



SITOP MODULAR PLUS 20 STABILIZED POWER SUPPLY
INPUT: 120/230 V 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	1-phase and 2-phase AC
Supply voltage / 1 / at AC / nominal value	120 V
Supply voltage / 2 / at AC / nominal value	230 V
Voltage range	
• Note	Set by means of wire jumper on the device; starting from $V_{in} > 93/183 \text{ V}$
Input voltage / 1 / at AC	85 ... 132 V
Input voltage / 2 / at AC	176 ... 264 V
Wide-range input	No
Overvoltage resistance	$2.3 \times V_{in}$ rated, 1.3 ms
Mains buffering at I _{out} rated, min.	20 ms
Mains buffering	at $V_{in} = 230 \text{ V}$
Rated line frequency	50 / 60 Hz
Rated line range	47 ... 63 Hz
Input current / at nominal level of the input voltage 120 V	7.7 A
Input current / at nominal level of the input voltage 230 V	3.5 A
Switch-on current limiting (+25 °C), max.	60 A

I ² t, max.	9.9 A ² ·s
Built-in incoming fuse	Yes
Protection in the mains power input (IEC 898)	Recommended miniature circuit breaker at 1-phase operation: 10 A, characteristic C; required at 2-phase operation: circuit breaker 2-pole connected or circuit breaker 3RV2411-1JA10 (120 V) or 3RV2411-1FA10 (230 V)
Output	
Output	Controlled, isolated DC voltage
Rated voltage V _{out} DC	24 V
Total tolerance, static ±	3 %
Static mains compensation, approx.	0.1 %
Static load balancing, approx.	0.1 %
Residual ripple peak-peak, max.	100 mV
Residual ripple peak-peak, typ.	30 mV
Spikes peak-peak, max. (bandwidth: 20 MHz)	200 mV
Spikes peak-peak, typ. (bandwidth: 20 MHz)	60 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.	0.1 s
Voltage rise, typ.	50 ms
Rated current value I _{out} 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
Efficiency	
Efficiency at V _{out} rated, I _{out} rated, approx.	89 %
Power loss at V _{out} rated, I _{out} rated, approx.	59 W
Closed-loop control	
Dynamic mains compensation (V _{in} rated ±15 %), max.	1 %
Dynamic load smoothing (I _{out} : 50/100/50 %), U _{out} ± typ.	2 %

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.	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"
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	0.4 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	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
Mechanics	
Connection technology	screw-type terminals
Connections / Supply input	L, N, PE: 1 screw terminal each for 0.2 ... 4 mm ² single-core/finely stranded

