## 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

supply voltage at AC <ul> <li>initial value</li> <li>Automatic range selection</li> <li>value</li>                       &lt;</ul>	nput	
• initial value         Automatic range selection           supply voltage         -           • 1 at AC rated value         200 V           • 2 at AC rated value         200 V           • 1 at AC         85 132 V           • 2 at AC         170 264 V           design of input wide range input         No           overvoltage overload capability         2.3 × Vin rated, 1.3 ms           operating condition of the mains buffering         at Vin = 93/187 V           buffering time for rated value of the output current in the event of power falure minimum         20 ms           operating condition of the mains buffering         at Vin = 93/187 V           Inne frequency         at Vin = 93/187 V           Infor tated value of the output current in the event of polyted value         60 Hz           intrated value         60 Hz           Inne frequency         47 63 Hz           input current         2.3 A           i at rated input voltage 200 V         2.3 A           i at rated input voltage 210 V         2.3 A           i at rated input voltage 220 V         1.2 A           current limitation of innush current at 25 °C         Ta           i at rated input voltage 210 V         2.3 A           i at rated input voltage         Controlled, isolated	type of the power supply network	1-phase AC
supply voltage       120 V         • 1 at AC rated value       120 V         • 2 at AC rated value       230 V         input voltage       230 V         • 1 at AC       85132 V         • 2 at AC rated value       170264 V         design of input wide range input       No         overvoltage overload capability       2.3 × Vin rated, 1.3 ms         operating condition of the mains buffering       at Vin = 93/187 V         Differing time for rated value of the output current in the event of power failure minimum       20 ms         operating condition of the mains buffering       at Vin = 93/187 V         Inne frequency       20 ms         • 1 rated value       50 Hz         • 2 rated value       60 Hz         ing frequency       47 ··· 63 Hz         • 1 rated value       60 Hz         • 1 rated value of input voltage 230 V       1.2 A         • at rated input voltage 230 V       1.2 A         current limiting at 25 °C       arms         • at rated input voltage 230 V       1.2 A         current limiting at 25 °C       arms         • naximum       1.2 A*s         tube rotector type       1.3 15 A/250 V (not accessible)         • in the feeder       Controlled, isolated DC volta	supply voltage at AC	
1 at AC rated value     120 V       • 2 at AC rated value     230 V       input voltage     230 V       • 1 at AC     85 132 V       • 2 at AC     170 264 V       • design of input wide range input     No       overvoltage oversload capability     2.3 × Un rated, 1.3 ms       operating condition of the mains buffering     at Vin = 93/187 V       buffering time for rated value of the output current in the event of power failure minimum     20 ms       operating condition of the mains buffering     at Vin = 93/187 V       uife frequency     20 ms       • 1 rated value     50 Hz       • 1 rated value     60 Hz       • 1 rated input voltage 120 V     2.3 A       • 1 rated input voltage 230 V     12 A       • at rated input voltage 230 V     12 A       • at rated input voltage 230 V     12 A       • at rated input voltage 230 V     12 A       • at rated input voltage 230 V     12 A       • at rated input voltage 230 V     12 A       • at rated input voltage 230 V     12 A*/s       • in the feeder     Recommended miniature circuit breaker: from 6 A characteristic C       • unaximum     12 A*/s       • to tage cortecil on type     51 A/250 V (not accessible)       • in the feeder     Controlled, isolated DC voltage       • output vol	initial value	Automatic range selection
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• 1 al AC85 132 V• 2 at AC170 264 Vdesign of input wide range inputNoovervoltage overload capability2.3 × Vin rated, 1.3 msoperating condition of the mains bufferingat Vin = 93/187 Vbuffering time for rated value of the output current in the event of power failure minimum20 msoperating condition of the mains bufferingat Vin = 93/187 Vine frequencyat Vin = 93/187 V• 1 rated value60 Hz• 1 rated value60 Hz• 1 rated value60 Hz• 1 rated input voltage 120 V2.3 A• at rated input voltage 230 V1.2 Acurrent limitig at 25 °C3 ms• at rated input voltage 230 V1.2 A12 value maximum1.2 A²sfuse protection typeT 3,15 A/250 V (not accessible)• In the feeder24 Vvoltage curve at outputControlled, isolated DC voltageoutput voltage at DC rated value24 Voutput voltage3 %relative control precision of the voltage3 %• naximum3 %relative control precision of the voltage3 %• na slow fluctuation of input voltage0.1 %• on slow fluctuation of input voltage0.5 %• on slow fluctuation of input voltage0.5 %	• 2 at AC rated value	230 V
• 2 at AC170 264 Vdesign of input wide range inputNoovervoltage overload capability2.3 × Vin rated, 1.3 msoperating condition of the mains bufferingat Vin 93/187 Voperating condition of the mains bufferingat Vin 93/187 Voperating condition of the mains bufferingat Vin 93/187 Voperating condition of the mains bufferingat Vin 93/187 Vine frequency50 Hz• 1 rated value60 Hz• 2 rated value60 Hz• 2 rated value70 ms• at rated input voltage 120 V2.3 A• at rated input voltage 230 V1.2 A• at rated input voltage 230 V2.0 Acurrent limitation of inrush current at 25 °C maximum20 Avalue maximum1.2 A*s121 value maximum1.2 A*s121 value maximum1.2 A*svoltage curve at outputControlled, isolated DC voltageoutput voltage 210 V2.4 V• at rated input voltage 230 V2.4 V• at rated input voltage 230 V1.2 A• at rated input voltage 230 V1.2 A• at rated input voltage 210 V3 ms121 value maximum1.2 A*svoltage curve at outputControlled, isolated DC voltage• in the feederControlled, isolated DC voltage• output voltage at DC rated value24 Vvoltage curve at output 1 at DC rated value24 Vrelative cortor precision of the voltage3 %• on slow fluctuation of input voltage0.1 %• on slow fluctuation of input vol	input voltage	
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overvoltage overload capability         2.3 × Vin rated, 1.3 ms           operating condition of the mains buffering         at Vin = 93/187 V           buffering time for rated value of the output current in the event of power failure minimum         20 ms           operating condition of the mains buffering         at Vin = 93/187 V           iner frequency         at Vin = 93/187 V           • 1 rated value         50 Hz           • 2 rated value         60 Hz           line frequency         47 63 Hz           • at rated input voltage 120 V         2.3 A           • at rated input voltage 120 V         2.3 A           • at rated input voltage 120 V         2.3 A           • at rated input voltage 120 V         2.3 A           • at rated input voltage 120 V         2.3 A           • at rated input voltage 230 V         1.2 A           current limitation of inrush current at 25 °C maximum         20 A           duration of inrush current at 25 °C maximum         3 ms           12t value maximum         1.2 A²-s           fuse protection type         3 (15 A/250 V (not accessible)           • in the feeder         Recommended miniature circuit breaker; from 6 A characteristic C           vutput voltage at DC rated value         24 V           output voltage         3 %	• 2 at AC	170 264 V
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line frequency         47 63 Hz           input current         2.3 A           • at rated input voltage 120 V         2.3 A           • at rated input voltage 230 V         1.2 A           current limitation of inrush current at 25 °C maximum         20 A           duration of inrush current limiting at 25 °C	• 1 rated value	50 Hz
input current       2.3 A         • at rated input voltage 120 V       2.3 A         • at rated input voltage 230 V       1.2 A         current limitation of inrush current at 25 °C maximum       20 A         duration of inrush current limiting at 25 °C       •         • maximum       3 ms         12t value maximum       1.2 A²-s         fuse protection type       T 3,15 A/250 V (not accessible)         • in the feeder       Recommended miniature circuit breaker: from 6 A characteristic C         voltage curve at output       Controlled, isolated DC voltage         output voltage       24 V         output voltage       3 %         relative overall tolerance of the voltage       3 %         relative control precision of the output voltage       0.1 %         • on slow fluctuation of ohm loading       0.5 %	• 2 rated value	60 Hz
• at rated input voltage 120 V2.3 A• at rated input voltage 230 V1.2 Acurrent limitation of inrush current at 25 °C maximum20 Aduration of inrush current limiting at 25 °C3 msduration of inrush current limiting at 25 °C1.2 A²-s• maximum1.2 A²-s12t value maximum1.2 A²-sfuse protection typeT 3,15 A/250 V (not accessible)• in the feederRecommended miniature circuit breaker: from 6 A characteristic Cvoltage curve at outputControlled, isolated DC voltageoutput voltage at DC rated value24 Voutput voltage3 %relative coverall tolerance of the voltage3 %relative control precision of the output voltage0.1 %• on slow fluctuation of input voltage0.1 %• on slow fluctuation of ohm loading0.5 %residual ripple0.5 %	line frequency	47 63 Hz
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duration of inrush current limiting at 25 °C       3 ms         i maximum       3 ms         12t value maximum       1.2 A²-s         fuse protection type       T 3,15 A/250 V (not accessible)         i in the feeder       Recommended miniature circuit breaker: from 6 A characteristic C         Utput         voltage curve at output         output voltage at DC rated value       24 V         output voltage       24 V         relative overall tolerance of the voltage       3 %         relative control precision of the output voltage       0.1 %         on slow fluctuation of ohm loading       0.5 %	<ul> <li>at rated input voltage 230 V</li> </ul>	1.2 A
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butput         Controlled, isolated DC voltage           voltage curve at output         Controlled, isolated DC voltage           output voltage at DC rated value         24 V           output voltage         24 V           e at output 1 at DC rated value         24 V           relative overall tolerance of the voltage         3 %           relative control precision of the output voltage         0.1 %           on slow fluctuation of input voltage         0.5 %	fuse protection type	T 3,15 A/250 V (not accessible)
voltage curve at output       Controlled, isolated DC voltage         output voltage at DC rated value       24 V         output voltage       24 V         • at output 1 at DC rated value       24 V         relative overall tolerance of the voltage       3 %         relative control precision of the output voltage       0.1 %         • on slow fluctuation of input voltage       0.5 %         residual ripple       0.5 %	• in the feeder	Recommended miniature circuit breaker: from 6 A characteristic C
output voltage at DC rated value     24 V       output voltage     24 V       • at output 1 at DC rated value     24 V       relative overall tolerance of the voltage     3 %       relative control precision of the output voltage     0.1 %       • on slow fluctuation of input voltage     0.5 %       residual ripple     6	Dutput	
output voltage     24 V       • at output 1 at DC rated value     24 V       relative overall tolerance of the voltage     3 %       relative control precision of the output voltage     0.1 %       • on slow fluctuation of input voltage     0.5 %       residual ripple     6	voltage curve at output	Controlled, isolated DC voltage
• at output 1 at DC rated value     24 V       relative overall tolerance of the voltage     3 %       relative control precision of the output voltage     0.1 %       • on slow fluctuation of input voltage     0.5 %       residual ripple     6.5 %	output voltage at DC rated value	24 V
relative overall tolerance of the voltage       3 %         relative control precision of the output voltage       0.1 %         • on slow fluctuation of input voltage       0.1 %         • on slow fluctuation of ohm loading       0.5 %         residual ripple       0.1 %	output voltage	
relative overall tolerance of the voltage     3 %       relative control precision of the output voltage     0.1 %       • on slow fluctuation of input voltage     0.5 %       residual ripple     0.5 %		24 V
relative control precision of the output voltage • on slow fluctuation of input voltage • on slow fluctuation of ohm loading residual ripple	relative overall tolerance of the voltage	3 %
on slow fluctuation of input voltage     on slow fluctuation of ohm loading     onslow fluctuation of ohm loading     residual ripple		
• on slow fluctuation of ohm loading 0.5 % residual ripple		0.1 %
residual ripple		0.5 %
		50 mV

• typical voltage peak	10 mV
• maximum	150 mV
• typical	20 mV
product function output voltage adjustable	No
type of output voltage setting	
display version for normal operation	Green LED for 24 V OK
behavior of the output voltage when switching on	No overshoot of Vout (soft start)
response delay maximum	2 s
voltage increase time of the output voltage	
• typical	10 ms
output current	
rated value	5 A
rated range	0 5 A
supplied active power typical	120 W
short-term overload current	
<ul> <li>on short-circuiting during the start-up typical</li> </ul>	20 A
at short-circuit during operation typical	20 A
duration of overloading capability for excess current	
<ul> <li>on short-circuiting during the start-up</li> </ul>	100 ms
at short-circuit during operation	100 ms
product feature	
bridging of equipment	Yes
Efficiency	
efficiency in percent	87 %
power loss [W]	
<ul> <li>at rated output voltage for rated value of the output ourroat trained</li> </ul>	18 W
current typical	
Closed-loop control	0.1%
relative control precision of the output voltage with rapid fluctuation of the input voltage by +/- 15% typical	0.1 %
relative control precision of the output voltage load step of resistive load 50/100/50 % typical	1 %
setting time	
<ul> <li>load step 50 to 100% typical</li> </ul>	0.3 ms
<ul> <li>load step 100 to 50% typical</li> </ul>	0.3 ms
Protection and monitoring	
design of the overvoltage protection	Additional control loop, shutdown at < 28.8 V, automatic restart
response value current limitation	5.5 6.5 A
property of the output short-circuit proof	Yes
design of short-circuit protection	Electronic shutdown, automatic restart
enduring short circuit current RMS value	
• maximum	7 A
Safety	
galvanic isolation between input and output	Yes
galvanic isolation	Safety extra-low output voltage Uout acc. to EN 60950-1 and EN 50178
operating resource protection class	Class I
leakage current	
• maximum	3.5 mA
• typical	0.5 mA
protection class IP	IP20
Approvals	
certificate of suitability	
• CE marking	Yes
• UL approval	Yes; cULus-Listed (UL 508, CSA C22.2 No. 142), File E143289
CSA approval	Yes; cULus-Listed (UL 508, CSA C22.2 No. 142), File E143289
• cCSAus, Class 1, Division 2	Νο
• ATEX	Yes; ATEX (EX) II 3G Ex nA nC IIC T3 Gc
certificate of suitability	
relating to ATEX	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

• IECEx	Yes; IECEx Ex nA nC IIC T3 Gc
NEC Class 2	No
ULhazloc approval	Yes
FM registration	Yes; Class I, Div. 2, Group ABCD, T4
type of certification CB-certificate	Yes
certificate of suitability	
EAC approval	Yes
certificate of suitability shipbuilding approval	Yes
shipbuilding approval	In S7-300 system
Marine classification association	
American Bureau of Shipping Europe Ltd. (ABS)	No
<ul> <li>French marine classification society (BV)</li> </ul>	No
• DNV GL	No
Lloyds Register of Shipping (LRS)	No
<ul> <li>Nippon Kaiji Kyokai (NK)</li> </ul>	No
EMC	
standard	
for emitted interference	EN 55022 Class B
for mains harmonics limitation	EN 61000-3-2
for interference immunity	EN 61000-6-2
environmental conditions	
ambient temperature	
during operation	0 60 °C; with natural convection
during operation     ort	-40 +85 °C
during storage	-40 +85 °C
environmental category according to IEC 60721	Climate class 3K3, 5 95% no condensation
Mechanics	
type of electrical connection	screw-type terminals
at input	L, N, PE: 1 screw terminal each for 0.5 2.5 mm <sup>2</sup> single-core/finely stranded
● at output	L+, M: 3 screw terminals each for 0.5 2.5 mm <sup>2</sup>
<ul> <li>for auxiliary contacts</li> </ul>	
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
net weight	0.6 kg
product feature of the enclosure housing can be lined up	Yes
fastening method	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)

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