

BATTERY CHARGER

D.C POWER SUPPLY



CPN, HP, HPT series



PRELIMINARY

AEES Company, specialist in emergency power supply for various applications provides a wide range of products. The charger rectifier is the common part of all these systems.

CHARGER RECTIFIER

LOW RATING CHARGER
for stationary battery
CE-CN.D-CPN.D/E-CMV Series
20039 leaflet

UNINTERRUPTIBLE POWER SUPPLY
ASD-ASC SERIES
20040 - 20050
LEAFLETS

FUNCTIONALITY
RELIABILITY
PERFORMANCE
STANDARD OR
CUSTOM DESIGN

DC POWER SUPPLY WITH BATTERY
IPP - ISP- ISPP - SPP Series
20043 - 20044
leaflets

EMERGENCY LIGHTING
EPP-ESP-PCC-SCC Series
20079 - 20080
leaflets

BATTERY CHARGER UNIT

DC POWER SUPPLY

CPN-HP-HPT series : this 20046 leaflet is dedicated to them

REFERENCES

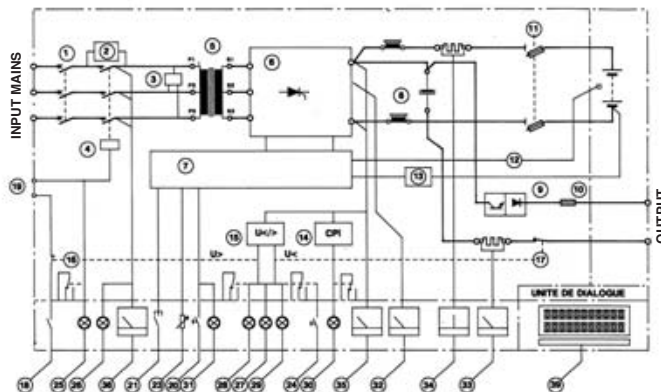
APPLICATIONS :

Automatisms (relays, PLC...)
Telephone exchanges (PABX)
Switchboards for LV, MV, HV, Switchgears
Emergency lighting
Computers, data processings
Alarm systems
Machines (ticketing - tooling...)
etc...

USES :

Transport (Subway, airport, railways...)
Telecommunications
Industry (oil, chemical, car...)
Marine (Veritas, Lloyds...)
Army
Buildings (Sky scraper, commercial center...)
O.E.M.
Exportation (5 mainlands).

SYNOPTIQUE



EQUIPMENT

		CPN		HP		HPT	
		A	B	A	B	A	B
INPUT	1 Overload and short circuit protection :						
	Circuit breaker	*	*	*	*	●	●
	Fuse	●	●	●	●	*	*
	2 Pre-magnetization circuit (Rush of current limitation)	*	*	*	*	*	*
3 Surge suppressor according to CEI 801.5.	●	●	●	●	●	●	
4 Incoming circuit contactor	●	●	●	●	●	●	
RECTIFIER	5 Input transformer	●	●	●	●	●	●
	Regulated rectifier module including :						
	6 Diodes / thyristors bridge rectifier.	●	●	●	●	●	●
	6 pulses rectifier bridge	*	*	*	*	*	*
«MCD» type rectifier bridge system providing same performances as a 12 pulses rectifier, but with higher reliability. As example (N version) : - Cos π 0,92 - THD (current) 15%.....	*	*	*	*	*	*	
7 Electronic control unit.	●	●	●	●	●	●	
OUTPUT	8 Smoothing unit :						
	- Standard : LC type	●	●	●	●	●	●
	- Improved : π type	*	*	*	*	*	*
	9 Output voltage limitation :						
	- Transistorized ballast	*		*		*	
	- Diodes dropper	*		*		*	
	10 Overload and short circuit protection						
	Output circuit : fuse	●	●	●	●	●	●
	Circuit breaker	*	*	*	*	*	*
	11 Battery circuit : fuse isolator (Depending on configuration)	●/*		●/*		●/*	
	Circuit breaker	*		*		*	
	12 Battery temperature sensor for U = f (θ) regulation	*		*		*	
	13 Line voltage drop compensation device (far away battery, high power supply...)	*	*	*	*	*	*
	14 Earth fault monitor (CPI)	*	*	*	*	*	*
	15 Voltage monitoring of charger voltage	●		●		●	
	Voltage monitoring of battery voltage	●		●		●	
	Voltage monitoring of output voltage	*	*	*	*	*	*
16 Charger switch-off when over battery voltage	●		●		●		
17 Output switch-off when under battery voltage	*		*		*		
CONTROL - MONITORING	18 « on-off » switch	●	●	●	●	●	●
	19 Remote control of the charger (for instance to enslave the charge operation, to the battery room ventilation)	●	*	●	*	●	*
	20 Switch or push button for manual charge control	*		*		*	
	21 Selector for Charge mode - Automatic mode - Manual mode	*		*		*	
	22 Voltage selector for multi voltages system	*	*	*	*	*	*
	23 Adjustable output voltage by potentiometer	*	*	*	*	*	*
	24 Push button faults reset	●		●		●	
	Signalling by L.E.D. or signal lamp (S) and free remote contact (R) :						
	25 A.C. healthy	S	S	S	S	S	S
	26 Charge on	S	S	S	S	S	S
	27 Charger fault	*		*		*	
	28 Charger voltage fault (overvoltage)	SR	SR	SR	SR	SR	SR
	29 Battery voltage fault (undervoltage)	SR	SR	SR	SR	SR	SR
	30 Earth fault	*		*		*	
	31 Manual charge on	S	S	S	S	S	S
	Meters (72 x 72 - 90° scale) :						
	32 Charger flow	●		●		●	
	33 Output flow	*	●	*	●	*	●
	34 Charge and discharge battery current	*		*		*	
	35 Output voltage or battery voltage	●	●	●	●	●	●
	36 Input voltage	*	*	*	*	*	*
	37 Digital indicator against moving coil indicator	*	*	*	*	*	*
	38 U and I measuring transducers	*	*	*	*	*	*
	39 Man-machine communication-unit, maintenance aid, battery supervising, remote transmission	*	*	*	*	*	*
40 Interface (RS 232 - RS 485 - RS 422)	*	*	*	*	*	*	
41 Automatic battery test device	*		*		*		
42 Additional outgoing feeders by circuit breakers	*	*	*	*	*	*	
43 Special make following specification	*	*	*	*	*	*	

A Battery charger : system combined with a battery
B D.C. power supply : static power supply operating without battery

● Standard
 * Option

CHARGING FEATURES

The AEES chargers can be combined with most of battery type.

However, two safety measures must be taken in order to guarantee an optimal mode of operation and to increase the battery lifetime :

- A - Adjust the charging mode to the battery type.
- B - Provide the proper protection to the battery.

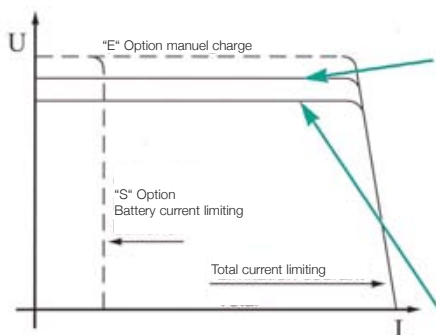
A . CHARGING MODE

TWO BASIC VERSIONS

N version

One automatic voltage level

Mainly used for free maintenance sealed lead acid battery but also suitable to lead acid battery and NiCd battery of vented type.



X version

Two automatic voltage levels :

The rapid charging mode operates during 12 hours in standard version (adjustable between 1 H and 15 H on option). This mode operates after power supply interruption upper than 30 seconds in standard version (adjustable between 3 and 5 min on option).

- The floating charging mode (automatically resumed after charging mode).

THREE OPTIONS

T OPTION

Charge voltage regulation following temperature. This option is interesting if the battery is exposed to high and long fluctuation of temperature.

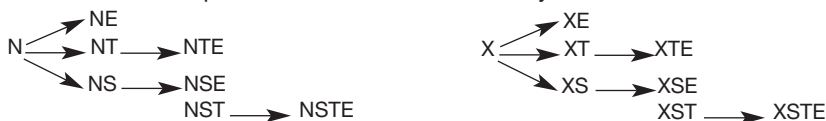
S OPTION

Current limiting according to the battery charging current (total current limiting as standard). This option is very welcome when high rating chargers (I) are combined with low battery capacity (C) (in fact for quotient below 3 (C/I ratio), and mainly for sealed lead acid battery with gas recombination.

E OPTION

Manual mode (Equalizing charge) often used for battery commissioning or renewing of vented battery performance after a long period of float charge operation.

Each option can be combined with any basic version



B . PROTECTION

An electronic voltage control unit totally independant of the charger regulation permits :

- To be in accordance with the NF C 58-311 and NF C 15-100 (see appendix chapter 554), with required voltage control device independant of the charger regulation in order to switch « off » the charge when the voltage reaches the level corresponding to the maximal battery charging current.
- To be in accordance, when combined with « S » option, with the rules link to the air circuit cooling of the battery case in closed rooms.

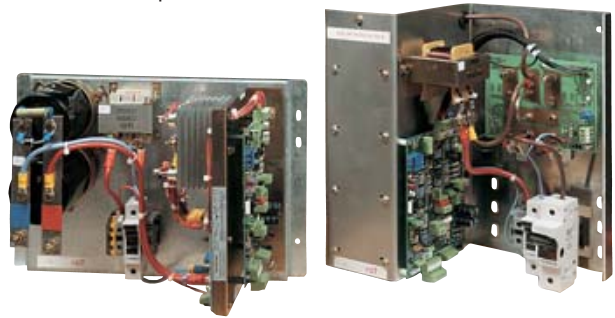


RANGE FITTING

1 PHASE INPUT	CE	1A					
		2A	CE-CN.D-JUPITER SERIES **				
		3A	see 20039 / 20065 leaflet				
		4A					
		CN	8A				
			12A		CPN 12-48 CAN	HP (T) 12-110 CAN CB1	HP (T) 12-220 CAN CB1
	CPN *	18A		CPN 18-24 CAN	CPN 18-48 CAN	HP (T) 18-110 CAN CB1	HP (T) 18-220 CB1
		25A	CPN 25-12 CAN	CPN 25-24 CAN	CPN 25-48 CAN	HP (T) 25-110 CB1	HP (T) 25-220 CB1
		30A	CPN 30-12 CAN	CPN 30-24 CAN	CPN 30-48 CAN	HP (T) 30-110 CB1	HP (T) 30-220 CB1
		40A	CPN 40-12 CAN	CPN 40-24 CAN	CPN 40-48 CAN1	HP (T) 40-110 CB1	HP (T) 40-220 CDN
		50A	CPN 50-12 CAN 1	CPN 50-24 CAN1	HP (T) 50-48 CAN1	HPT 50-110 CB1	HPT 50-220 CDN
		HP *	60A	HP 60-12 CB 1	HP (T) 60-24 CB1	HP (T) 60-48 CB1	HPT 60-110 CB1
65A			HP 65-12 CB 1	HP (T) 65-24 CB1	HP (T) 65-48 CB1	HPT 65-110 CB1	HPT 65-220 CDN
80A			HP 80-12 CB 1	HP (T) 80-24 CB1	HP (T) 80-48 CB1	HPT 80-110 CN	HPT 80-220 CN
100A			HP 100-12 CB 1	HP (T) 100-24 CB1	HP (T) 100-48 CB1	HPT 100-110 CDN	HPT 100-220 CDN
125A			HP 125-12 CB 1	HP (T) 125-24 CB1	HP (T) 125-48 CB1	HPT 125-110 CDN	HPT 125-220 MC 188
3 PHASE INPUT	HPT	160A	HPT 160-12 CB 1	HPT 160-24 CDN	HPT 160-48 CDN	HPT 160-110 MC 188	HPT 160-220 MC 188
		200A	HPT 200-12 CB 1	HPT 200-24 CDN	HPT 200-48 CDN	HPT 200-110 MC 188	HPT 200-220 MC 188
		250A	HPT 250-12 CDN	HPT 250-24 CDN	HPT 250-48 CDN	HPT 250-110 MC 188	HPT 250-220 MC 188
		300A	HPT 300-12 CDN	HPT 300-24 CDN	HPT 300-48 CDN	HPT 300-110 MC 188	HPT 300-220 MC 188
		400A	HPT 400-12 CDN	HPT 400-24 CDN	HPT 400-48 MC 188	HPT 400-110 MC 188	HPT 400-220
		500A	HPT 500-12 MC 138	HPT 500-24 MC 188	HPT 500-48 MC 188	HPT 500-110 MC 188	
		600A	HPT 600-12 MC 138	HPT 600-24 MC 188	HPT 600-48 MC 188	HPT 600-110 MC 188	
		700A	HPT 700-12 MC 138	HPT 700-24 MC 188	HPT 700-48 MC 188		
		800A	HP 800-12 MC 188	HPT 800-24 MC 188	HPT 800-48 MC 188		
		1000A	HPT 1000-12 MC 188	HPT 1000-24 MC 188	HPT 1000-48 MC 188		
>1000 A by modules paralleling							

Please consult us

- Cabinet fitting :
This table describes our charger or DC power supply range fitted in cabinet (see last page).
- Chassis mounting (open frame) or rack mounting :
Available on request.



HP charger (chassis version) HP 12 - 120 / HP 50 - 120

CHARGER + BATTERY UNIT

- Working principle :
Different possibilities are permitted : see on following page.
- Fitting :
Different possibilities are permitted : see last page.
- When the charger is provided with the battery, these two units can be combined with different ways :
 - charger with housing and battery on stand.
 - charger and battery in cabinet fitting.
 Thus, the battery is mounted :
 - either in the same cabinet
 - either on the bottom side
 - or with on additional case
 - or in a second cabinet

In the case of battery of the vented type (NiCd for example), the battery can be provided on special sliding drawer in order to help the access and so the maintenance.

DEFINITION

Depending on the specification you need, we are at your disposal to determine which configuration is best suited (working principle, charger rating, battery capacity, dimensions...).

OTHER PRODUCTS

- Automatic battery chargers CE - CN.D - CPN.D - CMV - Jupiter : see leaflet N°20039/20065.
- Low power rating DC powers supplies with battery : see leaflet N°20043.
- Low power rating regulated DC power supplies (RFI series) or non regulated DC power supplies (XFI, XTI series) : see leaflet 20048.

ENERGY STATION

Purpose The combination of a charger with a battery constitute a DC power supply with a back up time in case of mains failure.

Operating This combination permits different principles such as these principals :

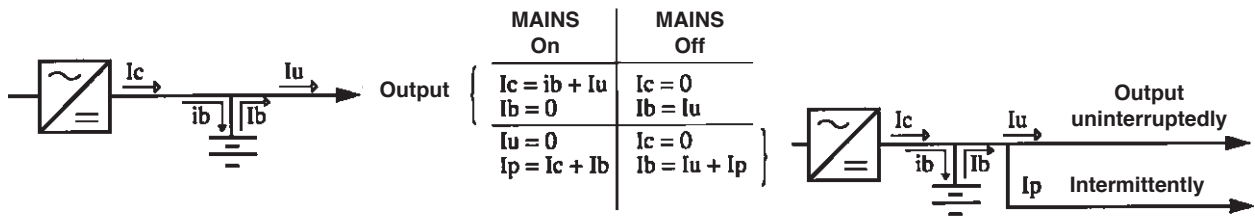
INDÉPENDENT SYSTEM

MAINTAINED TYPE

When mains is "on" the charger supplies both the load and the battery recharge.

NON - MAINTAINED TYPE

When mains is "on", the charger supplies only the battery recharge. The load is either provided only by the battery when mains is "off", or provided intermittently by the battery when mains is "on".



SYSTEMS REDUNDANT OR IN STAND-BY

DUAL PARALLELING

The two chargers (diagram with one battery) or two units «charger + battery» (diagram with two batteries) operate in parallel.

Both of them are able to supply the total output in case of stopping of the faulty one.

PILOT + STAND-BY

The two chargers (diagram with one battery) or two units «charger + battery» (diagram with two batteries) do not operate in parallel. In case of pilot failure, the stand-by unit (slave) starts up and supplies the output with no transfer time thanks to the battery.

Diagram with two batteries

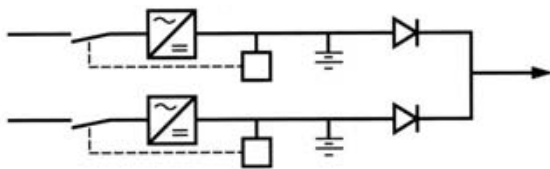
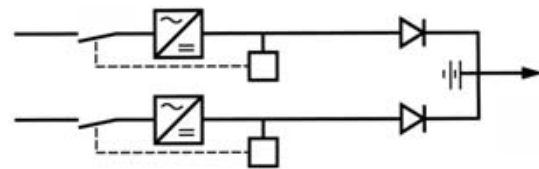
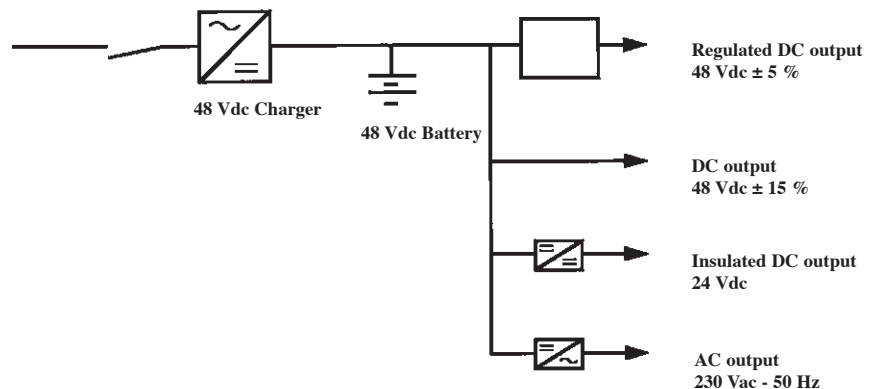


Diagram with one battery



AEES, SPECIALIST IN EMERGENCY SUPPLY PROVIDES YOU OTHER DIFFERENT WORKING PRINCIPLES

For some applications it can be interesting to have only one energy station which supplies all the types of loads DC or AC current regulated or not.



MECHANICAL DATA

A wide range of cases, cabinets, battery compartments allows many possibilities

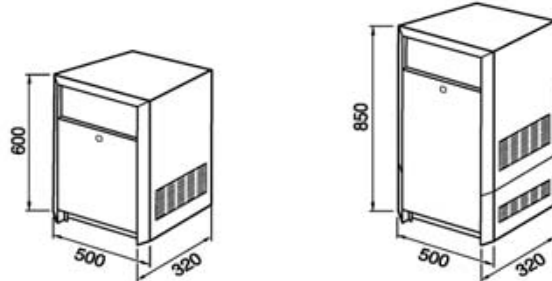
STANDARD MODEL :

- A cabinet including :
- charger and its accessories
 - battery space if need

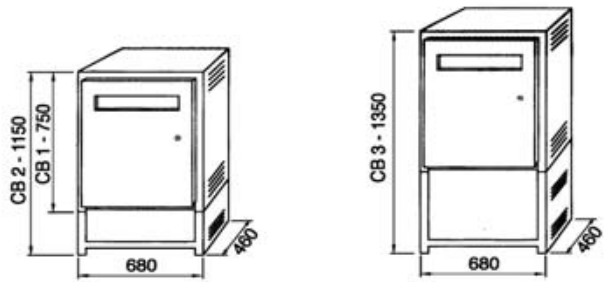
OTHER SOLUTION :

- one cabinet for charger
 - one cabinet for battery
- or
- one cabinet for charger
 - one wooden stand or metallic rack for battery

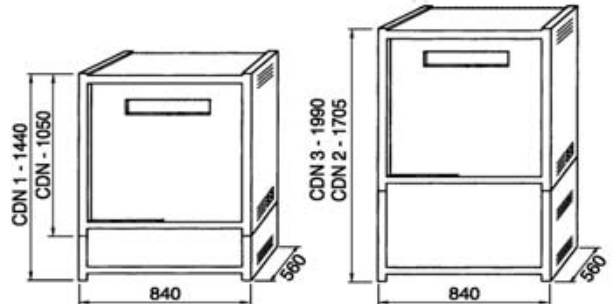
CAN / CAN1



CB



CDN



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MC

Code/mm	H	W	D
MC 136	1300	600	650
MC 138	1300	800	650
MC 186	1800	600	650
MC 188	1800	800	650

