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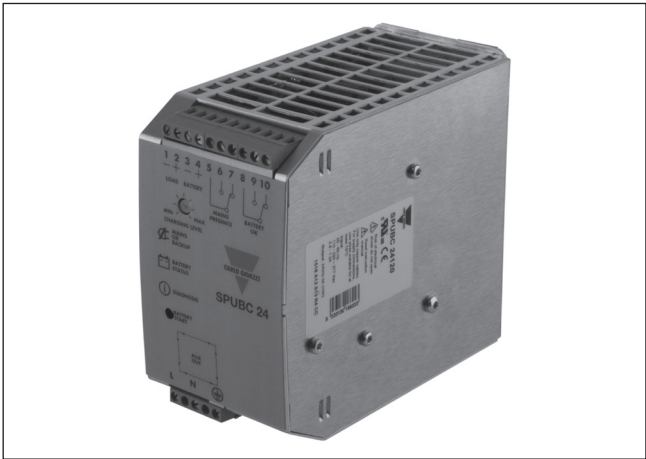
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# Smart Power Supply and UPS

## Type SPUBC 24V 5A



- Single phase input 115Vac / 230Vac / 277Vac
- Smart power management
- Rated output 5A with permanent 10A overboost
- Max battery charging current 5A
- Suitable for Lead Acid open or sealed, Lead gel
- Automatic Battery diagnostic and battery care
- Boost, Trickle/float and recovery charging cycles.
- Battery reversed polarity, element short circuit or disconnection
- 2 relay outputs for remote status and operation indication
- cURus recognized and CE approved

### Product Description

The new Carlo Gavazzi SPUBC puts you in the driving seat of your power management requirements, allocating power, in the most efficient way, between the load and the battery. The maximum available current for battery charging is set by means of a front trimmer. It can go from 20% to 100%, which means that it is possible to charge with up to 5A. The priority though is always the load. If the load requires 80% of current, the current available for the battery is only the remaining 20%

regardless of the setting. On the SPUBC24120 the rated output current is 5A, although, after the battery is charged, the power supply can provide 10A. SPUBC implements a comprehensive process called “Battery Care” that applies algorithms to obtain rapid and automatic charging, battery charge optimization over time, flat battery recovery and real time diagnostic during installation and operation. The Real Time auto-diagnostic system, monitors

battery faults such as battery sulphatation, elements in short circuit, accidental reverse polarity connection and battery disconnection or bad connection. All these can be easily detected and removed during installation and operation by the “diagnostic LED” Blinking Code. Continuous battery efficiency monitoring, reduces battery damage risk and allows safe operation in permanent connection. This device is suitable for a selection of most common battery types.

By means of built in jumpers it is possible to set preset curves. They are programmed for two charging levels, boost and float/trickle, but can be changed to single charging level by the user. In addition to the SPUBC, Carlo Gavazzi, also provides a selection of Racks for DIN rail mounting of the battery, with battery included upon request from 1.2Ah up to 12Ah capable of providing, depending upon load, from a few minutes to several hours of charge reserve.

### Approvals



### Ordering Key

SPUBC 24 120

Power supply UPS battery charger

Battery and Output Voltage Vdc

Output power W

### Output Data

Output voltage	24Vdc	Power dissipation @ Max. Load	17W
Nominal current	5A	Short circuit protection	Yes
Rated output current	5A	Over load protection	Yes
Efficiency (@50% of rated current)	≥90%	Overvoltage output protection	Yes (typ. 35Vdc)
Turn on delay	1S (Max)	Thermal protection	Yes
Max Capacitive load startup	Unlimited		



## Input Data

Nominal input voltage	115 ~ 230 ~ 277Vac	Frequency	47 ÷ 63Hz
Voltage range	90 ÷ 305Vac	Input current (115 - 230Vac)	2.8 ~ 1.3A
Inrush current		Internal fuse (not replaceable)	4A
(V <sub>n</sub> - I <sub>n</sub> nom. Load) I <sup>2</sup> t	≤ 11A ≤ 5ms	External fuse MCB curve B	10A

## General Data

Insulation voltage		Dimensions W x H x D	65 x 115 x 135mm
IN / OUT	3000Vac	Weight	0.6Kg approx.
IN / GND	1605Vac	Operating temperature	-25°C ~ 70°C
OUT / GND	500Vac	Derating T <sup>a</sup> > 50°C	-2.5% (I <sub>n</sub> )/°C
Protection Degree		Storage temperature	-40°C ~ +85°C
EN/IEC 60529	IP20	Ambient Humidity	RH 95%
Pollution degree	2		not condensing
Connection wires size	2.5mm (24-14AWG)	Cooling	Natural air flow, convection
Protection class	I (IEC61140)		
(with PE connected)			

## Battery Charger (@ 25°C Ambient, I<sub>nom</sub>)

Boost charge	28.8Vdc	Charging current Adjustment	20 ~ 100% I <sub>nom</sub>
Max. Boost charge duration	15h	Reverse battery protection	Yes
Min. duration boost charge	1min.	Sulfated battery check	Yes
Trickle charge	27.5Vdc	Detection of battery element in short circuit	Yes
MTBF IEC 61709	> 300.000h	Quiescent current	≤ 5mA
Recovery charge	2 ~ 16Vdc	Charging Profile	3 stage
Max. Charging current	5A ± 5%	Remote input control	Boost / Trickle

## Power Supply Output (@ 25°C Ambient, I<sub>nom</sub>)

Output voltage	22 ~ 28.8Vdc	Max current output load	15A x 4s Max
Output Current	1.1 x I <sub>nA</sub> ± 5%	Total discharge protection	19 ~ 20Vdc batt
Continuous current (without battery)	5A	Flat battery alarm	20 ~ 21Vdc batt
Continuous current (with battery)	10A		

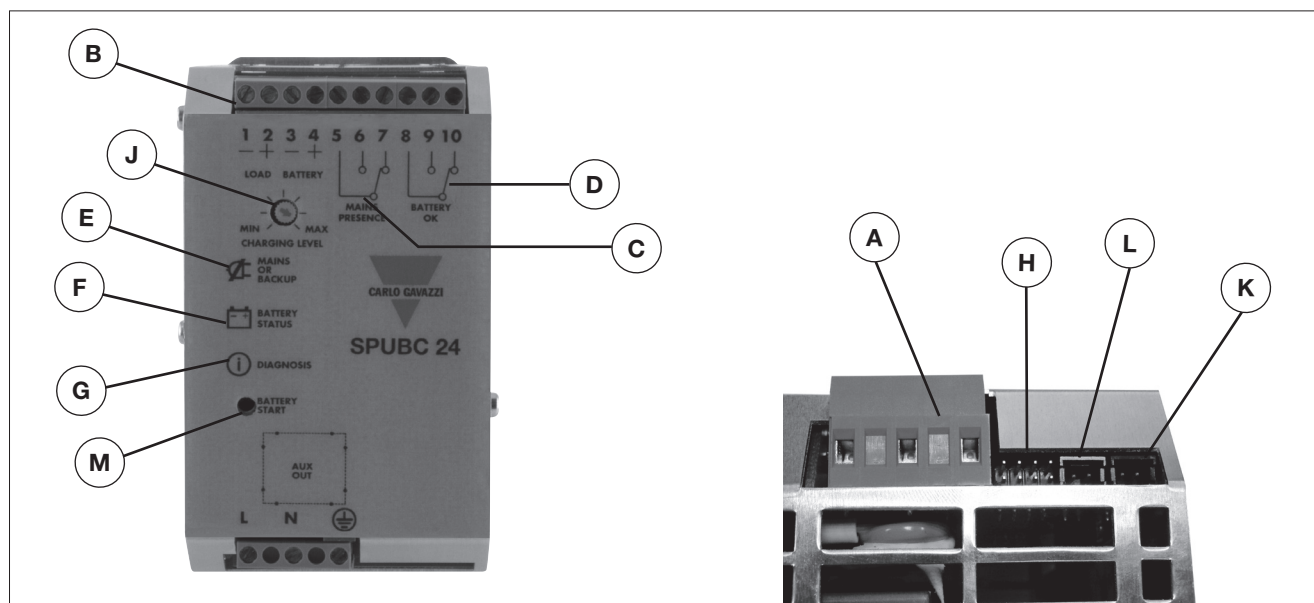
## Signal Outputs

Mains or backup power	Yes	Relay outputs	
Low battery	Yes	Type	2 x SPDT
Battery fault	Yes	Max. AC Load AC1	1A @ 60Vac
		Max. DC Load DC1	1A @ 30Vdc
		Min. Load	1mA @ 5Vdc

## Signal Port RJ45 (RJ 45 Auxiliary Output behind the label; remove the window label to find the connector)

Battery temp. Compensation	Yes. It is possible connect a temperature sensor, for ambient temperature charging compensation.	Can Bus	No
Remote monitoring display	Yes. It is possible connect an external display to remote N° 3 led of the internal device.		

## Signals and Terminals

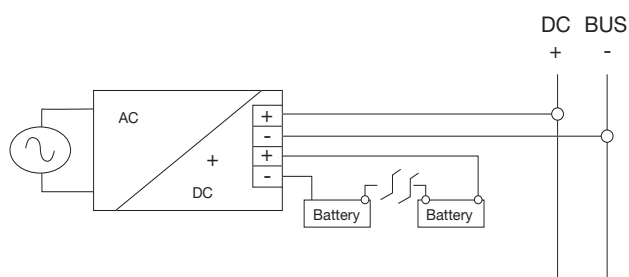


- A:** Mains Terminals (input)
- B:** Battery and load terminals
- C:** Backup mode output
- D:** Battery status output
- E:** Backup mode LED
- F:** Battery status LED

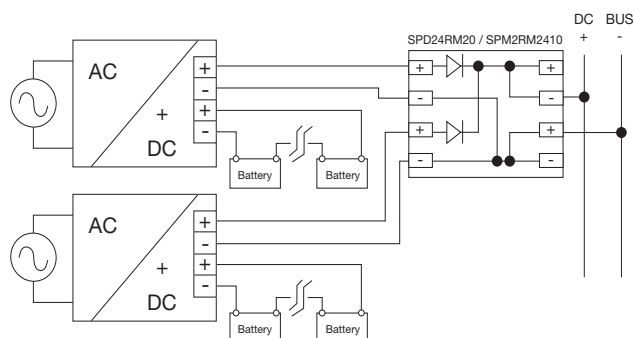
- G:** Diagnosis LED
- H:** Battery configuration jumpers
- J:** Charging level adjustment (from 20 to 100%)
- K:** Fast charge enabling jumper
- L:** Remote battery start
- M:** Local battery start

## Output Power Connections

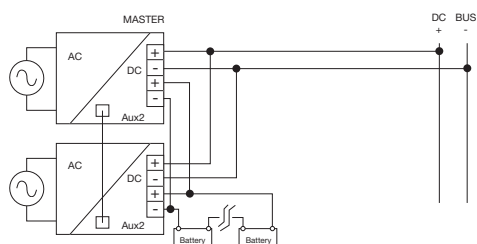
### Normal connection



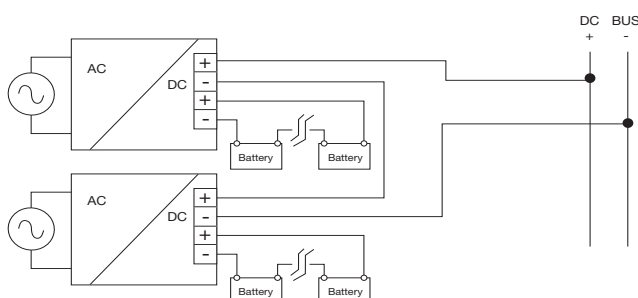
### Parallel connection "Redundancy"



### Parallel connection "Double Power"



### Series connection



## Buffering Time / Battery Capacity

Battery capacity Load	1.2Ah SPUBATxx1A2	3.2Ah SPUBATxx3A2	7.2Ah SPUBATxx7A2	12Ah SPUBATxx12	100Ah
1.5A	20'	60'	200'	400'	-
3A	8'	30'	120'	240'	-
5A	3'	15'	55'	100'	-
7.5A	2'	10'	30'	60'	-
10A	no	7'	20'	45'	20h

## Accessories

Ordering Code	Description	Type	Voltage	Battery Capacity	Max. Charging current	Weight	Width mm	Height mm	Depth mm
SPUBAT241A2	DIN Rail Rack with 1.2Ah Battery	Lead Acid VRLA	24V	1.2Ah	0.3A	1.5Kg	62	185	120
SPUBAT243A2	DIN Rail Rack with 3.2Ah Battery	Lead Acid VRLA	24V	3.2Ah	0.8A	3Kg	82	200	160
SPUBAT247A2	DIN Rail Rack with 7.2Ah Battery	Lead Acid VRLA	24V	7.2Ah	1.7A	5.5Kg	145	210	130
SPUBAT1A2	Empty DIN Rail Rack for 1.2Ah Battery	-	12V or 24V	Designed for 1.2Ah	-	?	62	175	120
SPUBAT3A2	Empty DIN Rail Rack for 3.2Ah Battery	-	12V or 24V	Designed for 3.2Ah	-	?	82	200	160
SPUBAT7A2	Empty DIN Rail Rack for 7.2Ah Battery	-	12V or 24V	Designed for 7.2Ah	-	?	145	210	130
SPUBAT12	Empty DIN Rail Rack for 12Ah Battery	-	12V or 24V	Designed for 12Ah	-	?	210	210	210