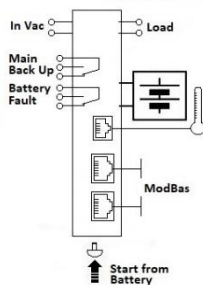


CBI2801224A ALL In One



Input: Single-phase 100 - 240 - 277 Vac
Output Selectable Load: 12 Vdc 15A; 24 Vdc 10A
Output Battery charging: 12 Vdc 15A; 24 Vdc 10A
Suited for the following battery types: Open Lead Acid, Sealed Lead Acid, Lead Gel, Lead Crystal, Ni-Cd, Ni-MH, Li-Ion
Automatic diagnostic of battery status. Charging curve IUoU, constant voltage and constant current Battery Life Test function (Battery Care)
Four charging levels: Boost, Absorption, Float, Recovery
Protected against short circuit and inverted polarity
Signal output (contact free) for discharged or damaged battery
Signal output (contact free) for mains or Back-UP
Modbus RTU for all parameter battery and system
Protection degree IP20
DIN rail; Space saving

Technical features

Thanks to the All In One units (DC-UPS), it will be possible to optimize power management. The available power is automatically allocated between load and battery, supplying power to the load is the first priority of the unit thus it is not necessary to double the power, because also the power going to the battery will go to the load if the load so requires. The maximum available current on the load output is 2 times the value of the device rated current I_n . We call "Battery Care" the concept base on algorithms that implement rapid and automatic charging, battery charge optimization during time, flat batteries recovery and real time diagnostic during installation and operation. The Real Time Auto-diagnostic system, monitoring battery faults such as, battery Sulfated, elements in short circuit, accidental reverse polarity connection, disconnection of the battery, they can easily be detected and removed by help of Blink Code of Diagnosis Led; during the installation and after sell. The continuous monitoring of battery efficiency, reduces battery damage risk and allows a safe operation in permanent connection. Each device is suited for all battery types, by means of jumpers it is possible setting predefined curves for Open Lead Acid, Sealed Lead Acid, Gel, Ni-Cd (option). They are programmed for two charging levels, boost and charge, but they can be changed to single charging level by the user. A rugged casing with bracket for DIN rail mounting provides IP20 protection degree. They are extremely compact and cost-effective.

Climatic Data

Ambient temperature (operation)	-25 ÷ +70°C
De Rating $T^a > 50^\circ\text{C}$	- 2.5% (I_n) /°C
Ambient temperature Storage	-40 ÷ +85°C
Humidity at 25 °C no condensation	95% to 25°C
Altitude: 0 to 2 000m - 0 to 6 560ft	No restrictions
Altitude:	De-rating
2 000 to 6 000m - 6 560 to 20 000ft	5°C/1000m
Cooling	Auto convection

General Data

Insulation voltage (IN/OUT)	3000 Vac
Insulation voltage (Input / Earth, PE)	2000 Vac
Insulation voltage (Out Load & Battery / Earth, PE)	500 Vac
Insulation voltage (Out Load & Battery / Fault System & Main or Back Up terminal)	500 Vac
Insulation voltage (Out Load & Battery / Aux2 & Aux3 / Fault System & Main or Back Up terminal)	500 Vac
Leakage Current	< 5mA
Protection Class (EN/IEC 60529)	IP20

Reliability: MTBF IEC 61709	> 300.000 h
Pollution Degree Environment	2
Connection Terminal Blocks screw Type	2,5mm(24-14AWG)
Protection class (PE Connected)	I, with PE
Dimensions (w-h-d)	115x116x135 mm
Weight	0.98 kg

Input Data

CE Input Voltage	100-277 Vac (±10%)
UL Input Voltage range	100-240 Vac (±10%)
Input Current (100 - 240 - 277 Vac)	5.5 - 3.0 - 2.0 A
Power Factor typ. (115 - 230 Vac)	0.6 - 0.47
Input Inrush Current Limiter	NTC
Inrush Current ($V_n - I_n$ nom. Load) I^2t	≤ 16 A ≤ 5 msec.
Frequency	50 - 60 Hz (±6%)
Internal fuse (not replaceable)	6.3 A
External Fuse (recommended)	16 A MCB curve B

Output Data (internal power supply)

Select Output Voltage 12 or 24 Vdc.	By: Jumper Enabling
Continuous current (without battery)	$I_{load}=I_n$
Continuous current (With battery)	$2 \times I_n$
$I_{load}=I_n+I_{batt}$	
Max. current Output Load (Main + Battery) I_{load} (4 sec.)	3 x I_n max.
Max. current Output Load (Back Up) I_{load} (4 sec.)	2 x I_n max.
Start From Battery Without Main (Remote Input Control)	RTCONN (cable) Push Button
Time Buffering; min (switch output off without main input)	by MODBUS RTU RS485 or via ADEL View System
Efficiency 230 Vac 24Vdc (rated current)	≥ 91 %
Ripple and Noise (20 MHz Bandwidth)	80 mV _{pp} (max)
Turn-On delay after applying mains voltage	1 sec. (max)
Start up with Strong Load (capacitive load)	Yes, Unlimited
Dissipation power load max (W)	28
Short-circuit protection)	Yes
Over Load protection	Yes
Over Voltage Output protection	Yes (typ. 35 Vdc)
Overheating Thermal protection	Yes

Load Output 24 Vdc (jumper selection)

Output voltage (at I_n)	22 - 28.8 Vdc
Nominal current $I_n = I_{load}$	10 A ± 5% I_n
Threshold alarm Battery almost flat	20 - 21 Vdc batt
Protections against total discharge	19 - 20 Vdc batt

Load Output 12 Vdc (jumper selection)

Output voltage (at In)	10 - 14.4 Vdc
Nominal current In = Iload	15 A ± 5% In
Threshold alarm Battery almost flat	10 - 11 Vdc batt
Protections against total discharge	9 - 10 Vdc batt

Battery Output

Output Voltage Battery	Follow Out Load
Boost-Fast charge Switch Configuration 25°C (V/cell)	Lead Acid: 2.4 Ni-Cd: 1.51 Ni-Mh: 1.5 Li-ion: 3.65
Float Charge Switch Configuration 25°C (V/cell):	Lead Acid: 2.23; 2.25; 2.27; 2.3 Ni-Cd: 1.4 Ni-Mh: 1.5 Li-ion: 3.45
Max. Time Boost-Bulk charge (Typ. at In)	15 h
Min. Time Boost-Bulk charge (Typ. at In)	1 min.
Charging current max I _{batt}	In ± 5%
Charging current limiting I _{adj}	0.2 ÷ 100 % / I _{batt}
Recovery Charge 12V / 24Vdc	2 - 10V / 2 - 20V
Reverse battery protection	Yes
Sulfated battery check	Yes (by Jumper)
Short circuit Element Detection	Yes
Quiescent Current on the battery	≤ 5 mA
Charging Curve automatic: IUoU	4 stage
Remote Input Control (RTCONN cable)	Boost / Float
Threshold alarm Battery almost flat 12V/24V	10 - 11 / 20 - 21 V _{batt}
LVD. (Protections against total Batt. discharge) 12V / 24V	9 - 10 / 19 - 20 V _{batt}

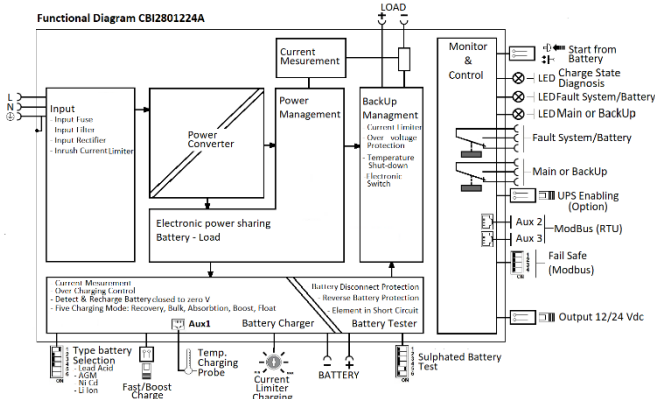
Signal Output (free switch contacts)

Main or Backup Input Power	Yes
Low Battery	Yes
Fault Battery or system	Yes

Type of Signal Output Contact

Dry Contact. Current can be switched (EN60947.4.1): Max: DC1: 30 Vdc 1 A; AC1: 60 Vac 1A (Resistive load) Min: 1mA at 5 Vdc (Min permissive load)

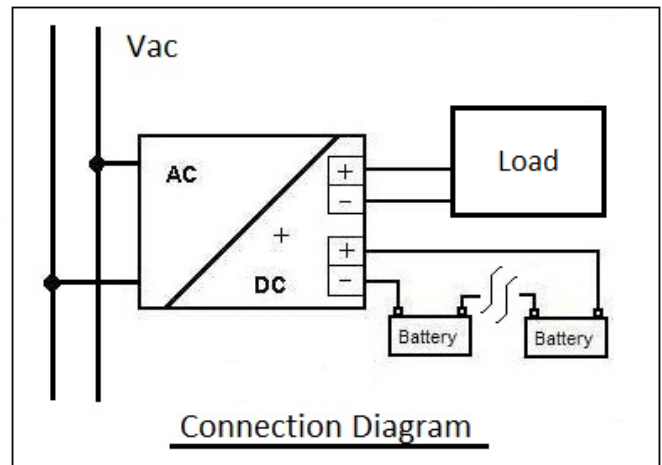
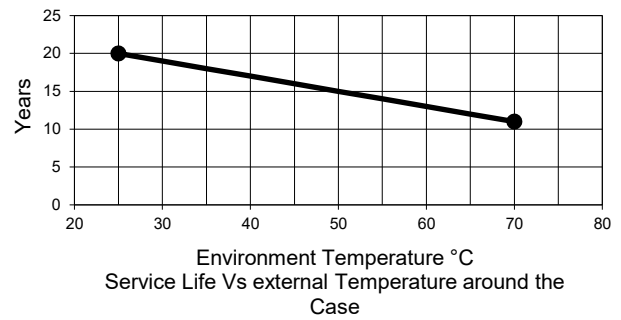
Fault System / Low Battery	C	NC	NO
Main or Back Up	C	NC	NO



Signal Input / Output (RJ45)

Temp. Comp. Battery (with external probe)	RJ Temp (cable): Aux 1
Remote monitoring data: Protocol:	RJ45: Aux 2 - Aux 3 Modbus RTU (RS485)
UPS Disabling	Yes (RTCONN cable)

Service Life



Accuracy Measurement through ModBus (RTU)

Accuracy on the Input side

Measure of the Main Input voltage at 47- 63Hz; ±25°C; 90 - 135:180 - 305	± 1 % of Full Scale Vac
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Accuracy on the output side

Measure of the Output voltage Load Side Range: 10 - 31Vdc	± 1.5% of Full Scale Vdc Out
Measure of the Output current Load Side Range: 0-15A	± 1.5% of Full Scale I Out
Measure of the Output voltage Battery Side Range: 0-15A	± 1.5% of Full Scale Vdc Out
Measure of the Output current Battery Side Range: 0-15A	± 1.5% of Full Scale I Out
Temperature Probe Range: -20 - 60°C	± 2 °C

Norms and Certifications

- Conformity to European Directives: 2014/30/UE (EMC), 2014/35/UE (LVD), 2011/65/EU (RoHS).
- Conformity to UK Regulations: S.I. 2016/1091 (EMC), S.I. 2016/1101 (Safety), S.I. 2012/3032 (RoHS).
- Safety standards: EN IEC 62368-1.
- EMC Standards: EN IEC 61000-6-2 (Immunity), EN IEC 61000-6-4 (Emission).
- UL62368-1 3rd Edition and CAN/CSA C22.2 No. 62368-1:19 3rd Edition (file E353188).
- Charging cycle DIN41773.