

SIMATIC PS307/1AC/24VDC/10A  
SIMATIC S7-300 Regulated power supply PS307 input: 120/230 V  
AC, output: 24 V / 10 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 lout 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      | 4.2 A                     |
| • at rated input voltage 230 V      | 1.9 A                     |

|                                               |                                                                   |
|-----------------------------------------------|-------------------------------------------------------------------|
| Switch-on current limiting (+25 °C), max.     | 55 A                                                              |
| duration of inrush current limiting at 25 °C  |                                                                   |
| • maximum                                     | 3 ms                                                              |
| $I^2t$ , max.                                 | 3.3 A <sup>2</sup> ·s                                             |
| Built-in incoming fuse                        | T 6.3 A/250 V (not accessible)                                    |
| Protection in the mains power input (IEC 898) | Recommended miniature circuit breaker: from 10 A characteristic C |

## Output

|                                                       |                                        |
|-------------------------------------------------------|----------------------------------------|
| Output                                                | Controlled, isolated DC voltage        |
| Rated voltage $V_{out}$ DC                            | 24 V                                   |
| Total tolerance, static $\pm$                         | 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.                       | 15 mV                                  |
| Spikes peak-peak, max. (bandwidth: 20 MHz)            | 150 mV                                 |
| Spikes peak-peak, typ. (bandwidth: 20 MHz)            | 60 mV                                  |
| product function output voltage adjustable            | No                                     |
| Output voltage setting                                | -                                      |
| Status display                                        | Green LED for 24 V OK                  |
| On/off behavior                                       | No overshoot of $V_{out}$ (soft start) |
| Startup delay, max.                                   | 2 s                                    |
| Voltage rise, typ.                                    | 10 ms                                  |
| Rated current value $I_{out}$ rated                   | 10 A                                   |
| Current range                                         | 0 ... 10 A                             |
| supplied active power typical                         | 240 W                                  |
| short-term overload current                           |                                        |
| • on short-circuiting during the start-up typical     | 38 A                                   |
| • at short-circuit during operation typical           | 38 A                                   |
| duration of overloading capability for excess current |                                        |
| • on short-circuiting during the start-up             | 80 ms                                  |
| • at short-circuit during operation                   | 80 ms                                  |
| Parallel switching for enhanced performance           | Yes                                    |

## Efficiency

|                                                         |      |
|---------------------------------------------------------|------|
| Efficiency at $V_{out}$ rated, $I_{out}$ rated, approx. | 90 % |
| Power loss at $V_{out}$ rated, $I_{out}$ rated, approx. | 27 W |

## Closed-loop control

|                                                                       |        |
|-----------------------------------------------------------------------|--------|
| Dynamic mains compensation ( $V_{in}$ rated $\pm 15$ %), max.         | 0.1 %  |
| Dynamic load smoothing ( $I_{out}$ : 50/100/50 %), $U_{out} \pm$ typ. | 2 %    |
| setting time maximum                                                  | 0.1 ms |

| Protection and monitoring                  |                                                                                                                        |
|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| Output overvoltage protection              | Additional control loop, shutdown at < 28.8 V, automatic restart                                                       |
| Current limitation                         | 11 ... 12 A                                                                                                            |
| property of the output short-circuit proof | Yes                                                                                                                    |
| Short-circuit protection                   | Electronic shutdown, automatic restart                                                                                 |
| enduring short circuit current RMS value   |                                                                                                                        |
| • maximum                                  | 12 A                                                                                                                   |
| Overload/short-circuit indicator           | -                                                                                                                      |
| Safety                                     |                                                                                                                        |
| Primary/secondary isolation                | Yes                                                                                                                    |
| galvanic isolation                         | Safety extra-low output voltage U <sub>out</sub> acc. to EN 60950-1 and EN 50178                                       |
| Protection class                           | Class I                                                                                                                |
| leakage current                            |                                                                                                                        |
| • maximum                                  | 3.5 mA                                                                                                                 |
| • typical                                  | 0.6 mA                                                                                                                 |
| Degree of protection (EN 60529)            | IP20                                                                                                                   |
| Approvals                                  |                                                                                                                        |
| CE mark                                    | Yes                                                                                                                    |
| UL/cUL (CSA) approval                      | cULus-Listed (UL 508, CSA C22.2 No. 142), File E143289                                                                 |
| Explosion protection                       | ATEX (EX) II 3G Ex nA II T4; cULus (ANSI/ISA 12.12.01, CSA C22.2 No.213) Class I, Div. 2, Group ABCD, T4, File E330455 |
| certificate of suitability NEC Class 2     | No                                                                                                                     |
| FM approval                                | Class I, Div. 2, Group ABCD, T4                                                                                        |
| CB approval                                | No                                                                                                                     |
| Marine approval                            | In S7-300 system                                                                                                       |
| 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                                |                                                                                                                        |

|                                                                    |                                                                                                   |
|--------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• Supply input</li> </ul>   | L, N, PE: 1 screw terminal each for 0.5 ... 2.5 mm <sup>2</sup> single-core/finely stranded       |
| <ul style="list-style-type: none"> <li>• Output</li> </ul>         | L+, M: 4 screw terminals each for 0.5 ... 2.5 mm <sup>2</sup>                                     |
| <ul style="list-style-type: none"> <li>• Auxiliary</li> </ul>      | -                                                                                                 |
| width of the enclosure                                             | 80 mm                                                                                             |
| height of the enclosure                                            | 125 mm                                                                                            |
| depth of the enclosure                                             | 120 mm                                                                                            |
| required spacing                                                   |                                                                                                   |
| <ul style="list-style-type: none"> <li>• top</li> </ul>            | 40 mm                                                                                             |
| <ul style="list-style-type: none"> <li>• bottom</li> </ul>         | 40 mm                                                                                             |
| <ul style="list-style-type: none"> <li>• left</li> </ul>           | 0 mm                                                                                              |
| <ul style="list-style-type: none"> <li>• right</li> </ul>          | 0 mm                                                                                              |
| Weight, approx.                                                    | 0.8 kg                                                                                            |
| product feature of the enclosure housing for side-by-side mounting | Yes                                                                                               |
| Installation                                                       | Can be mounted onto S7 rail                                                                       |
| mechanical accessories                                             | Mounting adapter for standard mounting rail (6EP1971-1BA00)                                       |
| MTBF at 40 °C                                                      | 1 504 280 h                                                                                       |
| other information                                                  | Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified) |