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** | |
| type of the power supply network | 1-phase AC |
| supply voltage at AC | |
| ● initial value | 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 |
| 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 | |
| ● 1 rated value | 50 Hz |
| ● 2 rated value | 60 Hz |
| line frequency | 47 ... 63 Hz |
| input current | |
| ● 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 |
| I2t 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 |
| **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 |
| 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 | 0.5 % |
| residual ripple | |
| ● maximum | 50 mV |

| | |
|---|---|
| ● typical | 10 mV |
| voltage peak | |
| ● 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 | |
| ● 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 |
| product feature | |
| ● bridging of equipment | Yes |
| **Efficiency** | |
| efficiency in percent | 87 % |
| power loss [W] | |
| ● at rated output voltage for rated value of the output current typical | 18 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 | 1 % |
| setting time | |
| ● load step 50 to 100% typical | 0.3 ms |
| ● load step 100 to 50% typical | 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 | No |
| ● 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 |
| ● French marine classification society (BV) | No |
| ● DNV GL | No |
| ● Lloyds Register of Shipping (LRS) | No |
| ● Nippon Kaiji Kyokai (NK) | 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 transport | -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 mm² single-core/finely stranded |
| ● at output | L+, M: 3 screw terminals each for 0.5 ... 2.5 mm² |
| ● for auxiliary contacts | - |
| 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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