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Uninterruptible power supply with integrated power supply unit, 2 A, in combination with MINI-BAT/24/DC 0.8 AH or 1.3 AH

Your advantages

- High operational safety - comprehensive signaling and temperature-dependent battery charging
- Fast installation – minimal wiring effort with COMBICON connectors for easy connection

Commercial data

Item number	2866640
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	CM20
Product key	CMUM13
Catalog page	Page 350 (C-4-2019)
GTIN	4046356113533
Weight per piece (including packing)	496 g
Weight per piece (excluding packing)	447 g
Customs tariff number	85371091
Country of origin	CN

MINI-DC-UPS/24DC/2 - Uninterruptible power supply



2866640

<https://www.phoenixcontact.com/us/products/2866640>

Technical data

Input data

DC operation

Input voltage	24 V DC
Input voltage range	100 V DC ... 350 V DC
Voltage type of supply voltage	DC
Inrush current	< 34 A (< 1.1 A ² s)
Inrush current integral (I ² t)	< 1.1 A ² s
Mains buffering time	see diagram
Buffer period	20 min. (2 A)
Rotary selector switch	Can be set to: 0.5 min; 1 min; 2 min; 3 min; 5 min; 10 min; 15 min; 20 min; 30 min; permanent
Current consumption	0.6 A
	0.85 A (230 V AC)
	1.1 A
	1.5 A (120 V AC)
Protective circuit	Varistor
Power factor (cos phi)	approx. 0.5
Typical response time	100 ms
Input fuse	3.15 A (slow-blow, internal)
Permissible backup fuse	B6 B10 B16
Recommended breaker for input protection	6 A ... 16 A (Characteristics B, C, D, K)

AC operation

Nominal input voltage range	100 V AC ... 240 V AC
Input voltage range	85 V AC ... 264 V AC
Voltage type of supply voltage	AC

Output data

Efficiency	> 83 %
Nominal output voltage	24 V DC (AC input voltage available: 22.5 to 29.5 V DC, AC input voltage not available: 27.9 to 19.2 V DC)
Setting range of the output voltage (U _{Set})	22.5 V DC ... 29.5 V DC (normal mode; in the buffer mode, dependent on a battery voltage of 27.9 V DC ... 19.2 V DC)
Nominal output current (I _N)	2 A
Output current limit	max. 3 A
Bridging time	1200 s
Derating	60 °C ... 70 °C (2.5 %/K)
Feedback voltage resistance	35 V DC
Protection against overvoltage at the output (OVP)	< 35 V DC
Max. capacitive load	unlimited
Control deviation	< 1 % (change in load, static 10 % ... 90 %)
Residual ripple	< 50 mV _{PP}

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Output power	48 W
Peak switching voltages nominal load	< 100 mV _{PP}
Maximum no-load power dissipation	3.8 W
Power loss nominal load max.	15 W
Power dissipation battery operation	2.1 W
Rise time	< 100 ms
Connection in parallel	yes
Connection in series	no

Mains operation

Nominal output voltage	24 V DC
Output voltage range	22.5 V DC ... 29.5 V DC
Nominal output current (I _N)	2 A

Battery operation

Nominal output voltage	24 V DC
Output voltage range	19.2 V DC ... 27.6 V DC (U _{OUT} = U _{BAT} - 0,5 V DC)
Nominal output current (I _N)	2 A

Signal: Active (high = buffer module is loaded)

Output description	Power Good
Maximum switching voltage	≤ 24 V
Output voltage	+ 24 V
Continuous load current	≤ 20 mA

Signal: Alarm

Output description	Relay output
Maximum switching voltage	≤ 24 V
Output voltage	24 V
Continuous load current	≤ 200 mA

Signal: Battery charge

Output description	Relay output
Maximum switching voltage	≤ 24 V
Output voltage	24 V
Continuous load current	≤ 200 mA

Signal: Battery mode

Output description	Relay output
Maximum switching voltage	≤ 24 V
Output voltage	24 V
Continuous load current	≤ 200 mA

Energy storage

Charging current	1 A
Nominal capacity range	0.8 Ah ... 1.3 Ah
Memory medium	external, battery 0.8 Ah / 1.3 Ah

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IQ technology	no
Network management	No

Connection data

Input

Connection method	Pluggable COMBICON screw connections
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	8 mm
Screw thread	M3
Tightening torque, min	0.5 Nm
Tightening torque max	0.6 Nm

Output

Connection method	Pluggable COMBICON screw connections
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	8 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
Conductor cross section AWG min.	24
Conductor cross section AWG max.	12
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: Active (high = buffer module is loaded)

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Status display	LED "Power Good", green
Note on status display	Buffer module is loaded: LED ON

Signal output: Alarm

Status display	LED (red)
Note on status display	Malfunction/alarm: LED permanently lit

Signal output: Battery charge

Status display	LED flashing yellow
Note on status display	Battery charge/battery is being charged: LED flashing

Signal output: Battery mode

Status display	LED (yellow)
Note on status display	Battery mode/buffer mode: LED permanently lit

Electrical properties

Insulation voltage input/output	4 kV (type test)
	2 kV (routine test)

Product properties

Product type	DC UPS with integrated power supply
Product family	MINI UPS – UPS with integrated power supply
IQ technology	no
MTBF (IEC 61709, SN 29500)	> 753000 h (40 °C)

Data management status

Article revision	06
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Insulation characteristics

Protection class	II (in closed control cabinet)
Degree of pollution	2

Dimensions

Width	67.5 mm
Height	99 mm
Depth	107 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 note	alignable: horizontally 0 mm, vertically 50 mm
Mounting position	horizontal DIN rail NS 35, EN 60715

Material specifications

MINI-DC-UPS/24DC/2 - Uninterruptible power supply



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Housing material	Plastic
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)
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

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)
	EN 61558-2-17
Standard – Protection against shock currents, basic requirements for protective separation in electrical equipment	EN 50178
Standard – Safety extra-low voltage	EN 60950-1 (SELV)
	EN 60204 (PELV)
Standard - Safe isolation	DIN VDE 0100-410

Approvals

UL approvals	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

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
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011 (EN 55022)

Electrostatic discharge

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

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Electrostatic discharge

Contact discharge	6 kV
Discharge in air	8 kV
Comments	Criterion B

Electromagnetic HF field

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

Frequency range	80 MHz ... 2 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: conductor to ground)
Comments	Criterion B

Surge voltage load (surge)

Standards/regulations	EN 61000-4-5
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Surge voltage load (surge)

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

Conducted interference

Standards/regulations	EN 61000-4-6
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Conducted interference

I/O/S	Level 3
Frequency range	10 kHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

Voltage dips

Standards/regulations	EN 61000-4-11
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Emitted interference

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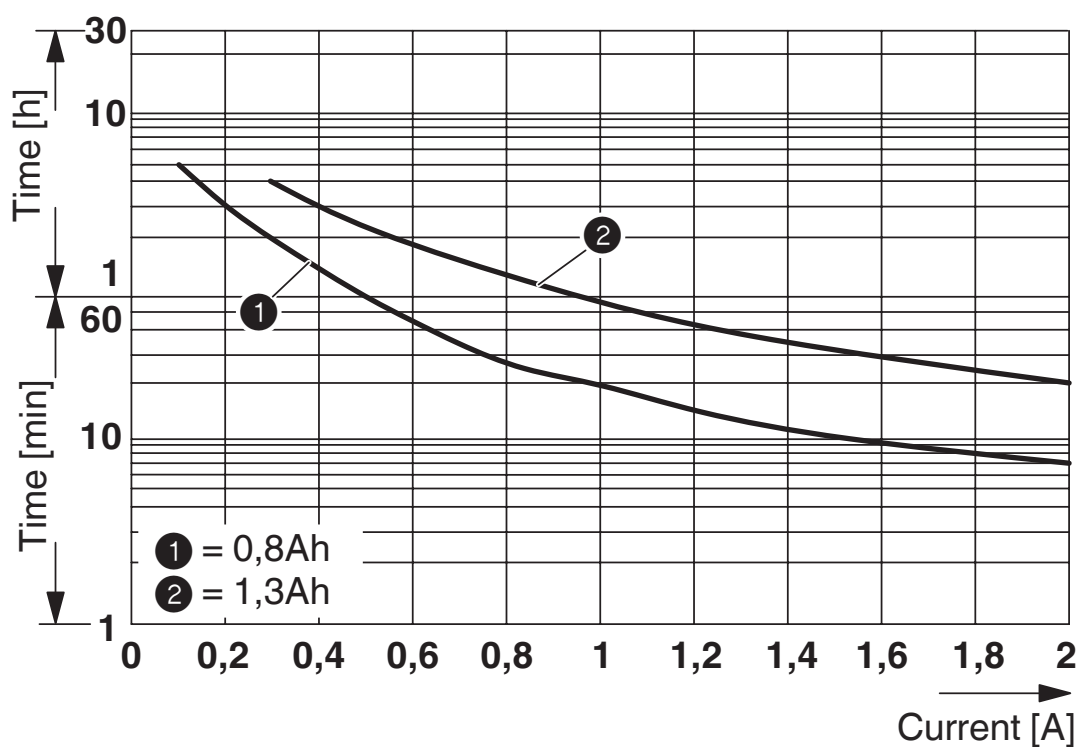
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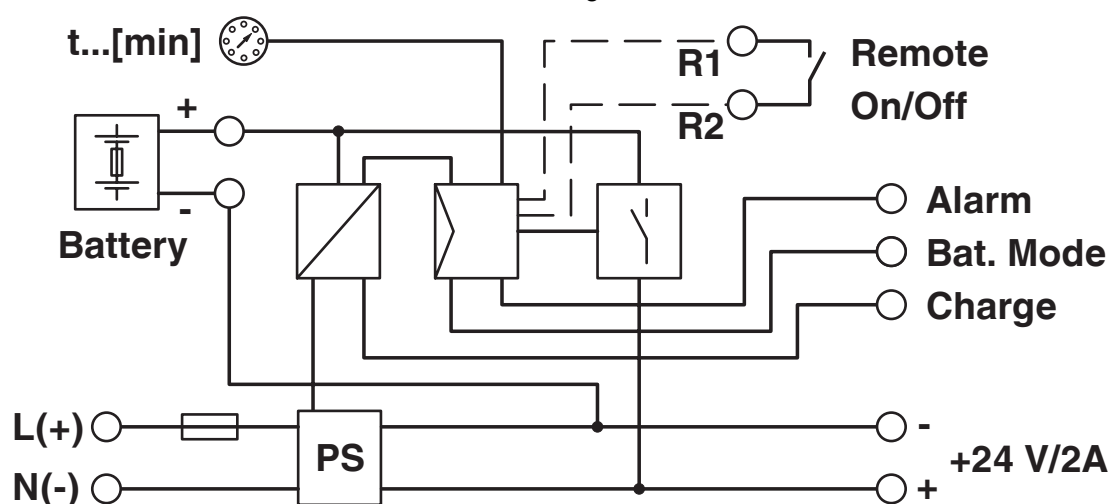
Radio interference voltage in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential
Emitted radio interference in acc. with EN 55011	EN 55011 (EN 55022) Class B, area of application: Industry and residential

Drawings

Diagram



Block diagram



Graphic

Load Current	Buffertime for 24 V DC system										
	Minutes										Hour
	8	9	10	15	20	25	30	40	45	50	1
0.5 A											
1 A											
1.5 A											
2 A											

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

2866666 MINI-BAT/24DC/0.8AH

1394729 TRIO-BAT/PB/24DC/1.2AH

Buffer times for MINI DC UPS for 24 V systems

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Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2866640>



cUL Recognized
Approval ID: FILE E 211944



UL Recognized
Approval ID: E211944



EAC
Approval ID: EAC-Zulassung



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



UL Listed
Approval ID: E123528



EAC
Approval ID: RU-DE.B.00184/20



KC
Approval ID: R-R-PCK-2866640

CoC / Compliance Statement
Approval ID: 17-235-00



cUL Listed
Approval ID: E199827



UL Listed
Approval ID: E199827

cULus Recognized

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Classifications

ECLASS

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

ETIM

ETIM 9.0	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(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	2b4b9094-1235-45d0-bf72-fefce9e27e6c

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Accessories

MINI-BAT/24DC/0.8AH - Battery module

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Battery module, lead AGM, VRLA technology, 24 V DC, 0.8 Ah.

MINI-BAT/24DC/1.3AH - Battery module

2866417

<https://www.phoenixcontact.com/us/products/2866417>



Battery module, lead AGM, VRLA technology, 24 V DC, 1.2 Ah.

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