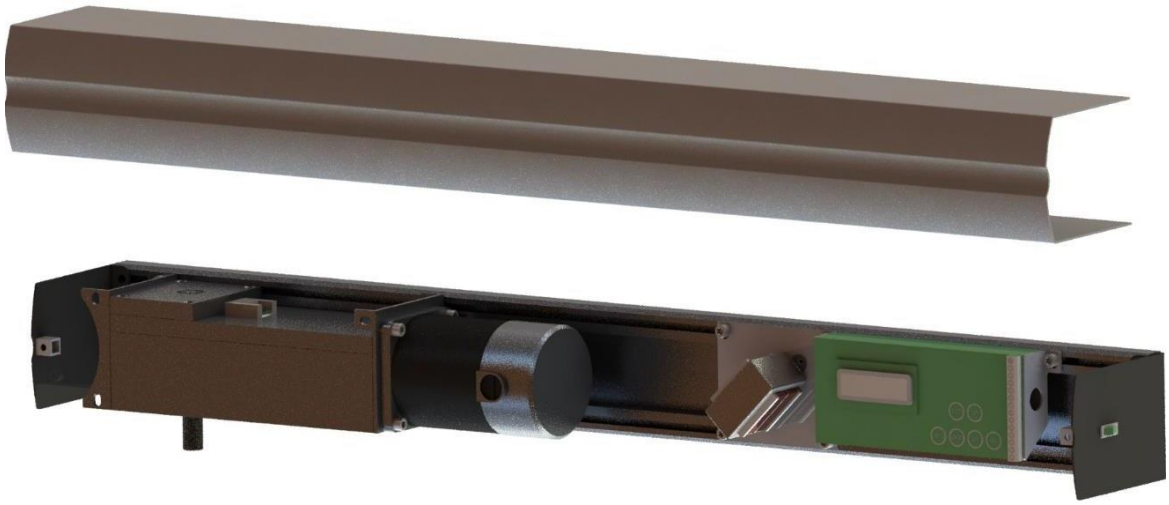
SIGMA AUTOMATICS SA300

Operation & Installation Manual

LOW ENERGY AUTOMATIC SWING DOOR OPERATOR



These installation instructions are solely for use by professional installers and are not intended to be handed over to the end user.

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WARNING

Failure to follow the instructions and information in this manual may result in personal injury or damage to equipment. SIGMA AUTOMATICS will not be held responsible for any loss, damage or injury if instructions and proper precautions are not followed. To reduce the risk of injury or damage - use this operator with single or double pedestrian swinging doors only. Save these instructions for future reference.

AVOID ELECTRICAL SHOCK, INJURY, MALFUNCTIONS OR FIRE!

	ADJUSTMENTS/INSTALLATION/MAINTENACE TO BE PERFORMED BY QUALIFIED OR TRAINED PERSONNEL ONLY. PLEASE READ ALL INSTRUCTIONS BEFORE INSTALLATION. AVOID ELECTRICAL SHOCK. DISCONNECT POWER DURING INSTALLATION OR MAINTENANCE. POWER REQUIRED 120VAC, 1A. CONTROL BOARD POWER SUPPLY 24VDC. ENSURE CONTROL BOARD AND OPERATOR ARE GROUNDED. FOLLOW ALL LOCAL WIRING REGULATIONS OR STANDARDS. KEEP FINGERS AND CLOTHING CLEAR OF ALL MOVING PARTS. ALTERATION TO ANY COMPONENTS IS PROHIBITED AND WILL VOID WARRANTY. BEFORE POWERING ON, REMOVE ANY MECHANICAL DEVICES OR LOCKS THAT INTERFERE WITH THE OPERATION OF THE DOOR (OTHER THAN PARTS INTEGRATED WITH THE OPERATOR SYSTEM). OPERATOR TO BE INSTALLED 8 FEET MINIMUM ABOVE GROUND IF THERE ARE ANY EXPOSED MOVING PARTS. OPERATOR HOUSING IS NOT WEATHER PROOF OR SEALED. EXCESSIVE MOISTURE OR CORRISIVE ENVIRONMENTS MAY DAMAGE ELECTRONIC COMPONENTS. OPERATOR SHALL NOT CLOSE WITH A FORCE GREATER THAN 30 LBF (133.4 N) AT THE LATCH SIDE OF THE CLOSING STILE, AND SHALL NOT CLOSE THROUGH THE FINAL 10 DEGREES IN LESS THAN 1.5 SECONDS. SERIOUS INJURY MAY OCCUR IF THE POWER CORD IS CAUGHT OR PINCHED IN ANY OF THE MOVING COMPONENTS OF THE OPERATOR, DOOR OR SYSTEM. SERIOUS INJURY MAY OCCUR IF THE HEADER UNIT IS NOT PROPERLY SECURED TO A SOLID STRUCTURAL SURFACE AND/OR IF COMPONENTS ARE NOT SECURELY FIXED TO THE HEADER UNIT.

	2 YEAR (24 MONTHS) LIMITED WARRANTY FROM MANUFACTURED DATE – VOID IF ANY REPAIR OR MODIFICATION IS ATTEMPTED TO MOTOR, MECHANISM, ELECTRONICS OR CONTROL ASSEMBLY AND/OR IF IMPROPERLY INSTALLED.

Table of Contents

1. Product Summary

The SIGMA SA300 is a non-handed, low-power, electro-mechanical swing door operator for automatic opening and closing interior or exterior swing doors.

The SIGMA SA300 door operator is installed onsite by qualified or trained installers. Header unit (or main unit) must be installed on the interior of a building. For double swing doors (IE: SA320, SA350), both operators are installed in one single header.

When installed correctly*, the SIGMA 300 complies with:

- ANSI/BHMA A156.19 Standard for Power Assist and Low Energy Operated Swing Doors

(*) It is the responsibility of the installer to certify that the Door Operator is correctly installed in accordance to local building codes, applicable laws and the ANSI/BHMA A156.19 Standard governing this product.

1.1. Product Specifications / Technical Data

Model No.	SA300
Description	Commercial low energy automatic swing door operator
Opening Angle	Up to 180°
Handing	Handed, field reversible
Capacity	400 lbs (181 kg); 48" (122 cm) wide per door leaf *Based on prevailing conditions at the door opening*.
Control Type	Microprocessor with digital display
Motor	1/3HP, 16VDC Permanent Magnet (PM) Silent Motor
Operating Range	-40° to 50° C (-40° to 122° F)
Power Supply	115V AC, 60Hz
Power Consumption	100W Maximum
Fuse Type	5A @ 500V, Slow-Blow
Auxiliary Power	24VDC up to 1A
Electrical Lock Relay Type	MOSFET
Lock Relay Rating	5.7A @ 100VDC (Limited to 1.1A @ 24VDC)
Operation During Power Failure	As per spring powered door closer.
Installation Types	Surface Mounted (Push/Pull)
Operator Dimensions	5 1/8" (D) x 4 3/8" (H) (130 mm x 111 mm)
Operator Width	40" to 80" (1016 mm to 2032 mm) *Custom widths available – please contact your local reseller for details.*
Finishes (Cover)	Clear Anodized Aluminum, Dark Bronze *Custom finishes available – please contact your local reseller for details.*
Software Version	V1.24

2. Pre-Installation Information

2.1. Parts list

Before installation, please verify that the product was shipped with all required components. Verify the model number, header width, door handing, arm and colour.

- Do not attempt installation if any parts are missing.
- Please report any missing parts or an incorrect shipment within 5 days of delivery, otherwise claim will be rejected.
- NOTE: Mounting hardware for the header unit IS NOT INCLUDED.

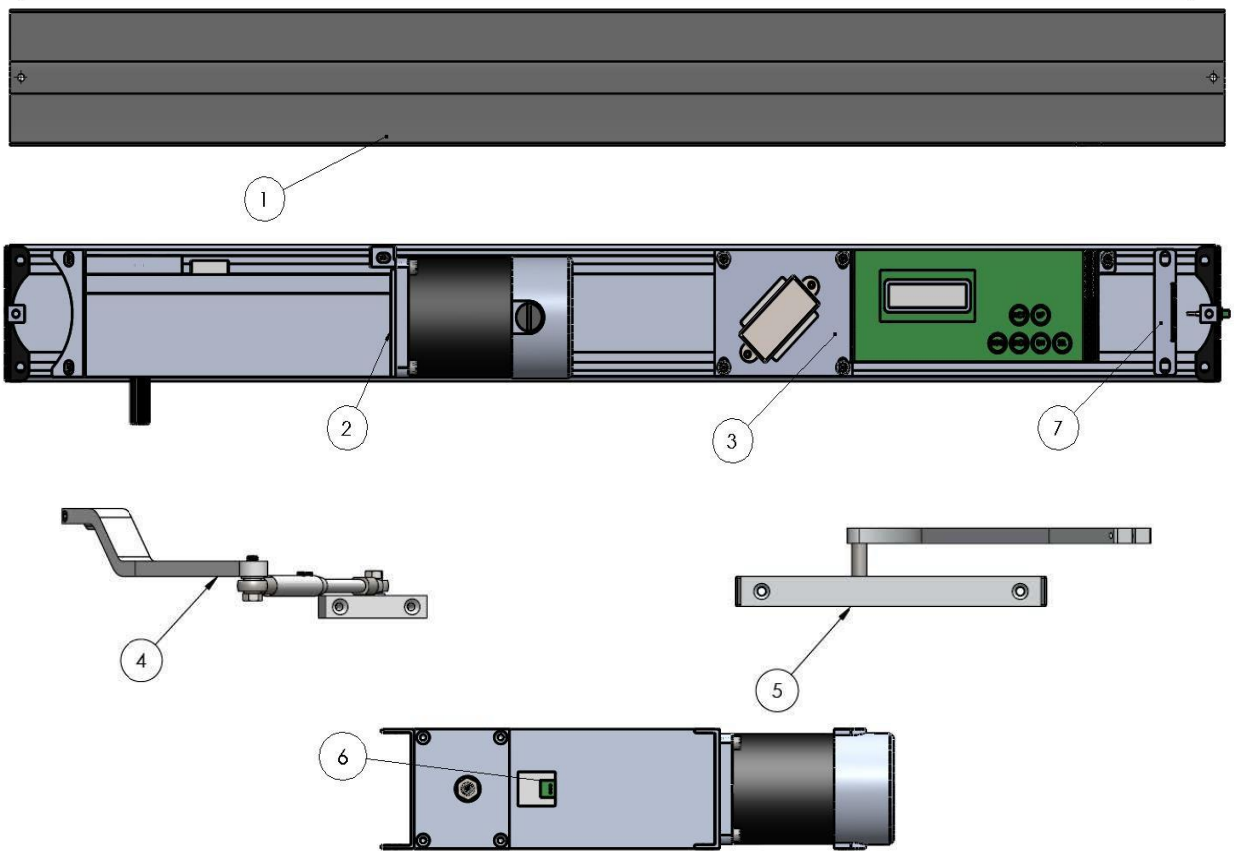


Figure 2-1 Part Identification

Parts list for surface mounted Single Swing Door Operator (SA300), see Appendix for other models.

No.	Description	Part Number
1	Operator cover and screws	SA-PH-001
2	Operator motor and gearbox	SA-PM01 (motor) SA-PG01 (gearbox)
3	Operator control board and transformer	SA-PC01
4	Push Arm Kit	SA-PR01
5	Pull Arm Kit	SA-PR02
6	Encoder	SA-PG-011
7	L16 Connector bracket	SA-2716

2.2. Required Tools

1- 1/8 Allen key
2- 1/4 Allen key
3- 3/16 Allen key
4- 5/64 Allen key
5- 0.3 mm Flat head screwdriver
6- 9/16 Wrench
7- #3 Phillips Screwdriver
8- Torque wrench
9- Door pressure gauge (0-35 lbf).
10- Various drill bits and fasteners (see section 2.3)

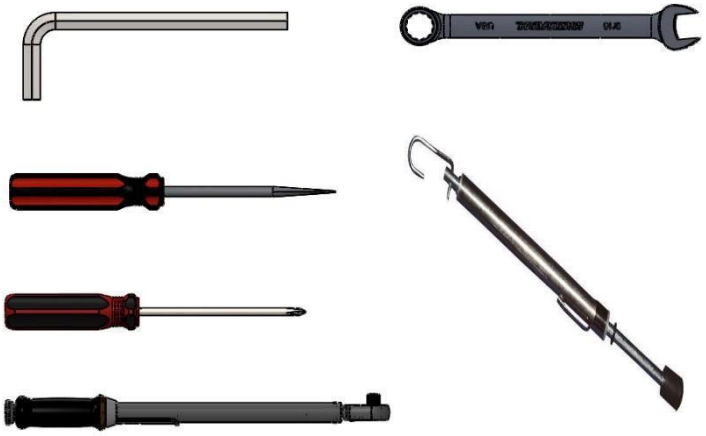


Figure 2-2 Required Tools

2.3. Fasteners

The SA300 door operator does not include header unit mounting hardware of any kind. Installers should use their discretion and use the appropriate mounting hardware for their situation/installation. See section 4.5 for installation examples.

2.3.1. Torque Ranges

Fastener	Ft-lb	Location
#8-32	1.7	Cover screws
5/16-18	13	Operator motor, gearbox and controller
3/8-16	23	Gearbox spindle.

3. Safety Information

This document contains important instructions for installation of the SA 300 swing door operators. Review these instructions thoroughly prior to installation and follow them carefully during installation, commissioning, troubleshooting and maintenance.

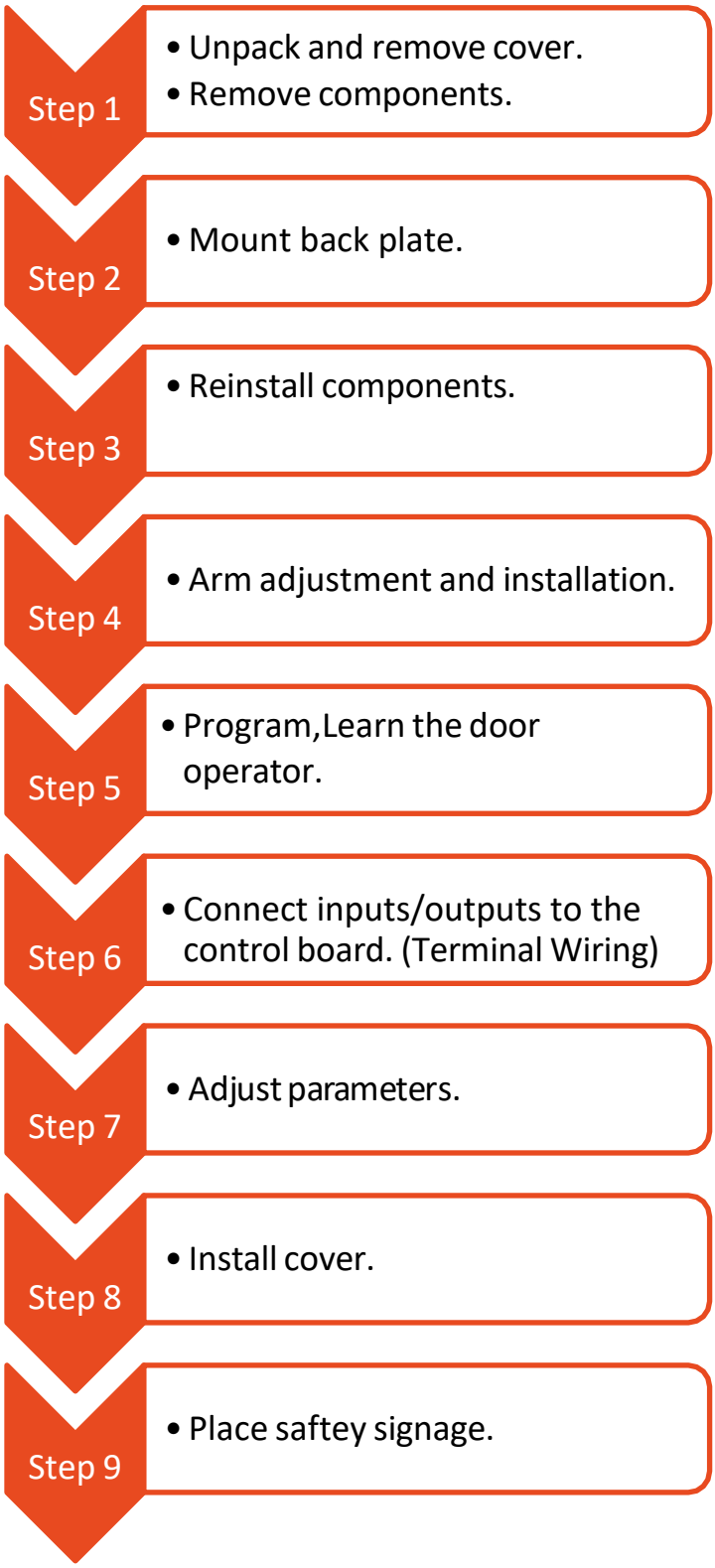
3.1. Safety Warnings

- Damage to equipment or incorrect equipment operation may result from an incorrect installation.
- Hazard to mechanical processes by use of control settings elements or procedures not documented in this manual!
- Electric shock hazard!
- By use of control elements, settings of Procedures not documented in this manual!
- Work on electrical equipment and 120VAC wiring installation must be performed only by qualified or trained personnel!
- Metallic doors must be grounded per national and local codes!
- Hand pinch point and crushing hazards of door closing edges!
- Crushing hazards at door closing edges!
- Prior to mounting the SA 300 check that proper power has been delivered to the location in accordance with local electrical code
- Ensure that the high-power cables (e.g., 120 vac) do not share the access hole as the low voltage wires

3.2. Post Installation Hazards

- After installation, hazards such as minor crushing, impact with limited force, and risk to unsupervised children may exist depending on structural design of door area, type of door, and any safeguards that have been implemented.
- Hand pinch point and crushing hazards at arm and track

4. SA300 Installation Process



4.1. Unpack and Remove Cover

- Use 1/8" Allen key to remove cover screws.
- Remove cover.
- Verify operator handing. Left Hand Push show below (Figure 4-1).

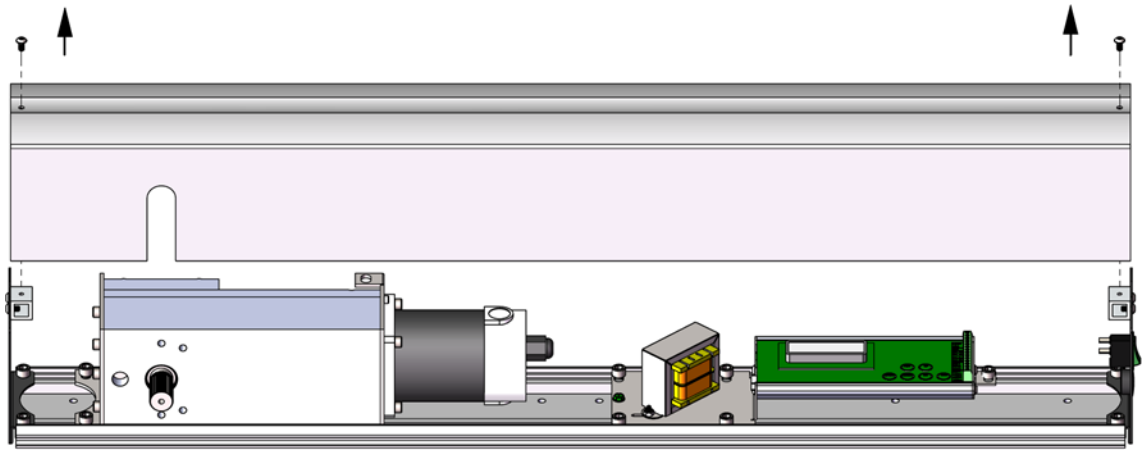
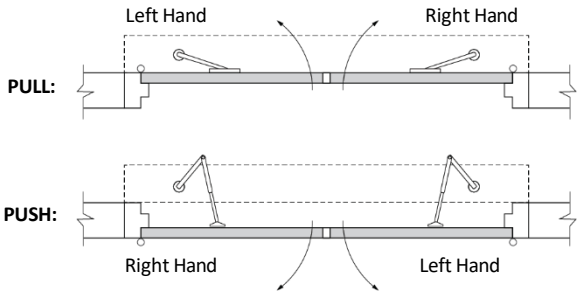
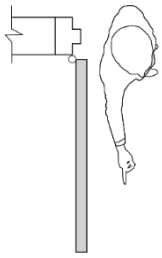


Figure 4-1 Left Hand Push Model

4.1.1. Operator Handing





Door handing is determined by standing with your back towards the hinges of the door. The side toward which the door opens (left or right) is the handing of the door.

Diagram illustrates a right-handed door.

4.2. Mount back plate

NOTE: Installers should use their discretion when mounting the header unit. They should ensure that the door operator is properly and securely mounted using appropriate fasteners and mounting methods.

- Mark the positions of the gearbox and controller mounting plates edges on the rear plate channel of the header. These marks will be used for reassembly.
- Use 1/4" Allen key to remove the motor fasteners and remove the gearbox unit.
- Use 1/4" Allen key to remove the controller fasteners and remove the controller unit.

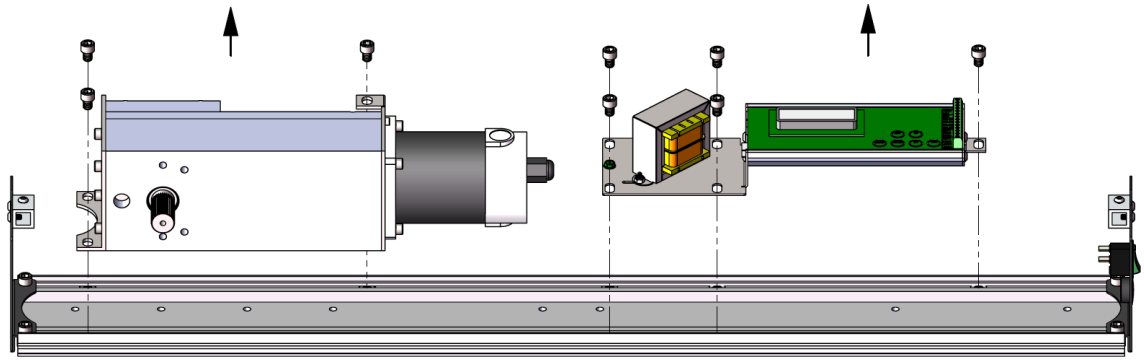


Figure 4-2 Unit Disassembly

- Using the appropriate drill bit for the fasteners to be used. Drill at least 6 mounting holes on the motor side of the header, and 4 holes on the controller side. **DRILL HOLES BETWEEN THE CHANNELS** as highlighted in yellow below (Figure 4-3).

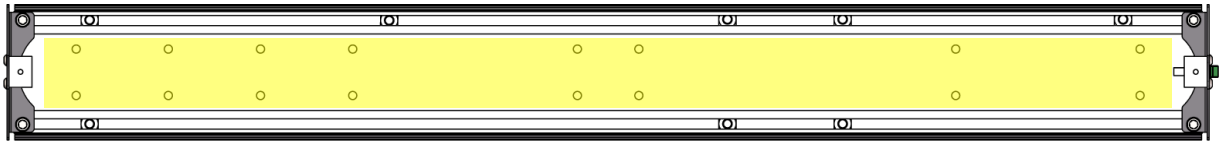


Figure 4-3 Recommended Mounting Holes

4.2.1. Determine Header Position

The position of the header in relation to the door and frame is determined by the operator's function.

- For **PULL** applications: mount the bottom of the unit above the frame (2" above the top of the door). Figure 4-4 illustrates a PULL application header position.
- For **PUSH** applications: mount the unit bottom flush with the bottom of the frame. Figure 4-5 illustrates a PUSH application header position with the components reinstalled.

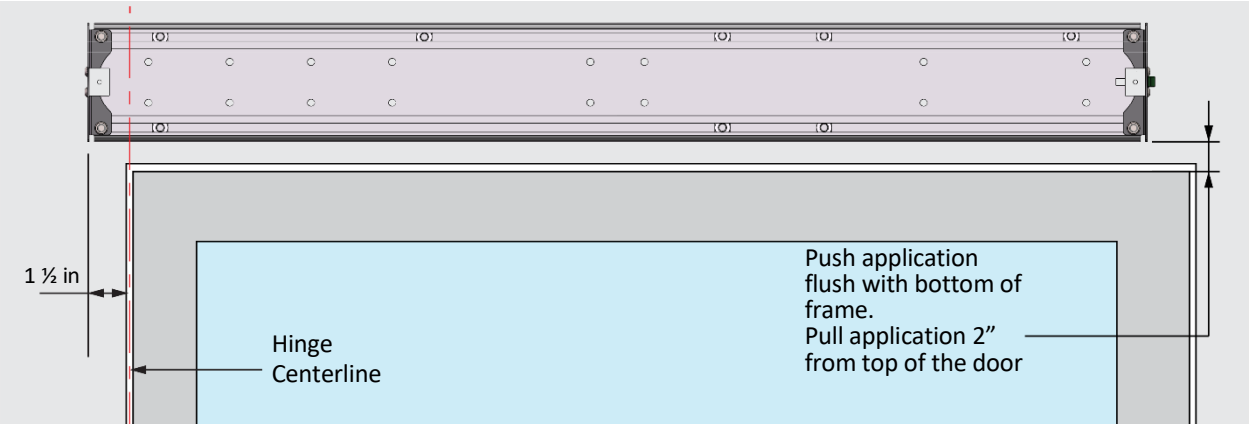


Figure 4-4 Header Unit Position (Pull Application)

- After the header's position is determined, BEFORE physical mounting, ensure that a hole for the wire pass-through is made on the header that corresponds with the wire hole on the surface. Recommend 1in or 2in hole, please use your discretion on and follow all local codes. See Figure 4-5 for an example.
- Fasten the header to the surface using appropriate fasteners and mounting techniques.
  NOTE: It is recommended that the header be mounted securely to solid structural surfaces such as wood wall studs or masonry. See section 4.3 for example installations.

4.2.2. Reinstall Components

Once the header is secured, the gearbox and controller units can be reinstalled onto the header.

- Using the marks made in 4.2 as a guide, reinstall the gearbox unit using the appropriate fasteners. Ensure the marks align.
- With the gearbox unit installed, proceed with installing the controller unit using the appropriate fasteners. Figure 4-5 illustrates a PUSH application with components installed.

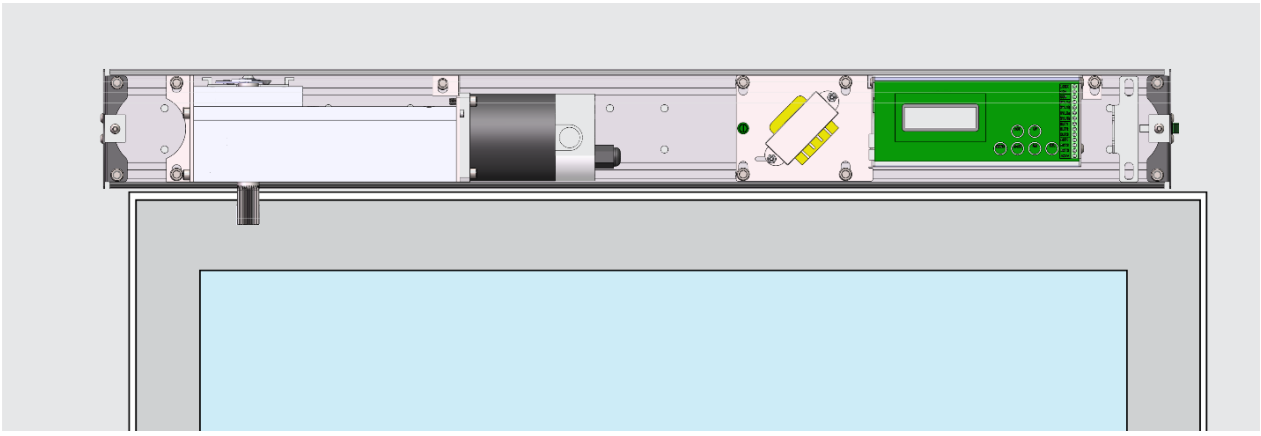
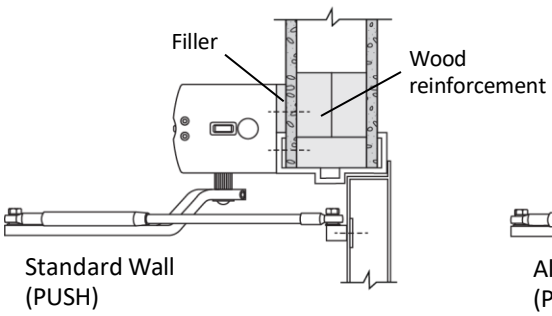
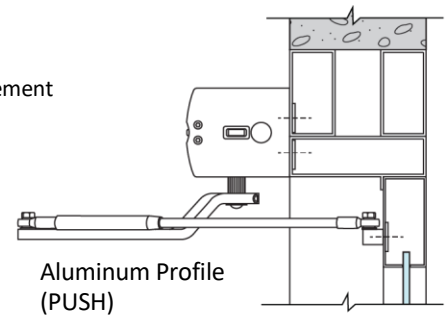


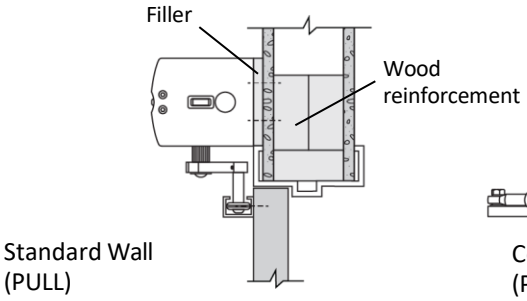
Figure 4-5 Header Unit Position (Push Application)

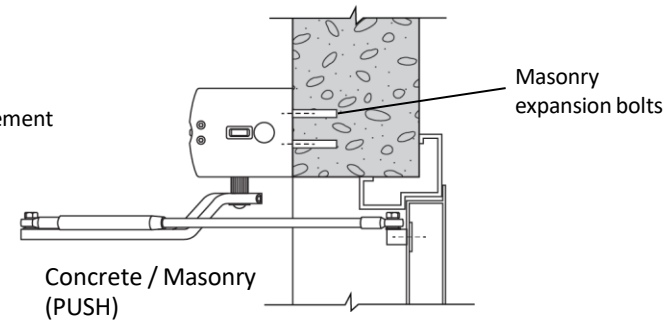
4.3. Installation Examples

- Ensure there is solid structural support in the mounting surface (wall) behind the header unit for the appropriate mounting hardware to be secured to.
- A spacer or filler plate made of solid material may be required to compensate for any gap between the door frame/header unit and mounting surface.
- Before mounting the header unit, ensure that access holes for the power supply cables are aligned and properly prepared.
- Shown below are examples ONLY. Use your discretion, follow all local building and security codes.
- On composite or hollow wood doors we recommend the use of thru-bolts when securing the arm shoe or slider.









- Standard push arm can accommodate reveals up to 12in (30.5 cm)
- Standard pull arm can accommodate reveals up to 6in (15 cm)

Other arms are available for deeper reveals – please contact your local reseller for details.

4.4. Motor and Control Board Wiring

⚠

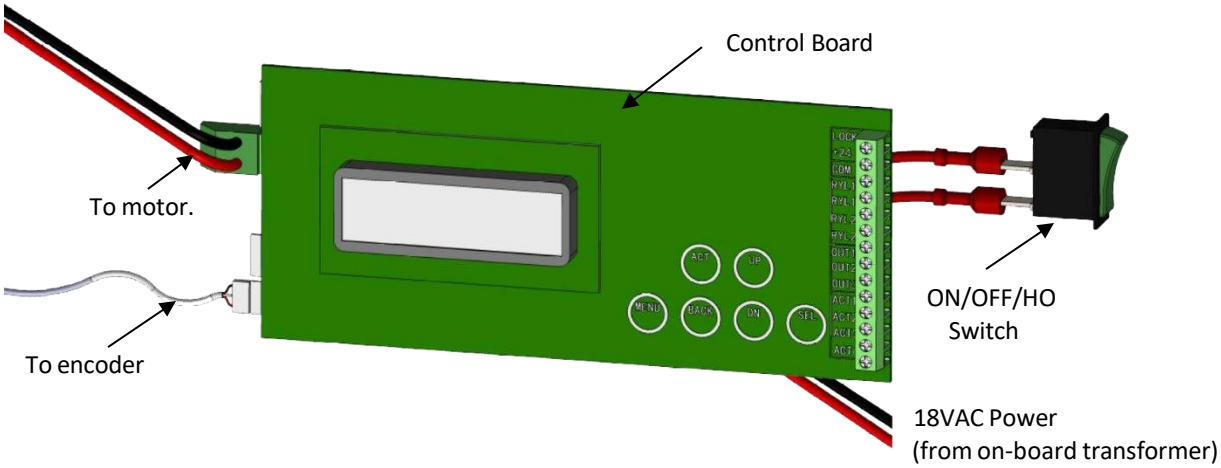
⚠ **Unit must be grounded**.

⚠ **Connect 120VAC wire to transformer via L16 connector and distribution block.**

⚠ **Use Minimum of No. 14 AWG with copper connectors.**

⚠ **Permanent wiring is to be employed as required by local codes.**

- Connect motor wire to motor connector on controller.
- Connect magnet sensor wire to connector on controller.
- Connect power switch wire to power switch on header.
- Have a qualified electrician connect the 120VC armored wire to L16 connector.



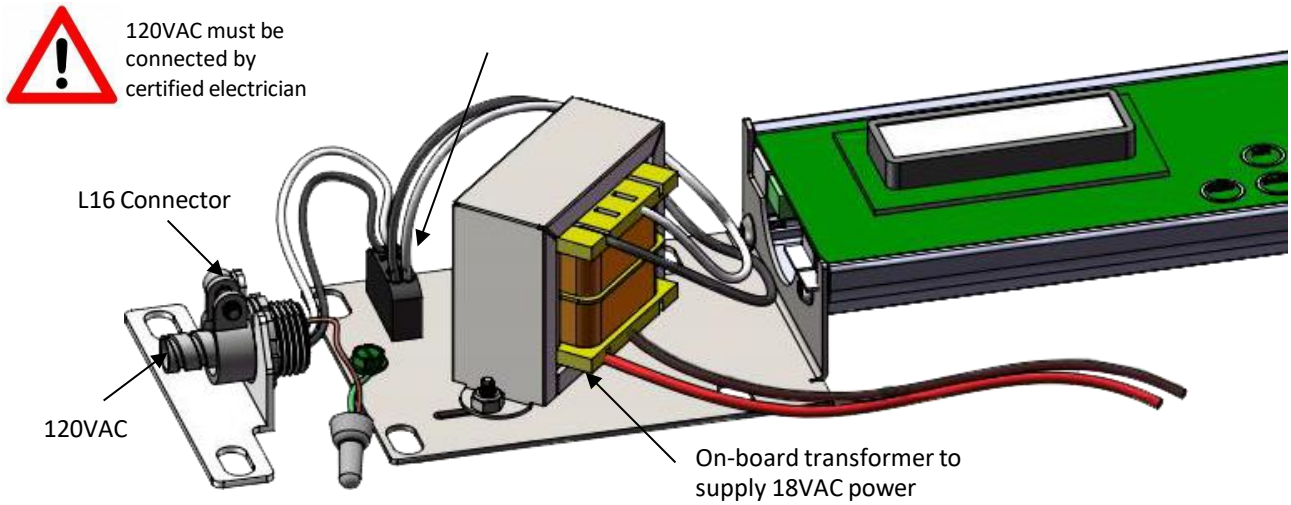
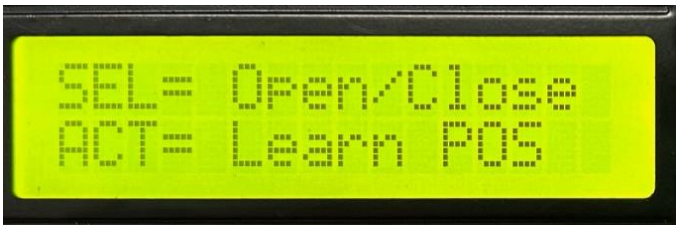


Figure 4-6 Unit Wiring

4.5. Arm Installation

SA300 arms can be installed in either a PUSH or PULL configuration. Regardless of configuration, the gearbox must be loaded to hard stop.

4.5.1.1. Automatic Gearbox Loading to Hard Stop



- Turn POWER ON. Screen will display 2 options as in image above.
- Press SEL button to enter the Open/Close menu. Screen display will change.

- Press SEL button again to activate motor loading. Observe the spindle until it reaches hard stop.
- Install the arm as per instructions on page 15,16.
- Pres SEL to close the door.

4.5.1.2. Manual Gearbox Pre-loading

- With the door open, preload the gearbox manually by attaching the arm to the spindle like a wrench, then turn the arm towards the hinges until the hard stop is reached.
- Lock the gearbox with metal rod or screwdriver through one of the 1/2" diameter holes at bottom of the gearbox. Skip to section 4.5.2 for the next step.
- **If you do not reach the hard stop, lock the gearbox temporarily then re-attach the arm to the spindle. While holding the arm, remove the metal rod or screwdriver and continue to preload until the hard stop is reached.**

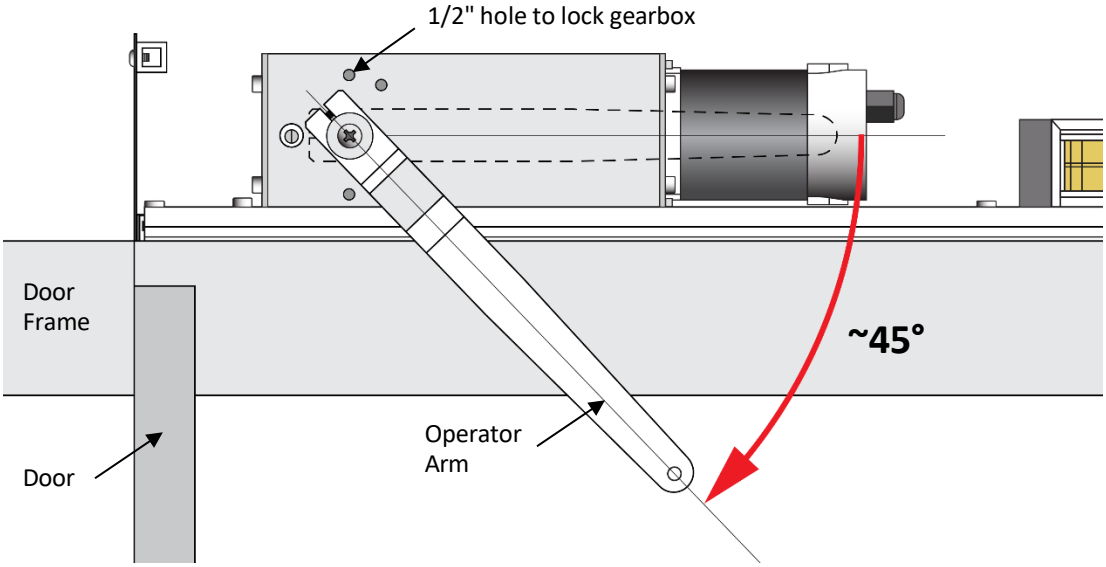


Figure 4-8 Push Arm Positioning

4.5.2. PUSH Arm Installation

- Attach or re-adjust the push arm to be approximately 45° from parallel to the door frame as shown in Figure 4-8. Lock position using 3/16 socket screw included.
- With the door still held in position, attach the forearm and block to the door 14-1/2" from the hinge side door edge, in the high or low mount position as shown in Figure 4-9. **Use your discretion:** The forearm must be level with the operator arm, adjust accordingly.

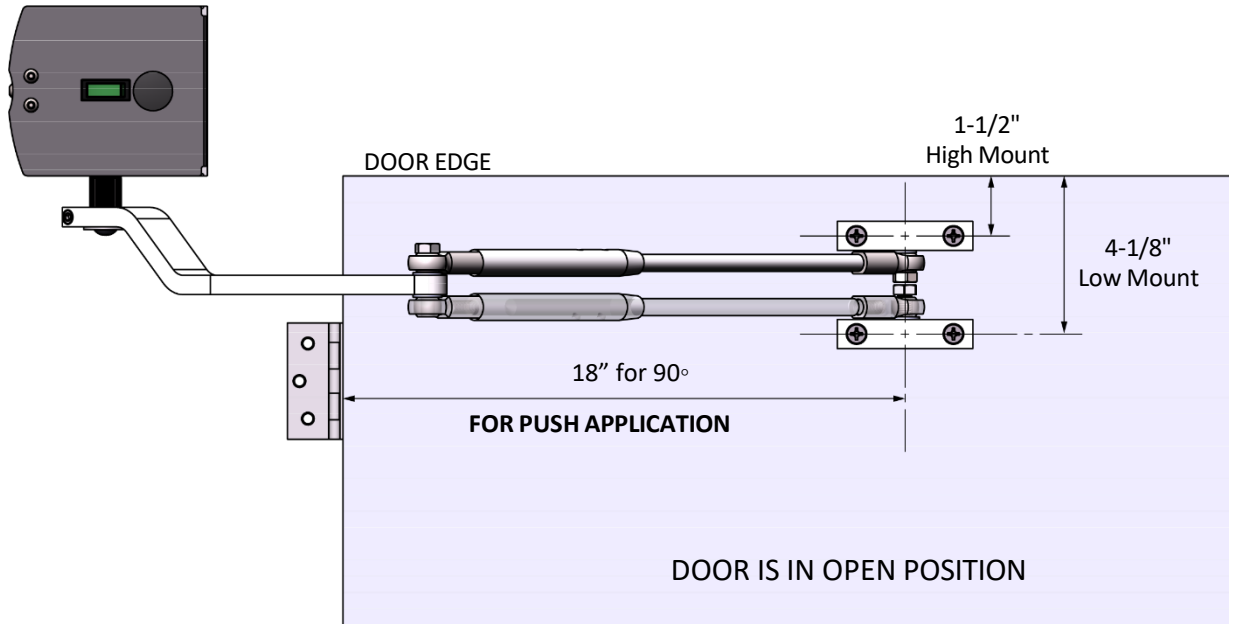


Figure 4-9 Push Arm Installation

- Fix the arm to the operator spindle using supplied PH3 screw.
- Push the door slightly to release the metal rod or screwdriver from the gearbox. If the gearbox was pre-loaded using the motor, remove the jumper wire between COM and ACT2 on the control board.
- With the rod removed, the door should close as if it had a manual door closer installed.
- The door operator is now ready for programming.

4.5.3. PULL Arm Installation

- With the door closed, install main arm and mark the location of the main arm's tip on the closed door (A).
- Remove the arm and open the door to the desired opening angle and hold it in place. Re-attach main arm and mark the location of the main arm's tip on the open door (B).
- Remove the arm and close the door. Locate and mark the center line between A and B.
- Center sliding track on the marked centerline, 3 ½" below the bottom of the header as shown in Figure 4-11. Use appropriate mounting screws to fix sliding track to the door.

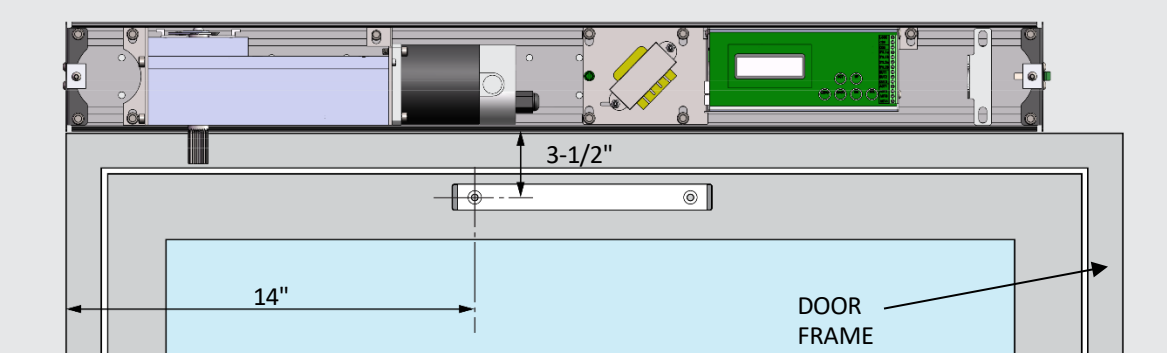


Figure 4-10 Slide Track Installation

- Slide the arm roller into the track, then push the arm onto the operator's spindle. Secure arm to spindle using supplier screw and washer.

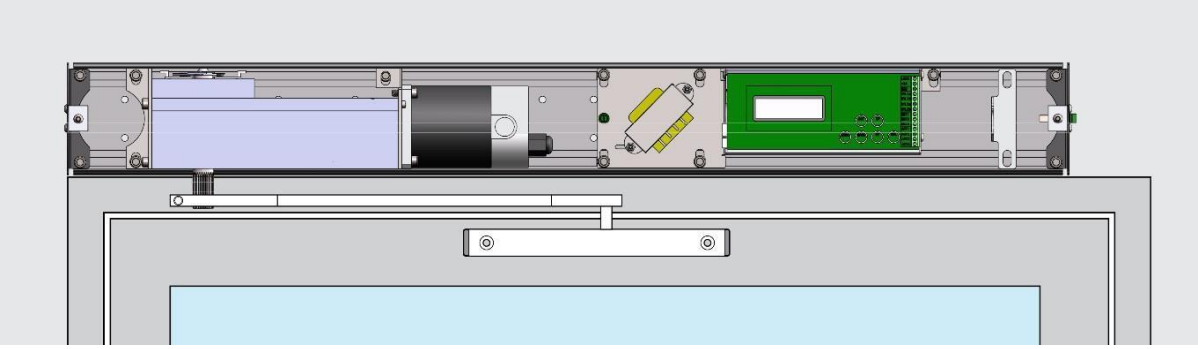
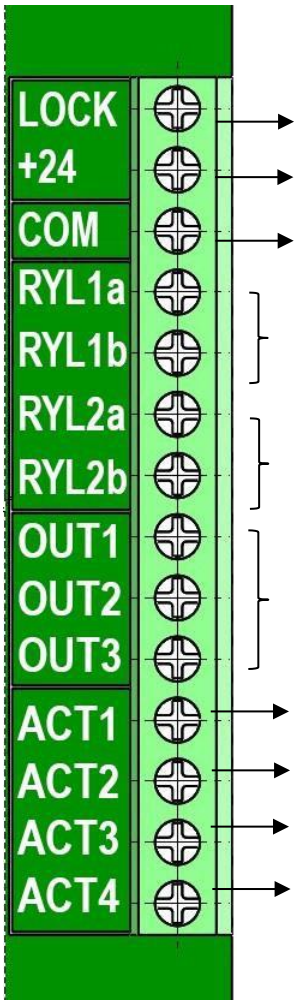


Figure 4-11

- Push the door slightly to release the metal rod or screwdriver from the gearbox. If the gearbox was pre-loaded using the motor, remove the jumper wire between COM and ACT2 on the control board.
- With the rod removed, the door should close as if it had a manual door closer installed.
- The door operator is now ready for programming.

5. Terminal Wiring

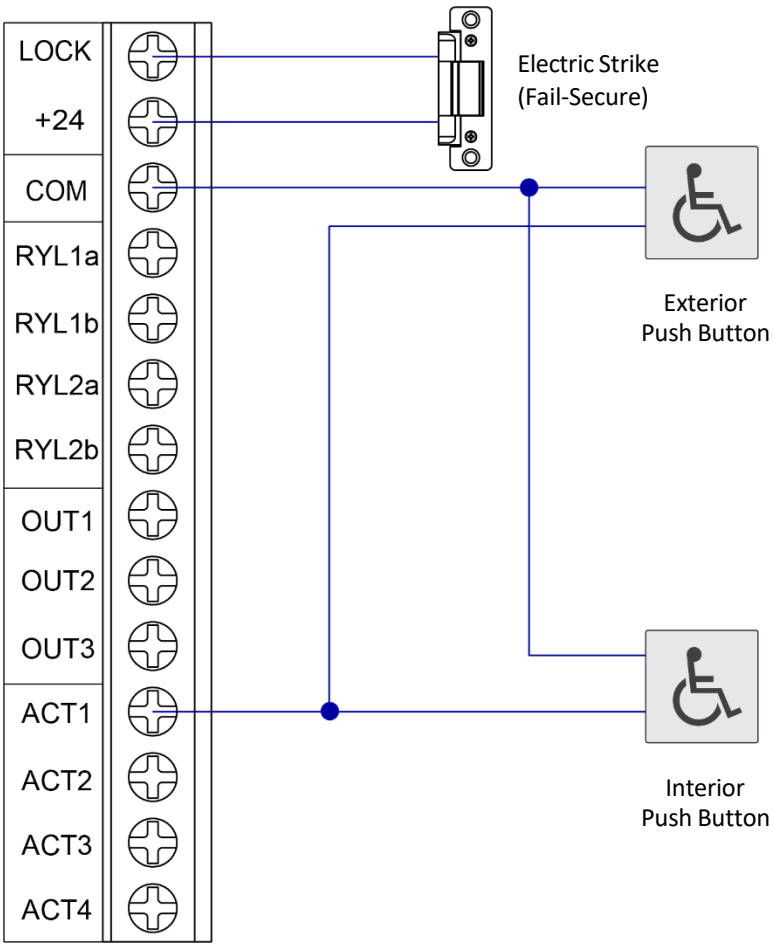
5.1. Terminal Description / Legend



LOCK	Lock relay used for operating electric locking hardware.
+24	24VDC power terminal used to power device and looking hardware.
COM	Shared input for all dry device and as 0VDC output for power devices.
RYL1a RYL1b	RLY 1 is used: in Normal Mode as end switch when input is maintained to ACT2 and common; in Washroom Mode for occupied indicator; and to inhibit swing sensor in Safety Sensor installations.
RYL2a RYL2b	RLY 2 - Future use
OUT1 OUT2 OUT3	Used in Normal Mode in conjunction with overhead safety sensors.
ACT1	Primary activation input.
ACT2	Secondary activation input used for fire alarm, washroom, access control.
ACT3	Input used in washroom, access control and safety sensor setup.
ACT4	Input used safety sensor setup.

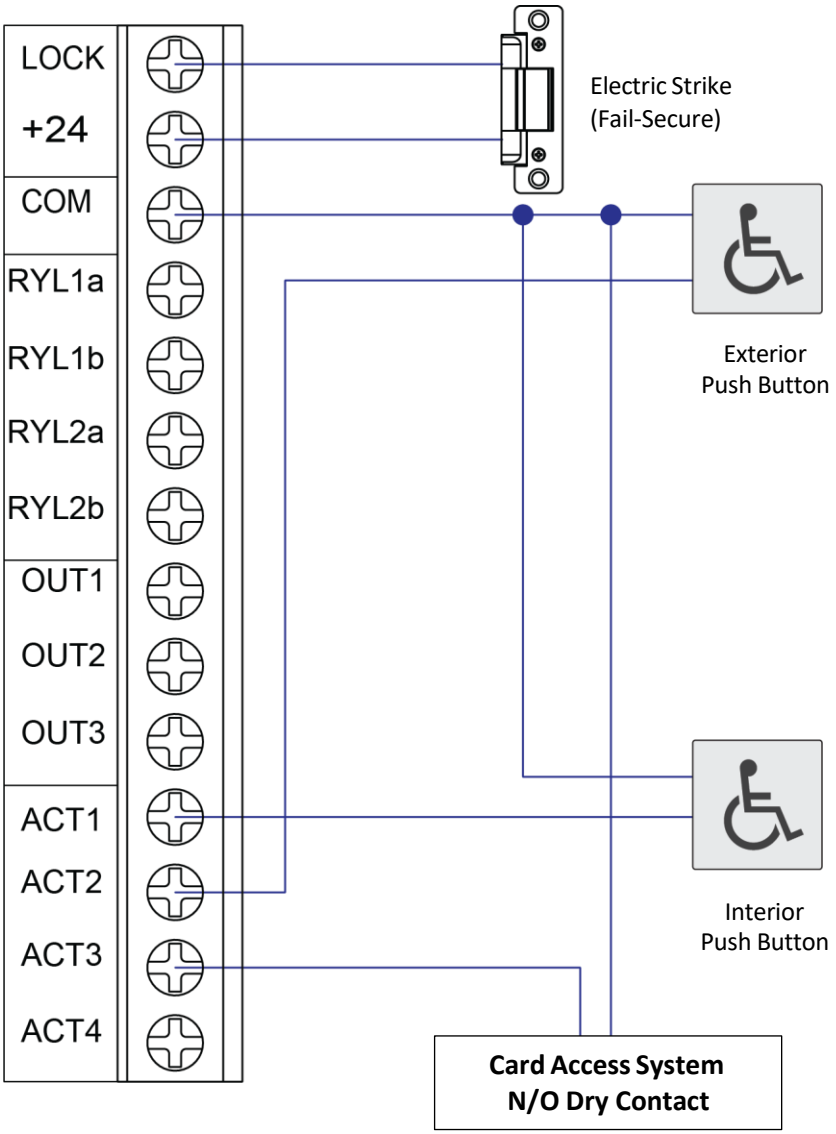
5.2. Wiring Example: Regular Push-Button Activation

The following diagram is only an example, use only as a reference.



5.3. Wiring Example: Card Access Integration

The following diagram is only an example, use only as a reference.

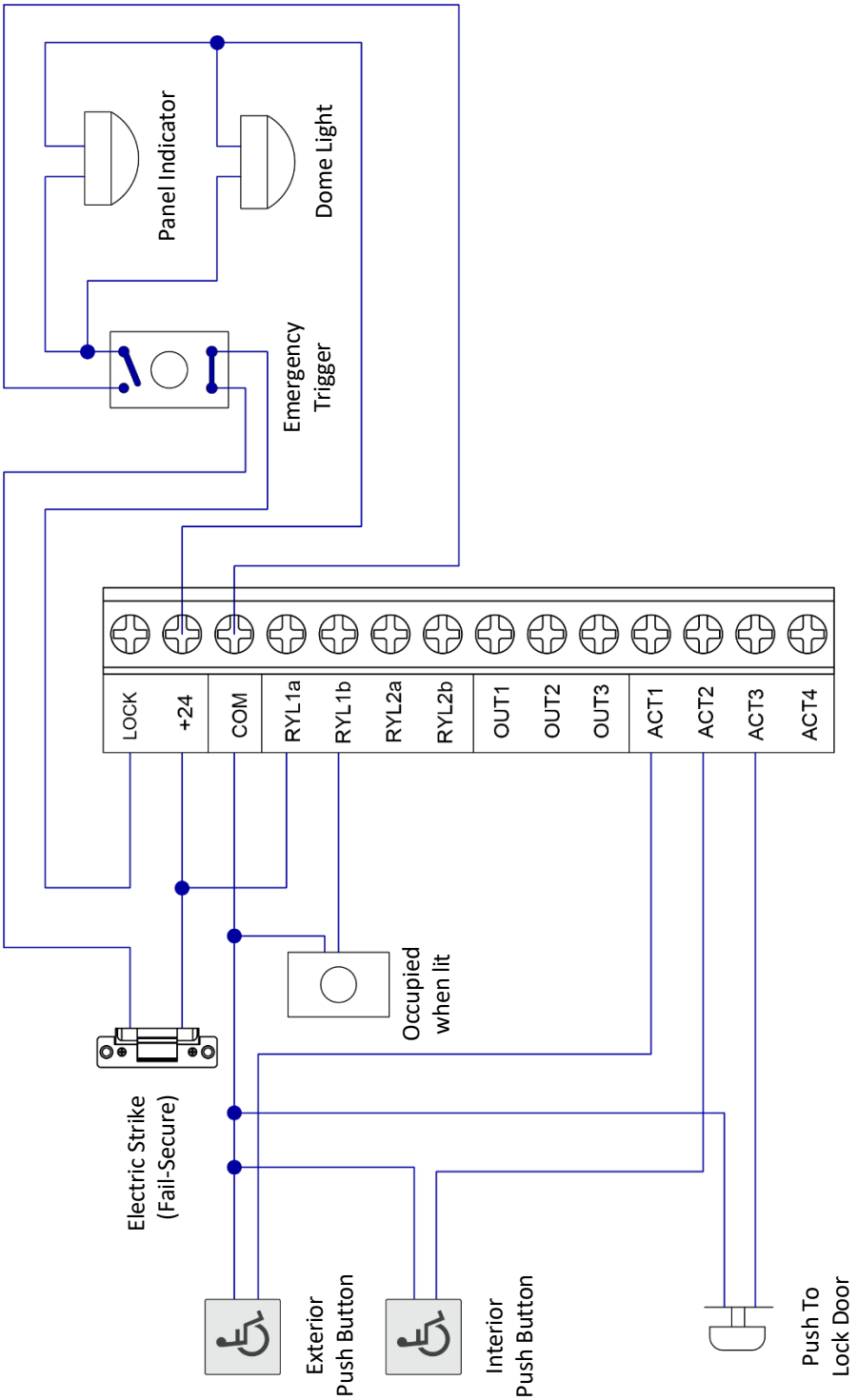


After the initial auto-learning sequence is complete (see 6.2), use the control board menu to set the Control Mode to 3 “Access Control” (see 6.3). The control board will display “DOOR CLOSED [ACCESS DENIED]”

Access control signal must be a **DRY N/O CONTACT** from the card reader.

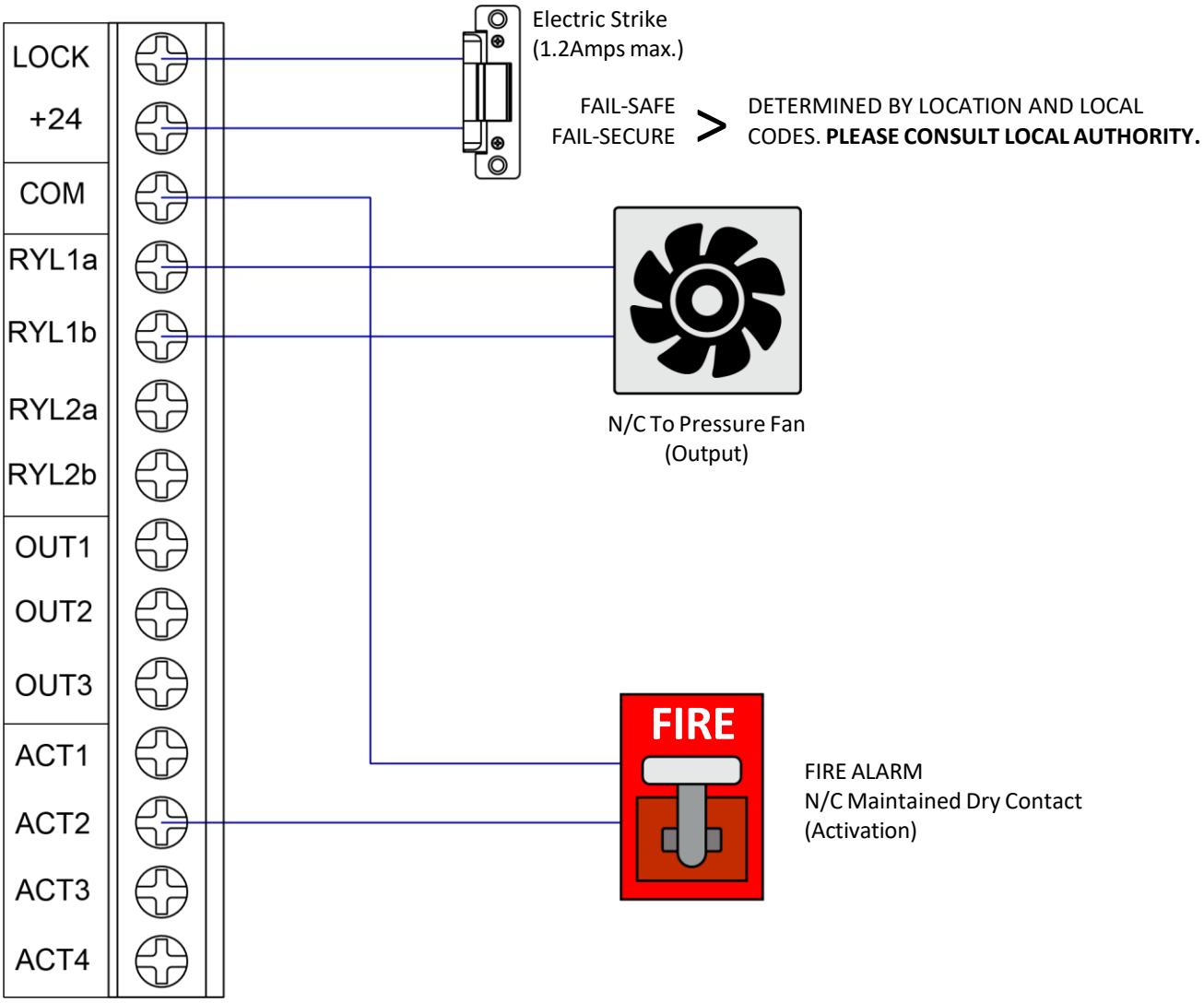
5.4. Wiring Example: Washroom Application

The following diagram is only an example, use only as a reference.



5.5. Wiring Example: Stairwell (Fire-Alarm) Application

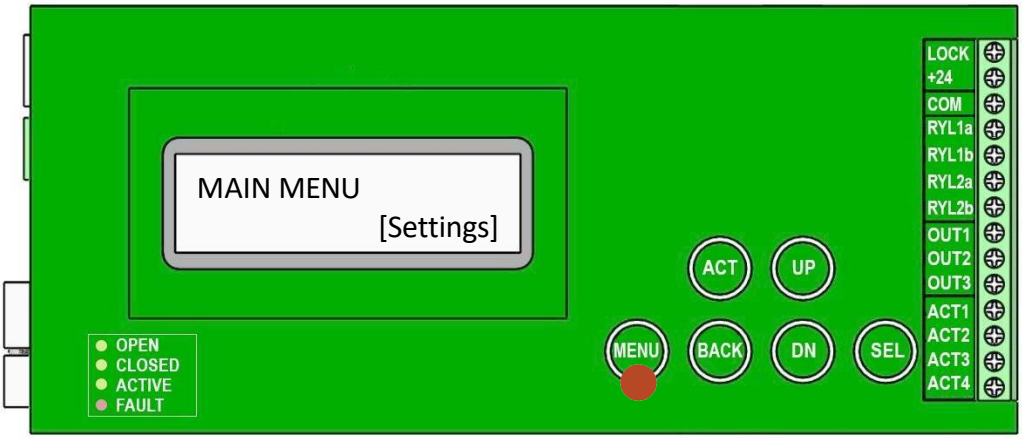
The following diagram is only an example, use only as a reference.



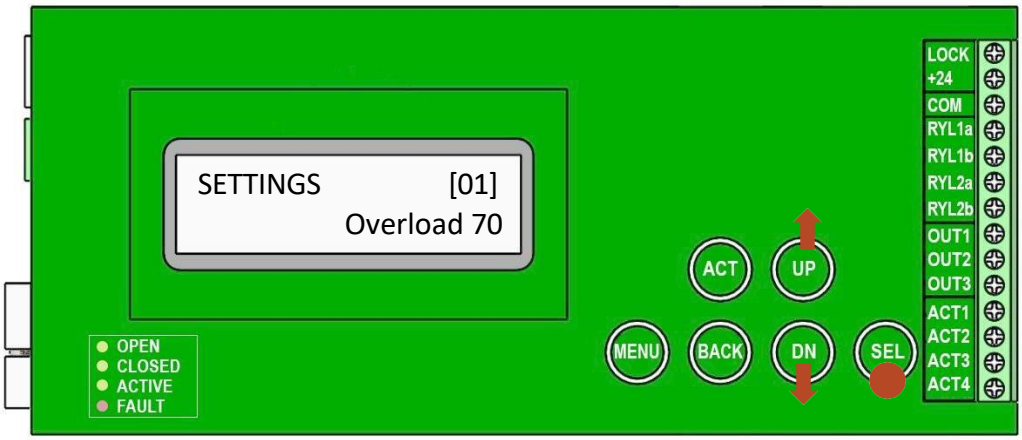
6.3. Change Operating Parameter Settings

The SA300 default operating parameter settings can be adjusted to better suit the installation. See Section 6.3.2 for a full list of basic and advanced parameters.

- Ensure the door is fully closed – the door operator control display should read “DOOR CLOSED.”
- Press the **MENU** button on the control Board to enter the Main Menu.



- Using the **UP** and **DN** buttons, scroll up or down until “[Settings]” is displayed.
- Press the **SEL** button to enter the Settings menu.



- Using the **UP** and **DN** buttons, scroll up or down until the required parameter and its current value is displayed.
- Press the **SEL** button again to edit the parameter.
- Using the **UP** and **DN** buttons, scroll up or down until the required parameter value is achieved.
- Press the **SEL** button again to set/confirm the new parameter value.
- Press **BACK** to return to the Basic Settings menu in order to select another basic parameter.
- Press **BACK** a second time to return to the Main Menu.

6.3.2. Parameter Descriptions

All values and settings must comply with ANSI/BHMA A156.19 Standard for Power Assist and Low Energy Power Operated Swing Doors

	Parameter	Description	Value	Default
01	Overload (Obstacle Detection)	Percentage of current that the door operator will use to reverse if an obstacle is detected during the Opening Cycle. To test, stall door opening for 2 seconds. Increase or decrease value as required.	0-99	70
02	Act Delay	Delay between the signal from activation device and door operator. Measured in 10s of seconds.	0-99	0
03	Backcheck Speed	Speed at which door travels after it engages backcheck. Higher the value, the faster the speed.	0-99	25
04	Holding Time	Time (in seconds) that the door will stay open.	0-99	10
05	Opening Speed	Adjust how fast the door will perform opening cycle. Higher the value, the faster the speed,	0-99	50
06	Closing Speed	Adjust how fast the will door perform closing cycle. Higher the value, the faster the speed.	0-99	30
07	Latch Speed	Adjust how fast the door will perform latching cycle. Higher the value, the faster the speed.	0-99	10
08	Control Mode	Changes operating mode of the controller.	1-4	1
09	Sensor Cfg.	Selects # of safety sensors and monitoring	0-8	0
10	Stop Speed	Speed of door once pressence detected on swing side	0-99	14
12	Pwr Cl Angle	Power close engaging angle	3-24	3
13	Closing Time	Length of closing cycle (in seconds)	0-50	50
14	Opening Time	Length of opening cycle (in seconds)	0-50	50
15	Latch Time	Time (in seconds) of latching cycle.	0-50	2
16	Latch Angle	Adjusts latch angle.	0-99	8
17	Preload Time	Adjusts preload length in sec.	0-50	0
22	Preload Speed	Adjusts the preload force	0-99	50
23	Wind Brake	Turns ON/OFF wind brake feature	0-99	0
24	WBrake Speed	Wind Brake stop speed/torque	0-99	10
25	WBrake Angle	Adjusts wind brake angle	7-24	12
28	Factory Test	Factory reset, change from 1 to 3	1 or 3	1

6.3.3. Recommended Parameter Settings by Door Size

All values and settings must comply with ANSI/BHMA A156.19 Standard for Power Assist and Low Energy Power Operated Swing Doors.

	Parameter	For 7ft to 8ft Door	For 8ft to 12ft Door	
01	Overload	70-85	75-90	
02	Act Delay	0-2	0-2	
03	Backcheck speed	20-22	20-24	
04	Holding time	>5	>5	
05	Opening speed	50-55	50-55	
06	Closing speed	35-50	35-50	
07	Latch speed	1-5	1-5	

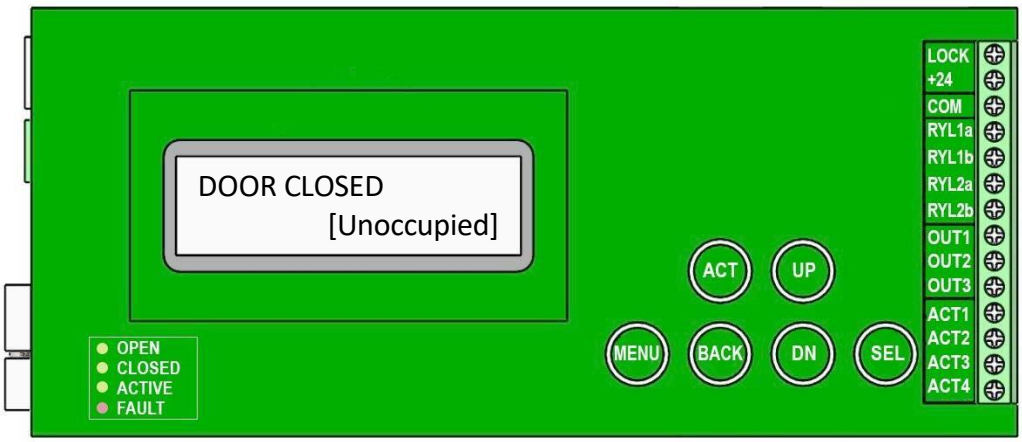
See 5.4 Parameter Descriptions for more details.

6.3.4. Universal Washroom Mode

- The door is normally unlocked.
- Install the door operator for required application based on installation instructions.
- Adjust parameters for basic or default setup. (As per 6.3.3)
- Follow the Universal Washroom wiring diagram to connect all the devices to proper terminals. See Section 5.4 for wiring details.
- Once the devices are wired and door operator is programmed for basic setup, access the settings and change the CONTROL MODE parameter from 1 (Regular) to 2 (Washroom).
- Adjust the following parameters:

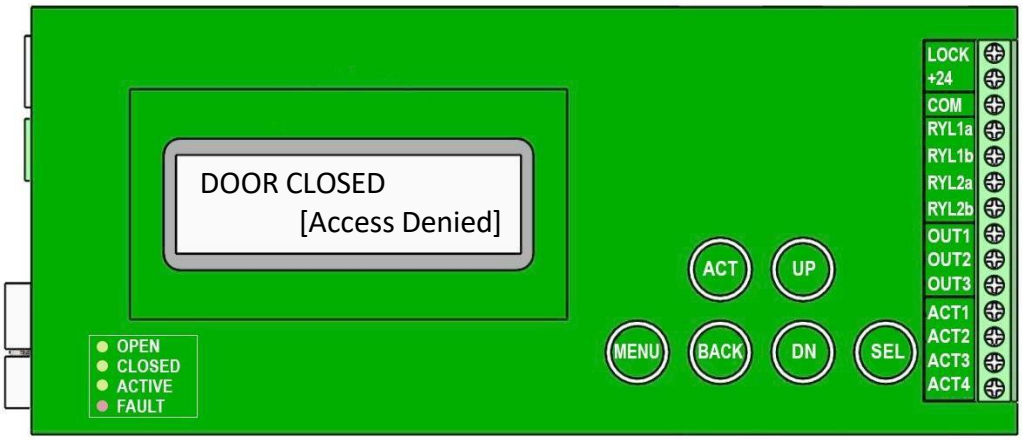
	Parameter	
17	Latch Time	From 2 to 0

- Test to ensure proper functioning.
  Once the door is closed the display will show “DOOR CLOSED [Unoccupied].”



6.3.5. Access Control Mode

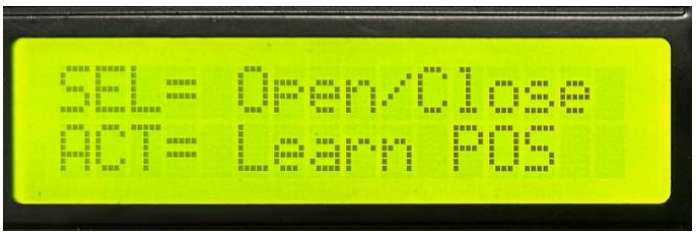
- Press the MENU button on the control Board to enter the Programming Menu.
- Install the door operator for required application based on installation instructions.
- Adjust parameters for basic setup. (As per 6.3.3)
- Follow the Access Control wiring diagram to connect all the devices to proper terminals.
  See Section 5.5 for wiring details.
- Signal from access control panel needs to be dry (0 Volts) to connect device and signal from access control panel to proper terminals.
- Once the devices are wired and door operator is programmed for basic setup, access the settings and change the CONTROL MODE parameter from 1 (Regular) to 3 (Access Control).
- Test to ensure proper functioning.
  Once the door is closed the display will show “DOOR CLOSED [Access Denied].”



6.4. Programing

Install the operator based on the following instructions and use the required tools.

- Ensure the door is fully closed and no obstacles are in the doorway.
- Turn Power ON. Screen will display 2 options as in image below.

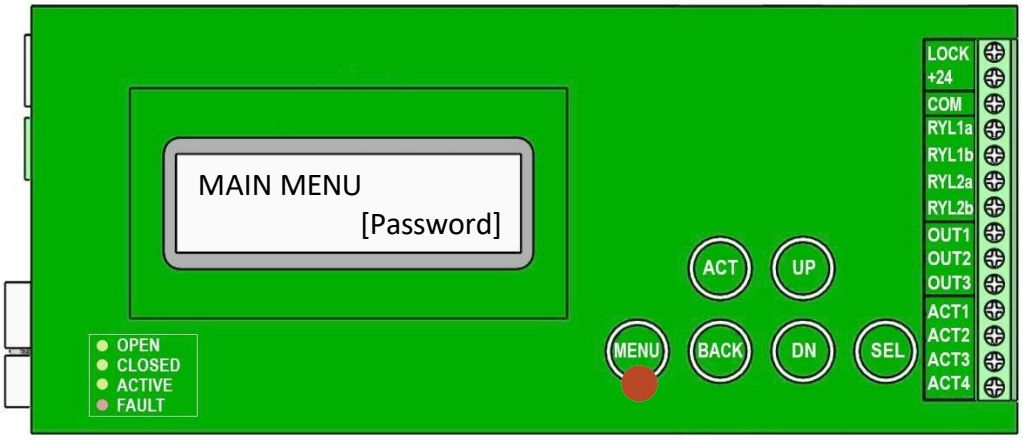


- Press ACT. Door will run 2 cycles. First cycle the operator learns door position. Second cycle the operator learns door speeds.
- Once proper learn is complete, screen will display DOOR CLOSED.

6.5. Password Menu – Set Password

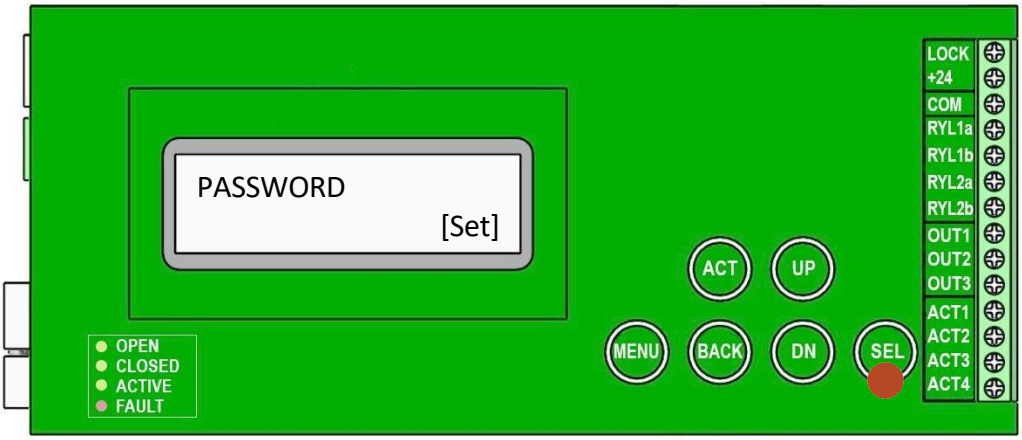
WARNING: Use this function with caution. Recovering from a lost password will require a direct service call to Sigma Automatics.

- Ensure the door is fully closed – the door operator control display should read “DOOR CLOSED.”
- Press the **MENU** button on the control board to enter the Main Menu.

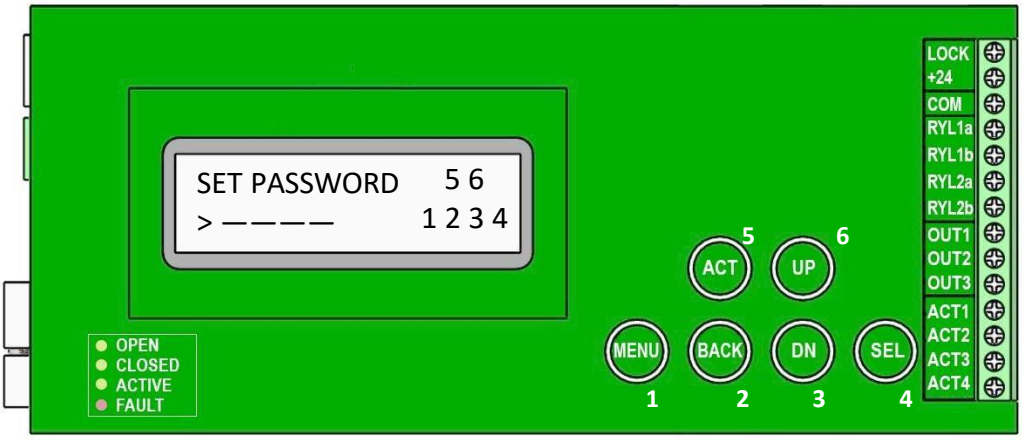


- Using the **UP** and **DN** buttons, scroll up or down until “[Password]” is displayed.

- Press the **SEL** button to enter the PASSWORD menu.



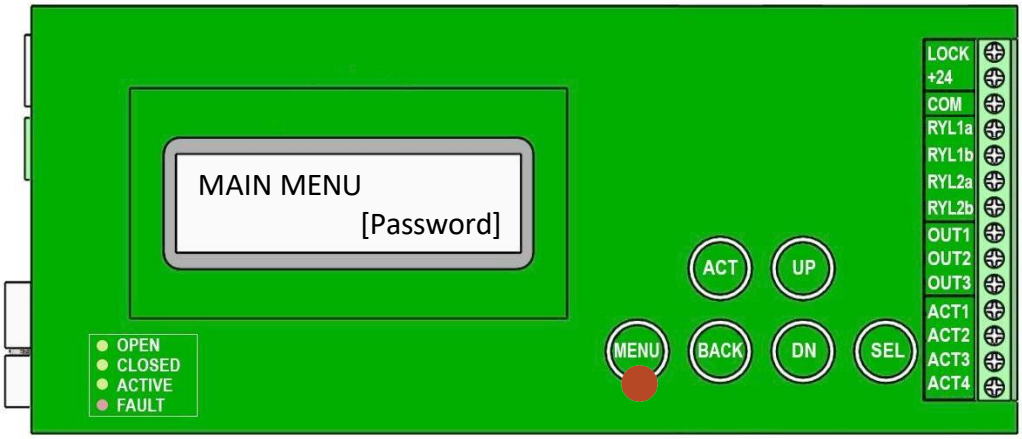
- Using the **UP** and **DN** buttons, scroll up or down until "[Set]" is displayed.
- Press the **SEL** button to begin setting your PASSWORD.



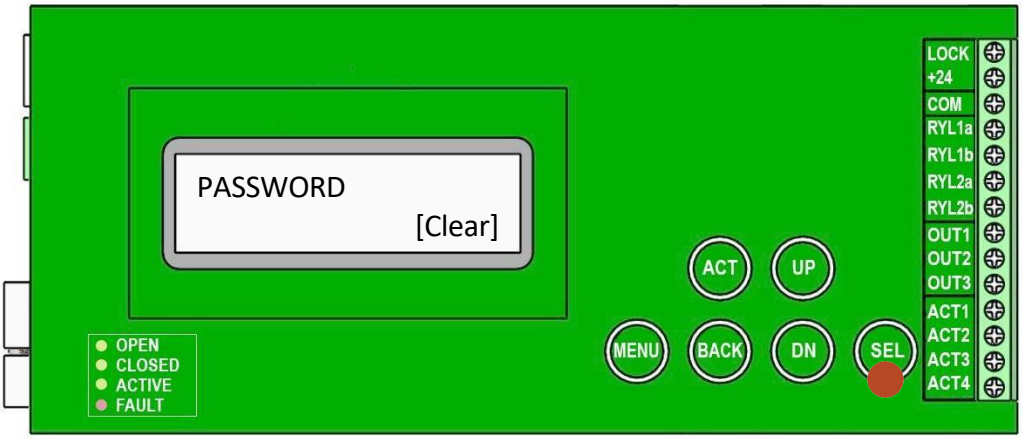
- A password must be 4 characters long, each character a number from 1 to 6.
  Use the 6 buttons to the right of the screen to make your selections.
- Screen will clear when last digit is entered.
- Press the **SEL** button to confirm. Password is now set. Users will be prompted to enter the password in order to access the Main Menu and confirm changes.
- Display will clear momentarily and display will return to the Password setting menu.
- Press **BACK** to return to the Main Menu.

6.6. Password Menu – Clear Password

- Ensure the door is fully closed – the door operator control display should read “DOOR CLOSED.”
- Press the **MENU** button on the control board to enter the Main Menu. User will be prompted to enter the password.



- Using the **UP** and **DN** buttons, scroll up or down until “[Password]” is displayed.
- Press the **SEL** button to enter the PASSWORD menu. User will be prompted to enter the password.

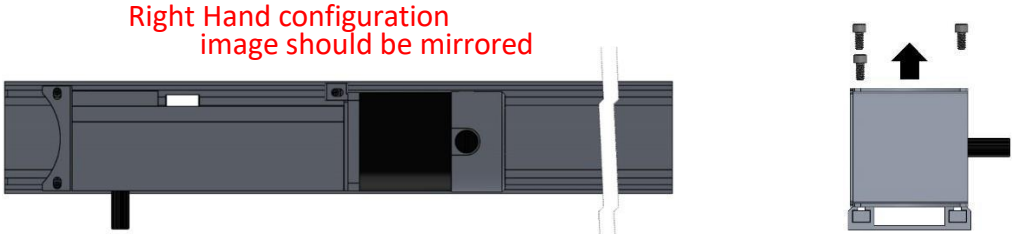


- Using the **UP** and **DN** buttons, scroll up or down until “[Clear]” is displayed.
- Press the **SEL** button to clear the PASSWORD. User will be prompted to enter the password.
- Display will clear momentarily and display will return to the Password setting menu.
- Press **BACK** to return to the Main Menu.

7. Motor Hand Swap

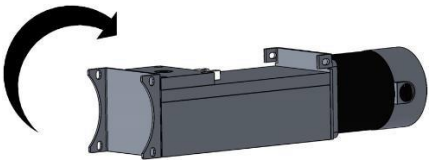
Step 1: Take out the 3 mounting screws.

Right Hand configuration
image should be mirrored

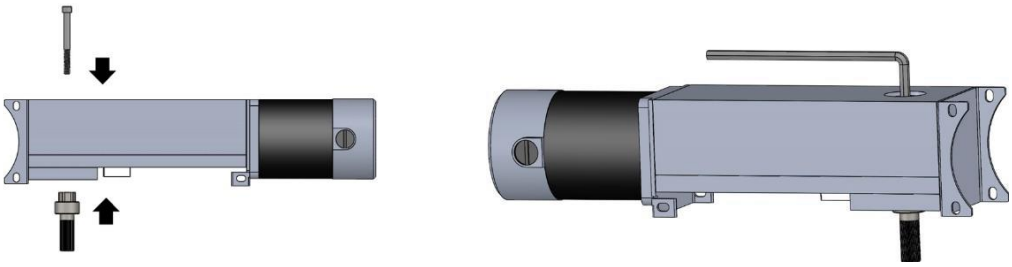


Step 2: Take out the shaft mounting screw on top of the gearbox and disengage the shaft from the hub

Step 3: Flip the gearbox 180°

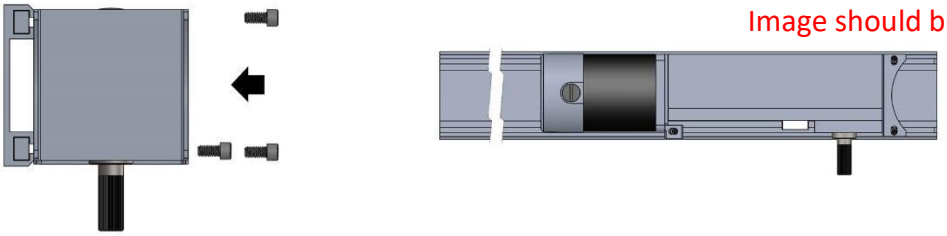


Step 4: Screw the shaft on the gearbox from the bottom



Step 5: Place the gearbox back on the track and screw the 3 mounting screws on

Left hand configuration
Image should be mirrored

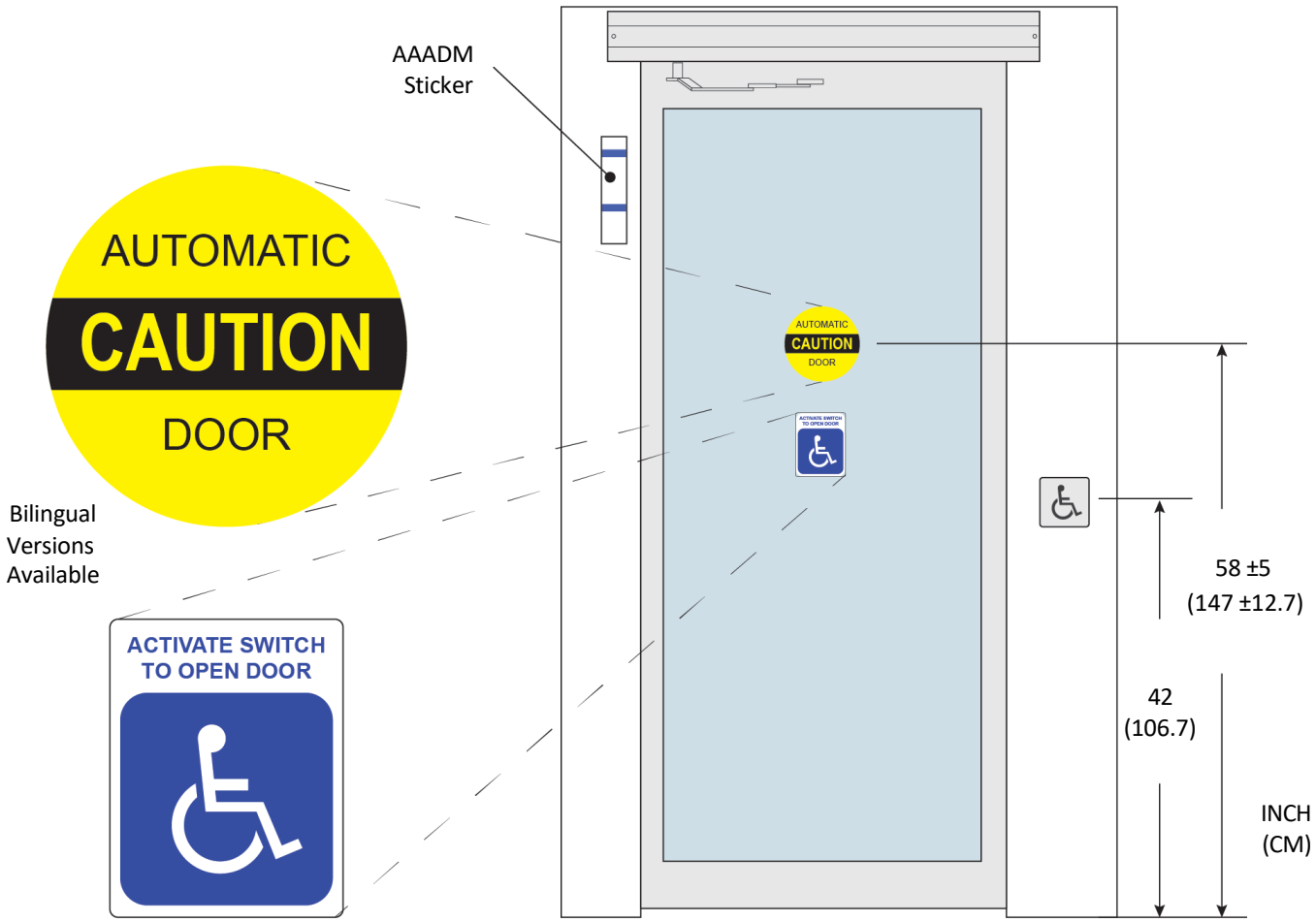


8. Troubleshooting

Problem	Possible Solutions
Door does not open	• Verify power connection. • Verify ON/OFF switch is set to ON. • Verify the connection of activation devices and/or sensors. • Verify the display message.
Display does not indicate door closed	• Verify position value 100. • Verify sensor wire.
Display does not indicate door open	• Verify position value 100. • Verify sensor wire.
Door stops opening halfway	• Adjust overload setting.
Door does not close	• Verify if door is rubbing on floor and/or ceilings. • Verify the magnets and sensor wire. • Verify if the gearbox has tension.
Electric strike does not release	• Verify wiring. • Verify hardware. • Verify strike connection. • Verify strike voltage.
Touch buttons do not respond or are slow to respond	• Clean fingers or wipe the touch buttons. The control board uses resistive buttons, a dirty surface can interfere with its proper functioning.

9. Safety Signage and Access Control Placement

- Always apply supplied stickers on both sides of the door at locations stipulated by local codes.
- See ANSI standard A156.19 requirements for additional safety decal information
- Safety signage included with SA300 are double-sided labels intended for application on clear glass. A second set of labels will be required if labels are applied on an opaque or non-transparent surface.
- AAADM (American Association of Automatic Door Manufacturers) Safety Checklist Sticker is single sided and must be applied to side of the door frame where the operator is installed.



10. Appendix 1: Other Device Configurations

10.1. bSA320 Surface Mounted Paired Operator (Auto/Auto – Double Auto)

Parts list for a **surface mounted header,** paired operators and regular arm kits.

No.	Description	Part Number
1	Operator cover and screws	SA-PH-001
2	Operator motor and gearbox x2	SA-PM01 (motor) SA-PG01 (gearbox)
3	Operator control board and transformer x2	SA-PC01
4	Push Arm Kit x2	SA-PR01
5	Pull Arm Kit x2	SA-PR02
6	Operator magnetic door sensors	SA-PG-011
7	L16 Connector	SA-2716

10.2. SA350 Surface Mounted Paired Operator (Auto/Manual)

Parts list for a **surface mounted header**, single operator paired with manual door closer and regular arm kits:

No.	Description	Part Number
1	Operator cover and screws	SA-PH-001
2	Operator motor and gearbox	SA-PM01 (motor) SA-PG01 (gearbox)
3	Operator control board and transformer	SA-PC01
4	Push Arm Kit x2	SA-PR01
5	Pull Arm Kit x2	SA-PR02
6	Operator magnetic door sensors	SA-PG-011
7	Mounting plate for manual door closer*	SA-PG11
8	L16 Connector	SA-2716

(*) Manual door closer not included, sold separately. DOREX 441HD or equivalent recommended.

11. Appendix 2: Safety Check List

This checklist is provided to help ensure pedestrian safety and the proper operation of the door operator. These safety checks are repeated on the AAADM sticker applied to the door frame.

- Verify that the power switch on the device header is switched to ON and that the device is properly powered.
- Activate the door operator
    - Door should open at a slow and even pace (4 or more seconds) and stop without impact.
    - Door must remain fully open for a minimum of 5 seconds before beginning to close.
    - Door should close at a slow and even pace (4 or more seconds) and stop without impact.
- Inspect the floor area. It should be clean with no loose objects or uneven surfaces that may cause a pedestrian to trip or fall. Keep traffic path clear.
- Inspect the doors over all condition. Safety signage should be present and visible and hardware should be in good condition.
- Inspect the door operator for damage, excessive wear or weathering. Header cover and arms should be properly secured.
- Have the door operator inspected by an AAADM certified inspector on a yearly basis.
- Follow any and all maintenance requirements for all safety sensors, activation buttons, card readers and keypads.

DO NOT USE DOOR OPERATOR if it fails any of the safety checks listed above or if it malfunctions in any way. Call a qualified automatic door service company to have the operator repaired or serviced.