

Reserve Power Supply for circulation pumps



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User's Manual

1. Application

One of the most important parts of the central heating systems is the circulation pump. It provides spreading of the heat power provided of the boiler throughout all the installation system like radiators, water heaters, etc. Keeping the circulation pump permanently working during the boiler operation is necessary for obtaining the desired heating comfort and provides central heating system correct operation.

Stopping the circulation pump even for short time can cause a boiler overheating, that reflect subsequently to damages of pipes, radiators, etc. The present Device reserves the power supply for the circulation pump and it is designed to provide alternate power supply to the circulation pump when the established power supply drops completely. In this way it avoids undesired failures result that reflects directly to the heating systems.

2. Technical data

1. Power supply: 220V / 50Hz/AC
2. Battery voltage: 10.8 – 14.2V / DC
3. Output voltage: 220V/AC +/-5%
4. Output frequency: 50Hz +/- 2%
5. Output capacity: 150W
6. Efficiency: 90%

3. Operation

The reservation is done by electro-mechanical switching of the circulation pump between established power supply of 220V/50Hz/AC and an independent one obtained by an accumulating battery 12V. In fact the battery is an outer energy source for the Device. The switching is automatic and it depends on the presence or missing of the power supply.

a) Power supply by the circuit

During that regime the circulation pump operates connected to the circuit and the Device operates as a battery charger. The battery voltage level is permanent observed by the Device. In case it reaches 13.8 – 14.2 V the charging current will be stopped. The Device charges the battery periodically due to the typical for the batteries discharging process.

Thus is not necessary the permanent maintaining of the accumulating battery, providing its using any time when the power supply drops completely. That regime is indicated with a green light, named "CIRCUIT".

b) Completely dropped power supply.

In that operation regime the circulation pump gets a necessary power supply by the accumulating battery by means of a transformer (DC 12V/AC220V). The voltage of the battery is observed by the Device and in case it drops down to 10.8V a sound signal appears.

If the battery voltage keeps decreasing and reaches a level of 10.5V, the circulation pump will stop, as the sound signal will not, but it will appear a red light indication for "FAILURE".

It means that the accumulating battery is discharged and its next usage will be possible after charging by the circuit, after next restoring of the mains.

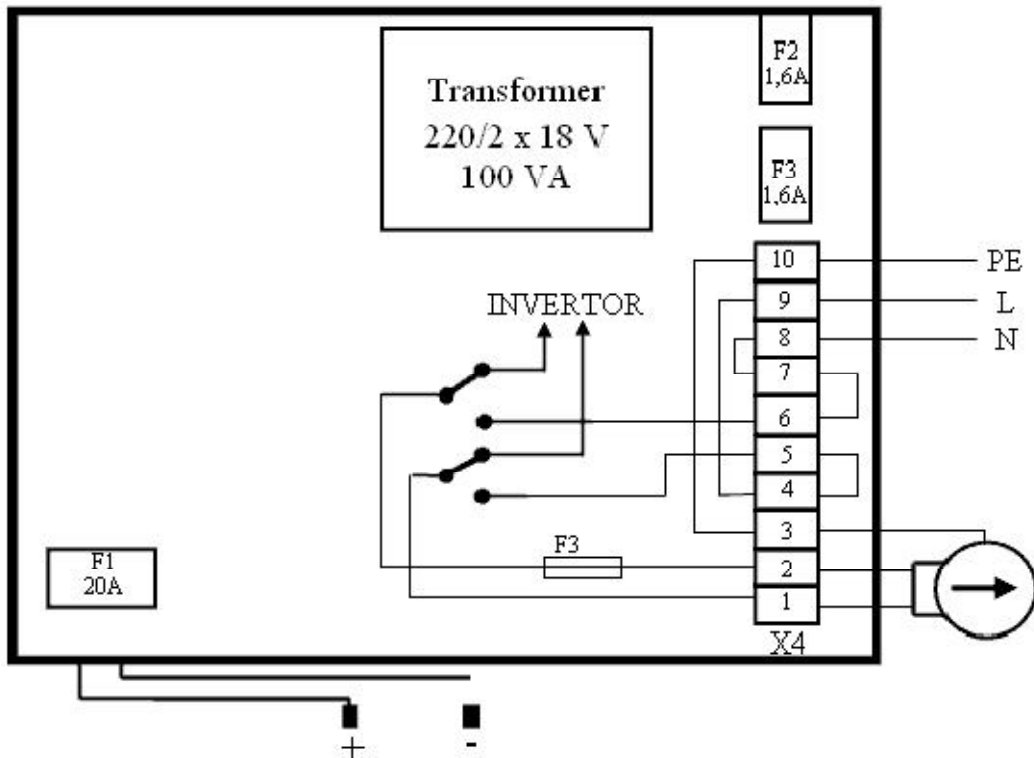
The Device is able to provide the power supply of a circulation pump with a maximum capacity of 150W for a period of 4 – 5 hours, when the Device is used together with accumulating battery which capacity is 55 – 60 Ah. During that regime a red light indication named "BATTERY" appears.

4. Wiring

The location of the elements in the box is shown on Figure 1.

Attention!

Before the Device connection to the installation, check up if a bridge is placed between PE circulation pump terminal (a safety earth connection) and the neutral cable. In case there is such a bridge it must be removed and after that the Device is to be connected.



The pump is to be connected to terminals 1, 2 and 3 of the terminal board X4, in accordance with Figure 1. The above mentioned terminals respectively related to L – a phase, N – a neutral and PE (a safety earth). The power supply of the pump is to be connected to terminals 5 and 6 in "CIRCUIT" regime.

That is provided by the manufacturer by means of bridges between terminals 6 and 7, as well 5 and 4. When the power supply of the pump during "CIRCUIT" regime is to be provided by an outer regulation unit (like thermo regulator, a controller for heating systems, etc.), the above mentioned bridges are to be removed and the cables for the power supply of that regulation unit are to be connected to terminals 5 and 6.

The fuse F3 is connected to the circulation pump circuit. A button for a manual pump switching (on/off) is located on the Device cover and it can be used in both operation regimes "CIRCUIT" and "BATTERY".

The status for the operating pump is indicated by a green light named "PUMP".

According the manufacturer settings, the Device power supply is to be connected to terminals 8, 9 and 10. Terminal 8 is for a neutral (N), 9 for a phase (L) and 10 is for a safety earth (PE).

The fuse F2 – 0.5A protects the primary coil of the circuit transformer. The Device is equipped with cables that end with lead battery clamps which are to be connected to a battery with voltage

of 12 V. The battery capacity is to provide of the circulation pump a regular operation when the power supply completely drops.

Caution!

The connection to the battery is to be done as follows:

Battery terminal "+" to Device clamp "+"

Battery terminal "-" to Device clamp "-"

The opposite connection is not allowed, because the fuse F1 – 20A will burn.

Connecting or unconnecting the Device clamps to battery terminals is to be done at an unplugged electrical circuit.

5. 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.