Full Height & Waist High Turnstile Control Board Kit

(P/N 50-10-7821)

The full height & waist high turnstile control board kit is used to upgrade or replace the existing turnstile control board on all full height and waist high turnstiles.

Common Terms	
Term	**Definition**
Fail-Lock	The turnstile locks upon loss of power
Fail-Safe	The turnstile unlocks upon loss of power
Clockwise (CW)	Refers to the clockwise rotation of the turnstile—looking down at the shaft assembly
Counter-Clockwise (CCW)	Refers to the counter-clockwise rotation of the turnstile—looking down at the shaft assembly

Kit Contents	
Description	**Quantity**
10-7821 Turnstile Control Board	1
Dry Contact Label	1
6-32 x 1/4” Round Head Phillips Screw - Zinc	4
6-32 x 3/8” Standoff, F/F-Aluminum	4
Disposable Grounding Strap	1
Tools Required for Installation	
1/8” Allen Wrench (full height turnstiles only)	
1/4” Wrench (full height turnstiles only)	
3/8” Wrench (waist high turnstiles only)	
7/16” Wrench or 1/2” Wrench (waist high turnstiles only)	
9/64” Flat Head Screwdriver	
#2 Phillips Head Screwdriver (waist high turnstiles only)	

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Turnstile Control Board Models

All full height and waist high turnstiles come equipped with the 10-7800 or the newer 10-7821 turnstile control board.

10-7800 Turnstile Control Board

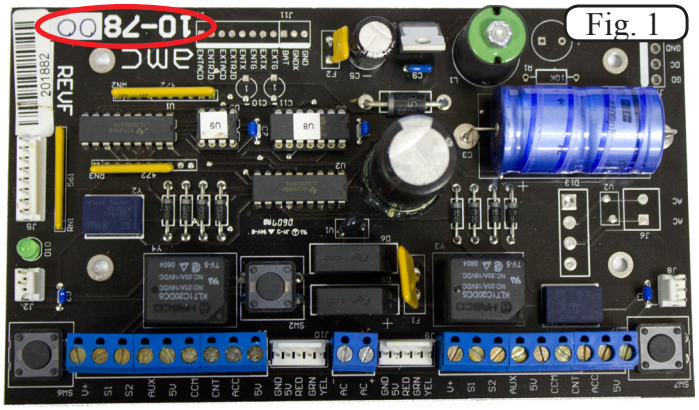

Fig. 1

10-7821 Turnstile Control Board

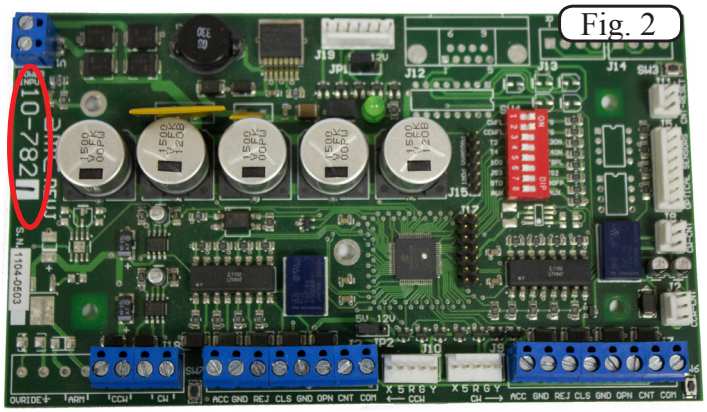

Fig. 2

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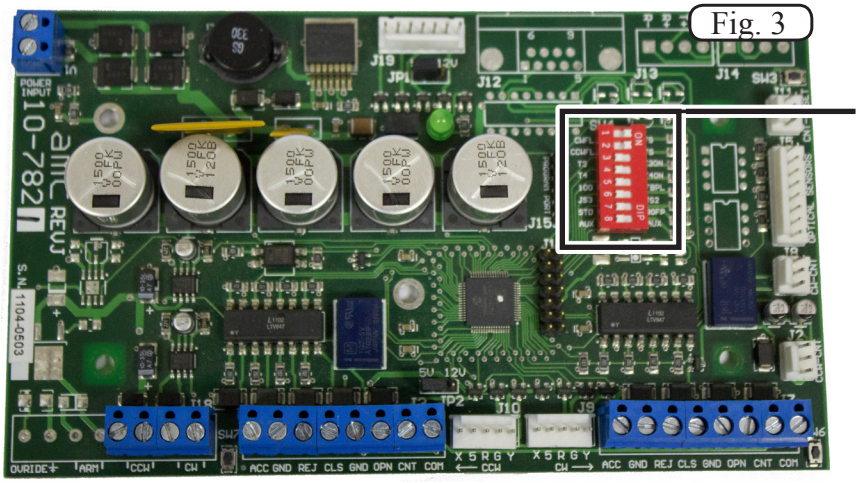
Full Height Turnstile Control Board Replacement

1) Using a 1/8” Allen wrench, remove the top cover of the turnstile.

2) Turn OFF the power at the junction box.

3) Locate the turnstile control board and **document the connection points** as well as the current position of the switches on DIP SW4 (if applicable) [Fig. 3]. Consider taking a picture.

Fig. 3



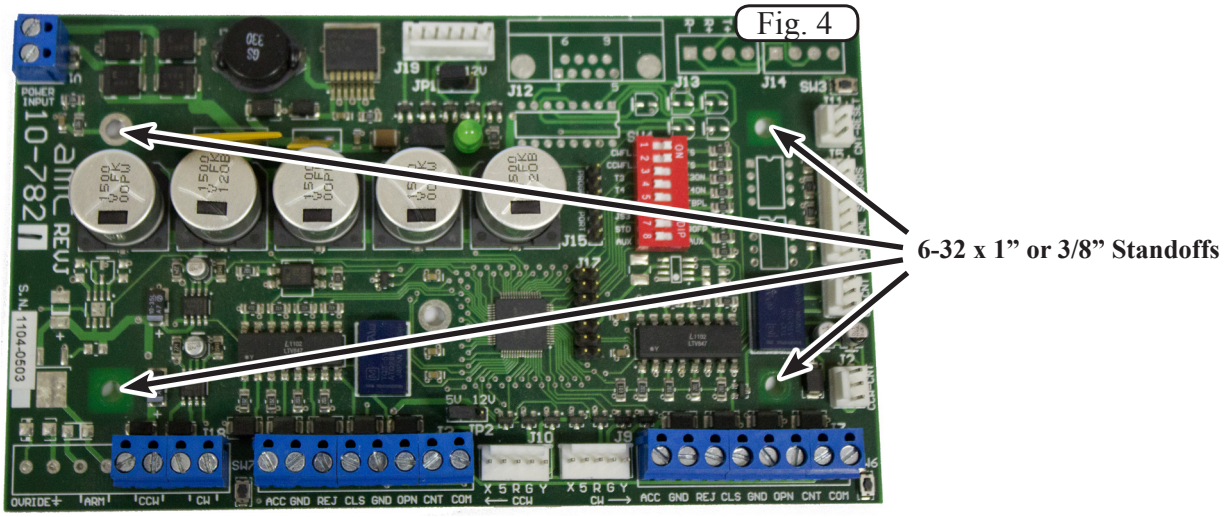
4) **Put on the disposable grounding strap**: wrap the end without the copper backing around your wrist, remove the protective backing from the copper-lined end, and place it on a bare metal finish.

5) Unplug all wiring harnesses from the turnstile control board.

6) Using a 9/64” flat head screwdriver, remove all remaining wire connections from the terminals.

7) Using a 1/4” wrench, unscrew the (4) 6-32 x 1” or 3/8” high male/female standoffs [Fig. 4] and remove the turnstile control board from the control board mounting plate.

Fig. 4

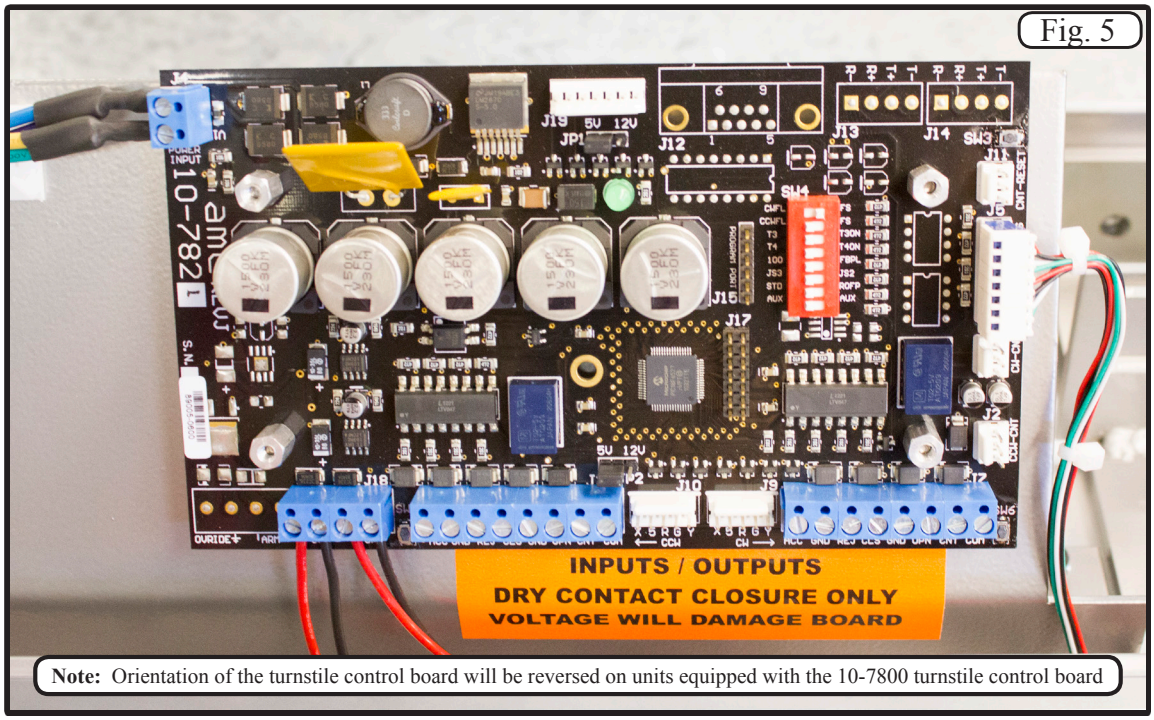


8) Install the replacement turnstile control board and, using a 1/4” wrench, secure it with the (4) new 6-32 x 3/8” male/female standoffs.

Full Height Turnstile Control Board Replacement (*Continued*)

9) Remove the "Dry Contact" label and attach it directly beneath the turnstile control board [Fig. 5].
***** Skip this step if there is already a sticker in place *****

Fig. 5



Note: Orientation of the turnstile control board will be reversed on units equipped with the 10-7800 turnstile control board

10) Use a 9/64" flat head screwdriver to connect all the wires to their designated terminals. If you are replacing a 10-7800 [Fig. 1, page 1] with the newer 10-7821 [Fig. 2, page 1], see Appendix A on pages 7 & 8 for the new connection points.

11) Reconnect all wiring harnesses.

12) Set the SW4 DIP switches to their previously documented positions. If you are replacing a 10-7800 [Fig. 1, page 1] with the newer 10-7821 [Fig. 2, page 1], see Appendix B on page 9 for settings.

13) Turn ON the power at the junction box.

14) Test turnstile operation at least 3 times before replacing the top cover.

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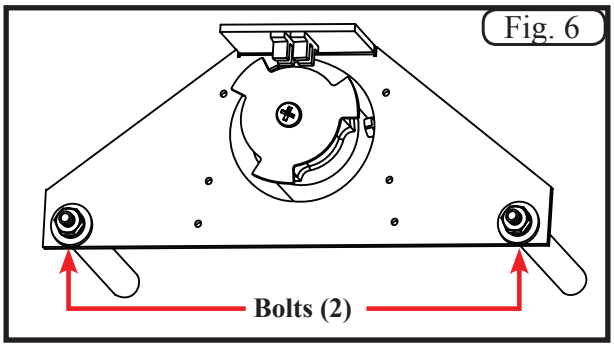
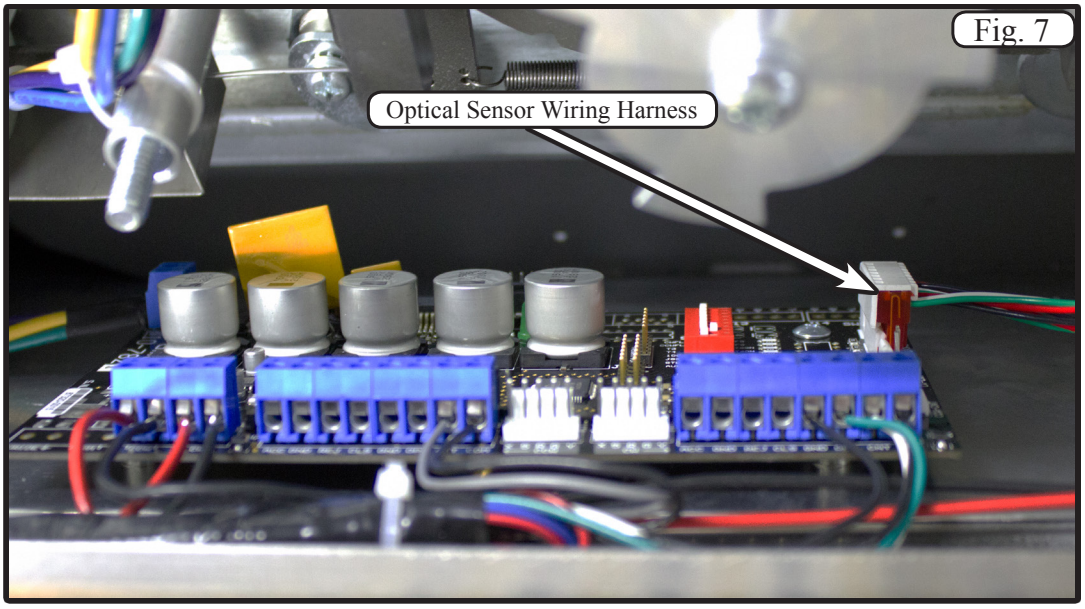
Waist High Turnstile Control Board Replacement

1) Open the turnstile lid and turn OFF the power at the junction box.

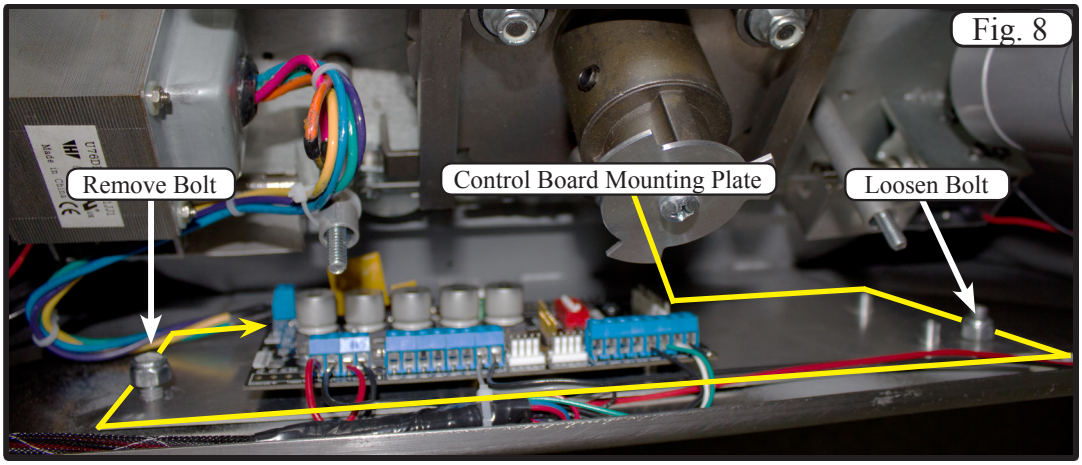
2) Using a 7/16” wrench, remove the optical sensor assembly by unscrewing the (2) bolts that secure it [Fig. 6].



3) Disconnect the optical sensor wiring harness from the turnstile control board [Fig. 7] and set the optical sensor assembly aside.



4) Locate the turnstile control board mounting plate and use a 7/16” or 1/2” wrench to remove the left bolt and loosen the right bolt [Fig. 8]. ***** The size of the bolt is dependent on the age of the turnstile *****



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Waist High Turnstile Control Board Replacement (*Continued*)

5) Lift the left side of the turnstile control board mounting plate and swing it up to access the plugs and wires [Fig. 9].

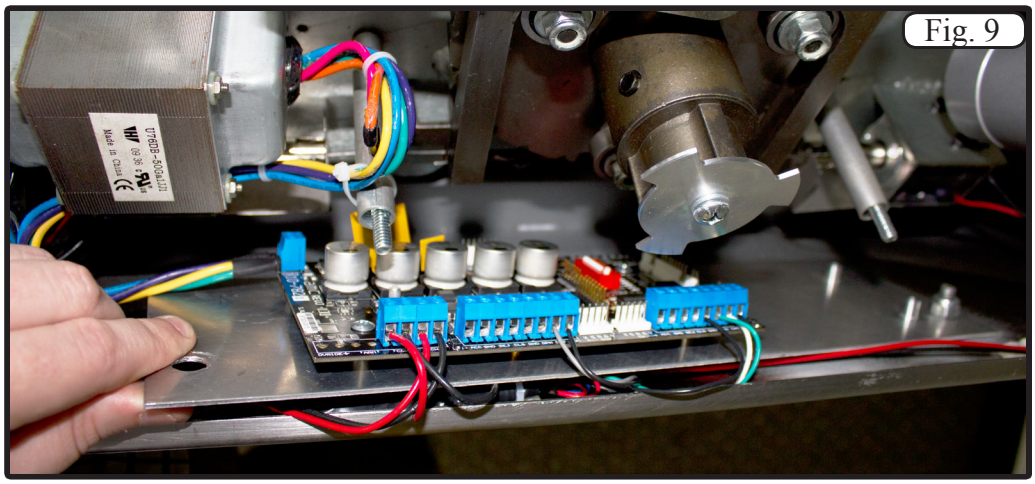
Fig. 9

6) **Document the location of the plugs and wires** on the turnstile control board. Consider taking a picture [Fig. 10].

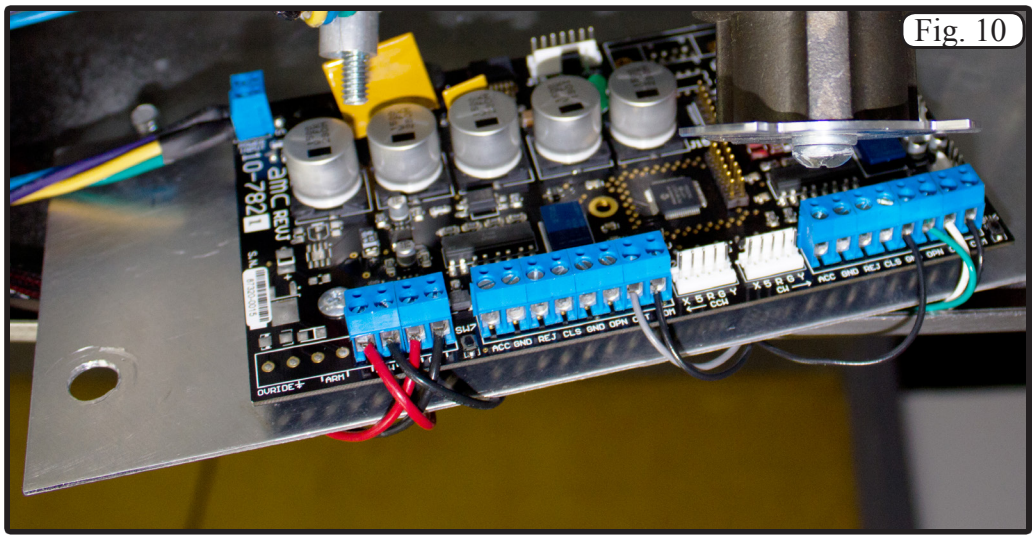
Fig. 10

7) Using a 9/64" flat head screwdriver, remove all remaining wire connections from the terminals on the turnstile control board and disconnect any remaining wiring harnesses.

8) Using a 7/16" or 1/2" wrench, Remove the remaining bolt holding the turnstile control board mounting plate in place and remove the turnstile control board mounting plate from the turnstile chassis.

9) Document the switch configuration on DIP SW4 and configure the new turnstile control board to match it (if applicable) [Fig. 11]. If you are replacing a 10-7800 [Fig. 1, page 1] with the newer 10-7821 [Fig. 2, page 1], see Appendix B on page 9 for settings.

DIP SW4

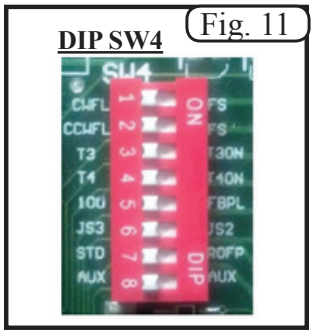

Fig. 11

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Waist High Turnstile Control Board Replacement (*Continued*)

10) Using a #2 Phillips head screwdriver, unscrew the (4) 6-32 x 1/4” round head Phillips screws and remove the turnstile control board from the turnstile control board mounting plate.

11) Using a #2 Phillips head screwdriver, fasten the new turnstile control board to the turnstile control board mounting plate with the new 6-32 x 1/4” round head Phillips screws.

12) Attach the turnstile control board mounting plate to the turnstile chassis using a single 1/2” or 7/16” bolt—finger tighten. Swing the turnstile control board mounting plate to an accessible position [page 5, Fig. 10].

13) Place the “Dry Contacts” label on the turnstile control board mounting plate adjacent to the turnstile control board [Fig. 12]

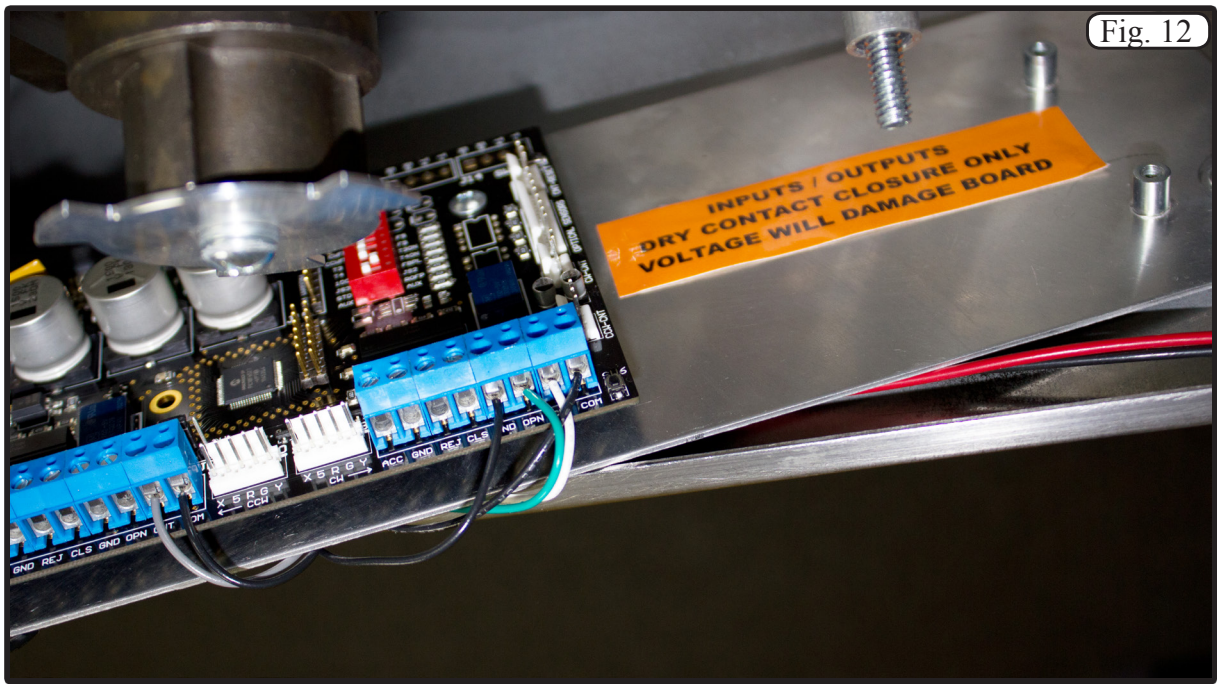

Fig. 12

14) Use a 9/64” flat head screwdriver to connect all the wires to their designated terminals. If you are replacing a 10-7800 [page 1, Fig. 1] with the newer 10-7821 [page 1, Fig. 2], see Appendix A on pages 7 & 8 for the new connection points.

15) Connect any other wiring harnesses to the appropriate plugs, see Appendix A on pages 7 & 8 for connection points.

16) Swing the turnstile control board mounting plate back to its original position and replace and retighten the bolts using a 7/16” or 1/2” wrench [page 4, Fig. 8].

17) Reconnect the optical sensor wiring harness to the turnstile control board [Page 4, Fig. 7].

18) Replace the optical sensor assembly and , using a 7/16” wrench, secure it with the (2) bolts that were previously removed [page 4, Fig. 6].

19) Turn the power ON at the junction box.

20) Test turnstile operation at least 3 times before closing the access hatch.

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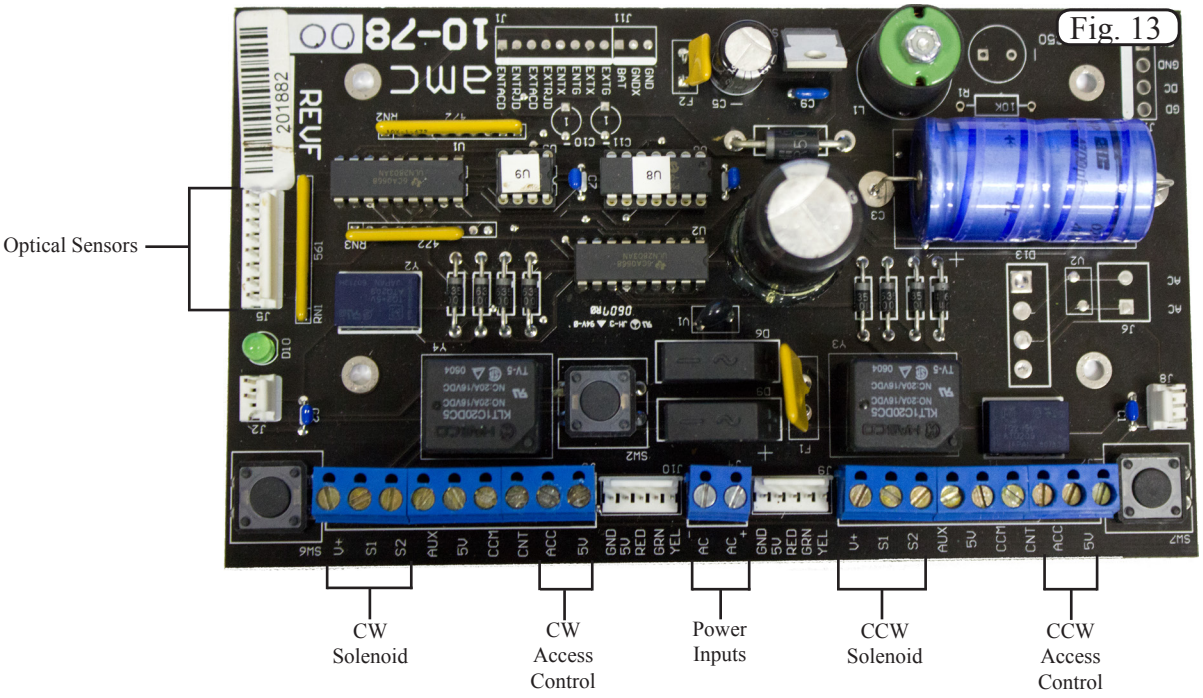
Appendix A: 10-7800 & 10-7821 Turnstile Control Board Terminal Connection Points

The illustrations below show the most common connection points on the 10-7800 & 10-7821 turnstile control boards.

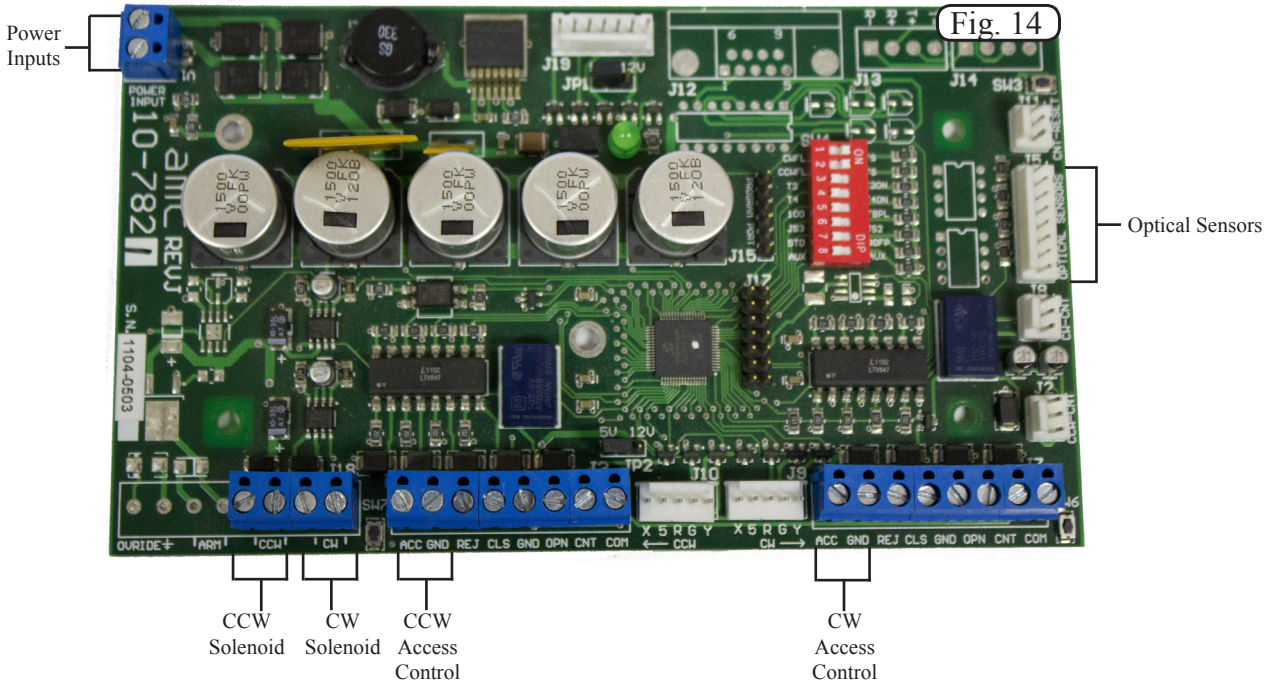
10-7800 Turnstile Control Board

Fig. 13



10-7821 Turnstile Control Board

Fig. 14



Appendix A: 10-7800 & 10-7821 Turnstile Control Board Terminal Connection Points (*Continued*)

Use the table below to determine the corresponding connection points on the 10-7821 turnstile control board when upgrading from the 10-7800.

Counter Clockwise Direction (CCW)		
Description	***10-7800 Terminal Connection (J7)***	***10-7821 Terminal Connection (J3)***
Access Control Activation - CCW	ACC	ACC
Common Ground	5V	GND
Entry (Passage) Count	CNT	CNT
Entry (Passage) Count	CCM	COM
Common GND	5V	GND
Emergency/Key Lock Override	AUX	OPN
CCW Fail-Lock	S2	J18 CCW (Fail-Lock see SW4 DIP switch settings) **
CCW Fail-Safe	S1	J18 CCW (Fail-Safe see SW4 DIP switch settings) **
Solenoid Voltage	V+	J18 CCW
Clockwise Direction (CW)		
Access Control Activation - CW	ACC	ACC
Common Ground	5V	GND
Entry (Passage) Count	CNT	CNT
Entry (Passage) Count	CCM	COM
Common GND	5V	GND
Emergency Override	AUX	OPN
CW Fail-Lock	S2	J18 CW (Fail-Lock see SW4 DIP switch settings) **
CW Fail-Safe	S1	J18 CW (Fail-Safe see SW4 DIP switch settings) **
Solenoid Voltage	V+	J18 CW
Additional Wire Connections		
Low Voltage Power Connection	J4	J4
JS2/JS3 Harness Connector - CCW	J9	J10
JS2/JS3 Harness Connector - CW	J10	J9
Optical Sensors	J5	J5

Note: Most common connections are shaded

** On the new 10-7821 turnstile control board, the function of the solenoid is controlled by SW4 DIP switches 1 and 2. See Appendix B on page 9 for details

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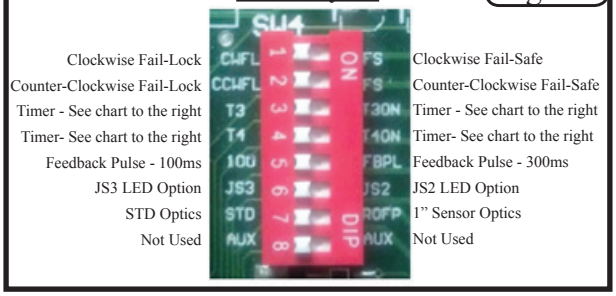
Appendix B: 10-7821 Turnstile Control Board SW4 DIP Configuration

Use the tables/illustrations below to set the SW4 DIP switches to the necessary positions based on the configuration of the turnstile. ***** This table applies to the 10-7821 turnstile control board *****

SW4 Layout Fig. 15



Timed Delay Reset Timer (Positions T3 and T4)	T3	T4
5 seconds	ON	ON
10 seconds	ON	OFF
15 seconds	OFF	ON
20 seconds (default)	OFF	OFF

****** The Timed Delay Reset Timer is used to relock the turnstile if it is not used in a specified amount of time after activation ******

Switch	Description (OFF)	Position (OFF)	Position (ON)	Description (ON)
1	Clockwise Solenoid - Fail-Lock	CWFL	FS	Clockwise Solenoid - Fail-Safe
2	Counter-Clockwise Solenoid - Fail-Lock	CCWFL	FS	Counter-Clockwise Solenoid - Fail-Safe
3	See [Fig. 15]	T3	T3ON	See [Fig. 15]
4	See [Fig. 15]	T4	T4ON	See [Fig. 15]
5	Sets pulse length sent to 3rd party counter/GateWatch to 100 ms	100	FBPL	Sets pulse length sent to 3rd party counter/GateWatch to 300 ms
6	Red/Yellow/Green activation lights	JS3	JS2	Red/Green activation lights
7	Standard optical sensor configuration. Passage feedback sent after second sensor detection	STD	ROFP	Custom optical sensor configuration. Passage feedback sent after first sensor detection
8	Not used	AUX	AUX	Not used