

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for procurement and maintenance review

SIEMENS

6ES7307-1BA01-0AA0

PS 307 REGULATED POWER SUPPLY

Used with the applicable SIMATIC S7-300 configuration.

REFERENCE PACKAGE

OFFICIAL DOCUMENT

Selected official manufacturer pages follow this cover.

Source: Siemens official documentation for 6ES7307-1BA01-0AA0



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	$2.3 \times V_{in \text{ rated}}$, 1.3 ms
Mains buffering	at $V_{in} = 93/187 \text{ V}$
Mains buffering at $I_{out \text{ rated}}$, min.	20 ms; at $V_{in} = 93/187 \text{ V}$
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^2t , 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 $V_{out \text{ DC}}$	24 V
• output voltage at output 1 at DC rated value	24 V
Total tolerance, static $\pm$	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 Vout (soft start)
Startup delay, max.	2 s
Voltage rise, typ.	10 ms
Rated current value Iout 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 Vout rated, Iout rated, approx.	84 %
Power loss at Vout rated, Iout rated, approx.	9 W
Closed-loop control	
Dynamic mains compensation (Vin rated ± 15 %), max.	0.1 %
Dynamic load smoothing (Iout: 50/100/50 %), Uout $\pm$ 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 Uout 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
certificate of suitability EAC approval	Yes
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 — Note - during transport - during storage	0 ... 60 °C with natural convection -40 ... +85 °C -40 ... +85 °C
Humidity class according to EN 60721	Climate class 3K3, 5 ... 95% no condensation
Mechanics	
Connection technology	screw-type terminals
Connections - Supply input - Output - Auxiliary	L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm ² single-core/finely stranded L+, M: 2 screw terminals each for 0.5 ... 2.5 mm ² -
width of the enclosure	40 mm
height of the enclosure	125 mm
depth of the enclosure	120 mm
required spacing - top - bottom - left - right	40 mm 40 mm 0 mm 0 mm
Weight, approx.	0.4 kg
product feature of the enclosure housing can be lined up	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)

