

SIMATIC PS307/1AC/24VDC/2A  
 SIMATIC S7-300 Regulated power supply PS307 input: 120/230 V  
 AC, output: 24 V DC/2 A



Input	
Input	1-phase AC
• Note	Automatic range selection
supply voltage	
• 1 at AC rated value	120 V
• 2 at AC rated value	230 V
input voltage	
• 1 at AC	85 ... 132 V
• 2 at AC	170 ... 264 V
Wide-range input	No
Overvoltage resistance	2.3 × Vin rated, 1.3 ms
Mains buffering	at Vin = 93/187 V
Mains buffering at Iout rated, min.	20 ms; at Vin = 93/187 V
Rated line frequency 1	50 Hz
Rated line frequency 2	60 Hz
Rated line range	47 ... 63 Hz
input current	
• at rated input voltage 120 V	0.9 A
• at rated input voltage 230 V	0.5 A

Switch-on current limiting (+25 °C), max.	22 A
duration of inrush current limiting at 25 °C	
• maximum	3 ms
I <sup>2</sup> t, max.	1 A <sup>2</sup> ·s
Built-in incoming fuse	T 1.6 A/250 V (not accessible)
Protection in the mains power input (IEC 898)	Recommended miniature circuit breaker: 3 A characteristic C

## Output

Output	Controlled, isolated DC voltage
Rated voltage V <sub>out</sub> DC	24 V
Total tolerance, static ±	3 %
Static mains compensation, approx.	0.1 %
Static load balancing, approx.	0.2 %
Residual ripple peak-peak, max.	50 mV
Residual ripple peak-peak, typ.	5 mV
Spikes peak-peak, max. (bandwidth: 20 MHz)	150 mV
Spikes peak-peak, typ. (bandwidth: 20 MHz)	20 mV
product function output voltage adjustable	No
Output voltage setting	-
Status display	Green LED for 24 V OK
On/off behavior	No overshoot of V <sub>out</sub> (soft start)
Startup delay, max.	2 s
Voltage rise, typ.	10 ms
Rated current value I <sub>out</sub> rated	2 A
Current range	0 ... 2 A
supplied active power typical	48 W
short-term overload current	
• on short-circuiting during the start-up typical	9 A
• at short-circuit during operation typical	9 A
duration of overloading capability for excess current	
• on short-circuiting during the start-up	90 ms
• at short-circuit during operation	90 ms
Parallel switching for enhanced performance	Yes
Numbers of parallel switchable units for enhanced performance	2

## Efficiency

Efficiency at V <sub>out</sub> rated, I <sub>out</sub> rated, approx.	84 %
Power loss at V <sub>out</sub> rated, I <sub>out</sub> rated, approx.	9 W

## Closed-loop control

Dynamic mains compensation (V <sub>in</sub> rated ±15 %), max.	0.1 %
Dynamic load smoothing (I <sub>out</sub> : 50/100/50 %), U <sub>out</sub> ± typ.	0.8 %

Load step setting time 50 to 100%, typ.	0.5 ms
Load step setting time 100 to 50%, typ.	0.5 ms
setting time maximum	1 ms

### Protection and monitoring

Output overvoltage protection	Additional control loop, shutdown at < 28.8 V, automatic restart
Current limitation	2.2 ... 2.6 A
property of the output short-circuit proof	Yes
Short-circuit protection	Electronic shutdown, automatic restart
enduring short circuit current RMS value	
• maximum	2 A
Overload/short-circuit indicator	-

### Safety

Primary/secondary isolation	Yes
galvanic isolation	Safety extra-low output voltage U <sub>out</sub> acc. to EN 60950-1 and EN 50178
Protection class	Class I
leakage current	
• maximum	3.5 mA
• typical	0.5 mA
Degree of protection (EN 60529)	IP20

### Approvals

CE mark	Yes
UL/cUL (CSA) approval	cULus-Listed (UL 508, CSA C22.2 No. 142), File E143289
Explosion protection	ATEX (EX) II 3G Ex nA II T4; cULus (ANSI/ISA 12.12.01, CSA C22.2 No.213) Class I, Div. 2, Group ABCD, T4, File E330455
certificate of suitability NEC Class 2	No
FM approval	Class I, Div. 2, Group ABCD, T4
CB approval	No
Marine approval	In S7-300 system

### EMC

Emitted interference	EN 55022 Class B
Supply harmonics limitation	not applicable
Noise immunity	EN 61000-6-2

### environmental conditions

ambient temperature	
• during operation	0 ... 60 °C
— Note	with natural convection
• during transport	-40 ... +85 °C
• during storage	-40 ... +85 °C
Humidity class according to EN 60721	Climate class 3K3, 5 ... 95% no condensation

### Mechanics

Connection technology	screw-type terminals
Connections	
<ul style="list-style-type: none"> <li>• Supply input</li> <li>• Output</li> <li>• Auxiliary</li> </ul>	<p>L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm<sup>2</sup> single-core/finely stranded</p> <p>L+, M: 2 screw terminals each for 0.5 ... 2.5 mm<sup>2</sup></p> <p>-</p>
width of the enclosure	40 mm
height of the enclosure	125 mm
depth of the enclosure	120 mm
required spacing	
<ul style="list-style-type: none"> <li>• top</li> <li>• bottom</li> <li>• left</li> <li>• right</li> </ul>	<p>40 mm</p> <p>40 mm</p> <p>0 mm</p> <p>0 mm</p>
Weight, approx.	0.4 kg
product feature of the enclosure housing for side-by-side mounting	Yes
Installation	Can be mounted onto S7 rail
mechanical accessories	Mounting adapter for standard mounting rail (6EP1971-1BA00)
MTBF at 40 °C	2 320 078 h
other information	Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)