

Siemens 6ES7307-1BA01-0AA0 Manual

Brand	Siemens
Product Series	Siemens
Product Type	of the power supply network 1-phase AC

Description

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

type of the power supply network 1-phase AC

supply voltage at AC Automatic range selection

supply voltage 120 V/230 V

input voltage 1 at AC 85 ... 132 V

input voltage 2 at AC 170 ... 264 V

wide range input No

overvoltage overload capability 2.3 A Vin rated, 3 ms

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 50/60 Hz

line frequency 47 ... 63 Hz

input current

- at rated input voltage 120 V 0.9 A

- at rated input voltage 230 V 0.5 A

current limitation of inrush current at 25 °C maximum 22 A

duration of inrush current limiting at 25 °C

- maximum 3 ms

I²t value maximum 1 A²·s

fuse protection type T 1.6 A/250 V (not accessible)

fuse protection type 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

- at output 1 at DC rated value 24 V

output voltage adjustable No; -

relative overall tolerance of the voltage 3 %

relative control precision of the output voltage

- on slow fluctuation of input voltage 0.1 %

- on slow fluctuation of ohm loading 0.2 %

residual ripple

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- maximum 50 mV
- typical 5 mV

voltage peak

- maximum 150 mV
- typical 20 mV

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 2 A
- rated 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

bridging of equipment Yes

number of parallel-switched equipment resources for increasing the power

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efficiency

efficiency in percent 84 %

power loss [W]

- 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

- load step 50 to 100% typical 0.5 ms
- load step 100 to 50% typical 0.5 ms

setting time

- maximum 1 ms

protection and monitoring

design of the overvoltage protection Additional control loop, shutdown at < 28.8 V, automatic restart

property of the output short-circuit proof Yes

design of short-circuit protection Electronic shutdown, automatic restart

response value current limitation 2.2 ... 2.6 A

enduring short circuit current RMS value

- maximum 2 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

EMC

standard

- for emitted interference EN 55022 Class B
- for mains harmonics limitation not applicable
- for interference immunity EN 61000-6-2

standards, specifications, 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
- UKCA marking Yes
- EAC approval Yes
- NEC Class 2 No

type of certification

- CB-certificate Yes

MTBF at 40 °C 2 320 078 h

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standards, specifications, approvals hazardous environments

certificate of suitability

- IECEx Yes; IECEx Ex nA nC IIC T4 Gc
- ATEX Yes; ATEX (EX) II 3G Ex nA nC IIC T4 Gc
- ULhazloc approval Yes
- cCSAus, Class 1, Division 2 No
- UKEX Yes
- CCC for hazardous zone according to GB standard Yes
- FM registration Yes; Class I, Div. 2, Group ABCD, T4

standards, specifications, approvals marine classification

shipbuilding approval Yes

Marine classification association

- American Bureau of Shipping Europe Ltd. (ABS) No
- French marine classification society (BV) No
- Det Norske Veritas (DNV) Yes
- Lloyds Register of Shipping (LRS) Yes

standards, specifications, approvals Environmental Product Declaration

Environmental Product Declaration Yes

Global Warming Potential [CO2 eq]

- total 289.8 kg
- during manufacturing 7.9 kg
- during operation 281.5 kg
- after end of life 0.25 kg

ambient conditions

ambient temperature

- during operation 0 ... 60 °C; with natural convection

- during transport -40 ... +85 °C
- during storage -40 ... +85 °C

environmental category according to IEC 60721 Climate class 3K3, 5 ... 95% no condensation

connection method

type of electrical connection screw terminal

- at input L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm² single-core/finely stranded
- at output L+, M: 2 screw terminals each for 0.5 ... 2.5 mm²
- for auxiliary contacts -

mechanical data

width × height × depth of the enclosure 40 × 125 × 120 mm

installation width × mounting height 40 mm × 205 mm

required spacing

- top 40 mm
- bottom 40 mm
- left 0 mm
- right 0 mm

fastening method Can be mounted onto S7 rail

- standard rail mounting No
- S7 rail mounting Yes
- wall mounting No

housing can be lined up Yes

net weight 0.4 kg

accessories

mechanical accessories Mounting adapter for standard mounting rail (6EP1971-1BA00)

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