



SITOP MODULAR PLUS 20 STABILIZED POWER SUPPLY  
 INPUT: 400-500 V 3 AC OUTPUT: 24 V DC/20 A VERSION  
 WITH COATED PCB

## Technical specifications

|                    |                    |
|--------------------|--------------------|
| Product            | SITOP modular plus |
| Power supply, type | 24 V/20 A          |

### Input

|   |                                   |
|---|-----------------------------------|
| Input   | 3-phase AC                        |
| Rated voltage value $V_{in}$ rated                          | 400 ... 500 V                     |
| Voltage range   | 320 ... 550 V                     |
| • Note  | Starting from $V_{in} > 340$ V    |
| Wide-range input  | Yes                               |
| Overvoltage resistance                                      | $2.3 \times V_{in}$ rated, 1.3 ms |
| 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 | 1.1 A                             |
| Input current / at nominal level of the input voltage 500 V | 0.9 A                             |
| Switch-on current limiting (+25 °C), max.                   | 35 A                              |
| $I^2t$ , max.   | 0.7 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) |
| <b>Output</b>   |   |
| Output  | Controlled, isolated DC voltage   |
| Rated voltage Vout DC   | 24 V  |
| Total tolerance, static ±   | 3 %   |
| Static mains compensation, approx.  | 0.1 %   |
| Static load balancing, approx.  | 0.2 %   |
| Residual ripple peak-peak, max.   | 100 mV  |
| Spikes peak-peak, max. (bandwidth: 20 MHz)  | 200 mV  |
| Adjustment range  | 24 ... 28.8 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   | via signaling module (6EP1961-3BA10)  |
| On/off behavior   | No overshoot of Vout (soft start)   |
| Startup delay, max.   | 2.5 s   |
| Voltage increase time / of the output voltage / maximum   | 500 ms  |
| Rated current value Iout rated  | 20 A  |
| Current range   | 0 ... 20 A  |
| • Note  | > 60 °C Derating  |
| delivered active power / typ.   | 480 W   |
| constant overload current / at short-circuit during run-up / typical                                  | 23 A  |
| short-term overload current / at short-circuit during operation / typical                             | 60 A  |
| Duration of overloading ability for excess current / on short-circuiting during the operational phase | 25 ms   |
| Parallel switching for enhanced performance   | Yes   |
| • Note  | switchable characteristic   |
| Numbers of parallel switchable units for enhanced performance   | 2   |
| <b>Efficiency</b>   |   |
| Efficiency at Vout rated, Iout rated, approx.   | 90 %  |
| Power loss at Vout rated, Iout rated, approx.   | 53 W  |
| <b>Closed-loop control</b>  |   |
| Dynamic mains compensation (Vin rated ±15 %), max.  | 1 %   |
| Dynamic load smoothing (Iout: 50/100/50 %), Uout ± typ.   | 2 %   |
| Load step setting time 50 to 100%, typ.   | 4 ms  |
| Load step setting time 100 to 50%, typ.   | 4 ms  |
| Setting time / maximum  | 10 ms   |

| <b>Protection and monitoring</b>                               |   |
|--|---|
| Output overvoltage protection                                  | < 35 V  |
| Current limitation, typ.                                       | 23 A  |
| Characteristic feature of the output / short-circuit protected | Yes   |
| Short-circuit protection                                       | Alternatively, constant current characteristic approx. 23 A or latching shutdown                |
| Enduring short circuit current / Effective level / typical     | 23 A  |
| Overload/short-circuit indicator                               | LED yellow for "overload", LED red for "latching shutdown"                                      |
| <b>Safety</b>  |   |
| Primary/secondary isolation                                    | Yes   |
| Potential separation   | Safety extra-low output voltage Uout acc. to EN 60950-1 and EN 50178                            |
| Protection class   | Class I   |
| stray current / maximum  | 3.5 mA  |
| CE mark  | Yes   |
| UL/CSA approval  | Yes   |
| UL/cUL (CSA) approval  | UL-Listed (UL 508), File E197259, CSA (CSA C22.2 No. 14, CSA C22.2 No. 107.1)                   |
| Explosion protection   | -   |
| FM approval  | -   |
| CB approval  | No  |
| Marine approval  | -   |
| 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 0.33 ... 4 mm <sup>2</sup>                                     |
| Connections / Auxiliary  | -   |
| Width / of the housing   | 160 mm  |

|  |   |
|--|---|
| Height / of the housing  | 125 mm  |
| Depth / of the housing   | 125 mm  |
| Installation width   | 160 mm  |
| Mounting height  | 225 mm  |
| Weight, approx.  | 2 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, signaling module   |
| Other information  | Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified) |

**letzte Änderung:**

Oct 19, 2012