

Automation Devices, Inc.

Model 4500E Series Motor Controller Instructions

➤ DESCRIPTION

The 4500E Series Controllers are designed for permanent magnet motors. An adjustable full wave output is provided by a solid state circuit. A combination of counter-EMF and IR feedback is used to stabilize motor speed. Electronic current-limiting reduces motor starting current, thereby prolonging motor and semiconductor life.

Model Number	Input Voltage (AC RMS)	Motor Fuse (Amps)	Line Fuse (Amps)	Maximum Motor HP
4560E	120V	8	10	3/4
4580E	240V	5	5 (two required)	

NOTE: All fuses are type ABC. Chassis Models 4561E and 4581E are also available.

➤ OPERATION

SPEED RANGE ADJUST – Turn the power switch ON and adjust the unit to the desired speed with the control knob. The MIN and MAX motor speed trimmers are factory set for operation from zero to full motor speed. If a different speed range is desired, adjust as follows:

MAX SPEED – Turn the main speed control to full speed (maximum clockwise direction). Adjust the MAX trimpot to obtain the new top speed.

MIN SPEED – Turn the main speed control to the lowest speed (maximum counterclockwise direction). Adjust the MIN trimpot to obtain the new low speed.

The following trimmer adjustments are preset at the factory to provide the most efficient and trouble-free operation of this controller, when used with the motor supplied:

IR – controls load regulation (typical setting is 25% of clockwise rotation).

CL – protects against overloads (typical setting is 75% of clockwise rotation).

ACCEL – provides a slow, smooth start-up (typical setting is 50% of clockwise rotation). **CAUTION: NEVER TURN FULLY COUNTERCLOCKWISE.**

TORQUE – This controller is factory adjusted for 1/4 through 3/4 horsepower motors. If a different horsepower motor is required, consult the factory for information.

➤ INSTALLATION

The controller should be mounted in an area free of excessive heat, vibration, metallic dust and moisture. The safety of all personnel should be a part of the selection process. Note the location of wiring knockouts to ensure convenient connections.

➤ WIRING (Refer to wiring diagram)

ALL WIRING SHOULD BE PERFORMED BY QUALIFIED PERSONNEL. To make the power connections, remove the rear endplate from the enclosure and slide the faceplate subassembly away from the housing. Knockouts are provided in the endplate for incoming power leads and for the wires from the motor armature. The following wiring hardware is supplied with the controller:

- **two strain reliefs** – for use with 16-3 SJO cord as entrance fittings in the endplate knockouts for input power and motor-armature cables. An alternative method is to use two of the knockouts in the end plate which will accommodate 1/2 inch trade-size entrance fittings (not supplied).
- **two 1/4 inch push-on lugs** – for connection of the input power leads to the power switch terminals.

WARNING: Inspect all connections for accuracy and tightness prior to applying power. Incorrect connections will damage the circuit.

MOTOR CONNECTION – The armature is connected to terminals labeled A- and A+. Reverse the armature leads if the motor is turning the wrong way.

FUSING – A fuse, in series with the 120V input line to L1, is provided. (On 240V systems, the input lines to L1 and L2 are both fused.) A second fuse, installed in series with the motor armature, provides protection against motor overloads. Refer to the above chart for replacement values.

GROUNDING – For the user's safety, suitable input power and motor grounds must be connected to the controller housing. A ground screw with two ring terminals is provided for this purpose.

CONTROLLER REPAIRS – We suggest that all controllers be returned to Automation Devices for repair. If there is any question concerning warranty, the controller should go back to the company where it was purchased.

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