# Auto ⊡ EntryControl<sup>™</sup> Low Energy Swing Door Automatic Operator

# INSTALLATION GUIDE For Surface Mounted Applications



Visit: sdcsecurity.com/autoentry For Installation video



# **IMPORTANT NOTE**

#### READ THIS SECTION BEFORE PROCEEDING WITH INSTALLATION

Security Door Controls (hereafter referred to as "SDC") recommends that its automated pedestrian door products be installed by a trained automatic door technician and that the resulting performance of the product be in full compliance with the most current version of the American National Standards Institute (ANSI) document A156.19 as well as any applicable building codes and/or fire codes. SDC further recommends that a full inspection of the operating system be performed in accordance with the guidelines of the American Association of Automatic Door Manufacturers (AAADM). SDC recommends this documented inspection be performed upon completion of the installation, as well as following the completion of every service call thereafter. If service is not performed within one year of the previous service action, a routine AAADM inspection should be performed and documented. SDC does NOT recommend service on any of their automated pedestrian door products by any individual who is not certified as an AAADM inspector.

Following the installation or service of any SDC automated pedestrian door product, if it is deemed unsafe, or is operating in an unsatisfactory manner according to national performance standards or recommended performance guidelines as defined by SDC, repairs should be made immediately. If an immediate repair cannot be made, the product should be disabled and appropriate measures should be taken to secure the door in a safe position or to enable the door to safely be used manually. During this situation, every effort should be made to notify the owner (or person responsible) of the condition and to advise on corrective actions that must be taken to return the product to safe operation.

#### LOW ENERGY APPLICATION NOTE

When using the *Auto EntryControl*<sup>™</sup> Series, SDC recommends the use of a door-mounted presence sensor, like the *SDC Auto-IR*<sup>™</sup>, on the approach side of the door to be used as a secondary activation device. This type of sensor can be installed at time of installation or can also be retrofitted. This device serves to re-activate the door to the open position should a person enter into the closing path at the approach side of the door as it is closing. Once the door is fully closed, a "knowing act" device must then be used for initial activation. SDC considers this device to be essential in reducing the possibility of doors "timing out" and closing before all pedestrians have passed though the doorway.





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## **PRODUCT DESCRIPTION & SPECIFICATIONS**

The SDC Auto EntryContro/<sup>™</sup> Low Energy Swing Door Operator provides safe and reliable point of entry door control featuring a state-of-the-art microprocessor-based controller with electro-mechanical drives. The unit is self-tuning and self-learning while offering non-handed operation, full mechanical stops, and a variety of interface options for sensors, push-plates, fire alarms, and electrified locks. A versatile, slim-line design makes it suitable for surface mounted (Push/Pull) applications.

Power Supply	115 VAC (+6%, -10%) 60Hz		
Power Consumption	100W		
Current Consumption	1A		
Motor	24 VDC Permanent Magnet With Belt Driven Encoder		
	- Length (from mounting wall): 4-7/8"		
Installed Product Dimensions	- Height: 4-1/2"		
	- Width: 39"/45"/51" for 36"/42"/48" opening, respectively		
Fused Protection	3.5A Fuse ("F1" located on I/O Board)		
Drive Unit Assembly Weight	22 lbs. Per Operator Drive Assembly		
Ambient Operating Temperature	-4° to 131° F		
Ingress Protection	IP23 (protection from spray water up to 60° from vertical)		
	Push Arm Pull Arm		
Maximum Door Weight	- 36" Door: 438 lbs. 342 lbs.		
	- 42" Door: 328 lbs. 256 lbs.		
24 VDC Accessories/Look Bower Supply	- 48" Door: 254 lbs. 198 lbs.		
24 VDC Accessories/Lock Power Supply	24 VDC / TA Max.		
Adjustable Speeds & Timers	- Auto Opening Speed		
Potentiometers	- Hold Open Time		
	- Closing Speed w/Power Off		
	- Automtic		
External Selector Switch Functions	- Hold Open		
	- Manual (Off/Night)		
	- 24 VDC Power Supply		
Standard Control Outputs	- Lock Relay		
	- Door Status (Fully Open and Fully Closed)		
	- Malfunction Alarm Signal		
	- Interior Activation		
Standard Control Inputs	- Exterior Activation		
	- Emergency Shuldown		
	- Secondary Activation (Push side door mounted		
	presence sensor)		
	- Stop Safety Device Input (Pull side presence sensor)		



# **STEP 1: HOUSING BASEPLATE INSTALLATION**

Remove the Front Cover by removing the 4 hex screws on the top & bottom of the operator.



The Drive Unit Assembly is factory mounted to the slotted Housing Baseplate using **four adjustable** Hex Bolts and **one fixed** Hex Bolt. The bolts attach to nuts that slide in the two slotted tracks of the back plate. The Drive Unit Assembly should be removed before installing the Housing Baseplate.

NOTE: The Drive Unit Assembly will be shipped from the factory in the **Pull** or **Push** orientation depending on purchased model. Take note of the orientation before removing the Drive Unit Assembly (i.e. is the Motor towards the center of the housing, or the edge of the housing). The Drive Unit Assembly will need to be re-installed in the same orientation. Drive Unit Assembly

#### **Push Orientation**



#### **Pull Orientation**



Main Power Connector -



Before removing any Hex Bolts, disconnect the **On-Auto-Off Connector** from the I/O Board & the **Main Power Connector**.



Loosen the 4 side Hex Bolts so that they can slide away from the Drive Unit Assembly (do not remove them completely).



There is a fifth fixed Hex Bolt in the center of the Drive Unit Assembly that does **not** need to be loosened. To free the Drive Unit Assembly, slide it towards the center of the Housing Baseplate. Carefully lift the Drive Unit Assembly off of the Housing Baseplate. Note the position of the slotted hole on the back of the drive unit plate, as you will need to re-align this hole with the fifth Hex Bolt when re-installing the drive unit in Step 2.



To route low voltage wires out of the device, a 7/8" diameter access hole may be drilled in the Housing Baseplate anywhere inside black hatched areas shown below. The hole may also be drilled in the top or bottom of the Housing Cover if desired (do not drill in the Drive Unit Installation Area). Move any loose wires out of the way before drilling. A 7/8" grommet is supplied to protect cables routing out of the device.







Interior

Left Hand Right Hand

Exterior



supplied).



supplied).

Note: A Filler Plate may be required to mount the Housing Baseplate flush against the wall (not supplied by SDC).





The Housing Baseplate should mount with the Spindle Cutouts closer to the hinge side of door.



For Single Door Applications, the Housing Baseplate should extend past the door opening on the hinge side by 1-1/2". This will position the Arm Spindle in the correct location in relation to the hinge.

For Double Door Applications, the Housing Baseplate should be centered on the door opening.

(Note: Installation for Single Door Pull Arm Application shown below)



Mount the Housing Baseplate to the top door frame using supplied Mounting Screws or other appropriate hardware. Mounting holes are provided for convenience. Additional or alternate mounting holes may be used given the existing frame conditions.

——— Mounting Holes	

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# STEP 2: RE-MOUNT THE DRIVE UNIT ASSEMBLY

The orientation of the Drive Unit Assembly will depend on the door handing & application.



Before reinstalling the Drive Unit Assembly, take notice of the location of the 4 loose mounting Hex Bolts in the Housing Baseplate, making sure they are not in the Drive Unit installation area. Place the Drive Unit Assembly in the slotted tracks, making sure the fifth center Hex Bolt is in the Drive Unit Baseplate. Slide the Drive Unit Assembly until the spindle hole is centered on the Housing cutouts. Tighten the center Hex Bolt.

Slide the 4 other Hex Bolts and their washers over the Drive Unit Assembly and tighten loosely. Make sure the Spindle Hole on the Drive Unit Assembly lines up with the center of the Spindle Cutouts on the Housing Baseplate. Secure the Drive Unit Assembly by tightening the 4 outer Hex Bolts.

Reconnect the On-Auto-Off Connector & the Main Power Connector to the Drive Unit Assembly.





# STEP 3A: INSTALL THE ARM ASSEMBLY – PUSH APPLICATION

For Pull Applications with less than 1/2" Reveal, refer to Step 3B (pages 12-13).

The Push Arm is meant for use on Out-Swing doors.

Assemble the Push Arm as shown below. Push Arm Application models are supplied with a 20mm Spindle & a 12" Arm Connector Sleeve. Different length Spindles are sold separately. For Hinge Hung Doors with Reveals greater than 8" or Center Pivoted Doors with Reveals greater than 5", a separately purchased Push Arm Extension is required (refer to diagrams on page 11).



Note: For Fire Rated Doors, use supplied Sex Bolts and Pan Head Screws to mount the Arm to the Door. Refer to Appendix C (page 27) for additional Fire Door installation procedures.



0

Reveal-

–Door Swing-



The length of Dimension X will vary depending on the "Reveal" distance, or the distance between the back of the Housing Baseplate and the closest face of the door (refer to diagram and chart below).

Installation dimensions are different for Hinge Hung Doors and Center Pivoted Doors:

- For Hinge Hung Doors, the centerline of the Door Shoe should be about 13-1/2" from the hinge-side edge of the door.
- For Center Pivoted Doors, the centerline of the Door Shoe should be about 16" from the hinge-side edge of the door.

With the door closed, the Door Arm should be at *approximately* 90° to the face of the door both horizontally and vertically.



or [Reveal Dimension + 16"] for Center Pivot doors.

IMPORTANT NOTE: After full installation, manually hold the door open and move the Mechanical Closed Door Stop to the fully closed position (see page 14). This will provide a preload and ensure the device is programmed to rotate until stopping on the frame door stop.



# STEP 3B: INSTALL THE ARM ASSEMBLY – PULL APPLICATION

For Push Applications, refer to Step 3A (pages 10-11).

The Pull Arm is meant for use on In-Swing doors with a 0"-1/2" Reveal. It is crucial that the door-side face of the Pull Arm Track be flush with the face of the door frame. NOTE: For Reveals greater than 0", the Pull Arm Track needs to be shimmed from the door to be flush with the door frame.

Assemble the Pull Arm as shown below. Pull Arm Application models are supplied with a 20mm Spindle. Different length Spindles are supplied separately (Note: the Spindle **should not** hang below the top of the Door).





Note: For Fire Rated Doors, use supplied Sex Bolts and Pan Head Screws to mount the Track to the Door. Refer to Appendix C (page 27) for additional Fire Door installation procedures.





Installation dimensions are different for Hinge Hung Doors and Center Pivoted Doors:

- For Hinge Hung Doors, the edge of the Track should be 3-3/4" from the door opening on the hinge side.
- For Center Pivoted Doors, the edge of the Track should be 4-1/4" from the door opening on the hinge side.



(Spindle Length Note: The bottom of the Spindle **should not** hang below the top face of door)

Install the Pull Arm Assembly to the Operator before installing the Track to the Door. When installing the Pull Arm Assembly on the Operator, make sure the arm position is as close to the frame as possible. It may be necessary to slightly rotate the Pull Arm Assembly away from the door to fit the Sliding Block in the Track.

IMPORTANT NOTE: After full installation, manually hold the door open and move the Mechanical Closed Door Stop to the fully closed position (see page 14). This will provide a preload and ensure the device is programmed to rotate until stopping on the frame door stop.





# **STEP 4: ADJUSTING THE MECHANICAL STOPS**



The Mechanical Stops will be located on the top or bottom of the mounted Operator depending on the handing of the door.

The **Open Door Stop** determines the furthest the door can open with both automatic and manual operation. When the door opens, the Door Position Screw will rotate until it hits the Open Door Stop. The main purpose of the Open Door Stop is to prevent the door from opening too far during manual use and damaging objects behind it.

The **Closed Door Stop** determines the furthest the door can close. When the door closes, the Door Position Screw will rotate until it hits the Closed Door Stop (or when the door hits a frame-mounted fixed door stop).

It is recommended that the Door Stops be adjusted prior to powering on the Operator for the first time. Both Door Stops can be adjusted by loosening the Hex Screw just enough that the Stop can slide along its slot. **Do not remove the Hex Screw from the Stop.** 

- When adjusting the Open Door Stop, manually prop the door open at the furthest desired open position. Slide the Open Door Stop until it touches the Door Position Screw, then tighten the Hex Screw.
- When adjusting the Closed Door Stop, manually prop the door at the desired closed position. Slide the Closed Door Stop until it touches the Door Position Screw, then tighten the Hex Screw

An optional programmable "Soft Stop" can be added after initial Automatic Operation Setup (refer to Step 7 on page 18 for Soft Stop setup instructions).

IMPORTANT NOTE: After full installation, move the Mechanical Closed Door Stop to the fully closed position (towards the Housing Baseplate). This will add a preload and ensure the device is programmed to rotate until stopping on the frame door stop.





# **STEP 5: 120 VOLT AC ELECTRICAL CONNECTION**

# WARNING:

# Ensure all incoming electrical power is shut off before proceeding with any high voltage wiring. Failure to do so may result in damage to equipment or personal harm.

Connect the main power to the Black, White, and Green wires using the two supplied wire nuts as shown below.

- Connect positive to the Black wire.
  - Main power supply requirements: 120 VAC, 15A, Single Phase, 60Hz circuit.
- Connect both White wires to incoming neutral.
- Use Grounding Lug to connect to ground.







## **STEP 6: POWER ON & TUNE-IN**

- Ensure the 120 VAC is connected and secure.
- Ensure Off-On-Hold Switch is in the middle (0) position.
- Apply power using the Power Switch and observe the LEDs on both boards:
  - On the I/O Board, LEDs DL1, DL4, DL5, & DL6 must be ON solid green upon power up.
  - On the Logic Board, LED DL3 should be flashing blue.
- The I/O Board will not accept an activation until approx. 8 seconds after powering on AND until an initial setup is completed.
- During Initial setup the Logic Board should have all dip switches in the OFF position for Push Applications. For Pull Applications DIP Switch #2 should be in the ON position (see page 20 for Dip Switch functions).





#### I/O Board



DL2

DL3

Logic Board

DIP Switch #2

#### Perform an initial setup at the I/O board as follows:

- Ensure main power is on.
- On the **I/O Board**, depress the **SW1** button for approximately 5 seconds. When the red LED (DL2) on the Logic Board begins flashing rapidly, release the button.
- Door will slowly open, recycle partially, close and then re-open a second time.
- Do not interrupt the process and do not move the door manually during this time.
- If the door does not open and the red LED (DL2) is flashing slowly, check to make sure all connections to both Control Boards are secure. Correct as necessary or contact support.
- Once the setup process is complete, the door will close and the red LED will go out.
- Setup is complete.

IMPORTANT NOTE: If the operator stroke is interrupted, the "Soft Stop" function will be activated (see page 17 for proper Soft Stop setup). The door will then only automatically open to that position. A new setup will need to be performed to re-learn the full operator stroke.

- Upon completion of the Setup, momentarily jumper terminals 7 & 11 on the **I/O Board** to activate opening the door. Ensure all performance is acceptable.
- A re-learn is not required following a main power recovery.





# SETTING UP THE SOFT STOP

A "Soft Stop" is sometimes preferred depending upon the application, particularly if heavy manual use is anticipated. The Soft Stop is simply a method of programming the door for the open position by means of a temporary stop method, such as holding your foot at the desired location during programming. To use the Soft Stop method, perform the following:

- Press the automatic calibration button (SW1 on the I/O Board shown above), to allow the start of the setup process detailed in Step 6.
- During the first door opening cycle of Setup, position your foot on the ground at the desired full open door position. Allow the door to hit your foot. Remove your foot from that position after the door moves away from your foot.
- Allow the setup to complete.
- The door will open automatically thereafter to that position. When the door is pushed further than the soft stop location it will return to the programmed point automatically.
- If there is anything behind the open door that the door could collide into from manual openings, such as a glass wall, make sure to adjust the Open Door Mechanical Stop to avoid collisions. **Do not rely solely on the Soft Stop to avoid collisions.**



As a general rule for I/O board LED observation:

- For normally open inputs, the respective LED will illuminate upon triggering the input.
- For normally closed inputs, the respective LED will extinguish upon triggering the input.

LED Location	Input #	ON	OFF
DL1		Accessories power is present	No Accessories power
DL2	10	Internal Opening Command active	Internal Opening Command inactive
DL3	11	External Opening Command active	External Opening Command inactive
DL4	12	Emergency Command inactive	Emergency command active
DL5	13	Secondary Activation inactive	Secondary Activation command active
DL6	14	Stop Command inactive	Stop Command active
DL7	Inactive	Inactive	Inactive
DL8	16	Alarm command is <b>active</b>	Fire Alarm Command inactive
DL9	17	Reserved	Reserved





#### I/O BOARD WIRING CONNECTIONS

	Input #	Function	Description
	1	Electric Lock Relay	Common.
J5	2	Electric Lock Relay	N.O. Dry contact – Contact closes upon activation. May be used for fail-secure locks by routing 1 leg of power through the relay common. Relay is triggered by activation inputs 10, 11, or 15. Relay remains energized until door is fully open.
ıl Strip	3	Electric Lock Relay	N.C. Dry Contact - Contact opens upon activation. May be used for fail-safe locks by routing 1 leg of power through the relay common. Relay is triggered by activation inputs 10, 11, or 15. Relay remains energized until door is fully open.
ermina	4	Door Status – Closed	N.C. Dry Contact - Contact opens upon activation. Contact remains open until door is fully closed again.
Ĕ	5	Door Status – Common	Common contact for Door Status inputs 4 & 6.
	6	Door Status – Open	N.O. Dry Contact – Contact closes when door is fully open. The contact opens as soon as the door starts to close.

	Input #	Function	Description
	7	GND	Common Ground
	8	GND	Common Ground
	9	+24VDC	1A Max. Current
	10	Internal Activation	Requires N.O. Contact between input 10 & COM.
J4	11	External Activation	Requires N.O. Contact between input 11 & COM.
Strip	12	Emergency Closing	Requires N.C. contact between 12 & COM. Upon open contact, door closes and overrides all other inputs. Remains jumpered if input is not used.
nal	13	Secondary Activation	Requires N.C. contact between 13 & COM. Disabled in full closed position. Used for AUTO-IR door-mounted presence sensor.
ermi	14	Stall Safety	Requires N.C. contact between 14 & COM. Upon open contact, during opening, door stops, then resumes at reduced speed when input is released.
н	15	Key Input	N.O. connection.Remains capable to activate when dip switch 3 is ON AND Open- Auto-Off switch is OFF.
	16	Alarm Input	N.O. contact, when closed causes door closing. All inputs inhibited during closed contact
	17	Not Used	Requires N.O. contact
	18	GND	Common Ground
	19	GND	Common Ground

	Input #	Function	Description
	20	Aux Relay	Not used
J6	21	Aux Relay	Not used
trip	22	Aux Relay	Not used
al Si	23	Solid State Output #1	Configurable using AUTO-PROG handheld programmer
min'	24	Solid State Output #2	Configurable using AUTO-PROG handheld programmer
Ter	25	+24VDC	1A max. (Total for terminals 9 & 25)
	26	GND	Common Ground

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LED Location	LED Color	Description	
DL1	DL1         Green         A USB connection is present		
DL2	Red	Solid Red indicates an error on initialization Slow flashing Red indicates initialization required or error Fast flashing Red indicates setup in progress	
DL3	Blue	Continuously Slow Flashes when the device is operating normally	
DL4A mberA change has been made to the control such as speed, time adjustme dip switch. NOTE: Once a change is made, the SW1 button next to D be pressed momentarily to clear the yellow light and accept the change		A change has been made to the control such as speed, time adjustment, and/or dip switch. NOTE: Once a change is made, the SW1 button next to DL4 must be pressed momentarily to clear the yellow light and accept the changes.	

#### ADJUSTING TIMERS ON THE LOGIC BOARD

Potentiometer	Adjustment	Description	
TR1	<b>Opening Speed</b>	Increase speed by turning Clockwise = decreases open cycle time	
TR2	Closing Speed	Increase speed by turning Clockwise = decreases closing cycle time	
TR3	Hold Open Time	Increase hold open time by turning Clockwise	
TR4	Closing Speed (No Power)	Only enabled when main power is off and when jumper J6 is moved to ADJ. (Enabled by default.)	
SW1	Program Change Confirmation	Extinguishes amber light (DL4) when lit	
J2	USB Port	Used for configuration uploads	

#### **HELPFUL NOTES:**

- The Amber light (DL4) will illuminate when changes are made to blue potentiometers or dip switches. To confirm & accept changes, momentarily press SW1 next to the amber light, until the amber light goes out.
- Speed and time adjustment changes will not take effect until the door closes fully after the adjustment has been made
- Hold Open time affects the delay following activation from input 10, 11, and 13.
- When Dip Switch 5 is ON, potentiometers TR1, TR2, and TR3 are disabled and will have no effect.



# **DIP SWITCHES ON THE LOGIC BOARD**



The Logic Board has a block of 10 dip switches (SW2). When the switch is flipped down towards the printed number, it is in the ON position.

SW2	Description	ON	OFF
1	Closed Door Force	Additional force applied while door is in closed position. Be sure to maintain ANSI compliance if using on low energy application. Cannot exceed 30 Ibf to get door moving from jamb.	Disabled (Default)
2	Pull / Push Arm	Use for Slide Arm Applications. Operator stroke at 90 degrees or less. Visible change in performance may not always be noticeable.	Push Arm Application. Operator stroke 90 or greater. (Default)
3	Night Function (Exit Only)	Allows activation at input 10 when On- Off Switch is in OFF (night function) position.	Disabled. The On/Off Switch, when OFF, required manual operation of the door. (Default)
4	Push and Go	Enabled.	Disabled (Default)
5	Full Power / Low Energy	Low Energy performance enabled. 5 seconds to open, 7 seconds hold open, 5 seconds to close. Speed & time potentiometers are disabled. Settings are fixed.	Disabled. Control can be adjusted for full power or low energy operation via potentiometers. (Default)
6	Not used for Low Energy Applications		Set to OFF for Low Energy Applications. Required when using Stall Safety input (14).
7	Inhibit at 30 degrees before door fully open. Only used if input 14 is used.	Input 14 is disabled at 30 degrees prior to full open door position.	Stall function remains un-inhibited for full door stroke. (Default)
8	Power Close	Additional closing force applied for final 10 degrees of closing.	Disabled (Default)
9	Assisted Manual Closing***	Enabled assisted closing following a manual opening.	Disabled assisted closing following a manual opening.
10	FACTORY USE ONLY, LEAVE IN OFF POSITION		

\*\*\*Note: SDC recommends the use of a door-mounted secondary activation device when dip switch 9 is ON-Enabled.





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# TROUBLESHOOTING

Problem	Solution	
Door will not open when activation button is pressed.	<ul> <li>Check Power On-Off switch for proper position</li> <li>Check 3-position Open-AUTO-Off switch for proper position ('0' position for AUTO mode</li> <li>Check LED status for DL4, 5 &amp; 6 on the I/O Board. If any of these LEDs are OFF, the door will not open. They require a normally closed circuit.</li> <li>Launch a new setup.</li> <li>Door has traveled closed past the 0 degree position.</li> </ul>	
Operator will not start the initialization (setup) cycle.	<ul> <li>Ensure that SW1 on the I/O board is being pressed (next to terminal 26)</li> <li>Check LED status for DL4, 5 &amp; 6 on the I/O Board. If any of these LEDs are OFF, the door will not initialize. They require a normally closed circuit.</li> <li>Check 3-position Open-AUTO-Off switch for proper position ('0' position for AUTO mode</li> <li>If DL2 turns solid red or slowly flashes after initialization attempt, call factory support.</li> </ul>	
Operator will not accept speed or dip switch changes.	<ul> <li>Ensure the Amber light on the Logic board has been cleared by momentarily pressing the SW1 button next to the Amber light.</li> </ul>	
Door will not close.	<ul> <li>Check status of LEDs DL2, 3, and 7 on the I/O Board.</li> <li>If any of these LEDs are ON, input is shorted. Check the associated input.</li> <li>Check 3-position Open-AUTO-Off switch for proper position ('0' position for AUTO mode</li> </ul>	
Door will not reach its full open or closed position.	<ul> <li>Check the mechanical stops on the operator for proper adjustment (see page 14).</li> </ul>	
Slow flashing red LED (DL2) on the Logic Board	<ul> <li>Indicates a possible fault in the control. <ul> <li>Check LED status for the other inputs. This will identify if any inputs are currently active.</li> </ul> </li> <li>Indicates a potential faulty setup. <ul> <li>Loose or incorrect motor connection</li> <li>Possible loose chain tensioner – refer to Appendix A for chain tensioner adjustment procedures.</li> <li>Launch a new setup. If problem repeats and there are no other discrepancies noted, replace the operator/control sub-assembly.</li> </ul> </li> </ul>	
Door closes too fast at last 5 to 10 degrees of closing.	<ul> <li>Ensure dip switch 8 on the Logic Board is OFF.</li> <li>Ensure there is no binding of the door as it is closing through the last few degrees of closing. If binding exists (from a tight bottom sweep, for example), correct the condition and then re-launch a new setup.</li> </ul>	



# **APPENDIX A – CHAIN TENSIONER ADJUSTMENT**

#### Signs of a loose Chain Tensioner

- Opening or Closing door movements may be erratic.
- The door may reverse open on its own during the closing cycle.
- When a setup is launched, the door may appear to open a few degrees at a time, especially as it is just beginning to open.
- Door may not open to its full open position it may stop short and then close, as it thinks there was an obstruction.
- Operator may make a loud clicking noise this is created by the chain jumping on the sprockets.
- There may be a "lag" between operator movement and door movement this is due to the chain "slack" being taken up before door movement.
- Door may go through a setup correctly but then will show a flashing red error LED upon completion of setup, or upon the first attempt to open.
- If chain is excessively loose, it is possible for the chain to become bound up on itself, thus preventing automatic door movement this will usually happen on the closing stroke.
- Abnormal noises may come from the operator as you use the door manually.
- Wear marks may be evident on the body of the operator where the tensioner bolt has slipped.



#### Adjusting the Chain Tensioner

- 1. Loosen the Chain Tensioner Adjustment Lock Nut (do not remove it).
- 2. Loosen the Chain Tensioner Block Hex Screw (do not remove it).
- 3. Insert 4mm Allen wrench into the Chain Tensioner Adjustment and apply tension counterclockwise to increase tension on the chain.
- 4. Re-tighten the Chain Tensioner Block Hex Screw while maintaining chain tension These bolts are generally torqued to around 3.7ft lbs.
- 6. Re-tighten the Chain Tensioner Adjustment Lock Nut.
- 7. When complete, double check the positions of the Mechanical Stops adjust if necessary.
- 8. Launch a new setup with the Control Boards to check for proper operation.





## **APPENDIX B – WIRING DIAGRAMS**

#### **Door Status Switch Output**

- **Terminal 4**: Door "Closed" status switch: Contact closes upon full door closed position.
- Terminal 5: Common for both Door Open & Closed status.
- **Terminal 6:** Door "Open" status switch: Contact is closed when door is full open.



#### Low Energy Application 1:

Push Plates with Approach Side Door-Mounted Sensor



- Non-Swing Side (approach) door-mounted sensor is wired into the secondary activation input (13) at the I/O board. It is a normally closed circuit. Remove factory jumper on terminal 13.
- Door-mounted sensor will cause re-activation when in detection during the closing cycle.
- Presence sensor activation input 13 is disabled at the full closed door position.
- Jumpers must be installed between terminal 8 and 12 & 14 if those inputs are not required for the application. If they are used for the application, they must be connected to a N.C. circuit.







#### Low Energy Application 3:

Wireless Push Plate with SDC Electric Latch Retraction Kit



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When wiring controls for use as a simultaneous pair, all required inputs need to be synchronized (connected) between Door #1 and Door #2 (shown as dotted lines in above diagram).

Example shown above: Push plates are connected to inputs 7, 10 and 11 at door #1 and are connected via sync line to Door #2.

When using pairs of controls each control board will have its own jumpers installed. If any of these inputs are required for the application, the jumper will be removed for the respective input – in place of the jumper.

For simultaneous pairs, each plug-in connector for the mode control is pre-wired in parallel to the On-Off-Hold switch located in the header end-cap. One switch will control both doors.

All control adjustments (speed & time delay) must be made independently at each control.

In most applications, all dip switches at each control must be set independently and must match between controls.





### **APPENDIX C – FIRE RATED DOOR APPLICATION**

Perform the installation according to the instructions outlined in this manual. Additionally, ensure the following conditions have been met:

- When attaching the door arm to the door, use steel binding posts (Sex Bolts) to attach. Do NOT use sheet metal screws into the face of the door. The door arm bracket must be through-bolted.
- When attaching the header to the hollow metal door frame, ensure there are 5 attaching screws spaced equally apart. They should be #12 sheet metal type screws.
- Fire rated power operated doors must close and latch during a fire alarm condition. Ensure proper procedures have been followed to allow a main power disconnect during a fire alarm condition. Always check to ensure compliance to local building codes.
- Upon job completion, always perform a functional test to ensure that the door(s) close and latch following a power loss.
- Other hardware may be required to complete the installation. For example, for pairs of doors, if an Astragal is installed, a mechanical door coordinator may be required to ensure a proper coordinated closing during a power loss.
- Only fire rated hardware shall be used on a fire rated door & frame assembly.
- Ensure the Auto EntryControl<sup>™</sup> operator that is being installed has the proper fire rated label applied to the header.

