AquaForte RB345

AquaForte RB345 Vario Plus II Frequency Converter User Manual

1. Introduction

The AquaForte Vario Plus II is an advanced frequency converter designed to optimize the performance of single-speed pool pumps. By converting the alternating current frequency, this device allows precise control over the pump's motor speed. This functionality leads to significant benefits including reduced energy consumption, decreased operational noise by up to 25%, and enhanced water filtration due to slower water movement. The unit features a user-friendly touchscreen display for easy configuration of various settings, including multiple time zones and speed levels. An integrated chip ensures that all settings are retained even after a power interruption.

2. Safety Information

- **Electrical Safety:** Always disconnect power before installation or maintenance. Installation should be performed by a qualified electrician in accordance with local electrical codes.
- **Voltage Compatibility:** Ensure the input voltage (220-240V) matches your electrical supply and the pump's requirements.
- **Water Exposure:** This device is designed for use in a technical room or protected area. Avoid direct exposure to water or excessive humidity.
- **Ventilation:** Ensure adequate ventilation around the unit to prevent overheating. Do not block the heat sink fins.
- **Pump Compatibility:** This frequency converter is suitable for single-phase pumps only. Verify your pump's specifications before connection.
- **Maximum Power:** The maximum power capacity of this unit is 1.1 kW. Do not connect pumps exceeding this power rating.

3. Product Overview

The AquaForte Vario Plus II is a compact and robust frequency converter designed for efficient control of pool pumps. It features a sleek black housing with an intuitive touchscreen interface on the front panel.



Figure 1: Front view of the AquaForte Vario Plus II Frequency Converter. The touchscreen displays power consumption, RPM, current time, and timer settings, surrounded by control buttons.

The device is equipped with a high-quality aluminum heat sink and two fans for efficient cooling, ensuring stable operation and longevity.



Figure 2: Side view of the frequency converter, highlighting the heat sink fins for thermal management.

An internal C1 EMC filter is integrated to minimize electromagnetic interference. The unit also offers external control options, including digital input, RS485, and relay output, for advanced system integration.



Figure 3: Detailed diagram showcasing the innovative housing, touch screen control panel functions (power, motor speed, night/day/backwash modes, current time, timer settings, lock function), external control options, plug & play wall mounting, internal C1 EMC filter, and efficient cooling system with aluminum heat sink and dual fans.

4. Installation

Proper installation is crucial for the safe and efficient operation of your AquaForte Vario Plus II Frequency Converter. Always ensure the device is installed in a dry, well-ventilated area, protected from direct sunlight and moisture.

4.1 Mounting

- The unit is designed for wall mounting. Use appropriate fasteners for your wall type.
- Ensure sufficient space around the unit for air circulation, especially around the heat sink.

4.2 Electrical Connections

All electrical connections must be made by a qualified professional.

- **Power Input:** Connect the main power supply (220-240V AC) to the designated input terminals.
- **Pump Output:** Connect your single-phase pool pump to the output terminals.
- **Cable Length:** The maximum recommended distance for the cable connecting the frequency converter to the pump is 2 meters to ensure optimal performance and minimize signal loss.
- **Grounding:** Ensure the unit is properly grounded to prevent electrical hazards.

5. Operating Instructions

The AquaForte Vario Plus II features an intuitive touchscreen control panel for easy operation.

5.1 Touch Screen Control Panel

The touchscreen allows you to monitor and adjust various parameters:

- **Power Consumption:** Displays the current power usage in Watts.
- **Motor Speed (RPM):** Shows the pump's rotational speed.
- **Operation Modes:** Indicators for Night (low speed), Day (medium speed), and Backwash (high speed).

- **Current Time:** Displays the current time.
- **Timer Sequence:** Indicates which of the 4 daily timers is active (1/2/3/4).
- **Timer Start/Timer Off:** Buttons to activate or deactivate timers.
- **Lock/Mode:** Button to lock the screen or switch between Night/Day/Backwash modes.
- **Up/Down Arrows:** Used to adjust time or speed settings.
- **Timer Button:** Accesses settings for the 4 daily operation timers.

5.2 Speed Adjustment

The Vario Plus II offers 35 different speed settings, allowing you to precisely match the pump's output to your filtration needs. Use the 'Up' and 'Down' arrows on the touchscreen to increase or decrease the motor speed. Lower speeds are ideal for continuous filtration and energy saving, while higher speeds can be used for backwashing or when increased circulation is required.

5.3 Time Zone Programming

You can program up to 4 different time zones per day. This allows for automated operation at varying speeds throughout the day. For example, you can set the pump to run at a low speed during the night for quiet operation and energy saving, and at a higher speed during the day for active filtration. Consult the detailed programming section in the full manual for step-by-step instructions on setting time zones and associated speeds.

5.4 Data Storage

The integrated chip within the Vario Plus II automatically stores all your settings. In the event of a power outage, your programmed speeds and time zones will be retained, eliminating the need for reprogramming once power is restored.

6. Maintenance

Regular maintenance ensures the longevity and optimal performance of your frequency converter.

- **Cleaning:** Periodically clean the exterior of the unit with a soft, dry cloth. Do not use abrasive cleaners or solvents. Ensure the touchscreen is clean for proper responsiveness.
- **Ventilation:** Regularly check that the heat sink fins and ventilation openings are free from dust and debris. Blocked vents can lead to overheating.
- **Connections:** Annually inspect all electrical connections to ensure they are secure and free from corrosion.
- **Environmental Conditions:** Ensure the operating environment remains within the specified temperature and humidity ranges.

7. Troubleshooting

If you encounter issues with your AquaForte Vario Plus II, refer to the following common troubleshooting steps:

- **No Power:** Check the main power supply, circuit breaker, and all electrical connections. Ensure the unit's power switch is in the 'ON' position.
- **Pump Not Running:** Verify that the pump is properly connected and receiving power. Check the speed setting on the frequency converter; ensure it's not set to zero. Confirm that no timer is preventing operation.
- **Abnormal Noise/Vibration:** This could indicate an issue with the pump itself or an incorrect speed setting. Try adjusting the speed. If the problem persists, inspect the pump.
- **Overheating:** Ensure the unit has adequate ventilation and the heat sink is not obstructed. Reduce the load on the pump if it's running at maximum capacity for extended periods in high ambient temperatures.
- **Display Issues:** If the touchscreen is unresponsive or displaying errors, try power cycling the unit (turn off, wait 30

seconds, then turn on).

For persistent issues or complex problems, contact AquaForte customer support or a qualified technician.

8. Specifications

Model Number	RB345
Input Voltage	220-240V AC
Power Source	AC
Dimensions (L x W x H)	22.2 x 11.7 x 16.6 cm
Weight	4.57 kg
Speed Settings	35 different speeds
Timer Functions	4 different time zones per day
Data Retention	Integrated chip for settings memory after power loss
EMC Filter	Internal C1 EMC filter

9. Warranty and Support

AquaForte products are manufactured to high-quality standards and come with a standard manufacturer's warranty. For specific warranty terms and conditions, please refer to the warranty card included with your product or visit the official AquaForte website. For technical support, troubleshooting assistance, or spare parts inquiries, please contact AquaForte customer service through the contact information provided in your product packaging or on the official website. Please have your model number (RB345) and purchase details ready when contacting support.

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