Series 94 GEN II Modulating Electric Actuator

CAUTION: Proper voltage must be supplied to actuator.

CAUTION: If 120VAC & 220VAC models are PLC driven, output contacts of PLC should be rated at a minimum of 1.5 times required input voltage of actuator

NOTE: To conform to various electrical codes, a green grounding screw has been installed (on the baseplate) inside of actuator.

Terminal strip is suitable for up to #14 AWG wire, and should be wired as per the attached diagrams or the wiring diagram affixed inside of actuator cover.

NOTE: We recommend sealing conduit openings on units installed outdoors or exposed to large temperature swings (15ºF or more).
We also recommend the heater and thermostat option in these applications.

Model		120 Vac		220 Vac		24 vac		Cycle Time per 90 Degrees (Seconds)	Weight (lbs)
	Torque (in/lbs)	Amp Draw	Duty Cycle	Amp Draw	Duty Cycle	Amp Draw	Duty Cycle		
A94	150	0.5	100%	0.4	100%	4.0	75%	5	3.5
B94	300	0.8	75%	0.6	75%	4.0	75%	5	3.5

Note: Amp rating is considered locked rotor
Duty cycles are for ambient temperature (73°F)

For outdoor or wet locations it is recommended prior to replacing the cover that the top shaft seal be cleaned and coated with silicone grease. Also clean shaft and lightly coat seal area of shaft with silicone grease.

Manual Override Operation
Reference Drawing #279QM

Push down on handle (Part #34) and rotate within labeled limits.
To re-engage simply rotate actuator handle in opposite direction until it moves up and re-engages.

CAUTION: The manual override should only be used when there is no power applied to actuator. When power is restored the actuator will automatically resume normal operation.

Allow 4.75 inches clearance for cover removal.

QuickCal Procedure

The MODE button selects a particular function, or mode, and the indicator for the selected mode turns on steady. Pushing the MODE button saves any new setting of the current mode before switching to the next mode. The adjust up (□) and adjust down (□) buttons are used to make adjustments to current mode.

1. Apply power to the actuator on Connector J2: terminal #1 (neutral), terminal #2 (line), and terminal #3 (earth). There is no need for a signal connection during calibration.
2. Push the MODE button until the yellow "MANUAL/FB POT CAL" LED is illuminated. The LED may be flashing (at different speeds) through the next several steps. This is expected and will be explained.
3. Use the adjust buttons (□ and □) to move the actuator and verify that the limit switches are set past the desired open and closed positions; then move the actuator to mid stroke.
4. If LED is solid, proceed to step 7.
5. If LED is flashing, loosen the gear on the actuator shaft and rotate the potentiometer gear until the LED is no longer flashing, but on solid - this indicates the center of the potentiometer's travel. Note that the LED will flash at a slower rate the farther away from the mid position it gets. Once the LED is on solid tighten all gears.
6. Push the MODE button until the "CLOSE" LED is illuminated. Use the adjust buttons (□ and □) to drive the actuator to the desired closed position. Ensure that the close limit switch does not engage.
7. Push the MODE button until the "OPEN" LED is illuminated. Use the adjust buttons (□ and □) to drive the actuator to the desired open position. Ensure that the open limit switch does not engage.
8. Please skip to **Aux Open/Close Setup** if optional Transmitter with Relays is installed; otherwise continue to the next step.
9. Push the MODE button until the "COMMAND TYPE" LED is illuminated. Use the adjust buttons (□ and □) to select appropriate input signal (4-20mA, 1-5VDC, 0-5VDC, 0-10VDC, 2-10VDC or Digital). If 0-5VDC or 0-10VDC is selected, the LOSS OF COMMAND feature is not available, so proceed to step 12.
10. Push the MODE button until the "LOSS OF COMMAND" LED is illuminated; this sets the actuator to a predetermined position upon loss of command. Use the adjust buttons (□ and □) to select appropriate position (OPEN, CLOSE, or LAST POSITION).
11. Please skip to **Aux Position Setup** if optional Transmitter, or optional Transmitter with Switches is installed, otherwise continue to the next step.
12. Push the MODE button until the "AUTO" LED is illuminated. Your calibration is now **COMPLETE**. Connect the command signal wires to connector J2: terminal #4 (signal ground) and terminal #5 (mA input) **OR** terminal #6 (voltage input), depending on the application. If a signal input was already connected, the actuator should have moved to that position.

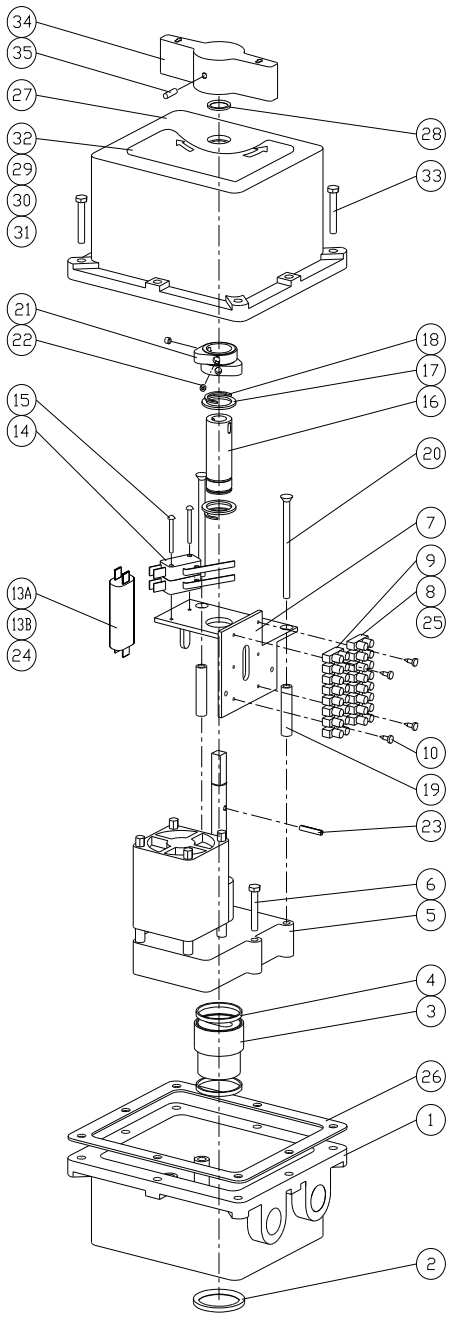
Aux Open/Close Option Setup

1. Push the MODE button until the "AUX CLOSE OUTPUT" LED is illuminated. Use the adjust buttons (□ and □) to drive the actuator to the desired auxiliary close position.
2. Push the MODE button until the "AUX OPEN OUTPUT" LED is on. Use the adjust buttons (□ and □) to drive the actuator to the desired auxiliary open position.
3. Continue with Step 9 in the **Quick Calibration Procedure** (see above).

Aux Position Option Setup

1. Push the MODE button until the green "AUX POSITION OUT CAL" LED illuminates **while** the "CLOSE" LED flashes.
2. Use the adjust buttons (□ and □) to set the desired output voltage or current (mA) on the option module output for the closed position.
3. Push the MODE button so the "AUX POSITION OUT CAL" LED remains steady **while** the "OPEN" LED flashes. Use the adjust buttons (□ and □) to set the desired output voltage or current (mA) on the option module output for the open position.

Continue with Step 12 in the **Quick Calibration Procedure** (see above).



ITEM	PART NO	QTY	DESCRIPTION
1	7403002	1	BASE
2	7403000	1	BASE SEAL
3	7403017	1	OUTPUT COUPLING
4	7403005	2	COUPLING GASKET
5	7403004	1	MOTOR
6	7403022	2	MOTOR SCREW
7	7403011	1	BASE PLATE
8	7401420	1	TERMINAL BLOCK 1-8
9	7401425	1	TERMINAL BLOCK 9-16
10	7401600	4	TERMINAL BLOCK SCREW
13A	7401948	1	4.2 MFD CAPACITOR - A94
13B	7402004	1	6.7 MFD CAPACITOR - B94
14	7401460	2	LIMIT SWITCH
15	7401620	2	LIMIT SWITCH SCREW
16	7403016	1	OUTER SHAFT
17	7403006	2	OUTER SHAFT GASKET
18	7403009	2	RETAINING RING
19	7403018	2	STANDOFF
20	7403014	2	BASE PLATE SCREW
21	7401480	2	CAM
22	7401740	4	CAM SCREW
23	7403010	1	PIN
24	7403023	1	2 PC HARNESS
25	7403015	1	4 PC HARNESS
26	7403007	1	BASE GASKET
27	7403001	1	COVER
28	7403020	1	COVER SEAL
29	7403019	1	WIRE DIAGRAM LABEL
30	7403025	1	OPTION LABEL
31	7403030	1	QM II LABEL
32	7403040	1	OVERRIDE LABEL
33	7403032	8	COVER SCREW
34	7403003	1	HANDLE
35	7401700	1	HANDLE SCREW
36	7403021	1	QM II BOX

NOTE:
1. LOCATE ITEM 29 & 30 ON INSIDE SURFACES OF COVER (ITEM 27).
2. LOCATE ITEM 31 ON OUTSIDE BACK SURFACE OF COVER (ITEM 27).

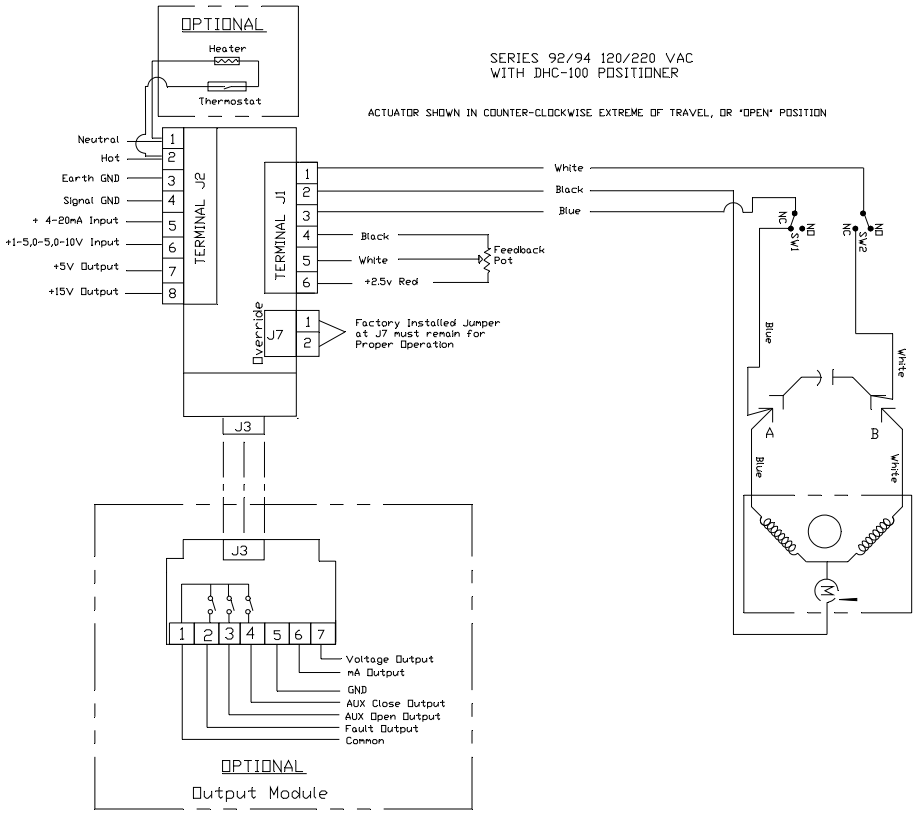
	NAME	DATE
DR	D CAMERON	9/13/01
APPD		
PROD		
WO#/SO#		
FILE	ACAD11/QM	

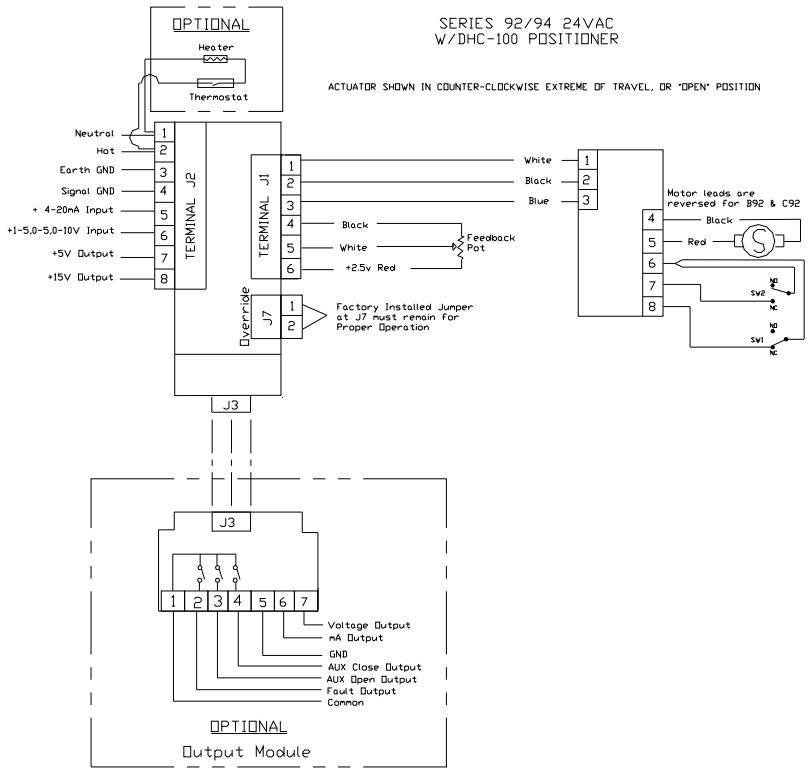
ASAHI/AMERICA
ISO 9001 CERTIFIED
35 GREEN STREET, P.O. BOX 653, MALDEN, MA.

SERIES 94 EXPLODED VIEW

SIZE	DWG. NO.	REV
A	279QM	B

SCALE NTS SHEET 1 OF 1


SERIES 92/94 120/220 VAC
WITH DHC-100 POSITIONER
ACTUATOR SHOWN IN COUNTER-CLOCKWISE EXTREME OF TRAVEL, OR "OPEN" POSITION
OPTIONAL
Heater
Thermostat
Neutral
Hot
Earth GND
Signal GND
+ 4-20mA Input
+1-5,0-5,0-10V Input
+5V Output
+15V Output
TERMINAL J2
TERMINAL J1
Override
J7
Factory Installed Jumper at J7 must remain for Proper Operation
Black
White
+2.5v Red
Feedback Pot
White
Black
Blue
NC
NO
SW1
SW2
Blue
White
A
B
J3
Voltage Output
mA Output
GND
AUX Close Output
AUX Open Output
Fault Output
Common
OPTIONAL
Output Module


SERIES 92/94 24VAC
W/DHC-100 POSITIONER
ACTUATOR SHOWN IN COUNTER-CLOCKWISE EXTREME OF TRAVEL, OR "OPEN" POSITION
OPTIONAL
Heater
Thermostat
Neutral
Hot
Earth GND
Signal GND
+ 4-20mA Input
+1-5,0-5,0-10V Input
+5V Output
+15V Output
TERMINAL J2
TERMINAL J1
Override
J7
Factory Installed Jumper at J7 must remain for Proper Operation
Black
White
+2.5v Red
Feedback Pot
White
Black
Blue
Motor leads are reversed for B92 & C92
Black
Red
SW2
SW1
J3
Voltage Output
mA Output
GND
AUX Close Output
AUX Open Output
Fault Output
Common
OPTIONAL
Output Module