

# powerflo

Battery back-up system



### Description

The powerflo battery back-up system is designed especially for circumstances 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, non-return valve and an IP 66 rated junction box.

### 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 01706 831223 from 8.30am–5.30pm, Monday to Friday.

1. Select a suitable location for the control panel, ensuring that the panel is as near to the pumping system as possible. It is important to bear in mind access to the control panel for maintenance purposes and also whether the high level alarm will be audible to the end user.
2. Once the primary and back-up pumps are connected to the discharge line ensure that separate non-return valves are used on both pumps. The appropriate wiring connections should then be made from the pump(s) and float switches to the panel in accordance to the wiring diagram provided. (Please refer to Section 6 of this document).
3. The pump is suitable for connection to 32mm uPVC 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. The float switches should be located within the tank ensuring that the following configuration is adhered to:

'High level alarm'	Float Top of tank
'Run'	Float is to be higher then the primary pump float switch
'Off'	Float Bottom of tank, above pump intake level

5. The electrical/float cables should be drawn through a cable duct back to the control panel, please note that the electrical cable should first go via the 'IP 66 rating junction box' supplied.
6. The control panel should be connected to a 220–240V 13 amp 2 pole switched spur with anti surge protection, by a suitably qualified person, in accordance with the Institute of Electrical Engineers

### Regulations.

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 panel and fill the tank with water until the back-up pump activates. It is also recommended to lift the high level alarm float switch to check the alarm is operating correctly.

### 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.

### Technical Specifications

Power Supply to Panel	230 V AC
Power Supply to Pump (via Panel)	24 V
Frequency	50 Hz
Motor Rating	Intermittent
Max. Flow Rate	170 l/min
Max. Vertical Output	5 m
Max. Horizontal Output	30 m
Max. Liquid Temp.	<40°C
Rated Current	6amps
Discharge Size	32 mm
Cable Length	1 m
Battery Life	90 min

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## Maintenance

It is advised that the operation of the powerflo 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.

It 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 01706 831223.

*In addition we recommend that a service contract be taken out (please contact Wykamol on 01706 831223 for further details).*

## Health and Safety

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 authorised electricians.
- Wykamol disclaims all responsibility for work done by untrained or/and unauthorised 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 energised 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 10A 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 back pressure 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.



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