A)	
Reset, outputs switched on/off	Remote reset with 24-V signal. Reset and each output switched on/off via push button									
Individual load circuits switched on sequentially	Load-optimized (previous output less than set rated value) + 25 ms, + 200 ms, or + 500 ms						0 ms (simultaneously), 25 ms, 100 ms or load-optimized (previous output less than set rated value)			
Rated output current	4 x 10 A	8 x 5 A	8 x 10 A	4 x 10 A	8 x 5 A	8 x 10 A	4 x 3 A	4 x 10 A	4 x 3 A	4 x 10 A
– Setting range	2...10 A	1...5 A	2...10 A	2...10 A	1...5 A	2...10 A	0.5...3 A	3...10 A	0.5...3 A	3...10 A
Efficiency at rated values, approx.	typ. 98%	typ. 98%	typ. 98%	typ. 98%	typ. 98%	typ. 98%	97 %	99 %	97 %	99 %
Parallel switching of 2 outputs	Yes (max. 15 A)	Yes (max. 7.5 A)	Yes (max. 15 A)	Yes (max. 15 A)	Yes (max. 7.5 A)	Yes (max. 15 A)	No	No	No	No
Electronic short-circuit protection	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Radio interference suppression (EN 55022)	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B	Class B
Degree of protection (EN 60529)	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20	IP20
Terminals	Push-in	Push-in	Push-in	Push-in	Push-in	Push-in	Screw terminals	Screw terminals	Screw terminals	Screw terminals
Ambient temperature	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+70 °C	–25...+60 °C	–25...+60 °C	–25...+60 °C	–25...+60 °C
Dimensions (W x H x D) in mm	45 x 135 x 125	45 x 135 x 125	45 x 135 x 125	45 x 135 x 125	45 x 135 x 125	45 x 135 x 125	72 x 80 x 72	72 x 80 x 72	72 x 80 x 72	72 x 80 x 72
Weight approx.	0.3 kg	0.3 kg	0.3 kg	0.3 kg	0.3 kg	0.3 kg	0.2 kg	0.2 kg	0.2 kg	0.2 kg
Certification	CE, UL, cULus, CB, CSA						CE, UL, cURus, CB, cULus, DNV GL, ABS, 6EP1961-BA51/6EP1961-2BA61: NEC Class 2			
List Price	\$176	\$290	\$310	\$240	\$405	\$425	\$205	\$225	\$205	\$225

Technical data applies at rated input voltage and ambient temperature of +25°C (unless otherwise specified)

SITOP expansion modules
to increase system availability

					
Technical data	Mains buffering up to the seconds range		Mains buffering up to the minutes range		
SITOP	Buffer module ¹⁾ SITOP PSE201U	Buffer module SITOP BUF1200	UPS500S–basic unit 15 A		UPS501S – expansion module
Buffer time/Energy	200 ms/40 A	300 ms/40 A	2.5 kW	5 kW	5 kW
Article No.	6EP1961-3BA01	6EP4231-7HB00-0AX0	6EP1933-2EC41	6EP1933-2EC51	6EP1935-5PG01
Input voltage	24 V DC/24...28.8 V DC	24 V DC/20...30 V DC	24 V DC, 22...29 V, infeed from SITOP 24 V		Infeed from basic unit
Rated input current	Module for buffering during short power failures; parallel connection at output of 24-V power supplies ¹⁾ . Buffering time 200 ms at 40 A up to 1.6 s at 5 A load current; multiplication possible through parallel connection; maximum buffering time 10 s	Module for buffering during short power failures; parallel connection at output of 24-V power supplies. Buffering time 300 ms at 40 A up to 2.4 s at 5 A load current; multiplication possible through parallel connection	15.2 A + approx. 2.3 A in charging mode		Description: expansion module for extending the buffering time, up to three units can be switched in parallel with one UPS500S basic unit
Rated output voltage			In buffer and normal mode 24 V DC ± 3 %		
Rated output current			15 A, charging current 1 A (factory setting) or 2 A selectable		
Efficiency at rated values, approx.			97.5 %		
Overload and short-circuit protection			Electronic, automatic restart		
Parallel switching	Yes	Yes	No		
Radio interference suppression (EN 55022)	Class B	Class B	Class B	Class B	Class B
Degree of protection (EN 60529)	IP20	IP20	IP20	IP20	IP20
Ambient temperature	0...+60 °C	–30 ...+70 °C	0...+60 °C	0...+60 °C	0...+60 °C
Dimensions (W x H x D) in mm	70 x 125 x 125	70 x 135 x 155	120 x 125 x 125	120 x 125 x 125	70 x 125 x 125
Weight approx.	1.2 kg	1.5 kg	1.0 kg	1.0 kg	0.7 kg
Certification	CE, UL, CSA, DNV GL, ABS	CE, cULus, CB, SEMI F4, pending: DNV GL, ABS	CE, cULus, CB, DNV GL, ABS		
List Price	\$305	\$460	\$685	\$865	\$590

¹⁾ Can be combined with SITOP PSU8200, PSU6200 and SITOP smart 24-V power supplies (except 6EP1 336-2BA10)
Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

Uninterruptible power supplies –
SITOP UPS500 maintenance-free DC UPS with
capacitor technology

Buffering times and charging times
SITOP UPS500

								
SITOP UPS500S/501S configurations								
Basic unit	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 kW	2.5 kW	5 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

Buffering times								
Load current								
0.5 A	134 s	236 s	390 s	478 s	632 s	748 s	851 s	1,007 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								
Charging 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

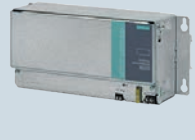
Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

Uninterruptible power supplies
SITOP DC UPS with battery modules for bridging longer power failures

					
Technical data	Mains buffering up to the hours range				
SITOP	UPS1600	UPS1600	UPS1600	Battery module UPS1100	Battery module UPS1100
Energy storage				Lead storage batteries	Lead storage batteries
Output voltage/current or charge	24 V/10 A	24 V/20 A	24 V/40 A	24 V/1.2 Ah	24 V/3.2 Ah
				for UPS1600 10 A	for UPS1600 10 A and 20 A
Article No.	6EP4134-3AB00-0AY0	6EP4136-3AB00-0AY0	6EP4137-3AB00-0AY0	6EP4131-0GB00-0AY0	6EP4133-0GB00-0AY0
– with USB interface	6EP4134-3AB00-1AY0	6EP4136-3AB00-1AY0	6EP4137-3AB00-1AY0		
– with Ethernet/PROFINET interface	6EP4134-3AB00-2AY0	6EP4136-3AB00-2AY0	6EP4137-3AB00-2AY0		
Input voltage	24 V DC, 22...29 V, infeed from 24-V SITOP power supply			Recommended end-of-charge voltage (set automatically by SITOP UPS1600)	
Rated input current	approx. 14 A at max. charging current (3 A)	approx. 25 A at max. charging (4 A)	approx. 46 A at max. charging (5 A)	Charging current max. 0.3 A	Charging current max. 0.9 A
Rated output voltage	24 V DC (upstream SITOP device or battery), charging voltage: 27.0 V			24 V DC, 22...27.0 V DC (no-load operation)	
Rated output current	10 A, charging current	20 A, charging current	40 A, charging current max. 5 A	10 A	20 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 %	Not applicable	Not applicable
Overload and shortcircuit protection	Yes, restart in normal mode			Installed battery fuse: 15 A/32 V	Installed battery fuse: 25 A/32 V
Parallel switching	No	No	No	Yes, up to six units	Yes, up to six units
Radio interference suppression	Class B (EN 55022)	Class B (EN 55022)	Class B (EN 55022)	–	–
Degree of protection (EN 60529)	IP20	IP20	IP20	IP20	IP20
Ambient temperature (derating from +60 °C)	–25...+70 °C	–25...+70 °C	–25...+70 °C	–15...+50 °C	–15...+50 °C
Installation	DIN rail	DIN rail	DIN rail	DIN rail or wall mounting	DIN rail or wall mounting
Dimensions (W x H x D) in mm	50 x 125 x 125	50 x 125 x 125	70 x 125 x 150	89 x 130 x 107	190 x 169 x 79
Weight approx.	0.38/0.4/0.44 kg	0.39/0.41/0.45 kg	0.65/0.65/0.7 kg	1.9 kg	3.8 kg
Certification	CE, cULus, CB, DNV GL, ABS		CE, cULus, CB, DNV GL, ABS	CE, cURus, CB, DNV GL, ABS	CE, cURus, CB, DNV GL, ABS
List Price	\$365/\$450/\$570	\$430/\$515/\$635	\$845/\$950/\$1,095	\$199	\$215

Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

Battery module selection table:
buffer times and service life

			
Mains buffering up to the hours range			
UPS1100 battery module	UPS1100 battery module	UPS1100 battery module with extended temperature range	UPS1100 battery module, lithium technology
Lead batteries	Lead batteries	Pure-lead batteries	LiFePO batteries
24 V/7 Ah	24 V/12 Ah	24 V/2.5 Ah	24 V/5 Ah
for UPS1600 10 A, 20 A, and 40 A	for UPS1600 10 A, 20 A and 40 A	for UPS1600 10 A and 20 A	for UPS1600 10 A and 20 A
6EP4134-0GB00-0AY0	6EP4135-0GB00-0AY0	6EP4132-0GB00-0AY0	6EP4133-0JB00-0AY0
Recommend end-of-charge voltage: set automatically by SITOP UPS1600			
Charging current max. 2.1 A	Charging current max. 3.6 A	Charging current max. 0.7 A	Charging current max. 2.1 A
24 V DC, 22...27.0 V DC (no-load operation)			24 V DC, 22...28.8 V DC (no-load operation)
40 A	40 A	20 A	20 A
Not applicable	Not applicable	Not applicable	Not applicable
Installed battery fuse: 2 x 25 A/32 V	Installed battery fuse: 2 x 25 A/32 V	Installed battery fuse: 25 A/32 V	Installed battery fuse: 25 A/32 V
Yes, up to six units	Yes, up to six units	Yes, up to six units	Yes, up to six units
–	–	–	–
IP20	IP20	IP20	IP20
–15...+50 °C	–15...+50 °C	–40...+60 °C	–20...+50 °C
Wall mounting	Wall mounting	DIN rail or wall mounting	DIN rail or wall mounting
186 x 186 x 110	253 x 186 x 110	265 x 115 x 76	189 x 186 x 113
6.1 kg	9.3 kg	3.7 kg	3.4 kg
CE, cURus, CB, DNV GL, ABS	CE, cURus, CB, DNV GL, ABS	CE, cURus, CB, DNV GL, ABS	CE, cURus, CB, DNV GL, ABS
\$265	\$360	\$540	\$1360

¹⁾ Buffer time determination is based on the discharging time of new and completely charged battery modules with a minimum battery temperature of +25 °C until DC UPS (19 V) turns off. The SITOP Selection Tool can be used to determine buffer times for additional temperatures and buffer voltages: [siemens.com/tst-powersupply](https://www.siemens.com/tst-powersupply) ²⁾ With two parallel connected UPS1100 battery modules and UPS1600 40 A

						
UPS1100 battery module	1.2 Ah	3.2 Ah	7 Ah	12 Ah	2.5 Ah	5 Ah
Load current	Buffering times ¹⁾					
1 A	27 min	2 h	5 h	8 h 30 min	1 h 30 min	4 h
2 A	14 min	1 h	2 h 40 min	4 h 30 min	50 min	2 h 10 min
3 A	10 min	45 min	1 h 50 min	3 h 10 min	36 min	1 h 30 min
4 A	7 min 50 s	34 min	1 h 20 min	2 h 30 min	26 min	1 h 10 min
6 A	4 min 40 s	21 min	48 min	1 h 30 min	15 min	48 min
8 A	3 min	15 min	34 min	1 h	11 min	37 min
10 A	1 min 30 s	9 min 30 s	21 min	42 min	6 min 40 s	26 min
12 A	–	8 min 10 s	19 min	37 min	5 min 40 s	23 min
14 A	–	6 min 50 s	16 min	32 min	4 min 40 s	21 min
16 A	–	5 min 30 s	13 min	27 min	3 min 40 s	18 min
20 A	–	2 min 50 s	7 min 50 s	17 min	1 min 40 s	13 min
30 A	–	–	3 min 50 s	10 min	3 min 20 s, 2x ²⁾	17 min, 2x ²⁾
40 A	–	–	1 min 40 s	5 min 30 s	1 min 40 s, 2x ²⁾	13 min, 2x ²⁾
Ambient temperature	Approximate service life (drop to 80% of the original capacity), depending on battery temperature					
+20 °C	4 years	4 years	4 years	4 years	10 years	15 years
+30 °C	2 years	2 years	2 years	2 years	7 years	10 years
+40 °C	1 year	1 year	1 year	1 year	3 years	9 years
+50 °C	0.5 years	0.5 years	0.5 years	0.5 years	1.5 years	2 years
+60 °C	1 year					

Find out more:

usa.siemens.com/sitop

Additional information on SITOP:

- TIA Selection Tool:
siemens.com/tst-powersupply
- Operating instructions as download:
siemens.com/sitop/manuals
- Request CAX data via the CAX download manager:
siemens.com/cax

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