



SITOP PSU400M/DC/DC/600V/24V/20A

SITOP PSU400M 20 A DC/DC converter input: 600 V DC output: 24 V DC/20 A

### Input

type of the power supply network	DC voltage
supply voltage at AC	startup from 340 V DC; derating necessary at 300 ... 400 V DC and 824 ... 900 V DC
• initial value	600 ... 600 V
supply voltage	300 ... 900 V
• at DC	Shutdown at $V_{in} > 900$ V DC
input voltage	0.85 A
• at DC	8 A
overvoltage overload capability	0.02 A <sup>2</sup> ·s
input current	yes, cut-off capacity 20 kA; L/R < 2 ms ("+" and "-" input)

### Output

voltage curve at output	Controlled, isolated DC voltage
output voltage at DC rated value	24 V
output voltage	24 V
• at output 1 at DC rated value	3 %
relative overall tolerance of the voltage	0.3 %
relative control precision of the output voltage	0.3 %
• on slow fluctuation of input voltage	0.3 %
• on slow fluctuation of ohm loading	0.3 %
residual ripple	150 mV
• maximum	30 mV
• typical	
voltage peak	200 mV
• maximum	100 mV
• typical	
adjustable output voltage	24 ... 28.8 V
product function output voltage adjustable	Yes
type of output voltage setting	via potentiometer; max. 480 W
display version for normal operation	Green LED for 24 V OK, green flashing LED for start delay
type of signal at output	Relay contact (NO contact, rating 60 V DC/ 0.3 A; 30 V DC/1 A) for 24 V OK
behavior of the output voltage when switching on	No overshoot of $V_{out}$ (soft start)
response delay maximum	0.1 s; 10 s adjustable using switch
voltage increase time of the output voltage	
• maximum	150 ms
output current	
• rated value	20 A

• rated range supplied active power typical short-term overload current	0 ... 20 A; +60 ... +70 °C: Derating 5.5%/K 480 W
• on short-circuiting during the start-up typical • at short-circuit during operation typical	40 A 60 A
duration of overloading capability for excess current	150 ms
• on short-circuiting during the start-up • at short-circuit during operation	25 ms
constant overload current	23 A
• on short-circuiting during the start-up typical	
product feature	Yes; switchable characteristic
• bridging of equipment	
number of parallel-switched equipment resources for increasing the power	2
<b>Efficiency</b>	
efficiency in percent	95 %
power loss [W]	
• at rated output voltage for rated value of the output current typical	25 W
<b>Closed-loop control</b>	
relative control precision of the output voltage with rapid fluctuation of the input voltage by +/- 15% typical	1.5 %
relative control precision of the output voltage load step of resistive load 50/100/50 % typical	1.5 %
setting time	
• load step 50 to 100% typical	1 ms
• load step 100 to 50% typical	1 ms
setting time	
• maximum	5 ms
<b>Protection and monitoring</b>	
design of the overvoltage protection	< 33 V
response value current limitation typical	22 A
property of the output short-circuit proof	Yes
design of short-circuit protection	Alternatively, constant current characteristic approx. 22 A or latching shutdown
enduring short circuit current RMS value	
• typical	22 A
overcurrent overload capability in normal operation	overload capability 150 % Iout rated up to 5 s/min
display version for overload and short circuit	LED yellow for "overload", LED red for "latching shutdown", red LED flashing for "Overtemperature"
<b>Safety</b>	
galvanic isolation between input and output	Yes
galvanic isolation	Protective extra low output voltage Vout according to EN 60950-1 and EN 50178
operating resource protection class	Class I
protection class IP	IP20
<b>Approvals</b>	
certificate of suitability	
• CE marking	Yes
• UL approval	Yes; cULus-Listed (UL 508, CSA C22.2 No. 107.1), File E197259
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• cCSAus, Class 1, Division 2	No
• ATEX	No
certificate of suitability	
• IECEx	No
• NEC Class 2	No
• ULhazloc approval	No
• FM registration	No
type of certification CB-certificate	Yes
certificate of suitability	
• EAC approval	Yes
• C-Tick	No
certificate of suitability shipbuilding approval	Yes
shipbuilding approval	DNV GL

Marine classification association	
• American Bureau of Shipping Europe Ltd. (ABS)	No
• French marine classification society (BV)	No
• DNV GL	Yes
• Lloyds Register of Shipping (LRS)	No
• Nippon Kaiji Kyokai (NK)	No
<b>EMC</b>	
standard	
• for emitted interference	EN 55022 Class A (emission)
• for mains harmonics limitation	-
• for interference immunity	EN 61000-6-2
<b>environmental conditions</b>	
ambient temperature	
• during operation	-25 ... +70 °C; with natural convection
• during transport	-40 ... +85 °C
• during storage	-40 ... +85 °C
environmental category according to IEC 60721	Climate class 3K3, 5 ... 95% no condensation
<b>Mechanics</b>	
type of electrical connection	screw-type terminals
• at input	DC input, +, -, PE: 1 screw terminal each for 0.2 ... 6/4 mm <sup>2</sup> single-core/finely stranded
• at output	+, -: 2 screw terminals each for 0.2 ... 6/4 mm <sup>2</sup> single-core/finely stranded
• for auxiliary contacts	Alarm signals: 2 screw terminals for 0.14 ... 1.5 mm <sup>2</sup> single-core/finely stranded
width of the enclosure	90 mm
height of the enclosure	125 mm
depth of the enclosure	125 mm
required spacing	
• top	50 mm
• bottom	50 mm
• left	0 mm
• right	0 mm
net weight	1.2 kg
product feature of the enclosure housing can be lined up	Yes
fastening method	Snaps onto DIN rail EN 60715 35x7.5/15
mechanical accessories	Device identification label 20 mm × 7 mm, pale turquoise 3RT1900-1SB20
MTBF at 40 °C	622 277 h
other information	Specifications at rated input voltage and ambient temperature +25 °C (unless otherwise specified)

