



SITOP MODULAR PLUS 5 STABILIZED POWER SUPPLY
INPUT: 120-230/230-500 V AC OUTPUT: 24 V DC/5 A
VERSION WITH COATED PCB

Technical specifications

Product	SITOP modular plus
Power supply, type	24 V/5 A
Input	
Input	1-phase and 2-phase AC
Supply voltage / 1 / at AC	120 ... 230 V
Supply voltage / 2 / at AC	230 ... 500 V
Voltage range	
• Note	Set by means of selector switch on the device; starting from $V_{in} > 90/180$ V
Input voltage / 1 / at AC	85 ... 264 V
Input voltage / 2 / at AC	176 ... 550 V
Wide-range input	Yes
Overvoltage resistance	1300 V _{peak} , 1.3 ms
Mains buffering at lout rated, min.	25 ms
Mains buffering	at $V_{in} = 120/230$ V, typ. 150 ms 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 120 V	2.2 A
Input current / at nominal level of the input voltage 230 V	1.2 A
Input current / at nominal level of the input voltage 500 V	0.61 A

Switch-on current limiting (+25 °C), max.	35 A
I^2t , max.	1.7 A ² s
Built-in incoming fuse	T 3.15 A (not accessible)
Protection in the mains power input (IEC 898)	Recommended miniature circuit breaker at 1-phase operation: from 6 A (10 A), characteristic C (B); required at 2-phase operation: circuit breaker 2-pole connected or circuit breaker 3RV2011-1EA10 (setting 3.8 A) or 3RV2711-1ED10 (UL 489) at 230 V; 3RV2011-1DA10 (setting 3 A) or 3RV2711-1DD10 (UL 489) at 400/500 V
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.	0.1 %
Residual ripple peak-peak, max.	50 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
Status display	Green LED for 24 V OK
Signaling	via signaling module (6EP1961-3BA10)
On/off behavior	Overshoot of V_{out} approx. 3 %
Startup delay, max.	1 s
Voltage rise, typ.	50 ms
Rated current value I_{out} rated	5 A
Current range	0 ... 5 A
• Note	> 60 °C Derating
delivered active power / typ.	120 W
constant overload current / at short-circuit during run-up / typical	5.5 A
short-term overload current / at short-circuit during operation / typical	15 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
Efficiency	
Efficiency at V_{out} rated, I_{out} rated, approx.	87 %
Power loss at V_{out} rated, I_{out} rated, approx.	18 W
Closed-loop control	
Dynamic mains compensation (V_{in} rated ± 15 %), max.	0.1 %
Dynamic load smoothing (I_{out} : 50/100/50 %), $U_{out} \pm$ 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	5 ms
Protection and monitoring	
Output overvoltage protection	< 35 V
Current limitation, typ.	5.5 A
Characteristic feature of the output / short-circuit protected	Yes
Short-circuit protection	Alternatively, constant current characteristic approx. 5.5 A or latching shutdown
Enduring short circuit current / Effective level / typical	5.5 A
Overload/short-circuit indicator	LED yellow for "overload", LED red for "latching shutdown"
Safety	
Primary/secondary isolation	Yes
Potential separation	Safety extra-low output voltage U _{out} acc. to EN 60950-1 and EN 50178
Protection class	Class I
stray current / maximum	3.5 mA
stray current / typical	0.25 mA
CE mark	Yes
UL/CSA approval	Yes
UL/cUL (CSA) approval	cULus-Listed (UL 508, CSA C22.2 No. 107.1), File E197259
Explosion protection	-
FM approval	-
CB approval	No
Marine approval	-
Degree of protection (EN 60529)	IP20
EMC	
Emitted interference	EN 55022 Class B
Supply harmonics limitation	EN 61000-3-2
Noise immunity	EN 61000-6-2
Operating data	
Ambient temperature / in operation	-25 ... +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
Mechanics	
Connection technology	screw-type terminals
Connections / Supply input	L, N, PE: 1 screw terminal each for 0.2 ... 2.5 mm ² single-core/finely stranded

