

**REGENERATIVE DRIVE
ELECTROL INSTALLATION AND
OPERATING INSTRUCTIONS**

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ENCLOSURE MODEL C-MH-W-923A-E
CHASSIS MOUNT MODEL C-MH-12-923A-CM

SPECIFICATIONS

INPUT: 115 OR 230 VAC 50/60 HZ SINGLE PHASE
 115 VAC -0-90 VDC ARM 12 AMPS MAX
 0-100 VDC FIELD 2 AMPS MAX
 230 VAC -0-189 VDC ARM 12 AMPS MAX
 0-200 VDC FIELD 2 AMPS MAX
 115 VAC -1/6 -1 HP PERMANENT MAGNET OR SHUNT-WOUND MOTORS
 230 VAC -1/4 -2 HP PERMANENT MAGNET OR SHUNT-WOUND MOTORS

SPEED RANGE: 60:1

SPEED REGULATION: 2- 10% OF BASE SPEED

NEMA-12 ENCLOSURE - ATTRACTIVE PLASTIC LID WITH EXTRUDED HEATSINK BASE

CIRCUIT DESCRIPTION: THE REGENERATIVE CONTROL IS A 4-QUADRANT DRIVE WHICH MAY RUN MOTOR IN TWO DIRECTIONS OR MAY BE USED AS A GENERATOR IN TWO DIRECTIONS. (GENERATE POWER BACK INTO THE AC LINE TO FORCE A LOADED MOTOR BACK DOWN.) FULL SPEED FORWARD TO FULL SPEED REVERSE MAY BE ACCOMPLISHED IN AS LITTLE AS TWO SECONDS DEPENDING UPON LOAD.

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 DPST TOGGLE SWITCH. DISCONNECT POWER SOURCE BEFORE CONNECTING CONTROL FEATURES P.C. MOUNTED LINE AND MOTOR FUSES.

ADJUSTMENTS

CONTROLS ARE SHIPPED SET UP AND ADJUSTED FOR 2 HP, 230 VAC AS STANDARD. IF ANY OTHER HORSEPOWER AND/OR VOLTAGE IS DESIRED, FOLLOW THE INSTRUCTIONS BELOW.

- A. HORSEPOWER SELECTION
THE DIP SWITCH POSITIONS 3, 4, AND 5 ON THE PC BOARD ARE FOR HORSEPOWER SELECTION.

HP	90V ARM	180V ARM
1/8-1/16	3, 4 & 5 OFF	
1/4	3 & 4 OFF, 5 ON	3, 4 & 5 OFF
1/3-1/2	3 OFF, 4 & 5 ON	3 & 4 OFF, 5 ON
3/4	4 & 5 OFF, 3 ON	3 & 5 OFF, 4 ON
1	3, 4 & 5 ON	3 OFF, 4 & 5 ON
1-1 1/2		4 & 5 OFF, 3 ON
2		3, 4 & 5 ON

USE LINE FUSES 1.25 TO 1.5 TIMES FULL LOAD MOTOR ARM CURRENT.

- B. INPUT VOLTAGE SELECTOR IS ACCOMPLISHED BY THE POSITION OF SLIDE SWITCH SW701 LOCATED ABOVE THE TRANSFORMER. "115V" OR "230V" IS VISIBLE ON THE SLIDE SWITCH OPERATOR.
- C. MOTOR VOLTAGE IS SELECTABLE WITH DIP SWITCH POSITION #2.
90 VDC MOTOR ARM, SWITCH #2 "ON"
180 VDC MOTOR ARM, SWITCH #2 "OFF"
- (NOTE: 180 VDC MOTOR ARM ON 230V INPUT ONLY)
- D. DIP SWITCH POSITION #1 IS FOR FUTURE TACH FEEDBACK. FOR NORMAL ARMATURE FEEDBACK OPERATION, SWITCH #1 SHOULD BE "ON".

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CONNECTIONS

L1	120V/240V 50/60 HZ	INPUT
L2		
F1	100/200 VDC	MOTOR FIELD (IF USED)
F2		
A1	0-09/0-180 VDC	MOTOR ARMATURE
A2		
T1	NOT USED	
T2		

CONNECTIONS

P1 FORWARD REFERENCE
P2 CHANNEL "A" INPUT (NON INVERTING)
P3 CHANNEL "B" INPUT (INVERTING) P4 REVERSE REFERENCE PS COM:MON REFERENCE
C1 CHANNEL "A" ENABLE COMMAND (+) NORMALLY OPEN
C2 REGENERATIVE STOP COMMAND (+) NORMALLY CLOSED
C3 CHANNEL "A" ENABLE COMMAND (+) NORMALLY OPEN
C4 NON-REGEN STOP COMMAND (+) NORMALLY CLOSED (E-STOP)
C5 COMMAND COM:MON (-)
V1 (+)
V2 (-)

TRIM POT

FOR. MAX ADJUST THE VOLTAGE AT TERM P1 FROM +SVDC TO - 1VDC
REV. MAX ADJUST THE VOLTAGE AT TERM P4 FROM -SVDC TO +1VDC
FWD ACCEL ADJUST THE ACC. RATE OF POSITIVE VOLTAGE INPUT TO P2 OR P3
REV. ACCEL ADJUST THE ACC. RATE OF NEGATIVE VOLTAGE INPUT TO P2 OR P3
IR COMP REGULATE MOTOR SPEED BETWEEN NO LOAD AND FULL LOAD
FWD TORQ LIMIT THE AMOUNT OF TORQUE (CURRENT) IN THE FORWARD COMMAND

REV TORQ LIMIT THE AMOUNT OF TORQUE (CURRENT) IN THE REVERSE COMMAND

LED INDICATORS

(+)V (-)V YELLOW -INDICATE LOW VOLTAGE POWER SUPPLY PRESENT (+/-) 8 VDC
VELOCITY- GREEN FOR FORWARD OR RED FOR REVERSE VELOCITY TORQUE- GREEN FOR
FORWARD ORE RED FOR REVERSE TORQUE
TORQUE LIMIT -GREEN FOR FORWARD OR RED FOR REVERSE TORQUE LIMIT
COMMAND -GREEN FOR FORWARD OR RED FOR REVERSE COMMAND

APPLICATION NOTES

A SINGLE MASTER SPEED POT MAY BE USED FOR BOTH DIRECTIONS OR TWO SPEED POTS WITH A SEPARATE POT FOR EACH DIRECTION. TERMINAL P2 IS THE NON INVERTING INPUT WITH P3 AS THE INVERTING INPUT. WITH P1 SET UP AS FORWARD MAX AND P4 AS REVERSE MAX AND P4 AS REVERSE MAX, A POT CAN BE SET UP FOR BY DIRECTIONAL OPERATION WITH CENTER STOP.

C1 THROUGH C5 ARE THE FWD, STOP, REVERSE FUNCTION CONTROLS. THESE INPUTS ARE ALL OPTICAL COUPLED. THIS ALLOWS FOR EXTERNAL VOLTAGE ACTIVATION OR USE OF ON BOARD AUX POWER. THE TWO STOP CIRCUITS ARE ENERGIZED FOR NORMAL OPERATION WITH POWER REMOVED FROM STOPPING.

WARRANTY INFORMATION

ELECTROL 1 -YEAR LIMITED WARRANTY

SERVICING OR REPAIRING ANY CONTROL MANUFACTURED BY ELECTROL WITHOUT ELECTROL'S CONSENT OR UNDER THE DIRECTION OF AN ELECTROL APPROVED SERVICE SHOP WILL VOID WARRANTY OF THE CONTROL.

ELECTROL CONTROLS ARE WARRANTED BY ELECTROL CO., INC. (ELECTROL) TO THE ORIGINAL USER AGAINST DEFECTS IN WORKMANSHIP OR MATERIALS UNDER NORMAL USE (RENTAL USE EXCLUDED), FOR ONE YEAR AFTER DATE OF PURCHASE.

ANY PART WHICH IS DETERMINED TO BE DEFECTIVE IN MATERIAL OR WORKMANSHIP AND RETURNED TO AN AUTHORIZED SERVICE LOCATION, AS ELECTROL DESIGNATES, SHIPPING COSTS PREPAID, WILL BE REPAIRED OR REPLACED AT ELECTROL'S OPTION. FOR COMPLETE INFORMATION, SEE. "SALES AND SERVICE POLICY".