

SITOP compact

1-phase, 24 V DC

Overview

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The single-phase SITOP compact are power supplies for the lower performance range. Thanks to the extremely space-saving slim design, they are especially suited to distributed applications in control boxes or in small control cabinets. The series is characterized by low power losses throughout the entire load range. The losses are extremely low even during idling, which means they are perfectly suited for applications that are frequently in stand-by mode. The SITOP PSU100C power supplies have a wide-range input for AC and DC networks; plug-in terminals facilitate the electrical connection.

To further increase the 24 V availability, the SITOP compact power supplies can be combined with **DC UPS**, **redundancy** and **selectivity modules**.

Main product highlights

- 24 V DC/ 0.6 A, 1.3 A, 2.5 A and 4 A
- 24 V DC/3.7 A for the supply of NEC class 2 circuits with limited output power (100 VA)
- 1-phase wide-range input from 85 V to 264 V AC or 110 V to 300 V DC
- Small mounting surface thanks to its slim design
- High efficiency across the entire load range.
- Low energy consumption during no-load operation or stand-by
- Adjustable output voltage for compensating voltage drops (starting at 1.3 A)
- Green LED for "24 V OK"
- Plug-in connecting terminals for pre-fabricated wiring and fast electrical connection
- Wide temperature range from -20 to $+70$ °C
- Comprehensive certifications, such as UL, ATEX or GL

Technical specifications

Article No.	6EP1331-5BA00	6EP1331-5BA10	6EP1332-5BA00
Product	SITOP PSU100C	SITOP PSU100C	SITOP PSU100C
Power supply, type	24 V/0.6 A	24 V/1.3 A	24 V/2.5 A
Input			
Input	1-phase AC or DC	1-phase AC or DC	1-phase AC or DC
Rated voltage value $V_{in \text{ rated}}$	100 ... 230 V	100 ... 230 V	100 ... 230 V
Voltage range AC	85 ... 264 V	85 ... 264 V	85 ... 264 V
Input voltage			
• for DC	110 ... 300 V	110 ... 300 V	110 ... 300 V
Wide-range input	Yes	Yes	Yes
Overvoltage resistance	$2.3 \times V_{in \text{ rated}}$, 1.3 ms	$2.3 \times V_{in \text{ rated}}$, 1.3 ms	$2.3 \times V_{in \text{ rated}}$, 1.3 ms
Mains buffering at $I_{out \text{ rated}}$, min.	20 ms; at $V_{in} = 230$ V	20 ms; at $V_{in} = 230$ V	20 ms; at $V_{in} = 230$ V
Rated line frequency	50 ... 60 Hz	50 ... 60 Hz	50 ... 60 Hz
Rated line range	47 ... 63 Hz	47 ... 63 Hz	47 ... 63 Hz
Input current			
• at rated input voltage 100 V	0.28 A	0.63 A	1.21 A
• at rated input voltage 230 V	0.18 A	0.31 A	0.67 A
Switch-on current limiting ($+25$ °C), max.	28 A	34 A	31 A
I^2t , max.	0.7 A ² ·s	1.2 A ² ·s	2.4 A ² ·s
Built-in incoming fuse	internal	internal	internal
Protection in the mains power input (IEC 60898)	Recommended miniature circuit breaker: from 16 A characteristic B or from 10 A characteristic C	Recommended miniature circuit breaker: from 16 A characteristic B or from 10 A characteristic C	Recommended miniature circuit breaker: from 16 A characteristic B or from 10 A characteristic C

Technical specifications (continued)

Article No.	6EP1332-5BA20	6EP1332-5BA10
Product	SITOP PSU100C	SITOP PSU100C
Power supply, type	24 V/3.7 A	24 V/4 A
Input		
Input	1-phase AC or DC	1-phase AC or DC
Rated voltage value $V_{in rated}$	100 ... 230 V	100 ... 230 V
Voltage range AC	85 ... 264 V	85 ... 264 V
Input voltage		
• for DC	110 ... 300 V	110 ... 300 V
Wide-range input	Yes	Yes
Overvoltage resistance	$2.3 \times V_{in rated}$, 1.3 ms	$2.3 \times V_{in rated}$, 1.3 ms
Mains buffering at $I_{out rated}$, min.	20 ms; at $V_{in} = 230$ V	20 ms; at $V_{in} = 230$ V
Rated line frequency	50 ... 60 Hz	50 ... 60 Hz
Rated line range	47 ... 63 Hz	47 ... 63 Hz
Input current		
• at rated input voltage 100 V	1.88 A	2.25 A
• at rated input voltage 230 V	0.95 A	1.15 A
Switch-on current limiting (+25 °C), max.	30 A	34 A
I^2t , max.	3 A ² ·s	3 A ² ·s
Built-in incoming fuse	internal	internal
Protection in the mains power input (IEC 60898)	Recommended miniature circuit breaker: from 16 A characteristic B or from 10 A characteristic C	Recommended miniature circuit breaker: from 16 A characteristic B or from 10 A characteristic C
Output		
Output	Controlled, isolated DC voltage	Controlled, isolated DC voltage
Rated voltage $V_{out DC}$	24 V	24 V
Total tolerance, static \pm	3 %	3 %
Residual ripple peak-peak, max.	200 mV	200 mV
Residual ripple peak-peak, typ.	90 mV	80 mV
Spikes peak-peak, max. (bandwidth: 20 MHz)	300 mV	300 mV
Spikes peak-peak, typ. (bandwidth: 20 MHz)	60 mV	80 mV
Adjustment range	-	22.2 ... 26.4 V
Product function Output voltage adjustable	No	Yes
Output voltage setting	-	via potentiometer
Status display	Green LED for output voltage OK	Green LED for output voltage OK
On/off behavior	Overshoot of V_{out} approx. 1 %	Overshoot of V_{out} approx. 1 %
Startup delay, max.	1.5 s	1.5 s
Voltage rise, typ.	500 ms	400 ms
Rated current value $I_{out rated}$	3.7 A	4 A
Current range	0 ... 3.7 A	0 ... 4 A
• Note	+55 ... +70 °C: Derating 3,5%/K	+55 ... +70 °C: Derating 3,5%/K
Active power supplied typical	89 W	96 W
Parallel switching for enhanced performance	No	Yes; Start-up with single nominal load only
Numbers of parallel switchable units for enhanced performance	-	2

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Technical specifications (continued)

Article No.	6EP1332-5BA20	6EP1332-5BA10
Product	SITOP PSU100C	SITOP PSU100C
Power supply, type	24 V/3.7 A	24 V/4 A
Efficiency		
Efficiency at $V_{out\ rated}$, $I_{out\ rated}$, approx.	87 %	88 %
Power loss at $V_{out\ rated}$, $I_{out\ rated}$, approx.	14 W	13 W
Active power loss during no-load operation maximum	0.75 W	0.75 W
Closed-loop control		
Dynamic mains compensation ($V_{in\ rated} \pm 15\%$), max.	0.1 %	0.1 %
Dynamic load smoothing (I_{out} : 10/90/10 %), $U_{out} \pm$ typ.	3 %	3 %
Load step setting time 10 to 90%, typ.	4 ms	4 ms
Load step setting time 90 to 10%, typ.	4 ms	4 ms
Protection and monitoring		
Output overvoltage protection	Yes, according to EN 60950-1	Yes, according to EN 60950-1
Current limitation, typ.	4 A	4.8 A
Property of the output Short-circuit proof	Yes	Yes
Short-circuit protection	Electronic shutdown, automatic restart	Electronic shutdown, automatic restart
Overload/short-circuit indicator	-	-
Safety		
Primary/secondary isolation	Yes	Yes
Galvanic isolation	Safety extra-low output voltage U_{out} acc. to EN 60950-1 and EN 50178	Safety extra-low output voltage U_{out} acc. to EN 60950-1 and EN 50178
Protection class	Class I	Class I
Leakage current		
• maximum	3.5 mA	3.5 mA
• typical	0.4 mA	0.4 mA
CE mark	Yes	Yes
UL/CSA approval	Yes	Yes
UL/cUL (CSA) approval	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 (acc. to UL 1310)	cULus-Listed (UL 508, CSA C22.2 No. 107.1), File E197259; cCSAus (CSA C22.2 No. 60950-1, UL 60950-1)
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
Certificate of suitability IECEx	No	No
Certificate of suitability NEC Class 2	Yes	No
FM approval	-	-
CB approval	Yes	Yes
Marine approval	GL, ABS	GL, ABS
Degree of protection (EN 60529)	IP20	IP20

Technical specifications (continued)

Article No.	6EP1332-5BA20	6EP1332-5BA10
Product	SITOP PSU100C	SITOP PSU100C
Power supply, type	24 V/3.7 A	24 V/4 A
EMC		
Emitted interference	EN 55022 Class B	EN 55022 Class B
Supply harmonics limitation	EN 61000-3-2	EN 61000-3-2
Noise immunity	EN 61000-6-2	EN 61000-6-2
Operating data		
Ambient temperature		
• during operation	-20 ... +70 °C	-20 ... +70 °C
- Note	with natural convection	with natural convection
• during transport	-40 ... +85 °C	-40 ... +85 °C
• during storage	-40 ... +85 °C	-40 ... +85 °C
Humidity class according to EN 60721	Climate class 3K3, no condensation	Climate class 3K3, no condensation
Mechanics		
Connection technology	screw-type terminals	screw-type terminals
Connections		
• Supply input	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
• Auxiliary	-	-
Width of the enclosure	52.5 mm	52.5 mm
Height of the enclosure	80 mm	80 mm
Depth of the enclosure	100 mm	100 mm
Weight, approx.	0.32 kg	0.32 kg
Product property of the enclosure housing for side-by-side mounting	Yes	Yes
Installation	Snaps onto DIN rail EN 60715 35x7.5/15	Snaps onto DIN rail EN 60715 35x7.5/15
Electrical accessories	Removable spring-type terminal 6EP1971-5BA00	Removable spring-type terminal 6EP1971-5BA00
Other information	Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)	Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

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Ordering data	Article No.	Accessories	Article No.
SITOP PSU100C 1-phase, 24 V DC/0.6 A Stabilized power supply Input: 100 ... 230 V AC Output: 24V DC/0.6 A	6EP1331-5BA00	SITOP PSE202U redundancy module Input/output: 24 V DC/NEC Class 2 suitable for decoupling two SITOP power supplies output power limited < 100 VA	6EP1962-2BA00
SITOP PSU100C 1-phase, 24 V DC/1.3 A Stabilized power supply Input: 120 ... 230 V AC Output: 24 V DC/1.3 A	6EP1331-5BA10	SITOP PSE202U redundancy module Input/output: 24 V DC/10 A suitable for decoupling two SITOP power supplies with a maximum of 5 A output current	6EP1964-2BA00
SITOP PSU100C 1-phase, 24 V DC/2.5 A Stabilized power supply Input: 100 ... 230 V AC Output: 24 V DC/2.5 A	6EP1332-5BA00	SITOP PSE200U 3 A selectivity module 4-channel selectivity module Input: 24 V DC Output: 24 V DC/3A per each channel output current adjustable 0.5 ... 3 A <ul style="list-style-type: none"> • With common alarm signal • With single-channel signaling 	6EP1961-2BA11 6EP1961-2BA31
SITOP PSU100C 1-phase, 24 V DC/3.7 A Stabilized power supply Input: 100 ... 230 V AC (110 ... 300 V AC) Output: 24 V DC/3.7 A limited output power NEC Class 2	6EP1332-5BA20	SITOP Power PSU100C accessories Removable spring-loaded terminal, 100 units, for SITOP PSU100C	6EP1971-5BA00
SITOP PSU100C 1-phase, 24 V DC/4 A Stabilized power supply Input: 120 ... 230 V AC Output: 24 V DC/4 A	6EP1332-5BA10		