

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



1082548

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

Product description

UPS modules with integrated battery are particularly space-saving: the UPS module and battery 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 with integrated battery
- 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
GTIN	4055626815169
Weight per piece (including packing)	662 g

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Weight per piece (excluding packing)	531 g
Customs tariff number	85371091
Country of origin	VN

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Technical data

Notes

General

Note on the battery	This product contains a battery with a limited shelf life that must be charged every few months. The product packaging indicates when the battery must be started up or recharged. The general shelf life can be found in the technical data area under "Latest startup". To prevent deep discharge, store and transport the battery module outside of the uninterruptible power supply.
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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. 20 min.
Current consumption	6 A (max.) < 30 mA (No-load) < 0.8 A (Charging (I _{Charge} = max, I _{Out} = 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 _{max}	6 A

Output data

Efficiency	> 97.4 % (for charged battery) > 92 % (Battery operation)
Nominal output voltage	12 V DC
Nominal output current (I _N)	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 _{Boost})	5 A (0 °C ... 35 °C)

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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)
	5.4 W (Battery operation)
Connection in series	no

Mains operation

Nominal output voltage	12 V DC
Output voltage range	$U_{Out} = U_{In} - 0.3 \text{ V DC}$
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	46 Wh
Charging time	5.5 h (max.)
Deep discharge protection	< 15 V DC
Battery module service life	500 full cycles
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
Battery fuse	yes, electronic 16 A
IQ technology	no

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Connection data

Input

Connection method	Screw connection
Conductor cross-section, rigid min.	0.2 mm ²
Conductor cross-section, rigid max.	2.5 mm ²
Conductor cross-section flexible min.	0.2 mm ²
Conductor cross-section flexible max.	2.5 mm ²
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

Output

Connection method	Screw connection
Conductor cross-section, rigid min.	0.2 mm ²
Conductor cross-section, rigid max.	2.5 mm ²
Conductor cross-section flexible min.	0.2 mm ²
Conductor cross-section flexible max.	2.5 mm ²
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
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Signal

Conductor cross-section, rigid min.	0.2 mm ²
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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

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Signalization designation	Power In OK
Status display	LED
Note on status display	static on

Signal output: Switching output

Signalization designation	Alarm
Status display	LED
Note on status display	static on

Signal output: Switching output

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

Signal output: Switching output

Signalization designation	Battery mode
Status display	LED
Note on status display	static on

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 battery
Product family	STEP DC UPS with integrated battery
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
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Installation distance top/bottom	30 mm / 30 mm
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Mounting

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

Material specifications

Housing material	Plastic
Housing material	PC
Type of housing	Plastic
Foot latch material	POM (Polyoxymethylene)

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

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

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)

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Comments	Criterion A
Electromagnetic HF field	
Standards/regulations	EN 61000-4-3
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
Test field strength	10 V/m (Test Level 3)
Comments	Criterion A
Fast transients (burst)	
Standards/regulations	EN 61000-4-4
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
Surge voltage load (surge)	
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
Conducted interference	
Input/output/signal	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

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Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
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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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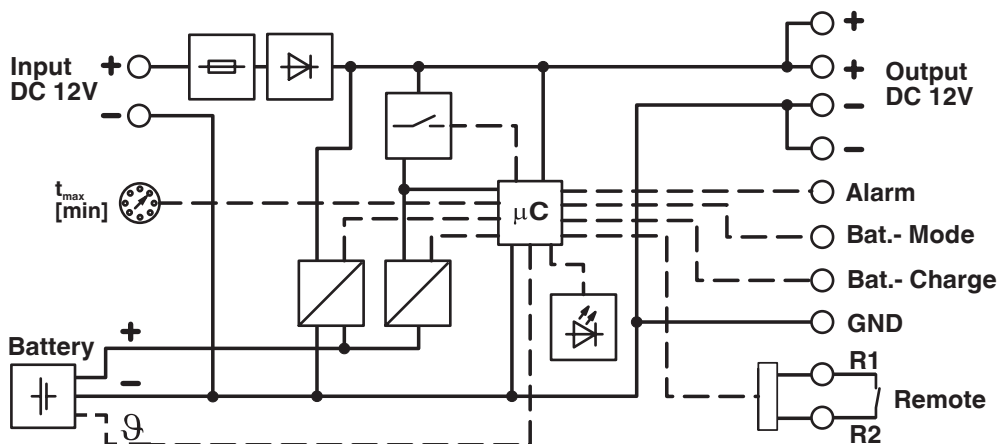


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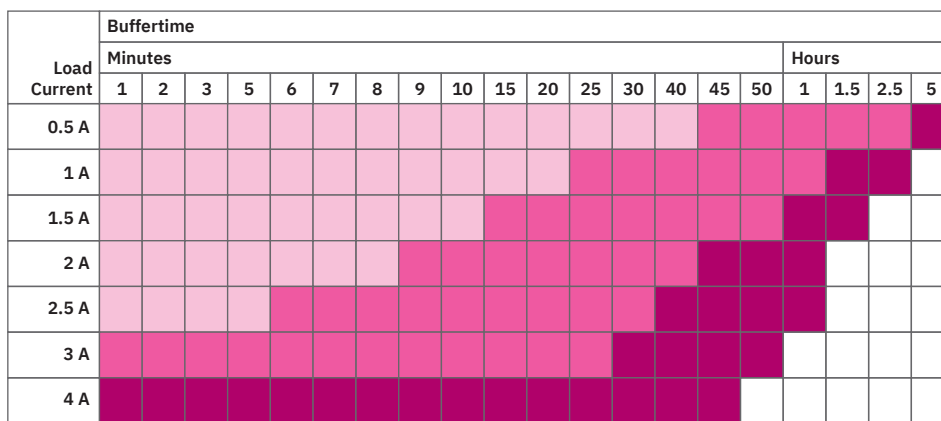
Drawings

Block diagram



Block diagram

Graphic



The data is based on an ambient temperature of +25 °C at the start of use.

2905907 UNO-UPS/24DC/24DC/60W
 1081430 STEP-UPS/24DC/24DC/3/46W
 1082548 STEP-UPS/12DC/12DC/4/46W

Buffer times for STEP DC UPS with integrated battery

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Approvals

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cULus Listed

Approval ID: FILE E 214596



cULus Listed

Approval ID: FILE E 214596



EAC

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



IECEE CB Scheme

Approval ID: DE/PTZ/0121



KC

Approval ID: R-R-PCK-1082548



IECEE CB Scheme

Approval ID: DE/PTZ/0121



EAC

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



KC

Approval ID: R-R-PCK-1082548



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Classifications

ECLASS

ECLASS-13.0	27040705
ECLASS-15.0	27040705

ETIM

ETIM 10.0	EC000382
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UNSPSC

UNSPSC 21.0	39121000
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Environmental product compliance

EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 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	f8e24838-6f3a-4a6d-95c8-f4906b735e4f

EF3.1 Climate Change

CO2e kg	17.159 kg CO2e
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