

PRO DC/DC PRO DCDC 480W 24V 20A

Weidmüller Interface GmbH & Co. KG

Klingenbergstraße 16

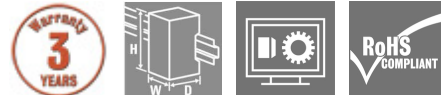
D-32758 Detmold

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The compact DC/DC converter provides systems with optimal failure protection for maximum availability.

- Compensation of voltage fluctuations
- Regeneration of the output voltage for a stable voltage at the end of long cables
- Establishment of floating supply systems through galvanic isolation
- Above-average performance data

General ordering data

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

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Technical data
Dimensions and weights

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

Temperatures

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

Probability of failure

MTBF	1,000,000 h
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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	Rated input voltage	24 V DC
Recommended back-up fuse	40 A, Char. B circuit breaker, 40 A, Char. C circuit breaker		

output

DCL - peak load reserve	150 % (5 s); 200 % (200 ms); 300 % (100 ms); 400 % (50 ms); 600 % (20 ms)	Capacitive load	unrestricted
Continuous output current @ U _{Rated}	20 A @ 60 °C, 24 A @ 45 °C, 15 A @ 70 °C	Output current	20 A
Output power	480 W	Output voltage	24 V
Output voltage	22.5...29.5 V (adjustable via potentiometer on front)	Overload protection	Yes
Parallel connection option	yes, max. 3	Power reserve at nom. voltage	600% IN for 16 ms
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	max. 20 mVpp @ 24 VDC, IN

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Technical data**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
Operating temperature	-25 °C...70 °C	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
Protective circuit	Overtemperature, Short-circuit, Inverse voltage	Short-circuit protection	Yes
Start-up	≥ -40 °C	Surge voltage category	III

EMC / shock / vibration

Limiting of mains voltage harmonic currents	in accordance with EN 61000-3-2	Noise emission acc. to EN55022	Class B
Vibration resistance IEC 60068-2-6	2.3 g (15 Hz...150 Hz)	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)
Shock resistance IEC 60068-2-27	30 g in all directions		

Insulation coordination

Class of protection	III, with no ground connection, for SELV	Humidity at operating temperature	5...95 %, no condensation
Insulation voltage input / earth	1.5 kV DC	Insulation voltage output / earth	0.5 kV DC
Insulation voltage, input/output	1.5 kV DC	Pollution severity	2
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 EN60950, PELV acc. to EN60204	Safety transformers for switch-mode power supplies	nach EN61558-2-16

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Technical data

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
Number of terminals	2 for (+, -)	Reverse polarity protection	Yes
Tightening torque, max.	1.5 Nm	Tightening torque, min.	1.2 Nm
Wire connection cross section, flexible (input), max.	16 mm ²		

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
Number of terminals	10 (+ / - / signal)	Tightening torque, max.	0.5 Nm
Tightening torque, min.	0.4 Nm		

Signalling

Contact load (NO contact)	max. 30 V DC / 0.5 A	Floating contact	Yes
Relay on/off		Transistor output, positive-switching	DC OK: 20 mA max., short-circuit-proof, I > 90%: 20 mA max., short-circuit-proof, Low U _{IN} : 20 mA max., short-circuit-proof
	Output voltage > 21.6 V / < 20.4 V		

Approvals

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

Classifications

ETIM 6.0	EC002540	eClass 6.2	27-14-91-90
eClass 9.1	27-04-07-01		

Approvals

Approvals				
ROHS	Conform			

Data sheet**PRO DC/DC
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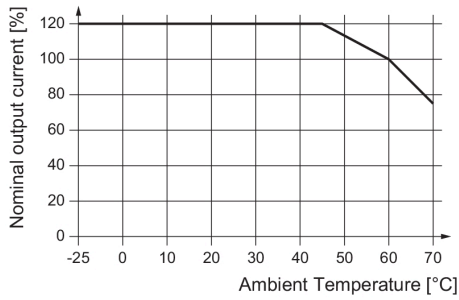
Technical data**Downloads**

Approval/Certificate/Document of Conformity	DE_PA5200_160310_002.pdf
Engineering Data	EPLAN, WSCAD
Engineering Data	STEP
User Documentation	Operating Instructions

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Drawings

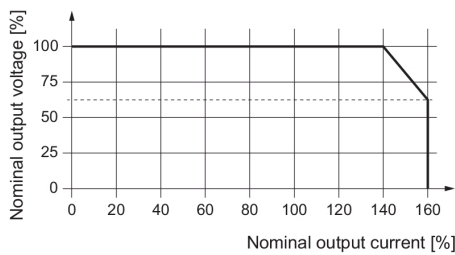


Derating curve

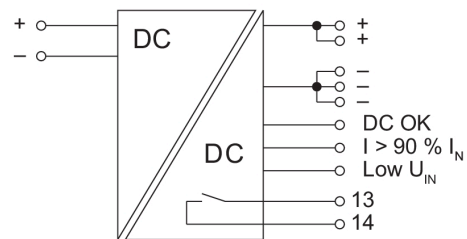
Event		LED (Gr/Ye/Rd) gr = "DC OK" Ye = "I > 90% I _N " Rd = "FAul T"	LED (Ye) "I low U _{IN} "	Transistor status outputs			Status relay
Input	Output			DC OK	I > 90% I _N	I low U _{IN}	
U _{IN} < 14 V	-	OFF	ON	Low	Low	Low	OFF
U _{IN} = 14...19.2 V *1)	I < 90% I _N	Gr	ON	High	Low	Low	ON
	I > 90% I _N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