Data sheet

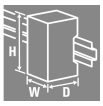
PRO DCDC 480W 24V 20A

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 items

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Data sheet

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Technical data

Approvals

Approvals	
ROHS	Conform
UL File Number Search	UL Website
Certificate no. (cULus)	E258476
Certificate no. (cULusEX)	E470829

Dimensions and weights

Depth	120 mm	Depth (inches)	4.7244 inch
Height	130 mm	Height (inches)	5.1181 inch
Width	75 mm	Width (inches)	2.9527 inch
Net weight	1300 g		

Temperatures

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

Environmental Product Compliance

RoHS Compliance Status	Compliant with exemption
RoHS Exemption (if applicable/known)	7a, 7cI
REACH SVHC	Lead 7439-92-1
SCIP	6d8cdf22-8230-4af8-86c8-3558c716666d

Input

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

Output

Output power	480 W
Connection system	Screw connection
Rated output voltage	24 V DC ± 1 %
Residual ripple, breaking spikes	≤ 20 mVPP @full load
Parallel connection option	yes, max. 3
Overload protection	Yes
Output voltage, max.	29.5 V
Output voltage, min.	22.5 V

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Output current, max.	24 A	
Wire connection method	Screw connection	
Output voltage, note	(adjustable via potentiometer on front)	
Nominal output current for Unom	20 A @ 60 °C	
Output current	20A	
Capacitive load	unrestricted	
Mains failure bridge-over time	Mains failure bridge-over time, min.	10 ms
	Input voltage type	DC
	Input voltage	24 V
	Output current	20 A
	Output voltage	24 V
Protection against inverse voltage	Yes	
Continuous output current @ UNominal	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 %
	Boost duration	20 ms
	Multiple of the rated current	600 %
Ramp-up time	≤ 9 ms (Uout: 10%...90%)	

General data

Degree of efficiency	typ. > 93%	Humidity	5...95 %, no condensation
Protection degree	IP20	Surge voltage category	III
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, On TS 35 mounting rail, 50 mm clearance above and below for free air supply., Horizontal on DIN rail TS 35, top and bottom 50 mm clearance for free air flow, 10 mm clearance to neighbouring active subassemblies with full load, 5 mm with passive neighbouring subassemblies, direct row mounting with 90% rated load	Housing version	Metal, corrosion resistant
Protection against reverse voltages from the load	33...34 V DC	Current limiting	150% Iout
Adjacent	No	Max. perm. air humidity (operational)	5 %...95 % RH
Power loss, idling	3 W	Clip-in foot	metal
Short-circuit protection	Yes	Power loss, nominal load	40 W
Protection against over-heating	Yes		

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EMC / shock / vibration

Limiting of mains voltage harmonic currents	According to EN 61000-3-2	Shock resistance IEC 60068-2-27	30 g in all directions
Noise emission in accordance with EN55032	Class B	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)
Vibration resistance IEC 60068-2-6	2.3 g (15 Hz...150 Hz)		

Insulation coordination

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

Electrical safety (applied standards)

Electrical machine equipment	Acc. to EN60204	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)

Connection system	Screw connection	Number of terminals	2 (+,–)
Reverse polarity protection	Yes	Conductor cross-section, AWG/kcmil , max.	8 AWG
Conductor cross-section, AWG/kcmil , min.	22 AWG	Wire connection cross section, flexible (input), max.	16 mm²
Conductor cross-section, flexible , min.	0.5 mm²	Conductor cross-section, rigid , max.	16 mm²
Conductor cross-section, rigid , min.	0.5 mm²	Tightening torque, min.	1.2 Nm
Tightening torque, max.	1.5 Nm		

Connection data (output)

Connection system	Screw connection	Number of terminals	10 (+ / - / signal)
Reverse polarity protection	Yes	Conductor cross-section, AWG/kcmil , max.	10 AWG
Conductor cross-section, AWG/kcmil , min.	26 AWG	Conductor cross-section, flexible , max.	6 mm²
Conductor cross-section, flexible , min.	0.18 mm²	Conductor cross-section, rigid , max.	6 mm²
Conductor cross-section, rigid , min.	0.18 mm²	Tightening torque, min.	0.4 Nm
Tightening torque, max.	0.5 Nm		

Connection data (signal)

Wire connection method	Screw connection	Number of terminals	5

Signalling

Transistor output, positive-switching	DC OK: 20 mA max., short-circuit-proof, I > 90%: 20 mA max., short-circuit-proof, Low UIN: 20 mA max., short-circuit-proof	Floating contact	Yes
Contact load (NO contact)	max. 30 V DC / 0.5 A, max. 50 V AC / 0.3 A	Relay on/off	Output voltage > 21.6 V / <20.4 V

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Classifications

ETIM 8.0	EC002540	ETIM 9.0	EC002540
ETIM 10.0	EC002540	ECLASS 14.0	27-04-07-01
ECLASS 15.0	27-04-07-01		

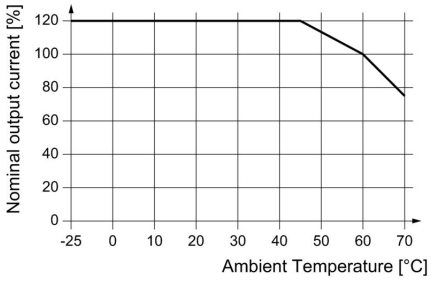
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Drawings

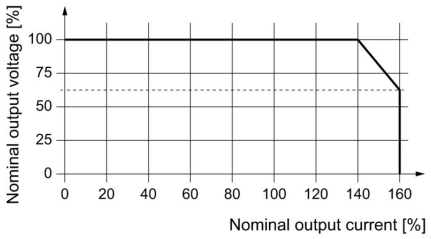


Derating curve

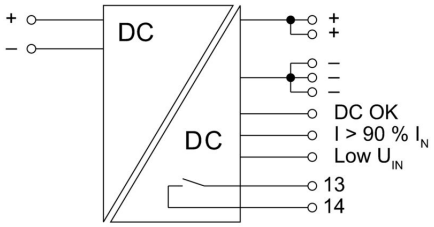
Event		LED (Gr/Ye/Rd) gr = "DC OK" Ye = "I > 90% I_N"	LED (Ye)	Transistor status outputs			Status
Input	Output	Rd = "FAul T"	"I ow u_{IN}"	DC OK	I > 90% i_N	I ow u_{IN}	relay
U_{IN} < 14 V	–	OFF	ON	Low	Low	Low	OFF
U_{IN} = 14...19.2 V *1)	I < 90 % I_N	Gr	ON	High	Low	Low	ON
	I > 90 % I_N	Ye	ON	High	High	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 / verte / verde / verde / verde / 绿色
Ye = gelb / yellow / jaune / giallo / amarillo / amarelo / 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

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