

The
SENTINEL
FROM PUMP EXPRESS

Installation Instructions



PUMP**EXPRESS**
WE MOVE WATER

1. IMPORTANT SAFETY INSTRUCTIONS

**PLEASE READ THIS INSTRUCTION MANUAL CAREFULLY
BEFORE INSTALLING OR COMMISSIONING THIS PRODUCT.**



To reduce the risk of fire or electrical shock, please assure that:

- The appliance is disconnected from the mains before any form of intervention.
- The mains supply cabling and any extension cords are adequately sized, according to the rated power of the pump and that there is no risk of the electrical connections coming into contact with water.
- Always use a Residual Current Device with IDn=30mA particularly in installations pertaining to swimming pools, ponds or fountains.

CAUTION: When the pump stops, the system will still be under pressure, therefore, before any intervention, make sure to open a tap to relieve the system.

The device should only be used for clean water systems and is not suitable for use with sea water, sewage, drainage systems, explosive, corrosive or any other hazardous liquids.

2. WARRANTY

The manufacturer guarantees this product for a period of 12 months from the date of purchase; the unit must be returned together with this instruction manual, clearly indicating the date of installation on the last page.

The warranty is automatically void if the appliance is subjected to any form of unauthorized tampering, damage resulting from incorrect use and/or improper installation, unsuitable environmental conditions or improper electrical installation.

The manufacturer declines any form of liability resulting from damages to buildings, personal belongings and/or persons, caused by failure to install the necessary electrical protection devices or inferior workmanship.

It is strongly recommended that the installation and maintenance of this appliance be undertaken by qualified installer who are expected to fully understand the contents of this instruction manual.

The manufacturer cannot be held responsible for any kind of damage to people and/or things ensuing from the failure of any internal safety devices to intervene, with the exception of compensation for the device itself if still under guarantee.

3. Description

The Sentinel will start and stop automatically upon a drop in pressure (opening of the taps) and stop when the flow through the system falls below 2 l/min.

Should the water supply be interrupted for any reason the Sentinel will stop protecting it from harmful dry running.

It is also able to restart automatically, by means of an inbuilt timer, to check for the eventual presence of water.

The integrated 0.4 Lt expansion tank reduces unwanted pressure surges as well as "pump cycling" which may arise due to the presence of small leaks within the system.

The inbuilt pressure gauge makes it easier to control the pressure within the system; and helps to identify any leaks in the system.



It is strongly recommended that the water is free of any sediment. If in doubt, it is necessary to install an appropriate sediment filter on the inlet side.



**The device must not be installed inside wells or sealed enclosures, where heavy condensation is likely to form.
The Sentinel must be protected against freezing during cold weather spells.**

4. Operation

The Sentinel activates for about 15 seconds when it is powered.

The pump starts every time it senses a pressure drop within the system, for example when a tap is opened.

Unlike traditional water system equipped with pressure switch and pressure tank, it is the minimum flow that determines when the pump should stop, rather than the cut-out pressure. The device delays the pump from stopping for a further 7 – 15 seconds, thus reducing pump cycling in low flow conditions.

5. Assembly Instructions

The Brio tank must be installed on the pump outlet (Top Connection). Care must be taken to ensure that the direction of the arrow on the cover is in the same direction of the flow of the fluid within the pipes. All hydraulic connections must be properly tightened.

6. Installation Instructions

Please read carefully before commencing installation.

Failure to properly follow these instructions will invalidate warranty.

- 1.** Both hot and cold water supplies must come from gravity feed tanks, **not mains**.
- 2.** Pump must be fitted in a flooded head situation. i.e. below supply tank level and close to the tanks.
- 3.** The pumps must be mounted with the flow outlet in an upright position. Do not bolt pumps to floor as this causes excessive noise. Use only PTFE on threaded joints on the pump. Boss white & Hemp should not be used as this can easily enter and damage the pump internals.
- 4.** All pipes to the pump must be 22 or 28mm, and pipes from the pump should ideally be 22mm (although 15mm can be used if this already exists.) The size of the supply pipe from the cold storage tank to the hot cylinder should ideally be 28mm although on short runs 22mm would be acceptable. (Single with no take offs)
- 5.** Isolating valves (preferably full-bore lever ball valves) must be fitted before and after (and close to) the pump for ease of servicing.
Do not use "ballofix" type valves as these are very restricting and will affect pump performance.
- 6.** The hot water supply must be from an unvented take - off point on the hot water cylinder. **(Not the top of the tank).**The connection must be made with Essex Flange CFI/R(NS) 22mm and the tube projected min 25mm into the cylinder and ideally to the centre of the tank with the end bent upwards. Hot water supply must not exceed 65°C. Therefore a cylinder stat should be fitted. **Any use above this temperature will cause premature failure of the pumps and invalidate the guarantee.**
- 7.** All bends in the pipe-work should be swept (do not use 90 degree). All pipe-work should be fitted so as to avoid air traps. Pipes should be clipped for noise reduction.
- 8.**The cold water storage tank for these installations should ideally have actual capacity of 50 gallons, or 75 gallons for a pair of pumps to ensure there is always enough water available when pumps are in use. Pumps will produce 20-30 litres/min (over 5 gallons/min) each.
- 9.** Do not install the hot pump in a loft area. The best place for the hot pump is close to the hot water cylinder and it must be placed below the level of the outlet.
- 10.** Before connecting the pump all new pipe-work should be thoroughly flushed out. Any debris entering the pump will invalidate the guarantee and debris blocking filters in any PRV's or shower valves will impair operation.
- 11. Never** run pumps dry. Always fill pump body with water before making final connection. (Open water supply and allow air to escape by opening air bleed screw until all water comes out and then tighten bleed screw).
- 12.** The BRIO controller (for negative head or where there is a multi-outlet shower) ensure the switch is fitted to the pump OUTLET. **NOTE:** On single pump installations the BRIO controller requires a closed outlet when not in use. Control valve must be inside the shower cubicle.

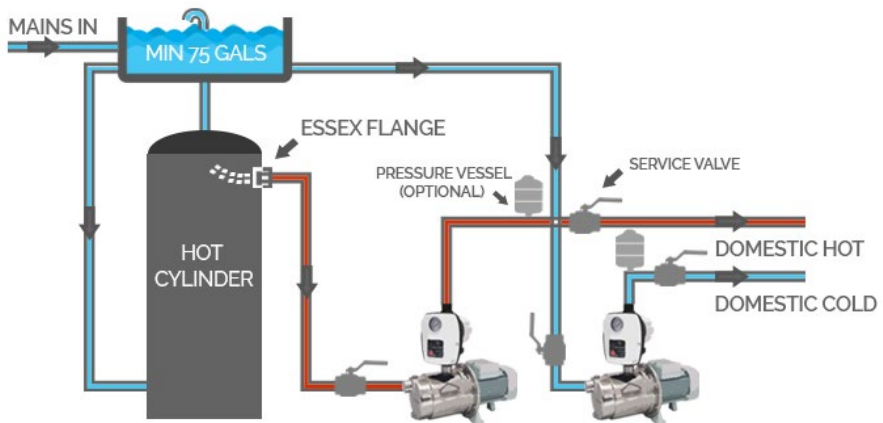
Electrical Supplies: The controller is pre-wired with fused plugs which can be replaced with a fused switch spur point with 5 amp fuse for one pump and 10 amp fuse for two pumps (required). Final connections should be made to IEE standards, following the wiring diagrams enclosed with each individual control switch.

7. Installation Guide

Both hot and cold water supplies must come from gravity feed tanks, not mains.

Pump must be fitted in a flooded head situation. i.e. below supply tank level and close to the tanks.

Please read FULL INSTALLATIONS INSTRUCTIONS carefully before commencing installation.



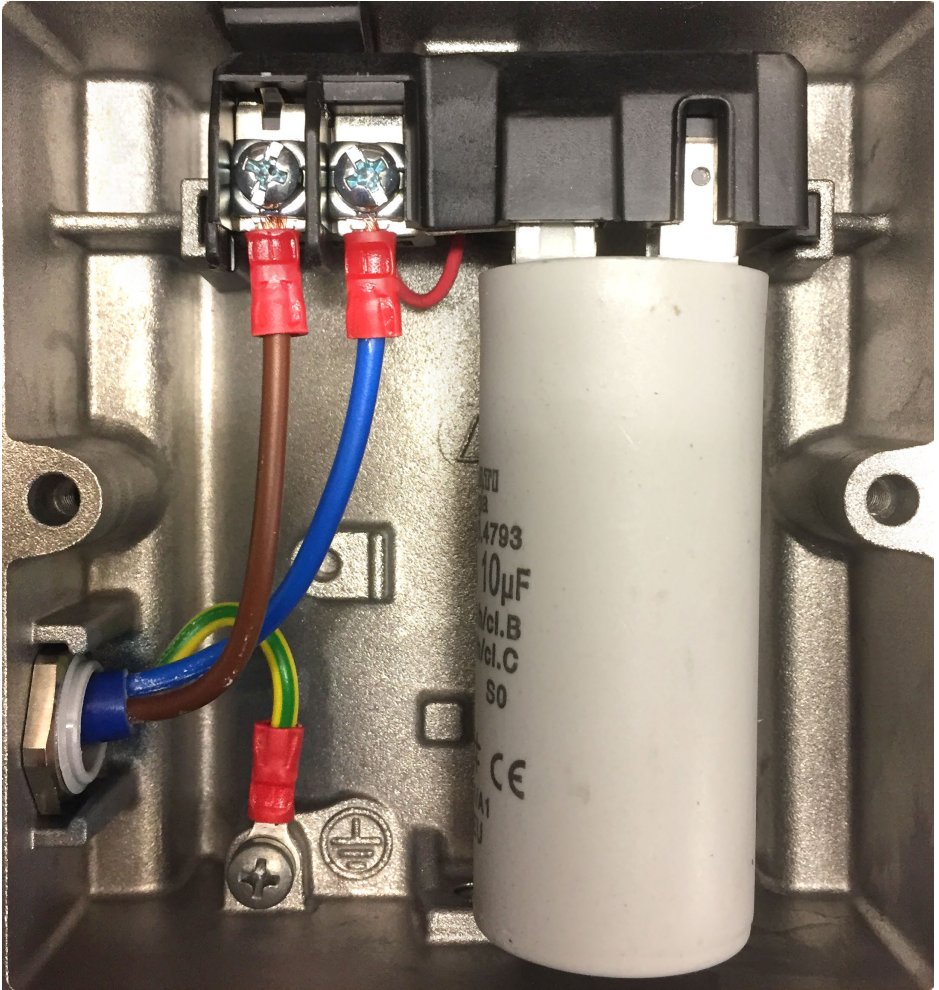
***Double Check Valves should be installed on hot and cold supply pipes before all points where 'cross over' between hot and cold supplies can occur, such as mixer taps and mixer showers.**

***Isolating valves (preferably full-bore lever ball valves) must be fitted before and after (and close to) the pump for ease of servicing. Service valves must be full bore.**

Do not use "ballofix" type valves as these are very restricting and will affect pump performance.

***If using Pressure Vessels they must be installed after the pumps and controllers before the first outlet.**

8. Wiring



9. Commissioning

Before switching on, make sure that both the suction pipe and the pump are primed. Start the pump by switching on the Brio Tank device. As soon as the pump stops running, open the tap positioned at the highest point within the system.

If there is a steady flow from the tap, and the pump runs uninterrupted, the commissioning procedure has been successful. If there is no continuous flow, try to run the pump for a short while by holding down the RESET button. If the problem persists, disconnect the Brio Tank device and repeat the whole procedure.

10. Protection Against Dry Running

If the pump stops running due to lack of water, the Red FAILURE light goes on. To reset the system, press the RESET button after confirming the presence of water on the suction side.

11. Automatic Reset

Should the pump stop running because of lack of water it will restart automatically at pre-set intervals of 15, 30 or 60 minutes, depending on the model. This operation mode is indicated by the rapid flashing of the red indicator light. This process is repeated until either there is new water available on the suction side of the pump or else, the pump has reached the maximum number of pre-set retries (2, 4 or 8 depending on the model). Should this limit be exceeded, the red indicator light remains switched on. To reset the system, you must press the RESET button after verifying the presence of water on the suction side.

12. Maintenance

The device has been designed to provide maximum performance without the need for special maintenance during its operational lifespan.

However, in particularly severe conditions of use, you may need to check, and if necessary adjust, the pre-set pressure of the pressure tank.

12.A TO CHECK THE PRESET TANK PRESSURE

Make sure to disconnect the power supply and completely relieve the system from the built-up hydraulic pressure by opening a tap. Unscrew the rear cap of the pressure tank in order to gain access to the pressurization valve.

Adjust the pressure of the tank to the desired value, using an appropriate compressed air source equipped with a pressure gauge.

The pre-set pressure should be adjusted to approximately $\frac{2}{3}$ of the value of the cut-in pressure of the Brio Tank (for example, if the start-up pressure is 1.5 Bar, the pre-set value must be $1,5 \times \frac{2}{3} = 1.0$ Bar).



CAUTION: THE PRESSURE WITHIN THE PRESSURE TANK MUST NEVER EXCEED 4 BAR. IT IS ADVISABLE TO USE A COMPRESSOR WITH A PRESET OUTPUT PRESSURE NOT EXCEEDING THE 4 BAR MAXIMUM VALUE TO AVOID THE RISK OF EXPLOSION AND/OR INJURY!

13. Troubleshooting

Problem	Possible Cause	Solution
1. The pump does not deliver any liquid	1. The Brio Tank was mounted the wrong way round 2. The priming process was not implemented correctly	1. Check the installation of the device and correct if necessary 3. Press and hold the RESET button until the flow is regular
2. The pump does not reach the desired pressure	1. There are leaks in the system 2. The suction pipe or filters are clogged	1. Check for leaks 2. Remove any clogging
3. The device stops the pump from running even in presence of water	1. The pump's thermal protection may prevent the pump from running	1. Check the pump 2. Contact us
4. The pump does not start when a tap is opened	1. Contact us	1. Contact us
5. The pump starts and stops frequently	1. There are leaks in the system 2. The pressure within the pressure tank is not correct 3. The flow of water from the tap is too low	1. Check for any leaks and resolve as necessary 2. Restore the pre-set value of the pressure tank 3. Contact technical support
6. The pump keeps running and does not stop	1. The flow switch of the Brio Tank is dirty 2. There are significant leaks within the system 3. A check valve has been installed before or after the Brio Tank device	1. Check the device 2. Check the plumbing system 3. Remove any valves from the system



CE DECLARATION OF CONFORMITY

EN - It is hereby declared that the machine specified herein, according to the specific design, type of construction and version released onto the market, complies with the essential health and safety requirements of EC directives. In the event of modifications to the machine without prior authorisation, this declaration will be rendered null and void.

MODEL: BRIO TANK

TYPE: BK-XX-X-XX-XXX

DIRECTIVE:	WITH REFERENCE TO:	MARKING YEAR:
2006/95/EC LVD	EN 60730-1/A2:2008 EN 60730-2-6:2008	13
2004/108/EC EMC	EN 61000-6-3/A2:2012 EN 61000-6-1:20073. T	13
2011/65/ECROHS	EN 50581:2012	13