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› CRESTWAVE Smart Adjustable Pressure Switch for Well Pump Instruction Manual

CRESTWAVE BRA90031101

CRESTWAVE Smart Adjustable Pressure Switch

Model: BRA90031101

Instruction Manual

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation of your CRESTWAVE Smart Adjustable Pressure Switch. This device is designed to automatically control water pumps, offering features such as adjustable pressure settings and dry-running protection. Please read these instructions thoroughly before installation and use, and retain them for future reference.

2. SAFETY INFORMATION

Always observe basic safety precautions to reduce the risk of fire, electric shock, and personal injury. This device involves electrical connections and water, which can be hazardous if not handled correctly.

- Ensure all electrical connections are made by a qualified electrician and comply with local codes.
- Disconnect power to the pump and pressure switch before performing any installation, maintenance, or troubleshooting.
- Do not operate the device if it appears damaged or if any cables are frayed.
- Keep children and unauthorized persons away from the installation area.
- The device is designed for use with clean water pumps only. Do not use with flammable liquids or corrosive chemicals.
- Ensure proper grounding to prevent electric shock.
- Install the unit vertically with the inlet at the bottom to ensure proper function of the check valve and air bleeding.

3. PACKAGE CONTENTS

Verify that all items are present in the package:

- CRESTWAVE Smart Water Pump Pressure Controller (Model BRA90031101)
- 2 NPT Adapters (1-inch)
- Instruction Manual

4. PRODUCT OVERVIEW AND FEATURES

The CRESTWAVE Smart Adjustable Pressure Switch is an intelligent control unit for various water pumps, designed to optimize performance and extend pump life. It features:

- **Adjustable Pressure Settings:** Customize start pressure (1.5 bar default, adjustable from 0.5-7 bar) and stop pressure (up to 10 bar in Mode 2) to suit specific application needs.
- **Automatic Control:** Electronically senses water pressure and levels to automatically start and stop the pump, preventing frequent on/off cycling and pressure fluctuations.
- **Dry-Running Protection:** Automatically shuts off the pump during water shortages to prevent motor damage and burnout.
- **Real-time Status Monitoring:** Bright LED indicators (Power, Operation, Failure) and a digital display provide instant visual feedback on performance and warnings.
- **Universal Compatibility:** Supports 110-240V voltage, 50/60Hz frequency, and up to 30A power capacity (Max 2.2KW), suitable for self-priming, jet, centrifugal, garden, shallow well, and submersible pumps.
- **Integrated Check Valve:** Prevents backflow in the system.
- **Durable Construction:** Made from corrosion-resistant, rust-proof plastic, designed for reliability in various environments.



Figure 4.1: Overview of the CRESTWAVE Smart Adjustable Pressure Switch and its protective features.

Elaborate Construction

Hassle-free Intelligent Control



2025 Latest Chip
Precise Control

Engineered for Longer Life
Engineered for Longer Life

Check Valve
No More Back Flow

Durable Rubber Diaphragm
100% Sealing

Figure 4.2: Internal construction details of the pressure switch, highlighting key components.

5. SETUP AND INSTALLATION

Proper installation is crucial for the optimal performance and longevity of the pressure switch. Refer to the following steps:

- 1. Mounting:** The pressure switch must be mounted vertically with the water inlet at the bottom. This orientation ensures the internal check valve functions correctly and aids in air bleeding from the system.
- 2. Water Connections:**
 - Connect the water inlet of the pressure switch to the pump's discharge outlet.
 - Connect the water outlet of the pressure switch to your water distribution system.
 - The unit comes with G1" male fittings. Use the included NPT1" adapters if your plumbing requires NPT connections. Ensure all connections are watertight using appropriate sealants (e.g., PTFE tape).
- 3. Electrical Connections:**

- The pressure switch comes with two pre-connected power cables: one for the pump and one for the power source.
- Plug the pump's power cord into the designated outlet on the pressure switch.
- Plug the pressure switch's power cord into a suitable grounded electrical outlet (110-240V, 50/60Hz).
- Ensure the power supply matches the requirements of both the pressure switch and your water pump.

4. **Priming the Pump:** Before initial operation, ensure your pump is properly primed according to its manufacturer's instructions. The system must be free of air.

New	Old
<p>0.5-7 bar start 1-10 bar stop</p>	<p>1.5 bar start 3 bar stop</p>
 <p>Monitor Pressure, Easy Adjustment</p>	 <p>Pressure Not Detected</p>
 <p>Plug in. Done</p>	 <p>Trouble-some Wiring</p>

Figure 5.1: Simplified plug-and-play installation of the CRESTWAVE pressure switch.



Figure 5.2: Example installation with a water pump.

6. OPERATING INSTRUCTIONS

The CRESTWAVE Smart Adjustable Pressure Switch offers two operating modes for flexible control.

6.1 Control Panel Overview

Visible Pressure at a Glance

Worry-Free Adjustment

2 Pressure Modes

Mode 1: | Adjustable start pressure

Mode 2: | Adjustable start & stop pressure

Real-time Pressure Display

2.2 2.2 Current Water Pressure:
2.2 bar

Pressure Mode & Adjustment

dE1 DE1, Enter Mode 1

L1 Start Pressure: 1 bar, Adjustable

dE2 DE2, Enter Mode 2

H3 Stop Pressure: 3bar, Adjustable

Warning

A low pressure, check leakage, clogging, water shortage

P Overpressure



Figure 6.1: Control panel with digital display and buttons.

- **Digital Display:** Shows current water pressure in bar.
- **POWER LED:** Illuminates when the unit is connected to power.
- **MODE 1 LED:** Illuminates when operating in Mode 1 (Adjustable Start Pressure).
- **MODE 2 LED:** Illuminates when operating in Mode 2 (Adjustable Start & Stop Pressure).
- **STATUS LED:** Illuminates when the pump is running. Flashes for failure/warning conditions.
- **FUNC Button:** Press once to set mode. Press twice to set pressure.
- **UP Button:** Used to convert modes or increase pressure values.
- **DOWN Button:** Used to convert modes or decrease pressure values.
- **RESET Button:** Restarts the pump at any time, or clears error states.

6.2 Operating Modes

The device has two main operating modes:

- **Mode 1: Adjustable Start Pressure (Default)**

- In this mode, you set the desired start pressure (L1). The pump will start when the system pressure drops below L1.
- The pump will stop when water flow ceases (e.g., when a faucet is closed) and the pressure reaches the pump's maximum head pressure.
- To adjust L1: Press the FUNC button twice. The display will show 'L1'. Use UP/DOWN buttons to set the desired start pressure (range: 0.5-7 bar). Press FUNC to confirm.

- **Mode 2: Adjustable Start & Stop Pressure**

- In this mode, you set both the start pressure (L1) and the stop pressure (H3). The pump starts when pressure drops below L1 and stops when pressure reaches H3.
- To enter Mode 2: Press the FUNC button once. The display will show 'dE1' (Mode 1). Use UP/DOWN to change to 'dE2' (Mode 2). Press FUNC to confirm.
- To adjust L1: Press FUNC twice. Display shows 'L1'. Use UP/DOWN to set start pressure (range: 0.5-7 bar). Press FUNC.
- To adjust H3: After setting L1, the display will show 'H3'. Use UP/DOWN to set stop pressure (range: 1-10 bar). Press FUNC to confirm. Ensure H3 is higher than L1.

6.3 Dry-Running Protection

If the pump runs without water (dry-running), the device will automatically shut off the pump to prevent damage. The STATUS LED will flash, and the display may show a warning code (e.g., 'A' for low pressure/water shortage). The pump will attempt to restart after 8 seconds, 30 seconds, and then 1 hour. After 1 hour, it will check periodically. You can manually reset the pump by pressing the RESET button.

6.4 Overpressure Protection

If the system pressure exceeds safe limits, the device may display 'P' for overpressure, indicating a potential issue in the system or with the pump. Address the cause of overpressure before continuing operation.

7. MAINTENANCE

The CRESTWAVE Smart Adjustable Pressure Switch is designed for minimal maintenance. However, regular checks can ensure optimal performance and extend its lifespan.

- **Regular Inspection:** Periodically check the unit and all connections for any signs of leaks, corrosion, or damage.
- **Cleaning:** Keep the exterior of the unit clean and free from dust and debris. Do not use harsh chemicals for cleaning.
- **Winterization:** In areas subject to freezing temperatures, disconnect the unit and drain all water to prevent damage from ice expansion. Store in a dry, frost-free location.
- **Check Valve:** The internal check valve is generally maintenance-free. If you suspect issues with backflow, inspect the valve for obstructions or wear.

8. TROUBLESHOOTING

Refer to this section for common issues and their solutions.

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Pump does not start.	No power supply. Water shortage (dry-running protection activated). Pump or switch malfunction. Air in the system.	Check power connections and circuit breaker. Check water source. Press RESET button. Inspect pump and switch for damage. Prime the pump and bleed air from the system.
Pump runs continuously or cycles frequently.	Leak in the system. Check valve malfunction. Incorrect pressure settings.	Inspect plumbing for leaks. Check or replace the internal check valve. Adjust start/stop pressure settings (refer to Section 6.2).
Low water pressure.	Pump not powerful enough. Clogged filter or pipes. Incorrect pressure settings.	Ensure pump capacity matches demand. Clean filters and check for pipe obstructions. Increase start/stop pressure settings (refer to Section 6.2).
Display shows 'A' (Warning).	Low pressure, leakage, clogging, or water shortage.	Check water supply, inspect for leaks, clear any clogs. Press RESET.
Display shows 'P' (Warning).	Overpressure in the system.	Check for blockages downstream or issues with pump output. Adjust stop pressure if in Mode 2.

9. SPECIFICATIONS

Parameter	Value
Brand	CRESTWAVE
Model Number	BRA90031101
Max Power	2.2 KW
Voltage	110-240V
Frequency	50/60Hz
Max Current	30A
Start Pressure (Mode 1)	Adjustable, 0.5-7 bar (default 1.5 bar)
Stop Pressure (Mode 1)	Pump stops at its max head
Stop Pressure (Mode 2)	Adjustable, 1-10 bar
Max Operation Pressure	15 bar
Max Operating Temperature	60°C
Waterproof Rating	IP65
Controller Fitting	G1" Male (includes 2 NPT Adapters)
Power Cord	2.94ft, 3-Prong, ETL Listed

Parameter	Value
Pump Cord	1.3ft, 3-Prong, ETL Listed
Product Dimensions	8 x 7 x 6 inches (approx.)
Item Weight	3.88 pounds

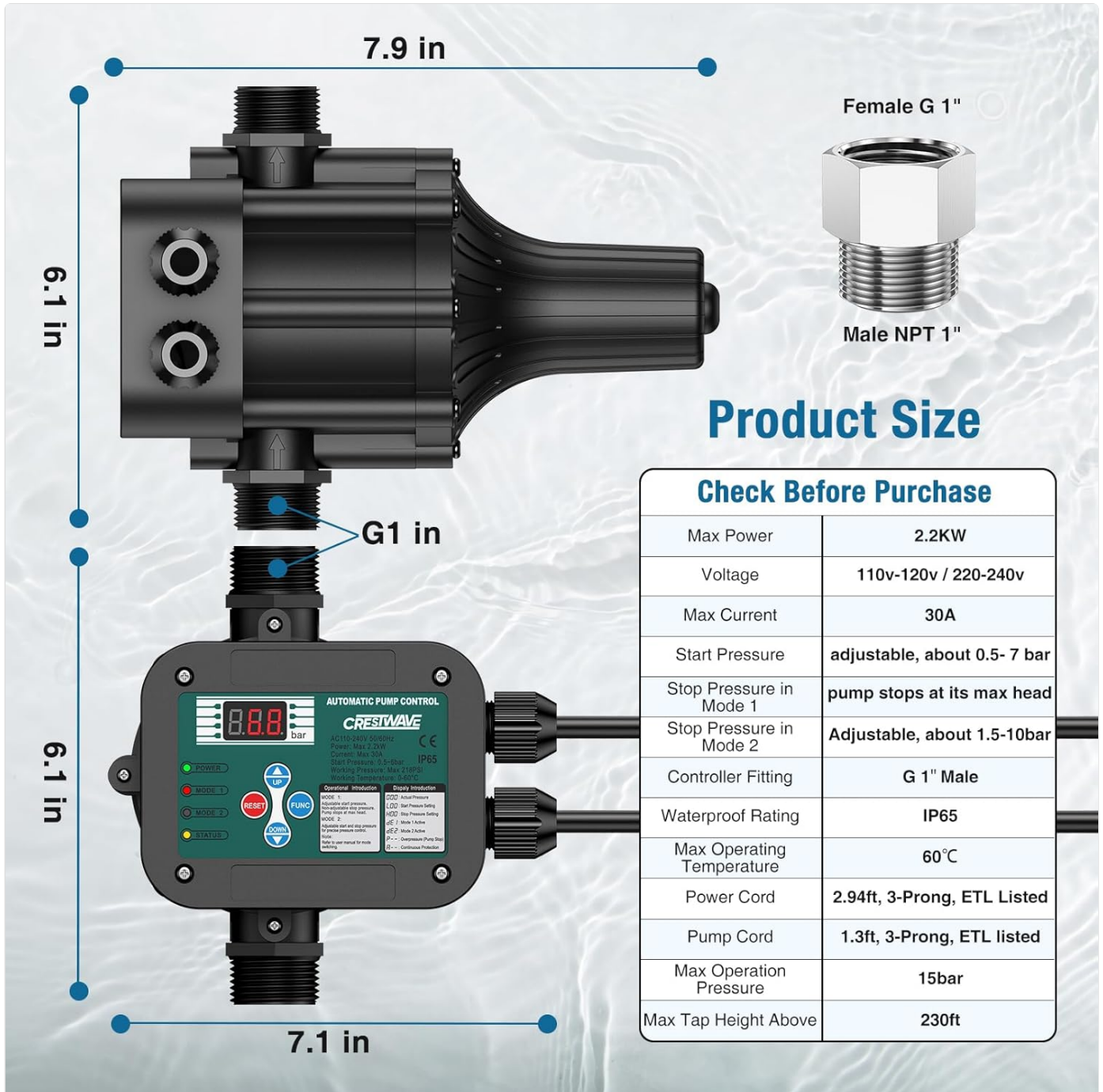


Figure 9.1: Product dimensions and detailed specifications.

10. WARRANTY AND SUPPORT

CRESTWAVE products are manufactured to high-quality standards. For warranty information, technical support, or service inquiries, please refer to the contact information provided with your purchase or visit the official CRESTWAVE website. Please have your model number (BRA90031101) and purchase date available when contacting support.

Note: Unauthorized repairs or modifications may void the product warranty.

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