

## DC/DC converters - MINI-PS- 48- 60DC/24DC/1 - 2866271

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Primary-switched MINI DC/DC converter for DIN rail mounting, input: 1-phase, output: 24 V DC/1 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 017918 960919
GTIN	4017918960919
Weight per Piece (excluding packing)	200.000 g
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: 2.5 %/K)

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#### Ambient conditions

Ambient temperature (storage/transport)	-40 °C ... 85 °C
Max. permissible relative humidity (operation)	≤ 95 % (at 25 °C, non-condensing)

#### Input data

Nominal input voltage range	48 V DC ... 60 V DC
Input voltage range	36 V DC ... 75 V DC
Frequency range DC	0 Hz
Current consumption	0.6 A (48 V DC)
	0.5 A (60 V DC)
Inrush current	< 15 A (typical)
Mains buffering time	typ. 15 ms (48 V DC)
	typ. 20 ms (60 V DC)
Input fuse	3.15 A (slow-blow, internal)

#### Output data

Nominal output voltage	24 V DC ±1 %
Setting range of the output voltage ( $U_{Set}$ )	22.5 V DC ... 28.5 V DC (> 24 V DC, constant capacity restricted)
Nominal output current ( $I_N$ )	1 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
Residual ripple	< 40 mV <sub>PP</sub>
Output power	24 W
Typical response time	< 0.5 s
Peak switching voltages nominal load	< 50 mV <sub>PP</sub> (20 MHz)
Maximum power dissipation in no-load condition	< 1.2 W
Power loss nominal load max.	< 5 W

#### General

Net weight	0.2 kg
Operating voltage display	Green LED
Efficiency	> 85 % (at 60 V DC and nominal values)
Insulation voltage input/output	1.5 kV (type test)
	1 kV (routine test)
Protection class	II
Degree of protection	IP20
	> 1147000 h (40 °C)
Mounting position	horizontal DIN rail NS 35, EN 60715
Assembly instructions	alignable: horizontally 0 mm, vertically 50 mm

#### Connection data, input

Connection method	Pluggable screw connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>

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### Technical data

#### Connection data, input

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	$U_{OUT} > 21.5 \text{ V}$ : High signal
Maximum switching voltage	$\leq 24 \text{ V DC}$
Output voltage	+ 24 V (Signal)
Continuous load current	$\leq 20 \text{ mA}$
Status display	"DC OK" LED green
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

EMC requirements for noise immunity	EN 61000-6-1
	EN 61000-6-2
EMC requirements for noise emission	EN 61000-6-3
	EN 61000-6-4
Standard - Electrical safety	EN 60950-1/VDE 0805 (SELV)

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### Standards

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
Rail applications	EN 50121-4

### Conformance/approvals

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)

### EMC data

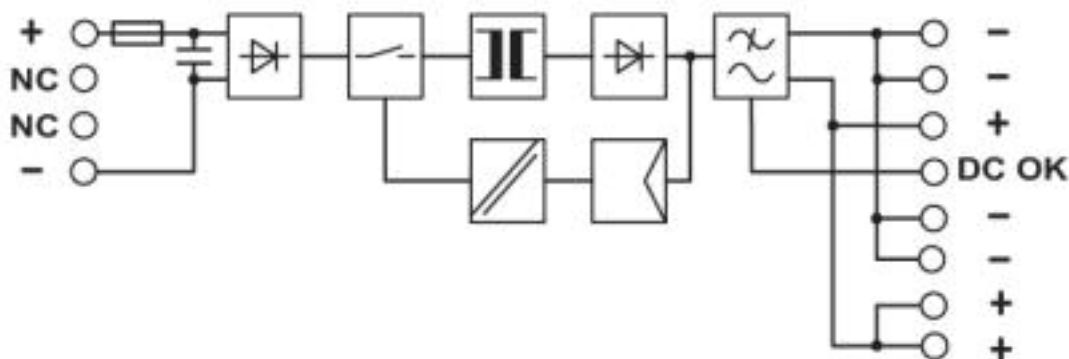
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Low Voltage Directive	Conformance with LV directive 2006/95/EC
Electrostatic discharge	EN 61000-4-2
Electromagnetic HF field	EN 61000-4-3
Fast transients (burst)	EN 61000-4-4
Surge voltage load (surge)	EN 61000-4-5
Voltage dips	EN 61000-4-11

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 25;
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

## Drawings

Block diagram



## Classifications

eCl@ss

eCl@ss 4.0	27210900
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### Classifications

#### eCl@ss

eCl@ss 4.1	27210900
eCl@ss 5.0	27210900
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 2.0	EC001039
ETIM 3.0	EC001039
ETIM 4.0	EC000599
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

#### Approvals

##### Approvals

UL Listed / UL Recognized / cUL Recognized / cUL Listed / EAC / EAC / cULus Recognized / cULus Listed

##### Ex Approvals

UL Listed / cUL Listed / cULus Listed


#### Approval details

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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