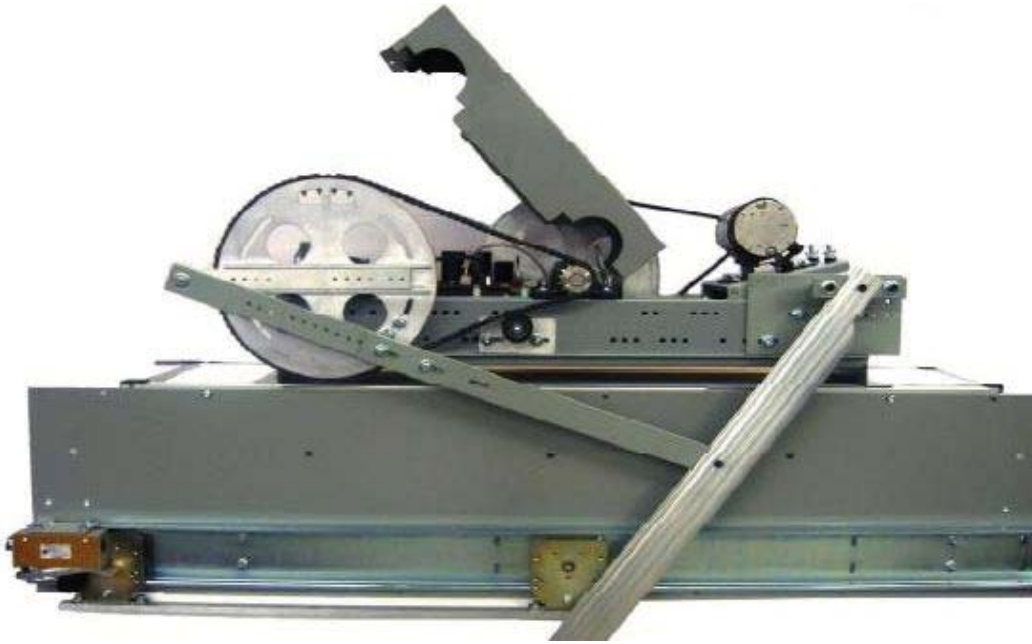




ECI - MODEL 1010

HEAVY DUTY SOLID STATE HIGH SPEED DOOR OPERATOR



- 48 VDC MOTOR
- 120VAC PRIMARY SUPPLY (240VAC ON REQUEST)
- 120VAC STANDARD INTERFACE TO THE ELEVATOR CONTROLLER
- CUSTOMER SPECIFIED INTERFACE AT 24, 48, 110VDC OR 24, 48, 240VAC (SPECIAL OPTION)
- FIELD REVERSABLE FOR RIGHT AND LEFT HAND OPERATION
- FULLY ADAPTABLE FOR 24" TO 96"(PLUS) DOOR OPENING (600mm – 2500mm)
- FACTORY PRE-SET ADJUSTABLE CLOSING FORCE
- TEST SWITCHES ALLOWING ADJUSTMENT AT DOOR OPERATOR
- ADJUSTABLE NUDGING SPEED AND FORCE
- SEPARATE ADJUSTMENT FOR HEAVY DOORS OR WIND CONDITIONS
- TOTAL MECHANICAL ADVANTAGE THROUGH LINKAGE HARMONICS
- EASY ADJUSTMENT WITH INDIVIDUAL BELT AND CHAIN TENSIONER
- ELECTRONICALLY CONTROLLED ACCELERATION AND DECELERATION SLOPE
- SLOW START FEATURE ON CLOSING CYCLE
- EASY FORCE ADJUSTMENT BY MEANS OF POTENTIOMETERS
- ON BOARD POWER SUPPLY 24VDC FOR INFRA-RED DOOR DETECTOR
- CSA APPROVED # 1793302

ELEVATOR COMPONENTS INDUSTRIES Inc.

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ECI - 1000 DOOR OPERATOR

ECI-1000 door operator is a solid state harmonic door operator which can be adapted to most elevator controllers.

The motor speed and current are controlled by the pulse width modulated, four quadrant chopper drive.

Technical data:

supply voltage: 120VAC, 50/60Hz, 500VA, single phase (220/240VAC on request)

motor data: 48VDC, 1/3Hp, 1150rpm

opto-isolated inputs voltage: 120VAC, standard version.

For all other inputs voltage, RX1 to RX6 resistors have to be changed (see table below).

INPUTS	120VAC	110VDC	24 to 48VAC/DC	240VAC/DC
RX1 to RX6 resistors	12K/1.6W	12K/1.6W	2.4K/2W	30K/3W

user inputs:

open command – DO10

close command – DO7

nudging command – DO4

door locking command – DO18

heavy door – HDP, HDN (an external dry contact is required)

user outputs:

open limit – DO3

close limit – DO17

Potentiometer functions

P1	OS	OPEN SLOW
P2	PL	INITIAL OPEN SPEED
P3	CFH	CLOSE FAST SPEED FOR HEAVY DOOR OPTION
P4	CS	CLOSE SLOW SPEED
P5	SS	SLOW START SPEED IN CLOSING
P6	NDG	NUDGING SPEED
P7	OF	OPEN FAST SPEED
P8	CF	CLOSE FAST SPEED
P9	FD	DECELERATION RAMP DURING REVERSAL FROM CLOSING TO OPENING
P10	A/D	SPEED ACCELERATION AND DECELERATION IN BOTH DIRECTION
P11	CLF	CLOSE FORCE LIMIT
P12	DLF	DOOR LOCKING FORCE
P13	NF	NUDGING FORCE LIMIT

All the parameters are factory preset, but to take full advantage of the drive, the field adjustment is recommended.

Remark: clockwise rotation of the potentiometers P1 to P13 increase the value of the respective setting.

Functions of the LEDs

D11 - dynamic brake circuit (red) - OFF when the braking circuit is active.

D22 - motor relay (red) - ON when the motor relay is picked up.

D38 - time out (red) - OFF when the motor current has been lowered to the NF (nudging force) level.

D62 - open limit (green) – OFF, when the door is fully open.

D63 - open command (green) – ON, when the open command is active.

D64 - door locking force command (green) – ON, when the DLF signal is active.

D65 - close command (green) – ON, when the close signal is active.

D66 - close limit (green) – OFF, when the door is fully closed.

D67 - nudging command (green) – ON, when the nudging command is active.

D84 - power stage shutdown (green)– ON, when the power stage is active.

D85 - run command (green) - ON when the closing or opening operation is enabled.

MECHANICAL SET UP

How to position the door operator

All E.C.I. door operators are factory preset to the data marked on the shipping box.

1. Mark daylight according to the data sheet:
for example: 9 ¾" for a single speed 36" door and 8' cab
14 ¾" for a two speed 48" door and 9' cab
2. Set the door operator, centre of the crank wheel onto the daylight, attach the linkage, Make sure the crankarm runs parallel to the door face (move the door operator towards or away from the hall door) and hand tighten the clamping screws.
3. Mount the clutch and shim accordingly, to engage the clutch arm with the crankarm.
4. Set SW2 to OFF and SW1 to TEST.
5. If the door operator works satisfactory go to 9. Should you have any difficulties, consult first the data sheet for the operator dimensions.
6. When the door is fully closed, the "A" linkage on SSL and 2SPD should be horizontal to the top of the cab (60lbs) force, 15 degrees on C/O.
7. Set the rubber stop on the crankwheel against the door operator base (1/16 clearance).
8. If the door operator does not function properly return the settings of the potentiometers to the factory settings and repeat the test with disconnected J10.

The table shows the factory setup voltage (DC) at the test points, X25 to X35.

X32	X30	X31	X28	X33	X34	X25	X26	X27	X35	X29
CS	SS	NDG	CFH	CLF	DLF	OF	OS	PL	NF	CF
1.5	1.5	1.5	3.0	5.0	1.5	3.5	1.0	1.0	3.5	4.0

- AD** and **FD** potentiometers don't have test points on the board. These are setup to 10 turns clockwise from fully counterclockwise position (20 turn pots).
9. Tighten all the clamping screws on the base, the cams, the linkage and the clutch.

IMPORTANT:

The following six requirements of the Elevator Code have to be achieved:

1. At the fully closed position, when the power is OFF, a 60lbs. force should allow you to pull the door open.
2. At the fully open position, arms "A" and "C" have to be in straight line, no "shear action" can be present, maximum ¾" over the post.
3. While the car is running, the door cannot be pulled open.
4. The closing force may not exceed 135N (30lbs).
5. During the closing the kinetic energy may not exceed 10 Joules (7.4ft.lbs).
6. In the nudging mode the kinetic energy may not exceed 3.0 Joules (2.5ft.lbs).

Electrical Adjustment Procedure

1. Before applying power to the door operator make sure that the door moves freely and has been mechanically adjusted.
2. Switch SW2 and SW3 to OFF.
3. Switch SW1 to TEST.
4. Position the door in fully closed position.
5. Unplug J10 Phoenix connector and apply power to J2 connector L1A, L2A (120VAC).
6. The red LEDs D11 and D38 have to be ON.
7. Switch SW2 to OPEN. D63 LED will be ON confirming the open command. D85 LED (RUN command) D84 LED (power stage active) and D22 LED (motor relay) have to be ON during the opening cycle.
8. The door starts at PL speed and continues at OF fast speed and slows down to the OS speed. Check if the door is fully open and adjust the cams OL and OLX if required.

- OL microswitch has to open before OLX microswitch.
- D62 LED(open limit) is OFF when the door is fully open.
- 9. When the door is fully open switch SW2 to OFF and then to CLOSE.
- D65 LED will be ON confirming the close command.
- D85 LED (RUN command) D84 LED(power stage active) and D22 LED (motor relay) have to be ON during the closing cycle.
- 10. The door starts the closing cycle at SS speed, continues at CF fast speed and ends at CS slow speed.
- Check if the door is fully closed and adjust the cams CL and CLX if required.
- CL microswitch has to open before CLX microswitch.
- D66 LED is OFF when the door is fully closed.
- 11. Cycle the door between the close and open position.
- 12. For opening cycle correct the speed adjusting the potentiometers:
 - P2----- (PL speed) ---PRE LIMIT SPEED
 - P7----- (OF speed) ---OPEN FAST
 - P1----- (OS speed) ---OPEN SLOW
 - P10---- (A/D) adjusts a smooth transition of the speed.
- 13. For closing cycle correct the speed adjusting the potentiometers:
 - P5----- (SS speed) ---SLOW START
 - P8----- (CF speed) ---CLOSE FAST
 - P4----- (CS speed) ---CLOSE SLOW
- 14. To adjust the nudging speed, switch SW3 to NUDGING and start the closing cycle.
- 15. Adjust the nudging speed using the NDG potentiometer.
- 16. Adjust the nudging force limit using the NF potentiometer.
- 17. Adjust the door closing force using CLF potentiometer to achieve 135N (30lbs).
- 18. If it is still needed, adjust A/D potentiometer to achieve a smooth transition of the speed during the close and open cycles.
- 19. When the door is fully closed, adjust the door backing force using DLF potentiometer.
- 20. During the closing cycle test the door reversal and adjust FD, to achieve the shortest stop distance, without a jerky slowdown.
- 21. When the door operator performs satisfactory on TEST, shut the power down and plug in the J10 connector.
- Make sure that the J10 connector has been wired according to the elevator controller schematics.
- 22. Set SW1 switch to RUN. The SW2 and SW3 switches must be set to OFF.

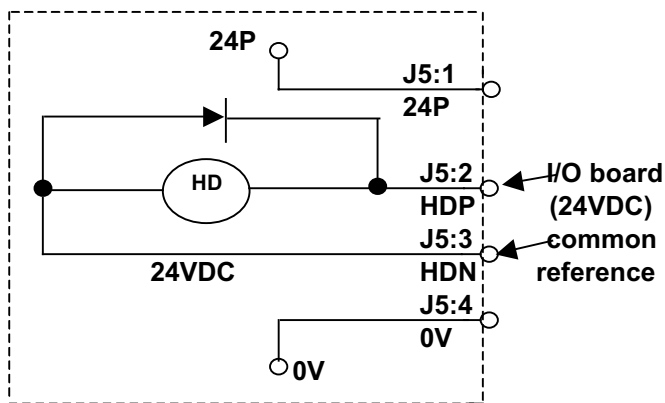
Heavy door option

Adjustment procedure

- 1. The adjustments have to be made at the entrance where the heavy door is used.
- 2. The HD relay has to be energized to enable heavy door profile.
- Check the voltage between HDP and HDN on connector J5 (24VDC).
- 3. Start from fully open position and set up the closing speed using CFH potentiometer.
- 4. Adjust HDCSDL cam during the closing cycle to achieve smooth operation of the door.
- 5. Adjust HDOSDL cam during the opening cycle to achieve proper speed transition.

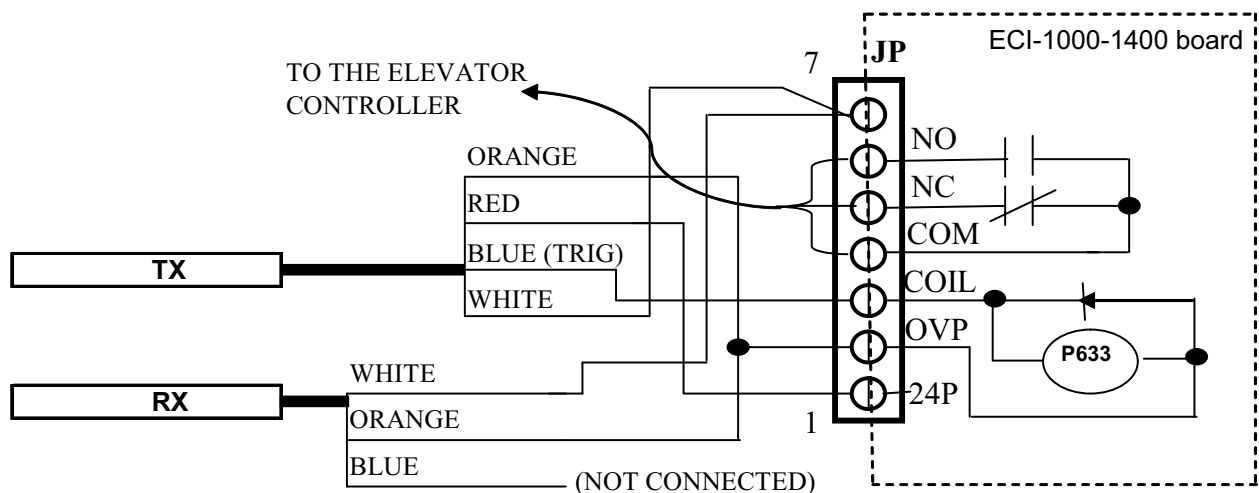
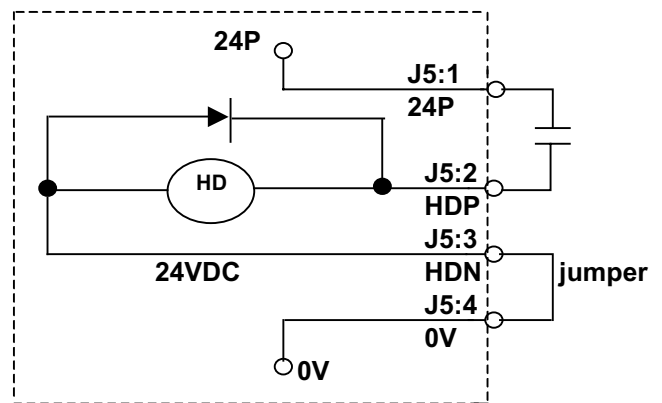
The heavy door closing speed has to be lower than the standard door closing speed to comply with the Elevator Code requirement regarding the door kinetic energy.

Examples of the connections to the HD relay



any positive 24VDC output

connection using dry contact



Infra-red door detector connections - model 640 by Memco. Connection to the JP connector of the ECI-1000-1400 board.

Infra-red curtain command – TRG (24VDC TRG command on JP-3 connector).

Dry relay contact (NO, NC, COM) 3A/250VAC, 3A/30VDC, connected to the elevator controller.

OPERATOR CONVERSION TO OPOSITE HAND

This operator is symmetrical about the center shaft, therefore all holes in the operator body are duplicated on the opposite side of center line.

INSTRUCTION

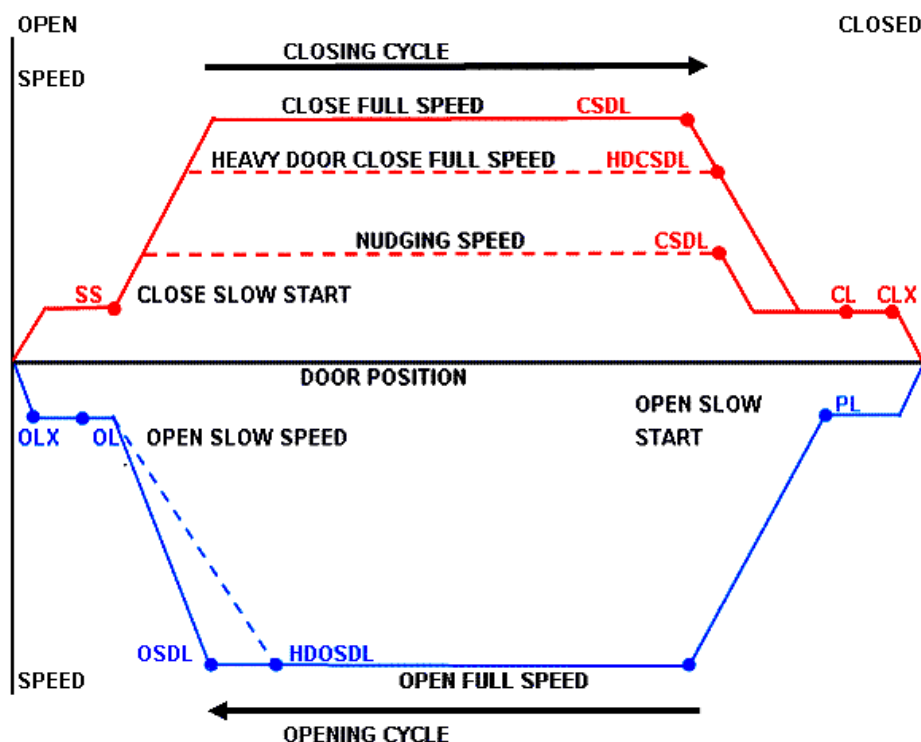
Electrical:

1. Remove cover and locking latch.
2. Locate motor connections and carefully mark each wire (for easy re-connection), then remove leads A1 and A2 from board terminal: NOTE: leads to be reversed to opposite hand.
3. Disconnect Molex and Phoenix connectors from the board.
4. Unscrew four self tapping screws in frame and remove board assy.
5. Board assy. may then be installed on opposite side after step 10 (or when mechanical work finished) NOTE: Electrical switch must always point to center shaft.

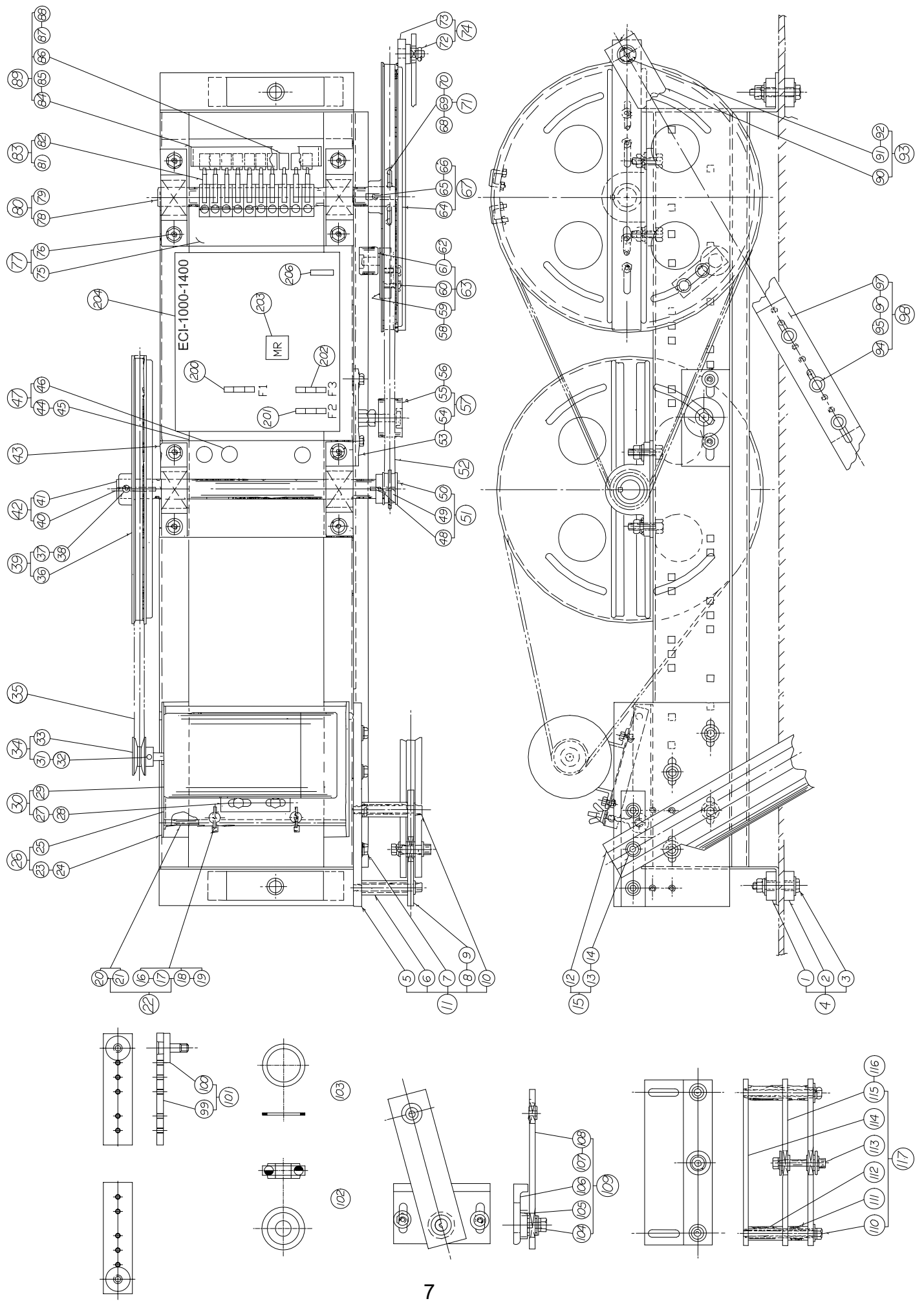
Mechanical:

1. Refer to the mechanical partlist (page 8 and page 9).
2. Remove item 57 (chain tensionner).
3. Remove item 52 (chain link).
4. Remove items 98, 93 & 74.
5. Remove item 63 (stop assy.) and install on opposite side.
6. Loosen item 17 (wing nut) and install on opposite side.
7. Remove motor (item 29).
8. Remove motor mount complete assy. (item 26)
9. Remove item 15 (crank arm).
10. Remove item 11 and remove parts. Install parts to opposite side of plate.
11. Remove item 89 (limit switch mount assy.).
12. Remove item 77. Then remove items 80, 83 and 87 as an assembly. Install on opposite hand of operator. Hand tighten bolts only.
13. Install item 52 (chain link). Make sure the shaft (item 80) is parallel with center shaft. Tighten bolts (item 76).
14. Install items 57 and tighten. Ensure proper chain tension.
15. Loosen lock screw on cam (item 81) and install item 89. Make sure there is enough travel in the limit switch arm to make or break limit switch. Mount assy. to be parallel with pivot arm shaft (item 80) and tighten. The 1/4" dia. lock screw on cam may be reversed as necessary, for ease of adjustment of the cam.
16. Install "V" belt (item 35) and tighten item 17 (wing nut) for correct tension.
17. Install item 11 (pivot mount assy.) and set required dimensions as per chart. Install crank arm
18. Install items 74 (adjustable bar assy.) 101 (operator arm A & B).
19. Refer to electrical section, connect motor terminals and Phoenix plugs.
20. Recheck entire system to specifications.
21. Set cams as page 13.
22. Set stop (item 63) in position.
23. Test RUN operator, refit cover and locking latch.

ECI 1000 DOOR OPERATOR SPEED PROFILES



ECI-1000-1400 -OPREATOR



PARTS LIST

ASSEMBLY	ITEM #	DESCRIPTION	PART #
	1	UPPER CLAMP PLATE	895-1027
	2	LOWER CLAMP PLATE	895-1028
	3	1/2 -13 X 2 1/2 BOLT LW FW & NUT	895-2001
4		CLAMP PLATE ASSEMBLY	895-3030
	5	MOUNTING PLATE	895-1001
	6	STAND OFF	895-1005
	7	5/16 - 18 X 1 CARRIAGE BOLT LW FW & NUT	895-2002
	8	PIVOT PLATE	1000-1 002
	9	UNGROUND BEARING	1000-2003
	10	3/8 X 3 1/4 SOCKET HD LW & FW	895-2004
11		PIVOT PLATE ASSEMBLY	1000-3031
	12	CRANK ARM	1000-1001
	13	3/8 X 1 SHOULDER BOLT LW FW & NUT	1000-2005
	14	BEARING WASHERS	1000-2006
15		CRANK ARM ASSEMBLY	1000-3003
	16	5/16 - 18 EYE BOLT	999-6008
	17	5/16 - 18 WING NUT & FW	895-2008
	18	RUBBER WASHER	895-2009
	19	EYE BOLT GROMMET	895-2010
	20	PIVOT SHAFT	1000-1006
	21	3/8 RETAINING RING	895-2011
22		MOTOR TENSION HARDWARE	1000-3004
	23	MOUNTING ANGLE	1000-1007
	24	3/8 - 16 X 1 BOLT LW FW & NUT	895-2012
	25	MOTOR PIVOT PLATE	1000-1 008
26		MOTOR MOUNTING PLATE ASSEMBLY	1000-3005
	27	5/16-18 X 1 BOLT LW FW & NUT	895-2013
	28	RUBBER WASHER	895-2009
	29	1/3 HP DC MOTOR	1000-2014
30		MOTOR ASSEMBLY	1000-3006
	31	KEY	895-2016
	32	PLASTIC LOCK SET SCREW	1000-2017
	33	V-BELT PULLEY	1000-2018
34		V-BELT PULLEY ASSEMBLY	1000-3007
35		4L550 V-BELT	1000-3008
	36	PULLEY WHEEL	1000-1015
	37	SET SCREW & LOCK NUT	1000-2002
	38	KEY	895-2016
39		PULLEY WHEEL ASSEMBLY	1000-3009
	40	KEY	895-2016
	41	DRIVE SHAFT	1000-2021
42		1000 PULLEY SHAFT ASSY	1000-3010
43		PILLOW BLOCK BEARINGS	1000-3011
	44	CENTER PLATE	1000-1012
	45	BOLT LW FW & NUT 3/8 X 16 X 1 1/2	1000-2023
	46	GROMMETS	904-1005
47		CENTER PLATE ASSEMBLY	1000-3012
	48	KEY & SET SCREW	1000-2024
	49	SPROCKET SILENCER RINGS YELLOW	1000-2025
	50	CHAIN SPROCKET	1000-1042
51		CHAIN SPROCKET ASSEMBLY	1000-3013
52		# 40 CHAIN & CONN LINK	1000-3014
	53	CHAIN TAKE UP BASE	895-1022
	54	5/16-18 X 1 CARRIAGE BOLT LW FW & NUT	895-2002
	55	1000 CHAIN ROLLER	1000-2027
	56	ROLLER SHAFT	896-1004-B
57		CHAIN TENSION ROLLER ASSEMBLY	1000-3015
	58	ROLLER STOP BASE SSL	1000-2029
	59	ROLLER STUD	895-1048
	60	BOLT LW FW 5/16-18 X 1	1000-2030
	61	ROLLER YELLOW	896-1003-B
	62	INTERNAL LOCK WASHER	1000-2032
63		ROLLER STOP ASSEMBLY	1000-3016
	64	CHAIN WHEEL	1000-1014
	65	KEY	895-2016

ASSEMBLY	ITEM #	DESCRIPTION	PART #
	66	SET SCREW & LOCK NUT 1/4 x 7/8	1000-2002
67		CHAIN WHEEL ASSEMBLY	1000-3017
	68	CHAIN CLAMP & NUTS	1000-1026
	69	URETHANE SILENCER STRAP	895-2033
	70	CONNECTOR C- 6	895-2034
71		CHAIN CLAMP & SILENCER ASSEMBLY	1000-3018
	72	1/4 - 20 x 7/8 BOLT LW FW 7 NUT	1000-2035
	73	A-BAR WITH STUD	1000-3019
74		OPERATOR ARM-A-SSEMBLY	1000-3020
	75	LIMIT SWITCH MOUNTING PLATE	1000-1017
	76	3/8 - 16 x 1/2 BOLT LW FW & NUT	1000-2023
77		LIMIT SWITCH PLATE ASSEMBLY	1000-3021
	78	KEY	895-2016
	79	CAM SHAFT	1000-1009
80		CAM SHAFT ASSEMBLY	1000-3022
	81	1/4 - 20 x 1 1/4 RND HD SCREW & SQ NUT	1000-2026
	82	CAM	1000-1010
83		CAM ASSEMBLY	1000-3023
	84	LIMIT SWITCH BRACKET	1000-1016
	85	10 - 24 x 5/8 HEX WSHR. HD SCREW	1000-2036
	86	4 - 40 ROD LW FW & NUTS	1000-1025
	87	PLASTIC SPACER	1000-2038
	88	MICRO SWITCHES	1000-2039
89		LIMIT SWITCH ASSEMBLY	1000-3024
	90	C LINKAGE 20 TAPPED HOLES	1000-1020
	91	UNGROUND BEARING	1000-2003
	92	BEARING WASHERS	1000-2006
93		TAPPED C-LINKAGE SSEMBLY 20 HOLE	1000-3025
	94	5/16 - 18 x 7/8 BOLT LW & FW	1000-2040
	95	UNGROUND BEARING	1000-2003
	96	BEARING WASHERS	1000-2006
	97	C-LINKAGE SLOTTED	1000-1021
98		C LINKAGE SLOTETD	1000-3026
	99	CENTER PARTING-A-&B-ARMS	895-1063
	100	BEARING STUD/ LW FW NUT	1000-1019
101		CENTER PARTING ARM ASSEMBLY "A"	1000-3027
102		UNGROUND BEARING	1000-2003
103		BEARING WASHERS	1000-2006
	104	3/8 - 16 NUT LW & FW	1000-2041
	105	BEARING STUD	1000-1060
	106	SLAVE DOOR BRACKET	895-1061
	107	UNGROUND BEARING	1000-2003
	108	SLAVE ARM (6", 8", 10", 12")	1000-1062
109		SLAVE BRACKET ASSEMBLY	1000-3028
	110	3/8 - 16 x 4 1/8 THREADED ROD LW FW & NUT	1000-2037
	112	STAND OFF 1"	1000-1066
	113	3/8 x 1 3/4 SHOULDER BOLT LW FW & NUT	1000-2044
	114	MOUNTING BRACKET	1000-1058
	115	PIVOT BAR	1000-1056
	116	UNGROUND BEARINGS	1000-2003
117		CENTER PRTING PIVOT BRACKET ASSEMBLY	1000-3029
118		OPERATOR COVER (NOT SHOWN)	1000-1090
119		COVER LATCH (NOT SHOWN)	1000-2045
120		OPERATOR BASE	1000-1013
	200	MDL 3A/250V FUSE-F1	1000-1427
	201	MDL 2A/250V FUSE-F2	1000-1428
	202	GBB 9A/60V FUSE-F3	1000-1429
	203	MOTOR RELAY - MR - MJN2C-E-DC24	1000-1430
204		ELECTRONIC BOARD ASSEMBLY	1000-3050
	205	KBC- 1502 BRIDGE RECTIFIER	895-6010
	206	P633 - RELAY - G2R-2-S-DC24	1000-1439
	207	110VAC TO 48VDC TRANSFORMER	1000-6601
	208	POWER RESISTOR 50W/10ohm	1000-6602
	209	MICRO SWITCH WIRING HARNESS	1000-1335
210		COMPLETE ELECTRONIC ASSEMBLY	1000-3051

PARTS LIST

HOW TO REPLACE ECI-1001-1300 WITH ECI-1000-1400 (year 1998 – 2005)

1. Switch the power to the door operator off and wait two minutes for capacitors to discharge.
2. Unplug all the connectors from the existing board starting with J2 (L1A, L2A).
3. Remove the old board by unscrewing the four nuts on each side of the board.
4. Install the new board, which is a direct replacement for the old one.
5. Plug in all the connectors except J10 and J2.
6. Connect the ground to J10 connector pin # 7.
7. Switch SW-1 to TEST, SW-2 and SW-3 to OFF.
8. Plug in J2, power line connector and apply power to the board.
9. Use SW-3 and SW2 switches to test the new board according to the Electrical Adjustment Procedure.
10. In order to maintain the same direction of the motor, swap A1 and A2 motor wires on J4 connector.

HOW TO REPLACE ECI-1000-500 WITH ECI-1000-1400 (year 1988 – 1998)

1. Switch the power to the door operator off and wait two minutes for capacitors to discharge.
2. Unplug all the connectors from the existing board.
3. Disconnect L1A and L2A of the J2 connector and connect them to J2 connector (new board).
4. Reconnect all the wires of the J2 connector (old board) to the J10 connector (new board) follow the order: DO3, DO10, DO7, DO4, DO18, DO17, GND.
5. Disconnect OV yellow wire from J4 old board and connect it to the J4 connector (new board) In the same way reconnect RB1, RB2, A1,A2 to the J4 connector.
6. Disconnect the wire from –VS (J4 connector old board) and remove the old board.
Remove the mounting plate out of the door operator frame. Disconnect the wires from the capacitor together with the wire previously disconnected from the terminal –VS and pull them out. Slide the orange wire supplied with the new board onto the positive terminal of the rectifier and put the mounting plate back into the frame. Connect the other end of the orange wire to terminal 54P (J4 connector).
7. Install the new board and connect the Molex lugs J7, J1 (use 1 to 15 connectors, 16 is not used).
8. Double check your work and follow steps 7 to 9 of “ How to replace ECI-1001-1300 with ECI-1000-1400” mentioned above.

TROUBLESHOOTING.

1. Status of LEDs. (Switches SW1 - TEST, SW2 - OFF, SW3 - OFF)

	D66	D84	D67	D64	D65	D63	D62	D85	D22	D38	D11
Door closed							ON			ON	ON
Door open	ON									ON	ON
Door closing	ON	ON			ON		ON	ON	ON		ON
Door opening	ON	ON				ON	ON	ON	ON		ON
Door locked		ON		ON			ON	ON	ON	*	ON
Nudging	ON	ON	ON		ON		ON	ON	ON		ON

* This LED switches ON after 30 seconds from the start of the door close or open cycle.

2. Test voltages.

L1A – L2A	120VAC +/- 10% (optional 240VAC)
54P – 0V	54VDC +/- 10%
24P – 0V	24VDC +/- 10%

F1 fuse – L1A	120VAC +/- 10% (optional 240VAC)
F2 fuse – 0V	54VDC +/- 10%
F3 fuse – 0V	54VDC +/- 10%

3. Operator works on TEST but not on automatic.

- 3.1 Check if the SW1 switch is in the RUN position.
- 3.2 Make sure the SW3 switch is OFF.
- 3.3 Make sure that the control signals are referenced to L1A.
- 3.4 Verify that the elevator controller is activating either the door close or the door open command.
- 3.5 Make sure that the commands are not reversed.
- 3.6 Check if the elevator controller signals are active. Measure between L1A and DO7 or DO10. 120VAC at DO7 indicates that the close command is not active. 120VAC at DO10 indicates that the open signal is not active. These signals have to be about 0V when the command is active and the corresponding LEDs have to be lit (D65 for the close command, D63 for the open command). Check voltages when the door is in its middle position.

4. Door closed limit signal is not present at the elevator controller when the door is fully closed.

The door operator output DO17 is at 120VAC when the door is not closed. It is derived from a normally closed contact of the CL micro-switch.

Disconnect the DO17 wire. Set the door in the middle of the opening. Measure voltage at J1 pin 1, J1 pin 5 and DO17 terminal. Follow the schematic included in this booklet. 120 VAC is expected at these terminals. Manually close the door. When the door is closed the voltage will go to 0V. If it does not, re-adjust the CL cam. The CL switch has to switch over before the CLX switch. When this test has been done connect the DO17 wire and measure the door close signal voltage at your controller.

5. Door open limit signal is not present at the elevator controller when the door is fully open.

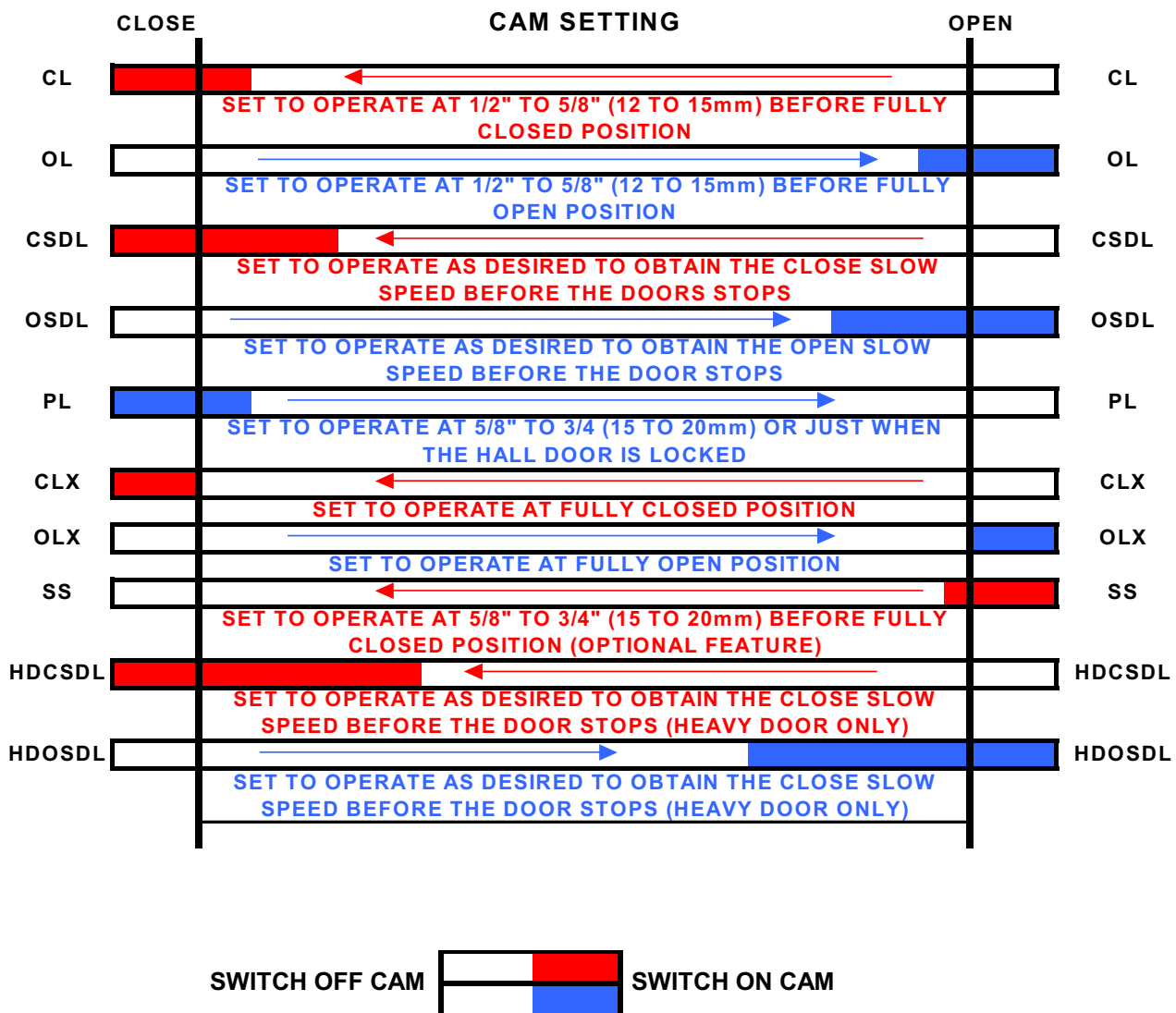
The door operator output DO3 is at 120VAC when the door is not open. It is derived from a normally closed contact of the OL micro-switch.

Disconnect the DO3 wire. Set the door in the middle of the opening. Measure voltage at J1 pin 1, J1 pin 6 and DO3 terminal. Follow the schematic included in this booklet. 120 VAC is expected at these terminals. Manually open the door. When the door is open the voltage will go to 0V. If it does not, re-adjust the OL cam. The OL switch has to switch over before the OLY switch. When this test has been done connect the DO3 wire and measure the door open signal voltage at your controller.

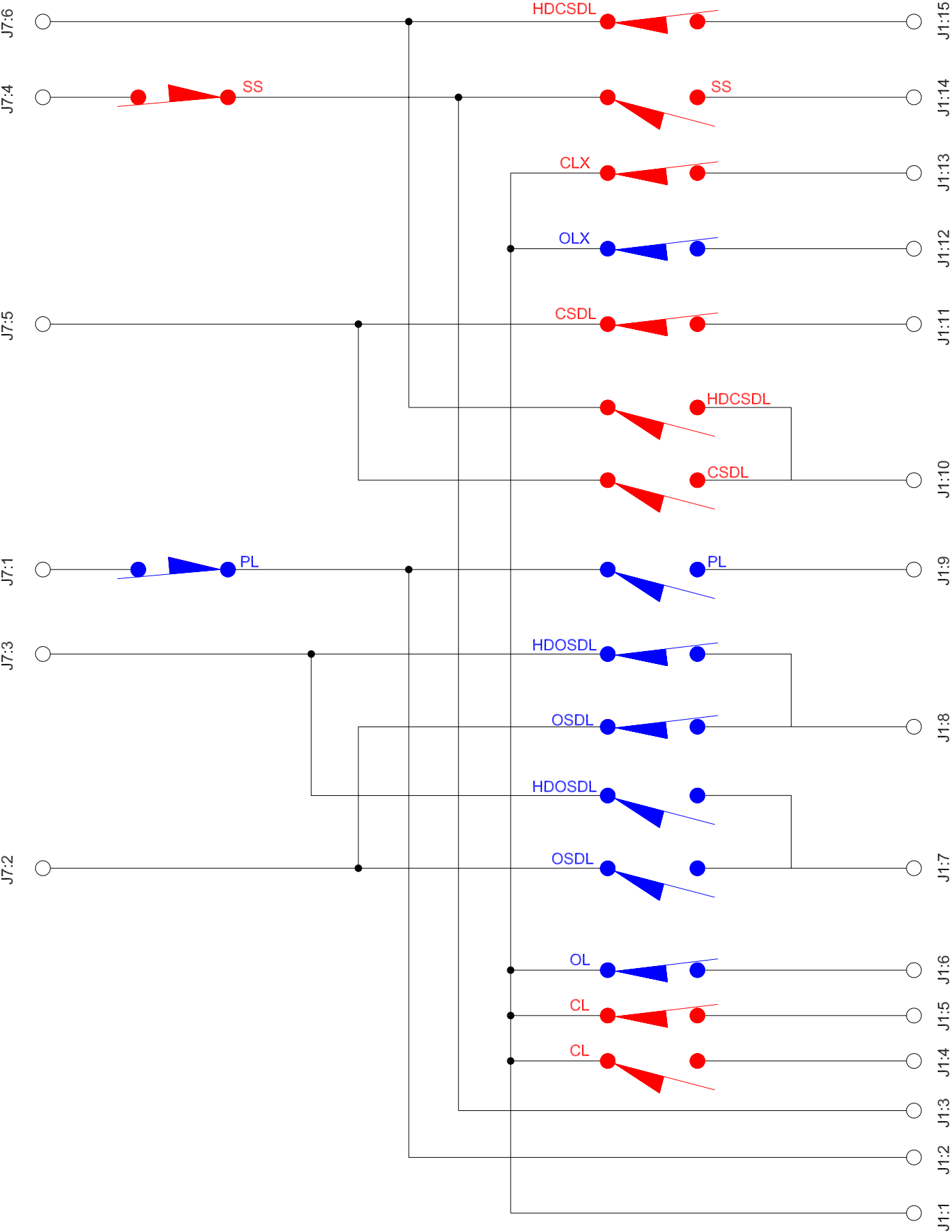
6. The door does not run at the nudging speed.

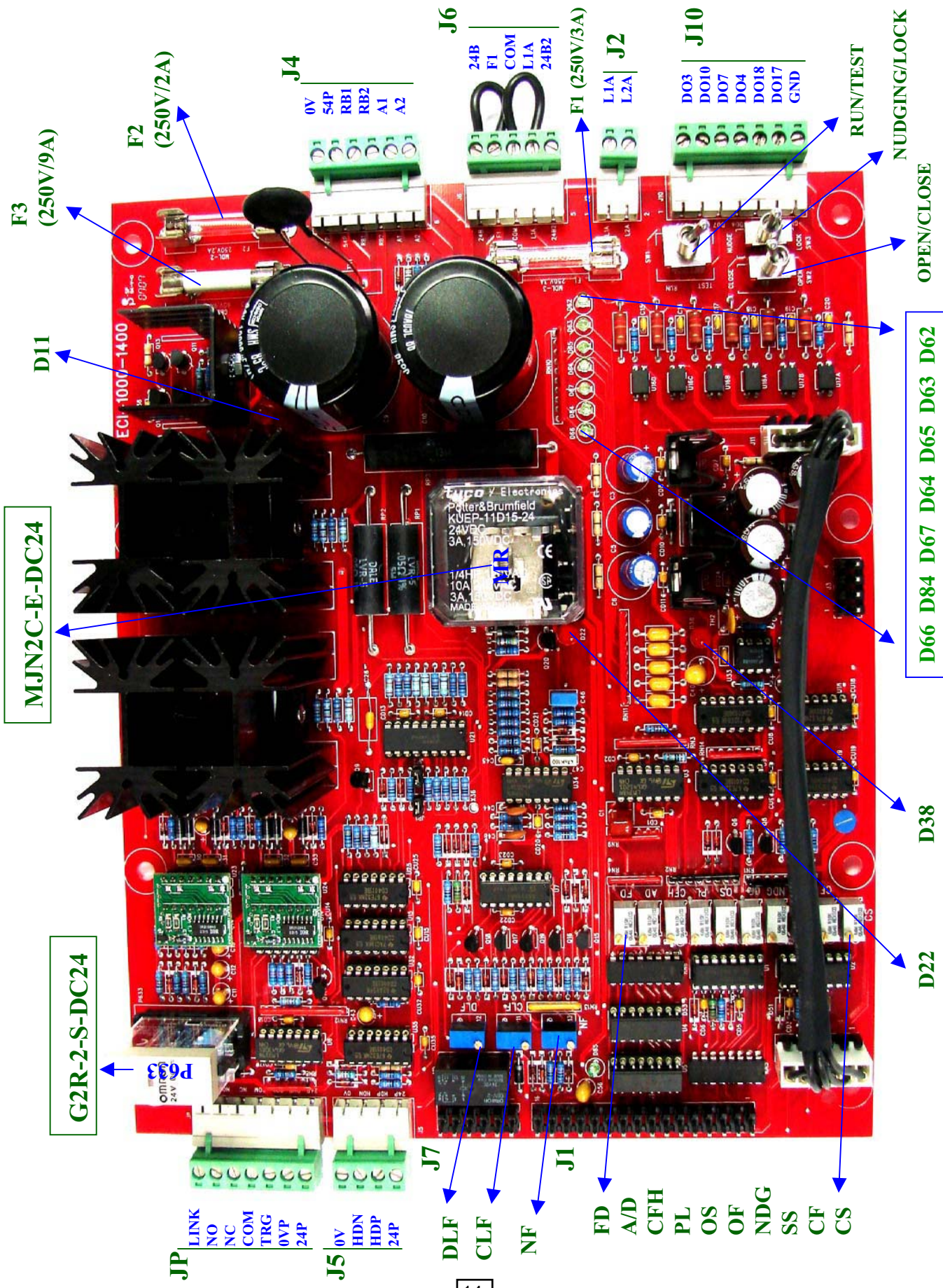
- 6.1 If the door moves at closing speed but does not move at all when switched to the nudging, temporarily turn the NF potentiometer 2 turns clockwise to increase the nudging force and try to run the door. Then follow the steps 6.2 to 6.4.
- 6.2 Verify that the test point voltage X31 is much lower than the test point voltage X29. Make sure that the door is moving freely and if it is possible test the car door only. Switch the SW1 switch to TEST and the SW3 switch to NUDGE. Using the SW2 switch close the door. If the door speed is not slower than the closing speed, go to step 6.3. If the door speed is slower than the closing speed go to the next step.

- 6.3 Switch the SW3 switch to OFF. Verify that the elevator controller activates the nudging command. Measure the voltage between L1A and DO4. It has to be equal to 120VAC when the command is not active. When it is active it has to be about 0V and the D67 LED has to be lit. If the LED is off and the voltage is about 0V check the NC contact of the CL limit.
- 6.4 Switch SW3 to OFF. Set the door in the middle. Measure voltage at J1 pin 1, J1 pin 5 and J10 pin 4. Follow the schematic included in this booklet. If 120 VAC is present at each pin, switch SW3 to NUDGE. D67 LED has to be lit and voltage at J10 pin 4 has to be equal to 0V. If this test is positive, change the door board. If it is not, check the SW3 switch and the CL micro-switch as well as related wiring.
7. No locking force.
- 7.1 Make sure that both, the door closing command (DO7) and the door locking command (DO18) have been activated. Check that the normally open contact of the CL micro-switch is closed. Measure if 120VAC is present at J1 pin 4 when the door is closed.
- 7.2 Use DLF potentiometer to set the locking force. This force will be reduced to the nudging force 30 seconds after the close signal has been applied.



MICROSWITCH WIRING SCHEMATIC ECI-1000





F3
(250V/9A)

F2
(250V/2A)

D11

MJN2C-E-DC24

G2R-2-S-DC24

J5
LINK
NO
NC
COM
TRG
0VP
24P

J6
0V
HDN
HDP
24P

J4
0V
S4P
RB1
RB2
A1
A2

J7
DLF
CLF
NF

POTTER & BRUMFIELD
KNEP-11D15-24
24VDC
3A, 15WDC
1/4H
10A
3A, 15WDC
MADE IN U.S.A.

J6
24B
F1
COM
LIA
LIA
24B2

F1 (250V/3A)

J1
FD
A/D
CFH
PL
OS
OF
NDG
SS
CF
CS

J2
LIA
LIA
L2A

J10
DO3
DO10
DO7
DO4
DO18
DO17
GND

RUN/TEST

NUDGING/LOCK

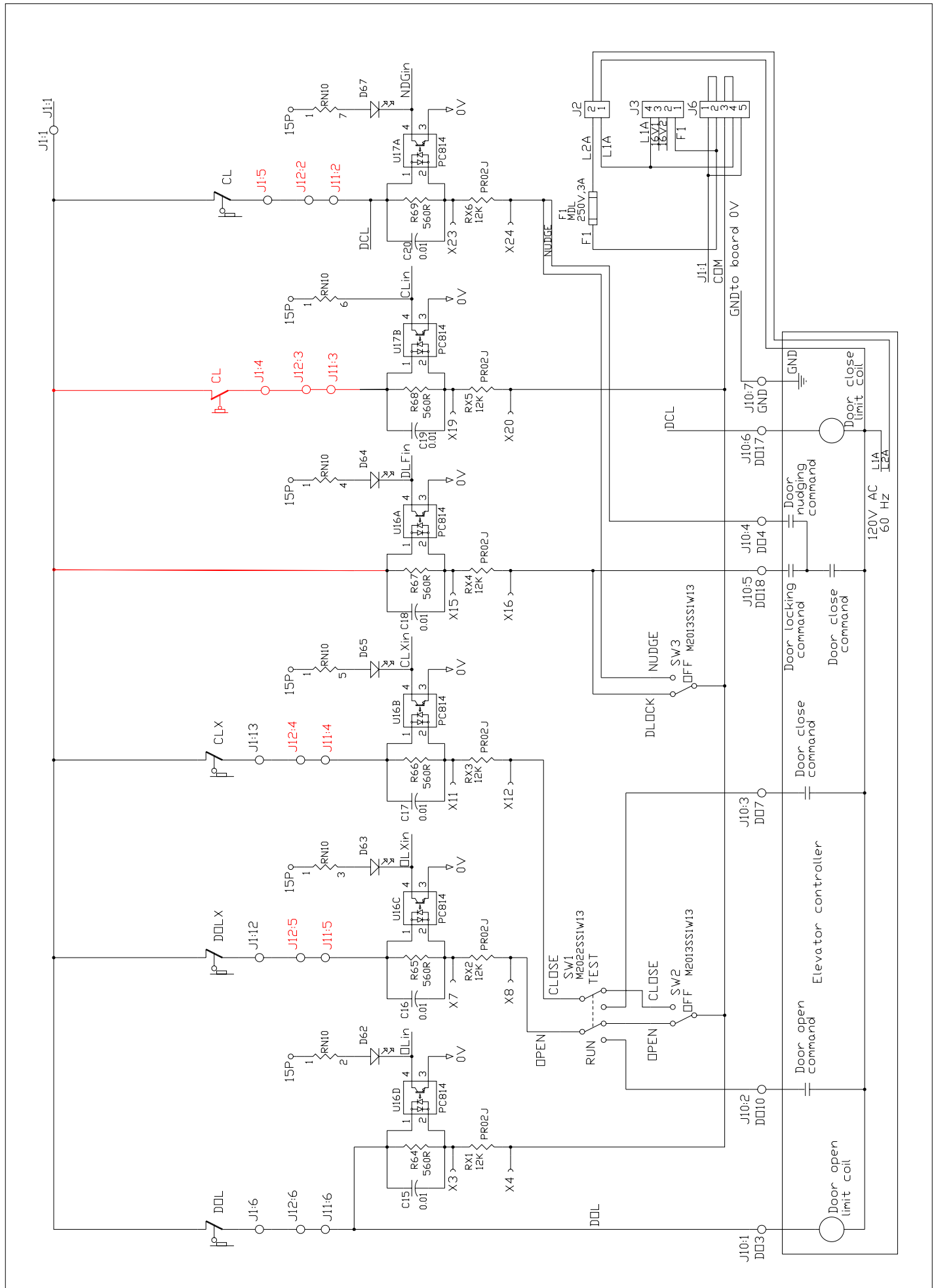
OPEN/CLOSE

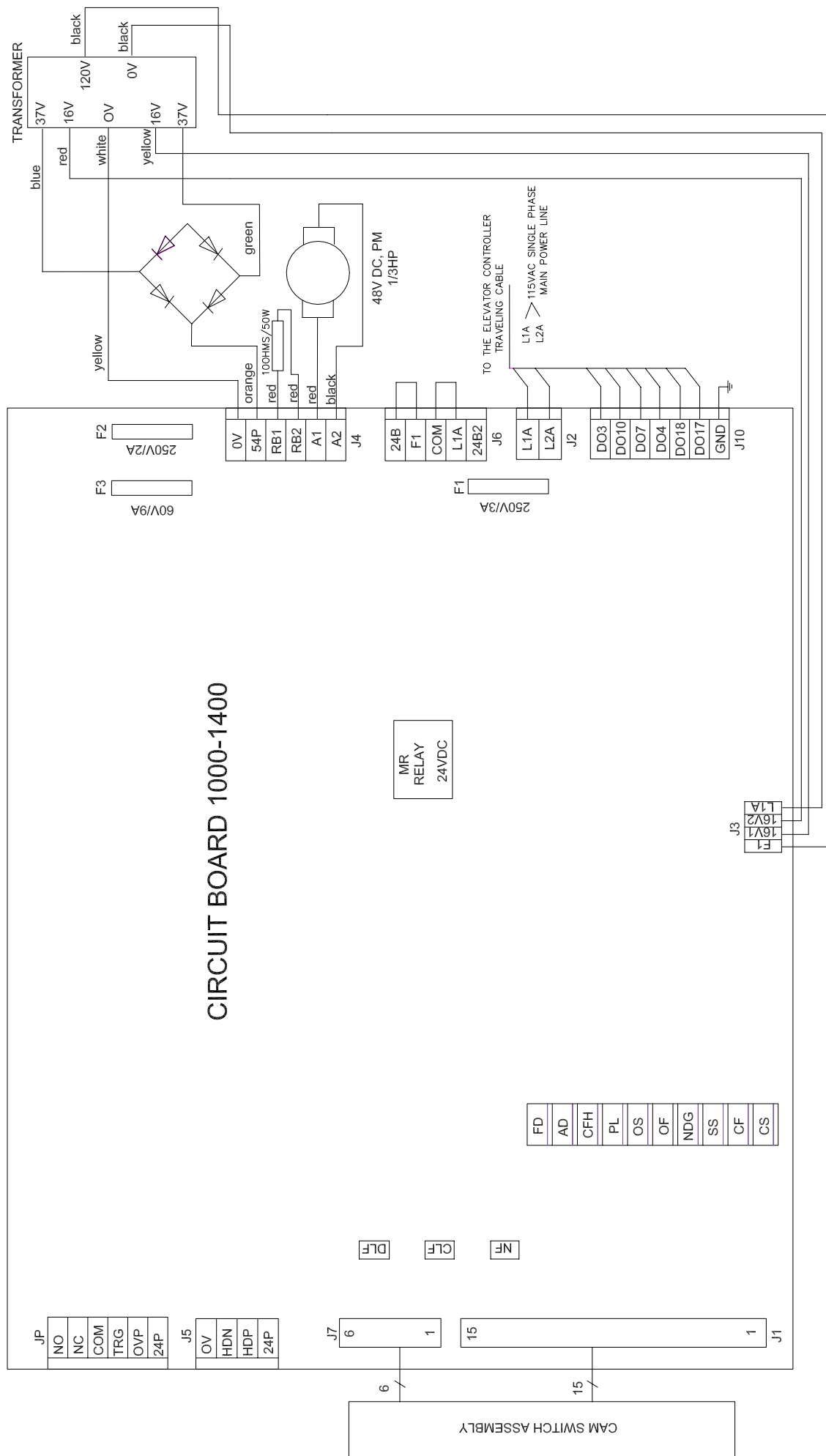
D66 D84 D67 D64 D65 D63 D62

D38

D22

ECI-1000-1400 STANDARD CONTROLLER INTERFACE





NOTES

This image shows a full page of blank white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for writing or drawing. There are no margins, text, or other markings on the paper.



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