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› [Walfront](#) /

› [Walfront STVP-936 3-Phase Voltage Protector User Manual](#)

Walfront STVP-936

Walfront STVP-936 3-Phase Voltage Protector User Manual

Model: STVP-936 (50A)

1. INTRODUCTION

The Walfront STVP-936 series automatic reset over-voltage, under-voltage, and multi-function protector is a sophisticated monitoring and auxiliary device designed for three-phase four-wire power systems and electrical equipment. This device provides comprehensive protection by instantly cutting off the power supply to prevent damage to electrical equipment when conditions such as overvoltage, undervoltage, or overcurrent occur. Once the line voltage returns to normal, the protector automatically restores the power supply.

This protector integrates multiple functions including over-voltage, under-voltage, over-current, three-phase current (voltage) unbalance, phase sequence (phase dislocation), and phase-break detection. It also features fault inquiry, voltmeter and ammeter functions, and the ability to restore factory settings. The clear LCD screen provides easy access to all functions and settings.

2. SAFETY INFORMATION

WARNING: Installation and maintenance should only be performed by qualified electricians in accordance with local electrical codes and regulations. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Ensure power is disconnected before installation or any maintenance.
- Verify correct wiring connections for three-phase four-wire systems.
- Do not operate the device if it appears damaged.
- Keep the device away from moisture and extreme temperatures.
- The device is designed for indoor use within specified environmental conditions.

3. PRODUCT OVERVIEW



Figure 3.1: Front view of the Walfront STVP-936 Voltage Protector, showing the LCD display and control buttons.

The STVP-936 is a compact device designed for DIN rail mounting. It features an LCD display for real-time voltage and current readings, as well as for navigating settings. Control buttons allow for adjustment of protection parameters.

Key Features:

Parameter	Value
Undervoltage Recovery Value Range	220V-151V (default 180V)
Undervoltage Action Time	0.1 - 10 seconds (default 0.2 seconds)
Overcurrent Action Time	1 - 512 seconds (default 5 seconds)
Three-Phase Voltage Unbalance Value Range	5%-90%-OFF (default 25%)
Phase Voltage Unbalance Action Time	0.1 - 10 seconds (default 2.0 seconds)
Power-On Delay Time	2 - 255 seconds (default 2 seconds)
Failure Recovery Delay Time	2 - 512 seconds (default 60 seconds)
Power Consumption	≤3VA
Display Mode	LCD
Electrical Isolation Strength	>2000VAC, pulse 2.5KV 1.2/50μS
Working Environment Temperature	-20°C ~ 50°C
Working Environment Humidity	85%
Working Environment Altitude	No more than 2000 meters
Approximate Dimensions (L x W x H)	70 x 95 x 65 mm (2.8 x 3.7 x 2.6 inches)
Item Weight	13.5 ounces

5. SETUP AND INSTALLATION

The Walfront STVP-936 is designed for DIN rail mounting within an electrical enclosure. Ensure the enclosure provides adequate ventilation and protection from environmental factors.



Figure 5.1: Front view showing the 'IN' (input) and 'OUT' (output) terminals for wiring.

Wiring Instructions:

1. **Power Disconnection:** Before beginning any wiring, ensure that the main power supply to the circuit is completely disconnected and locked out to prevent accidental re-energization.
2. **Mounting:** Mount the STVP-936 onto a standard DIN rail securely.
3. **Input Wiring (IN terminals):**
 - Connect the incoming three-phase power lines (L1, L2, L3) and the Neutral line (N) to the corresponding 'IN' terminals at the top of the device.
 - Ensure all connections are tight and secure to prevent loose contacts and overheating.

4. **Output Wiring (OUT terminals):**

- Connect the protected load's three-phase power lines (L1, L2, L3) and the Neutral line (N) to the corresponding 'OUT' terminals at the bottom of the device.
- Verify that the load's current requirements do not exceed the device's maximum current rating (50A for this model).

5. **Grounding:** Ensure proper grounding of the electrical system as per local codes.

6. **Verification:** Double-check all wiring connections for correctness and tightness before restoring power.



Figure 5.2: Top-down view illustrating the terminal block layout for wiring connections.

6. OPERATING INSTRUCTIONS

After successful installation and power-up, the device's LCD will display real-time voltage and current readings. The device is pre-configured with default settings, but these can be adjusted to suit specific application requirements.



Figure 6.1: Close-up of the LCD display and control buttons (SET, Up, Down).

Display and Controls:

- **LCD Display:** Shows real-time voltage (V), current (A), and various protection parameters during configuration.
- **SET Button:** Used to enter the setting mode and confirm parameter changes.
- **Up/Down Buttons:** Used to navigate through settings and adjust parameter values.

Adjusting Parameters:

1. Press and hold the **SET** button for a few seconds to enter the parameter setting mode.
2. Use the **Up** and **Down** buttons to scroll through the different adjustable parameters (e.g., Overvoltage Value, Undervoltage Value, Overcurrent Action Time, etc.).
3. When the desired parameter is displayed, press the **SET** button briefly to select it for adjustment.
4. Use the **Up** and **Down** buttons to change the value of the selected parameter.
5. Press the **SET** button again to confirm the new value and move to the next parameter, or to exit the setting mode if no further changes are needed.

6. If no buttons are pressed for a certain period, the device may automatically exit the setting mode and save changes.

Refer to the Specifications section (Section 4) for the default values and adjustable ranges of each parameter.

Fault Inquiry and Reset:

- The device automatically detects faults and disconnects power. The LCD will typically display the type of fault.
- After a fault condition clears and the recovery delay time (default 60 seconds) has passed, the device will automatically reset and restore power.
- To inquire about past faults, consult the device's specific menu options using the SET and Up/Down buttons.
- To restore factory settings, there is usually a specific sequence or menu option. Refer to the on-screen prompts or a more detailed manufacturer's guide if available.

7. MAINTENANCE

The Walfront STVP-936 Voltage Protector is designed for minimal maintenance. However, regular checks can ensure optimal performance and longevity.

- **Visual Inspection:** Periodically inspect the device for any signs of physical damage, discoloration, or loose connections.
- **Cleaning:** Keep the device clean and free from dust. Use a dry, soft cloth for cleaning. Do not use liquid cleaners or solvents.
- **Connection Checks:** Ensure all wiring connections remain tight and secure. Loose connections can lead to overheating and device malfunction.
- **Environmental Conditions:** Verify that the operating environment remains within the specified temperature and humidity ranges.
- **Functionality Test:** If possible and safe to do so, periodically test the protection functions by simulating a fault condition (e.g., temporarily reducing voltage if a test setup is available) to ensure the device responds correctly. This should only be done by qualified personnel.

Do not attempt to open or repair the device yourself. Refer all servicing to qualified personnel.

8. TROUBLESHOOTING

This section provides guidance for common issues. For problems not listed here, contact technical support.

Problem	Possible Cause	Solution
Device does not power on.	No input power; incorrect wiring; internal fault.	Check main power supply. Verify input wiring (L1, L2, L3, N). If power is present and wiring is correct, the device may be faulty.
Device trips frequently.	Voltage fluctuations (over/under); overcurrent condition; phase unbalance; incorrect settings.	Monitor line voltage and current. Check load for overcurrent. Verify protection parameter settings (overvoltage, undervoltage, overcurrent, unbalance thresholds). Adjust settings if necessary, ensuring they are appropriate for your system.
Device does not reset after fault clears.	Fault condition still present; recovery delay time not elapsed; internal fault.	Ensure the fault condition (e.g., overvoltage) has genuinely cleared. Wait for the configured failure recovery delay time to elapse. If the issue persists, power cycle the device (if safe) or contact support.

Problem	Possible Cause	Solution
LCD display is blank or erratic.	No power; display fault; internal malfunction.	Check power supply. If power is present, try power cycling the device. If the problem persists, the device may require servicing.
Cannot adjust settings.	Incorrect button sequence; device locked.	Ensure you are pressing and holding the SET button correctly to enter setting mode. Follow the operating instructions precisely.

9. WARRANTY AND SUPPORT

Specific warranty information for the Walfront STVP-936 Voltage Protector is not provided in this manual. Please refer to the product packaging, your purchase documentation, or contact your retailer or Walfront customer service for details regarding warranty coverage and terms.

For technical support, troubleshooting assistance beyond this manual, or inquiries about replacement parts, please contact Walfront customer support through their official website or the contact information provided with your purchase.

