



Clean Water
**Booster
Sets**

POWERBOOST

Flow Range O&M Manual



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General

Delivery and Handling

The weight and size of the **POWERBOOST** unit may require the aid of lifting equipment and must be handled in a safe manner. The unit must be lifted only by the base and not the pipe work, pumps or vessel.

Inspection

On delivery, the **POWERBOOST** unit should be inspected thoroughly and any damage reported to the supplier as soon as possible. This should be confirmed in writing within 48 hours.

Applications

The **POWERBOOST** FLOW range of cold water booster units are designed for domestic and light commercial pressure boosting.

The **POWERBOOST** unit should not be installed in areas that are classified as hazardous or where there is a risk of an explosion or harm to people. The manufacturer does not accept responsibility if the unit is used to pump liquids other than clean water unless suitability has previously been agreed in writing.

Warranty

All mechanical components of the **POWERBOOST** unit are covered by a 12 month warranty against manufacturing defects. In case of failure please contact the relevant technical department on one of the following:

ROI	094 963 3500
NI	028 9181 8347
UK	01543 415200

Site Storage

Should a **POWERBOOST** unit need to be stored before installation it should be in a safe place away from moisture, dust and frost.

Installation Checklist

1. Check the unit for any visual defects. Contact your supplier immediately if any are found.
2. Choose a suitable location for installation. Please ensure the unit is fitted in accordance with these instructions.
3. Connect the inlet and outlet pipe work as per the installation diagram.
 - The **POWERBOOST** Unit is designed to be gravity fed from a cold water storage tank.
 - The inlet pipe work should be sized according to minimise friction & turbulence maintaining a suction velocity of less than 2m/s and in any case should be at least the size of the inlet manifold.
 - Good quality full bore Isolation Valves should be fitted before and after the unit to allow for reliable service or repair.
4. Fit the supplied pressure vessel to the discharge manifold (See Page 7).
5. In accordance with the latest IEE regulation all electrical connections should be carried out by a qualified electrician. The booster unit must be earthed. It is recommended that a residual current device (RCD) is fitted on the incoming electrical supply.
6. Once all mechanical and electrical connections have been made the following steps should be followed before the unit is powered up:
 - Fully close all isolation valves on the outlet side of the booster set;
 - Ensure there is sufficient water in the supply tank;
 - Fully open all isolation valves on the inlet side of the booster set;
 - Open bleed screw at the top of each pump in turn and fully de-aerate the pumps.

Location Consideration

The **POWERBOOST** unit should be installed in a dry, well-ventilated area where it is not exposed to extreme temperature or frost.

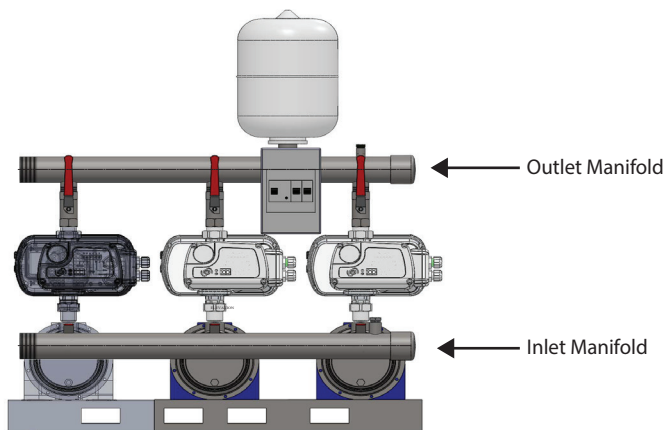
Reasonable access to all parts of the set and adequate service work space must be provided. Provision for lifting equipment is recommended for units incorporating large pumps. There should ideally be adequate lighting in the location of the **POWERBOOST** unit for ease of maintenance.

All system pipe work should be aligned and self supporting preventing any strain or distortion within the unit. All pipe work that may be exposed to freezing conditions should be fully protected. Provision should be made for the disposal of water drained from the system.

Foundation & Mounting

The **POWERBOOST** unit must be mounted on a solid foundation to support the weight of the unit. Surfaces must be firm and level in all directions, the recommended surface is a concrete plinth or floor and points are provided for floor fixing if desired. Isolation mounts are provided and should be fitted if required.

Installation Information & Diagrams



NB: Pipe Work connections can be made to either end of the inlet & outlet Manifold to suit your site layout. Blanking Caps are supplied loose to close any open ends.

Electrical Installation

The **POWERBOOST** unit is designed for professional installation and should be connected by a suitably qualified electrician in accordance with the latest IEE regulations.

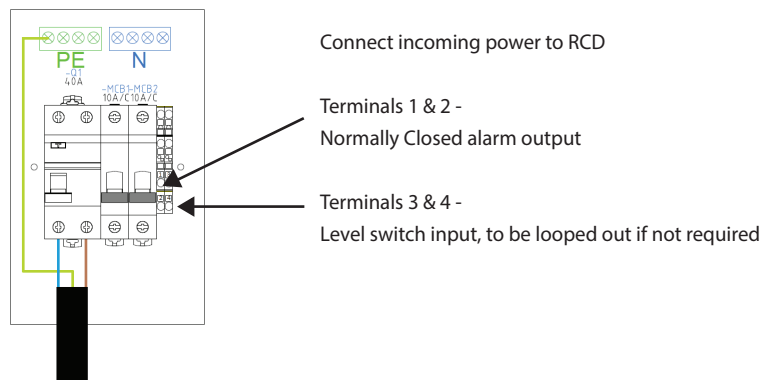
Ensure that the electrical supply is fully isolated before removing any electrical covers. The **POWERBOOST** unit must be earthed and it is recommended that an RCD is fitted on the incoming electrical supply.

Single phase Powerboost units are suitable for voltage supply 230 +/- 10%. The supply cable should be sized **POWERBOOST** to its required length allowing for voltage drop with all pumps running simultaneously and protected by a suitable MCB or fuse.

Wiring Connections

The **POWERBOOST** unit has provision for an external level switch input and a volt free general alarm output (BMS connection). Connections for these features are made within the main wiring box as per the diagrams below.

FLOW-V



Commissioning

1. Make a visual check to ensure all pipe work and electrical connections are connected in a safe manner.
2. Ensure the supply tank is sufficiently full and the pumps have been de-aerated.
3. Ensure that the closest outlet to the booster set is open to allow water to flow once the set is turned on.
4. Check the main discharge valve after the outlet manifold is closed and all other valves are fully open.

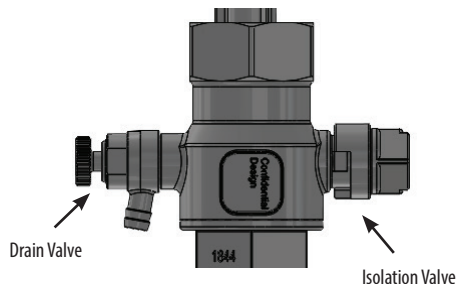
5. Turn on the power supply to the controllers and press the start button on the controllers.
6. Slowly open the discharge valve on the booster unit to gradually fill the delivery main.
7. Once water is flowing from the nearest outlet, check the pipe work around the set for leaks.
8. Working away from the set, open each outlet in turn until water flows to purge air from the system.
9. When all the air has been purged, close all outlets. The pump set will shut off within 10 seconds after building up pressure in the system.
10. The **POWERBOOST** unit is factory set as per the details on the pump specification page.
11. Please see controller specific instructions for guidance on how to change the Pressure cut in and cut out settings of your booster unit if required.

Pressure Vessel

The air pre-charge in the pressure vessel should be set 65% of the pre-set working pressure for maximum effectiveness. It is recommended to check the tank air pressure every 4-6 months. The vessel can be charged with an air source via an inlet valve. The pressure can be checked using a suitable pressure gauge. Air can be added or released as required in order to adjust the percentage of pressure.

In order to check the air pressure in the vessel, it is necessary to release the pressure in the vessel. To do this:

1. The isolation valve below the vessel must first be closed
2. The drain valve is opened to release water pressure
3. The air pressure is tested with a suitable gauge at the air valve
4. Add or release air depending on the pressure reading
5. When the pressure has been adjusted, close the drain valve and open the isolation valve to return the set to service



Pump Specification

Flow V Variable Speed

Pump	Power		Amps Per Pump		Factory		Maximum	
	kW	HP	230V	400V	Cut In	System Pressure	Flow	Pressure
4CR80	0.55	0.75	3.4	2	2	3	80	5.2
5CR80	0.75	1	4.3	2.5	3	4	80	6.7
4CR100	0.75	1	4.5	2.6	2	3	100	5.0
5CR100	1.1	1.5	4.2	2.4	3	4	100	6.3
4CR200	1.5	2	7.3	4.2	3	4	200	5.8
5CR200	1.8	2.5	9.4	5.4	4	5	200	7.3
6CR200	2.2	3	10.2	5.9	5	6	200	8.7

Controller Specific Instructions & Troubleshooting

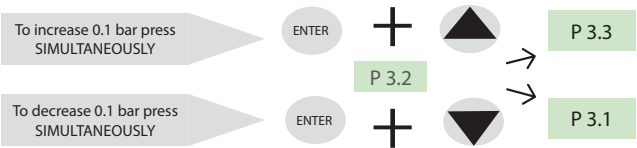
Starting up: Steadypres

Switch on power to controller and wait the STARTING time (approx. 10 sec.)

By pressing **START STOP** you put the inverter **IN SERVICE** or **OUT OF SERVICE**.

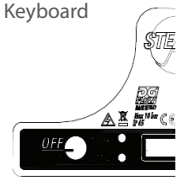


Set pressure quick adjustment: Steadypres



Light Signals: Steadypres

Keyboard



	● ON	● OFF	● BLINKING
● STATUS POWER	STEADYPRES does not detect power supply. WARNING: cannot guarantee the absence of power supply, the electronic board may be faulty, but under tension		
● STATUS POWER	STEADYPRES is live, but the pump is not running (STANDBY)		
● STATUS POWER	STEADYPRES is live, and the pump is running		
● STATUS POWER	STEADYPRES is live, but out of service; the re-arm is only manual		
● STATUS POWER	is only manual STEADYPRES is in ALARM mode, re-arm		

Controller Specific Instructions & Troubleshooting



Alarms: Steadypres

OVER CURRENT %	The current exceeded the allowable tolerance on the current set. The inverter stops the pump, the rearm is only manual.
CURRENT LIMIT	Occurs if, in the absence of flow, the pump cannot reach the SET pressure, but can reach at least a pre-determined percentage of the SET pressure, defined through the parameter Pd. The inverter does not stop the pump.
I DRY (Only with flow sensor)	Occurs if, in the absence of flow, the pump cannot reach the SET pressure, but can reach at least a pre-determined percentage of the SET pressure, defined through the parameter Pd. The inverter does not stop the pump.
DRY RUNNING (applications WITH flow Sensor)	Occurs if, in the absence of flow, the pump fails to reach the pressure of the set but does not even reach a predetermined percentage of the SET pressure , expressed by the parameter Pd; the inverter stops the pump. The error is reset after the time TP and the inverter re-starts in automatic mode.
DRY RUNNING PF (only T/T models)	Occurs if the electrical parameter COSFI (power factor) falls to value indicating the unload operation of engine. the inverter stops the pump. the error is reset after the time TP.
LOW PRESS	Occurs if the pump is running at maximum frequency (50/60 Hz), in the presence of flow, and the pressure doesn't reach 0.3 bar ; the inverter stops the pump. the error is reset after the time TP and the inverter re-starts in automatic mode.
VOLTAGE ERROR L	A voltage drop has occurred beyond minimum operating threshold. The inverter stops the pump. The error is reset after one minute, and the inverter re-starts in automatic mode.
HIGH TEMP. BOX (Only T/T models)	The temperature inside the inverter has reached 65°C; is automatically limited the maximum frequency of 5 Hz but the drive continues to run , the error is reset below 60°C.
OVER TEMP. BOX (Only T/T models)	The temperature Inside the Inverter has reached 80°C, the inverter stops the pump , the error is reset below 60°C and the drive will restart automatically.
HIGH TEMP. MOD	The module temperature has reached the first alarm threshold; the maximum working frequency is automatically limited, but the drive continues to run , the error is reset when the module temperature returns below 70°C.
OVER TEMP. MOD	The module temperature has reached the second alarm threshold, the inverter stops the pump , the error is reset when the module temperature returns below 70°C and the drive will restart automatically.
INPUT ERROR	There has been a reversal of the power connections / output to the motor. the inverter is locked, the error is reset by connecting the cables correctly in the terminal.
COM ERROR	Communication has been interrupted between the control board and the power board; the cause could be integrity of the cable and the connection ports or an electronic board fault.
PHASE ERROR	(Only for models with three-phase output) lack of phase towards the motor during operation. The inverter stops the pump; reset is manual only.
LOW LEVEL	This occurs when the digital input EL is configured as "WATER LEVEL" (level signal) and there is no signal . When the signal returns, the message disappears and the inverter operates normally again.
EXT OFF	This occurs when the digital input EL is configured as "EXT ENABLE" (control enabled from outside) and there is no signal . When the signal returns (external enabling) the message disappears and the inverter operates normally again.

DECLARATION OF CONFORMITY



PLEASE KEEP THIS DOCUMENT IN A SAFE PLACE

We, EPS Group
of Mallow Business and Technology Park
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Telephone: +353 (22) 31200
Email: info@epswater.ie

Hereby declare that:

Equipment: **POWERBOOST PRO E, PRO S, & FLOW V Ranges**
Model : All standard models

in accordance with the following Directives:

- Machinery Directive 2006/42/EU
- EMC Directive 2014/30/EU

is in conformity with the applicable requirements of the following documents:

- ISO 12100 (Safety of machinery — General principles for design — Risk assessment and risk reduction)

I hereby declare that the equipment above has been designed, assembled, and tested to comply with the relevant section of the above referenced specifications. The unit complies with all essential requirements of the directives.

The Technical File is maintained at:

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Telephone: +353 (22) 31200
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Signed:

Managing Director, EPS

Date:

02/01/2020

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POWERBOOST
by EPS Group