

## SITOP lite

### 1-phase, 24 V DC

#### Overview



The single-phase SITOP lite power supplies are designed for basic requirements in industrial environments and offer all the key functions at an attractive price. The wide-range input with manual switchover supports connection to a wide range of 1-phase supply systems. Thanks to the slim design, the power supplies require little space on the standard mounting rail, and their excellent efficiency ensures low thermal losses in the control cabinet.

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

#### Main product highlights

- 24 V DC/ 2.5 A, 5 A and 10 A
- 1-phase wide-range input with manual switchover
- Slim design - no lateral installation clearances required
- High degree of efficiency
- Green LED for "24 V OK"
- Adjustable output voltage for compensating voltage drops
- Parallel connection possible
- Ambient temperature range of 0 °C to 60 °C (above 45 °C with derating)
- Short-circuit and overload protection
- Certification to CE, cULus and CD

#### Technical specifications

Article No.	6EP1332-1LB00	6EP1333-1LB00	6EP1334-1LB00
Product	SITOP PSU100L	SITOP PSU100L	SITOP PSU100L
Power supply, type	24 V/2.5 A	24 V/5 A	24 V/10 A
<b>Input</b>			
Input	1-phase AC	1-phase AC	1-phase AC
Supply voltage	120 V 230 V	120 V 230 V	120 V 230 V
• 1 with AC Rated value			
• 2 with AC Rated value			
• Note	Set by means of selector switch on the device	Set by means of selector switch on the device	Set by means of selector switch on the device
Input voltage	93 ... 132 V	93 ... 132 V	93 ... 132 V
• 1 with AC			
• 2 with AC	187 ... 264 V	187 ... 264 V	187 ... 264 V
Wide-range input	No	No	No
Overvoltage resistance	$2.3 \times V_{in\ rated}$ , 1.3 ms	$2.3 \times V_{in\ rated}$ , 1.3 ms	$2.3 \times V_{in\ rated}$ , 1.3 ms
Mains buffering at $I_{out\ rated}$ , min.	20 ms; at $V_{in} = 93/187$ V	20 ms; at $V_{in} = 93/187$ V	20 ms; at $V_{in} = 93/187$ 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 120 V	1.1 A	2.1 A	4.1 A
• at rated input voltage 230 V	0.65 A	1.15 A	2.4 A

## Technical specifications (continued)

Article No.	6EP1332-1LB00	6EP1333-1LB00	6EP1334-1LB00
Product	SITOP PSU100L	SITOP PSU100L	SITOP PSU100L
Power supply, type	24 V/2.5 A	24 V/5 A	24 V/10 A
<b>Input (continued)</b>			
Switch-on current limiting (+25 °C), max.	27 A	32 A	65 A
Duration of inrush current limiting at 25 °C typical	3 ms	3 ms	3 ms
$I^2t$ , max.	0.3 A <sup>2</sup> ·s	0.8 A <sup>2</sup> ·s	3.3 A <sup>2</sup> ·s
Built-in incoming fuse	T 2 A/250 V (not accessible)	T 3,15 A/250 V (not accessible)	T 6.3 A/250 V (not accessible)
Protection in the mains power input (IEC 60898)	Recommended miniature circuit breaker: from 3 A characteristic C	Recommended miniature circuit breaker: from 6 A characteristic C	Recommended miniature circuit breaker: from 10 A characteristic C
<b>Output</b>			
Output	Controlled, isolated DC voltage	Controlled, isolated DC voltage	Controlled, isolated DC voltage
Rated voltage $V_{out}$ DC	24 V	24 V	24 V
Total tolerance, static ±	3 %	3 %	3 %
Static mains compensation, approx.	0.1 %	0.1 %	0.1 %
Static load balancing, approx.	0.5 %	0.5 %	0.5 %
Residual ripple peak-peak, max.	150 mV	150 mV	150 mV
Residual ripple peak-peak, typ.	10 mV	50 mV	50 mV
Spikes peak-peak, max. (bandwidth: 20 MHz)	240 mV	240 mV	240 mV
Spikes peak-peak, typ. (bandwidth: 20 MHz)	50 mV	150 mV	150 mV
Adjustment range	22.8 ... 26.4 V	22.8 ... 26.4 V	22.8 ... 26.4 V
Product function Output voltage adjustable	Yes	Yes	Yes
Output voltage setting	via potentiometer	via potentiometer	via potentiometer
Status display	Green LED for 24 V OK	Green LED for 24 V OK	Green LED for 24 V OK
On/off behavior	Overshoot of $V_{out}$ approx. 4 %	Overshoot of $V_{out}$ approx. 4 %	Overshoot of $V_{out}$ approx. 4 %
Startup delay, max.	1.5 s	1.5 s	1.5 s
Voltage rise, typ.	150 ms	130 ms	170 ms
Rated current value $I_{out rated}$	2.5 A	5 A	10 A
Current range	0 ... 2.5 A	0 ... 5 A	0 ... 10 A
• Note	+45 ... +60 °C: Derating 2%/K	+45 ... +60 °C: Derating 2%/K	+45 ... +60 °C: Derating 2%/K
Active power supplied typical	60 W	120 W	240 W
Parallel switching for enhanced performance	Yes	Yes	Yes
Numbers of parallel switchable units for enhanced performance	2	2	2
<b>Efficiency</b>			
Efficiency at $V_{out rated}$ , $I_{out rated}$ , approx.	85 %	86 %	89 %
Power loss at $V_{out rated}$ , $I_{out rated}$ , approx.	9 W	17 W	34 W

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## Technical specifications (continued)

Article No.	6EP1332-1LB00	6EP1333-1LB00	6EP1334-1LB00
Product	SITOP PSU100L	SITOP PSU100L	SITOP PSU100L
Power supply, type	24 V/2.5 A	24 V/5 A	24 V/10 A
<b>Closed-loop control</b>			
Dynamic mains compensation ( $V_{in rated} \pm 15\%$ ), max.	0.3 %	0.3 %	0.3 %
Dynamic load smoothing ( $I_{out}: 10/90/10\%$ ), $U_{out} \pm$ typ.	2 %	2 %	2 %
Load step setting time 10 to 90%, typ.	0.5 ms	0.4 ms	0.5 ms
Load step setting time 90 to 10%, typ.	0.7 ms	0.4 ms	0.7 ms
<b>Protection and monitoring</b>			
Output overvoltage protection	< 33 V	< 33 V	< 33 V
Current limitation, typ.	2.6 A	5.25 A	10.5 A
Property of the output Short-circuit proof	Yes	Yes	Yes
Short-circuit protection	Constant current characteristic	Constant current characteristic	Constant current characteristic
Enduring short circuit current RMS value typical	4 A	8 A	16 A
Overload/short-circuit indicator	-	-	-
<b>Safety</b>			
Primary/secondary isolation	Yes	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	Safety extra-low output voltage $U_{out}$ acc. 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	0.4 mA	0.4 mA	0.8 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	cULus-Listed (UL 508, CSA C22.2 No. 107.1), File E197259	cULus-Listed (UL 508, CSA C22.2 No. 107.1), File E197259
Explosion protection	-	-	-
Certificate of suitability IECEx	No	No	No
Certificate of suitability NEC Class 2	No	No	No
FM approval	-	-	-
CB approval	Yes	Yes	Yes
Marine approval	-	-	-
Degree of protection (EN 60529)	IP20	IP20	IP20

**Technical specifications** (continued)

Article No.	6EP1332-1LB00	6EP1333-1LB00	6EP1334-1LB00
Product	SITOP PSU100L	SITOP PSU100L	SITOP PSU100L
Power supply, type	24 V/2.5 A	24 V/5 A	24 V/10 A
<b>EMC</b>			
Emitted interference	EN 55022 Class A	EN 55022 Class A	EN 55022 Class A
Supply harmonics limitation	not applicable	-	-
Noise immunity	EN 61000-6-2	EN 61000-6-2	EN 61000-6-2
<b>Operating data</b>			
Ambient temperature	0 ... 60 °C	0 ... 60 °C	0 ... 60 °C
• during operation	with natural convection	with natural convection	with natural convection
• Note	-40 ... +85 °C	-40 ... +85 °C	-40 ... +85 °C
• 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, no condensation	Climate class 3K3, no condensation	Climate class 3K3, no condensation
<b>Mechanics</b>			
Connection technology	screw-type terminals	screw-type terminals	screw-type terminals
Connections			
• Supply input	L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm <sup>2</sup> single-core/finely stranded	L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm <sup>2</sup> single-core/finely stranded	L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm <sup>2</sup> single-core/finely stranded
• Output	+, -: 2 screw terminals each for 0.5 ... 2.5 mm <sup>2</sup>	+, -: 2 screw terminals each for 0.5 ... 2.5 mm <sup>2</sup>	+, -: 2 screw terminals each for 0.5 ... 2.5 mm <sup>2</sup>
• Auxiliary	-	-	-
Width of the enclosure	32.5 mm	50 mm	70 mm
Height of the enclosure	125 mm	125 mm	125 mm
Depth of the enclosure	120 mm	120 mm	120 mm
Weight, approx.	0.32 kg	0.5 kg	0.75 kg
Product property of the enclosure housing for side-by-side mounting	Yes	Yes	Yes
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
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)	Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

## SITOP lite

## 1-phase, 24 V DC

## Ordering data

## Article No.

**SITOP PSU100L 1-phase,  
24 V DC/2.5 A**

6EP1332-1LB00

Stabilized power supply  
 Input: 120 ... 230 V AC  
 Output: 24 V DC/2.5 A

**SITOP PSU100L 1-phase,  
24 V DC/5 A**

6EP1333-1LB00

Stabilized power supply  
 Input: 120 ... 230 V AC  
 Output: 24 V DC/5 A

**SITOP PSU100L 1-phase,  
24 V DC/10 A**

6EP1334-1LB00

Stabilized power supply  
 Input: 120 ... 230 V AC  
 Output: 24 V DC / 10 A

## Accessories

## Article No.

**SITOP PSE202U  
redundancy module**

6EP1962-2BA00

Input/output:  
 24 V DC/NEC Class 2  
 suitable for decoupling two  
 SITOP power supplies  
 output power limited < 100 VA

**SITOP PSE202U  
redundancy module**

6EP1964-2BA00

Input/output:  
 24 V DC/10 A  
 suitable for decoupling two  
 SITOP power supplies  
 with a maximum of 5 A  
 output current

**SITOP PSE200U 3 A  
selectivity module**

4-channel selectivity module  
 Input: 24 V DC  
 Output: 24 V DC/3A per channel  
 output current adjustable 0.5 ... 3 A

- With common alarm signal
- With single-channel signaling

6EP1961-2BA11

6EP1961-2BA31

**SITOP PSE200U 10 A  
selectivity module**

4-channel selectivity module  
 Input: 24 V DC  
 Output: 24 V DC/10 A per channel  
 output current adjustable 3 ... 10 A

- With common alarm signal
- With single-channel signaling

6EP1961-2BA21

6EP1961-2BA41