

# Power supply units and UPS

## Uninterruptible power supplies

### UPS module with integrated power supply

#### TRIO DC UPS, 1 AC, 24 V DC

For the reliable supply of DC loads.

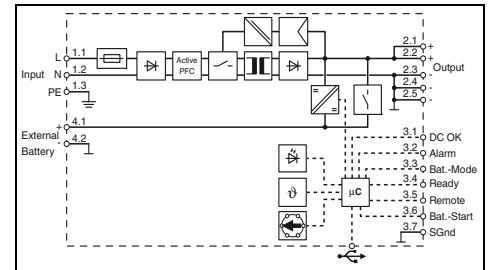
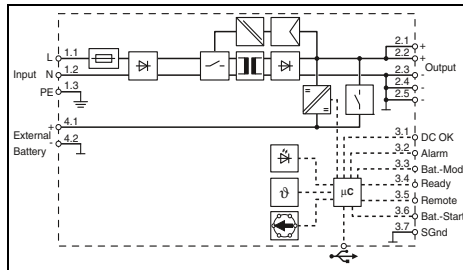
- Space-saving combination of UPS and power supply in the same housing
- Long buffer times, thanks to a large number of VRLA energy storage devices
- USB interface for connection to higher-level controllers, such as industrial PCs
- Startup from energy storage possible, even without mains input
- Push-in connection



UPS with integrated power supply,  
1 V AC / 24 V DC, 5 A



UPS with integrated power supply,  
1 V AC / 24 V DC, 10 A



#### Technical data

#### Technical data

Input data	
Input voltage range	100 V AC ... 240 V AC 110 V DC ... 250 V DC
Current consumption (nominal load)	1.6 A (240 V AC) / 3.3 A (100 V AC) 0.7 A (250 V DC) / 1.8 A (110 V DC)
Input fuse	6.3 A (slow-blow, internal)
Reliable backup fuse, circuit breaker	B10
Output data	
Nominal output voltage	24 V DC
Setting range of the output voltage (in mains operation)	24 V DC ... 28 V DC (> 24 V constant capacity)
Output current / Dynamic Boost	5 A / 7.5 A
Can be connected in parallel/series	yes, with diode module uncoupled / No
Buffer period	to 2 h
Max. power dissipation (no load/nominal load)	< 3 W (230 V AC) / < 19 W (230 V AC)
Efficiency	typ. 85% (120 V AC) / typ. 87% (230 V AC) / typ. 96% (Battery operation)
Signaling	
LED signaling	DC OK (green), Alarm (red), Bat.-Mode (yellow)
Configurable signal output	DC OK, Alarm, Bat.-Mode, Ready
Interfaces	MINI-USB type B
General data	
Battery technology	VRLA
Charging current	0.2 A ... 1.5 A (-25°C ... 60°C)
Weight / Dimensions W x H x D	0.75 kg / 60 x 130 x 115 mm
Mounting position	horizontal DIN rail NS 35, EN 60715
Connection	alignable: horizontally 0 mm, vertically 50 mm
Connection method	Push-in connection
Input connection data rigid / flexible / AWG	0.2 - 4 mm <sup>2</sup> / 0.2 - 2.5 mm <sup>2</sup> / 24 - 12
Output connection data rigid / flexible / AWG	0.2 - 4 mm <sup>2</sup> / 0.2 - 2.5 mm <sup>2</sup> / 24 - 12
Signal connection data rigid / flexible / AWG	0.2 - 1.5 mm <sup>2</sup> / 0.2 - 1.5 mm <sup>2</sup> / 24 - 16
Degree of protection / Protection class	IP20 / I
MTBF (IEC 61709, SN 29500)	> 825726 h (230 V AC, at 40°C)
Ambient temperature (operation)	-25°C ... 70°C (> 60°C Derating: 2.5%/K)
Standards/regulations	
Insulation voltage input/output	1.5 kV AC (routine test) / 3 kV AC (type test)
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
UL approvals	UL Listed UL 61010, UL/C-UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C

Input data	
Input voltage range	100 V AC ... 240 V AC 110 V DC ... 250 V DC
Current consumption (nominal load)	2 A (240 V AC) / 4.5 A (100 V AC) 1.8 A (250 V DC) / 4 A (110 V DC)
Input fuse	6.3 A (slow-blow, internal)
Reliable backup fuse, circuit breaker	B10
Output data	
Nominal output voltage	24 V DC
Setting range of the output voltage (in mains operation)	24 V DC ... 28 V DC (> 24 V constant capacity)
Output current / Dynamic Boost	10 A / 15 A
Can be connected in parallel/series	yes, with diode module uncoupled / No
Buffer period	to 3 h
Max. power dissipation (no load/nominal load)	< 3 W (230 V AC) / < 32 W (230 V AC)
Efficiency	typ. 90% (120 V AC) / typ. 91% (230 V AC) / typ. 96% (Battery operation)
Signaling	
LED signaling	DC OK (green), Alarm (red), Bat.-Mode (yellow)
Configurable signal output	DC OK, Alarm, Bat.-Mode, Ready
Interfaces	MINI-USB type B
General data	
Battery technology	VRLA
Charging current	0.2 A ... 3 A (-25°C ... 60°C)
Weight / Dimensions W x H x D	1.34 kg / 68 x 130 x 160 mm
Mounting position	horizontal DIN rail NS 35, EN 60715
Connection	alignable: horizontally 0 mm, vertically 50 mm
Connection method	Push-in connection
Input connection data rigid / flexible / AWG	0.2 - 4 mm <sup>2</sup> / 0.2 - 2.5 mm <sup>2</sup> / 24 - 12
Output connection data rigid / flexible / AWG	0.2 - 4 mm <sup>2</sup> / 0.2 - 2.5 mm <sup>2</sup> / 24 - 12
Signal connection data rigid / flexible / AWG	0.2 - 1.5 mm <sup>2</sup> / 0.2 - 1.5 mm <sup>2</sup> / 24 - 16
Degree of protection / Protection class	IP20 / I
MTBF (IEC 61709, SN 29500)	> 1210518 h (230 V AC, at 40°C)
Ambient temperature (operation)	-25°C ... 70°C (> 60°C Derating: 2.5%/K)
Standards/regulations	
Insulation voltage input/output	2 kV AC (routine test) / 4 kV AC (type test)
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
UL approvals	UL Listed UL 61010, UL/C-UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C

Input data	
Input voltage range	100 V AC ... 240 V AC 110 V DC ... 250 V DC
Current consumption (nominal load)	2 A (240 V AC) / 4.5 A (100 V AC) 1.8 A (250 V DC) / 4 A (110 V DC)
Input fuse	6.3 A (slow-blow, internal)
Reliable backup fuse, circuit breaker	B10
Output data	
Nominal output voltage	24 V DC
Setting range of the output voltage (in mains operation)	24 V DC ... 28 V DC (> 24 V constant capacity)
Output current / Dynamic Boost	10 A / 15 A
Can be connected in parallel/series	yes, with diode module uncoupled / No
Buffer period	to 3 h
Max. power dissipation (no load/nominal load)	< 3 W (230 V AC) / < 32 W (230 V AC)
Efficiency	typ. 90% (120 V AC) / typ. 91% (230 V AC) / typ. 96% (Battery operation)
Signaling	
LED signaling	DC OK (green), Alarm (red), Bat.-Mode (yellow)
Configurable signal output	DC OK, Alarm, Bat.-Mode, Ready
Interfaces	MINI-USB type B
General data	
Battery technology	VRLA
Charging current	0.2 A ... 3 A (-25°C ... 60°C)
Weight / Dimensions W x H x D	1.34 kg / 68 x 130 x 160 mm
Mounting position	horizontal DIN rail NS 35, EN 60715
Connection	alignable: horizontally 0 mm, vertically 50 mm
Connection method	Push-in connection
Input connection data rigid / flexible / AWG	0.2 - 4 mm <sup>2</sup> / 0.2 - 2.5 mm <sup>2</sup> / 24 - 12
Output connection data rigid / flexible / AWG	0.2 - 4 mm <sup>2</sup> / 0.2 - 2.5 mm <sup>2</sup> / 24 - 12
Signal connection data rigid / flexible / AWG	0.2 - 1.5 mm <sup>2</sup> / 0.2 - 1.5 mm <sup>2</sup> / 24 - 16
Degree of protection / Protection class	IP20 / I
MTBF (IEC 61709, SN 29500)	> 1210518 h (230 V AC, at 40°C)
Ambient temperature (operation)	-25°C ... 70°C (> 60°C Derating: 2.5%/K)
Standards/regulations	
Insulation voltage input/output	2 kV AC (routine test) / 4 kV AC (type test)
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
UL approvals	UL Listed UL 61010, UL/C-UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C

#### Ordering data

#### Ordering data

Description	
<b>Power supply, uninterruptible</b>	

Type	Order No.	Pcs./Pkt.
TRIO-UPS-2G/1AC/24DC/5	2907160	1

Type	Order No.	Pcs./Pkt.
TRIO-UPS-2G/1AC/24DC/10	2907161	1

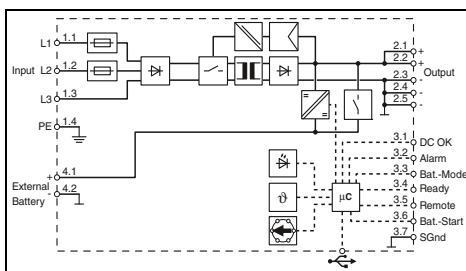
**UPS module with integrated power supply**

**TRIO DC UPS, 3 AC, 24 V DC**

- For the reliable supply of DC loads.
- Space-saving combination of UPS and power supply in the same housing
- Long buffer times, thanks to a large number of VRLA energy storage devices
- USB interface for connection to higher-level controllers, such as industrial PCs
- Startup from energy storage possible, even without mains input
- Push-in connection



**UPS with integrated power supply,  
3 V AC / 24 V DC, 20 A**



**Technical data**

<b>Input data</b>	
Input voltage range	3x 400 V AC ... 500 V AC / 2x 400 V AC ... 500 V AC
Current consumption (nominal load)	3x 1.1 A (500 V AC) / 3x 1.3 A (400 V AC) 2x 1.9 A (480 V AC) / 2x 2.2 A (400 V AC)
Input fuse	6.3 A (slow-blow, internal)
Reliable backup fuse, circuit breaker	B10
<b>Output data</b>	
Nominal output voltage	24 V DC
Setting range of the output voltage (in mains operation)	24 V DC ... 28 V DC (> 24 V constant capacity)
Output current / Dynamic Boost	20 A / 30 A
Can be connected in parallel/series	yes, with diode module uncoupled / No
Buffer period	to 1.5 h
Max. power dissipation (no load/nominal load)	< 3.6 W (400 V AC) / < 36 W (400 V AC)
Efficiency	typ. 93% (400 V AC) / typ. 92% (480 V AC) / typ. 94% (Battery operation)
<b>Signaling</b>	
LED signaling	DC OK (green), Alarm (red), Bat.-Mode (yellow)
Configurable signal output	DC OK, Alarm, Bat.-Mode, Ready
Interfaces	MINI-USB type B
<b>General data</b>	
Battery technology	VRLA
Charging current	0.5 A ... 3 A (-25°C ... 60°C)
Weight / Dimensions W x H x D	1.71 kg / 88 x 130 x 160 mm
Mounting position	horizontal DIN rail NS 35, EN 60715
Connection	alignable: horizontally 0 mm, vertically 50 mm
Connection method	Push-in connection
Input connection data rigid / flexible / AWG	0.2 - 4 mm <sup>2</sup> / 0.2 - 2.5 mm <sup>2</sup> / 24 - 12
Output connection data rigid / flexible / AWG	0.2 - 10 mm <sup>2</sup> / 0.2 - 6 mm <sup>2</sup> / 24 - 16
Signal connection data rigid / flexible / AWG	0.2 - 1.5 mm <sup>2</sup> / 0.2 - 1.5 mm <sup>2</sup> / 24 - 16
Degree of protection / Protection class	IP20 / I
MTBF (IEC 61709, SN 29500)	> 680194 h (400 V AC, at 40°C)
Ambient temperature (operation)	-25°C ... 70°C (> 60°C Derating: 2.5%/K)
<b>Standards/regulations</b>	
Insulation voltage input/output	2 kV AC (routine test) / 4 kV AC (type test)
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
UL approvals	UL Listed UL 61010, UL/C-UL Listed ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C

**Ordering data**

Description	Type	Order No.	Pcs./Pkt.
<b>Power supply, uninterruptible</b>	TRIO-UPS-2G/3AC/24DC/20	2906367	1

# Power supply units and UPS

## Uninterruptible power supplies

### Energy storage for TRIO UPS

#### UPS BAT/VRLA for maximum buffer times

- Lead AGM (Absorbent Glass Mat) technology
- Ambient temperatures from 0°C to +40°C
- Long buffer times for high currents
- Integrated temperature sensor for optimum charging
- Battery can be changed without tools



IQ Technology<sup>®</sup>  
Designed by PHOENIX CONTACT



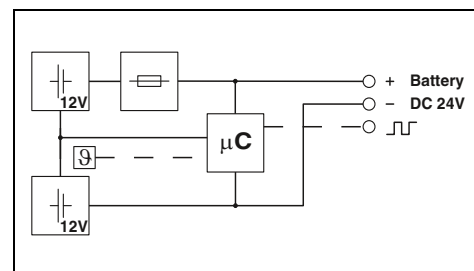
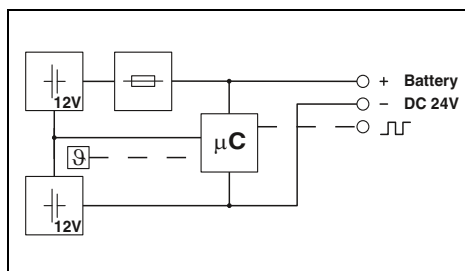
VRLA energy storage,  
1.3 Ah



IQ Technology<sup>®</sup>  
Designed by PHOENIX CONTACT



VRLA energy storage,  
3.4 Ah



#### Technical data

Input data/output data
Nominal input voltage
Nominal capacity
Output current
Output fuse
Can be connected in parallel/series
Buffer period
General data
Storage medium
Weight / Dimensions W x H x D
Degree of protection / Protection class
Ambient temperature (operation)
Service life
Standards/regulations
UL approvals

24 V DC
1.3 Ah
15 A
1x 15 A
Yes / No
20 min. (2 A) / 5 min. (5 A)
Lead rechargeable battery module
1.7 kg / 54 x 157 x 113 mm
IP20 / III
0°C ... 40°C
6 years ... 9 years (20°C)
UL/C-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)

#### Ordering data

Description
Energy storage

Type	Order No.	Pcs./Pkt.
UPS-BAT/VRLA/24DC/1.3AH	2320296	1

#### Accessories

Fuse
Mounting set
Mounting set

FUSE 15A/32V FK1	2908360	2
------------------	---------	---

#### Technical data

24 V DC
3.4 Ah
25 A
1x 25 A
Yes / No
4.5 min. (20 A) / 3 min. (25 A)
Lead rechargeable battery module
3.3 kg / 85 x 191 x 110 mm
IP20 / III
0°C ... 40°C
6 years ... 9 years (20°C)
UL/C-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)

#### Ordering data

Type	Order No.	Pcs./Pkt.
UPS-BAT/VRLA/24DC/3.4AH	2320306	1

#### Accessories

FUSE 25A/32V ATOF	2908366	2
-------------------	---------	---



IQ Technology  
Designed by PHOENIX CONTACT



VRLA energy storage,  
7.2 Ah



IQ Technology  
Designed by PHOENIX CONTACT



VRLA energy storage,  
12 Ah

IQ Technology  
Designed by PHOENIX CONTACT



VRLA energy storage,  
38 Ah



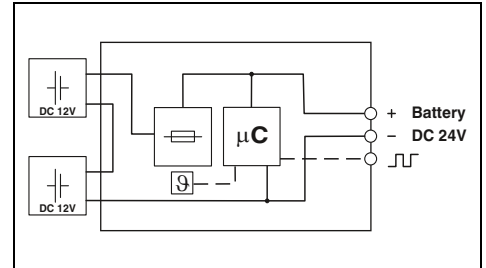
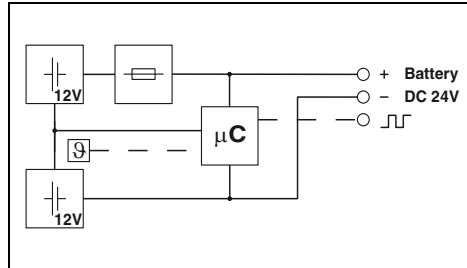
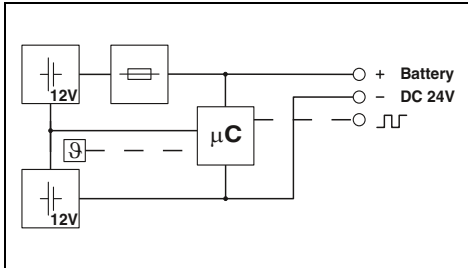
Ex:



Ex:



Ex:



Technical data

24 V DC  
7.2 Ah  
50 A  
2x 25 A  
Yes / No  
10 min. (20 A) / 3 min. (40 A)

Lead rechargeable battery module  
5.9 kg / 135 x 202 x 110 mm  
IP20 / III  
0°C ... 40°C  
6 years ... 9 years (20°C)

UL/C-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)

Ordering data

Type	Order No.	Pcs./Pkt.
UPS-BAT/VRLA/24DC/7.2AH	2320319	1

Accessories

FUSE 25A/32V ATOF	2908366	2

Technical data

24 V DC  
12 Ah  
50 A  
2x 25 A  
Yes / No  
22.5 min. (20 A) / 9 min. (40 A)

Lead rechargeable battery module  
8.9 kg / 202 x 202 x 110 mm  
IP20 / III  
0°C ... 40°C  
6 years ... 9 years (20°C)

UL/C-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)

Ordering data

Type	Order No.	Pcs./Pkt.
UPS-BAT/VRLA/24DC/12AH	2320322	1

Accessories

FUSE 25A/32V ATOF	2908366	2

Technical data

24 V DC  
38 Ah  
45 A  
2x 25 A ATOF 32V  
Yes / No  
72 min. (20 A) / 35 min. (40 A)

Lead rechargeable battery module  
26 kg / 330 x 221 x 197 mm  
IP20 / III  
0°C ... 40°C  
-

UL/C-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)

Ordering data

Type	Order No.	Pcs./Pkt.
UPS-BAT/VRLA/24DC/38AH	2320335	1

Accessories

FUSE 25A/32V ATOF	2908366	2
BATTERY MOUNTING KIT	2320788	1
BATTERY MOUNTING CASE	2320458	1