

# Uninterruptible power supply - TRIO-UPS- 2G/1AC/1AC/120V/750VA



2905908

<https://www.phoenixcontact.com/pc/products/2905908>

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1AC/1AC/750 VA uninterruptible power supply with integrated energy storage, lead AGM, VRLA technology, 24 DC, 4 Ah for 120 V AC applications.

## Product Description

UPS modules with integrated energy storage are particularly space saving: UPS module and energy storage are combined in one housing. The TRIO AC-UPS ensures seamless transition to battery operation thanks to the pure sine curve. Connected industrial PCs can be shut down safely via the integrated USB interface.

## Your advantages

- Smooth transition, thanks to the pure sine curve: the sine generated in battery operation is synchronous with the mains previously used for supply
- Space saving: UPS module and energy storage combined in one housing
- Long buffer times with integrated VRLA energy storage, can be extended with additional energy storage
- USB interface for connection to higher-level controllers such as industrial PCs
- Startup from energy storage possible, even without mains input

## Commercial Data

Item number	2905908
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	CMUO15
Catalog Page	Page 332 (C-4-2019)
GTIN	4055626007397
Weight per Piece (including packing)	6,359 g
Weight per Piece (excluding packing)	6,098 g
Customs tariff number	85044060
Country of origin	DE

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## Technical Data

### Input data

#### AC operation

Input voltage	120 V AC
Input voltage range	96 V AC ... 138 V AC
Voltage type of supply voltage	AC
Frequency range ( $f_N$ )	45 Hz ... 55 Hz 55 Hz ... 65 Hz
Current consumption	6 A (max.)
Power factor (cos phi)	0.8
Input fuse	10 A 400 V gRL
Permissible backup fuse	B10 B16 Listed breaker

#### Digital Control (configurable)

Designation	Remote
Low signal	Connection to SGnd with < 2.7 k $\Omega$
High signal	Open (> 35 k $\Omega$ between Remote and SGnd)

#### Digital Control Low-Active (configurable)

Battery-operated start 120 V AC low signal	Connection to SGnd with < 2.7 k $\Omega$
Battery-operated start 120 V AC high signal	Open (> 200 k $\Omega$ between Bat.-Start and SGnd)

### Output data

Classification according to IEC 62040-3	VFD-SS-311
Efficiency	> 95 % (100 % load, with charged energy storage) ~ 81 % (100 % load )
Nominal output voltage	120 V AC
Form of output voltage	Pure sine
Nominal output current ( $I_N$ )	6 A
Bridging time	60 s
UPS connection in parallel	no
UPS connection in series	no
Apparent power	750 VA
Nominal power	600 W (Real power)
Crest factor	2.8
Switch-over time	< 10 ms
Connection in parallel	no
Connection in series	No

#### Mains operation

Nominal output voltage	120 V AC
Nominal output current ( $I_N$ )	6 A (750 VA)

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## Battery operation

Nominal output voltage	120 V AC
Nominal output current ( $I_N$ )	6 A (750 VA)
Frequency (after automatic detection in mains operation)	50 Hz
	60 Hz

## Signal: Alarm

Output voltage	24 V (SELV)
Continuous load current	≤ 20 mA

## Signal: Battery mode

Output voltage	24 V (SELV)
Continuous load current	≤ 20 mA

## Signal: Ready

Output voltage	24 V (SELV)
Continuous load current	≤ 20 mA

## Signal:

Signal ground SGnd	Reference potential for Bat.-Mode, Ready, Remote, and Bat.-Start
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## Energy storage

Nominal voltage $U_N$	24 V DC
Charging current	0.7 A ... 1.1 A
Nominal capacity	4 Ah
Nominal capacity range	4 Ah
Charging time	7 h
Buffer period	20 min. (100 W)
	4 min. (300 W)
	1 min. (600 W)
Latest startup date (battery only)	6 Months (0 °C ... 20 °C)
Latest startup (battery only) - range	6 Months ... 3 Months (20 °C ... 30 °C)
	3 Months ... 1 Months (30 °C ... 40 °C)
Battery technology	Lead rechargeable battery module
Memory medium	Lead rechargeable battery module
Accumulator type	2x Panasonic UP-VW1220P1 / BB Battery HR4.2-12FR
Can be extended with external battery	1x 24 V 4 Ah
Battery fuse	40 A, 32 V

## Connection data

### Input

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>

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Conductor cross section solid max.	4 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	10 mm

## Output

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	4 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	10 mm

## Signal

Connection method	Push-in connection
Conductor cross section solid min.	0.2 mm <sup>2</sup>
Conductor cross section solid max.	1.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	1.5 mm <sup>2</sup>
Conductor cross section AWG min.	24
Conductor cross section AWG max.	16
Stripping length	8 mm

## Interfaces

Interface	MINI-USB type B
Maximum cable length	3 m

## LED signaling

Types of signaling	LED
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### Signal output: Transistor output, active

Signalization designation	Alarm
Status display	LED
Color	red

### Signal output: Transistor output, active

Signalization designation	Battery mode
Status display	LED
Color	yellow

### Signal output: Transistor output, active

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Signalization designation	Ready
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## Signal output

Status display	LED
Color	green

## Signal output

Signalization designation	Battery charge
Status display	LED
Color	yellow

## Signal output

Signalization designation	Service
Status display	LED
Color	red

## Electrical properties

Number of phases	1.00
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## Product properties

Product type	Uninterruptible power supply, AC
	TRIO UPS
MTBF (IEC 61709, SN 29500)	> 206000 h (40 °C)

## Insulation characteristics

Protection class	I
Overvoltage category	II
Degree of pollution	3

## Life expectancy (electrolytic capacitors)

Time	32861 h
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## Dimensions

Width	210 mm
Height	170 mm
Depth	136 mm

## Installation dimensions

Installation distance right/left	0 mm / 0 mm
Installation distance top/bottom	50 mm / 50 mm

## Mounting

Mounting type	DIN rail mounting
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## Material specifications

Color	gray
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Type of housing	DX51D+AZ (steel sheet / Galvalume)
Hood version	PC + ABS

## Environmental and real-life conditions

### Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	0 °C ... 40 °C
Ambient temperature (storage/transport)	-15 °C ... 40 °C (with charged energy storage device)
Maximum altitude	≤ 3000 m (> 2000 m, observe derating)
Climatic class	3K3 (in acc. with EN 60721)
Max. permissible relative humidity (operation)	≤ 95 % (25 °C, non-condensing)
Shock	20g in all directions (EN 60068-2-27) 30g in each space direction with UWA 130
Vibration (operation)	5 Hz ... 100 Hz, 0.7g (EN 60068-2-6)

## Standards and regulations

### Standards

Standard uninterruptible power supply systems	EN 62040-1
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## Approval data

UL approvals	UL/C-UL Recognized UL 1778
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## EMC data

Low Voltage Directive	Conformance with Low Voltage Directive 2014/35/EC
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Conducted noise emission	EN 62040-02 (Class C2)
Interference emission	Noise emission in accordance with EN 62040-2
Noise immunity	Immunity in accordance with EN 61000-6-1 (residential), EN 61000-6-2 (industrial), and EN 61000-6-5 (power station equipment zone), IEC/EN 61850-3 (power supply) Immunity in accordance with EN 62040-2

### 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)
Comments	Criterion A

### Electromagnetic HF field

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

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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	2 kV (Test Level 3 - asymmetrical)
	2 kV (Test Level 3 - asymmetrical)
Output	2 kV (Test Level 3 - asymmetrical)
Signal	2 kV (Test Level 3 - asymmetrical)
	2 kV (Test Level 3 - asymmetrical)
Comments	Criterion A (B for USB)

## 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

Frequency range	0.15 MHz ... 80 MHz
Comments	Criterion A
Voltage	10 V

## Power frequency magnetic field

Standards/regulations	EN 61000-4-8
Frequency	60 Hz
Test field strength	100 A/m
Comments	Criterion A

## Emitted interference

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.

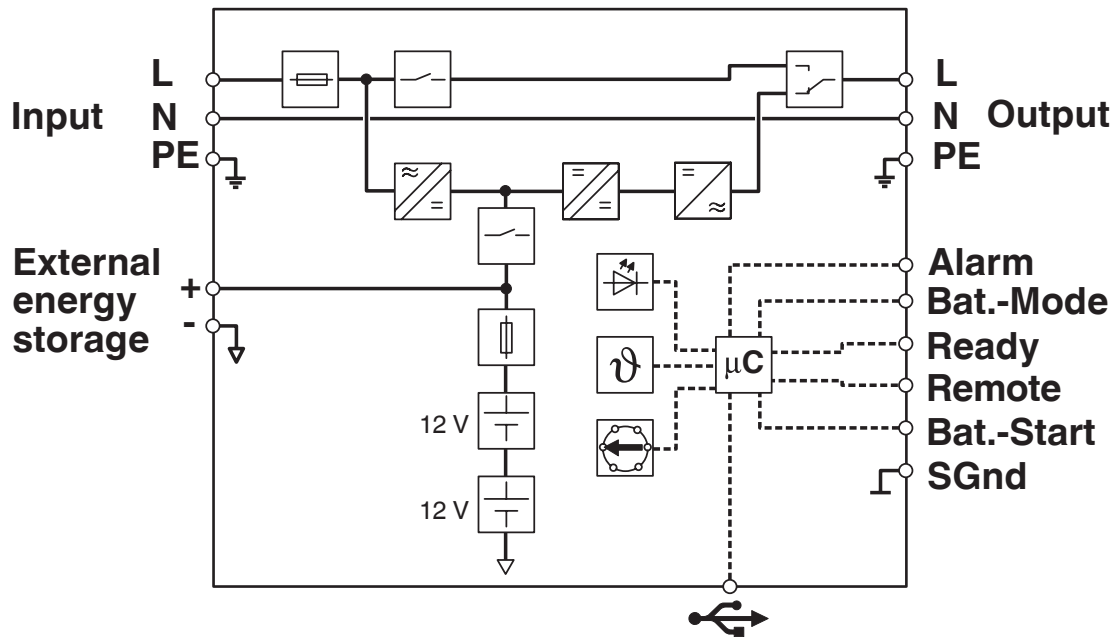
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## Drawings

Block diagram





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## Approvals



**cUL Recognized**  
Approval ID: FILE E 342453



**UL Recognized**  
Approval ID: FILE E 342453



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



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

**DNV**

Approval ID: TAA00002JM



**KC**  
Approval ID: R-R-PCK-2905908



**UL Recognized**  
Approval ID: FILE E 342453



**cUL Recognized**  
Approval ID: FILE E 342453



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



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



**KC**  
Approval ID: R-R-PCK-2905908

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**DNV**

Approval ID: TAA00002JM



**cUL Recognized**

Approval ID: FILE E 359066



**UL Recognized**

Approval ID: FILE E 359066



**cUL Recognized**

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**UL Recognized**

Approval ID: FILE E 359066

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## Classifications

### ECLASS

ECLASS-9.0	27040705
ECLASS-10.0.1	27040705
ECLASS-11.0	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 = 3
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### Energy storage

Energy storage - QUINT-BAT/24DC/ 3.4AH - 2866349

<https://www.phoenixcontact.com/pc/products/2866349>



Energy storage device, lead AGM, VRLA technology, 24 V DC, 4 Ah. Connection via pin cable lug.

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### Uninterruptible power supply replacement battery

Uninterruptible power supply replacement battery - UPS-BAT-KIT/PB/2X12V/4AH - 1283116

<https://www.phoenixcontact.com/pc/products/1283116>



Replacement battery, VRLA-AGM, 2x12 V DC, 4 Ah. Only for 1274117 UPS-BAT/PB/24DC/4AH, 2320267 QUINT-UPS/24DC/24DC/10/3.4AH from V/C 06, 2905908 TRIO-UPS-2G/1AC/1AC/120V/750VA, and 2905909 TRIO-UPS-2G/1AC/1AC/230V/750VA

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## Energy storage

Energy storage - UPS-BAT/PB/24DC/4AH - 1274117

<https://www.phoenixcontact.com/pc/products/1274117>



Energy storage, VRLA-AGM, 24 V DC, 4 Ah, automatic detection and communication with QUINT UPS-IQ

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## Data cable

Data cable - MINI-SCREW-USB-DATACABLE - 2908217

<https://www.phoenixcontact.com/pc/products/2908217>



Used for communication between an industrial PC and Phoenix Contact devices with USB-Mini-B connection.

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## Type 3 surge protection device

Type 3 surge protection device - PLT-SEC-T3-120-FM-UT - 2907918

<https://www.phoenixcontact.com/pc/products/2907918>



Type 2/3 surge protection, consisting of protective plug and base element, with integrated status indicator and remote signaling for single-phase power supply networks. Nominal voltage: 120 V AC/DC

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## Mounting adapter

Mounting adapter - UWA 130 - 2901664

<https://www.phoenixcontact.com/pc/products/2901664>



2-piece universal wall adapter for securely mounting the device in the event of strong vibrations. The profiles that are screwed onto the side of the device are screwed directly onto the mounting surface. The universal wall adapter is attached on the left/right.

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## Fuse

Fuse - FUSE 10A/400V GRL - 2908358

<https://www.phoenixcontact.com/pc/products/2908358>

Fuse, nominal current: 10 A, length: 31.8 mm, diameter: 6.35 mm



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## Fuse

Fuse - FUSE 40A/32V ATOF - 2908357

<https://www.phoenixcontact.com/pc/products/2908357>

Fuse, nominal current: 40 A, length: 19 mm, width: 5 mm, height: 18.8 mm



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