

POWER SUPPLY PS307 24 V/2 A
 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 lout 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 ² t, max.	1 A ² ·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 _{out} 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 _{out} (soft start)
Startup delay, max.	2 s
Voltage rise, typ.	10 ms
Rated current value I _{out} 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 _{out} rated, I _{out} rated, approx.	84 %
Power loss at V _{out} rated, I _{out} rated, approx.	9 W

Closed-loop control

Dynamic mains compensation (V _{in} rated ±15 %), max.	0.1 %
Dynamic load smoothing (I _{out} : 50/100/50 %), U _{out} ± 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 _{out} 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
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, no condensation

Mechanics

Connection technology	screw-type terminals
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Connections	
<ul style="list-style-type: none"> • Supply input • Output • Auxiliary 	<p>L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm² single-core/finely stranded</p> <p>L+, M: 2 screw terminals each for 0.5 ... 2.5 mm²</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"> • top • bottom • left • right 	<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)