



SITOP PSU300S 20 A STABILIZED POWER SUPPLY  
INPUT: 400-500 V 3 AC OUTPUT: 24 V DC/20 A

### Technical specifications

|                                                             |                                                                                                                                                           |
|-------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product                                                     | SITOP PSU300S                                                                                                                                             |
| Power supply, type                                          | 24 V/20 A                                                                                                                                                 |
| <b>Input</b>                                                |                                                                                                                                                           |
| Input                                                       | 3-phase AC                                                                                                                                                |
| Rated voltage value $V_{in}$ rated                          | 400 ... 500 V                                                                                                                                             |
| Voltage range                                               | 340 ... 550 V                                                                                                                                             |
| Wide-range input                                            | Yes                                                                                                                                                       |
| Mains buffering at $I_{out}$ rated, min.                    | 6 ms                                                                                                                                                      |
| Mains buffering                                             | at $V_{in} = 400$ V                                                                                                                                       |
| Rated line frequency                                        | 50 / 60 Hz                                                                                                                                                |
| Rated line range                                            | 47 ... 63 Hz                                                                                                                                              |
| Input current / at nominal level of the input voltage 400 V | 1.2 A                                                                                                                                                     |
| Input current / at nominal level of the input voltage 500 V | 1 A                                                                                                                                                       |
| Switch-on current limiting (+25 °C), max.                   | 36 A                                                                                                                                                      |
| $I^2t$ , max.                                               | 0.9 A <sup>2</sup> ·s                                                                                                                                     |
| Built-in incoming fuse                                      | none                                                                                                                                                      |
| Protection in the mains power input (IEC 898)               | Required: 3-pole connected miniature circuit breaker 6 ... 16 A characteristic C or circuit breaker 3RV2011-1DA10 (setting 3 A) or 3RV2711-1DD10 (UL 489) |

### Output

|                                                                                                       |                                                                      |
|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Output                                                                                                | Controlled, isolated DC voltage                                      |
| Rated voltage Vout DC                                                                                 | 24 V                                                                 |
| Total tolerance, static ±                                                                             | 3 %                                                                  |
| Static mains compensation, approx.                                                                    | 0.5 %                                                                |
| Static load balancing, approx.                                                                        | 1 %                                                                  |
| Residual ripple peak-peak, max.                                                                       | 150 mV                                                               |
| Spikes peak-peak, max. (bandwidth: 20 MHz)                                                            | 240 mV                                                               |
| Adjustment range                                                                                      | 24 ... 28 V                                                          |
| Product feature / output voltage adjustable                                                           | Yes                                                                  |
| Output voltage setting                                                                                | via potentiometer                                                    |
| • Note                                                                                                | max. 480 W                                                           |
| Status display                                                                                        | Green LED for 24 V OK                                                |
| Signaling                                                                                             | Relay contact (NO contact, rating 60 V DC/ 0.3 A) for "24 V OK"      |
| On/off behavior                                                                                       | No overshoot of Vout (soft start)                                    |
| Startup delay, max.                                                                                   | 1.5 s                                                                |
| Voltage rise, typ.                                                                                    | 30 ms                                                                |
| Voltage increase time / of the output voltage / maximum                                               | 500 ms                                                               |
| Rated current value Iout rated                                                                        | 20 A                                                                 |
| Current range                                                                                         | 0 ... 20 A                                                           |
| • Note                                                                                                | 24 A up to +45°C; +60 ... +70 °C: Derating 5%/K                      |
| delivered active power / typ.                                                                         | 480 W                                                                |
| short-term overload current / at short-circuit during run-up / typical                                | 35 A                                                                 |
| Duration of overloading ability for excess current / on short-circuiting during the start-up          | 100 ms                                                               |
| short-term overload current / at short-circuit during operation / typical                             | 35 A                                                                 |
| Duration of overloading ability for excess current / on short-circuiting during the operational phase | 100 ms                                                               |
| Parallel switching for enhanced performance                                                           | Yes                                                                  |
| Numbers of parallel switchable units for enhanced performance                                         | 2                                                                    |
| <b>Efficiency</b>                                                                                     |                                                                      |
| Efficiency at Vout rated, Iout rated, approx.                                                         | 91 %                                                                 |
| Power loss at Vout rated, Iout rated, approx.                                                         | 47 W                                                                 |
| <b>Closed-loop control</b>                                                                            |                                                                      |
| Dynamic mains compensation (Vin rated ±15 %), max.                                                    | 3 %                                                                  |
| Dynamic load smoothing (Iout: 50/100/50 %), Uout ± typ.                                               | 3 %                                                                  |
| Load step setting time 50 to 100%, typ.                                                               | 2 ms                                                                 |
| Load step setting time 100 to 50%, typ.                                                               | 2 ms                                                                 |
| Setting time / maximum                                                                                | 10 ms                                                                |
| <b>Protection and monitoring</b>                                                                      |                                                                      |
| Output overvoltage protection                                                                         | protection against overvoltage in case of internal fault Vout < 35 V |

|                                                                |                                                                                                                 |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Current limitation, typ.                                       | 25 A                                                                                                            |
| Characteristic feature of the output / short-circuit protected | Yes                                                                                                             |
| Short-circuit protection                                       | Electronic shutdown, automatic restart                                                                          |
| Enduring short circuit current / Effective level / maximum     | 7 A                                                                                                             |
| Enduring short circuit current / Effective level / typical     |                                                                                                                 |
| • Note                                                         | overload capability 150 % I <sub>out</sub> rated up to 5 s/min                                                  |
| <b>Safety</b>                                                  |                                                                                                                 |
| Primary/secondary isolation                                    | Yes                                                                                                             |
| Potential separation                                           | Safety extra-low output voltage U <sub>out</sub> acc. to EN 60950-1 and EN 50178                                |
| Protection class                                               | Class I                                                                                                         |
| stray current / maximum                                        | 3.5 mA                                                                                                          |
| stray current / typical                                        | 1 mA                                                                                                            |
| CE mark                                                        | Yes                                                                                                             |
| UL/CSA approval                                                | Yes                                                                                                             |
| UL/cUL (CSA) approval                                          | cULus-Listed (UL 508, CSA C22.2 No. 107.1), File E197259;<br>cCSAus (CSA C22.2 No. 60950-1, UL 60950-1)         |
| Explosion protection                                           | ATEX (EX) II 3G Ex nAC IIC T4; cCSAus (CSA C22.2 No. 213,<br>ANSI/ISA-12.12.01) Class I, Div. 2, Group ABCD, T4 |
| CB approval                                                    | Yes                                                                                                             |
| Marine approval                                                | GL, ABS                                                                                                         |
| Degree of protection (EN 60529)                                | IP20                                                                                                            |
| <b>EMC</b>                                                     |                                                                                                                 |
| Emitted interference                                           | EN 55022 Class B                                                                                                |
| Supply harmonics limitation                                    | EN 61000-3-2                                                                                                    |
| Noise immunity                                                 | EN 61000-6-2                                                                                                    |
| <b>Operating data</b>                                          |                                                                                                                 |
| Ambient temperature / in operation                             | 0 ... 70 °C                                                                                                     |
| • Note                                                         | with natural convection                                                                                         |
| Ambient temperature / on transport                             | -40 ... +85 °C                                                                                                  |
| Ambient temperature / in storage                               | -40 ... +85 °C                                                                                                  |
| Humidity class according to EN 60721                           | Climate class 3K3, no condensation                                                                              |
| <b>Mechanics</b>                                               |                                                                                                                 |
| Connection technology                                          | screw-type terminals                                                                                            |
| Connections / Supply input                                     | L1, L2, L3, PE: 1 screw terminal each for 0.2 ... 4 mm <sup>2</sup> single-core/finely stranded                 |
| Connections / Output                                           | +, -: 2 screw terminals each for 0.2 ... 4 mm <sup>2</sup>                                                      |
| Connections / Auxiliary                                        | 13, 14 (alarm signal): 1 screw terminal each for 0.14 ... 1.5 mm <sup>2</sup>                                   |
| Width / of the housing                                         | 90 mm                                                                                                           |
| Height / of the housing                                        | 145 mm                                                                                                          |
| Depth / of the housing                                         | 150 mm                                                                                                          |

|                                                                      |                                                                                                   |
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| Installation width                                                   | 90 mm                                                                                             |
| Mounting height                                                      | 225 mm                                                                                            |
| Weight, approx.                                                      | 1.6 kg                                                                                            |
| Product feature / of the housing / housing for side-by-side mounting | Yes                                                                                               |
| Type of mounting / wall mounting                                     | No                                                                                                |
| Type of fixing / cap rail mounting                                   | Yes                                                                                               |
| Type of mounting / S7-300 rail mounting                              | No                                                                                                |
| Installation                                                         | Snaps onto DIN rail EN 60715 35x7.5/15                                                            |
| Electrical accessories                                               | Buffer module                                                                                     |
| Mechanical accessories                                               | Device identification label 20 mm × 7 mm, pastel-turquoise 3RT1900-1SB20                          |
| Other information                                                    | Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified) |

**letzte Änderung:**

Oct 28, 2013