

POWER SERVICE[®]

USER AND
MAINTENANCE MANUAL

GOLD-M

GOLD25-M

GOLD30-M

GOLD40-M

NDS ENERGY s.r.l.

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1. DESCRIPTION

Power Service Gold is the latest model of electronic battery charger for 12V lead storage battery. NDS has conceived and planned it for the use on recreational vehicles (like camper and motorhome) in reply to the different energy sources that nowadays the user has available. In fact it can be powered by three different power sources:

- alternator;
- mains (230V);
- photovoltaic power system.

The new battery charger is capable to manage in a fully automatic way the recharging of any service battery with capacity over 40Ah, providing a charge of real 100% and a reduction of time compared with the traditional recharging systems (alternator, power supply etc..). The Power Service Gold has a microprocessor that is programmed to effect 4 different "load curves":

- three curves specific for each typology of battery: Gel, Agm and traditional wet battery (flooded);
- a load curve with of voltage limited up to 14,5 V.

Each "load curve", in fact, consist of five phases (see paragraph 4.1), among which there is the important phase "impulse current with desulphatising effect" that will optimize the performance and extend the life of the battery. After this phase there is the "maintanance phase" which allow the continuous use of the device without damaging the batteries connected to it.

It is also equipped with 3 leds indicating the source of power supply and also the type of charge that the device is processing in a state moment. Special temperature sensors inside allow to manage the cooling fan giving protection to the Power Service Gold for a good operation. Even if with small dimensions the Power Service Gold offer a complete recharging system: at the forefront as for safety, with very high efficiency and with dedicated load curves, it is the optimal solution to have more and more autonomy on one's vehicle.

2. WARNINGS



Do not install the Power Service in dusty or poorly ventilated places, in order to prevent the fan malfunctioning, with the consequent block of the device operation.



Do not install the Power Service inside the bonnet, because this location is extremely hot and subject to dampness.



Be sure that the “jumper” is set according to the typology of the battery in use (see the assembly instructions).



The terminal no. 3 (see Instructions 5.2) should be always connected, whatever input power supply is used.

3. MODELS

The Power Service "Gold" is available in three 12V models:

PWS Gold 25-M

PWS Gold 30-M

PWS Gold 40-M

4. TECHNICAL DATA

The following tables show the main technical characteristics of the Power Service Gold:

PWS Gold 25-M suitable for 12V batteries

INPUT SUPPLY	ALTERNATOR	MINIMUM POWER 70A
	SOLAR PANEL	MAX 250W
	MAINS 230V	115/230 VAC 50/60 HZ
OUTPUT CURRENT	WITH ALTERNATOR	MAX 25A +/- 5%
	WITH SOLAR PANEL	MAX 20A
	MAINS-CONNECTED	MAX 15A
PROTECTION	INPUT FUSE	50A
	OUTPUT FUSE	30A
	MAINS FUSE 230V	6.3A GLASS TYPE
	SOLAR PANEL FUSE	25A
ACTIVATION	AUTOMATIC	
YIELD	95%	
ANOMALY ALARM	ACOUSTIC	
SIZE (mm)	228*135*95h	
WEIGHT	1700 gr.	

N.B.: The consumption by the engine battery when the device is turned off is approximately 15mA. It is recommended to disconnect the battery for long periods of engine stopped.

TECHINICAL DATA

PWS Gold 30-M

suitable for 12V batteries

INPUT SUPPLY	ALTERNATOR	MINIMUM POWER 90A
	SOLAR PANEL	MAX 250W
	MAINS 230V	115/230 VAC 50/60 HZ
OUTPUT CURRENT	WITH ALTERNATOR	MAX 30A +/- 5%
	WITH SOLAR PANEL	MAX 20A
	MAINS-CONNECTED	MAX 20A
PROTECTION	INPUT FUSE	50A
	OUTPUT FUSE	40A
	MAINS FUSE 230V	6.3A GLASS TYPE
	SOLAR PANEL FUSE	25A
ACTIVATION	AUTOMATIC	
YIELD	95%	
ANOMALY ALARM	ACOUSTIC	
SIZE (mm)	228*135*95h	
WEIGHT	1700 gr	

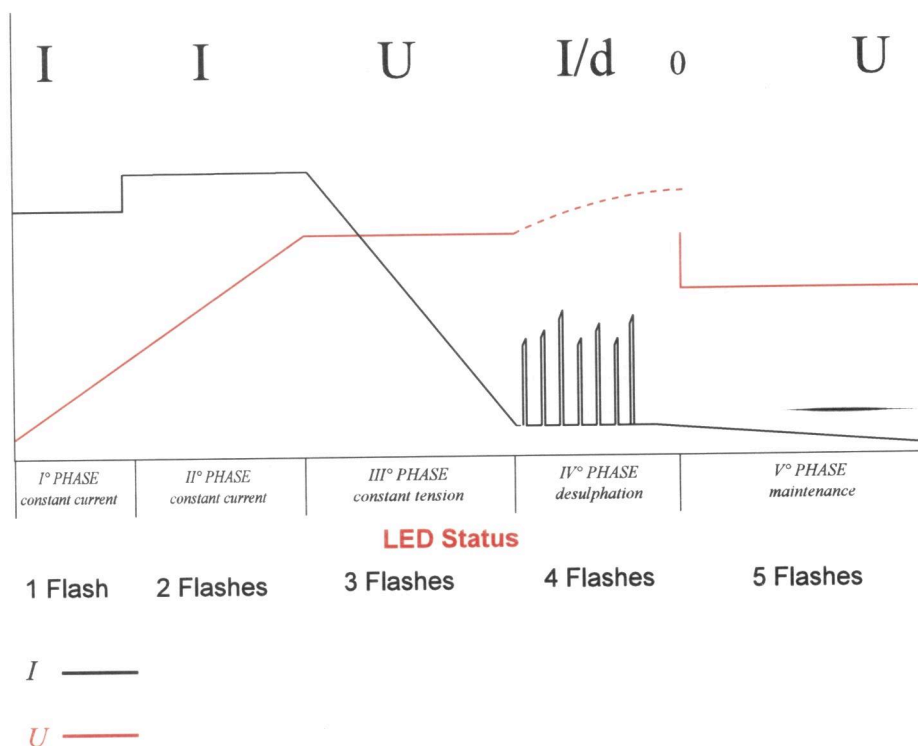
PWS Gold 40-M

suitable for 12V batteries

INPUT SUPPLY	ALTERNATOR	MINIMUM POWER 110A
	SOLAR PANEL	MAX 250W
	MAINS 230V	115/230 V AC 50/60 HZ
OUTPUT CURRENT	WITH ALTERNATOR	MAX 40A +/- 5%
	WITH SOLAR PANEL	MAX 20A
	MAINS-CONNECTED	MAX 25A
PROTECTION	INPUT FUSE	60A
	OUTPUT FUSE	2 of 25A
	MAINS FUSE 230V	6.3A GLASS TYPE
	SOLAR PANEL FUSE	25A
ACTIVATION	AUTOMATIC	
YIELD	95%	
ANOMALY ALARM	ACOUSTIC	
SIZE (mm)	228*135*95h	
WEIGHT	1700 gr	

4.1 LOAD CURVES

The following chart illustrates the 5 load-phases performed by the Power Service Gold:



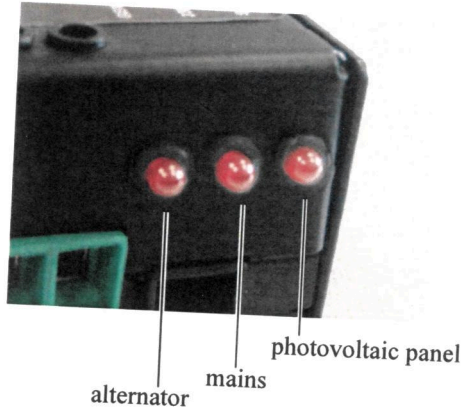
NOTES

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4.2 LED FUNCTIONING

- Each led shows the source of power supply in use (see the photo).



- The modality of led lighting is related to the charging cycle that the device is performing.

The number of flashes followed by a pause, corresponds to the charging step that the device is performing.

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5. ISTRUZIONI FOR INSTALLATION

5.1 LOCATION

Install the Power Service far from heating sources, damp and excessively dusty locations, and anyway in places well ventilated (not in the bonnet!)

5.2 INSTALLATION

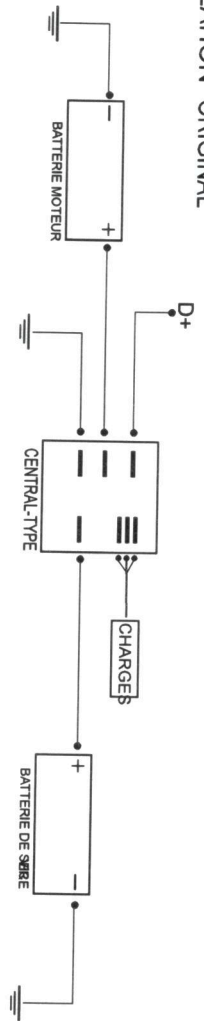


- | | |
|--------------------------------------|---|
| ⊥ 1) negative | AUX 5) positive from original main unit |
| ⊥ 2) negative | OUT 6) leisure battery positive |
| B+ 3) positive engine battery | ☀ 7) photovoltaic panel positive |
| +⊥=⊖ 4) positive 'power on' | |

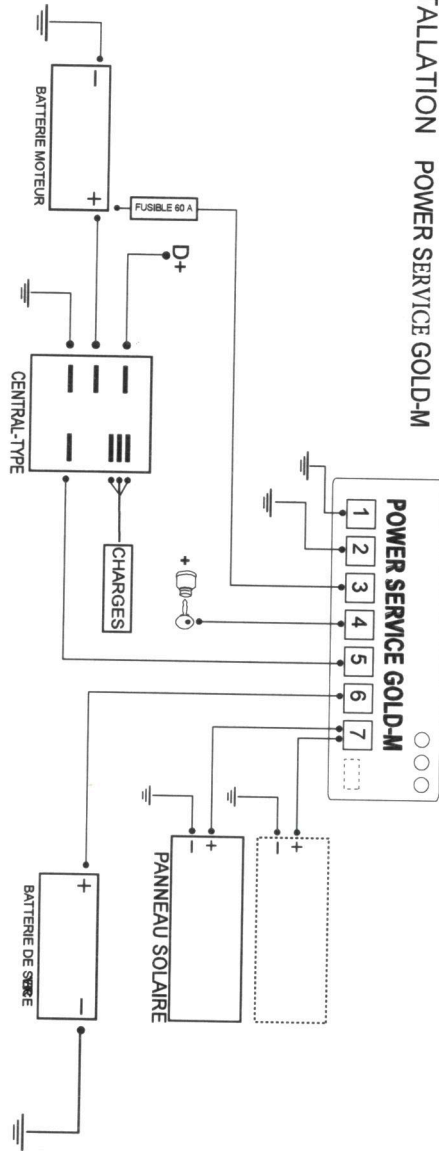
It is recommended to use cables with a cross section greater than or equal to 10mm

5.3 INSTALLATION SCHEME OF POWER SERVICE GOLD

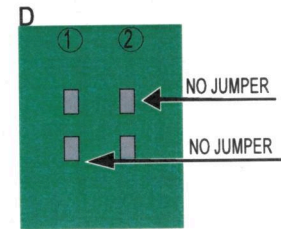
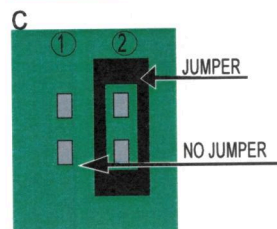
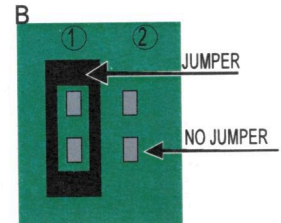
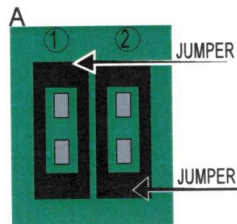
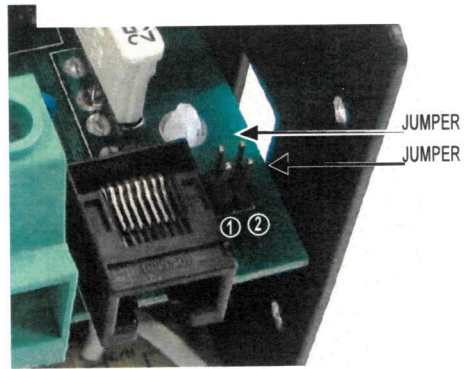
INSTALLATION ORIGINAL



INSTALLATION POWER SERVICE GOLD-M



5.4 SELECTION OF BATTERY TYPOLOGY



- A) Load Curve for 'GEL TYPE' battery;
- B) Load curve for 'AGM TYPE' battery
- C) Load curve for 'FLOODED TYPE' (wet battery)
- D) Load curve with maximum voltage 14.5V

* The Power Service Gold is pre-set for 'AGM TYPE' battery.

6. MAINTENANCE

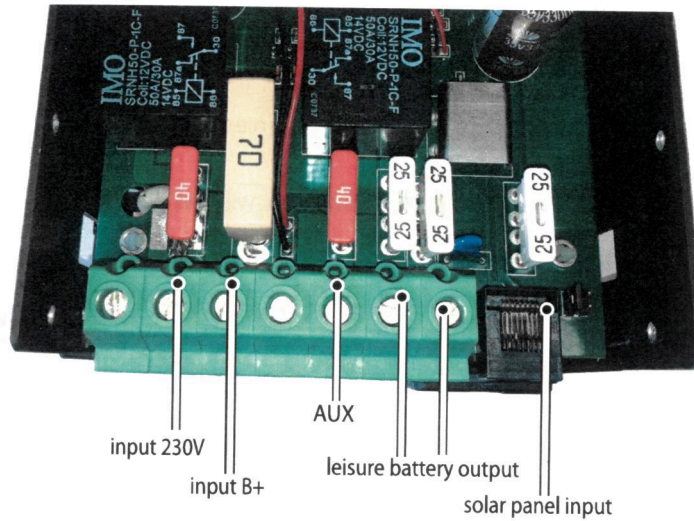
6.1 FUSE REPLACEMENT

Before replacing the fuses of the Power Service make sure that the equipment is switched "off" and then remove away the upper cover in the front part.

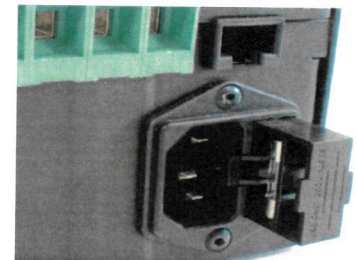
GOLD25-M

GOLD30-M

GOLD40-M



AC 230V FUSE



Replace the fuses with equivalent like original types.

7. WARRANTY

The manufacturer will answer for correct functioning of the Power Service and undertakes to replace completely free of charge any parts which may be deteriorated due to construction faults within 24 months from the date of purchase, proved by the relevant validation slip (to be filled in all its part and sent back to the manufacturer).

Any malfunctioning resulting from wrong installation, inappropriate use, tampering or negligence will not be covered by this warranty.

Moreover, the manufacturer accepts no responsibility whatsoever for any and all direct and indirect damages. The Power Service returned - even if returned under guarantee - shall be sent "Freight paid" and shall be returned on a "freight collect" basis.

The certificate of warranty shall be valid only if accompanied by a receipt or delivery document.

In case of disputes the court of competent jurisdiction will be the court of Pescara (Italy).

Mod.....Registration number **GOLD40-M_16_2224**

Date of purchase



Seller stamp and signature

8. VALIDATION SLIP

PWS GOLD-M

Mod..... Registration No GOLD40-M_16_2224

Date of purchase

Surname

Name

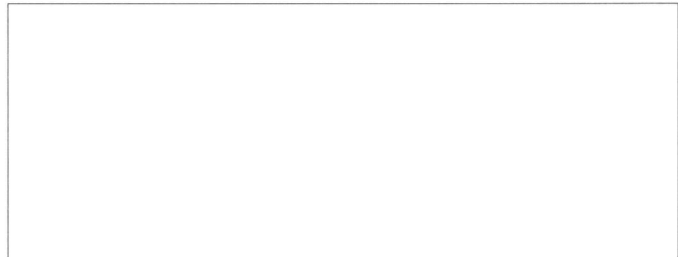
Street No

Post CodeCity

Phone no.

**I authorize the use of my personal data according to the
D.L.of 30th June 2003 no.196.** _____

Customer's signature



Manufacturer stamp and signature

To be sent in a sealed envelope to:

NDS ENERGY s.r.l.

Via Pascoli, 169

65010 Cappelle sul Tavo (Pe) Italy

8.1 INSTALLED ON:

CAMPER VAN

CARAVAN

BOAT

OTHER.....

Model.....

Motorisation.....

Registration year

NOTES

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