CE

“Ecopoint HF1”

Single-phase version with PBM205 control board

- USER MANUAL -

Before connecting the battery charger to the power supply and the battery, **CAREFULLY READ THE INSTRUCTIONS BELOW**.

CAUTION! The models belonging to the category identified as 2KW in Table 3.1 on page 3, comply with **EMC class A + B** as established by the CEI EN 61000-6-2, CEI 61000-6-3 and CEI EN 61000-6-4, that is both for **RESIDENTIAL** and **INDUSTRIAL ENVIROMENTS**.
The models belonging to the category identified as 4KW are in conformity **EMC class A** as established by the CEI EN 61000-6-4 (2002) and CEI EN 61000-6-2 (2002), that is for **INDUSTRIAL ENVIROMENTS**.

CONTENTS

ATTENTION

The **USB** port is a service port to be used only for programming the charging parameters and downloading of historical data and graphs.
You must **disconnect the charger from USB cable during charging**, to prevent EMI noise from interfere with the charging process with unpredictable consequences for the battery charger and battery.

"HF7" High-Frequency Battery Charger

1) USE AND OPERATION

To use this battery charger you must comply with safety requirements contained in laws and regulations and in the provisions set out by the local authorities.
Obligations of the "user" : based on these user instructions the *"user"* is any natural or legal person that uses the charging equipment directly or the person using it on the half of said person. For special cases, eg. leasing, rental, the *"user"* is the person who, under the arrangements agreed between the owner and the user of charging equipments, takes on the obligations below.
The *"user"* will be responsible for the site where the appliance is used. He or she must check if the influence of the battery charger interferes with particularly sensitive equipment. The place of use must be chosen so that using the equipment (high direct currents generate interfering magnetic fields) does not adversely affect the operation of electromagnetic devices and magnetic data supports (such as pacemakers, monitors, discs and magnetic disks, magnetic tapes, magnetic cards, watches, etc).
The *"user"* should make sure that the use of charging equipment complies with current regulations and that any action that may endanger the life and health of the user or any third party is avoided, as well as avoiding any damage to property.
The *"user"* must make sure that users and operators have read and understood these instructions and comply with safety regulations, safety standards from a technical point of view and use and maintenance provisions.

2) INSTALLATION AND SAFETY WARNINGS

Before connecting the battery charger to the power supply and the battery, **CAREFULLY READ THE INSTRUCTIONS BELOW.**

- **FOR CORRECT FUNCTIONING AND IMPROVED YIELD, THE BATTERY CHARGER MUST BE POSITIONED ON THE WALL IN THE CORRECT DIRECTION AND FIXED WITH PLUGS THROUGH THE RELATIVE SLOTS; PAY ATTENTION NOT TO OBSTRUCT THE VENTILATION SLOTS HOLES.**
- Only specialised and authorised staff can carry out jobs that require the battery charger to be opened.
- Before operating the battery charger, the insulation of mains connection cables and of the battery connectors must be verified.
- It is necessary to intervene on electrical equipment, thoroughly trained personnel only.
- Disconnect the mains connection before connecting or disconnecting the battery.

- **CAUTION !!** The battery being charged generates explosive gases, therefore it is prohibited to smoke in proximity of the machinery; avoid naked flames and or sparks and proximity with other machinery that lead to hazardous circumstances for people or property.
- This battery charger contains electrical components which can generate electric arcs and sparks, so if used in enclosed areas it must be positioned in a site suitable to its function; anyhow the standard battery charger (IP 20) must be used in enclosed and well ventilated areas and not exposed to rain and/or splashing water, placed on sound, levels floors. Dusty areas or areas with water sources, sources of heat and humidity should be particularly avoided. DO NOT place the battery charger on surfaces and/or shelves made with wood or other flammable materials or accumulate various materials near the battery charger and place any items or containers with liquids on the lid.
- To prevent dangers of electrocution, the battery charger **must be connected to a current socket connected to earth**. Moreover, the current socket to which the battery charger will be connected must be proportionate to the power of the same and must be protected by appropriate electric equipment in compliance with Standards (fuses automatic switch). For sufficient selectivity, the protection must have calibration of at least 10 % over the equipment current absorption. Moreover the appliance must be protected regarding contact voltage that is too high, in compliance with the provisions envisioned by Local Authorities.
- Always use special bipolar connectors.
- DO NOT use additional cables to extend the existing electrical connections.
- The charging appliance is maintenance-free, except for routine cleaning that must be performed regularly and periodically according to the type of work environment. Before starting to clean the appliance, disconnect the power supply cable from the mains and the connection cables to the battery.

3) CONNECTION TO POWER SUPPLY

It is essential to connect to a current socket proportioned to the power of the installed battery charger.
Ensure to also correctly connect the **earth conductor.**

Tab 3.1

MODEL (2 kW)		Active Power	Absorbed Current (230 V)	Fusible AC	MAINS CABLE
		(W)	(A)	A	mm²
12	50	857	3,7	GG 12	3x2,5
12	60	1029	4,5	GG 12	3x2,5
12	70	1200	5,2	GG 12	3x2,5
24	50	1714	7,4	GG 12	3x2,5
24	60	2057	8,9	GG 12	3x2,5
24	70	2400	10,4	GG 12	3x2,5
36	30	1543	6,7	GG 12	3x2,5
36	40	2057	8,9	GG 12	3x2,5
36	45	2314	10,0	GG 12	3x2,5
48	25	1714	7,4	GG 12	3x2,5
48	30	2057	8,9	GG 12	3x2,5
48	35	2400	10,4	GG 12	3x2,5
72	20	2057	8,9	GG 12	3x2,5
72	25	2571	11,2	GG 12	3x2,5
80	10	1143	5,0	GG 12	3x2,5
80	15	1714	7,4	GG 12	3x2,5
80	20	2286	9,9	GG 12	3x2,5

MODEL (4 kW)		Active Power	Absorbed Current (230 V)	Fusible AC	MAINS CABLE
		(W)	(A)	A	mm²
24	80	2743	11,9	GG 25	3x2,5mmq
24	90	3086	13,4	GG 25	3x2,5mmq
24	100	3429	14,9	GG 25	3x4,0mmq
24	120	4114	17,9	GG 25	3x4,0mmq
36	50	2571	11,2	GG 25	3x2,5mmq
36	60	3086	13,4	GG 25	3x2,5mmq
36	70	3600	15,6	GG 25	3x4,0mmq
36	80	4114	17,9	GG 25	3x4,0mmq
48	50	3429	14,9	GG 25	3x4,0mmq
48	60	4114	17,9	GG 25	3x4,0mmq
48	75	5143	22,3	GG 25	3x6,0mmq
72	40	4114	17,9	GG 25	3x4,0mmq
72	50	5143	22,3	GG 25	3x6,0mmq
80	30	3429	14,9	GG 25	3x4,0mmq
80	40	4571	19,8	GG 25	3x6,0mmq

4) BATTERY CONNECTION

It is recommended to use relevant **bi-polar connectors in compliance with Standards** without the possibility of inversion of the polarity on the battery. Also check **the current connection of the cables in the connector contacts**.
This operation has to be performed by skilled personnel only.

5) VISUAL SIGNALS

This program illustrates the visual signals on the 4 status LEDs during the various operating statuses of the battery charger.

REF	DESCRIPTION	DL4 LED (green)	DL3 LED (yellow)	DL2 LED (green)	DL1 LED (red)	DISPLAY
S1	Power supply from battery only	OFF	OFF	OFF	OFF	OFF
S2	Power supply from mains only	OFF	OFF	OFF	OFF	ON
S3	Power supply from mains and from battery	ON	OFF	OFF	OFF	ON
S4	Autostart execution	BL	BL	BL	BL	ON
F1	Phase 1 – Initial Charge CI	BL	OFF	OFF	OFF	ON
F2-F7	Phase 2 – Phase 7	BL	ON	OFF	OFF	ON
F8	Equaliz. standby	ON	ON	ON	OFF	ON
EQU ON	Equalisation charge ON (in operation)	BL	BL	ON	OFF	ON
					OFF	ON
EQU OFF	Equalisation charge OFF (in standby)	ON	ON	ON	OFF	ON
M	Maintenance	BL	BL	ON	OFF	ON
END	Charging Ended	ON	ON	ON	OFF	ON

Where:
OFF = the LED is off
ON = the LED is permanently on
BL = the LED flashes (Blink, T=1seconds)
- - = the LED can be in any condition

6) DISPLAY LCD

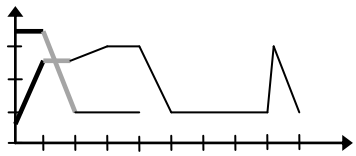
The battery charger offers 3 monitor menus. You can use the P2 button, whose function has been illustrated earlier, to navigate between the menus

Below is a summary of the information reported respectively in the 3 MONITOR displays.

MONITOR1

ROW	EXAMPLE	DESCRIPTION
(1)	Pb 1Pb ST 48V /35A	Technology of the Battery, Type of Curve, Size of the battery charger
(2)	43.3 V 35A	Battery voltage and current
(3)	Ah= 8 Tc= 0h15m29s	Ah charged, Charging time in hours, min, sec
(4)	PhI1 CHARGE	Current charging phase, STATUS or the battery charger (eg. phase = auto start A0, Status= BATTERY NOT CONNECTED)
(5)	-- Messages	Possible fault or status messages

MONITOR2

ROW	EXAMPLE	DESCRIPTION
(1)	43.4V 35A	Battery Voltage and Current
(2)		Active charging profile indicating : - Phase completed (bold line) - Current phase (flashing line) - Phase to conduct (Thin line)
(3)	7Ah PhI1 13m22s	Ah charged, Charging time in hours, min, sec
(4)	-- Message	Possible fault or status Messages

MONITOR3

ROW	EXAMPLE	DESCRIPTION
(1)	CYCLE N= 53 - Ph 2	Number of charging cycle and current charging phase E.g.: charging cycle 53 and Phase 2
(2)	C1ID=1PB ST_01.0001	Unique code of the charging curve
(3)	Vbif=2.39V/el = 57.4V	Battery voltage at the beginning of the phase (Vbif) first expressed as element voltage (V/el) and then as absolute voltage (V)
(4)	Vbef=2.40V/el = 57.7V	Battery voltage at the end of the phase (current phase) (Vbef) first expressed as element voltage (V/el) and then as absolute voltage (V)
(5)	Ibif= 33A Ibef= 21A	Current at the beginning of the phase (Ibif) and current at the end of the phase (Ibef)
(6)	Tf =0h0m Tef=0hm	Time of the individual phase (Tf) and Overall charging time at the end of the phase (Tef)
(7)	Ahf= 0 AhEf = 0	Ah output in the selected phase Ahf) and overall charged Ah (AhEf)
(8)	-- Message	It reports any faults that took place during the charging cycle

7) WARRANTY

- *The machine is guaranteed 12 months from the date of installation.*
- *The warranty covers the parts that result faulty in manufacture or assembly.*
- *The warranty does NOT cover damage caused by bad use and/or incorrect installation.*
- *The warranty becomes NULL AND VOID if tampering is detected.*
- *For any problems, contact the AUTHORISED DEALER.*

CE DECLARATION OF CONFORMITY

file: CE Declaration-HF7 4K-rev0-28 09 2011.doc

DECLARATION OF CONFORMITY

We

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declare under our sole responsibility that the following product

Product type: BATTERY CHARGER
Name: HF7
Models:
24V/80A, 24V/90A, 24V/100A, 24V/120A
36V/50A, 36V/60A, 36V/70A, 36V/80A
48V/50A, 48V/60A, 48V/75
72V/30A, 72V/40A, 72V/50A
80V/30A, 80V/40A
Options: ALL

to which this declaration relates complies with the requirements of the following Directives of the European Union:

2006/95/EEC (LVD) and following modifications
and
2004/108/EEC (EMC) and following modifications

Standards to which conformity is declared:

Safety: CEI EN60335-1:(04-2004)

EMC: CEI EN61000-6-2 :(10-2002)
CEI EN61000-6-4 :(10-2002)
CEI EN50366 : (02-2004)
including amendments

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QUALITY SYSTEM CERTIFICATION UNI EN ISO 9001:2000 n° LRC 141297