Dor-O-Matic®

Dor-O-Matic 95K-LE Swing Operator

95620-9XX with Push Arm
95625-9XX with Pull Arm
Installation Instructions

DOR - O - MATIC®

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INTRODUCTION

This system is a fully automatic electro-mechanical swinging door operator for residential, commercial, and industrial pedestrian use. It can be used to automate center pivoted doors, as well as hinged or offset pivoted doors.

This operator is a "start on demand", "power-open/spring close" system. The swinging door is driven under power to the full open position, at which time the electrical power is turned off and the door is closed by spring force only.

The opening and closing cycles of the door are under complete control at all times, as individual potentiometers or switches independently control the opening speed, back check speed, hold open time delay, closing speed and latch position. In the event of a power failure, the operator acts as manual door closer without fear of damage to the door or the automatic door components.

The Electronic Control Box contains the activating, safety, and related motor control circuits. The safety circuit actually performs two different functions, depending on which portion of the cycle is in operation. If the safety circuit is operated before the door is activated, it will prevent the door from opening, or it will hold the door open if it is operated after the door has been activated. An adjustable time delay of 1 to 30 seconds continues to hold the door open for a preset time after the activating and safety circuits have been de-energized.

The activating circuit will re-open the door from any position in the closing swing, provided the safety circuit is not energized. The surface applied operator may be installed for either push or pull applications on center pivoted, hinged, or offset pivoted doors. The basic components of this system are the Operator & Cover Assembly, the Arm Assembly, and the Screw Bag (Figures 1 & 5).

GENERAL

This Instruction Sheet covers the proper installation of surface applied operators for use on center pivoted, butt hung/hinged, or offset pivoted doors. BEFORE proceeding with any stage of the installation...

A. Check architectural drawings and final approved shop drawings for position of the frame and structural openings.
B. Check header & frame dimensions, making sure to allow for the proper clearances (Figures 2 & 6).
C. Check the content of the shipping container against the bill of material to see that all necessary parts and materials have been included. Also, be sure that the model is correct for the required application.
D. Remove the motor/gearbox and control box to install the mounting plate (Figure 4).
E. Refer to proper diagrams in this manual for either *Push Arm* or *Pull Arm* installation
F. Do not mount any accessories directly to this operator.
G. When additional accessories are used with this operator, refer to the instructions for those devices.

NOTE: Always disconnect main power to operator prior to servicing or cleaning.

INSTALLATION

1. Preparation:
A 115 volt, single phase, 60Hz, fused, 15 amp, 3-wire power supply must be brought to the hinge side jamb tube. This work is usually supplied by the electrical contractor. UL approved type flexible conduit is recommended for running the 115 volt power supply into the operator. Determine the location of the wire passage holes through the hinge side jamb (Figures 3 & 7). Approximately 12" of wire should be left for hook up.
NOTES:
   A. Secure all conductors and connections against physical damage.
   B. Route all wiring away from moving parts, sharp edges and heat sources.
   C. Use copper conductors only.

2. Pre-Operational Adjustments:
   A. Using the appropriate wiring diagram (Figures 8 & 9) connect power and accessories as needed.
   B. Select proper function using SW2:
   Function 0: Generic Equipment – Any device not manufactured by Dor-O-Matic.
   Function 1: Swing-12 No Beam or 77700-900 No Beam.
   C. Turn on power at the switch. After the first activation signal, the door should open and close one time, after which it is ready for normal operation.
   NOTE: If spring tension is too high, rotate P8 just enough for the door to overcome the spring.

3. Operational Check and Adjustments:
NOTE: Refer to the latest revision of ANSI/BHMA A156.19-1997 Standard for Power Assist and Low Energy Power Operated Doors for all settings and adjustments.

Latch Location:	10 degrees or more
Latch Speed:	1.5 seconds or more
Closing Speed:	3 seconds or more
Opening Speed:	3 seconds or more

   A. Opening Speed Adjustment:
      1. Opening speed is adjusted by rotating P2 (CW=SLOWER, CCW=FASTER). It allows for proper adjustment of any normal weight and size door.
      2. Cycle the door open and close several times and observe the opening speed.
      NOTE: It is recommended that the door be operated as slow as is practical for the traffic conditions.
   B. Back Check Speed Adjustments:
      The back check speed is controlled by rotating P3 (CW=SLOWER, CCW=FASTER).
   C. Time Delay Adjustment:
      Adjustment is made by rotating P1 (CW=LESS HOLD OPEN TIME, CCW=MORE HOLD OPEN TIME). The total adjustment range on the control box is 1 to 30 seconds of time delay.
   D. Back Check Position:
      There is no adjustment available on the back check position, since the computer in the electronic control box sets the proper back check position automatically while the door sizes itself.
   E. Closing Speed Adjustments:

Continue to cycle the door open and close while making adjustments. Set the closing speed by rotating P7 (CW=SLOWER, CCW=FASTER).

F. Latch Position:
By rotating P6, one can vary the position at which latch occurs (CCW=LESS LATCH, CW=MORE LATCH).

G. Latch Speed:
Latch speed is factory set and has no adjustment.

H. Power Boost Close and Power Boost Hold Features:
1. This is a built in feature that can be turned on or off with SW1-3.
2. When this feature is on, it can be set for continuous or 5 second power boost with SW1-4.
3. It is used to electronically increase the closing force of the door from 9 lbs. to 18 lbs. in order to close and hold the door closed against high winds or high stack pressure.
4. When the power boost close and hold feature is turned on, the automatic increase in power occurs approximately 7 seconds after the door has closed to the latch position. The power boost feature will not turn on during the first 80 degrees of the closing door travel.

I. Push-N-Go Feature:
With this feature, after a certain amount of manual door travel, power assist takes over and the door opens under power the rest of the cycle. This is selected with SW1-2.

J. Delayed Activation Feature:
When delayed activation is selected, there is a 1 second delay between reception of the activation signal and the actual door opening. This allows for most electric strikes, panics, etc. to disengage before the door opens. This is selected with SW1-1.

4. Operational Walk Through Test:
NOTE: It is assumed that during the installation process, any problems would have been found and corrected before this point. However, it is recommended that a complete walk-through test now be performed.

A. Activate door operator. The door should open smoothly and silently to the back check point, where it should slow down rapidly and drift into full 90 degrees open without slamming.

B. Maintain the activation signal to ensure that the door does not time out and close while being activated.

C. If a door safety device is used, step on through the door opening and into the safety area. Again, remain in the safety area making sure that the door does not close while the safety area is occupied.

D. Step out of the safety area. After both the activating and safety areas are clear, the door should time out at the pre-set time delay period. The door should then close quietly and smoothly to the latch point, where it rapidly slows down and drifts into the fully closed position without slamming.

E. Safety Function with the Door Closed:
1. Step back into the safety area, and have someone else activate the door. The door must not open.
2. Step out of the safety area. The door should open fully. Have the other person release the activation signal. The door should stand open until the end of the time delay cycle, and then close as before.

5. Release of the System for Service:

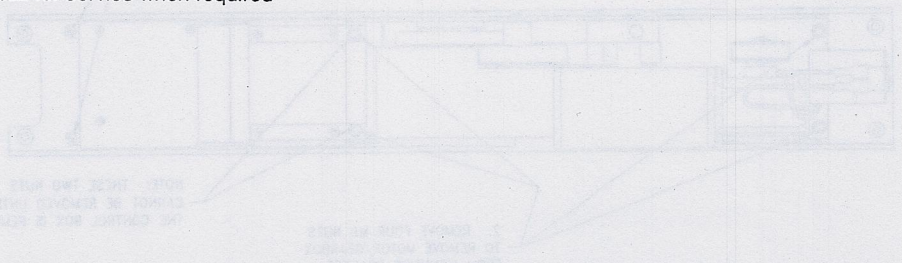
A. Remove all tools and installation equipment, and clean any debris from the vicinity of the door.

B. Install all safety, traffic control, and instruction decals to the door as required. THIS IS VERY IMPORTANT! Failure to do this leaves the installer LIABLE for any accident that might occur. THIS MUST BE DONE!

C. Verbally explain the proper operation of the door system to the owner or to the person in charge.

DO'S AND DON'TS

1. Do Not try to use this operator on large, heavy doors without checking with the factory first.
2. Do Not connect any remote activating device to the door unless it is located within the "line of sight" of the door.
3. Do Not attempt to use a fuse larger than specified.
4. Do Not attempt to modify the factory wiring or connect any wiring into an existing electrical circuit or any other electrical device.
5. Do Not attempt to connect the 115 volt power supply line into the building lighting system operating FLUORESCENT LIGHTS.
6. Do Not mount any accessories directly to this operator.
7. Do make certain that the operator is connected to a dedicated 115 volt circuit from the main circuit breaker panel.
8. Do make certain that the operator is properly grounded with a separate green wire.
9. Do make certain that all connections are proper and secure before turning the power on.
10. Do make certain that all wires are properly dressed and secured to prevent any interference.
11. Do make certain that all safety labels and instruction decals relating to door operation are properly applied to the door before leaving the job.
12. Do verbally instruct the owner or person in charge of the proper operation of the door.
13. Do disconnect main power to the operator prior to servicing and cleaning.
14. Do also instruct the owner or person in charge of his responsibility of inspecting the door for the following:
    A. Occasional damage
    B. Developing problems
    C. Minor preventative maintenance
    D. Who and where to call for service when required



PUSH ARM DIAGRAMS

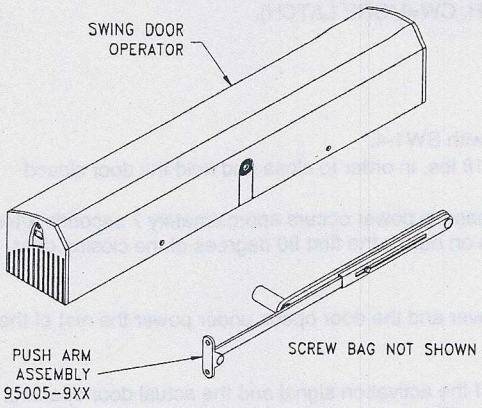


FIGURE 1: SYSTEM COMPONENTS – PUSH ARM

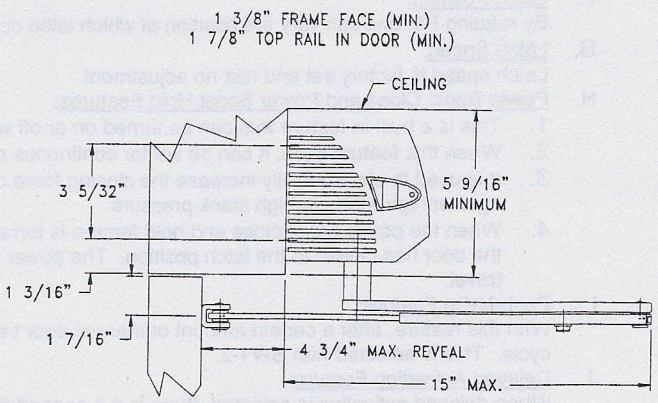
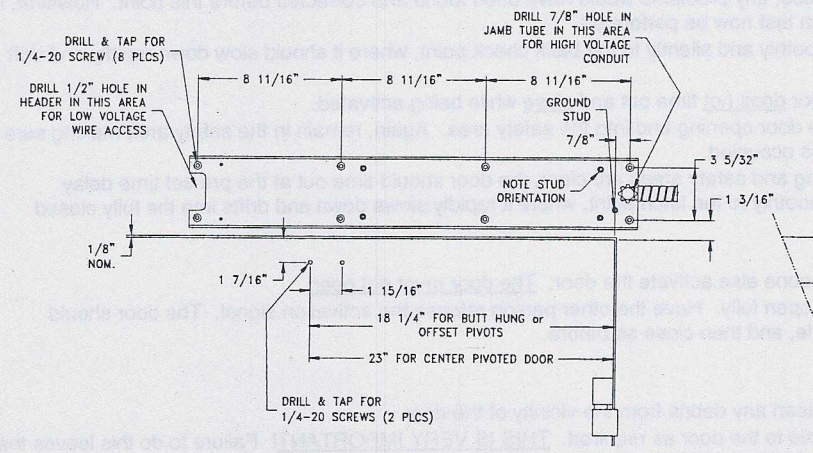


FIGURE 2: OPERATOR CLEARANCES – PUSH ARM



NOTES:
1. MOUNTING BRACKET MUST BE INSTALLED WITH THREAD STUDS NEAR THE HINGE TO ENSURE CORRECT MOTOR/GEARBOX ORIENTATION.
2. AFTER INSTALLING THE MOUNTING BRACKET WITH 1/4-20 SCREWS, INSTALL THE MOTOR/GEARBOX WITH THE 6mm NUTS SUPPLIED. NEXT, INSTALL THE CONTROL BOX WITH THE SCREWS PROVIDED.
3. PLUG MOTOR & HALL EFFECT CONNECTOR INTO CONTROL BOX.
4. CONNECT POWER TO TERMINAL LOCK NEAR MOTOR, MATCHING BLACK TO BLACK, WHITE TO WHITE, AND GROUND TO GROUNDING STUD.
5. CONNECT POWER PLUG FROM SWITCH TO CONTROL BOX.
6. MOUNT ACTIVATION DEVICES AND CONNECT IN PARALLEL TO EITHER "INSIDE ACTIVATION" OR OUTSIDE ACTIVATION" TERMINALS.
7. ACTIVATE THE OPERATOR TO THE FULL OPEN POSITION AND ATTACH THE FIXED LENGTH ARM TO THE GEARBOX AT APPROXIMATELY 90° WITH THE 8mm SOCKET HEAT CAP SCREW. ATTACH THE SHOE TO THE DOOR AND ADJUST THE ARM TO THE DESIRED DOOR POSITION.
8. INSTALL COVER AND SPINDLE INSERT.

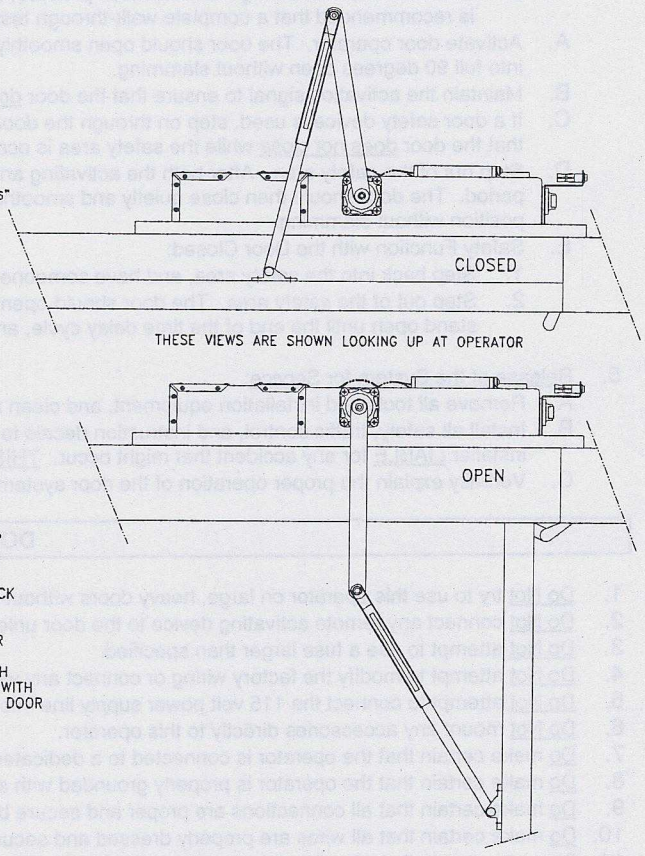


FIGURE 3: OPERATOR INSTALLATION – PUSH ARM

MOUNTING PLATE PREPARATION

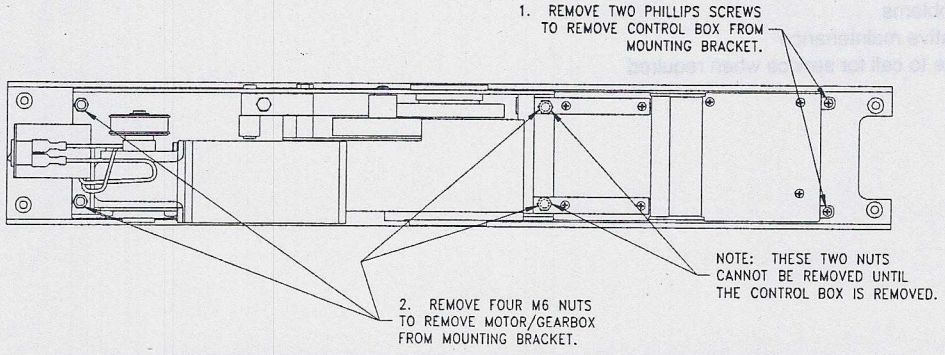


FIGURE 4: MOTOR/GEARBOX & CONTROL BOX REMOVAL

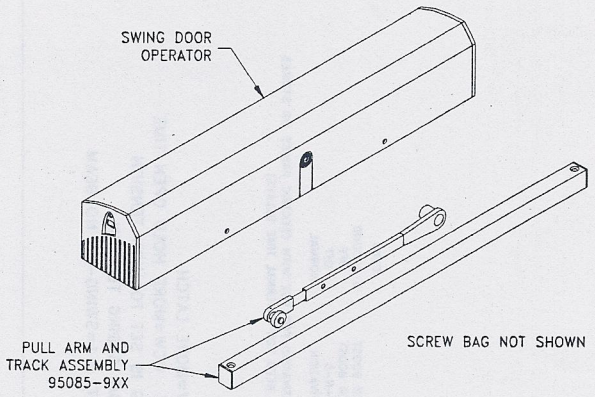


FIGURE 5: SYSTEM COMPONENTS – PULL ARM

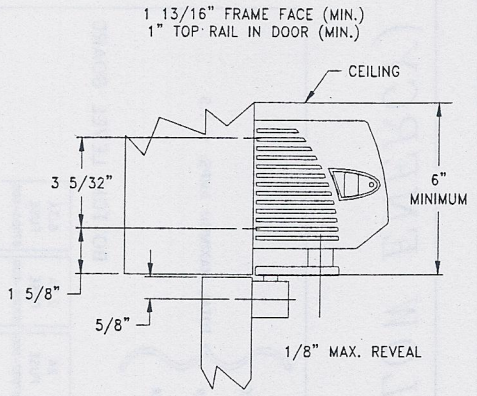
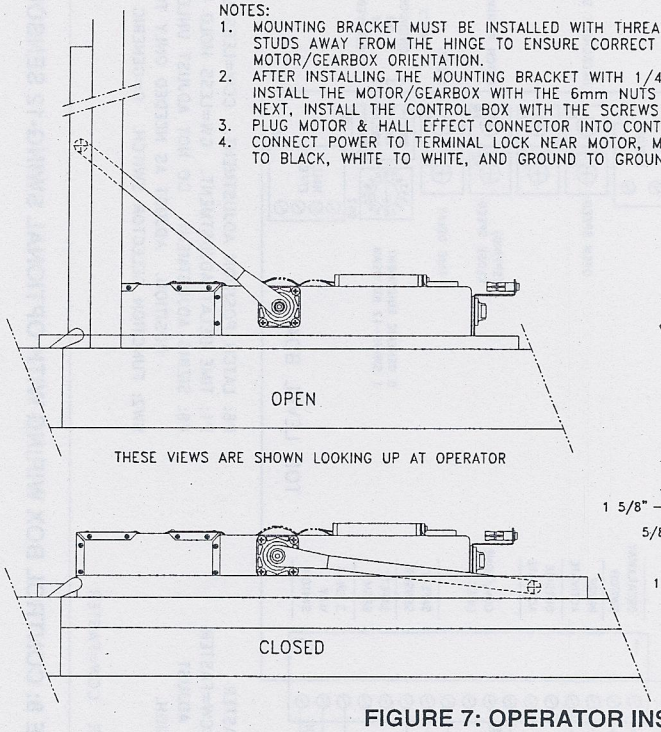


FIGURE 6: OPERATOR CLEARANCES – PULL ARM

NOTES:
1. MOUNTING BRACKET MUST BE INSTALLED WITH THREAD STUDS AWAY FROM THE HINGE TO ENSURE CORRECT MOTOR/GEARBOX ORIENTATION.
2. AFTER INSTALLING THE MOUNTING BRACKET WITH 1/4-20 SCREWS, INSTALL THE MOTOR/GEARBOX WITH THE 6mm NUTS SUPPLIED. NEXT, INSTALL THE CONTROL BOX WITH THE SCREWS PROVIDED.
3. PLUG MOTOR & HALL EFFECT CONNECTOR INTO CONTROL BOX.
4. CONNECT POWER TO TERMINAL LOCK NEAR MOTOR, MATCHING BLACK TO BLACK, WHITE TO WHITE, AND GROUND TO GROUNDING STUD.
5. CONNECT POWER PLUG FROM SWITCH TO CONTROL BOX.
6. MOUNT ACTIVATION DEVICES AND CONNECT IN PARALLEL TO EITHER "INSIDE ACTIVATION" OR "OUTSIDE ACTIVATION" TERMINALS.
7. ACTIVATE OPERATOR TO THE FULL OPEN POSITION AND ATTACH THE ARM ASSEMBLY TO THE GEARBOX AT APPROXIMATELY 45° USING THE 8mm SOCKET HEAD CAP SCREW. MAKE SURE ARM RUNS FREELY IN THE TRACK FOR THE ENTIRE OPENING AND CLOSING CYCLE.



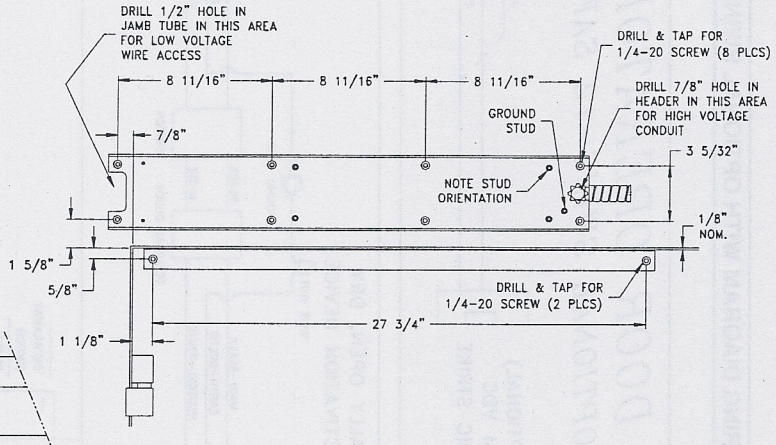


FIGURE 7: OPERATOR INSTALLATION – PULL ARM

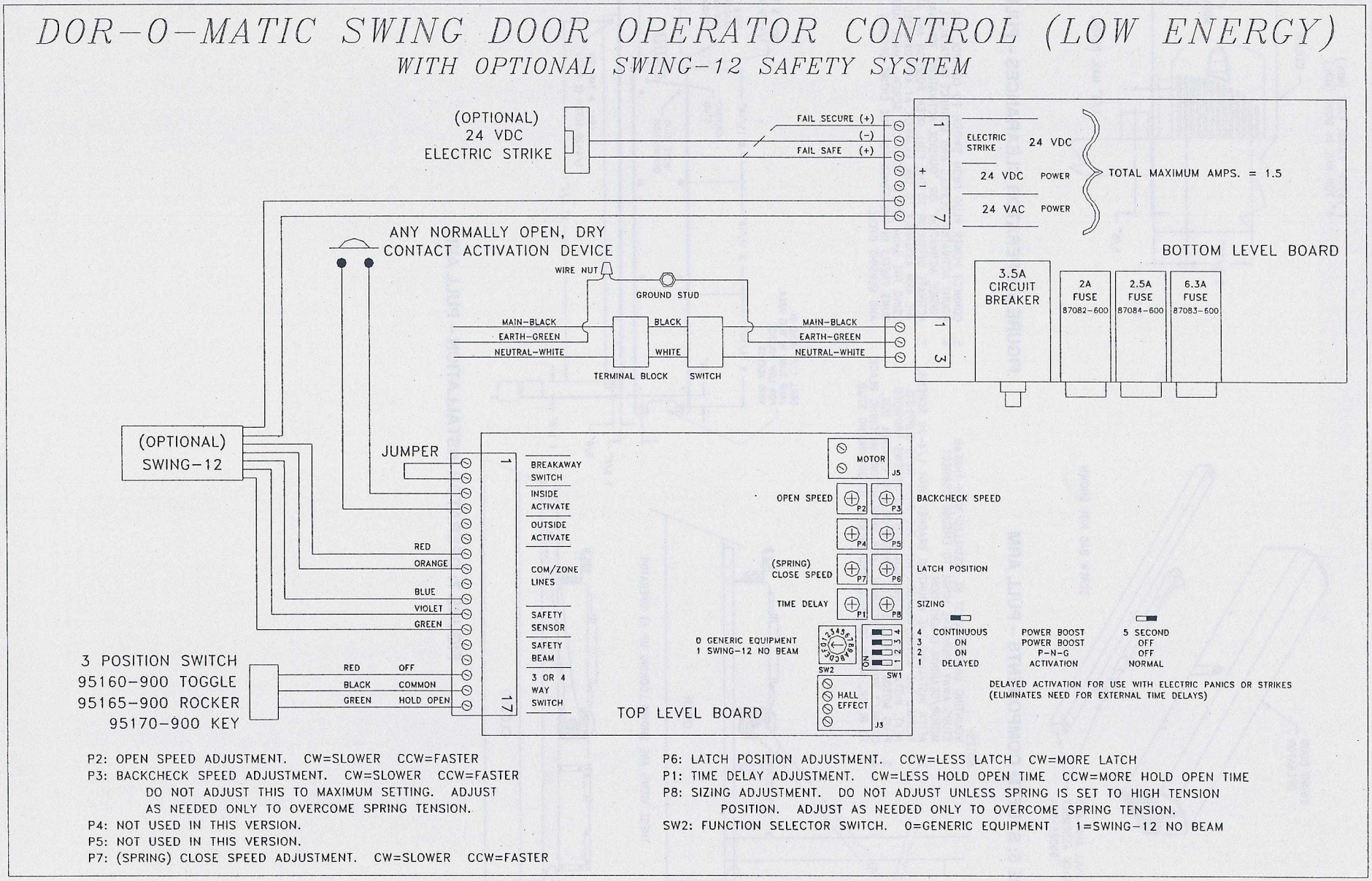
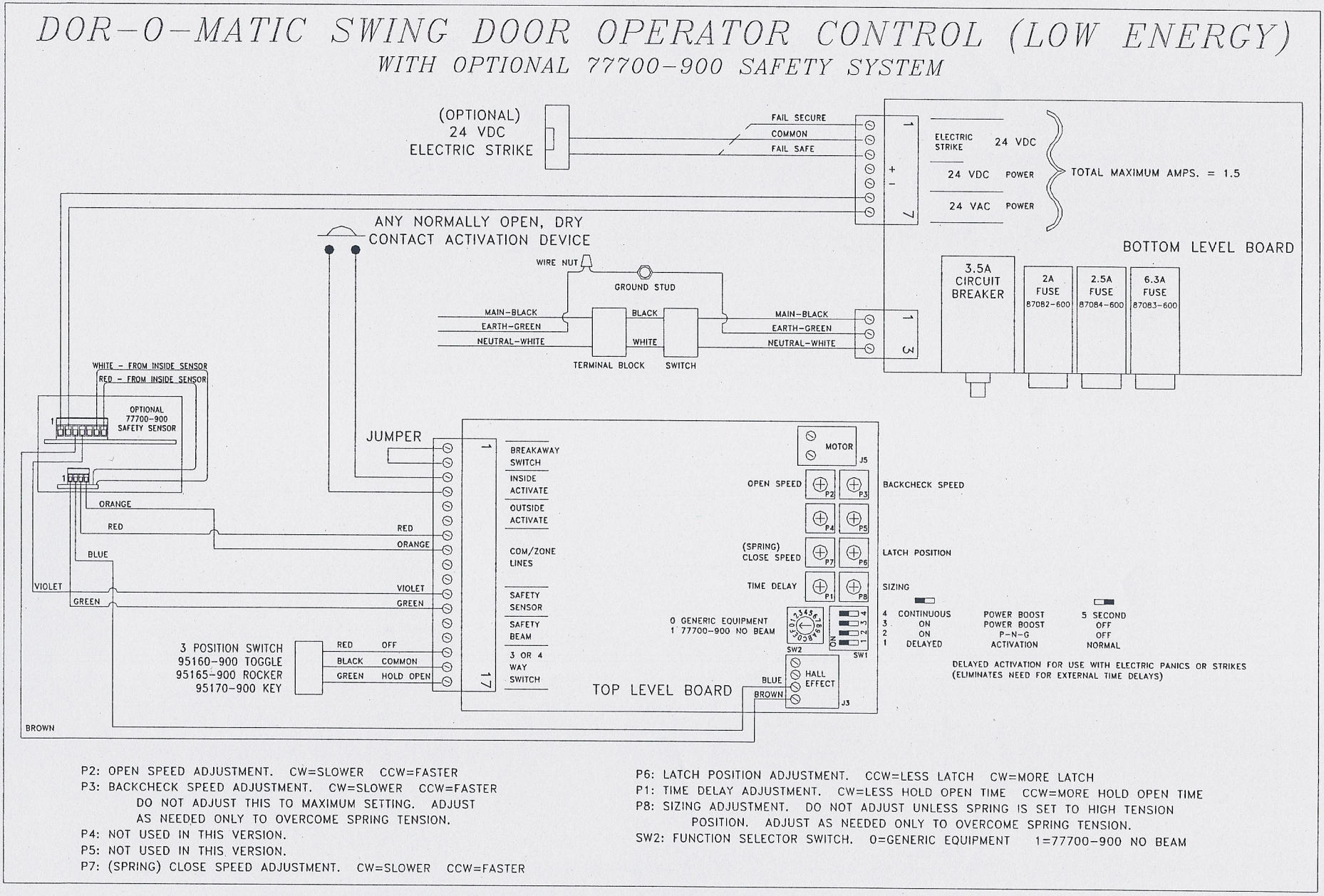


FIGURE 8: CONTROL BOX WIRING WITH OPTIONAL SWING-12 SENSOR



P2: OPEN SPEED ADJUSTMENT. CW=SLOWER CCW=FASTER
P3: BACKCHECK SPEED ADJUSTMENT. CW=SLOWER CCW=FASTER
DO NOT ADJUST THIS TO MAXIMUM SETTING. ADJUST AS NEEDED ONLY TO OVERCOME SPRING TENSION.
P4: NOT USED IN THIS VERSION.
P5: NOT USED IN THIS VERSION.
P7: (SPRING) CLOSE SPEED ADJUSTMENT. CW=SLOWER CCW=FASTER

P6: LATCH POSITION ADJUSTMENT. CCW=LESS LATCH CW=MORE LATCH
P1: TIME DELAY ADJUSTMENT. CW=LESS HOLD OPEN TIME CCW=MORE HOLD OPEN TIME
P8: SIZING ADJUSTMENT. DO NOT ADJUST UNLESS SPRING IS SET TO HIGH TENSION POSITION. ADJUST AS NEEDED ONLY TO OVERCOME SPRING TENSION.
SW2: FUNCTION SELECTOR SWITCH. 0=GENERIC EQUIPMENT 1=77700-900 NO BEAM

FIGURE 9: CONTROL BOX WIRING WITH OPTIONAL 77700-900 SENSOR