MINI-PS- 12- 24DC/ 5-15DC/2 - DC/DC converter

2320018

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Please use the following item in new systems: 1066704.
Primary-switched MINI DC/DC converter for DIN rail mounting, input: 12 V DC ... 24 V DC, output: 5 V DC ... 15 V DC/2 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

Commercial data

Item number	2320018
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CMD
Product key	CMDM42
GTIN	4046356478519
Weight per piece (including packing)	231 g
Weight per piece (excluding packing)	200 g
Customs tariff number	85044095
Country of origin	CN

Technical data

Input data

DC operation

Nominal input voltage range	12 V DC ... 24 V DC
Input voltage range	10 V DC ... 32 V DC (> 10.5 V DC start)
Wide-range input	yes
Input voltage range DC	10 V DC ... 32 V DC (> 10.5 V DC start)
Voltage type of supply voltage	DC
Inrush current	< 10 A (typical)
Inrush current integral (I^2t)	0.2 A^2s
Frequency range DC	0 Hz
Mains buffering time	typ. 4 ms (12 V DC)
	typ. 18 ms (24 V DC)
Current consumption	2.3 A (12 V DC)
	1.1 A (24 V DC)
Typical response time	< 0.5 s
Input fuse	6.3 A (slow-blow, internal)

Output data

Efficiency	> 88 % (at 24 V DC and nominal values)
Output characteristic	U/I
Nominal output voltage	12 V DC ±1 %
Setting range of the output voltage (U_{Set})	5 V DC ... 15 V DC
Nominal output current (I_N)	2 A (-25 °C ... 60 °C)
Derating	60 °C ... 70 °C (2.5 %/K)
Feedback voltage resistance	30 V DC
Protection against overvoltage at the output (OVP)	< 25 V DC
Residual ripple	< 20 mV_{PP} (20 MHz)
Output power	24 W
Peak switching voltages nominal load	< 10 mV_{PP} (20 MHz)
Maximum no-load power dissipation	< 1 W
Power loss nominal load max.	< 4.2 W
Connection in parallel	yes, for assembling redundant systems and increasing efficiency
Connection in series	yes
Fuse protection (secondary side)	electronic

Signal: DC OK active

Output description	U_{OUT} > 0.9 x U_N: High signal
Continuous load current	≤ 20 mA

Connection data

Input

Connection method	Pluggable screw connection
Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section, rigid max.	2.5 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	2.5 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	14
Stripping length	7 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Output

Connection method	Pluggable screw connection
Conductor cross-section, rigid min.	0.2 mm²
Conductor cross-section, rigid max.	2.5 mm²
Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	2.5 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	14
Stripping length	7 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
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Signal

Conductor cross-section, rigid min.	0.2 mm²
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Conductor cross-section flexible min.	0.2 mm²
Conductor cross-section flexible max.	2.5 mm²
Conductor cross-section AWG min.	24
Conductor cross-section AWG max.	14
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Signaling

Types of signaling	LED
	Active switching output

Signal output: DC OK active

Status display	"DC OK" LED green
Note on status display	U_{OUT} > 0.9 x U_N: LED ON
Color	green
Note on status display	LED on

Electrical properties

Number of phases	1
Insulation voltage input/output	1.5 kV (type test)
	1 kV (routine test)

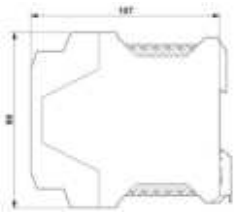
Product properties

Product type	DC/DC converters
Product family	MINI POWER
MTBF (IEC 61709, SN 29500)	> 2072000 h (40 °C)

Insulation characteristics

Protection class	III
Degree of pollution	2

Dimensions

Dimensional drawing	
Width	22.5 mm
Height	99 mm
Depth	107 mm

Installation dimensions

Installation distance right/left	0 mm / 0 mm (≤ 70 °C)
Installation distance top/bottom	50 mm / 50 mm (≤ 70 °C)

Mounting

Assembly note	alignable: horizontally 0 mm, vertically 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715
With protective coating	no

Material specifications

Housing material	Plastic
Housing material	PA
Type of housing	Polyamide PA, color: green

Environmental and real-life conditions

Ambient conditions

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

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

Standards and regulations

Rail applications	EN 50121-4
Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard - Electrical safety	EN 60950-1/VDE 0805 (SELV)
Standard - Safe isolation	DIN VDE 0100-410
	DIN VDE 0106-101

Approvals

CSA	CSA-C22.2 No. 107.1-01
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 Low Voltage Directive 2014/35/EC
EMC requirements for noise emission	EN 61000-6-3
	EN 61000-6-4
EMC requirements for noise immunity	EN 61000-6-1
	EN 61000-6-2

Noise emission

Standards/regulations	EN 55011 (EN 55022)

Electrostatic discharge

Standards/regulations	EN 61000-4-2
Housing	> Level 3

Electrostatic discharge

Contact discharge	8 kV (Contact discharge)
Discharge in air	8 kV (Air discharge)
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3

Electromagnetic HF field

Frequency range	80 MHz ... 3 GHz
Test field strength	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4

Fast transients (burst)

Input	4 kV (level 4 - asymmetrical: conductor to ground)
Output	2 kV (level 3 - asymmetrical: conductor to ground)
Signal	1 kV (Level 2 - asymmetrical cable to ground)
Comments	Criterion B

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5

Conducted interference

Standards/regulations	EN 61000-4-6

Conducted interference

Input/Output	Level 3
Frequency range	0.15 MHz ... 80 MHz (10 V)

Voltage dips

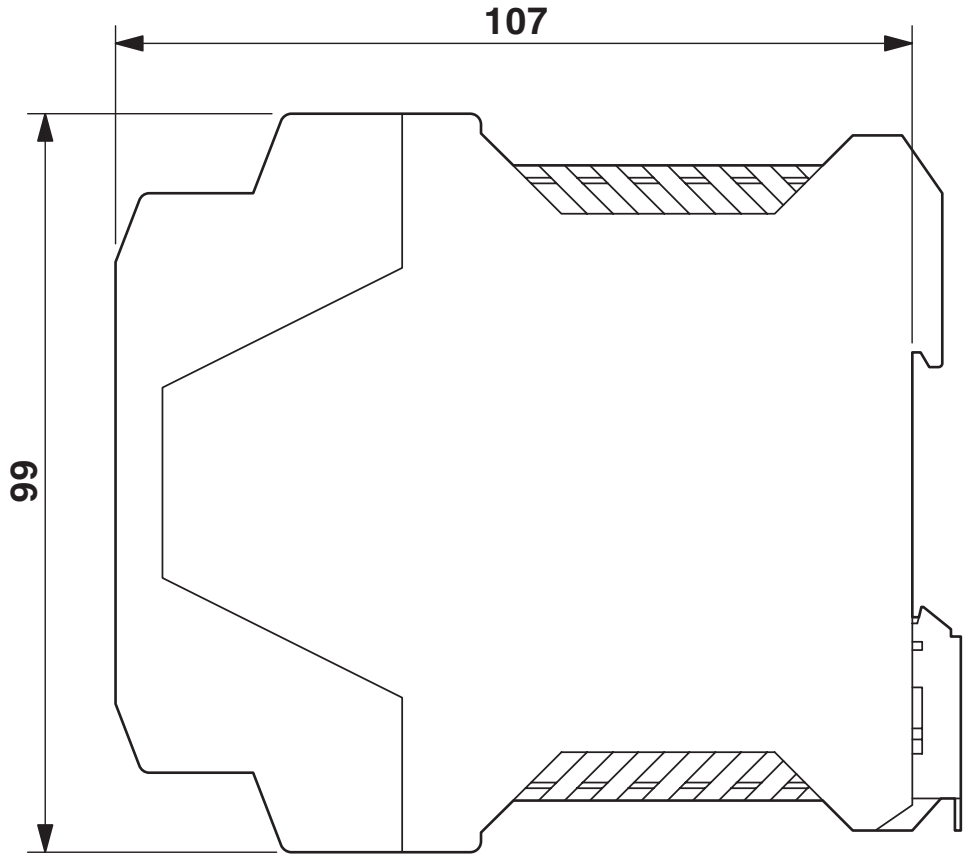
Standards/regulations	EN 61000-4-11

Emitted interference

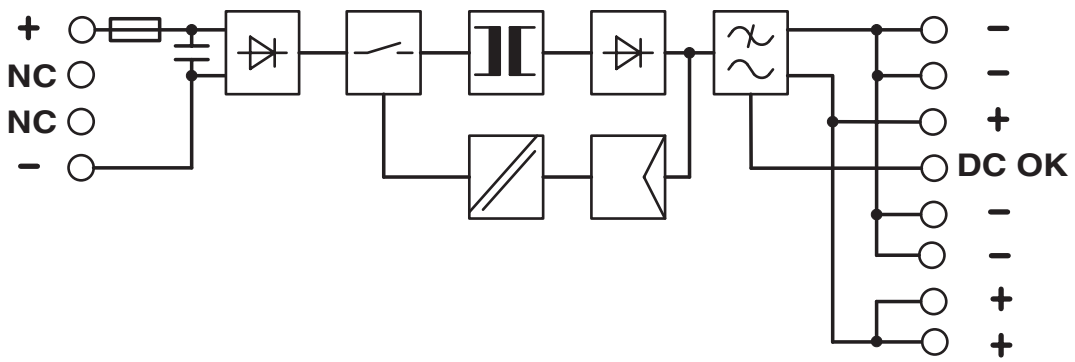
Standards/regulations	EN 61000-6-3
Radio interference voltage in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential

Drawings

Dimensional drawing



Block diagram



Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/ae/products/2320018

cUL Recognized
Approval ID: FILE E 211944

UL Recognized
Approval ID: E211944

EAC
Approval ID: RU S-DE.BL08.W.00764

UL Listed
Approval ID: E123528

cUL Listed
Approval ID: E123528

CoC / Compliance Statement
Approval ID: 19-004-01

cUL Listed
Approval ID: E199827

UL Listed
Approval ID: E199827

Classifications

ECLASS

ECLASS-13.0	27040701
ECLASS-15.0	27040701

ETIM

ETIM 9.0	EC002540

UNSPSC

UNSPSC 21.0	39121000

Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

China RoHS

Environment friendly use period (EFUP)	EFUP-25
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	2350ef3a-62c5-4b86-a136-b61d660c3ebc

EF3.0 Climate Change

CO2e kg	2.23 kg CO2e

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