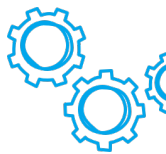




SMPS-T-01-1-480-DC24V-20A

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The primary pulsed SMPS switch mode power supply is suitable for a wide range of automation applications in the machine building industry. As central unit of the DC 24 V level they can be used in combination with the 4230-T MCB for AC primary circuit protection. Thanks to the compact design it helps save space in the control cabinet. The 150 % power boost of the power supplies ensures increased machine uptime. Thanks to their mode options (continuous current/hiccup) and their wide output voltage range, they are suitable for a wide range of applications. Thanks to their flexible expandability, you can easily connect several power supplies in series, making future expansions possible without any problems.



TYPICAL FEATURES

- Efficiency factor of more than 93 %
- 56 mm slim aluminium enclosure
- 150 % overload
- Constant current or hiccup mode limitation, adjustable by the user
- Wide range of output voltage

TYPICAL APPLICATIONS

Process engineering, e.g. industrial switch and control systems, machine building industry, telecommunication systems

WEB LINKS

[Further information](#), [International approvals](#), [Technical basics](#), [REACH](#), [RoHS](#), [Contact](#)

YOUR BENEFITS

- High efficiency and space-savings through compact design
- Increased machine uptime through 150 % power boost
- Flexible application area through mode selection (constant current/hiccup) and wide range of output voltage
- Flexibly expandable through facilitated connection of the power supplies in series

APPROVALS / CERTIFICATIONS



COMPLIANCE



GENERAL INFORMATION

SAFETY AND INSTALLATION INSTRUCTIONS



Installation must be done by a qualified electrician.

- The device must only be supplied with power after proper installation.
- The user must ensure that the cable cross section complies with the applicable current rating. The national standards (e.g. for Germany DIN VDE 0100) must be observed for installation and selection of feed and return cables.
- Recommended circuit breaker for the primary input cable protection: E-T-A's 4230 IN C10A
- In addition, special precautions must be taken in the system or machine (e.g. use of a safety PLC), which reliably prevent an automatic re-start of parts of the system (cf. Machinery Directive 2006/42/EU and EN 60204-1, Safety of Machinery). In the event of a failure (short circuit/overload) the load circuit is disconnected by the circuit breaker or the switch mode power supply.

TECHNICAL DATA (TU = +25 °C, UB = AC 230 V, IO = 20 A)

INPUT CIRCUIT

Rated input voltage range U_e	AC 90...264 V DC 110...345 V
Rated input voltage U_n	AC 230 V
Input current	2.4 A typ. at $U_b = AC 240 V$ 4.8 A typ. at $U_b = AC 120 V$
Mains frequency	47...63 Hz
Inrush current	at AC 230 V: max. 23 A
Power loss	at $U_b 230 V, I_o 20 A$: < 36.5 W
Power factor correction (passive)	> 0.9
Input protection	Internal blade fuse T8A / AC 250 V
Recommended back-up fuse	1 pole MCB e.g. E-T-A's 4230; C10 protector

OUTPUT CIRCUIT

Output power rating	480 W
Rated output voltage U_o	DC 24 V SELV
Rated output current I_o	20 A
Overload limit in constant current mode	21 A
Output voltage accuracy	$\pm 1 \%$
Minimum load	0 %
Load regulation	Single mode $\pm 1 \%$ Parallel mode $\pm 3 \%$
Voltage setting range	DC 22...29 V
Continuous rated load	20 A at $U_o = DC 24 V$
Power boost factor	typ. 150 %
Holding time / Exposure time	20 / 30 ms
Residual ripple	$\leq 60 mV$, range = 20 MHz
Reverse voltage resistance	min. DC 33 V
Capacitive load	max. 2400 μF
Operating conditions signalling	DC OK - green LED OVERLOAD - red LED DC OK - potential-free contact
Limit value display	DC OK - 90 % of U_o when switched ON (21.6 V) OVERLOAD - 110 % of I_n when switched on (22 A) OVERLOAD - Hiccup mode at 30 A (max. 5 s) OVERLOAD - C.C. (Constant Current) at 30 A
Parallel mode	4 power supplies max. at 0.1...0.8 I_o

ELECTRICAL DATA

Rated insulation voltage	Input to output: AC 3 kV / DC 4.2 kV Protective ground input: AC 1.56 kV / DC 2.2 kV Protective ground output: AC 0.53 kV / DC 0.75 kV
Efficiency	typ. > 93 %
Insulation co-ordination (EN IEC 60664)	Pollution degree: 2

MECHANICAL DATA

Mounting dimensions (WxHxD)	56 x 140 x 146.85 mm (version with terminals)
Mounting position	Wall mounting with input terminals pointing downwards (see dimensions)
Mass	approx. 1,100 g
Material	Aluminium
Mounting data	Fixation on DIN rail (TS35/7.5 or TS35/15)
Convection cooling	normal air convection, distances: see drawing

MOUNTING VALUES

Input terminal connection capacity	Cable cross section [mm ²]	Cable cross section [AWG]	Stripping length [mm]
rigid	0.2...2.5	26...12	11...12
flexible	0.2...2.5	26...12	11...12
flexible with wire end ferrule with plastic sleeve	0.25...2.5	26...12	11...12
flexible with wire end ferrule without plastic sleeve	0.25...2.5	26...12	11...12
Output terminal connection capacity	Cable cross section [mm ²]	Cable cross section [AWG]	Stripping length [mm]
rigid	0.2...2.5	26...12	10
flexible	0.2...2.5	26...12	10
flexible with wire end ferrule with plastic sleeve	0.2...2.5	26...12	10
flexible with wire end ferrule without plastic sleeve	0.2...2.5	26...12	10

AMBIENT CONDITIONS

Ambient temperature	-40...+70 °C
Derating	7.2 W/°C above +60 °C (see characteristic curve)
Storage temperature	-40...+80 °C
Damp heat	5...95 % relat. humidity according to UL 61010
Vibration	Test according to IEC 60068-2-6 Mounted on DIN rail, 2 g (17.8...500 Hz), on X, Y & Z axis, 120 minutes per axis
Shock	Test according to IEC 60068-2-27, test Ea 20 g (11 ms), 3 axes, 6 sides, 3 times per side
IP code (standard)	IP20
EMC requirements (EMC directive, CE logo) emitted interference	<ul style="list-style-type: none"> • EN55011 (CISPR11) - Class B • EN61000-3-2 - Class A • EN61000-3-3
EMC requirements (EMC directive, CE logo) resistance to disturbances	<ul style="list-style-type: none"> • EN61000-4-2 - Level 3 (Air), Level 2 (Contact) • EN61000-4-3 - Level 3 (80-1000MHz), Level 2 (1.4-6GHz) • EN61000-4-4 - Level 3 • EN61000-4-5 - Level 3 • EN61000-4-6 - Level 3 • EN61000-4-8 - Level 4 • EN61000-4-11 - Level 2
MTBF	> 600,000 hours at 25 °C
Operating altitude	2,000 m a. sea level (SL) 3,000 m a. SL 4,000 m a. SL up to +60 °C (from 3,000 m a. SL load reduction 1.4 % and temperature reduction 1 °C per 100 m)

ORDERING NUMBER CODE



1 TYPE NUMBER

SMPS Single phase switch mode power supply for DIN rail mounting

2 PANEL CUT-OUT

T DIN rail mounting

3 TERMINAL

01 Push-in terminals

4 PHASE

1 single phase

5 POWER

120 120 Watt
240 240 Watt
480 480 Watt

6 OUTPUT VOLTAGE

DC24V

7 OUTPUT CURRENT

5A
10A
20A

APPROVALS



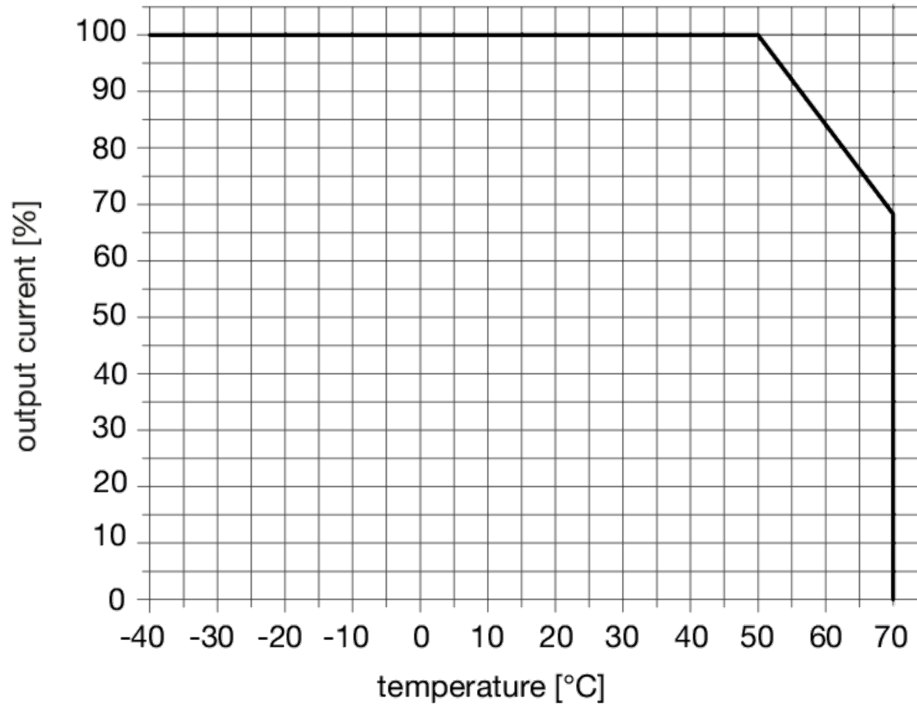
- UL508
- UL61010-1
- UL61010-2-201



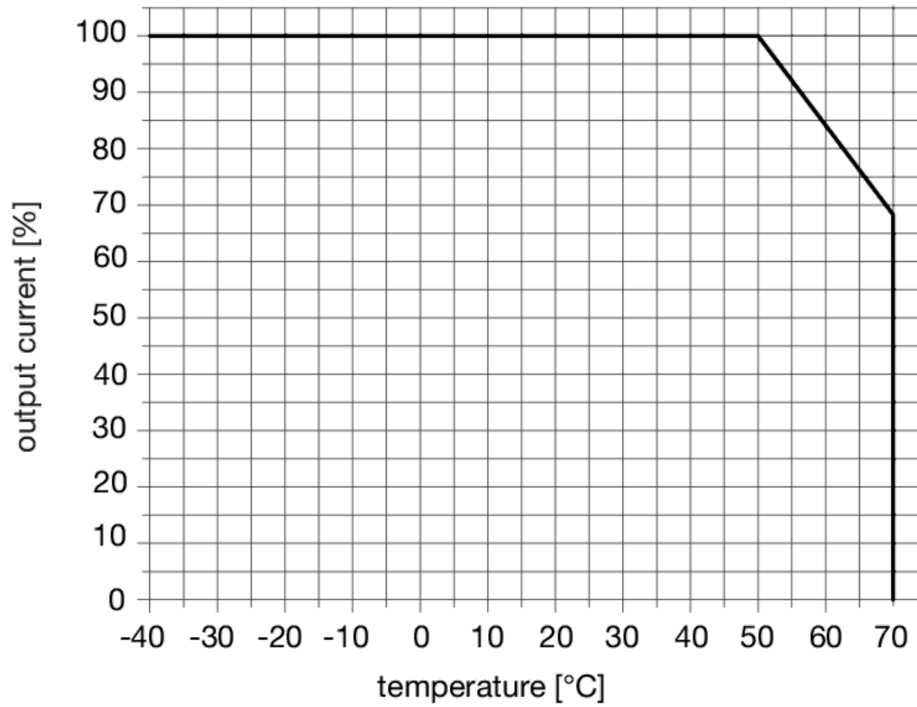
- IEC/EN61010-1
- IEC/EN61010-2-201

DERATING

DERATING CURVE AC 120 V 20 A

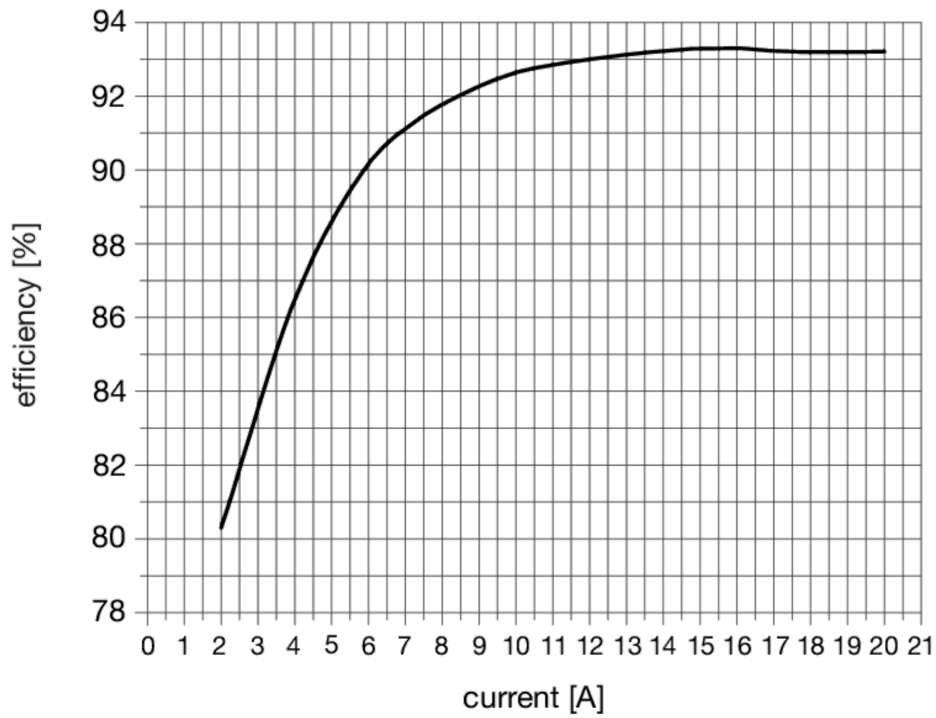


DERATING CURVE AC 240 V 20 A



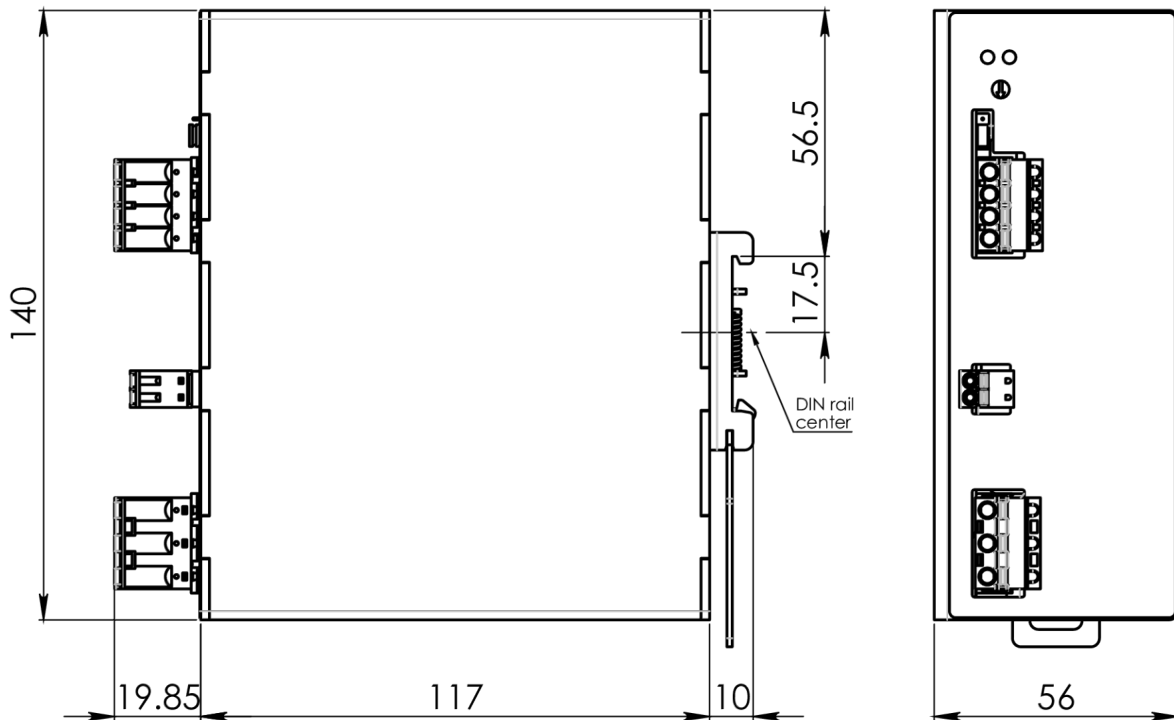
EFFICIENCY

EFFICIENCY FACTOR AC 240 V 20 A



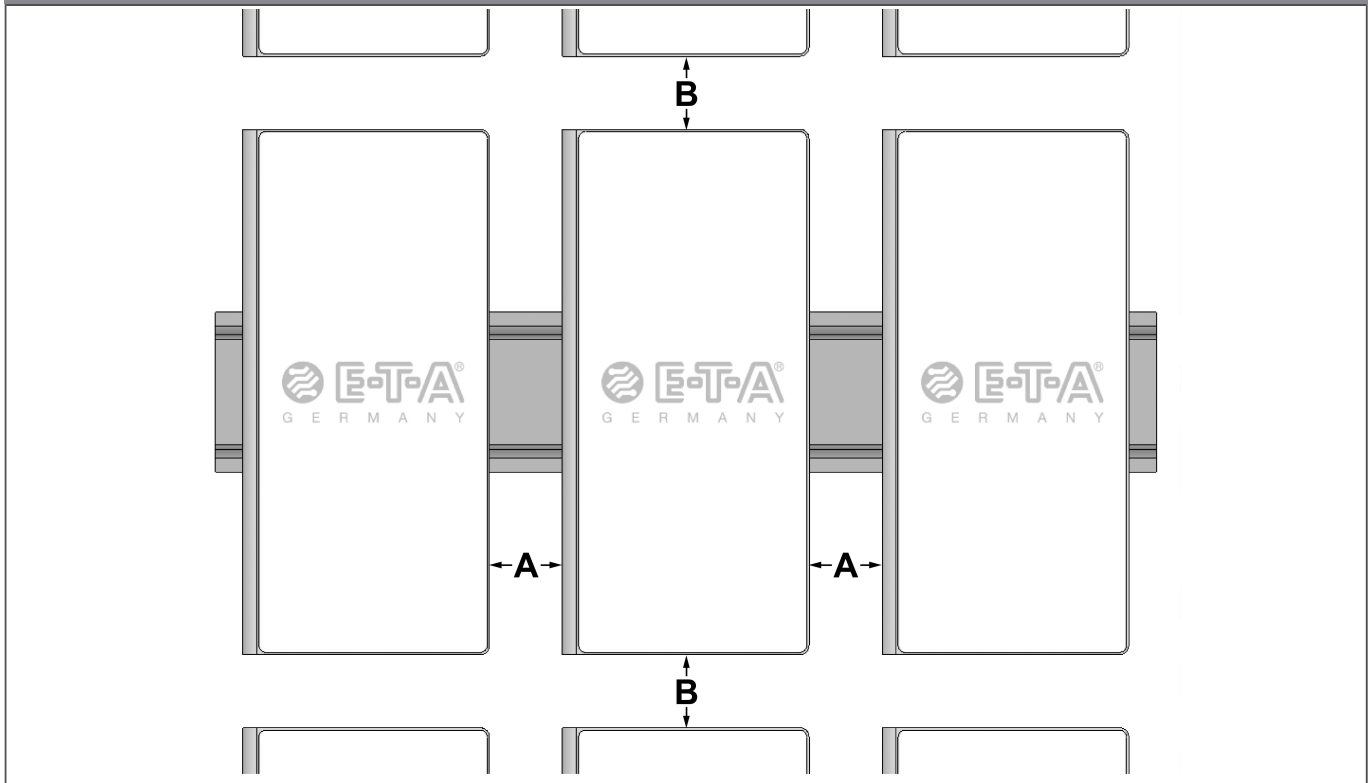
DIMENSIONS

SMPS-T-01-1-480-DC24V-20A



INSTALLATION INSTRUCTIONS

INSTALLATION INSTRUCTION



A = 20 mm; B = 50 mm


INSTALLATION INSTRUCTIONS


PIN ASSIGNMENTS

Pin no.	Name	Description
1.1	Line	Input Connection
1.2	Neutral	Input Connection
1.3	Earth Ground	Input Connection
2.1	DC +	Output Connection
2.2	DC +	Output Connection
3.1	DC -	Output Connection
3.2	DC -	Output Connection
13	NO	Signalling / DC OK
14	COM	Signalling / DC OK

FURTHER PRODUCTS

RELATED PRODUCTS

OSMPS1001	<p>SMPS-T-01-1-120-DC24V-5A</p> <p>The primary pulsed SMPS switch mode power supply is suitable for a wide range of automation applications in the machine building industry. As central unit of the DC 24 V level they can be used in combination with the 4230-T MCB for AC primary circuit protection. Thanks to the compact design it helps save space in the control cabinet. The 150 % power boost of the power supplies ensures increased machine uptime. Thanks to their mode options (continuous current/hiccup) and their wide output voltage range, they are suitable for a wide range of applications. Thanks to their flexible expandability, you can easily connect several power supplies in series, making future expansions possible without any problems.</p>	
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<u>0SMPS1002</u>	<p>SMPS-T-01-1-240-DC24V-10A</p> <p>The primary pulsed SMPS switch mode power supply is suitable for a wide range of automation applications in the machine building industry. As central unit of the DC 24 V level they can be used in combination with the 4230-T MCB for AC primary circuit protection. Thanks to the compact design it helps save space in the control cabinet. The 150 % power boost of the power supplies ensures increased machine uptime. Thanks to their mode options (continuous current/hiccup) and their wide output voltage range, they are suitable for a wide range of applications. Thanks to their flexible expandability, you can easily connect several power supplies in series, making future expansions possible without any problems.</p>	
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All information and data given on our products are accurate and reliable to the best of our knowledge, but E-T-A does not accept any responsibility for the use in applications which are not in accordance with the present specification. E-T-A reserves the right to change specifications at any time in the interest of technical improvement. Dimensions are subject to change without notice. Please enquire for the latest dimensional drawing with tolerances if required. All dimensions, data, pictures and descriptions are for information only and are not binding. Amendments, errors and omissions excepted. Ordering part numbers may differ from the device marking.