INTIEL
THE ELECTRONICS ON YOUR SIDE

UNINTERRUPTABLE POWER SUPPLY

User's Manual

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I. Application

Gas boilers for heating and domestic hot water preparation are very popular as they are being used for residential and commercial applications, as well as for heating systems with boilers, etc. for water circulation using circulation pumps. One of the main disadvantages of such systems is their dependence of the electrical power supply. Therefore, the prevention of the electrical cut off is very important for these systems as it is able to be provided only by means of using uninterruptable power supply. The present device is able to provide the necessary power supply back-up running the gas boilers for quite a long period of time.

II. Operation

The back-up power supply is provided by means of switching between the grid ~220V / 50 Hz and the back-up power provided by 12V battery (which in fact is an external energy source for the device).

The switching is being provided automatically in relation to power supply grid presence.

A) Presence of a grid power supply

This mode is indicated by green indicator "**Main supply**"

The unit is being power supplied by means of the grid as within that time the device operates as a battery charger. The battery voltage is being observed automatically as when a voltage of 13,8 – 14,2 V is being reached then the charging is being stopped. The device periodically charges the battery due to self-discharging process during the time when a power supply grid is available.

In this way the battery maintenance is not necessary, providing constant keeping of the battery in standby mode for a subsequent usage in case of power supply cut off.

The battery status is indicated on the LED scale from 25 to 100%

B) Absence of a grid power supply

This mode is indicated by the indicator "**Load**"

In this case the gas boiler or the pump is being power supplied by the battery by means of DC/AC inverter 12V / 220V. The battery voltage is being observed as if it is being decreased a sound signal appears at 10,6V, as at 10.3V red light indication "**Failure**" appears, and a power supply of the unit is being stopped until the grid is being restored. It means the battery is exhausted and it subsequent usage is possible only after recharging.

The device is able to work with 12V internal battery with a capacity of 7.5Ah or an external 12V car battery with a capacity of up to 100Ah.

Should be known that Uninterruptable Power Supply can not work without any battery.

It is desirable before installing the battery to check the status and if the battery voltage is below 10V it must be charged this can be done after the installation of the battery inserting the plug of the Uninterruptable Power Supply the mains power supply and the ON / OFF button is in the OFF position and wait until the battery is sufficiently charged. The internal battery is able to provide a back-up power supply of up to one hour if the unit

electrical consumption is up to 50W, as if the previous mentioned consumption is bigger it is recommended the usage of external battery.

For example, if the gas boiler or the pump consumption is 150W and the battery capacity is 100Ah, the device is to provide a back-up power supply up to 10-12 hours.

C) Protections

1. Overload protection and short circuit at output - this protection act immediately and prevents damage to the device under overload or short circuit at the output when activated follows dropping the output voltage and **Load** indicator goes off and **Failure** indicator lights up. Protection is automatically restored after removal of the overload or short circuit.
2. Protection from wrong connection of battery.
3. Protection of the defect in the device is realized by a fuse inside the device.

III. Technical data

1. Power supply	~220V/50Hz
2. Battery voltage	от 10.8 V до 14,7 V DC
3. Output Voltage	220V AC ±5 %
4. Output frequency	50 Hz ±2 %
5. Output Power	150 W
6. Efficiency	95 %
7. Time of switching	< 5 ms.
8. Maximum charge current	5A

IV. Installation:

Follow the instructions bellow in order to provide proper installation of the device.

1. Fix the metal plate on the wall, where the device is to be placed (see fig.1)

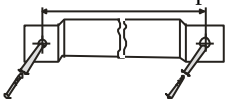

Fig. 1

2. Hang up the device of the metal plate.
3. If the device is to work with an internal battery, it is to be connected observing its polarity (see Fig.2)

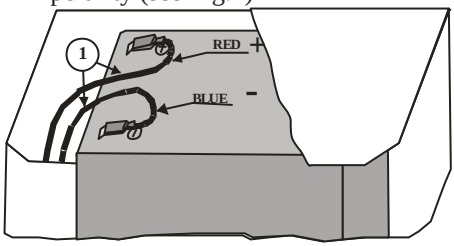

Fig.2

- Remove the top cover of the device by unscrewing the lateral the four bolts.
- Insert the battery into the battery compartment (position 1)

- Install an appropriate instrument cable shoes to the wires.
- Connect the wires observing the battery polarity, the red wire is to be connected to plus terminal / + / and the black one to minus terminal / - /
- Connect the plug B to A connector according to Fig. 4 and mount the cover of this device by screwing four screws.

4. If the device is to work with an external battery, the cable compartment cover is to be removed according Fig. 3.

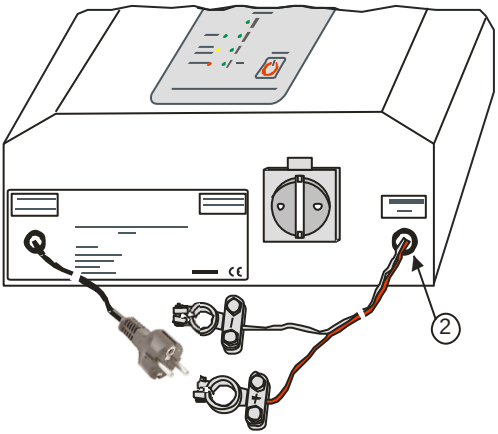

Fig. 3

- Remove the top cover of the device by unscrewing the lateral the four bolts.
- Thread the battery wires through the hole in the box pos.2
- fix the battery terminals observing their polarity. The one marked with plus / + / is to be connected to the red cable, as the one marked with minus to the black cable.

5. **Connect the plug B to A connector according to Fig. 4 and mount the cover of this device by screwing four screws.**

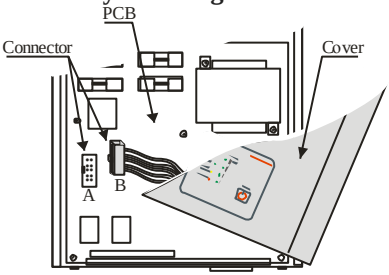

Fig. 4

6. Plug in the gas boiler or pump into the outlet of the Uninterruptable Power Supply.
7. Plug in the Uninterruptable Power Supply into the power supply grid.
8. The Uninterruptable Power Supply is to be switched on by pressing the button ON/OFF into position ON, as a light indication "**Main supply**" appears. Then the device is to be powered by the grid.

8. Make a switch off test of the grid, unplugging the device. light indication “Load” must so remain lit and the unit will be powered by the device.

9. Plug in the device again into the grid.

In carrying out activities on including power unit or battery change to be made after placing the ON / OFF button in position OFF.

V. DEFECTS

In the process of installation and operation can occur following failure

Defect	**Possible reason**	**Removal of the fault**
The device work in mode AC Power and does not work in the absence of mains power and **STATUS BATTERY** indicator lights 25%	- Exhausted Battery - Bad connection to the battery terminals	- Place the ON / OFF button set to OFF and wait to charge the battery - Check the battery status - Check battery terminals for the presence of a bad connection
In the presence of mains power the device does not work	Burnt fuse F1/2A /	To check and replace the fuse F1 / 2A /
Output voltage is absent / does not light up the indicator **Load**	Activated protection against overload and short circuit in the output	To disconnect the unit from the outlet of backup power if the indicator **Load** light have to check for the presence of a short circuit in power unit
For all other cases of failure		Contact an authorized service

The removal of the all the above faults to be made after placing the button in the OFF position and pulling the plug from the mains socket.

VI. Warranty

The warranty period is 24 months following the purchase date of the unit or its installation by an authorized Engineering Company, but not exceeding 28 months after the production date. The warranty is extended to the malfunctions that occur during the warranty period and are result of the production reasons or defective used parts.

The warranty does not relate to malfunctions corresponding to not-qualified installation, activities directed to the product body interference, not regular storage or transport.

The repairs during the warranty period can be done after correct filling of the manufacturer warranty card