

# STEP-UPS/12DC/12DC/4/46WH - Uninterruptible power supply



1082548

<https://www.phoenixcontact.com/us/products/1082548>

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Uninterruptible power supply with integrated battery module. The STEP-BAT/LI-ION/18.5DC/46WH battery module can be re-ordered separately.

## Product description

UPS modules with integrated energy storage are particularly space saving: UPS module and energy storage are combined in one housing. It's just a case of connecting a power supply upstream.

## Your advantages

- Stable supply of sensitive loads, thanks to the regulated output voltage
- Safety ensured, thanks to the integrated protective circuit and energy storage temperature monitoring
- Quick and easy installation, thanks to integrated energy storage
- Battery operation can be stopped via remote contact
- Flexible assembly – can be snapped onto the DIN rail or screwed onto a level surface

## Commercial data

Item number	1082548
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM20
Product key	CMUS42
Catalog page	Page 348 (C-4-2019)
GTIN	4055626815169
Weight per piece (including packing)	400 g
Weight per piece (excluding packing)	390 g
Customs tariff number	85371091
Country of origin	DE

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## Technical data

### Input data

#### DC operation

Input voltage	12 V DC
Input voltage range	10 V DC ... 16.5 V DC
Voltage type of supply voltage	DC
Buffer period	180 min. (1 A)
	90 min. (2 A)
	60 min. (3 A)
	45 min. (4 A)
Rotary selector switch	Service
	∞
	5 min.
	10 min.
Current consumption	20 min.
	6 A (max.)
	< 30 mA (No-load)
	< 0.8 A (Charging (I <sub>Charge</sub> = max, I <sub>Out</sub> = 0))
Fixed backup threshold	< 10 V
Variable connect threshold	1 V / 1 s
Typical response time	< 0.5 s
Input fuse	7 A (slow-blow, internal)
Maximum current I <sub>max</sub>	6 A

### Output data

Efficiency	> 97.4 % (Mains operation, with charged energy storage)
	> 92 % (Battery operation)
Nominal output voltage	12 V DC
Nominal output current (I <sub>N</sub> )	4 A (0 °C ... 40 °C)
Output current limit	In mains mode according to connected upstream current limiting device
	> 5 A (Battery operation)
POWER BOOST (I <sub>Boost</sub> )	5 A (0 °C ... 35 °C)
Bridging time	1200 s
Derating	35 °C ... 40 °C (5 %/K)
Output power	48 W
Power dissipation	0.4 W (Mains operation)
	1.2 W (Mains operation)
	5.5 W (Mains operation)
	1 W (Battery operation)
	4.4 W (Battery operation)

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	5.4 W (Battery operation)
Connection in series	No

## Mains operation

Nominal output voltage	12 V DC
Output voltage range	10 V DC ... 16.5 V DC ( $U_{Out} = U_{In} - 0.3 \text{ V DC}$ )
Nominal output current ( $I_N$ )	4 A (0 °C ... 40 °C)

## Battery operation

Nominal output voltage	12 V DC
Output voltage range	10 V DC ... 15 V DC ( $U_{Out} = U_{In (t-1)}$ )
Nominal output current ( $I_N$ )	4 A (0 °C ... 40 °C)

## Signal: Alarm

Output description	Transistor
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## Signal: Battery charge

Output description	Transistor
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## Signal: Battery mode

Output description	Transistor
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## Energy storage

Nominal voltage $U_N$	18.5 V DC
End-of-charge voltage	18.5 V DC ... 21 V DC
Charging current	0.4 A
Nominal capacity	2.5 Ah
Charging time	5.5 h (max.)
Deep discharge protection	< 15 V DC
Latest startup date (battery only)	12 Months (25 °C)
Battery technology	Lithium-ion
Memory medium	Lithium-ion
Battery presence check (cyclic)	60 s
Quality check of battery	yes, with each charge and cyclically once per month
IQ technology	no

## Connection data

### Input

Connection method	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

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Stripping length	6.5 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

## Output

Connection method	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	6.5 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

## Signal

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	6.5 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

## Signaling

Types of signaling	LED
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## Signal output

Signalization designation	Power In OK
Status display	LED
Note on status display	Static to

## Signal output: Switching output

Signalization designation	Alarm
Status display	LED
Note on status display	Static to

## Signal output: Switching output

Signalization designation	Battery charge
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Status display	LED
Note on status display	flashing

## Signal output: Switching output

Signalization designation	Battery mode
Status display	LED
Note on status display	Static to

## Signal output

Signalization designation	Overload
Status display	LED
Note on status display	flashing

## Signal output

Signalization designation	Service/Battery Error
Status display	LED
Note on status display	flashing

## Product properties

Product type	DC UPS with integrated energy storage
Product family	STEP UPS – UPS with integrated energy storage
IQ technology	no
MTBF (IEC 61709, SN 29500)	> 1997000 h (40 °C)

## Insulation characteristics

Protection class	III
Degree of pollution	2

## Dimensions

Width	108 mm
Height	90 mm
Depth	71 mm

## Installation dimensions

Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	30 mm / 30 mm

## Mounting

Mounting type	DIN rail mounting
Assembly instructions	alignable: horizontally 0 mm, vertically 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715

## Material specifications

Housing material	Plastic
Type of housing	Plastic

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Foot latch material	POM (Polyoxymethylene)
Housing material	Polycarbonate

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	0 °C ... 40 °C
Ambient temperature (storage/transport)	-20 °C ... 45 °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, 90 min.

## Standards and regulations

Standard – Electronic equipment for use in electrical power installations and their assembly into electrical power installations	EN 50178/VDE 0160 (PELV)
Standard - Electrical safety	IEC 62368-1 (SELV)

## Approvals

UL approvals	UL Listed UL 508 UL/C-UL Recognized UL 60950-1
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## EMC data

EMC requirements for noise immunity	EN 61000-6-2
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU

### Electrostatic discharge

Standards/regulations	EN 61000-4-2
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### Electrostatic discharge

Contact discharge	6 kV (Test Level 3)
Discharge in air	8 kV (Test Level 3)
Comments	Criterion A

### Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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### Electromagnetic HF field

Frequency range	80 MHz ... 1 GHz
Test field strength	10 V/m (Test Level 3)
Frequency range	1 GHz ... 2 GHz
Test field strength	10 V/m (Test Level 3)
Frequency range	2 GHz ... 3 GHz

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Test field strength	10 V/m (Test Level 3)
Comments	Criterion A

## Fast transients (burst)

Standards/regulations	EN 61000-4-4
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## Fast transients (burst)

Input	2 kV (Test Level 3 - asymmetrical)
Output	2 kV (Test Level 3 - asymmetrical)
Signal	2 kV (Test Level 4 - asymmetrical)
Comments	Criterion A

## Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
Input	1 kV (Test Level 2 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Output	1 kV (Test Level 2 - symmetrical)
	2 kV (Test Level 3 - asymmetrical)
Signal	1 kV (Test Level 2 - asymmetrical)
Comments	Criterion A

## Conducted interference

Standards/regulations	EN 61000-4-6
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## Conducted interference

I/O/S	asymmetrical
Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V (Test Level 3)

## 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

## Criteria

Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

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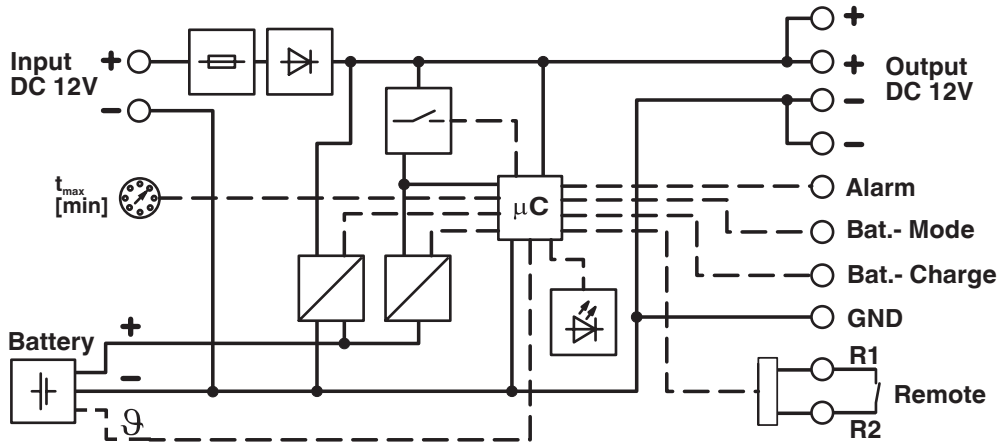


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## Drawings

Block diagram





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## Approvals

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**EAC**

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



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## Classifications

### ECLASS

ECLASS-11.0	27040705
ECLASS-13.0	27040705
ECLASS-12.0	27040705

### ETIM

ETIM 9.0	EC000382
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### UNSPSC

UNSPSC 21.0	39121000
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## Environmental product compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 25; For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### STEP-BAT/LI-ION/18.5DC/46WH - Energy storage

1081355

<https://www.phoenixcontact.com/us/products/1081355>

Energy storage, lithium-ion, 18.5 V DC, 46 Wh



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### STEP-PS/ 1AC/12DC/5 - Power supply unit

2868583

<https://www.phoenixcontact.com/us/products/2868583>

Primary-switched STEP POWER power supply for DIN rail mounting, input: 1-phase, output: 12 V DC/5 A



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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)