



SIMATIC PS307/1AC/24VDC/2A

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

Input

type of the power supply network	1-phase AC
supply voltage at AC	Automatic range selection
<ul style="list-style-type: none"> initial value 	
supply voltage	
<ul style="list-style-type: none"> 1 at AC rated value 2 at AC rated value 	120 V 230 V
input voltage	
<ul style="list-style-type: none"> 1 at AC 2 at AC 	85 ... 132 V 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 failure minimum	20 ms
operating condition of the mains buffering	at Vin = 93/187 V
line frequency	
<ul style="list-style-type: none"> 1 rated value 2 rated value 	50 Hz 60 Hz
line frequency	47 ... 63 Hz
input current	
<ul style="list-style-type: none"> at rated input voltage 120 V at rated input voltage 230 V 	0.9 A 0.5 A
current limitation of inrush current at 25 °C maximum	22 A
duration of inrush current limiting at 25 °C	
<ul style="list-style-type: none"> maximum 	3 ms
I2t value maximum	1 A²·s
fuse protection type	T 1.6 A/250 V (not accessible)
<ul style="list-style-type: none"> in the feeder 	Recommended miniature circuit breaker: 3 A characteristic C

Output

voltage curve at output	Controlled, isolated DC voltage
output voltage at DC rated value	24 V
output voltage	
<ul style="list-style-type: none"> at output 1 at DC rated value 	24 V
relative overall tolerance of the voltage	3 %
relative control precision of the output voltage	
<ul style="list-style-type: none"> on slow fluctuation of input voltage on slow fluctuation of ohm loading 	0.1 % 0.2 %
residual ripple	
<ul style="list-style-type: none"> maximum typical 	50 mV 5 mV
voltage peak	

<ul style="list-style-type: none"> • maximum • typical 	150 mV
product function output voltage adjustable	20 mV
type of output voltage setting	No
display version for normal operation	-
behavior of the output voltage when switching on	Green LED for 24 V OK
response delay maximum	No overshoot of Vout (soft start)
voltage increase time of the output voltage	2 s
<ul style="list-style-type: none"> • typical 	10 ms
output current	
<ul style="list-style-type: none"> • rated value • rated range 	2 A
supplied active power typical	0 ... 2 A
short-term overload current	48 W
<ul style="list-style-type: none"> • on short-circuiting during the start-up typical • at short-circuit during operation typical 	9 A
duration of overloading capability for excess current	9 A
<ul style="list-style-type: none"> • on short-circuiting during the start-up • at short-circuit during operation 	90 ms
product feature	90 ms
<ul style="list-style-type: none"> • bridging of equipment 	Yes
number of parallel-switched equipment resources for increasing the power	2

Efficiency

efficiency in percent	84 %
power loss [W]	
<ul style="list-style-type: none"> • at rated output voltage for rated value of the output current typical 	9 W

Closed-loop control

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	0.8 %
setting time	
<ul style="list-style-type: none"> • load step 50 to 100% typical • load step 100 to 50% typical 	0.5 ms
setting time	0.5 ms
<ul style="list-style-type: none"> • maximum 	1 ms

Protection and monitoring

design of the overvoltage protection	Additional control loop, shutdown at < 28.8 V, automatic restart
response value current limitation	2.2 ... 2.6 A
property of the output short-circuit proof	Yes
design of short-circuit protection	Electronic shutdown, automatic restart
enduring short circuit current RMS value	
<ul style="list-style-type: none"> • maximum 	2 A
display version for overload and short circuit	-

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	
<ul style="list-style-type: none"> • maximum • typical 	3.5 mA
protection class IP	0.5 mA
	IP20

Approvals

certificate of suitability	
<ul style="list-style-type: none"> • CE marking • UL approval • CSA approval • cCSAus, Class 1, Division 2 • ATEX 	Yes
certificate of suitability	Yes; cULus-Listed (UL 508, CSA C22.2 No. 142), File E143289
<ul style="list-style-type: none"> • relating to ATEX 	Yes; cULus-Listed (UL 508, CSA C22.2 No. 142), File E143289
	No
	Yes; ATEX (EX) II 3G Ex nA nC IIC T4 Gc
	IECEx Ex nA nC IIC T4 Gc; ATEX (EX) II 3G Ex nA nC IIC T4 Gc;
	cULus (ANSI/ISA 12.12.01, CSA C22.2 No.213) Class I, Div. 2, Group

<ul style="list-style-type: none"> • IECEX • NEC Class 2 • ULhazloc approval • FM registration 	ABCD, T4, File E330455 Yes; IECEX Ex nA nC IIC T4 Gc No Yes Yes; Class I, Div. 2, Group ABCD, T4 Yes
type of certification CB-certificate certificate of suitability <ul style="list-style-type: none"> • EAC approval 	Yes Yes
certificate of suitability shipbuilding approval shipbuilding approval	In S7-300 system
Marine classification association <ul style="list-style-type: none"> • American Bureau of Shipping Europe Ltd. (ABS) • French marine classification society (BV) • DNV GL • Lloyds Register of Shipping (LRS) • Nippon Kaiji Kyokai (NK) 	No No No No No
EMC	
standard <ul style="list-style-type: none"> • for emitted interference • for mains harmonics limitation • for interference immunity 	EN 55022 Class B not applicable EN 61000-6-2
environmental conditions	
ambient temperature <ul style="list-style-type: none"> • during operation • during transport • during storage 	0 ... 60 °C; with natural convection -40 ... +85 °C -40 ... +85 °C
environmental category according to IEC 60721	Climate class 3K3, 5 ... 95% no condensation
Mechanics	
type of electrical connection <ul style="list-style-type: none"> • at input • at output • for auxiliary contacts 	screw-type terminals 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 <ul style="list-style-type: none"> • top • bottom • left • right 	40 mm 40 mm 0 mm 0 mm
net weight	0.4 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	2 320 078 h
other information	Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

