

PRO DCDC 480W 24V 20A

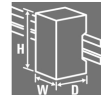
Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 26

D-32758 Detmold

Germany

www.weidmueller.com



The DC/DC converter compensates for voltage fluctuations, such as those that occur with unregulated power supplies or long cables. With galvanic isolation and protection class III for earth-free systems, the DC/DC converter is particularly suitable for use in independent supply systems. The space-saving module can optimally convert voltage levels, offers above-average power performance, comprehensive safety functions, and a high efficiency of up to 95 %.

General ordering data

Version	DC/DC converter
Order No.	2001820000
Type	PRO DCDC 480W 24V 20A
GTIN (EAN)	4050118384000
Qty.	1 pc(s).

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Technical data

Dimensions and weights

Depth	120 mm	Depth (inches)	4.724 inch
Height	130 mm	Height (inches)	5.118 inch
Width	75 mm	Width (inches)	2.953 inch
Net weight	1,300 g		

Temperatures

Storage temperature	-40 °C...85 °C	Operating temperature	-25 °C...70 °C
Operating temperature, min.	-25 °C	Operating temperature, max.	70 °C
Humidity at operating temperature	5...95 %, no condensation	Humidity	5...95 %, no condensation

Input

Connection system	Screw connection	DC input voltage range	14...32 V (during operation), 18...32 V (commissioning)
Input fuse (internal)	Yes	Inrush Current Limitation	Yes
Inrush current	max. 30 A	Nominal power consumption	516.1 VA
Rated input voltage	24 V DC	Recommended back-up fuse	40 A, Char. B circuit breaker, 40 A, Char. C circuit breaker

Output

Capacitive load	unrestricted	
Connection system	Screw connection	
Continuous output current @ $U_{Nominal}$	20 A @ 60 °C, 24 A @ 45°C, 15 A @ 70°C	
DCL - peak load reserve	Boost duration	5 s
	Multiple of the rated current	150 %
	Boost duration	200 ms
	Multiple of the rated current	200 %
	Boost duration	100 ms
	Multiple of the rated current	300 %
	Boost duration	50 ms
	Multiple of the rated current	400 %
Nominal output current for U_{nom}	Boost duration	20 ms
	Multiple of the rated current	600 %
Nominal output current for U_{nom}	20 A @ 60 °C	
Output current	20A	
Output power	480 W	
Output voltage, max.	29.5 V	
Output voltage, min.	22.5 V	
Output voltage, note	(adjustable via potentiometer on front)	
Overload protection	Yes	
Parallel connection option	yes, max. 3	
Protection against inverse voltage	Yes	
Ramp-up time	≤ 9 ms (U_{out} : 10%...90%)	
Rated output voltage	24 V DC ± 1 %	
Residual ripple, breaking spikes	≤ 20 mVPP @full load	

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General data

AC failure bridging time @ I_{nom}	> 10 ms @ 24 V DC	Clip-in foot	metal
Current limiting	150% I_{out}	Degree of efficiency	typ. > 93%
Housing version	Metal, corrosion resistant	Humidity	5...95 %, no condensation
Max. perm. air humidity (operational)	5 %...95 % RH	Mounting position, installation notice	Horizontal on TS35 mounting rail. 50 mm of clearance at top & bottom for air circ. Can mount side by side with no space in between., 50 mm clearance at top and bottom for free air circulation, mountable side by side without clearance
Power loss, idling	3 W	Power loss, nominal load	40 W
Protection against over-heating	Yes	Protection against reverse voltages from the load	33...34 V DC
Protection degree	IP20	Short-circuit protection	Yes
Start-up	≥ -40 °C	Surge voltage category	III

EMC / shock / vibration

Interference immunity test acc. to	EN 61000-4-2 (ESD), EN 61000-4-4 (burst), EN 61000-4-5 (surge), EN 61000-4-6 (conducted), EN61000-4-3 (HF field)	Limiting of mains voltage harmonic currents	According to EN 61000-3-2
Noise emission in accordance with EN55032	Class B	Shock resistance IEC 60068-2-27	30 g in all directions
Vibration resistance IEC 60068-2-6	2.3 g (15 Hz…150 Hz)		

Insulation coordination

Insulation voltage input / earth	1.5 kV	Insulation voltage output / earth	0.5 kV
Insulation voltage, input/output	1.5 kV	Pollution severity	2
Protection class	III	Surge voltage category	III

Electrical safety (applied standards)

Electrical machine equipment	Acc. to EN60204	For use with electronic equipment	Acc. to EN50178 / VDE0160
Protection against dangerous shock currents	Acc. to VDE0106-101	Protective separation / protection against electrical shock	VDE0100-410 / acc. to DIN57100-410
Safety extra-low voltage	SELV acc. to IEC 60950-1, PELV according to EN 60204-1	Safety transformers for switch-mode power supplies	According to EN 61558-2-16

Connection data (input)

Conductor cross-section, AWG/kcmil , max.	8 AWG	Conductor cross-section, AWG/kcmil , min.	22 AWG
Conductor cross-section, flexible , min.	0.5 mm ²	Conductor cross-section, rigid , max.	16 mm ²
Conductor cross-section, rigid , min.	0.5 mm ²	Connection system	Screw connection
Reverse polarity protection	Yes	Wire connection cross section, flexible (input), max.	16 mm ²

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Connection data (output)

Conductor cross-section, AWG/kcmil , max.	10 AWG	Conductor cross-section, AWG/kcmil , min.	26 AWG
Conductor cross-section, flexible , max.	6 mm ²	Conductor cross-section, flexible , min.	0.18 mm ²
Conductor cross-section, rigid , max.	6 mm ²	Conductor cross-section, rigid , min.	0.18 mm ²
Connection system	Screw connection	Number of terminals	10 (+ / - / signal)
Reverse polarity protection	Yes		

Connection data (signal)

Number of terminals	5	Wire connection method	Screw connection
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Signalling

Contact load (NO contact)	max. 30 V DC / 0.5 A, max. 50 V AC / 0.3 A	Floating contact	Yes
Relay on/off	Output voltage > 21.6 V / < 20.4 V		

Approbations

Certificate no. (cULus)	E258476	Certificate no. (cULusEX)	E470829
Institute (cULus)	CULUS	Institute (cULusEX)	CULUSEX

Classifications

ETIM 6.0	EC002540	ETIM 7.0	EC002540
ETIM 8.0	EC002540	ECLASS 9.0	27-04-07-01
ECLASS 9.1	27-04-07-01	ECLASS 10.0	27-04-07-01
ECLASS 11.0	27-04-07-01	ECLASS 12.0	27-04-07-01

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
SCIP	6d8cdf22-8230-4af8-86c8-3558c716666d

Approvals

Approvals



ROHS	Conform
UL File Number Search	UL Website
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Technical data**Downloads**

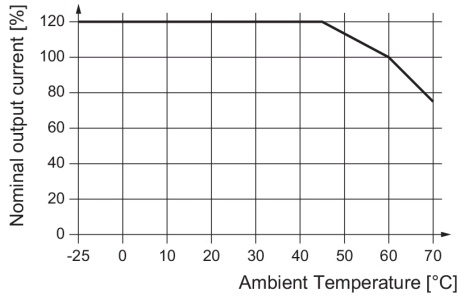
Approval/Certificate/Document of Conformity	DE_PA5200_160310_002.pdf
Engineering Data	CAD data – STEP
Engineering Data	WSCAD, EPLAN
User Documentation	Operating Instructions
Catalogues	Catalogues in PDF-format

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Drawings

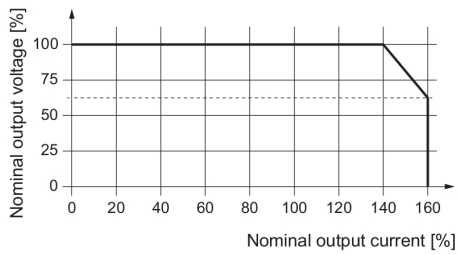


Derating curve

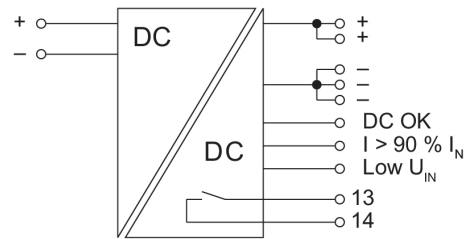
Event	Input	Output	LED (Gr/Ye/Rd)		Transistor status outputs			Status relay
			gr = "DC OK" Ye = "I > 90% I _N " Rd = "FAul T"	LED (Ye) "I low U _{IN} "	DC OK	I > 90% I _N	I low U _{IN}	
U _{IN} < 14 V	-	-	OFF	ON	Low	Low	Low	OFF
U _{IN} = 14...19.2 V *1)	I < 90% I _N	-	Gr	ON	High	Low	Low	ON
	I > 90% I _N	-	Ye	ON	High	High	Low	ON
	U < 20.4 V	-	Rd	ON	Low	Low	Low	OFF
U _{IN} > 19.2 V	I < 90% I _N	-	Gr	OFF	High	Low	High	ON
	I > 90% I _N	-	Ye	OFF	High	High	High	ON
	U < 20.4 V	-	Rd	OFF	Low	Low	High	OFF

Gr = grün / green / verde / verde / verde / verde / 绿色
 Ye = gelb / yellow / jaune / giallo / amarillo / amarillo / 黄色
 Rd = rot / red / rouge / rosso / rojo / vermelho / 红色
 *1) während des Betriebes / during operations / en cours de fonctionnement / durante l'esercizio / durante el servicio / durante a operação / 运行过程中

Signal states



UI characteristic curve



Switching symbol