

STEP-UPS/24DC/24DC/3/46WH - Uninterruptible power supply



1081430

<https://www.phoenixcontact.com/us/products/1081430>

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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	1081430
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM20
Product key	CMUS43
Catalog page	Page 348 (C-4-2019)
GTIN	4055626807850
Weight per piece (including packing)	510 g
Weight per piece (excluding packing)	500 g
Customs tariff number	85371091
Country of origin	DE

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Technical data

Input data

DC operation

Input voltage	24 V DC
Input voltage range	22.5 V DC ... 29.5 V DC
Voltage type of supply voltage	DC
Buffer period	90 min. (1 A)
	45 min. (2 A)
	30 min. (3 A)
	22 min. (4 A)
Rotary selector switch	Service
	∞
	5 min.
	10 min.
Current consumption	20 min.
	4.7 A (max.)
	< 30 mA (No-load)
	< 0.5 A (Charging (I _{Charge} = max, I _{Out} = 0))
Fixed backup threshold	< 22.5 V
Variable connect threshold	1 V / 1 s
Typical response time	< 0.5 s
Input fuse	7 A (slow-blow, internal)

Output data

Efficiency	> 98 % (Mains operation, with charged battery module)
	> 95 % (Battery operation)
Nominal output voltage	24 V DC
Nominal output current (I _N)	3 A (0 °C ... 40 °C)
Output current limit	In mains mode according to connected upstream current limiting device
	> 4 A (Battery operation)
POWER BOOST (I _{Boost})	4 A (0 °C ... 35 °C)
Bridging time	900 s
Derating	35 °C ... 40 °C (5 %/K)
Output power	72 W
Power dissipation	0.6 W (No-load)
	2 W (Nominal load)
	4.4 W (I _{max})
	1.1 W (No-load)
	3.8 W (Nominal load)
	10 W (I _{max})

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Connection in series	No
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Mains operation

Nominal output voltage	24 V DC
Output voltage range	$U_{Out} = U_{In} - 0.3 \text{ V DC}$
Nominal output current (I_N)	3 A (0 °C ... 40 °C)

Battery operation

Nominal output voltage	24 V DC
Output voltage range	23 V DC ... 26.5 V DC ()
Nominal output current (I_N)	3 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	max. 5.5 h
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 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
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule with plastic	2.5 mm ²

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sleeve, max.	
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, 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
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	2.5 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, 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

Signal

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
Single conductor/flexible terminal point with ferrule with plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule with plastic sleeve, max.	2.5 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, min.	0.2 mm ²
Single conductor/flexible terminal point with ferrule without plastic sleeve, max.	2.5 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

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
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)	> 1401000 h (40 °C)

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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
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
Maximum altitude	max. 2000 m
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/C-UL listed UL 508
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	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 ... 6 GHz
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
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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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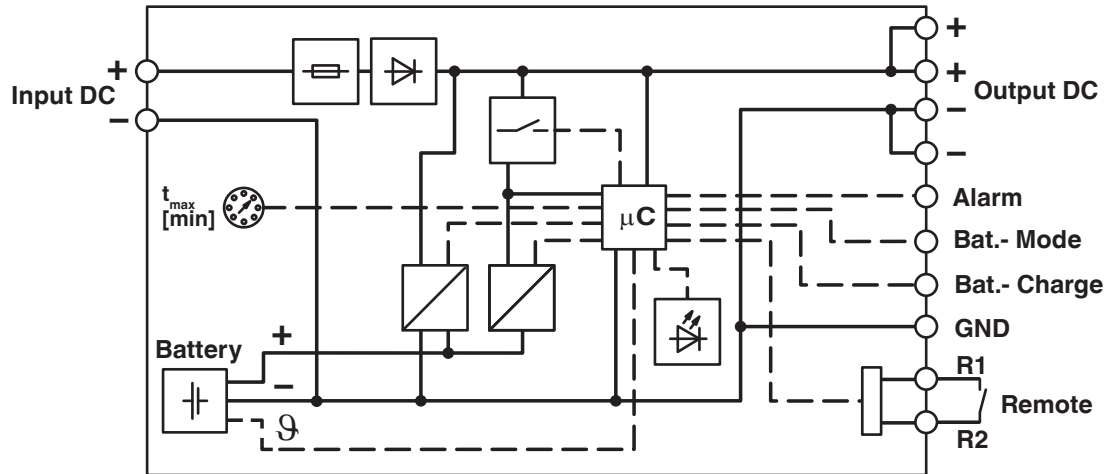


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Drawings

Block diagram



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Approvals

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Approval ID: FILE E 214596



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Approval ID: FILE E 214596



EAC

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



KC

Approval ID: R-R-PCK-1081430



EAC

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



KC

Approval ID: R-R-PCK-1081430



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Approval ID: FILE E 123528



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Classifications

ECLASS

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

ETIM

ETIM 8.0	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



STEP3-PS/1AC/24DC/4/PT - Power supply unit

1140066

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Primary-switched power supply unit, STEP POWER, Push-in connection, DIN rail or direct mounting, input: 1-phase, output: 24 V DC / 4 A, Adjustable from 22 V DC ... 27 V DC



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STEP3-PS/1AC/24DC/5/PT - Power supply unit

1088478

<https://www.phoenixcontact.com/us/products/1088478>



Primary-switched power supply unit, STEP POWER, Push-in connection, DIN rail or direct mounting, input: 1-phase, output: 24 V DC / 5 A, Adjustable from 22 V DC ... 27 V DC

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