

# RP3 Series

Installation and Maintenance Manual  
for the RP3



*An Altra Industrial Motion Company*

## WARNING

IMPROPER INSTALLATION OR OPERATION OF THIS CONTROL MAY RESULT IN INJURY TO PERSONNEL OR ELECTRONIC FAILURE. THE CONTROL MUST BE INSTALLED AND GROUNDED IN ACCORDANCE WITH LOCAL, STATE, AND NATIONAL SAFETY CODES. AT NO TIME SHOULD THE CIRCUIT CONTINUITY BE CHECKED BY SHORTING TERMINALS WITH A SCREWDRIVER OR OTHER METAL DEVICE.

PLEASE READ COMPLETELY BEFORE MAKING ANY ADJUSTMENTS

# HOOK-UP & TERMINAL IDENTIFICATION

- 1) Before attempting to wire the control, make sure all power is turned off.
- 2) The RP3 Series controller comes with built-in fusing (250VAC 6.3A, Littelfuse PN 216 06.3 or equivalent) wired in line with AC1.

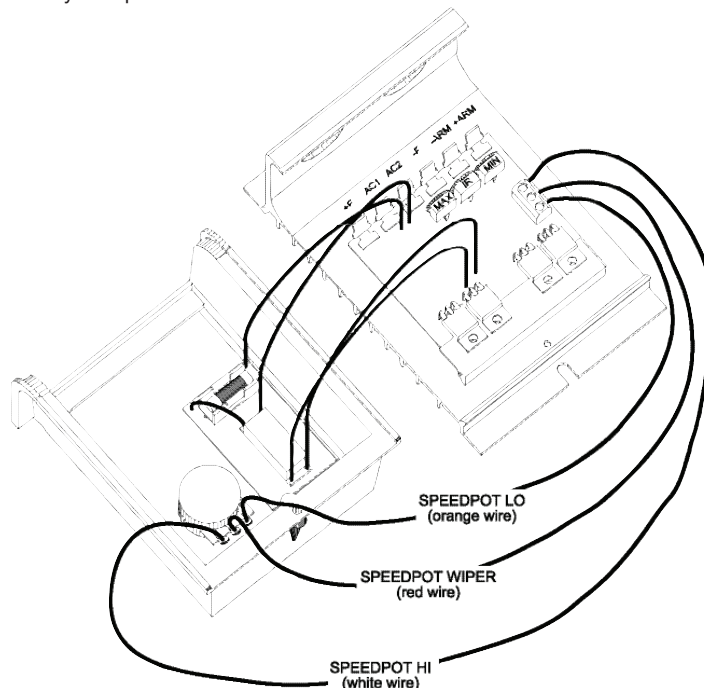
ALL SINGLE PHASE AC SYSTEMS SHOULD HAVE HOT AC CONNECTED TO AC1(L) PIN. FOR 240 VAC SUPPLIES WITH TWO HOT LINES, AN EXTERNAL FUSE WILL NEED TO BE ADDED IN SERIES WITH THE AC2(N) PIN. CAUTION SHOULD BE USED IN SELECTING THE SIZE OF HOOK-UP WIRING. LIMIT THE VOLTAGE DROP THROUGH THE WIRING TO 5% OF THE LINE VOLTAGE AT FULL LOAD.

- 3) +ARM: Connect to plus (+) Armature wire on motor: 0-90 VDC for 120 VAC input, and 0-180 VDC for 240 VAC input.
- 4) -ARM: Connect to minus (-) Armature wire on motor.
- 5) AC1 and AC2: 120/240 VAC - Connect one of the incoming AC lines to AC1 and the other AC line to AC2
- 6) +FIELD: Do not use for permanent magnet motor. This supplies +Field voltage for a Shunt Wound Motor. For motors with dual voltage field (ie; 50/100V or 100/200V), make sure the highest value is connected.
- 7) -FIELD: Connect to minus (-) Field wire of Shunt Wound Motor.

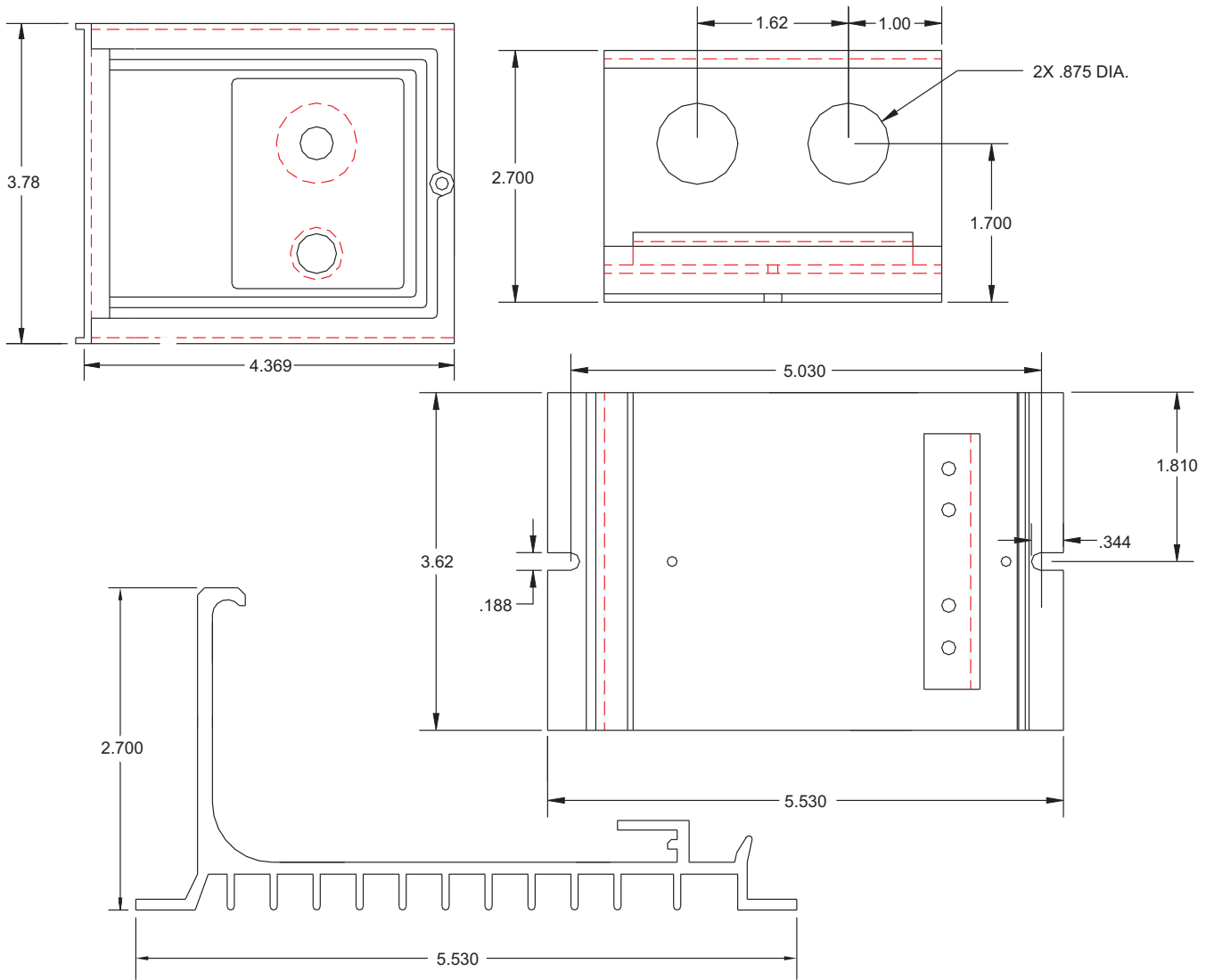
**CAUTION: DO NOT ATTEMPT TO PERFORM A HI-POT TEST ACROSS AC LINES WITH CONTROL IN CIRCUIT. THIS WILL RESULT IN IMMEDIATE OR LONG TERM DAMAGE TO THE CONTROL.**

## ADJUSTMENTS

- 1) Preset trimpots in the counter-clockwise (CCW) position.
- 2) Apply power and set the power on/off switch to the on position.
- 3) Rotate the Speedpot fully CW and adjust MAX trimpot in the CW direction until the maximum desired speed is obtained.
- 4) Rotate the Speedpot fully counter-clockwise (CCW) and adjust the MIN trimpot in the CW direction until deadband or the minimum desired speed is obtained.
- 5) The IR COMP trimpot is used as a regulation adjustment. If better motor regulation is needed between minimum and maximum loads, then adjust IR COMP trimpot as follows. Rotate the Speedpot CW to the 50% position and rotate the IR COMP trimpot CW as needed to increase regulation.
- 6) Recheck and readjust trimpots if necessary. Trimpot interaction with each other will be minimal.



# HEATSINK DIMENSIONS & IDENTIFICATION



## RP3 MODEL SPECIFICATIONS

AC Input Voltage .....	± 10% Rated Line Voltage
Input Voltage - .....	120 VAC or 240 VAC
Amps - DC Output .....	150mA to 3 Amps
Input Frequency .....	50 / 60 Hertz
I.R. Compensation .....	Adjustable - full range
Max. Speed .....	Adjustable (40 - 120% of Base Speed)
Min. Speed .....	Adjustable (0 - 30% of Max)
Output Voltage (120 or 240 VAC Input) .....	0-105 or 0-210 VDC
Overload Capacity .....	200% for 1 minute
Shunt Field Voltage .....	.75 Amp max, 100 VDC at 120 VAC
.....	.75 Amp max, 200 VDC at 240 VAC
Speed Control .....	5K Ohm Speed Potentiometer
Speed Range .....	25:1
Speed Regulation .....	± 1% of Base Speed
Temperature Range .....	-10° to 40° C. Ambient (15° to 105° F.)
Transient Protection .....	G-Mov
Dimensions .....	3.78" wide, 5.53" high, 3.49" deep
Weight .....	13.76 oz.

# Boston Gear DC Controls Warranty

**Boston Gear** warrants its products to be free from defects in material and workmanship.

The exclusive remedy for this warranty is Boston Gear factory replacement or repair of any part or parts of such product which shall within 12 months after delivery to the purchaser be returned to Boston Gear factory with all transportation charges prepaid and which Boston Gear determines to its satisfaction to be defective.

This warranty shall not extend to defects in assembly by other than Boston Gear or to any article which has been repaired or altered by other than Boston Gear or to any article which Boston Gear determines has been subjected to improper use.

Boston Gear assumes no responsibility for the design characteristics of any unit or its operation in any circuit or assembly.

This warranty is in lieu of all other warranties, express or implied; all other liabilities or obligations on the part of Boston Gear, including consequential damages, are hereby expressly excluded.

**NOTE:** Carefully check the control for shipping damage. Report any damage to the carrier immediately. Do not attempt to operate the drive if visible damage is evident to either the circuit or to the electronic components.

All information contained in this manual is intended to be correct; however information and data in this manual are subject to change without notice. Boston Gear makes no warranty of any kind with regard to this information or data.

Further, Boston Gear is not responsible for any omissions or errors or consequential damage caused by the user of the product.

Boston Gear reserves the right to make manufacturing changes which may not be included in this manual.



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