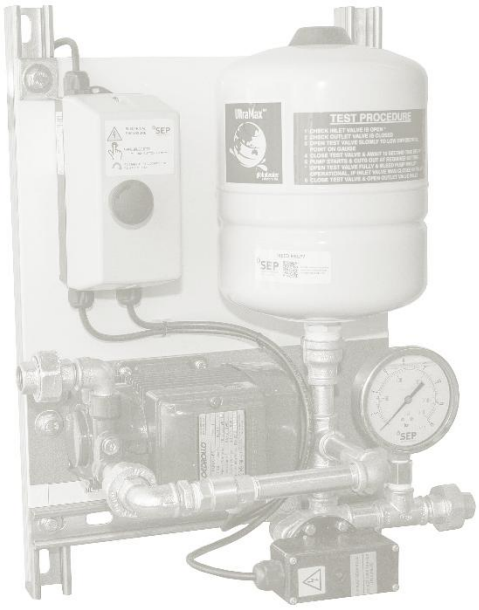
www.firesprinkler.co.uk



INSTALLATION & OPERATION INSTRUCTIONS

SEP Alarm Valve Booster Pump, including:

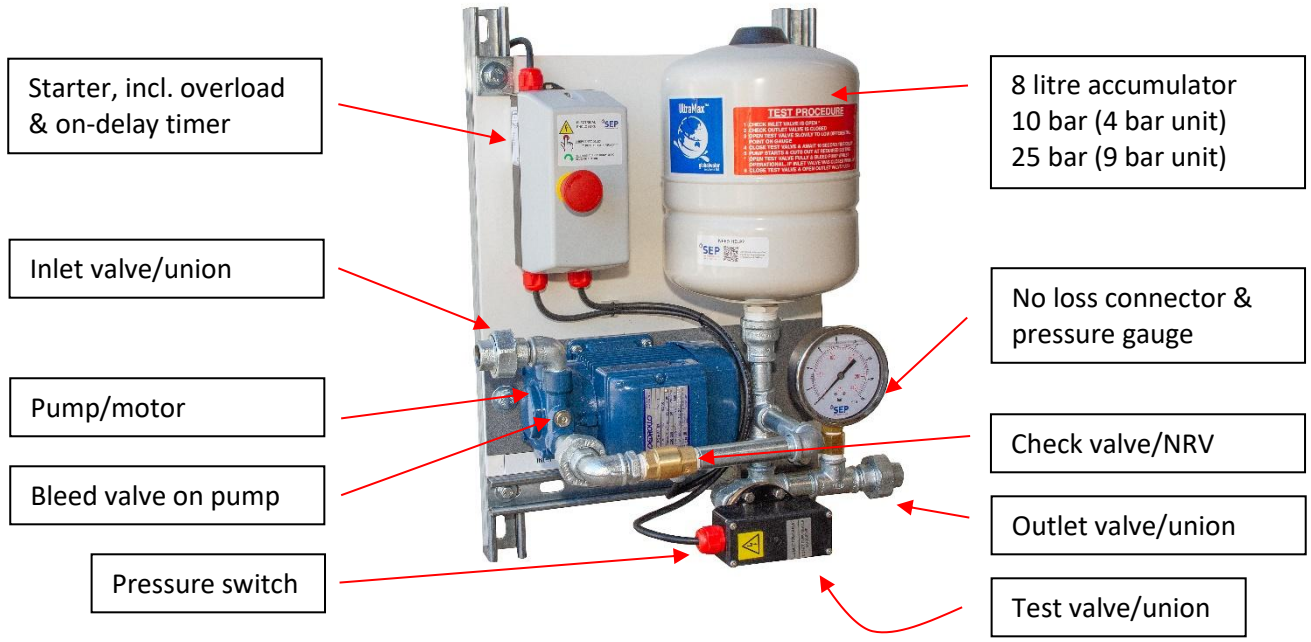
- 230v models: AVBP/S.AC/4BAR
  AVBP/S.AC/9BAR
- 400v models: AVBP/T.AC/4BAR
  AVBP/T.AC/9BAR
- *Includes* variations of above models (e.g. different pressure etc)

BOOSTER PUMPS ONLY FOR FIRE SPRINKLER SYSTEMS.
THIS BOOKLET MUST BE KEPT WITH THE UNIT FOR REFERENCE PURPOSES.

GENERAL DESCRIPTION

The unit comprises a peripheral water pump, which is directly driven by a standard electric motor, mounted on a polypropylene panel with a Unistrut frame. The unit is fitted with an adjustable LPCB-approved differential pressure switch to enable automatic "stop/start" incorporating time delay & thermal overload. An accumulator helps with pressure regulation and prevents the water pump cutting in/out excessively.

A filtered ball valve or Y-strainer is provided for the inlet, to prevent debris from entering the unit.



*** SAFETY ***

THESE UNITS ARE DESIGNED AND BUILT ONLY FOR FIRE SPRINKLER SYSTEMS.

ELECTRICITY CAN BE DANGEROUS, AND POTENTIALLY LETHAL.

DO NOT INSTALL this booster pump unless you are satisfied that you have the knowledge and experience to do so. If you are NOT SURE, ASK.

Take care because the units are heavy – ~25-30kg.

DO NOT OPERATE until you have read and understand the contents of these instructions, particularly with regard to stopping, starting and general safety. It is required that users employ safe working practices when using this equipment and your attention is drawn to the Health and Safety at Work Act 1974, the latest electrical and pressure equipment regulations and any other current or pending safety requirements.

This booklet must be kept with the unit for reference purposes. An electronic version is also available to download from our website if further copies are required.

The following safety signs and symbols may be used:


Read instructions before use


Automatic control – may start without warning


Dangerous voltage may be present


General safety information

INSTALLATION - MECHANICAL

Before you start, CHECK for any damage in transit and advise us immediately if this is the case.

CHECK you have the correct unit including the required power supply, and the power supply available, particularly a 3-phase supply which requires a neutral connection (i.e. 4-wire + earth).

1. Remove all packing materials. Take care to install and operate the unit in a clean, dry and cool (ambient temperature 5-40°C) to provide the best performance and reliability.
2. Use the four mounting holes in the Unistrut, securely bolting to the wall with M8 bolts. Use ALL four mounting holes, and ensure the bolts are tight.
3. The INLET, TEST and OUTLET valves should be linked with the system pipework using the ½"/15mm unions and valves provided. You MUST use the Y-strainer on the Inlet to prevent the ingress of debris. Failure to do so will invalidate any warranty and may cause damage to the pump.

INSTALLATION - ELECTRICAL

4. This unit **must** be wired into an appropriate isolation device and protected by an appropriate motor-compatible circuit-breaking device, as per the requirements of the current version of BS EN 60204-1. A simple 'fused spur' without an isolation switch should not be used.
5. For specific electrical data, please refer to the product label, and the table at the back of this manual.
6. Locate the compatible electrical supply, and connect in accordance with the enclosed wiring diagrams (for information only – the power cable from the top of the contactor box is prepared for direct connection to your power supply). This power cable, or an equivalent of at least the same rating, must be used.

Dangerous, potentially lethal voltages are present within this equipment; therefore, care should be taken to ensure that all electrical connections remain firm and that cables do not wear, nor allowed to be in contact with excessive heat or vibration etc.

TO START THE PUMP

7. Check and ensure that all valves are installed and the pipework is connected.
8. Close the Outlet and Test valves, and open the Inlet valve.
9. Loosen the bleed screw on the pump body until no more air is expelled, then tighten the screw.
10. Turn on unit at the isolator (the contactor box has emergency STOP button only). Please refer to the below section on the on-delay timer, because the pump will intentionally not start immediately.

TO STOP THE PUMP

Push the STOP button on the contactor enclosure (turn clockwise to unlock). In an EMERGENCY, use the STOP button on the contactor enclosure, or the electrical isolation switch that the pump unit is wired into.

ON-DELAY TIMER

On-delay timers are fitted as standard, since this helps prevent the pump hunting which would cause damage.

During commissioning, the starter cover should be removed (CARE: live wires) and the timer should be adjusted to the minimum setting (both dials turned completely anticlockwise). For normal standby, after commissioning, ensure that the timer is set – top dial to 3 min, bottom dial to 0.3.

The light pattern for the on-delay timer is as follows:

- No lights: system at pressure (no circuit via pressure switch) or power off or faulty
- Green light flashing: system activated, but timer running on delay countdown
- Both lights on: system activated, timer in operation, pump called to run.

PRESSURE SWITCH ADJUSTMENT (also refer to p5)

The pressure switch should NOT be adjusted unless and until you have read and understood these instructions.

Factory pre-set settings (approx.): *+4 bar models: IN mains +2 bar, OUT mains +3.2 bar*
+9 bar models: IN mains +5 bar, OUT mains +6.2 bar

1. Isolate from the electrical supply and remove the pressure switch cover; close the OUTLET valve.
2. Using a 5.5mm nut spinner, you may increase pressure by turning the small nut on the switch body *anticlockwise*. Decrease the pressure by turning the nut *clockwise*.
    - ¼-turn of the nut adjusts by around 10% of the switch range (~1.3 bar on a 14 bar 1381V)
3. The differential (difference between IN and OUT pressure) can also be adjusted by turning the wheel at the rear middle of the switch – anticlockwise to increase, clockwise to decrease. The pre-set differential is around 0.8 bar, and any adjustment to this should be made using only 2-3 clicks at a time.
    - ¼-turn of the nut adjusts by around 10% of the switch range (~1.3 bar on a 14 bar 1381V)
4. Reconnect power supply; if pressure has been increased, pump may operate and pressure will be held within the unit.
5. Reduce the pressure in the unit *slowly* by carefully opening the Test valve, observe the cut-in and cut-out pressures, making further adjustments as necessary (always with power isolated).
6. Replace pressure switch cover; do not overtighten the screws. Open OUTLET valve.
7. Reconnect to power and re-test for correct pressure by starting and operating in the normal manner.

WARNING: *DO NOT attempt to increase the pressure beyond the specified maximum (10 bar, for mains +4 bar models; 14 bar, for the mains +9 bar models).*

MAINTENANCE

SAFETY WARNING: Before carrying out any maintenance, observe all standard safety factors:

1. Isolate the unit from the mains power supply. Electricity is dangerous, and potentially fatal.
2. Carefully release any water pressure by closing the Inlet/Outlet, and opening the Test, valves.
3. Attach “DO NOT OPERATE" signs to the unit and electrical isolator (if not immediately close by).

To ensure continued reliability and efficiency, it is important that regular maintenance is carried out. The general cleanliness of the machine and area is important; the prevention of the ingress of dirt into the pump is critical; the prevention of ingress of water into the electrical components is also critical.

Clean the Y-strainer, and check electrical and pipework connections for security, leaks or other damage.

The pump itself should require very little attention; however, the motor should be protected against continual stop-start operation (assisted by the on-delay timer and accumulator) by ensuring that the pipework, unit and connections will hold pressure for at least 30 minutes.

WARRANTY & SPARE PARTS

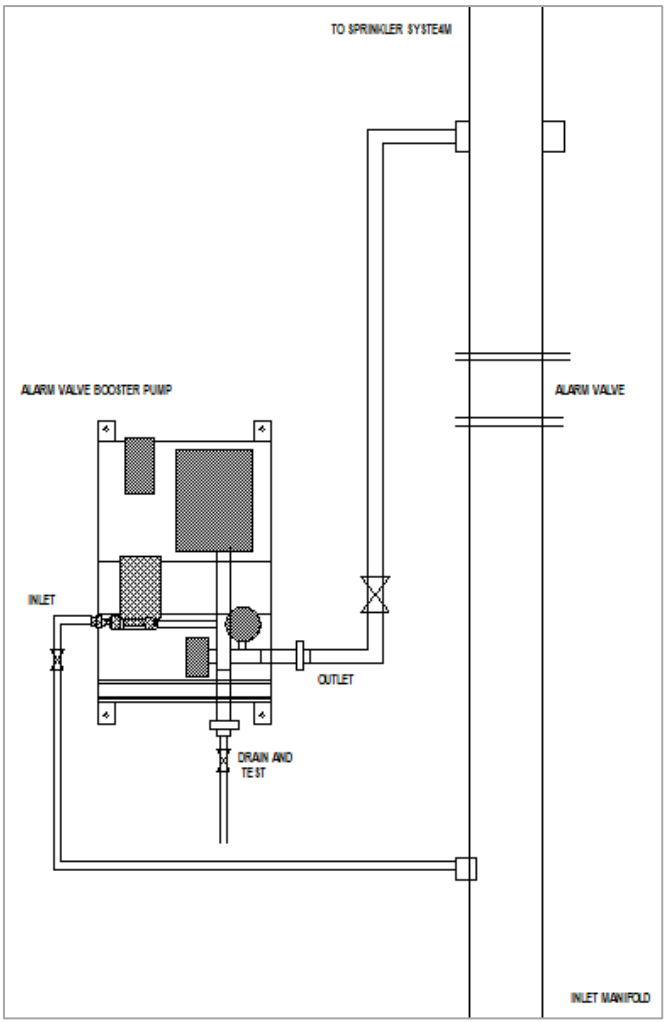
Our standard warranty is 12 months. This will automatically be extended to 24 months by registering the product on our website: https://firesprinkler.co.uk/warranty-registration-form/

Installation, operation and maintenance other than advised in these instructions, or otherwise in writing by SEP, will invalidate any warranty.

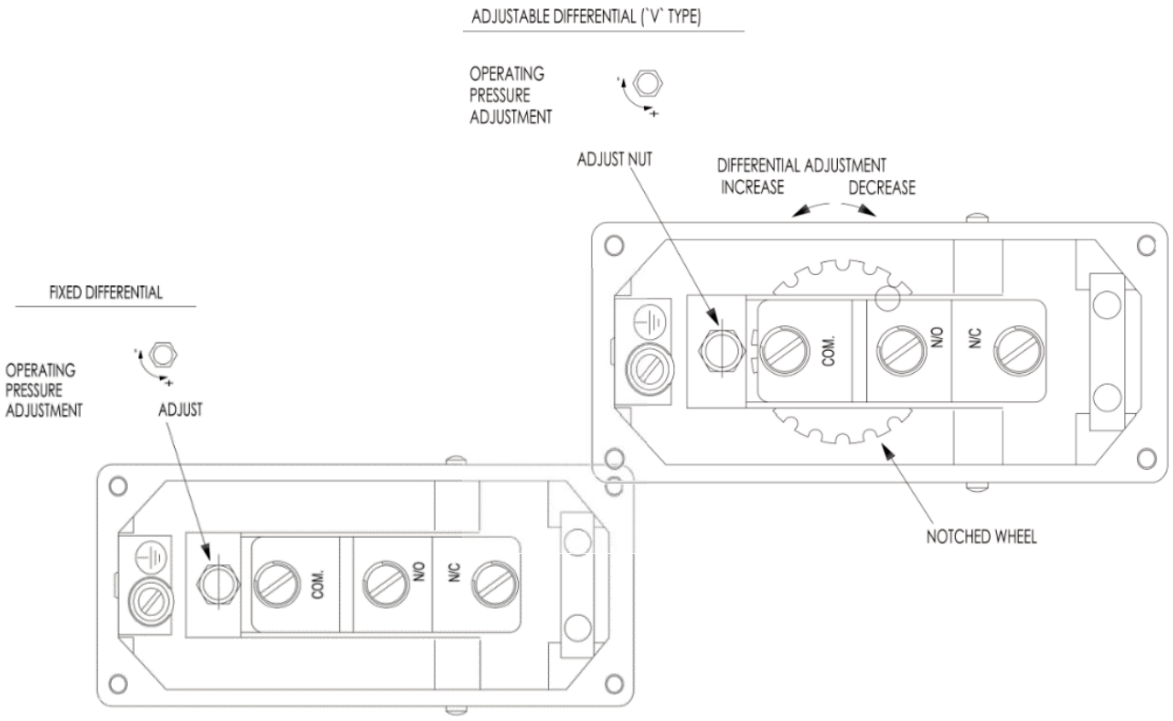
Only use genuine spare parts or service kits purchased from SEP or your maintainer. The use of non-genuine spare parts may affect the reliability and service life of the unit and will invalidate the warranty.

In the event of any difficulty understanding these instructions, or operating the unit, contact your installer or maintainer. Alternatively, please contact us directly: +44 161 428 1180 or sales@SEPfiresprinkler.co.uk

INSTALLATION SKETCH – ALL MODELS

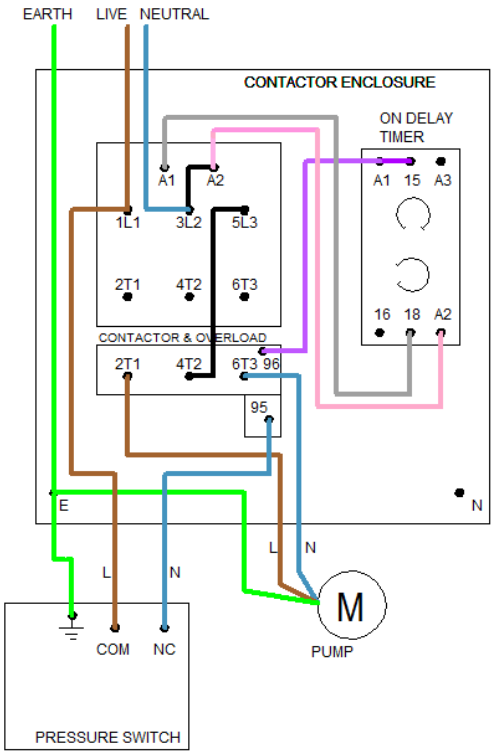


PRESSURE SWITCH ADJUSTMENT GUIDE – BAILEY & MACKEY 1381V

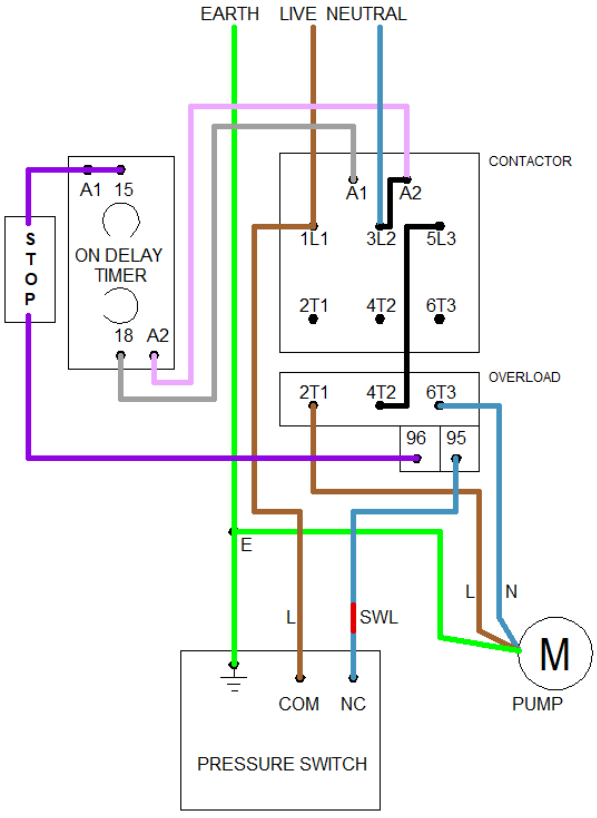


WIRING DIAGRAM – 230v MODELS

DANFOSS ELECTRICS



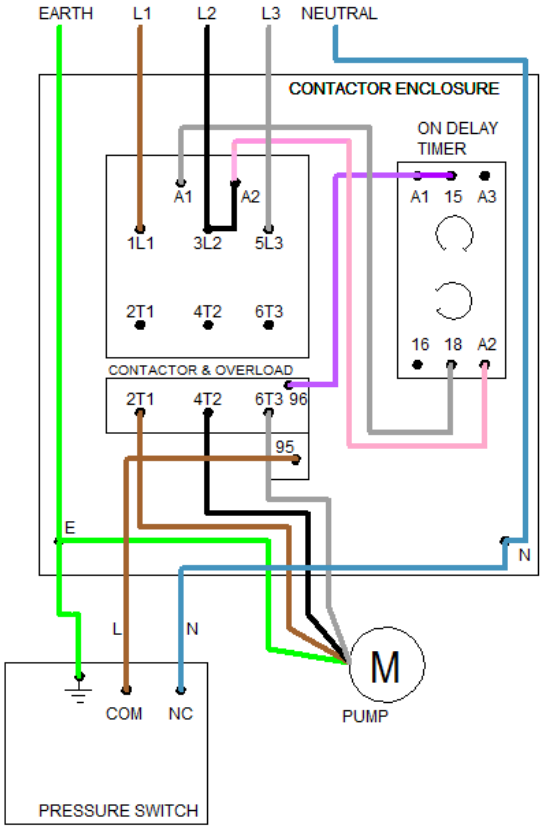
LOVATO ELECTRICS



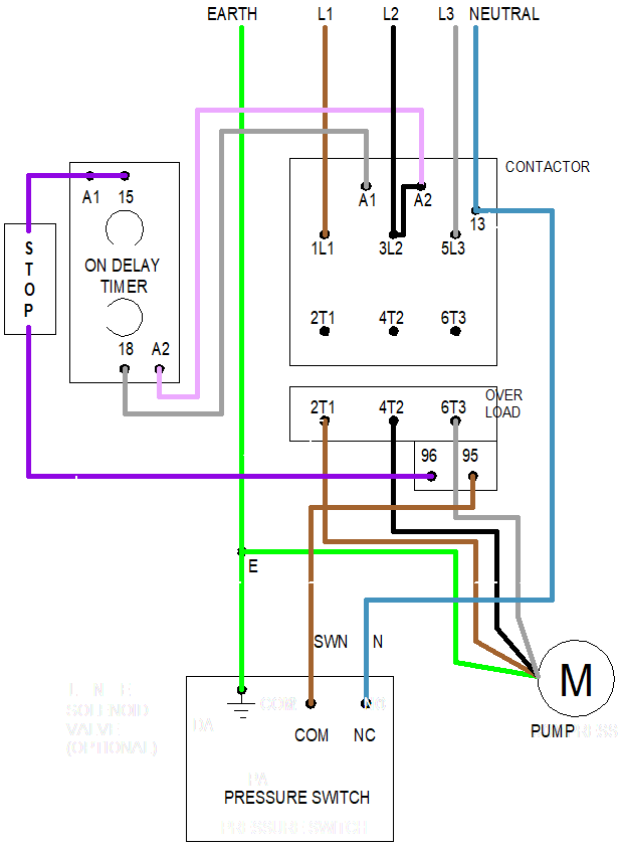
Note: Wiring colours may be different from those shown

WIRING DIAGRAM – 400v MODELS

DANFOSS ELECTRICS



LOVATO ELECTRICS



UK & EU DECLARATION OF CONFORMITY

WE DECLARE that the product covered by this document, with the serial number noted below, was built in compliance with the following directives and standards:

- 2006/42/EC (Machinery)
- 2014/35/EU (Electrical equipment)
- 2014/68/EU (formerly 97/23/EC) (Pressure Equipment Directive)
- 2014/29/EU (Simple pressure vessels)
- 2014/30/EU (Electromagnetic compatibility)
- EN 60204-1:2018 (Safety of machinery - electrical equipment of machines)

MODEL	**Electrical Information**						**Max pressure (bar)**	**Accumulator volume (L)**
AVBP/..AC/**4BAR**	**230V**, 0.4kW, FLC 3A			**400V**, 0.4kW, FLC 2A			10	8
AVBP/..AC/**9BAR**	**230V**, 0.5kW, FLC 4A			**400V**, 0.5kW, FLC 2A			14	8
Serial Number	Year		Order			Batch		

This declaration of conformity is issued under the sole responsibility of the manufacturer below.

S Robert Bell, Managing Director, from January 2026

TROUBLESHOOTING

The following is provided as a guide to possible problems that may be encountered at any time; it cannot be comprehensive BUT please consider these matters before calling your maintainer for assistance.

Problem	Possible Cause/s	Possible Resolution/s
Nothing at all is happening	• Power supply missing or faulty, or fuse blown	• Check external power supply; check each phase if 3-phase; check neutral circuit
	• External isolator switched off	• Trace back external power feed, ensure switched on
	• Emergency stop on contactor box pressed	• Check contactor box and ensure that stop button is out
	• Pressure above cut-in pressure	• Pressure can be reduced by opening Test valve, to check pump then operates
	• Loose wiring connection	• Check loose wires; check wiring diagram
Pump running (very quiet or noisy) but no pressure	• Pump shaft may be broken due to seizure	• Pump may be disconnected, removed, and the head removed for inspection
	• Impellor may be worn, damaged or jammed	• As above
	• Pump not purged	• Open bleed valve to release trapped air
	• Inlet valve is closed or filter blocked	• Check valve is open, or close valve and remove/check filter
Pump won't stop	• Pressure rising? Problem with pressure switch or blocked orifice	• Pressure switch setting incorrect, or orifice blocked; remove switch/elbow, check orifices
	• Pressure stable? Pump may be at maximum pressure ability	• Check pump ability and pressure switch settings

Specifications	AVBP/S.AC/4BAR	AVBP/S.AC/9BAR	AVBP/T.AC/4BAR	AVBP/T.AC/9BAR
Power (V AC)	230	230	400	400
Phases/Hz	1/50	1/50	3/50	3/50
Motor (kW)	0.4	0.5	0.4	0.5
Amps (RLC/FLC)	2.6/3	3.4/4	1.2/2	1.3/2
Pump Max flow (lpm)	40	18	40	18
Pump Max pressure (bar)	4	9	4	9
Unit Max pressure (bar)	10	14	10	14
Height (cm)	60	60	60	60
Width (cm)	40	40	40	40
Depth (cm)	30	30	30	30
Net/Packed weight (kg)	21/23	23/25	21/23	23/25

All information in this table is provided in good faith and may be estimated or approximate, and only correct at the time of publication. Exact specifications may change at any time for any reason without liability.

If any data is critical to your application then please check with us before installation.

Sale Engineering Products Ltd
45 Lambeth Road
Reddish, Stockport
Greater Manchester, UK, SK5 6TW

T: +44 (0) 161 428 1180
E: sales@SEPfiresprinkler.co.uk
W: www.firesprinkler.co.uk