

**INSTALLING, OPERATING AND
MAINTAINING THE
RHV135 CONTROLLER**

INSTALLING, OPERATING AND MAINTAINING

THE RHV135

PWM DC MOTOR CONTROL

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INTRODUCTION

Thank you for purchasing an **IPC Automation** motor control.

At **IPC** we are committed to designing and manufacturing high quality controls that meet or exceed our customers needs. This manual provides the information you will need in order to properly install, operate and troubleshoot the **RHV135 Chopper Drive**. Please read this manual completely before attempting to install or operate the **RHV135**.

Please feel free to call **IPC Automation** with any questions you may have **BEFORE** performing installation or start-up.

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SECTION ONE

GENERAL INFORMATION

1.1 SAFETY

Electrical rotating equipment and their associated controls can be dangerous if not handled properly. It is essential that only skilled personnel be allowed to work with this equipment.

The drive system should be installed, adjusted and serviced by qualified electrical maintenance personnel familiar with the construction and operation of all equipment in the system. Personal injury and/or equipment damage may occur if individuals are not familiar with the hazards resulting from improper installation and operation.

1.2 WARRANTY

Standard conditions of sale for the company include a Statement of Warranty, which covers the control equipment. This Statement of Warranty covers all new equipment.

1.3 Q.C. TESTING

Quality is an important factor of each phase of the manufacturing and development process. Each unit must pass rigorous quality tests as well as static and dynamic performance checks and a final inspection for quality of workmanship. A unit is allowed to ship only after acceptance of all aspects of Q.C. testing and inspection. This assures that you receive only those controls that meet our demanding quality standards.

1.4 STORAGE

Please take the following precautions if it should be necessary to store the control for any length of time.



Store the control in a clean, dry (non-corrosive) environment that is protected from sudden variations in temperature and high levels of moisture, shock and vibration.



The ambient temperature where the control is stored should be maintained between zero (0) and 65 degrees Centigrade.



The control should be stored in the original package in order to protect from dust and dirt contamination.

SECTION TWO

PRODUCT SPECIFICATIONS

2.1 GENERAL DESCRIPTION

The RHV135 PWM DC Drive is a single axis controller requiring a minimum of external components to complete the system. All required power supplies are built into the controller and operate from a 115 VAC power source.

The basic components of the system are as follows:

- RHV135 Series Controller
- 115 VAC Power Source
- Control Input (0 – 10 VDC) Voltage Source
- PM DC Motor or Gearmotor-WE recommend R DC Motors by RAE Corporation see their website @ www.raemotors.com

2.2 CONTROL SPECIFICATIONS

CONTROL INPUT SUPPLY:	115 VAC 50/60 HZ single phase
OUTPUT VOLTAGE:	Zero (0) to \pm 160 VDC
CONTINUOUS DUTY CURRENT:	3 Amperes
AMBIENT TEMPERATURE RANGE:	Zero (0) to 50 Degrees C
INPUT CONTROL VOLTAGE RANGE:	Zero (0) to Ten (10) Volts DC

2.3 CONTROL FEATURES OVERVIEW

The key features of the RHV135 PWM DC Drive are summarized here.

- ✓ FET Pulse Width Modulated Design
- ✓ Single Direction Operation
- ✓ Smooth Linear Acceleration
- ✓ Adjustable Maximum Speed

When setting the maximum output voltage or whenever monitoring the output voltage, always use an UNGROUNDED meter. Failure to use an ungrounded meter will result in damage to the control.

SECTION THREE

INSTALLATION INSTRUCTIONS

3.1 ENCLOSURE CONSIDERATIONS

The controller has mounting holes for customer use. Ideally, the controller should be mounted vertically with the heatsink fin also in the vertical position. Horizontal mounting is acceptable. However, horizontal mounting with the board below the heatsink is **NOT** recommended.

Adequate free air movement should be provided for proper cooling. In addition, the ambient temperature should be between zero and 50 degrees C. Operation at higher ambient temperatures is possible, but the controller output will be de-rated.

POWER WIRING

Power and motor leads should be kept as short as possible. All power connections should be capable of conducting 3 Amperes on a continuous duty basis.

Do not attempt to apply voltages in excess of 130 VAC to the L1 and L2 terminals. Permanent damage will occur to the controller if this is attempted.

SIGNAL WIRING

The potentiometer wiring should be capable of conducting 1 Ampere. Generally, it is not necessary to use shielded cable unless erratic speed operation is noted.

TERMINAL DESCRIPTIONS

All wiring is to be made to the connection point on the controller board. A description of the terminals and their function is as follows:

L1 and L2 These are the power connections. Connect 115 VAC to L1 and L2.

M+ and M- These are the motor connections. Connect the positive motor lead to M+ and the negative motor lead to M-.

PH The “high” side of the speed potentiometer is connected to this terminal.

PW The “wiper” of the speed potentiometer is connected to this terminal.

PL The “low” side of the speed potentiometer is connected to this terminal.