

# SITOP 1-phase 24 V DC

Output currents 2.1 A and 2.5 A

## Overview

Product	Special design PSU100D	SITOP lite PSU100L	SITOP compact PSU100C
Power supply, type	2.1 A	2.5 A	2.5 A
Order No.	6EP1331-1LD00	6EP1332-1LB00	6EP1332-5BA00

The product families are highlighted in the same color. For an explanation of the product families, see chapter 1, pages 1/8 through 1/12



The low-cost power supply in flat aluminum housing can be screwed directly on a wall in various mounting positions; with wide-range input for global use.



The low-cost power supply for standard requirements in industrial environments; slim design; manual switchover of input voltage range.



Slim power supply unit for the lower performance range, e.g. for distributed use in control boxes. Low energy consumption thanks to high efficiency across the entire performance range as well as minimum energy losses at no-load and connections with removable terminals.

## Technical specifications

Product	Special design PSU100D	SITOP lite PSU100L	SITOP compact PSU100C
<b>Input</b>			
Rated voltage value $U_{in rated}$ Supply voltage • 1 for AC rated value • 2 for AC rated value • Comment	1-phase AC <b>100 ... 240 V AC</b>	1-phase AC <b>120/230 V AC</b>	1-phase AC or DC <b>100 ... 230 V AC</b>
Input voltage • 1 for AC • 2 for AC • for DC Voltage range Overvoltage resistance Mains buffering at $I_{out rated}$ , min. Mains buffering Rated line frequency value • 1 • 2 Line frequency range	85 ... 264 V 15 ms at $U_{in} = 115/230 V$	93 ... 132 V 187 ... 264 V 2.3 × $U_{in rated}$ , 1.3 ms 20 ms at $U_{in} = 93/187 V$	110 ... 300 V 85 ... 264 V 2.3 × $U_{in rated}$ , 1.3 ms 20 ms at $U_{in} = 230 V$
Input current at rated value of input voltage • 100 V rated value • 120 V rated value • 230 V rated value • 240 V rated value	1.1 A 0.7 A	1.1 A 0.65 A	1.21 A 0.67 A
Switch-on current limit (+25 °C) Duration of the switch-on current limit at 25 °C max. $\dot{I}_t, max.$	max. 60 A 1.2 A <sup>2</sup> s	max. 27 A 3 ms 0.3 A <sup>2</sup> s	max. 31 A 2.4 A <sup>2</sup> s
Built-in incoming fuse Protection in the mains power input (IEC 898)	Internal Recommended miniature circuit breaker: 10 A or higher, characteristic C or 16 A or higher, characteristic B	T 2 A/250 V (not accessible) Recommended miniature circuit breaker: 3 A characteristic C	Internal Recommended miniature circuit breaker: 16 A or higher, characteristic B or 10 A or higher, characteristic C
<b>Output</b>			
Output Rated voltage $U_{out rated DC}$	Controlled, isolated DC voltage <b>24 V</b>	Controlled, isolated DC voltage <b>24 V</b>	Controlled, isolated DC voltage <b>24 V</b>
Total tolerance, static ± • Static mains compensation, approx. • Static load compensation, approx.	2 % 0.5 % 1 %	3 % 0.1 % 0.5 %	3 % 0.1 % 0.2 %

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#### Technical specifications (continued)

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Order No.	6EP1331-1LD00	6EP1332-1LB00	6EP1332-5BA00
<b>Output (continued)</b>			
Residual ripple, peak-peak Spikes (bandwidth approx. 20 MHz)	Max. 100 mV Max. 100 mV	Max. 150 mV (typ. 10 mV) Max. 240 mV (typ. 50 mV)	Max. 200 mV (typ. 55 mV) Max. 300 mV (typ. 50 mV)
Adjustment range Settable output voltage Output voltage adjustment Status display Signaling	22 ... 28 V Yes via potentiometer Green LED for 24 V OK	22.8 ... 26.4 V Yes via potentiometer Green LED for 24 V OK	22.2 ... 26.4 V Yes via potentiometer Green LED for output voltage OK
On/off behavior	Overshoot of $U_{out} < 2\%$	Overshoot of $U_{out}$ approx. 4 %	Overshoot of $U_{out}$ approx. 1 %
Startup delay, max. • Comment Voltage rise, typ. Maximum voltage rise time of the output voltage Rated current $I_{out rated}$ Current range • Comment	1 s 30 ms <b>2.1 A</b> 0 ... 2.1 A +50 ... +70 °C: Derating 2.5%/K	1.5 s 150 ms <b>2.5 A</b> 0 ... 2.5 A +45 ... +60 °C: Derating 2%/K	0.7 s 100 ms <b>2.5 A</b> 0 ... 2.5 A +50 ... +70 °C: Derating 3.5%/K
Typical power output Temporary overload current • in the event of a short circuit during startup, typical • in the event of a short circuit during operation, typical Duration of overload capability overcurrent • in the event of a short circuit during startup • in the event of a short circuit during operation	50 W	60 W	60 W
Parallel switching for enhanced performance Number of devices that can be switched in parallel to enhance performance, units	Yes 2	Yes 2	Yes 2
<b>Efficiency</b>			
Efficiency at $U_{out rated}$ , $I_{out rated}$ , approx. Power loss at $U_{out rated}$ , $I_{out rated}$ , approx.	86 % 8 W	85 % 9 W	87 % 9 W
<b>Closed-loop control</b>			
Dyn. mains compensation ( $U_{in rated} \pm 15\%$ ), max. Dynamic load compensation ( $I_{out}$ : 10/90/10 %), $U_{out} \pm$ typ. Dynamic load compensation ( $I_{out}$ : 50/100/50 %), $U_{out} \pm$ typ.	0.5 % 5 %	0.3 % 2 %	0.1 % 3 %
Load step settling time • 10 to 90 %, typ. • 50 to 100 %, typ. • 90 to 10 %, typ. • 100 to 50 %, typ. Settling time, maximum		0.5 ms 0.7 ms	4 ms 4 ms
<b>Protection and monitoring</b>			
Output overvoltage protection	< 35 V	< 33 V	Yes, according to EN 60950-1
Current limitation Current limitation, typ. Property of the output, short-circuit-proof	2.5 A Yes	2.6 A Yes	3 A Yes
Short-circuit protection	Electronic shutdown, automatic restart	Constant current characteristic	Electronic shutdown, automatic restart
Sustained short-circuit current rms value • Maximum • Typical • Comment	6 A	4 A	
Overload/short-circuit indicator	–	–	–

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#### Technical specifications (continued)

Product	Special design PSU100D	SITOP lite PSU100L	SITOP compact PSU100C
Power supply, type	2.1 A	2.5 A	2.5 A
Order No.	6EP1331-1LD00	6EP1332-1LB00	6EP1332-5BA00
<b>Safety</b>			
Primary/secondary isolation	Yes	Yes	Yes
Isolation	SELV output voltage $U_{out}$ according to EN 60950-1	SELV output voltage $U_{out}$ according to EN 60950-1 and EN 50178	SELV output voltage $U_{out}$ according to EN 60950-1 and EN 50178
Protection class	Class I	Class I	Class I
Leakage current			
• Maximum	3.5 mA	3.5 mA	3.5 mA
• Typical	1 mA	0.4 mA	0.4 mA
CE mark	Yes	Yes	Yes
UL/CSA approval	Yes	Yes	Yes
UL/cUL (CSA) approval	cULus-listed (UL 508, CSA C22.2 No. 107.1) File E197259, cURus (UL 60950-1, CSA C22.2 No. 60950-1) File E151273	cULus-listed (UL 508, CSA C22.2 No. 107.1), File E197259	cULus-listed (UL 508, CSA C22.2 No. 107.1), File E197259; cURus-recognized (UL 60950, CSA C22.2 No. 60950), File E151273, NEC Class 2
Explosion protection	–	–	ATEX (EX) II 3G Ex nA IIC T4; cCSAus (CSA C22.2 No. 213-M1987, ANSI/ISA-12.12.01-2007) Class I, Div. 2, Group ABCD, T4
FM approval	–	–	–
CB approval	Yes	–	Yes
Marine approval	–	–	GL, ABS
Degree of protection (EN 60529)	IP20	IP20	IP20
<b>EMC</b>			
Emitted interference	EN 55022 Class B	EN 55022 Class A	EN 55022 Class B
Supply harmonics limitation	Not applicable	Not applicable	Not applicable
Noise immunity	EN 61000-6-2	EN 61000-6-2	EN 61000-6-2
<b>Operating data</b>			
Ambient temperature			
• During operation	-10 ... +70 °C	0 ... +60 °C	-20 ... +70 °C
- Comment	with natural convection	with natural convection	with natural convection
• During transport	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
• During storage	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
Humidity class according to EN 60721		Climate class 3K3, without condensation	Climate class 3K3, without condensation
<b>Mechanics</b>			
Connection method	Screw terminals	Screw terminals	Screw terminals
Connections			
• Supply input	L, N, PE: 1 screw terminal each for 0.3 ... 1.3 mm <sup>2</sup> solid/finely stranded	L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm <sup>2</sup> solid/finely stranded	L, N, PE: removable screw terminal each for 1 x 0.5 ... 2.5 mm <sup>2</sup>
• Output	+, -: 1 screw terminal each for 0.3 ... 1.3 mm <sup>2</sup>	+, -: 2 screw terminals each for 0.5 ... 2.5 mm <sup>2</sup>	+: 1 screw terminal for 0.5 ... 2.5 mm <sup>2</sup> , -: 2 screw terminals for 0.5 ... 2.5 mm <sup>2</sup>
• Auxiliary contacts	–	–	–
Width of enclosure	97 mm	32.5 mm	45 mm
Height of enclosure	128 mm	125 mm	80 mm
Depth of enclosure	38 mm	120 mm	100 mm
Mounting width		32.5 mm	45 mm
Mounting height		225 mm	180 mm
Weight, approx.	0.35 kg		0.22 kg
Product property of the enclosure: side-by-side enclosure		Yes	Yes
Type of mounting			
• Wall mounting	Yes	No	No
• DIN rail mounting	No	Yes	Yes
• S7-300 rail mounting	No	No	No
Installation	Wall mounting	Snaps onto DIN rail EN 60715 35x7.5/15	Snaps onto DIN rail EN 60715 35x7.5/15
Electrical accessories			Removable spring-loaded terminal 6EP1971-5BA00

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### Selection and ordering data

Product	Input Voltage $U_{in}$ rated	Output Voltage $U_{out}$ rated	Current $I_{out}$ rated	Order No.	Price
<b>Special design, PSU100D</b>					
	100 ... 240 V AC	24 V DC	2.1 A	6EP1331-1LD00	
<b>SITOP lite, PSU100L</b>					
	120/230 V AC	24 V DC	2.5 A	6EP1332-1LB00	
<b>SITOP compact, PSU100C</b>					
	100 ... 230 V AC	24 V DC	2.5 A	6EP1332-5BA00	
<b>LOGO!Power</b>					
	100 ... 240 V AC	24 V DC	2.5 A	6EP1332-1SH43	
<b>SITOP smart, PSU100S</b>					
	120/230 V AC	24 V DC	2.5 A	6EP1332-2BA20	
<b>SITOP in SIMATIC design, S7-1200 version</b>					
	120/230 V AC	24 V DC	2.5 A	6EP1332-1SH71	

### Further information

You can find additional information in the Internet at:

- 2D dimensional drawings, 3D CAD data, circuit diagram macros:  
[www.siemens.com/sitop-cax](http://www.siemens.com/sitop-cax)
- Operating instructions:  
[www.siemens.com/sitop-manuals](http://www.siemens.com/sitop-manuals)
- SITOP Selection Tool:  
[www.siemens.com/sitop-selection-tool](http://www.siemens.com/sitop-selection-tool)

## Installation instructions, mounting areas and fixing options

### Installation instructions

All SITOP and LOGO!Power supplies are built-in devices. They must be mounted vertically so that the supply air can enter the ventilation slots at the bottom of the devices and leave through the upper part of the devices. The minimum distances specified in the relevant operating instructions for the top, bottom and side of the devices must be observed to ensure free air convection.

The option of mounting in non-vertical positions with the appropriate derating is specified in the respective user documentation (manual).

### Mounting areas and fixing options

Power supply	Order No.	Required mounting area in mm (W x H)	Mounting on a DIN rail acc. to EN 60715		Wall mounting
			35 x 7.5 mm	35 x 15 mm	
<b>SITOP 24 V, 1-phase and 2-phase power supplies</b>					
24 V/0.375 A	6EP1731-2BA00	22.5 x 180	X	X	
24 V/0.6 A	6EP1331-5BA00	22.5 x 180	X	X	
24 V/1.3 A	6EP1331-5BA10	30 x 180	X	X	
24 V/1.3 A	6EP1331-1SH03	54 x 130	X	X	
24 V/2 A	6ES7307-1BA01-0AA0 <sup>3)</sup>	40 x 205	<sup>2)</sup>	<sup>2)</sup>	
	6ES7305-1BA80-0AA0 <sup>3)</sup>	80 x 225		<sup>1)</sup>	
	6EP1732-0AA00	80 x 235		X	X
24 V/2.1 A	6EP1331-1LD00	58 (117) x 128			X
24 V/2.5 A	6EP1332-2BA20	33 x 225	X	X	
	6EP1332-5BA00	45 x 180	X	X	
	6EP1332-1SH43	72 x 130	X	X	
	6EP1332-1SH71	70 x 140	X	X	X
	6EP1332-1LB00	33 x 225	X	X	
24 V/3 A	6EP1332-4BA00 <sup>5)</sup>	50 x 225			
24 V/3.1 A	6EP1332-1LD00	58 (117) x 128			X
24 V/3.5 A	6EP1332-1SH31	160 x 280	X	X	X
24 V/3.7 A	6EP1332-5BA20	52 x 180	X	X	
24 V/4 A	6EP1332-5BA10	52.5 x 180	X	X	
	6EP1332-1SH52	90 x 130	X	X	
24 V/4.1 A	6EP1332-1LD10	58 (117) x 158			X
24 V/5 A	6EP1333-3BA00	70 x 225	X	X	
	6EP1333-2BA20	50 x 225	X	X	
	6ES7307-1EA01-0AA0 <sup>3)</sup>	60 x 205	<sup>2)</sup>	<sup>2)</sup>	
	6EP1333-1LB00	50 x 225	X	X	
	6ES7307-1EA80-0AA0 <sup>3)</sup>	80 x 225		<sup>1)</sup>	
	6EP1333-1AL12	160 x 230	X	X	
24 V/6.2 A	6EP1333-1LD00	58 (117) x 178			X
24 V/8 A	6EP1333-4BA00 <sup>5)</sup>	75 x 205			
24 V/10 A	6EP1334-3BA00	90 x 225	X	X	
	6EP1334-2BA20	70 x 225	X	X	
	6ES7307-1KA02-0AA0 <sup>3)</sup>	80 x 205	<sup>2)</sup>	<sup>2)</sup>	
	6EP1334-1LB00	70 x 225	X	X	
	6EP1334-1AL12	160 x 230	X	X	
24 V/12.5 A	6EP1334-1LD00	61 (125) x 199			X
24 V/20 A	6EP1336-2BA10	115 x 225	X	X	
	6EP1336-3BA10	90 x 225	X	X	
	6EP1536-3AA00	90 x 225	X	X	
	6EP1336-3BA00	160 x 225	X	X	
24 V/40 A	6EP1337-3BA00	240 x 225		X	