

# MINI-PS- 10- 42AC/15-60DC/3 - Feed-in module



2320199

<https://www.phoenixcontact.com/us/products/2320199>

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The AC feed module supplies the MINI DC/DC converter with a rectified and filtered supply voltage.

## Product description

The AC power module converts the 10 V AC ... 42 V AC input voltage into a 15 V DC ... 60 V DC output voltage. The output voltage level depends on the AC input voltage. With an overall width of just 22.5 mm, the housing is particularly narrow.

## Your advantages

- Enables the operation of the MINI DC/DC converters in an AC network.
- AC voltage of a transformer is rectified and filtered

## Commercial data

Item number	2320199
Packing unit	1 pc
Sales key	CM11
Product key	CMPM99
GTIN	4046356577731
Weight per piece (including packing)	211 g
Weight per piece (excluding packing)	160 g
Customs tariff number	85044095
Country of origin	CN

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## Technical data

### Product properties

Product type	Feed-in module
MTBF (IEC 61709, SN 29500)	> 18175000 h (40 °C)

### Insulation characteristics

Protection class	III
Degree of pollution	2

### Electrical properties

Number of phases	1
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### Input data

#### DC operation

Input voltage	24 V AC
Nominal input voltage range	10 V AC ... 42 V AC
Input voltage range	10 V AC ... 42 V AC
Wide-range input	yes
Input voltage range AC	0 V AC ... 42 V AC
Voltage type of supply voltage	AC
Inrush current	< 45 A (typical)
Inrush current integral ( $I^2t$ )	8 A <sup>2</sup> s
AC frequency range	45 Hz ... 65 Hz
Current consumption	6.5 A
Permissible backup fuse	C16 1 x circuit breaker
Recommended breaker for input protection	16 A (Characteristic C)

### Output data

Efficiency	> 95.7 % (For 42 V AC and nominal values)
Nominal output voltage	28 V DC $\pm$ 1 % 60 V DC
Output voltage range	15 V DC ... 60 V DC
Nominal output current ( $I_N$ )	3 A (-25 °C ... 60 °C)
Derating	60 °C ... 70 °C (2.5 %/K)
Residual ripple	< 3.6 V <sub>PP</sub>
Output power	72 W
Maximum no-load power dissipation	< 0.04 W
Power loss nominal load max.	< 6.9 W
Connection in series	no

### Connection data

#### Input

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Connection method	Pluggable screw connection
Conductor cross-section, rigid min.	0.2 mm <sup>2</sup>
Conductor cross-section, rigid 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.	12
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 mm <sup>2</sup>
Conductor cross-section, rigid 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.	12
Stripping length	7 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

## Dimensions

Width	22.5 mm
Height	99 mm
Depth	107 mm

## Installation dimensions

Installation distance right/left	0 mm / 0 mm ( $\leq 70$ °C)
Installation distance top/bottom	50 mm / 50 mm ( $\leq 70$ °C)

## 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: 2,5 %/K)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Climatic class	3K3 (in acc. with EN 60721)

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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

## Approvals

UL approvals	UL/C-UL listed UL 508 UL/C-UL Recognized UL 60950-1
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## Conformity/Approvals

SIL in accordance with IEC 61508	0
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## EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Noise immunity	EN 61000-6-2:2005

## Noise emission

Standards/regulations	EN 55011 (EN 55022)
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## 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
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## 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
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## 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
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## Surge voltage load (surge)

Input	2 kV (Level 3)
	1 kV (Level 3)

## 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)

## Mounting

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

# MINI-PS- 10- 42AC/15-60DC/3 - Feed-in module

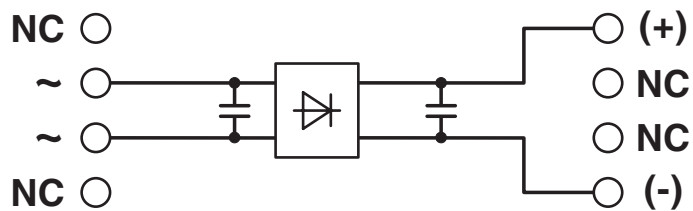
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## Drawings

Block diagram



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## Classifications

### UNSPSC

UNSPSC 21.0	39121000
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## 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)
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