

Albinus Water Pressure System WPS 4.0 12V / 24V, WPS 5.3 12V / 24V

Albinus 500-series 5-chamber diaphragm Water Pressure System pumps for providing pressurized water on demand! Our WPS pumps supply continuous, pulsation-free, pressurized flow of both hot and cold water to faucets, shower heads and more.

- Easy to install
- Integrated extra heavy duty sealed pressure switch
- Smooth & Pulsation-free flow
- Quiet operation
- Serves up to 5 outlets (WPS 4.0) or 6 outlets (WPS 5.3)
- Self-priming up to 2.5 m (8.2 ft)
- Quick disconnect ports
- Connection with ½" and ¾" hose
- Click-on 40 µm mesh strainer included
- Manufactured according to CE standard; EN55014-1, ISO 88461 & ISO10133. Under approval

| | | | | |
|--------------------|-----------------------------|--------------------|---------|----------------|
| part no. 02-02-006 | Water Pressure Pump WPS 4.0 | 15 L/min (4.0 GPM) | 12V 10A | ½" and ¾" hose |
| part no. 02-02-007 | Water Pressure Pump WPS 4.0 | 15 L/min (4.0 GPM) | 24V 5A | ½" and ¾" hose |
| part no. 02-02-008 | Water Pressure Pump WPS 5.3 | 20 L/min (5.3 GPM) | 12V 15A | ½" and ¾" hose |
| part no. 02-02-009 | Water Pressure Pump WPS 5.3 | 20 L/min (5.3 GPM) | 24V 8A | ½" and ¾" hose |

Operation:

When water is tapped from the system, for example from a faucet or a shower head, the pressure in the water supply system will drop. At the factory-set cut-in pressure of 1.7 bar (25 psi) the WPS pump's integrated pressure switch will automatically turn on the pump to boost the water system pressure, providing continuous, pulsation free flow. The WPS pump automatically turns off when the pre-set cut-off pressure of 2.8 bar (40 psi) is reached.

A check valve on the outlet maintains the pressure in the water system between uses so that pressurized water is always available. For the optimum Water Pressure System: install the WPS pump together with Albinus Accumulator Tank 02-66-022.

Technical Specifications:

| | |
|---------------------------------|--|
| Body: | Nylon/Polypropylene |
| Valve housing: | Polypropylene/Polyamide |
| Valves: | Santoprene/EPDM |
| Diaphragm: | Santoprene |
| Connection: | ½" and ¾" hose |
| Inlet strainer: | 40 µm mesh, included |
| Max. liquid temperature: | Max +50°C/+120°F |
| Fasteners: | Stainless steel |
| Max. suction lift: | WPS 4.0 – 2 m/6.5 ft WPS 5.3 – 2.5 m/8.2 ft |
| Cut in pressure: | 1.7 bar (25 psi) |
| Cut-off pressure: | 2.8 bar (40 psi) |
| Duty cycle: | Intermittent, max 20 min |
| Motor: | WPS 4.0 – 100W WPS 5.3 – 150W 12 / 24V DC with built in thermal protection |

Manufactured according to CE standard;
EN55014-1, ISO 88461 & ISO10133. Under approval

Installation:

The pump must be mounted in a dry, ventilated location and must not be submerged. *Selection of a cool ventilated location will generally extend pump motor life.* Mount the pump horizontally with space for maintenance. If you choose to mount the pump vertically, mount with the motor pointing upwards.

Mark screw positions and drill pilot holes (see drilling template). Mount the pump using stainless steel screws and with the accompanying washers; do not over tighten the screws so that the vibration dampening of the composite base is not compromised.

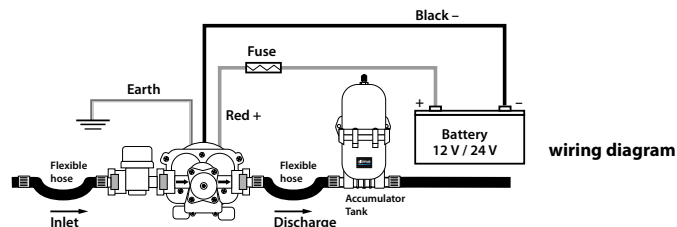
For connecting to the water piping, it is recommended to use reinforced, high pressure flexible tubing. If rigid piping is used for the connection, a length of flexible tubing (225 mm / 9 inches minimum) should be installed between the pump and the rigid pipe. This will stop noise and/or damage caused by any vibrations transmitted to rigid pipe. Use stainless steel hose clamps to secure tubing to the quick disconnect fittings and any other hose barbs present in the system.

NOTE:

The included strainer must be installed at the pump intake, to prevent debris from entering pump, causing damage and interfering with the proper functioning of valves.

Electrical connections:

The pump must be installed according to SS-EN ISO 10133 (Small craft – Electrical system – Extra low voltage DC installation for continuous current). Note: The fuse must be ignition protected. The motor is equipped with built-in thermal protection to prevent the motor from overheating. The protection is automatically reset when the motor has cooled. If the pump is connected with a separate earth lead, connect it to metallic part of the motor. See the wiring diagram for correct installation. In keeping with standard electrical nomenclature, the Negative wire must be black and the Earth lead (if used) should be yellow / green. Choose wire size in accordance with total wire length.



Connect black wire to negative (–) terminal of battery. The red wire should run to the positive (+) terminal of battery, with a properly sized fuse must be placed between the battery's positive terminal (+) and the pump. Other electrical devices, such as switches or circuit breaker, must be installed between the pump and the positive (+) lead on the battery (on the red wire). Use proper wire size as determined by wire table below. Wiring must comply with applicable electrical standards.

All wire connections must be sealed with a marine sealant. Note! Before the installation of electrical control systems, check that the capacity of the equipment to be used is of sufficient rating to accept the amperage draw of the motor. Low voltage will cause the motor to overheat.

WPS 4.0

| Wire size (based on 3% voltage drop) | Max wire length (total distance from the battery to the pump and back to the battery) | |
|--|--|--------------|
| | 12V | 24V |
| 2.5 mm ² (14 ga) | 7 m (23') | 30 m (98.4') |
| 4 mm ² (12 ga) | 11 m (36') | 49 m (161') |
| 6 mm ² (10 ga) | 16 m (52.5') | 73 m (240') |
| 10 mm ² (6 ga) | 27 m (88.6') | 122 m (400') |

WPS 5.3

| Wire size (based on 3% voltage drop) | Max wire length (total distance from the battery to the pump and back to the battery) | |
|--|--|----------------|
| | 12V | 24V |
| 2.5 mm ² (14 ga) | 5 m (16') | 22 m (72.2') |
| 4 mm ² (12 ga) | 8 m (26') | 34 m (111') |
| 6 mm ² (10 ga) | 12 m (39.4') | 52 m (170') |
| 10 mm ² (6 ga) | 20 m (65.6') | 86 m (282.2') |
| 16 mm ² (4 ga) | 31 m (102') | 138 m (452.8') |

Start-up procedure

After installing the pump, initiate the water system as follows:

1. Fill the water tank
2. Open one tap fully
3. Turn on the pump
4. Close the tap once the water begins flowing
5. Open each additional tap until all air has been purged from system
6. The pump will shut off after taps are closed and pressure builds to the pre-set cut-off pressure of the integrated pressure switch

Maintenance:

Periodically sanitize the system as follows:

1. Fill the water tank with a solution of household bleach and potable water – 1 ml (.03 oz.) bleach / 1 L (33 oz.) water.
2. Open all faucets and let run until flowing water smells of bleach
3. Close all faucets.
4. Drain the bleach / solution from the tank.
5. Refill the water tank with potable water.
6. Open all of the faucets and let the water run until bleach has been emptied from the system.

Winterizing

If water is not drained from the system at freezing ambient temperatures, damage will occur to the water pipes and in the pump. To prevent this follow these instructions:

1. Drain the water storage tank.
2. Open all taps.
3. Run the pump until the remaining water is expelled from the system.
4. Disconnect the inlet and outlet tubing.
5. Run the pump briefly to confirm that all water has been expelled.
6. Switch off the electrical power to the pump.
7. Keep the taps open and the pump fittings disconnected until temperatures are above freezing again.
8. To re-instate the pump, follow the directions under "Start up procedure"

Never start a frozen pump. Even when drained it might contain a small amount of ice that will lock the pump.

Self-priming





The pump is self-priming up to 2 m (6.5 ft) for WPS 4.0 and 2.5 m (8.2 ft) WPS 5.3. The inlet pipe must be airtight to ensure self-priming.

Dry running

Pump will not be damaged by shorter periods of dry running. It will, however, unnecessarily reduce your battery power.

Temperature

Max liquid temperature: +50°C/+120°F
 Max ambient temperature: +60°C/+140°F

-  Keep all wire connections above the highest water level. Wires must be joined with butt connectors and a marine grade sealant to prevent wire corrosion.
-  Disconnect power from the system before working on the unit to avoid personal injury, damage to the surrounding environment and/or damage to the unit.
-  Always install proper fuse size to prevent damage to product should a short occur. Failure to install proper fuse could increase risk of pump malfunction potentially resulting in personal injury and/or fire hazard.
-  Do not pump gasoline, solvents, thinners, highly concentrated or organic acids. Use with hazardous, caustic, or corrosive material could result in damage to the pump and the surrounding environment, possible exposure to hazardous substances and injury.

Trouble shooting

Pump does not run? Check the following:

- A. Fuse blown? Motor overheated? Allow motor to cool down before restarting.
- B. Battery fully charged? Check all wiring.
- C. Faulty pressure switch? Replace switch.
- D. Faulty motor? Replace pump.
- E. Frozen pump / motor? Thaw the pump and system and check for ice damage

Pump does not prime? Check the following:

- A. Empty water tank?
- B. Debris under the valves? Gently flush the valves in direction of flow with tap water.
- C. Perforated diaphragm? Replace diaphragm kit.
- D. Leakage on inlet side of pump? Check tightness of hose connections at pump, filter and tank
- E. Check inlet and outlet piping for restrictions.

Pump cycles on and off rapidly when a tap is opened? Check the following:

- A. Restriction / too high pressure on outlet side of pump? Outlet tubing is too small; must be same diameter as outlet connection.

Pump cycles on and off rapidly when no tap is open? Check the following:

- A. Leakage on outlet side of pump? Tighten connections and check hose for possible damage.

Pump continues running after tap is closed? Check the following:

- A. Leakage on inlet or outlet side of pump? Tighten connections and check hoses for possible damage.
- B. Perforated diaphragm? Replace diaphragm kit.
- C. Empty water tank?
- D. Faulty pressure switch? Replace switch.
- E. Low voltage to pump? Charge / replace battery.

Low flow / pressure? Check the following:

- A. Leakage on inlet or outlet side of pump? Tighten connections and check hoses for possible damage.
- B. Perforated diaphragm? Replace diaphragm kit.
- C. Faulty motor? Replace pump.
- D. Debris under the valves? Gently flush the valves in direction of flow with tap water.

Pump is excessively noisy? Check the following:

- A. Pump connected directly to rigid piping? Install flexible pipe according to instructions under "Installation"
- B. Pump head or mount loose on motor? Tighten screws.
- C. Pump mounting too rigid? Use flexible tubing on the inlet and outlet connections, make sure you are using the provided composite base
- D. Faulty motor? Replace pump.

Pump performance WPS 4.0 and WPS 5.3

WPS 4.0

| Pressure | | | Flow L/min | GPM | Amperage 12V | Amperage 24V |
|-------------------------|-----|-----|------------|-----|--------------|--------------|
| Bar | kpa | psi | | | | |
| 0 | 0 | 0 | 14.6 | 3.9 | 3.3 | 1.7 |
| 0.8 | 80 | 12 | 12.7 | 3.4 | 4.9 | 2.5 |
| 1.6 | 160 | 23 | 11 | 2.9 | 6.3 | 3.2 |
| 2.4 | 240 | 29 | 10 | 2.6 | 7.7 | 3.8 |
| 2.8 | 280 | 41 | 9.5 | 2.5 | 8.4 | 4.1 |
| Recommended Fuse | | | | | 10A | 5A |

WPS 4.0 at 13.6V & 27.2V (battery charge)

| Pressure | | | Flow L/min | GPM | Amperage 13.6V | Amperage 27.2V |
|----------|-----|-----|------------|-----|----------------|----------------|
| Bar | kpa | psi | | | | |
| 0 | 0 | 0 | 16 | 4.2 | 3.8A | 1.8A |

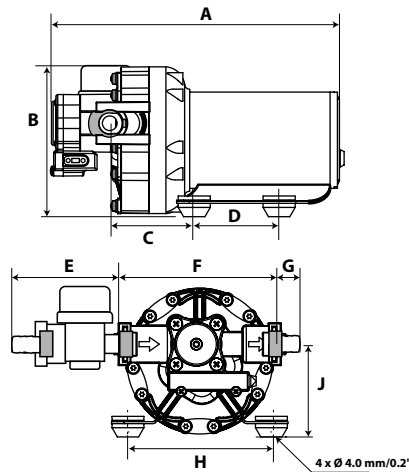
WPS 5.3

| Pressure | | | Flow L/min | GPM | Amperage | |
|-------------------------|-----|-----|------------|-----|----------|-----|
| Bar | kpa | psi | | | 12V | 24V |
| 0 | 0 | 0 | 19.6 | 5.2 | 4.9 | 2.6 |
| 0.8 | 80 | 12 | 17.1 | 4.5 | 7 | 3.5 |
| 1.6 | 160 | 23 | 15 | 4 | 8.2 | 4.2 |
| 2.4 | 240 | 29 | 13.3 | 3.5 | 11.3 | 5 |
| 2.8 | 280 | 41 | 12.5 | 3.3 | 12.2 | 5.2 |
| Recommended Fuse | | | | | 15 A | 8 A |

WPS 5.3 at 13.6V & 27.2V (battery charge)

| Pressure | | | Flow L/min | GPM | Amperage | |
|----------|-----|-----|------------|-----|----------|-------|
| Bar | kpa | psi | | | 13.6V | 27.2V |
| 0 | 0 | 0 | 21.2 | 5.6 | 7.5 A | 3 A |

Dimensions and weight



| Dimension | mm | inch |
|-----------|------|------|
| A | 215 | 8.5 |
| B | 112 | 4.4 |
| C | 63 | 2.49 |
| D | 63.4 | 2.5 |
| E | 82 | 3.2 |
| F | 122 | 4.8 |
| G | 20 | 0.8 |
| H | 108 | 4.3 |
| J | 70 | 2.75 |

WPS 4.0 2.5 kg / 5.5 lbs
 WPS 5.3 2.5 kg / 5.5 lbs

WARRANTY
 Two year limited warranty



Waste handling & material recycling
 At the product's end of life, please dispose of the product according to applicable law. Where applicable, please disassemble the product and recycle the parts according to material.

Albin Group
 since 1928

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