

Overview

Product	Special design The smallest ones	SITOP compact PSU100C	SITOP compact PSU100C
Power supply, type	0.375 A	0.6 A	1.3 A
Order No.	6EP1731-2BA00 ¹⁾	6EP1331-5BA00	6EP1331-5BA10

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 optimum power supply for automation solutions in the lowest performance range; with wide-range input for 48-220 V DC; thanks to their compact and slim design, they are particularly suitable for solutions where space is limited and in conjunction with low-voltage switchgear.



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.



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Technical specifications

Product	Special design The smallest ones	SITOP compact PSU100C	SITOP compact PSU100C
Input			
Rated voltage value $U_{in rated}$ Supply voltage • 1 for AC rated value • 2 for AC rated value • for DC • Comment	DC voltage 48 ... 220 V DC	1-phase AC or DC 100 ... 230 V AC	1-phase AC or DC 100 ... 230 V AC
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	30 ... 264 V 30 ... 187 V – 10 ms <i>at $U_{in} = 220 V$</i>	110 ... 300 V 85 ... 264 V $2.3 \times U_{in rated}$, 1.3 ms 20 ms <i>at $U_{in} = 230 V$</i> 50 Hz 60 Hz 47 ... 63 Hz	110 ... 300 V 85 ... 264 V $2.3 \times U_{in rated}$, 1.3 ms 20 ms <i>at $U_{in} = 230 V$</i> 50 Hz 60 Hz 47 ... 63 Hz
Input current at rated value of input voltage • 24 V rated value • 48 V rated value • 100 V rated value • 110 V rated value • 120 V rated value • 220 V rated value • 230 V rated value	0.3 A 0.06 A	0.28 A 0.18 A	0.63 A 0.31 A
Switch-on current limit (+25 °C) Duration of the switch-on current limit at 25 °C max. $\bar{I}t, max.$	max. 35 A 3 ms 1.2 A ² s	max. 28 A 0.7 A ² s	max. 34 A 1.2 A ² s
Built-in incoming fuse Protection in the mains power input (IEC 898)	F 4 A/250 V (not accessible) Recommended miniature circuit breaker: 6 A or higher, characteristic C, suitable for DC	Internal Recommended miniature circuit breaker: 16 A or higher, characteristic B or 10 A or higher, characteristic C	Internal Recommended miniature circuit breaker: 16 A or higher, characteristic B or 10 A or higher, characteristic C
Output			
Output Rated voltage $U_{out rated DC}$	Controlled, isolated DC voltage 24 V	Controlled, isolated DC voltage 24 V	Controlled, isolated DC voltage 24 V
Total tolerance, static ± • Static mains compensation, approx. • Static load compensation, approx.	3 % 0.1 % 0.1 %	3 % 0.1 % 0.2 %	3 % 0.1 % 0.2 %

1) SIPLUS module, see page 14/3.

SITOP 1-phase

24 V DC

Output current up to 2 A

Technical specifications (continued)

Product	Special design The smallest ones	SITOP compact PSU100C	SITOP compact PSU100C
Power supply, type	0.375 A	0.6 A	1.3 A
Order No.	6EP1731-2BA00	6EP1331-5BA00	6EP1331-5BA10
Output (continued)			
Residual ripple, peak-peak Spikes (bandwidth approx. 20 MHz)	Max. 150 mV (typ. 50 mV) Max. 240 mV (typ. 50 mV)	Max. 200 mV (typ. 40 mV) Max. 300 mV (typ. 20 mV)	Max. 200 mV (typ. 25 mV) Max. 300 mV (typ. 20 mV)
Adjustment range Settable output voltage Output voltage adjustment Status display On/off behavior	No – Green LED for 24 V OK No overshoot of U_{out} (soft start)	No – Green LED for output voltage OK Overshoot of U_{out} approx. 5 %	22.2 ... 26.4 V Yes via potentiometer Green LED for output voltage OK Overshoot of U_{out} approx. 5 %
Startup delay, max. Voltage rise, typ. Rated current $I_{out rated}$ Current range • Comment	2.5 s 90 ms 0.375 A 0 ... 0.375 A +60 ... +70 °C: Derating 3%/K	1 s 25 ms 0.6 A 0 ... 0.6 A +55 ... +70 °C: Derating 3%/K	0.6 s 90 ms 1.3 A 0 ... 1.3 A +55 ... +70 °C: Derating 3%/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	9 W 2.7 A 200 ms	14 W 1 A	30 W 3.1 A
Parallel switching for enhanced performance Number of devices that can be switched in parallel to enhance performance, units	No	No	Yes 2
Efficiency			
Efficiency at $U_{out rated}$, $I_{out rated}$, approx. Power loss at $U_{out rated}$, $I_{out rated}$, approx.	66 % 4.6 W	82 % 2.6 W	86 % 4.5 W
Closed-loop control			
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.	0.3 % 0.4 %	0.1 % 3 %	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	2 ms 2 ms	3 ms 3 ms	5 ms 5 ms
Protection and monitoring			
Output overvoltage protection	Yes, according to EN 60950-1	Yes, according to EN 60950-1	Yes, according to EN 60950-1
Current limitation, typ. Property of the output, short-circuit-proof	0.41 ... 0.49 A Yes	0.7 A Yes	1.4 A Yes
Short-circuit protection	Electronic shutdown, automatic restart	Electronic shutdown, automatic restart	Electronic shutdown, automatic restart
Sustained short-circuit current maximum rms value Overload/short-circuit indicator	0.9 A –	–	–
Safety			
Primary/secondary isolation Isolation	Yes SELV output voltage U_{out} according to EN 60950-1 and EN 50178	Yes SELV output voltage U_{out} according to EN 60950-1 and EN 50178	Yes SELV output voltage U_{out} according to EN 60950-1 and EN 50178
Protection class	Class I	Class I	Class I
Leakage current • Maximum • Typical	3.5 mA	3.5 mA 0.4 mA	3.5 mA 0.4 mA

SITOP 1-phase

24 V DC

Output current up to 2 A

Technical specifications (continued)

Product	Special design The smallest ones	SITOP compact PSU100C	SITOP compact PSU100C
Power supply, type	0.375 A	0.6 A	1.3 A
Order No.	6EP1731-2BA00	6EP1331-5BA00	6EP1331-5BA10
Safety (continued)			
CE mark	Yes	Yes	Yes
UL/CSA approval UL/cUL (CSA) approval	Yes cULus-listed (UL 508, CSA C22.2 No. 142), File E143289, cURus-recognized (UL 60950, CSA C22.2 No. 60950), File E151273	Yes 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	Yes 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	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	No	Yes	Yes
Marine approval	–	GL, ABS	GL, ABS
Degree of protection (EN 60529)	IP20	IP20	IP20
EMC			
Emitted interference	EN 55022 Class B	EN 55022 Class B	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
Operating data			
Ambient temperature			
• During operation	-25 ... +70 °C	-20 ... +70 °C	-20 ... +70 °C
- Comment	with natural convection	with natural convection	with natural convection
• During transport	-40 ... +70 °C	-40 ... +85 °C	-40 ... +85 °C
• During storage	-40 ... +70 °C	-40 ... +85 °C	-40 ... +85 °C
Humidity class according to EN 60721	Climate class 3K3, without condensation	Climate class 3K3, without condensation	Climate class 3K3, without condensation
Mechanics			
Connection method	Screw terminals	Screw terminals	Screw terminals
Connections			
• Supply input	L+1, M1, PE: 1 screw terminal each for 0.5 ... 2.5 mm ² solid/finely stranded	L, N, PE: Removable screw terminal each for 1 x 0.5 ... 2.5 mm ²	L, N, PE: Removable screw terminal each for 1 x 0.5 ... 2.5 mm ²
• Output	+: 1 screw terminal for 0.5 ... 2.5 mm ² ; -: 2 screw terminals for 0.5 ... 2.5 mm ²	+: 1 screw terminal for 0.5 ... 2.5 mm ² ; -: 2 screw terminals for 0.5 ... 2.5 mm ²	+: 1 screw terminal for 0.5 ... 2.5 mm ² ; -: 2 screw terminals for 0.5 ... 2.5 mm ²
• Auxiliary contacts	–	–	–
Width of enclosure	22.5 mm	22.5 mm	30 mm
Height of enclosure	80 mm	80 mm	80 mm
Depth of enclosure	91 mm	100 mm	100 mm
Mounting width	22.5 mm	22.5 mm	30 mm
Mounting height	180 mm	180 mm	180 mm
Weight, approx.	0.14 kg	0.12 kg	0.17 kg
Product property of the enclosure: side-by-side enclosure	Yes	Yes	Yes
Type of mounting			
• Wall mounting	No	No	No
• DIN rail mounting	Yes	Yes	Yes
• S7-300 rail mounting	No	No	No
Installation	Snaps onto DIN rail EN 60715 35x7.5/15	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	Removable spring-loaded terminal 6EP1971-5BA00
Mechanical accessories			

SITOP 1-phase

24 V DC

Output current up to 2 A

Selection and ordering data

Product	Input Voltage $U_{in \text{ rated}}$	Output Voltage $U_{out \text{ rated}}$	Current $I_{out \text{ rated}}$	Order No.	Price
Special design, the smallest ones					
	48 - 220 V DC	24 V DC	0.375 A	6EP1731-2BA00	
SITOP compact, PSU100C					
	100 - 230 V AC	24 V DC	0.6 A	6EP1331-5BA00	
	100 - 230 V AC	24 V DC	1.3 A	6EP1331-5BA10	
LOGO!Power					
	100 - 240 V AC	24 V DC	1.3 A	6EP1331-1SH03	
SITOP in SIMATIC design, S7-300 version					
	120/230 V AC	24 V DC	2 A	6ES7307-1BA01-0AA0	
SITOP in SIMATIC design, Outdoor version					
	24 - 110 V DC	24 V DC	2 A	6ES7305-1BA80-0AA0	
Special design, The DC/DC converter					
	48 - 110 V DC	24 V DC	2 A	6EP1732-0AA00	

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
- Operating instructions:
www.siemens.com/sitop-manuals
- SITOP Selection Tool:
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	Mounting on a DIN rail acc. to EN 60715		Wall mounting
		in mm (W x H)	35 x 7.5 mm	35 x 15 mm	
SITOP 24 V, 1-phase and 2-phase power supplies					
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 ³⁾	40 x 205	²⁾	²⁾	
	6ES7305-1BA80-0AA0 ³⁾	80 x 225		¹⁾	
	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 ⁵⁾	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 ³⁾	60 x 205	²⁾	²⁾	
	6EP1333-1LB00	50 x 225	X	X	
	6ES7307-1EA80-0AA0 ³⁾	80 x 225		¹⁾	
	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 ⁵⁾	75 x 205			
24 V/10 A	6EP1334-3BA00	90 x 225	X	X	
	6EP1334-2BA20	70 x 225	X	X	
	6ES7307-1KA02-0AA0 ³⁾	80 x 205	²⁾	²⁾	
	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	