SIEMENS

Data sheet 6ES7307-1EA01-0AA0

SIMATIC PS307/1AC/24VDC/5A

SIMATIC S7-300 Regulated power supply PS307 input: 120/230 V AC, output: 24 V/5 A DC

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	2.3 A
● at rated input voltage 230 V	1.2 A
Switch-on current limiting (+25 °C), max.	20 A
duration of inrush current limiting at 25 °C	
● maximum	3 ms
I^2t, max.	1.2 $A^2 \cdot s$
Built-in incoming fuse	T 3,15 A/250 V (not accessible)
Protection in the mains power input (IEC 898)	Recommended miniature circuit breaker: from 6 A characteristic C
Output	
Output	Controlled, isolated DC voltage
Rated voltage Vout DC	24 V
● output voltage at output 1 at DC rated value	24 V
Total tolerance, static ±	3 %
Static mains compensation, approx.	0.1 %
Static load balancing, approx.	0.5 %
Residual ripple peak-peak, max.	50 mV
Residual ripple peak-peak, typ.	10 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	5 A
Current range	0 ... 5 A
supplied active power typical	120 W
short-term overload current	
● on short-circuiting during the start-up typical	20 A
● at short-circuit during operation typical	20 A
duration of overloading capability for excess current	
● on short-circuiting during the start-up	100 ms
● at short-circuit during operation	100 ms
Parallel switching for enhanced performance	Yes
Efficiency	
Efficiency at Vout rated, Iout rated, approx.	87 %
Power loss at Vout rated, Iout rated, approx.	18 W
Closed-loop control	
Dynamic mains compensation (Vin rated ±15 %), max.	0.1 %
Dynamic load smoothing (Iout: 50/100/50 %), Uout ± typ.	1 %
Load step setting time 50 to 100%, typ.	0.3 ms
Load step setting time 100 to 50%, typ.	0.3 ms
Protection and monitoring	
Output overvoltage protection	Additional control loop, shutdown at < 28.8 V, automatic restart
Current limitation	5.5 ... 6.5 A
property of the output short-circuit proof	Yes
Short-circuit protection	Electronic shutdown, automatic restart
enduring short circuit current RMS value	
● maximum	7 A
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/CSA approval	Yes; cULus-Listed (UL 508, CSA C22.2 No. 142), File E143289
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certificate of suitability cCSAus, Class 1, Division 2	No
certificate of suitability ATEX	Yes; ATEX (EX) II 3G Ex nA nC IIC T3 Gc
Explosion protection	IECEx Ex nA nC IIC T3 Gc; ATEX (EX) II 3G Ex nA nC IIC T3 Gc; cULus (ANSI/ISA 12.12.01, CSA C22.2 No.213) Class I, Div. 2, Group ABCD, T4, File E330455
certificate of suitability	
● IECEx	Yes; IECEx Ex nA nC IIC T3 Gc
● NEC Class 2	No
● ULhazloc approval	Yes
FM approval	Yes; Class I, Div. 2, Group ABCD, T4
CB approval	No
certificate of suitability	
● EAC approval	Yes
Marine approval	Yes
Marine approval	In S7-300 system
Marine classification association American Bureau of Shipping Europe Ltd. (ABS)	No
Marine classification association French marine classification society (BV)	No
Marine classification association DNV GL	No

Marine classification association Lloyds Register of Shipping (LRS)	No
Marine classification association Nippon Kaiji Kyokai (NK)	No
EMC	
Emitted interference	EN 55022 Class B
Supply harmonics limitation	EN 61000-3-2
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	
● Supply input	L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm² single-core/finely stranded
● Output	L+, M: 3 screw terminals each for 0.5 ... 2.5 mm²
● Auxiliary	-
width of the enclosure	60 mm
height of the enclosure	125 mm
depth of the enclosure	120 mm
required spacing	
● top	40 mm
● bottom	40 mm
● left	0 mm
● right	0 mm
Weight, approx.	0.6 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	2 480 589 h
other information	Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)