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## Installation and Operating Guidelines Battery Back-up Pump System

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## 1.0 Product Summary

The battery back-up system is designed especially for where the possibility of primary pump failure through either a pump fault or loss of mains power would be catastrophic. The system comprises of a control panel, 24V back-up pump, 3 no. float switches and a non-return valve.

## 2.0 Installation Guidelines

It is important to note that these instructions are for guidance only and it is the contractor's responsibility to satisfy themselves that the installation procedure is in accordance with the prevailing conditions and good building practice, to eliminate any potential damage to the product either during or after installation.

Please read these instructions in full, prior to commencement of installation. If you are unsure on any point then ask for advice before proceeding. Our technical help desk is available on 01322 318830 from 9.00am–5.00pm, Monday to Friday.

1. Select a suitable location for the control panel, taking into account that the panel must be located within 4 metres of the pump. It is important to bear in mind access to the control panel for maintenance, ensuring it is located in a dry area and the alarm is audible to the end user.
2. Mount the panel to a wall or backboard using the mounting points at the back of the panel and appropriate screws and wall plugs (not supplied).
3. The pump is suitable for connection to 1 1/4" PVC pipework. All joins in the discharge line must be made with solvent cement, under no circumstances should push fit or compression fittings be used.
4. Once the primary and back-up pumps are connected to the discharge line ensuring that a separate non-return valve is used on both pumps.
5. The three float switches need to be fixed to the metal bracket (supplied) using the fittings provided (plastic washer and nut). Place the float switches into position ensuring that the activation arm is down and fixed into position using the plastic washer and nut.
6. The float switches should be located within the tank ensuring that the following configuration is adhered to:

'Run' Float	Top of bracket
'High Level Alarm' Float	Middle of bracket (float is to be higher than the primary pump float switch)
'Off' Float	Bottom of bracket

7. The electrical/float cables should be drawn through a cable duct back to the control panel and the appropriate wiring connections should then be made from the 24v pump and float switches to the panel in accordance to the wiring diagram provided. (Please refer to Section 6.0 of this document).
8. The control panel should be connected to a 240V, 13 amp fused spur by a suitably qualified person in accordance with the Institute of Electrical Engineers Regulations.
9. For connection to the mains supply it is imperative that the panel is connected to a separate fused spur to that of the primary pump. This is because should a fault occur with the pump and blow its fuse, then the back-up system can still operate.
10. Please ensure that there is suitable slack on the cable to allow for the pump to be removed for maintenance.

To commission the control panel you must connect both the batteries using the connectors provided, a red indicator on the battery charger will inform you that the batteries are now charging, once fully charged the red indicator will turn green. To test the system, disconnect the primary pump from the mains power and fill the tank with water until the back-up pump activates. Please note that prior to the back-up pump activating the high level alarm should sound.

### Control Panel Operation

The most important element of the battery back-up system is the control panel as it controls and monitors the status of the complete system.

The panel consists of both visual and audio indicators that are imperative for both the installer and end user to fully understand.

### Visual Indicators

White Indicator (Supply On)	This indicates whether there is a mains supply connected to the unit. Should the mains supply be removed (i.e. Power failure, blown fuse) the light will go out.
Red Indicator (Fault)	This indicates whether there is a fault with the back-up pump, such as a blockage, blown fuse or that the batteries have run dry.
Green Indicator (Running)	This indicates that the back-up pump is in operation.

### Audio Indicators

The battery back-up system comes complete with an audio alarm to alert the user when there is a high level situation within the tank. Also located on the front of the panel is an alarm mute button to silence the alarm in a high level situation.

## 3.0 Technical Specifications

Power Supply to Panel	230V AC
Power Supply to Pump (via Panel)	24V
Frequency	50Hz
Motor Rating	Intermittent
Max. Flow Rate	180l/min
Max. Vertical Output	6.5m
Max. Horizontal Output	45m
Max. Liquid Temp.	<40°C
Rated Current	1.3amps
Discharge Size	1 1/4"
Cable Length	4m
Battery Life	60min
Colour	Red

## 4.0 Dimensions

Height	380mm
Width	300mm
Depth	180mm

## 5.0 Parts List

Qty	Product Name	Product Code
1	NCC 24V Back-up Pump	11012
3	'Mini' Float Switches	9101
1	Control Panel	3003
1	1 1/4" Non-return Valve (Brass)	1019
1	Float Bracket ('L', 3 Float)	24000

## 6.0 Wiring Diagrams

Wiring Diagrams can be found within the control panel.

## 7.0 Transport

The pump and panel will be packed in bubble wrap and boxed. Carefully unpack the battery back-up system from the packaging and inspect it for any signs of damage. Should there be any damage present it must be reported immediately (no claim will be considered after 24 hours from time of delivery).

## 8.0 Maintenance

It is advised that the operation of the battery back-up pump system is checked every 6 months; this can be done by removing the power supply to the primary pump and allowing the tank to fill with water until the back-up pump activates. It is also advised that every 6 months the system is allowed to operate using only the back-up pump, this is to allow the batteries to run down and fully recharge which in turn will help to extend the life of the batteries.

Is also recommended that the battery back-up pump be removed every 6 months to ensure that there is no build up of debris around the pump and float switches.

Please note that we recommend that the batteries be replaced every 2 years, for replacement batteries please call 01442 211554.

**In addition we recommend that a service contract be taken out (please contact Edincare on 01442 211554 for further details).**

## 9.0 Health and Safety

Please pay attention to the following regulations when installing the system or ask your qualified electrician/distributor.

### **Safety Precautions**

In order to minimise the risk of accidents in connection with the service and installation work, the following rules should be followed.

- Never work alone. Use a lifting harness, safety line and respirator as required. Do not ignore the risk of drowning.
- Make sure there are no poisonous gases within the work area.
- Check the explosion risk before welding or using electric hand tools.
- Do not ignore health hazards. Observe strict cleanliness.
- Bear in mind the risk of electrical accidents.
- Make sure that the lifting equipment is in good condition.
- Provide a suitable barrier around your work area, e.g. guard rail.
- Make sure you have a clear path of retreat.
- Use a safety helmet, safety goggles and protective shoes.
- All personnel who work with sewage systems must be vaccinated against diseases to which they may be exposed.
- A first aid kit must be close to hand.
- Note that special rules apply to installations in an explosive atmosphere.

### **Electrical Connections**

- The following works should only be done by qualified and authorized electricians.
- Edincare disclaims all responsibility for work done by untrained or/and unauthorized personnel.
- Heed operating voltage (see name plate and additional labels).
- Take out the main fuses to isolate the mains supply from the control unit before repairs or any other works and ensure it cannot be energized again.
- If the pump is equipped with an automatic level control, there is a risk of a sudden restart.
- Before starting check the efficiency of the protective arrangements of the pump and the monitoring equipment. Failure to heed this warning may cause a lethal accident.
- Do not put the lead ends into water! Irruption of water may cause malfunctions.
- If persons are likely to come into physical contact with the pump or pumped media, the earthed (grounded) socket must have an additional connection to an earth (ground) fault protection device (GFI).
- Use the pump only in accordance to the data stated on the pumps plate respectively.

Special rules apply to installations in explosive atmosphere. Intrinsically safe circuits (Exi) are normally required for the automatic level control system by level regulators.

- Connection only to a mains supply installed in accordance to the local regulations. For fusing of d.o.l. starting pumps use only 1 OA slow fuses or automatic circuit breakers with C or D characteristics. This is because the motor's nominal voltage is measured at the terminal board of the pump; please consider the voltage drop of long supply cables.
- The motors of the three-phase AC pumps must be protected by a suitable over current release. Adjustment as follows:  
Direct start +10% of normal current  
Star-delta start (nominal current x 0.58) + 10%  
If the protective arrangement has triggered, eliminate the trouble.
- Replace the cable if the cable jacket is damaged. Do not pinch the cable or pull it around sharp bends.
- Always install the control unit in a dry and well-ventilated room above the backpressure level. Never install the control unit within the sump.

### **Earthing**

For safety reasons, the earth conductor should be approximately 50mm (2") longer than the phase conductors. If the motor cable is jerked loose by mistake, the earth conductor should be the last conductor to come loose from the first terminal. This applies to both ends of the cable. Ensure the correct earthing of the pump and control unit.

## 10.0 Guarantee

### **12 month component Guarantee**

If within the guarantee period of a product any defect is discovered in respect of workmanship, construction or material, we will make good the defect or replace the defective part at our expense inside normal working hours at the company's premises providing, written notice is given immediately the defect is discovered and that, if required by us, the part or complete unit is returned to the company's premises carriage paid. Spares or repaired parts are delivered ex works exclusive of fitting.

The guarantee does not apply to defects caused by incorrect installation, abnormal conditions of working, accidents, misuse or neglects. Our responsibility is in all cases limited to the cost of making good the defect or replacing the defective part at the company's premises inside normal working hours. We excludes all liability for any consequential or other damage or losses which may occur. We will not be liable is the pumping system fails due to it having been incorrectly specified (e.g. where the pump is inundated due to an inadequate waterproofing design or where the pump is used to discharge inappropriate media).

### **Triton Contact Details:**

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