

## DC/DC converters - MINI-PS- 12- 24DC/48DC/0.7 - 2320021

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Primary-switched MINI DC/DC converter for DIN rail mounting, input: 1-phase, output: 48 V DC/0.7 A

### Product Description

MINI DC/DC converter for MCR technology.


DC/DC converters alter the voltage level, regenerate the voltage at the end of long cables or enable the creation of independent supply systems by means of electrical isolation.

### Your advantages

- Electrical isolation: for setting up independent supply systems
- Support conversion to various voltage levels
- Constant voltage: output voltage regenerated even at the end of long cables



### Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 479448
GTIN	4046356479448
Weight per Piece (excluding packing)	0.200 kg
Custom tariff number	85044030
Country of origin	China

### Technical data

#### Dimensions

Width	22.5 mm
Height	99 mm
Depth	107 mm

#### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-25 °C ... 70 °C (> +60°C derating)

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### Technical data

#### Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	≤ 95 % (At +25°C, non-condensing)
Climatic class	3K3 (in acc. with EN 60721)
Degree of pollution	2

#### Input data

Nominal input voltage range	12 V DC ... 24 V DC
Input voltage range	10 V DC ... 32 V DC (> 10.5 V DC start)
Frequency range DC	0 Hz
Current consumption	3.2 A (12 V DC) 1.6 A (24 V DC)
Inrush current	< 10 A (typical)
Mains buffering time	typ. 2 ms (12 V DC) typ. 12 ms (24 V DC)
Input fuse	6.3 A (slow-blow, internal)

#### Output data

Nominal output voltage	48 V DC ±1 %
Setting range of the output voltage ( $U_{set}$ )	30 V DC ... 56 V DC (> 48 V DC, constant capacity restricted)
Nominal output current ( $I_N$ )	0.7 A (-25 °C ... 60 °C)
Derating	60 °C ... 70 °C (2.5%/K)
Connection in parallel	Yes, for assembling redundant systems and increasing efficiency
Connection in series	yes
Feedback voltage resistance	60 V DC
Protection against overvoltage at the output (OVP)	< 60 V DC
Residual ripple	< 20 mV <sub>PP</sub> (20 MHz)
Typical response time	< 0.5 s
Peak switching voltages nominal load	< 10 mV <sub>PP</sub> (20 MHz)
Maximum power dissipation in no-load condition	< 1.5 W
Power loss nominal load max.	< 4.5 W

#### General

Net weight	0.2 kg
Efficiency	> 87 % (at 24 V DC and nominal values)
Insulation voltage input/output	1.5 kV (type test) 1 kV (routine test)
Protection class	III
Degree of protection	IP20
	> 1993000 h (40 °C)
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	alignable: horizontally 0 mm, vertically 50 mm

#### Connection data, input

## DC/DC converters - MINI-PS- 12- 24DC/48DC/0.7 - 2320021

### Technical data

#### Connection data, input

Connection method	Pluggable screw connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Stripping length	7 mm
Screw thread	M3

#### Connection data, output

Connection method	Pluggable screw connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Stripping length	7 mm
Screw thread	M3

#### Signaling

Output name	DC OK active
Output description	$U_{OUT} > 0.9 \times U_N$ : High signal
Output voltage	+ 24 V (Signal)
Continuous load current	≤ 20 mA
Status display	"DC OK" LED green
Note on status display	$U_{OUT} > 0.9 \times U_N$ : LED ON
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm
Screw thread	M3

#### Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011 (EN 55022)
Noise immunity	EN 61000-6-2:2005

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#### Standards and Regulations

Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-2
Contact discharge	8 kV (Contact discharge)
Standards/regulations	EN 61000-4-3
Frequency range	80 MHz ... 3 GHz
Test field strength	10 V/m
Standards/regulations	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-6-3
	EN 61000-4-6
Frequency range	0.15 MHz ... 80 MHz (10 V)
Standards/regulations	EN 61000-4-11
Low Voltage Directive	Conformance with LV directive 2006/95/EC
Standard - Electrical safety	EN 60950-1/VDE 0805 (SELV)
Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard - Safe isolation	DIN VDE 0100-410
	DIN VDE 0106-101
UL approvals	UL/C-UL listed UL 508
	UL/C-UL Recognized UL 60950-1
	UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location)
Shock	18 ms, 30g, in each space direction (according to IEC 60068-2-27)
Vibration (operation)	< 15 Hz, amplitude ±2.5 mm (according to IEC 60068-2-6)
	15 Hz ... 150 Hz, 2.3g
Rail applications	EN 50121-4

#### Classifications

##### eCl@ss

eCl@ss 4.0	27250311
eCl@ss 4.1	27250311
eCl@ss 5.0	27242213
eCl@ss 5.1	27210900
eCl@ss 6.0	27210900
eCl@ss 7.0	27210901
eCl@ss 8.0	27210901
eCl@ss 9.0	27210901

##### ETIM

ETIM 3.0	EC001039
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## DC/DC converters - MINI-PS- 12- 24DC/48DC/0.7 - 2320021

### Classifications

#### ETIM

ETIM 4.0	EC002542
ETIM 5.0	EC002046
ETIM 6.0	EC002046
ETIM 7.0	EC002046

#### UNSPSC

UNSPSC 6.01	30211502
UNSPSC 7.0901	39121004
UNSPSC 11	39121004
UNSPSC 12.01	39121004
UNSPSC 13.2	39121041

### Approvals

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##### Approvals

DNV GL / UL Listed / UL Recognized / cUL Recognized / cUL Listed / EAC / EAC / cULus Recognized / cULus Listed

##### Ex Approvals

UL Listed / cUL Listed / cULus Listed

#### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA00001AX
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UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
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UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 211944
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cUL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 211944
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 123528
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EAC		EAC-Zulassung
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EAC		RU C- DE.A*30.B.01082
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