

# Booster Pump Set

## Models BPELC1 / BPELC2 - Overview - Datasheet Page 1 of 7

### Overview

Booster Pump Set packaged on a stainless steel base supplied with pressure vessel and ancillary controls ready for installation. A separate cistern (tank) is required to supply the set. The set is approved for drinking (wholesome) water applications.

The primary purpose is to boost the water pressure where the maintained mains supply pressure is less than 1 bar or where significant water storage is desired (e.g. 15 mins). The set may also be used for Fluid Category 5 backflow protection when supplied via a tank with a Type AB air gap.

The standard unit BPELC1 is quiet by virtue of a variable speed centrifugal pump, anti-vibration rubber feet and flexible stainless braided connection hoses. The unit comes with a low level pump cut out, level controller. All sets are supplied with pump controls – inverter, pressure transducer and BMS.

The set has the option of Dual Level Control (model LC2). The level control box provides additional solid state delayed action for cistern (tank) filling, via a solenoid controlled filling arm.

The Arrow Valves automatic Bypass Valve (see page 4) is recommended (up to Fluid Category 3) to enable mains water to be supplied - at mains pressure - during power failure or maintenance.

Arrow Valves also manufacture booster pumps complete with integral filling cistern –  
 Domestic boosting – (Wholesome water) *“Pent-A-Boost®”*  
 Backflow protection Fluid Category 5 - *“Boost-A-Break®”*

### Applications

- Penthouse (3 storey and taller)
- Boosting low water pressure
- “Combi” boilers & showers
- Fluid Category 5 backflow protection when used with cistern with Type AB air gap

### Specification

|                      |                                     |
|----------------------|-------------------------------------|
| Pressure Supply min. | 1.0 m head (0.1 bar)                |
| Pressure Supply max. | 1.0 bar                             |
| Pressure Outlet      | See flow graph – page 2             |
| Pressure Gauge       | Ø63 stainless – glycerine filled    |
| Vessel Capacity      | 12 Lt                               |
| Inlet Size           | See “Inlet Control” table           |
| Outlet Size          | See “Outlet Pressure Control” table |
| Noise                | <58 dBa @ 1 m                       |
| Temperature          | 25° max. ambient                    |

### Materials

|                              |                            |
|------------------------------|----------------------------|
| Base / drip tray / fasteners | Stainless steel 304        |
| Pump (wetted parts)          | Stainless steel 304        |
| Pipes / fittings             | Copper / Brass / Stainless |



Model BPE3-10LC1

*Conductive Electrodes – supplied with “Level Control”. The electrode holder is fitted to the tank lid and one pair of electrodes control low level pump cut-out. A second pair of electrodes control the tank filling (via a suitable solenoid) or high level cut out. Electrodes supplied 1 m long and must be cut to length on site to suit tank.*



### Water Regulations

The assembly is fully Water Regulations approved & complies with the requirements of the Water Regulations when installed and used correctly. Water supply companies are only obliged to supply a minimum pressure of 1 bar @ 9 Lt/min. This means mains water will only reach 10 m. Since many boilers and showers require 1 bar (or even 1.5 bar) this means boosting is often essential to the third storey and higher.

### Variable Speed Merits

Variable speed pumps provide only the pressure required to meet demand making the unit economical and extending the life of the pump.

There is a choice of 7 variable speed pumps – see page 2. Speed control is achieved by a full-wave inverter which varies the frequency to the induction motor. The merits include -

- Higher flow rate – up to 2 Lt/s output
- Variable speed – speed changes to meet demand
- Quiet – especially at low demand
- Surge free – inverter pump avoids high current demand
- Constant supply pressure
- Qualifies for Enhanced Capital Allowance

### Arrow Valves Ltd

Tel: 01442 823123 Fax: 01442 823234  
 www.arrowvalves.co.uk

Arrow Valves Ltd reserve the right to change specifications, design and materials at any time without notice.  
 All unit-less dimensions in mm.  
 © Copyright Arrow Valves Ltd 2001-2019



**Arrow  
Valves**

# Booster Pump Set

## Models BPELC1 / BPELC2 — Single Pump 1.0 Lt/s — Datasheet Page 2 of 7

### Connection Pipes

Flexible stainless braided hoses are supplied for the inlet and outlet. These have a female swivel nut (union) and a fibre washer. See Outlet Pressure Control and Codes and Descriptions tables for size. The outlet connection has a double check valve incorporated.

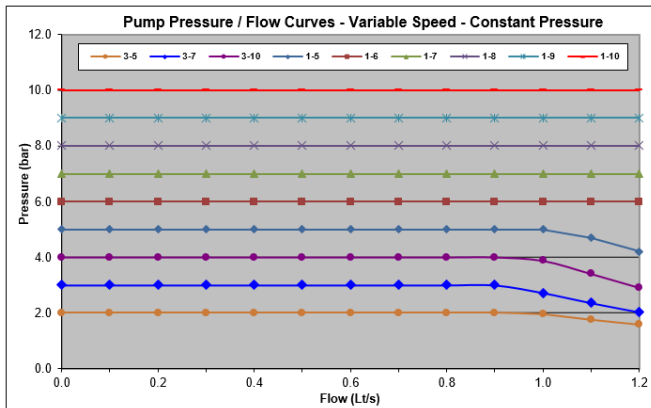
### Outlet Pressure Control

The outlet pressure is controlled by a transducer, which is factory set to the "default set point" in the table below and controlled to within a 10% band. The outlet pressure is therefore constant up to the maximum duty of the pump.

| Model | Outlet Size | Default Set point | Pressure Switch on (min.) <sup>1</sup> | Pressure Switch off (Max) <sup>1</sup> | Pressure Max <sup>2</sup> | Vessel Air Pressure <sup>3</sup> |
|-------|-------------|-------------------|----------------------------------------|----------------------------------------|---------------------------|----------------------------------|
| 3-5   | DN20        | 2.0 bar           | 1.8 bar                                | 2.2 bar                                | 2.8 bar                   | 1.4 bar                          |
| 3-7   | DN20        | 3.0 bar           | 2.7 bar                                | 3.3 bar                                | 4.6 bar                   | 2.1 bar                          |
| 3-10  | DN25        | 4.0 bar           | 3.6 bar                                | 4.4 bar                                | 5.5 bar                   | 2.8 bar                          |
| 1-5   | DN25        | 5.0 bar           | 4.5 bar                                | 5.5 bar                                | 7.0 bar                   | 3.5 bar                          |
| 1-6   | DN25        | 6.0 bar           | 5.4 bar                                | 6.6 bar                                | 7.0 bar                   | 4.2 bar                          |
| 1-7   | DN25        | 7.0 bar           | 6.3 bar                                | 7.7 bar                                | 11.7 bar                  | 4.9 bar                          |
| 1-8   | DN25        | 8.0 bar           | 7.2 bar                                | 8.8 bar                                | 11.7 bar                  | 5.6 bar                          |
| 1-9   | DN25        | 9.0 bar           | 8.1 bar                                | 9.9 bar                                | 11.7 bar                  | 6.3 bar                          |
| 1-10  | DN25        | 10.0 bar          | 9.0 bar                                | 11.0 bar                               | 11.7 bar                  | 7.0 bar                          |

Notes - 1. Differential +/- 10% of set point. 2. If set to full speed.  
3. Vessel air pressure with zero water pressure, 0.7 X set point.

The graph below illustrates the benefit of variable speed pumps. The outlet pressure is constant despite varying flow demand. *Note – using "default set point". The set point can be altered at the factory. On-site alterations require a commissioning service (this is chargeable).*



### Level Control

Supplied with Level Control, the control box on the pump set has an electrode holder with 5 m of cable (as standard). The electrode holder must be fitted to the tank lid and the electrodes cut to length to suit the tank.

**LC1** – Pump Protection supplied with a DN25 electrode holder with 3 one metre long electrodes. Pre-wired to control box to stop pump if water level drops too low.

**LC2** – Pump Protection as above plus additional level controller for solenoid controlled filling arm. Supplied with a DN25 electrode holder with 5 electrodes supplied with 5 m of cable, pre-wired to control box. The electrodes need cutting to length on site to suit tank

Fast filling is achieved by a servo-controlled solenoid valve with solid-state level probe control. This system has proved to be more reliable and accurate than conventional float valves. Accurate level control is achieved with level electrodes which provide on/off full flow control.

### Electrical Specification

Motor 2-Pole 50 Hz 230 V 1 ph (3-5, 3-7, 3-10, 1-5)  
400 V 3 ph (1-6, 1-7, 1-8, 1-9, 1-10)

| Model               | 1 phase A (Run) | 3 phase A (Run) | Input max kW |
|---------------------|-----------------|-----------------|--------------|
| 3-5                 | 4.2             |                 | 0.55         |
| 3-7                 | 5.5             |                 | 0.75         |
| 3-10                | 7.5             |                 | 1.10         |
| 1-5                 | 5.0             |                 | 1.10         |
| 1-6                 |                 | 3.7             | 2.20         |
| 1-7, 1-8, 1-9, 1-10 |                 | 5.0             | 3.00         |

Class BMS

Low level cut out

Protection Connection

1 phase

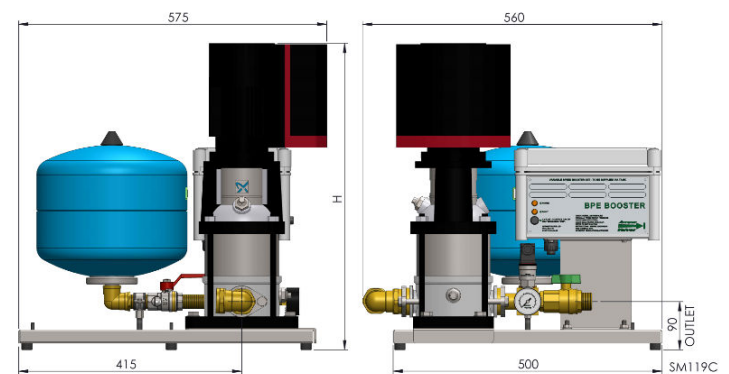
3 phase<sup>1</sup>

Note – 1. The control circuit is 230 V so a neutral supply is required

Class 1 (requires earth wire)  
Volt free SPDT relay general fault - pump / inverter / low level alarm  
Stops pump via electrodes in tank (Warning lamp on control box) – auto reset once tank refilled  
IP65 (Enclosure) / IP55 (Pump)

M20 1 phase + neutral + earth  
M20 3 phases + neutral + earth

### Dimensions



Model BPE3-10LC1

| Model – BPE | 3-5 | 3-7 | 3-10 | 1-5 | 1-6 | 1-7 | 1-8 | 1-9 | 1-10 |
|-------------|-----|-----|------|-----|-----|-----|-----|-----|------|
| H (mm)      | 534 | 570 | 654  |     | 775 | 954 | 954 | 954 | 954  |

Note – in addition to "H" - allow 25 mm min. for ventilation and ideally 200 mm for servicing.

### Codes and Descriptions – Single Pump 1.0 Lt/s

| Inlet Size | Code          | Description                                         |
|------------|---------------|-----------------------------------------------------|
| DN20       | BPE3-5LC1     | Booster pump 3-5 with low level pump cut out        |
| DN20       | BPE3-7LC1     | Booster pump 3-7 with low level pump cut out        |
| DN25       | BPE3-10LC1    | Booster pump 3-10 with low level pump cut out       |
| DN25       | BPE1-5LC1     | Booster pump 1-5 with low level pump cut out        |
| DN25       | BPE1-6LC1     | Booster pump 1-6 with low level pump cut out        |
| DN25       | BPE1-7LC1     | Booster pump 1-7 with low level pump cut out        |
| DN25       | BPE1-8LC1     | Booster pump 1-8 with low level pump cut out        |
| DN25       | BPE1-9LC1     | Booster pump 1-9 with low level pump cut out        |
| DN25       | BPE1-10LC1    | Booster pump 1-10 with low level pump cut out       |
| DN20       | BPE3-5LC2-20  | Booster Pump 3-5 Variable Dual Level Control 230 V  |
| DN20       | BPE3-7LC2-20  | Booster Pump 3-7 Variable Dual Level Control 230 V  |
| DN25       | BPE3-10LC2-25 | Booster Pump 3-10 Variable Dual Level Control 230 V |
| DN25       | BPE1-5LC2-25  | Booster Pump 1-5 Variable Dual Level Control 230 V  |
| DN25       | BPE1-6LC2-25  | Booster Pump 1-6 Variable Dual Level Control 400 V  |
| DN25       | BPE1-7LC2-25  | Booster Pump 1-7 Variable Dual Level Control 400 V  |
| DN25       | BPE1-8LC2-25  | Booster Pump 1-8 Variable Dual Level Control 400 V  |
| DN25       | BPE1-9LC2-25  | Booster Pump 1-9 Variable Dual Level Control 400 V  |
| DN25       | BPE1-10LC2-25 | Booster Pump 1-10 Variable Dual Level Control 400 V |

Optional extras – see pages 6 and 7

Arrow Valves Ltd

Tel: 01442 823123

Fax: 01442 823234

www.arrowvalves.co.uk

Arrow Valves Ltd reserve the right to change specifications, design and materials at any time without notice.  
All unit-less dimensions in mm.

© Copyright Arrow Valves Ltd 2001-2019



**Arrow Valves**

# Booster Pump Set

Models BPELC1 / BPELC2 — Single Pump 2.0 Lt/s — Datasheet Page 3 of 7

## Description – Speed 2.0 Lt/s

There is a choice of 7 single pump models with a 2.0 Lt/s output – see chart below.

The higher flow units are suitable for supplying multiple outlets or applications where a greater flow rate is required.

## Inlet Control

Fast and accurate level control is achieved with two 1" filling solenoid valves (except model 5-4 which has a single solenoid). Level electrodes provide on/off full flow control with 60 mm delayed action.

| Model                          | Inlet Size        | Minimum Dynamic Pressure | Pipe Velocity m/s |
|--------------------------------|-------------------|--------------------------|-------------------|
| 5-4                            | DN25 female union | 1.0 bar                  | 2.8               |
| 5-8, 5-10, 2-5, 5-16, 2-7, 2-8 | DN32 female union | 1.0 bar                  | 2.4               |

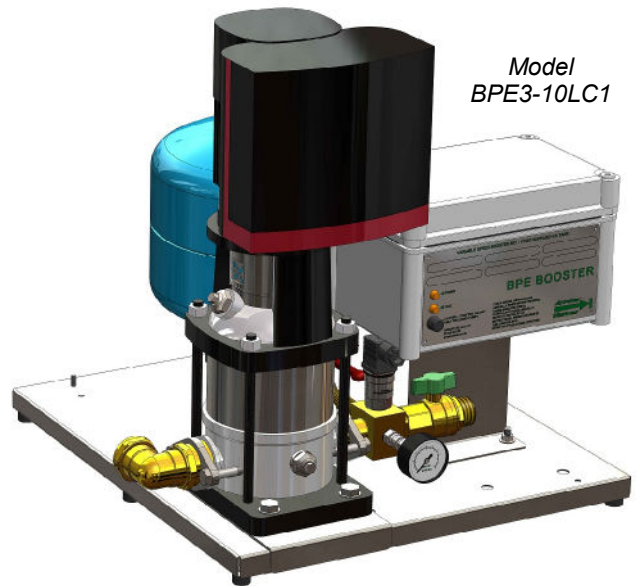
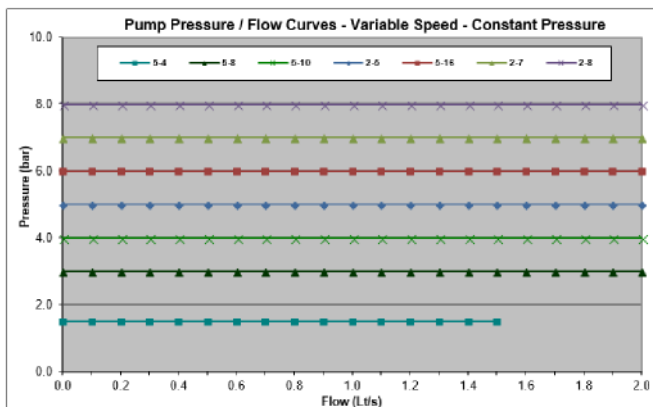
## Outlet Pressure Control

The outlet pressure controlled by a transducer, which is factory set to the "default set point" in the table below and controlled to within a 10% band. The outlet pressure is therefore constant up to the maximum duty of the pump.

| Model | Outlet Size | Default Set Point | Pressure Switch on (min.) <sup>1</sup> | Pressure Switch off (Max) <sup>1</sup> | Pressure Max <sup>2</sup> | Vessel Air Pressure <sup>3</sup> |
|-------|-------------|-------------------|----------------------------------------|----------------------------------------|---------------------------|----------------------------------|
| 5-4   | DN25        | 1.5 bar           | 1.4 bar                                | 1.7 bar                                | 2.8 bar                   | 1.1 bar                          |
| 5-8   | DN32        | 3.0 bar           | 2.7 bar                                | 3.3 bar                                | 5.0 bar                   | 2.1 bar                          |
| 5-10  | DN32        | 4.0 bar           | 3.6 bar                                | 4.4 bar                                | 7.0 bar                   | 2.8 bar                          |
| 2-5   | DN32        | 5.0 bar           | 4.5 bar                                | 5.5 bar                                | 7.0 bar                   | 3.5 bar                          |
| 5-16  | DN32        | 6.0 bar           | 5.4 bar                                | 6.6 bar                                | 11.7 bar                  | 4.2 bar                          |
| 2-7   | DN32        | 7.0 bar           | 6.3 bar                                | 7.7 bar                                | 11.7 bar                  | 4.9 bar                          |
| 2-8   | DN32        | 8.0 bar           | 7.2 bar                                | 8.8 bar                                | 11.7 bar                  | 5.6 bar                          |

Notes - 1. Differential +/- 10% of set point. 2. If set to full speed. 3. Vessel air pressure with zero water pressure, 0.7 X set point.

The graph below illustrates the benefit of variable speed pumps. The outlet pressure is constant despite varying flow demand. Illustrated using "default set point". The set point can be altered at the factory. On-site alterations require a commissioning service.



## Electrical Specification

Motor 2-Pole 50 Hz 230 V 1 ph (5-4, 5-8)  
400 V 3 ph (5-10, 2-5, 5-16, 2-7, 2-8)

|                | 1 phase | 3 phase | Input max |
|----------------|---------|---------|-----------|
| Model          | A (Run) | A (Run) | kW        |
| 5-4            | 7.5     |         | 1.10      |
| 5-8            | 7.5     |         | 1.50      |
| 5-10, 2-5      |         | 3.7     | 2.20      |
| 5-16, 2-7, 2-8 |         | 5.0     | 3.00      |

Class  
BMS

Low level cut out

Protection  
Connection

1 phase  
3 phase<sup>1</sup>

Note – 1. The control circuit is 230 V so a neutral supply is required

Class 1 (requires earth wire)  
Volt free SPDT relay general fault –  
Pump / inverter / low level alarm  
Stops pump via electrodes in tank  
(Warning lamp on control box) – auto  
reset once tank refilled  
IP65 (Enclosure) / IP55 (Pump)

M20 1 phase + neutral + earth  
M20 3 phases + neutral + earth

## Codes & Descriptions – Single Pump 2.0 Lt/s

| Inlet Size | Code          | Description                                         |
|------------|---------------|-----------------------------------------------------|
| DN25       | BPE5-4LC1     | Booster pump 5-4 with low level pump cut out        |
| DN32       | BPE5-8LC1     | Booster pump 5-8 with low level pump cut out        |
| DN32       | BPE5-10LC1    | Booster pump 5-10 with low level pump cut out       |
| DN32       | BPE2-5LC1     | Booster pump 2-5 with low level pump cut out        |
| DN32       | BPE5-16LC1    | Booster pump 5-16 with low level pump cut out       |
| DN32       | BPE2-7LC1     | Booster pump 2-7 with low level pump cut out        |
| DN32       | BPE2-8LC1     | Booster pump 2-8 with low level pump cut out        |
| DN25       | BPE5-4LC2-25  | Booster Pump 5-4 Variable Dual Level Control 230 V  |
| DN32       | BPE5-8LC2-25  | Booster Pump 5-8 Variable Dual Level Control 230 V  |
| DN32       | BPE5-10LC2-32 | Booster Pump 5-10 Variable Dual Level Control 400 V |
| DN32       | BPE2-5LC2-32  | Booster Pump 2-5 Variable Dual Level Control 400 V  |
| DN32       | BPE5-16LC2-32 | Booster Pump 5-16 Variable Dual Level Control 400 V |
| DN32       | BPE2-7LC2-32  | Booster Pump 2-7 Variable Dual Level Control 400 V  |
| DN32       | BPE2-8LC2-32  | Booster Pump 2-8 Variable Dual Level Control 400 V  |

Optional extras – see pages 6 and 7

Arrow Valves Ltd

Tel: 01442 823123

Fax: 01442 823234

www.arrowvalves.co.uk

Arrow Valves Ltd reserve the right to change specifications, design and materials at any time without notice.

All unit-less dimensions in mm.

© Copyright Arrow Valves Ltd 2001-2019



**Arrow  
Valves**

# Booster Pump Set

## Models BPELC1 / BPELC2 – Duty Standby – Datasheet Page 4 of 7

### Dual Pump – Duty Standby

Both pumps are variable speed and set to provide constant pressure. Remarkably, the foot print is the same as the single pump set. Only one pump runs at any one time, the pumps alternate on a daily basis to avoid stagnation and ensure even use. A manual override switch "hand" allows either pump to be isolated and run only the healthy pump.

### Connection Pipes

Flexible stainless braided hoses are supplied for the inlet and outlet. These have a female swivel nut (union) and a fibre washer. See Codes and Descriptions and Outlet Pressure Control tables for size.

### Electrical Specification

Motor 230 V 1 phase

|       | 1 phase |  | Input max |
|-------|---------|--|-----------|
| Model | A (Run) |  | kW        |
| 3-5S  | 4.2     |  | 0.55      |
| 3-7S  | 5.5     |  | 0.75      |
| 3-10S | 7.5     |  | 1.10      |
| 5-4S  | 7.5     |  | 1.10      |
| 5-8S  | 7.5     |  | 1.50      |

Class  
BMS

Class 1 (requires earth wire)  
Volt free SPDT relay general fault-  
pump / inverter / low level alarm  
Volt free SPDT for low level alarm  
Stops pump via electrodes in tank  
(Warning lamp on control box) –  
auto reset once tank refilled  
IP65 (Enclosure) / IP55 (Pump)

Low level cut out

Protection  
Connection  
1 phase

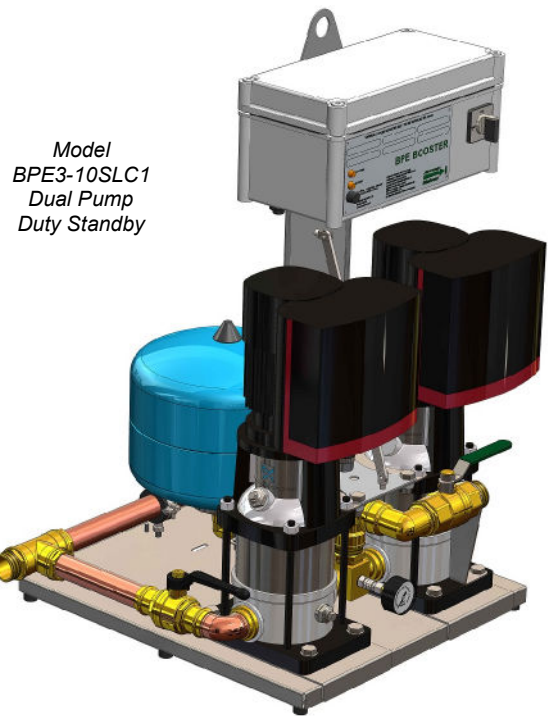
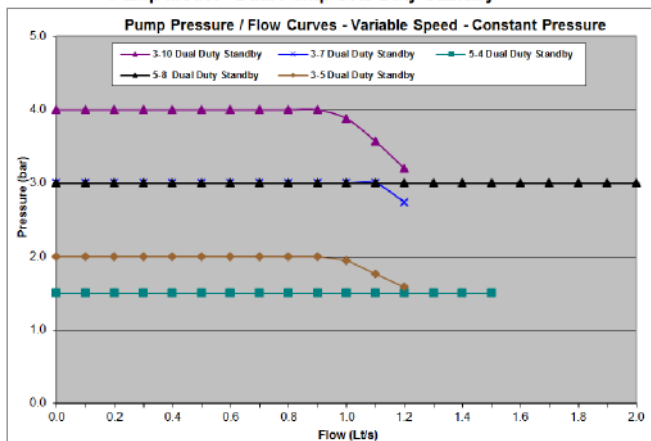
M20 1 phase + neutral + earth

### Outlet Pressure Control

| Model | Outlet Size | Default Set point | Pressure Switch on (min.) <sup>1</sup> | Pressure Switch off (Max) <sup>1</sup> | Pressure Max <sup>2</sup> | Vessel Air Pressure <sup>3</sup> |
|-------|-------------|-------------------|----------------------------------------|----------------------------------------|---------------------------|----------------------------------|
| 3-5S  | DN20        | 2.0 bar           | 1.8 bar                                | 2.2 bar                                | 2.8 bar                   | 1.4 bar                          |
| 3-7S  | DN20        | 3.0 bar           | 2.7 bar                                | 3.3 bar                                | 4.6 bar                   | 2.1 bar                          |
| 3-10S | DN25        | 4.0 bar           | 3.6 bar                                | 4.4 bar                                | 5.5 bar                   | 2.8 bar                          |
| 5-4S  | DN25        | 1.5 bar           | 1.4 bar                                | 1.7 bar                                | 2.8 bar                   | 1.1 bar                          |
| 5-8S  | DN32        | 3.0 bar           | 2.7 bar                                | 3.3 bar                                | 5.0 bar                   | 2.1 bar                          |

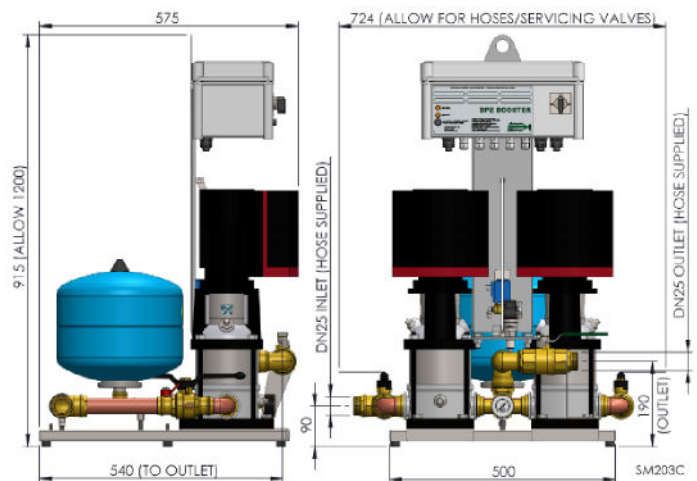
Notes -  
1. Differential +/- 10% of set point. 2. If set to full speed.  
3. Vessel air pressure with zero water pressure, 0.7 X set point.

Pump Model - Dual Pump Sets Duty Standby



Model  
BPE3-10SLC1  
Dual Pump  
Duty Standby

### Dimensions



Model BPE3-10S-LC1 Shown (Dimensions apply to all 3 Series Dual Pump units)

### Codes and Descriptions – Duty Standby

| Inlet Size | Code         | Description                                 |
|------------|--------------|---------------------------------------------|
| DN20       | BPE3-5S-LC1  | Booster pump 3-5 Duty Standby LC1 230 V     |
| DN20       | BPE3-7S-LC1  | Booster pump 3-7 Duty Standby LC1 230 V     |
| DN25       | BPE3-10S-LC1 | Booster pump 3-10 Duty Standby LC1 230 V    |
| DN25       | BPE5-4S-LC1  | Booster pump 5-4 Duty Standby LC1 230 V     |
| DN32       | BPE5-8S-LC1  | Booster pump 5-8 Duty Standby LC1 230 V     |
| DN20       | BPE3-5S-LC2  | Booster Pump 3-5 Duty Standby LC2-20 230 V  |
| DN20       | BPE3-7S-LC2  | Booster Pump 3-7 Duty Standby LC2-20 230 V  |
| DN25       | BPE3-10S-LC2 | Booster Pump 3-10 Duty Standby LC2-25 230 V |
| DN25       | BPE5-4S-LC2  | Booster Pump 5-4 Duty Standby LC2-25 230 V  |
| DN32       | BPE5-8S-LC2  | Booster Pump 5-8 Duty Standby LC2-25 230 V  |

Optional extras – see pages 6 and 7

Arrow Valves Ltd

Tel: 01442 823123

Fax: 01442 823234

www.arrowvalves.co.uk

Arrow Valves Ltd reserve the right to change specifications, design and materials at any time without notice.  
All unit-less dimensions in mm.

© Copyright Arrow Valves Ltd 2001-2019



**Arrow  
Valves**

# Booster Pump Set

## Models BPELC1 / BPELC2 – Duty Assist – Datasheet Page 5 of 7

### Duty Assist

Allows the second pump to automatically switch on when required, thus doubling the output. Alternate starting avoids stagnation and ensures even use. If one pump develops a fault, the controller isolates and continues with the healthy pump (the BMS fault relay activates together with panel lamps). Normal demand is often met with only one small pump running at optimum efficiency, offering substantial energy saving compared to one larger pump. Furthermore smaller pumps are quieter.

| Model | Outlet Size | Default Set point | Pressure Switch on (min.) <sup>1</sup> | Pressure Switch off (Max) <sup>1</sup> | Pressure Max <sup>2</sup> | Vessel Air Pressure <sup>3</sup> |
|-------|-------------|-------------------|----------------------------------------|----------------------------------------|---------------------------|----------------------------------|
| 3-5A  | DN32        | 2.0 bar           | 1.8 bar                                | 2.2 bar                                | 2.8 bar                   | 1.4 bar                          |
| 3-7A  | DN32        | 3.0 bar           | 2.7 bar                                | 3.3 bar                                | 4.6 bar                   | 2.1 bar                          |
| 3-10A | DN32        | 4.0 bar           | 3.6 bar                                | 4.4 bar                                | 5.5 bar                   | 2.8 bar                          |
| 5-4A  | DN32        | 1.5 bar           | 1.4 bar                                | 1.7 bar                                | 2.8 bar                   | 1.1 bar                          |
| 5-8A  | DN32        | 3.0 bar           | 2.7 bar                                | 3.3 bar                                | 5.0 bar                   | 2.1 bar                          |
| 5-10A | DN32        | 4.0 bar           | 3.6 bar                                | 4.4 bar                                | 7.0 bar                   | 2.8 bar                          |

**Notes -**  
 1. Differential +/- 10% of set point. 2. If set to full speed.  
 3. Vessel air pressure with zero water pressure, 0.7 X set point.

### Specification & Materials

See page 1

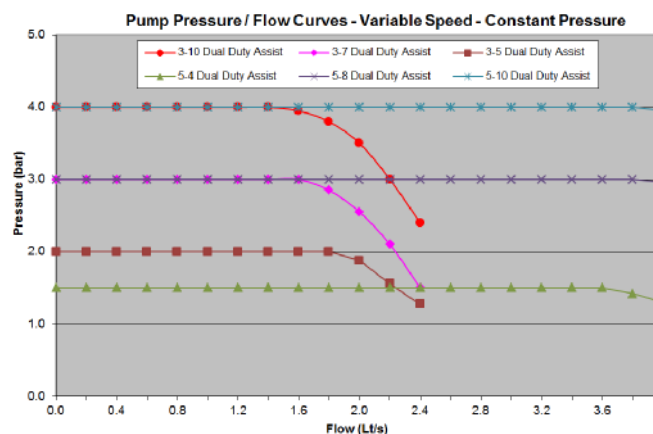
### Motor

Voltage 230 V 1 ph (3 series & 5-4,5-8)  
 400 V 3 ph (5-10)

Protection MCB in control box for each pump

motors thermal protection (IEC 34-11: TP 211)

| Model | 1 phase<br>A (Run) | 3 phase<br>A (Run) | Input max<br>kW |
|-------|--------------------|--------------------|-----------------|
| 3-5A  | 8.4                |                    | 1.10            |
| 3-7A  | 11.0               |                    | 1.50            |
| 3-10A | 15.0               |                    | 2.20            |
| 5-4A  | 15.0               |                    | 2.20            |
| 5-8A  | 15.0               |                    | 3.00            |
| 5-10A |                    | 7.4                | 4.40            |



### Digital Controller

The controller includes a digital display with setting buttons and button lock to prevent tampering. Both pumps can be tested and disabled if necessary via the display. Controller features include pump changeover every 24 hours if continuous draw off causes one pump to run and pump pulse every 24 hours to avoid seizure. The user can also view the set pressure and when the pump was last started and stopped via the display.

### Vessel Purge

The digital controller also features an automatic vessel purge facility for Legionella control. Every 24 hours the switch-on pressure is dropped below the vessel pre charge pressure, ensuring the entire contents of the vessel is emptied.

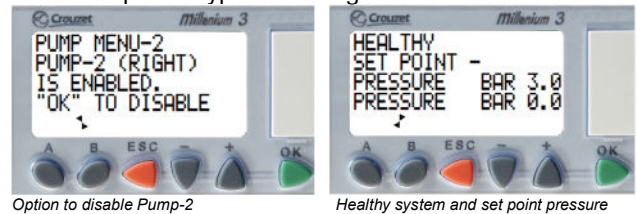
### Information display messages include

- Healthy
- Pump-1 running
- Pump-2 running
- Last started
- Last stopped
- Pressure
- Set point pressure

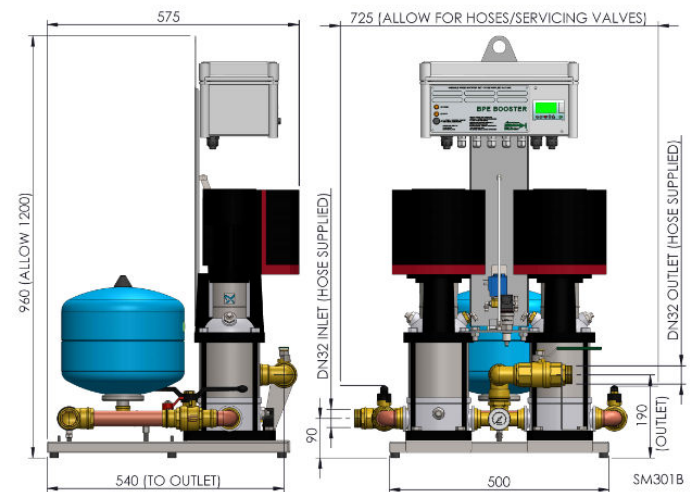
### Fault display messages include

- Pump-1 fault
- Pump-2 fault
- Pump-1 disabled
- Pump-2 disabled
- Low-level fault
- High-level fault

### Two examples of typical messages -



### Dimensions



Model BPE5-8A-LC1 Shown (Dimensions apply to all 5 Series Dual Pump units)

### Codes and Descriptions – Duty Assist

| Inlet Size | Code         | Description                                |
|------------|--------------|--------------------------------------------|
| DN32       | BPE3-5A-LC1  | Booster Pump 3-5 Duty Assist LC1 230 V     |
| DN32       | BPE3-7A-LC1  | Booster Pump 3-7 Duty Assist LC1 230 V     |
| DN32       | BPE3-10A-LC1 | Booster Pump 3-10 Duty Assist LC1 230 V    |
| DN32       | BPE5-4A-LC1  | Booster Pump 5-4 Duty Assist LC1 230 V     |
| DN32       | BPE5-8A-LC1  | Booster Pump 5-8 Duty Assist LC1 230 V     |
| DN32       | BPE5-10A-LC1 | Booster Pump 5-10 Duty Assist LC1 230 V    |
| DN32       | BPE3-5A-LC2  | Booster Pump 3-5 Duty Assist LC2-25 230 V  |
| DN32       | BPE3-7A-LC2  | Booster Pump 3-7 Duty Assist LC2-25 230 V  |
| DN32       | BPE3-10A-LC2 | Booster Pump 3-10 Duty Assist LC2-25 230 V |
| DN32       | BPE5-4A-LC2  | Booster Pump 5-4 Duty Assist LC2-25 230 V  |
| DN32       | BPE5-8A-LC2  | Booster Pump 5-8 Duty Assist LC2-25 230 V  |
| DN32       | BPE5-10A-LC2 | Booster Pump 5-10 Duty Assist LC2-25 400 V |

Optional extras – see pages 6 and 7

### Arrow Valves Ltd

Tel: 01442 823123 Fax: 01442 823234

www.arrowvalves.co.uk

Arrow Valves Ltd reserve the right to change specifications, design and materials at any time without notice.

All unit-less dimensions in mm.  
 © Copyright Arrow Valves Ltd 2001-2019



**Arrow Valves**

# Booster Pump Set

## Models BPELC1 / BPELC2 - Options - Datasheet Page 6 of 7

### Options

- Bypass Valve
- Wall Brackets – *not suitable for 5-16, 2-7, 2-8 or duals*
- GRP Drip Tray – *up to 3-7S*
- GRP Wall Cover – *use wall brackets*
- GRP Enclosures – for exterior use
- Pulse timer – prevents pump sticking if infrequently used – *all except dual (already included)*

| Suitability       | Code   | Description                                 |
|-------------------|--------|---------------------------------------------|
| Up to 5-8 single  | BTBRA  | Wall Bracket for Break Tanks AV Mounts      |
| All except dual   | BTPT   | Pulse Timer - Infrequent Use/Anti Seize     |
| Up to 3-7 single  | BTDT1  | GRP Drip Tray c/w Float Switch (up to 3-7S) |
| All               | BTCAB1 | Enc. 1120x1120x1050 GRP c/w Heating         |
| Up to 5-4 Single  | BTCAB2 | Enc. 700x700x950 GRP c/w Frost Protection   |
| Up to 5-10 Single | BTCAB5 | BT Wall Cover 1150hx775Wx750D               |
| All except BTCAB1 | BTFPS  | BT Frost Protection System                  |

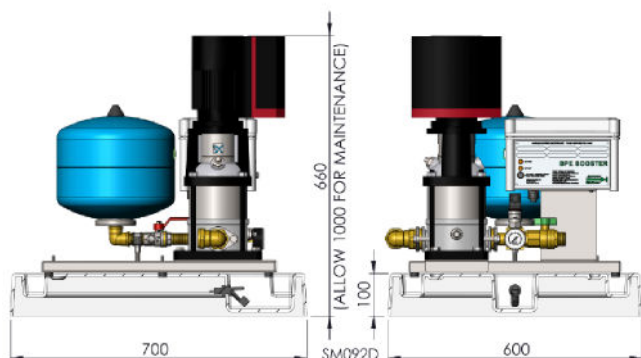
### GRP Drip Tray

**BTDT1** – GRP Drip Tray for use with Booster Set units (up to the 3-7S), where it is impractical to fit an overflow – e.g. when retro fitting in a stairwell.

The whole pump set sits on top of the Drip Tray so any water leaking from the pump is captured in the “moat” and runs into the well, activating the float switch and isolating the water supply, which stops the pump. The pump restarts pump once water is drained from the well.



### Dimensions



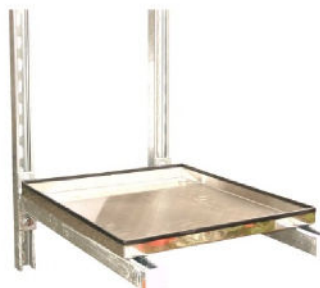
### Bypass Valve

If the pump fails or is turned off for maintenance, the Bypass Valve continues to feed water through the system at mains pressure, which is often sufficient to provide water for domestic purposes – see “BPV” datasheet.

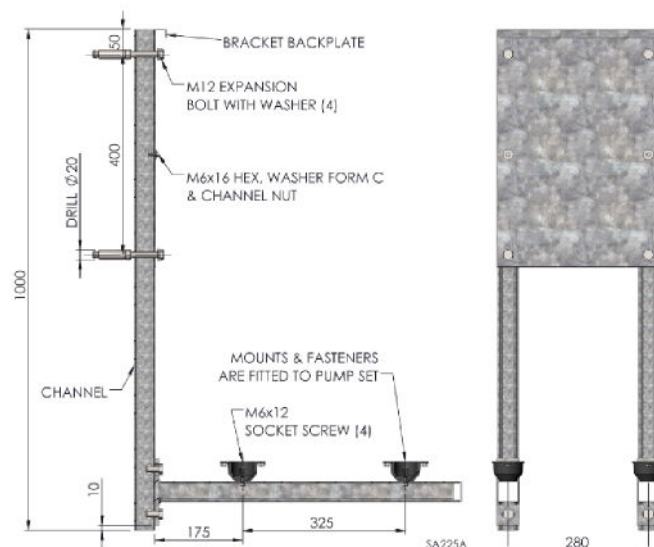


### Wall Brackets

**BTBRA** - Galvanised Steel Wall Mounting Brackets with Anti Vibration mounts. For use with single pump Booster Set units, except for the 5-16, 2-7 and 2-8. Not suitable for dual pump units.



### Dimensions



### Arrow Valves Ltd

Tel: 01442 823123 Fax: 01442 823234

www.arrowvalves.co.uk

Arrow Valves Ltd reserve the right to change specifications, design and materials at any time without notice.

All unit-less dimensions in mm.

© Copyright Arrow Valves Ltd 2001-2019



**Arrow Valves**

# Booster Pump Set

## Models BPELC1 / BPELC2 - Options - Datasheet Page 7 of 7

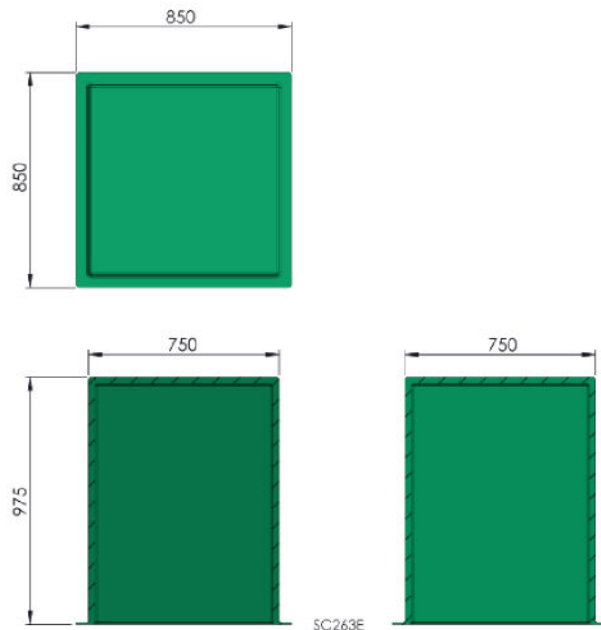
### GRP Wall Cover

**BTCAB5** – Insulated GRP Wall Cover, for use with the BTBRA Wall Mounting Brackets. The GRP colour is BS 00-A-05 (RAL equivalent is 7038). Integrated Frost Protection System (BTFPS – see BTCAB2 section below) can be added to the Wall Cover.

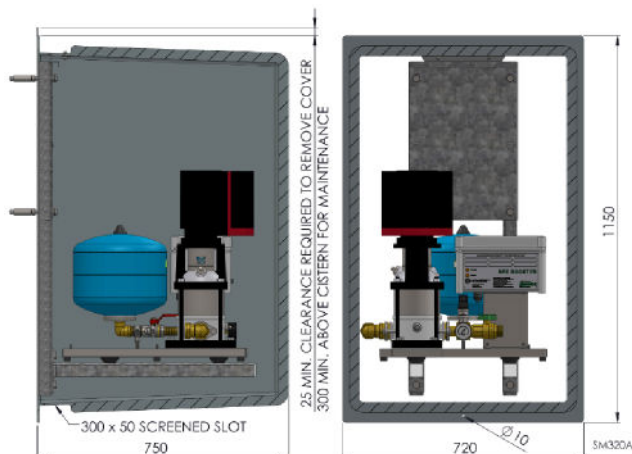
Not suitable for dual pump units or the 5-16, 2-7 and 2-8.



### BTCAB2 Dimensions



### Dimensions



### GRP Enclosures

**BTCAB2** – Lift Off GRP Enclosure for exterior use, supplied with a Padlock and Integrated Frost Protection System. A thermostat attached to the control box will cause the pump to run against a closed head to generate heat. The colour of the enclosure is RAL 6005, not suitable for dual pump units or single pumps larger than the BTAB5-4.



**BTCAB1** – GRP Heated Enclosure with Kiosk Door, for external use of all Booster Set units. The housing has an integrated bar heater, complete with thermostat. The exterior colour of the enclosure is RAL6005 – see “Boost-A-Break®” datasheet for dimensions.



### Installation Notes

The unit must be located in a frost-free area (or use a GRP enclosure) that is not liable to flooding. The unit is generally floor mounted on standard rubber feet. Alternatively use the wall brackets which feature special acoustic mounts and where possible mount to a solid external wall.

All controls and serviceable components are accessible from the front, so allow room for servicing. The vessel air charge valve is located on the left.

The flexible stainless hose provided should be connected to the outlet pipe. Thoroughly flush supply pipes before connecting.

The unit must be hardwired through a 2 pole isolator (4 pole for 3 phase) and protected with a suitable MCB.

Check the pump switches on and off at the required pressures using the gauge fitted.

### Arrow Valves Ltd

Tel: 01442 823123 Fax: 01442 823234

[www.arrowvalves.co.uk](http://www.arrowvalves.co.uk)

Arrow Valves Ltd reserve the right to change specifications, design and materials at any time without notice.

All unit-less dimensions in mm.  
© Copyright Arrow Valves Ltd 2001-2019



**Arrow  
Valves**