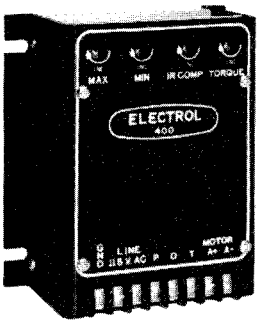
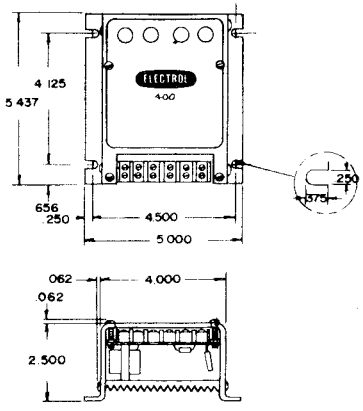
ELECTROL

INSTALLATION & MAINTAINENCE MANUAL

MODEL C-MH-U-400-CM
MODEL C-MH-U-420-CM





Standard Features

400 Series

- **Input Voltage** – 115V AC, 50/60 Hz, Single Phase
- **Output Voltage** – 0-90V DC PM or Shunt Motor (Field Voltage 50/100 V DC)
- **Horsepower Range** – 1/6 - 3/4 (Order from factory for desired HP

420 Series

- **Input Voltage** – 230V AC 50/60 Hz, Single Phase
- **Output Voltage** – 0-180V DC PM or Shunt Motor (Field Voltage 100/200V DC)
- **Horsepower Range** – 1/4 - 1 1/2 (Order from Factory for desired HP
- **Speed Regulation** – 3% of Base Speed
- **Speed Range** – 40:1 Constance Torque
- **Full Wave Rectification**
- **Minimum Speed Adjustment** – Set low end speed adjustment
- **Maximum Speed Adjustment** – Set high end speed adjustment
- **IR Compensation** – Adjustable No Load to Full Load RPM
- **Torque (Current Limit)** – Adjustable Maximum Current Cut-off
- **Built-in Transient and Surge Protection**
- **Built-in Line Voltage Compensation**
- **90% of all circuitry on one P.C. Board**
- **Master Speed Pot** – shipped loose for Customer Mounting

ELECTROL CO., INC. • 321 DEWEY ST. • YORK, PA 17404 • (717) 848-1722 • FAX (717) 848-4514

WARRANTY

ELECTROL controls are warranted by ELECTROL CO., INC. to the original user against defects in workmanship or materials under normal use (rental excluded) for one (1) year after purchase.

Any part which is determined to be defective in material or workmanship must be returned to ELECTROL headquarters, or an authorized service center, as ELECTROL designates, shipping costs prepaid. The control will be repaired or replaced at ELECTROL's option. Expenses incurred by buyer in repairing or replacing any defective product will not be allowed except where authorized in writing and signed by an officer of the company.

APPLICATION INFORMATION

1. If you replace an AC induction motor with a DC motor and adjustable speed drive, consideration must be given to the full load torque rating of the AC induction motor that is being replaced. The full load torque rating of the DC motor must be equal to or greater than the full load torque rating of the AC motor it is going to replace.
2. When replacing an AC induction motor with a DC motor and adjustable speed control the DC motors starting torque must be limited to 200% of full load torque (150% of full torque for gearmotors). The reason for these limits is to protect the motor or gearmotor from damaging overloads. Cycle type loads should be avoided.
3. Soft Start – The DC motor accelerates from 0 to full load RPM smoothly and takes 1 to 3 seconds to reach full load RPM. Acceleration rate varies with respect to speed setting and amount of inertia in the system.
4. The motor controller has circuitry to protect it from normal line surges, and transients. If, however, the control will be used in an environment where these are present constantly, such as high frequency welding equipment, an isolation transformer or other line filtering device should be used.
5. The Electrol adjustable speed DC motor control is designed for use on constant (or diminishing) torque applications such as conveyors, fans, blowers, etc.

   WARNING: NOT INTENDED FOR USE WITH SAWS, DRILL PRESSES, OR OTHER CONSTANT HP APPLICATIONS. NOT TO BE USED IN AN EXPLOSIVE ATMOSPHERE!

CONNECTION

CAUTION: Disconnect power source before connecting controller or motor. Use No. 12 AWG (minimum size) wire for controller input lines, and for interconnection lines between controller and motor.

CUSTOMER CONNECTION AND ADJUSTMENTS

CAUTION: Follow local electrical codes and proper electrical practices during hook-up of controller. The customer is responsible for supplying and connecting an external power disconnect, such as a 20 Amp circuit breaker or DPDTtoggle switch. Disconnect power source before connecting control and motor. Use #12 gauge wire for input lines to the control and lines to motor armature.

TERMINAL BLOCK CONNECTIONS:

GND, L1, L2 – Single Phase AC INPUT
"P" – Speed Pot 100%
"O" – Speed Pot Wiper
"T" – Speed Pot 0%
A1+, A2 – Motor Armature A1, A2 Interchange these two leads to Reverse Rotation

SHUNT WOUND

F+ – Motor Field F1
Located as FAST-ON tab on back of PC Board

A2- – Motor Field F2

400 Series 115V	420 Series 230V	FUSE LINE	FUSE ARM.
HP			
1/6	1/4	3	3
1/4	1/2-3/4	5	5
1/3-1/2	1	10	10
3/4	1-1/2	15	10

A. Voltage Selection:

For 115V - 400 Series
For 230V - 420 Series

B. Start-up procedures:

1. Set master speed pot to 0%.
2. Apply power to unit.
3. Turn speed pot up and check for proper rotation of motor shaft. Reverse motor leads to change rotation, if necessary.
4. Trim pot adjustments, if necessary.
   a) MIN RPM Trim: To adjust master pot low end speed range, turn CCW to decrease speed range. Turn CW to increase speed range.
   b) MAX RPM Trim: To adjust master pot high end speed range, turn CCW to decrease speed range. Turn CW to increase speed range.
   c) TORQUE Trim: To adjust maximum current available to motor armature, do not exceed full load current of motor.
   d) IR COMP: To maintain no load motor RPM with load applied, turn CW to increase compensation. Turn CCW to decrease compensation. CAUTION: Overadjustment will cause motor RPM at low speed settings to rise excessively under full load conditions.

To Request Schematic
Please call or write:

Electrol Co. Inc.
321 Dewey St.
York, PA 17404

Phone (717) 848-1722
Fax (717) 848-4514
E-mail electrol@electrolco.com