

User Instructions

Operational & Safety Considerations

- Users may move briskly, but should not run due to safety considerations.
- Users should not stop and linger in the turnstile. Lingered slows throughput and may trigger an alarm condition.
- Users with large bags, hand trucks, boxes, etc, should verify their combined width does not exceed passage width prior to entering the turnstile.
- Users requiring the use of a manual or motorized wheelchair should use designated wider passage turnstiles.

Controlled Passage Mode

NOTE

It is assumed that mullion-style card readers are installed under the top lid as shown in [Fig. 3] on page 10. Instructions on presenting credentials to other media devices are outside the scope of this User Guide.

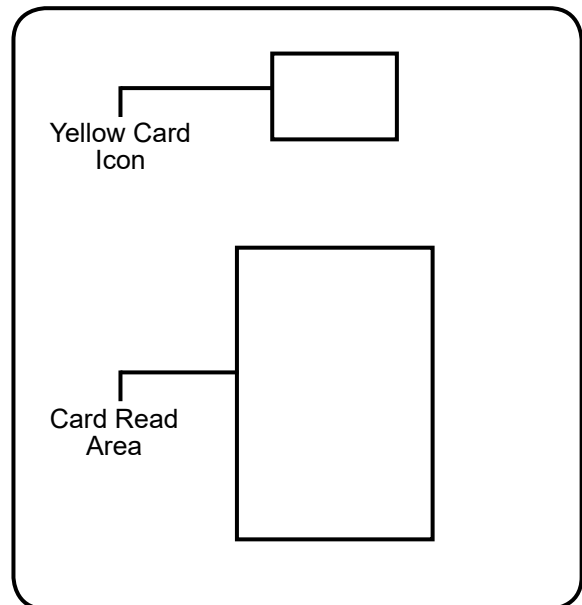
Alvarado follows what we call the “right-hand rule.” Card readers are always installed on the right-hand side as the user enter the turnstile.

1. The open / closed status light is green, and the user status display's yellow card icon is illuminated [Fig. 15].
2. Present the card to the turnstile by placing it in the center of the card read area shown in [Fig. 15]. Card read range varies from reader to reader. A best practice is to physically touch the card to the card read area. Avoid sliding the card on the card read area, as this does not improve readability.

TIP

The turnstile can be configured to emit an audible sound when an 'access granted' or 'access denied' signal is provided from the access control system. Most card readers have the capability to emit an audible sound upon card read. If both the turnstile and card reader audio is on, two sounds will be heard by the user. This can be confusing in certain applications. Consider disabling the card reader audio.

Fig. 15 Controlled Passage Icon / Card Read Area



3. Upon card validation:
 - Authorized Entry chime sounds.
 - Green arrow icon illuminates on the user status display.
 - Barriers move to the open position.
4. Promptly walk through the turnstile.

TIPS

To improve throughput:

- Instruct users to have their credentials ready for presentation prior to arrival at the turnstile.
- Instruct users that they do not have to wait for the barriers to close before presenting credentials. The turnstile will stack activations and will process additional activations when barriers are opening, all the way open, or in the closing process. If the turnstile receives an activation signal when the barriers are open, the barriers stay open and allow the second user to pass. Similarly, if the turnstile receives an activation signal when the barriers are closing, the barriers will stop in mid-cycle and re-open for passage.
- Keep the turnstile entry and exit areas free of obstructions and dissuade users from talking or congregating in those areas.
- Consider designating turnstiles as entry or exit only, particularly during busy throughput times (see Page 17).

Free Passage Mode

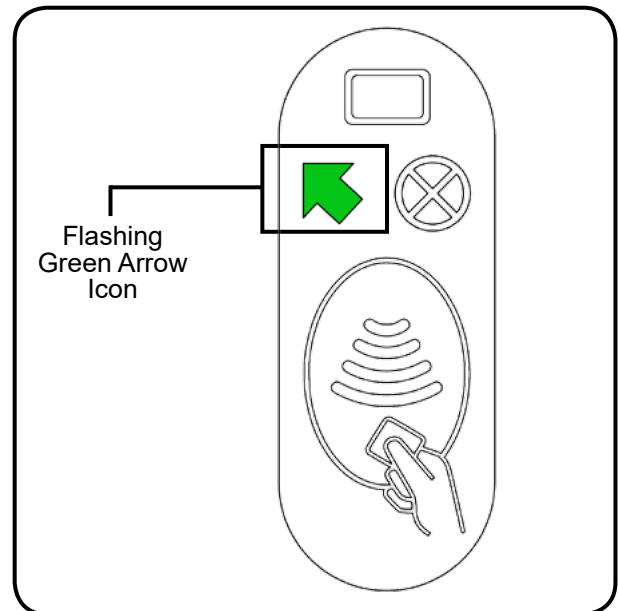
1. The open / closed status light is green, and the user status display's green arrow icon is blinking [Fig. 16].

NOTE

If the dynamic side panel illumination option has been ordered, the user status display's green arrow icon will be solid.

2. Enter the turnstile. The free passage sensors will detect the user and the barriers will move to the open position.

Fig. 16 Free Passage Icon

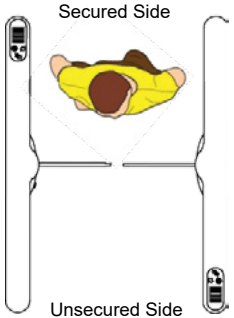
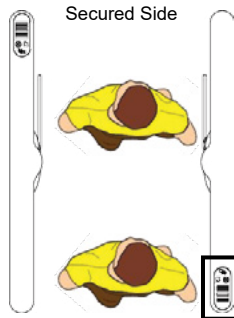
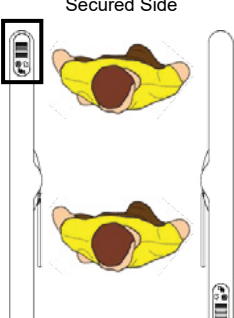
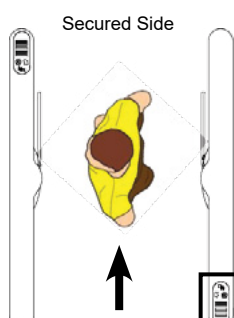


Turnstile Operations

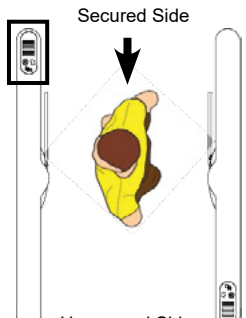
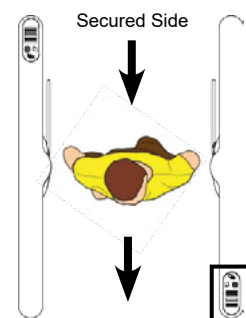
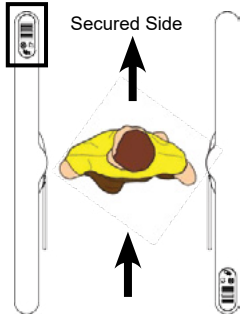
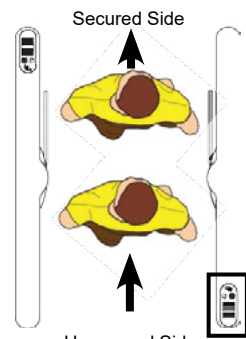
The following scenarios describe product behavior in common operational situations. Other operational information is available in other sections of this manual. Additional information can also be obtained by contacting Alvarado's technical support department.

Function	Description	Turnstile Response	I/O Output
<p>Authorized Entry</p> <p>Secured Side</p> <p>Unsecured Side</p>	<p>The user presents valid credentials to the card reader and completes an entry passage.</p>	<ul style="list-style-type: none"> Authorized Entry chime sounds. Green arrow icon illuminates on the entry side user status display. Barriers move to the entry open position, and close upon passage completion. 	YES
<p>Unauthorized Entry</p> <p>Secured Side</p> <p>Unsecured Side</p>	<p>The user presents invalid credentials and/or enters the turnstile from the unsecured side without authorization.</p>	<ul style="list-style-type: none"> Unauthorized Entry alarm sounds. Red stop icon flashes on the entry side user status display. Entry side open / closed status light turns red. Barriers remain closed. 	YES
<p>Authorized Exit</p> <p>Secured Side</p> <p>Unsecured Side</p>	<p>The user presents valid credentials to the card reader and completes an exit passage.</p>	<ul style="list-style-type: none"> Authorized Entry chime sounds. Green arrow icon illuminates on the exit side user status display. Barriers move to the entry open position, and close upon passage completion. 	YES

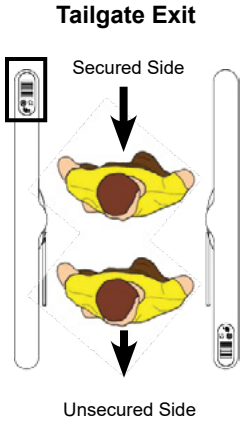
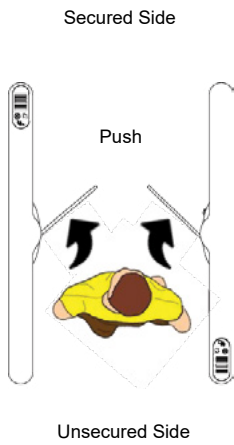
Turnstile Operation (cont.)

Function	Description	Turnstile Response	I/O Output
<p>Unauthorized Exit</p> 	<p>The user presents invalid credentials and/or enters the turnstile from the secured side without authorization.</p>	<ul style="list-style-type: none"> Unauthorized Exit alarm sounds. Red stop icon flashes on the exit side user status display. Exit side open / closed status light turns red. Barriers remain closed. 	<p>YES</p>
<p>Entry Stacking</p> 	<p>Users quickly and consecutively present credentials to the turnstile (up to one card per second). The turnstile "stacks" the activations and processes users as fast as they can walk through the turnstile.</p>	<ul style="list-style-type: none"> Authorized Entry chime sounds for each activation. Green arrow icon illuminates on the entry side user status display. Barriers move to the entry open position, and close after the last user has completed passage. 	<p>NO (Individual Authorized Entry Passage outputs are logged.)</p>
<p>Exit Stacking</p> 	<p>Users quickly and consecutively present credentials to the turnstile (one card per second). The turnstile "stacks" the activations and processes users as fast as they can walk through the turnstile.</p>	<ul style="list-style-type: none"> Authorized Entry chime sounds for each activation. Green arrow icon illuminates on the exit side user status display. Barriers move to the open position, and close after the last user has completed passage. 	<p>NO (Individual Authorized Exit Passage outputs are logged.)</p>
<p>Barrier Held Open (Entry Direction)</p> 	<p>While performing an authorized entry passage, the user stops and lingers, preventing the barriers from closing.</p>	<p>After remaining in the turnstile for 12 seconds:</p> <ul style="list-style-type: none"> Barrier Held Open alarm sounds. Red stop icon flashes on both user status displays. Both open / closed status light flash red. The alarm condition continues until the user exits the turnstile. 	<p>YES</p>

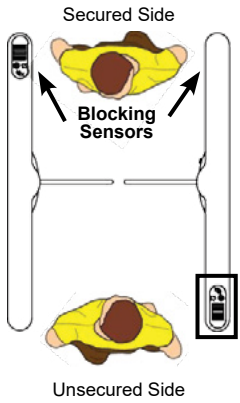
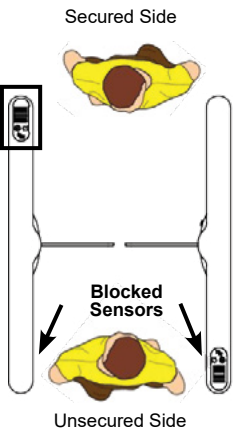
Turnstile Operation (cont.)

Function	Description	Turnstile Response	I/O Output
<p>Barrier Held Open (Exit Direction)</p> 	<p>While performing an authorized exit passage, the user stops and lingers, preventing the barriers from closing.</p>	<p>After remaining in the turnstile for 12 seconds:</p> <ul style="list-style-type: none"> The Barrier Held Open alarm sounds. Red stop icon flashes on both user status displays. Both open / closed status light flash red. The alarm condition continues until the user exits the turnstile. 	<p>YES</p>
<p>Unauthorized Exit Passage</p> 	<p>User activates the turnstile from the unsecured side.</p> <p>When the barriers move to the open position, a unauthorized user performs an exit passage from the secured side.</p>	<p>When the unauthorized user enters the turnstile from the secured side:</p> <ul style="list-style-type: none"> The Unauthorized Exit passage alarm sounds for 4 seconds. Red stop icon flashes on the exit side user status display. Exit side open / closed status light flash red. 	<p>YES</p>
<p>Unauthorized Entry Passage</p> 	<p>User activates the turnstile from the secured side.</p> <p>When the barriers move to the open position, an unauthorized user performs an entry passage from the unsecured side.</p>	<p>When the unauthorized user enters the turnstile from the unsecured side:</p> <ul style="list-style-type: none"> The Unauthorized Entry Passage alarm sounds. Red stop icon flashes on the entry side user status display. Entry side open / closed status light turns red. 	<p>YES</p>
<p>Tailgate Entry</p> 	<p>An unauthorized user closely follows an authorized user to enter the facility.</p>	<p>When the unauthorized user tailgates:</p> <ul style="list-style-type: none"> The Unauthorized Presence alarm sounds. Red stop icon flashes on the user status display. Open / closed status light turns red. The Unauthorized Entry Passage alarm sounds for 4 seconds. 	<p>YES</p>

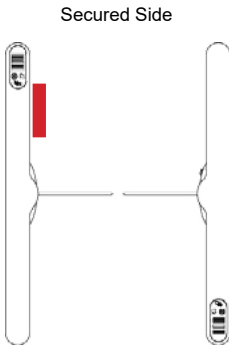
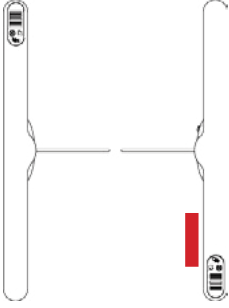
Turnstile Operation (cont.)

Function	Description	Turnstile Response	I/O Output
<p>Tailgate Exit</p> 	<p>An unauthorized user closely follows an authorized user to exit the facility.</p>	<p>When the unauthorized user tailgates:</p> <ul style="list-style-type: none"> • The Unauthorized Presence alarm sounds. • Red stop icon flashes on the exit side user status display. • Exit side open / closed status light flashes red. • The Unauthorized Exit Passage alarm sounds for 4 seconds. 	<p>YES</p>
<p>Barrier Breakaway</p> 	<p>User pushes on the barriers until they break away.</p>	<p>After the barriers break away:</p> <ul style="list-style-type: none"> • Unauthorized Entry alarm sounds. • Red stop icon flashes on the both user status displays. • Both open / closed status lights flash red. • Two seconds after the user steps out of the turnstile, the turnstile returns to previous passage mode. 	<p>YES</p>

Turnstile Operation (cont.)

Function	Description	Turnstile Response	I/O Output
<p>Unsafe to Open Entry</p> 	<p>Barriers do not open after the turnstile is activated from the entry side, due to an object or user detected in the exit side of the turnstile.</p>	<p>After the entry activation:</p> <ul style="list-style-type: none"> • The turnstile detects the obstruction and the Unsafe to Open alarm sounds. • Red stop icon flashes on the entry side user status display. • Entry side open / closed status light flashes red. 	<p>NO</p>
<p>Unsafe to Open Exit</p> 	<p>Barriers do not open after the turnstile is activated from the exit side, due to an object or user detected in the entry side of the turnstile.</p>	<p>After the entry activation:</p> <ul style="list-style-type: none"> • The turnstile detects the obstruction and the Unsafe to Open alarm sounds. • Red stop icon flashes on the entry side user status display. • Entry side open / closed status light flashes red. 	<p>NO</p>

Turnstile Operation (cont.)

Function	Procedure	Turnstile Response	I/O Output
<p>Blocked Sensor (Entry Direction)</p>  <p>Secured Side</p> <p>Unsecured Side</p>	<p>Object is blocking the entry side operational sensors for 15 seconds or longer.</p>	<ul style="list-style-type: none"> • Entry Blocked Sensor alarm sounds. • Red stop icon flashes on the both user status display. • Both open / closed status lights flash red. 	<p>YES</p>
<p>Blocked Sensor (Exit Direction)</p>  <p>Secured Side</p> <p>Unsecured Side</p>	<p>Object is blocking the exit side operational sensors for 15 seconds or longer.</p>	<ul style="list-style-type: none"> • Entry Blocked Sensor alarm sounds. • Red stop icon flashes on the entry side user status display. • Both open / closed status lights flash red. 	<p>YES</p>

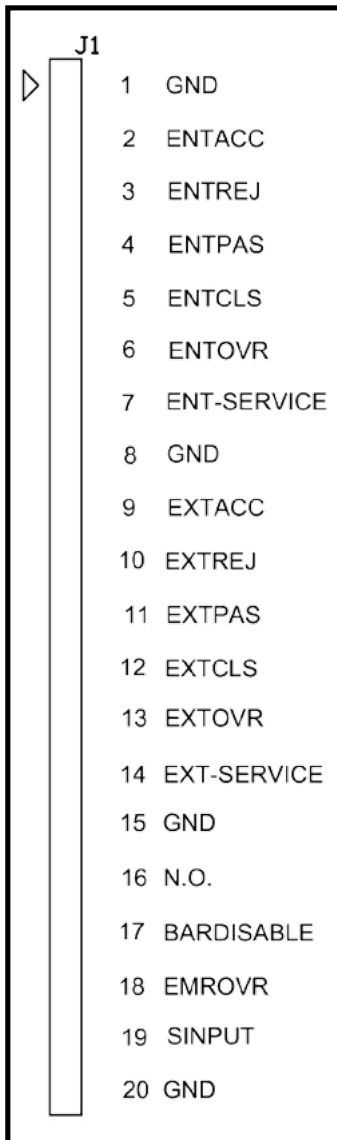
I/O Control

This section explains the various I/O control board inputs and outputs, and how they may be used. It is assumed that the turnstiles are already installed and interfaced with the access control system. For access control wiring instructions, please refer to the *SU5000 Installation Instructions*.

Inputs

The following inputs are available for access control system signals:

Fig. 17 Input Terminal Block



PINS 1, 8, 15, 20 - GND (Common Ground)

Description

Common ground terminals for access control system wiring. Only for input terminal block use.

Purpose and Customer Use

Access control system outputs that require a ground return are connected to these inputs.

PIN 2 - ENTACC / PIN 9 - EXTACC (Card Accept)

Description

Receipt of an input contact opens the barriers for a single passage in the appropriate direction.

Purpose and Customer Use

These are core system inputs. ENTACC (entry accept) signals the turnstile to allow a single valid passage in the entry direction. EXTACC (exit accept) signals the turnstile to allow a single valid passage in the exit direction. Typically these signals are provided after the access system determines that the card presented at the turnstile is valid for entry. ENTACC is used on virtually every installation. EXTACC is used in controlled entry / exit applications where users both card in and card out.

Inputs (cont.)**PIN 3 - ENTREJ / PIN 10 - EXTREJ (Card Reject)****Description**

Receipt of an input contact instructs the turnstile that the presented credential is invalid.

Purpose and Customer Use

These inputs notify users that presented credentials are not authorized. ENTREJ signals the turnstile to notify the user that the credential presented in the entry direction is not authorized.

PIN 4 - ENTPAS / PIN 11 - EXTPAS (Free Passage Mode)**Description**

Receipt of an input contact places the turnstile in Free Passage mode in the appropriate direction.

Purpose and Customer Use

These inputs can be used if the customer desires to change passage modes through the use of remote key switches or buttons, and has not purchased the turnstile key control or GateKeeper options.

PIN 5 - ENTCLS / PIN 12 - EXTCLS (No Passage Mode)**Description**

Receipt of an input contact places the turnstile in No Passage mode in the appropriate direction.

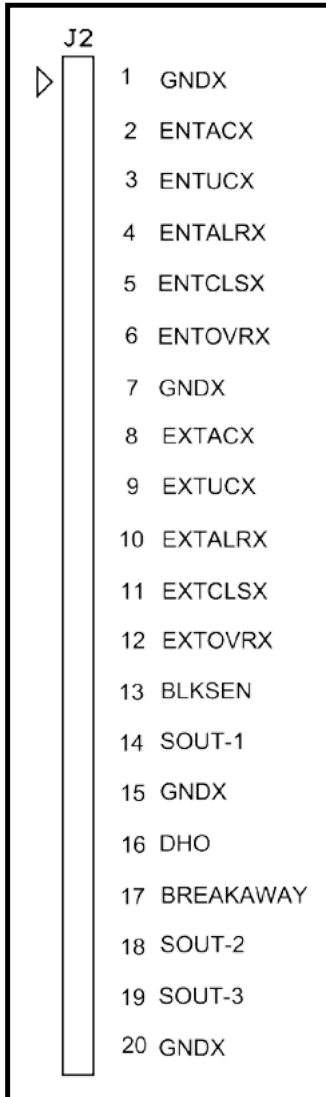
Purpose and Customer Use

These inputs are typically used by the customer only if the customer desires to change passage modes through the use of key switches or buttons and has not purchased the lane key control or GateKeeper options.

Outputs

Fig. 19

Output Terminal Block



The following outputs are available to provide information on turnstile operational status and activity. All output contacts are 300ms in duration.

PINS 1, 7, 15, 20 - GNDX (Common Ground)

Description

Common ground terminals for access control system wiring. Only for output terminal block use.

Purpose and Customer Use

Access control system inputs that require a ground return are connected to these outputs.

PIN 2 - ENTACX / PIN 8 - EXTACX (Authorized Passage)

Description

An output contact is generated when a user completes an authorized passage in the appropriate direction. This signal is generated when a passage occurs after receipt of an ENTACC / EXTACC signal, after receipt of an ENTOVR / EXTOVR signal, or after a passage if the turnstile direction is in Free Passage Mode.

Purpose and Customer Use

These outputs can be used by the facility access control system to track the number of authorized passages through the turnstile, or compare authorized entry or exit signals issued by the facility access control system against passages.

Outputs (cont.)

PIN 3 - ENTUCX / PIN 9 - EXTUCX (Unauthorized Passage)

Description

An output contact is generated when a user completes an unauthorized passage (i.e., tailgating after an authorized passage) in the appropriate direction. This is typically referred to by Alvarado as an “unauthorized passage” output.

Purpose and Customer Use

These are important outputs to monitor as they identify unauthorized passages. The outputs are typically used to identify the time and location of unauthorized passages. This allows review of the unauthorized passage on security camera footage (if available).

PIN 4 - ENTALRX / PIN 10 - EXALRX (Unauthorized Entry/Exit)

Description

An output contact is generated when a user enters the turnstile without the turnstile receiving an authorized passage signal (ENTACC / EXTACC or ENTOVR / EXTOVR).

Purpose and Customer Use

This output is generated when a user gets close to the barrier before the turnstile receives an authorized entry or exit signal. This can be caused by users entering the turnstile too far before presenting their credentials, or by users presenting their credentials and entering the passage area before the access system sends an authorization signal to the turnstile.

Customers typically do not monitor unauthorized entry/exit outputs, but they can be useful to monitor for a short time after installation. A large number of unauthorized entry/exit outputs can indicate that further user training is required, or that there may be adjustments required with respect to the card reader or the access system response time.

PIN 13 - BLKSEN (Blocked Sensor)

Description

An output contact is generated when any of the turnstile's transmit / receive sensors in the operational sensor arrays cannot communicate for a defined time period (factory default is 15 seconds). This output is generated without regard to the state of the panels (open or closed).

Purpose and Customer Use

This output is an important output to monitor. It would provide notification of a person or object lingering in the turnstile passage area or, as an example, if an object (such as a piece of gum or putty) was inhibiting communication between the sensors. Security camera footage (if available) can be used to review the situation surrounding generation of this output if desired.

Outputs (cont.)

PIN 17 - DHO (Barrier Held Open)

Description

Barrier Held Open is both a setting and an output.

As a setting (accomplished through LaneConfig), the DHO timeout defines the time after which barriers will close if a number of card accept (ENTACC or EXTACC) or override (ENTOVR or EXTOVR) signals are received, but users do not pass through the lane. As an example, after a card accept or override signal, the barriers remain open until a user passes, or for the defined open period if a user does not pass. If a number of card accept or override signals are received in succession (and there is no user passage), the DHO setting limits the time the barriers remain open after the last card accept or override signal to the defined DHO time period (default is 12 seconds).

An output is generated when barriers remain open past the defined DHO time. One example of when this might occur would be if a sensor in the closing path of the barriers were blocked after opening. In this case, for safety reasons the barriers will remain open. In such a case the turnstile will generate a DHO output. This would be in addition to the local alarm that would sound at the turnstile.

Purpose and Customer Use

The DHO output is an important output to monitor. It provides notification if barriers remain open beyond the expected "open" time. Security camera footage (if available) can be used to review the situation surrounding generation of this output if desired.

BREAKAWAY (Barrier Broken Away) (Pin 16)

Description

An output contact is generated when the barrier holding force threshold has been exceeded and the barrier gives way. If the user proceeds through the turnstile, an unauthorized passage output will also be generated.

Purpose and Customer Use

This is an important output that is monitored by most customers. Security camera footage (if available) can be used to review the situation surrounding a breakaway alarm.

SU5000 Configuration Preparation Overview

SU5000 configuration changes are broken down into two sections: configuring the turnstile operating system, and configuring the turnstile application. Each type of configuration requires a different configuration tool.

Configuring the turnstile operating system is accomplished using the *UltraVNC Viewer* application (included on the File Management CD provided with the turnstile). Configurable operating system settings include the system time, IP address, and speaker volume. Typically, operating system settings are configured before turnstile application settings.

Configuring the turnstile application is accomplished using the *LaneConfig* (also included on the File Management CD). Configurable turnstile application settings include alarm sounds, detection settings, and alarm timer settings. Instructions on using LaneConfig can be found in the *LaneConfig User Guide* located on the File Management CD.

There are two ways to connect to the turnstile: 1) via a computer on the facility network (if networked), or 2) via a local laptop computer connected directly to the turnstile (if not networked). Keep in mind that newly installed turnstiles that will be networked must first be configured using a local laptop computer to set the network IP address.

This User Guide assumes you are configuring newly installed turnstiles via a local laptop computer. If your turnstiles are already networked and configured with a network IP address, refer to the *LaneConfig* documentation for installation and configuration instructions.

New Installation Configuration Checklist

Perform the following configuration steps for newly installed turnstiles.

Install Configuration Tools

1. UltraVNC
2. LaneConfig

Connect Laptop Computer to the Turnstile

1. Remove base cover to access Ethernet adapter.
2. Connect laptop computer to the Ethernet extension cable using an Ethernet cable.

Configure Operating System Settings Using UltraVNC Viewer

1. Set local system time.
2. Set turnstile IP address (required for networked turnstiles).

Configure Turnstile Software Settings Using LaneConfig (optional)

1. Configure turnstile parameters.

NOTE

The factory default settings are appropriate for most installations. If the facility requires a particular turnstile setting to be changed, change it at this time.

Installing the Configuration Tools

Both *UltraVNC Viewer* and the *LaneConfig* installation package are located on the File Management CD that was provided with the turnstile. If you are unable to locate, or have misplaced, the File Management CD, contact Alvarado Technical Support.

Computer Requirements

- Operating System - Windows XP / Windows Vista / Windows 7 / Windows 8
- .NET Framework 4.0 or greater
- CD- / DVD-ROM drive

Installing UltraVNC Viewer

1. Insert the File Management CD into the CD/DVD drive on the computer.
2. Navigate to X:\File Management Utility CD\UltraVNC Software.
3. Double-click the **UltraVNC_1.0.9.6.2_Setup** icon to begin the installation.
4. During the installation process, go with the default selections with the exception of the **Select Components** screen, in which **UltraVNC Viewer Only** should be selected.
5. Follow the installation prompts until the installation is complete.

Installing LaneConfig

Refer to the *LaneConfig Installation Guide* for installation instructions additional computer requirements.

Connecting a Laptop Directly to the Turnstile

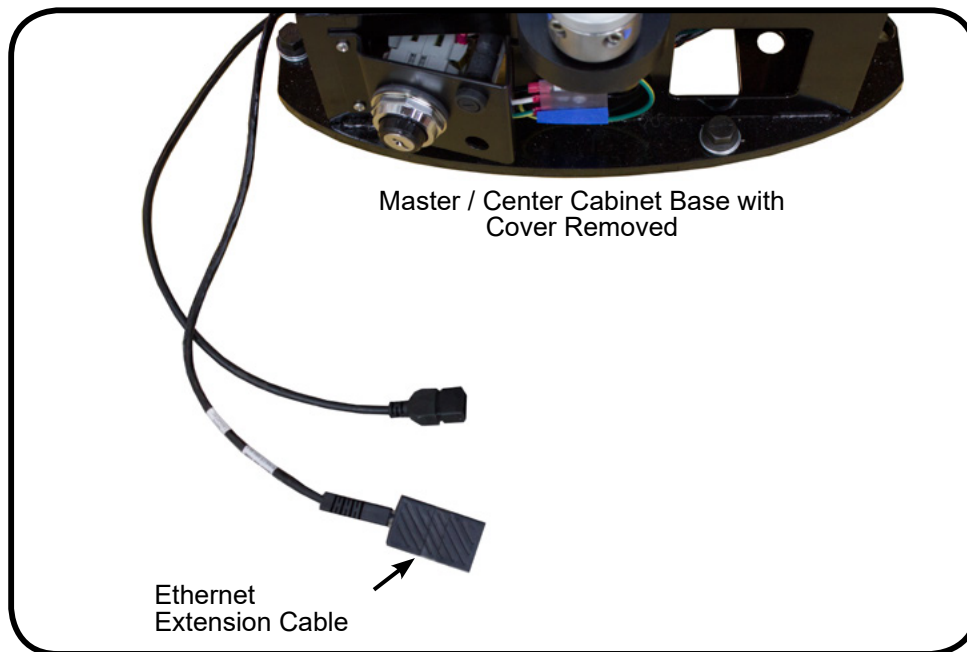
The SU5000 turnstile communicates with a computer or facility network via the main turnstile controller's Ethernet adapter. An Ethernet extension cable is tucked inside the base cover on all master and center cabinets. To access the Ethernet extension cable, the base cover will need to be removed. Instructions on removing the base cover can be found in the *SU5000 Installation Instructions*.

1. Locate the Ethernet extension cable tucked in the base of the master / center cabinet [Fig. 20].
2. Connect the Ethernet cable from the computer to the Ethernet extension cable.

NOTE

If network cable was run to the turnstile via conduit, temporarily disconnect the network cable from the Ethernet extension cable to configure the turnstile. Once the turnstile has been configured, reconnect the network cable.

Fig. 20 Ethernet Adapter



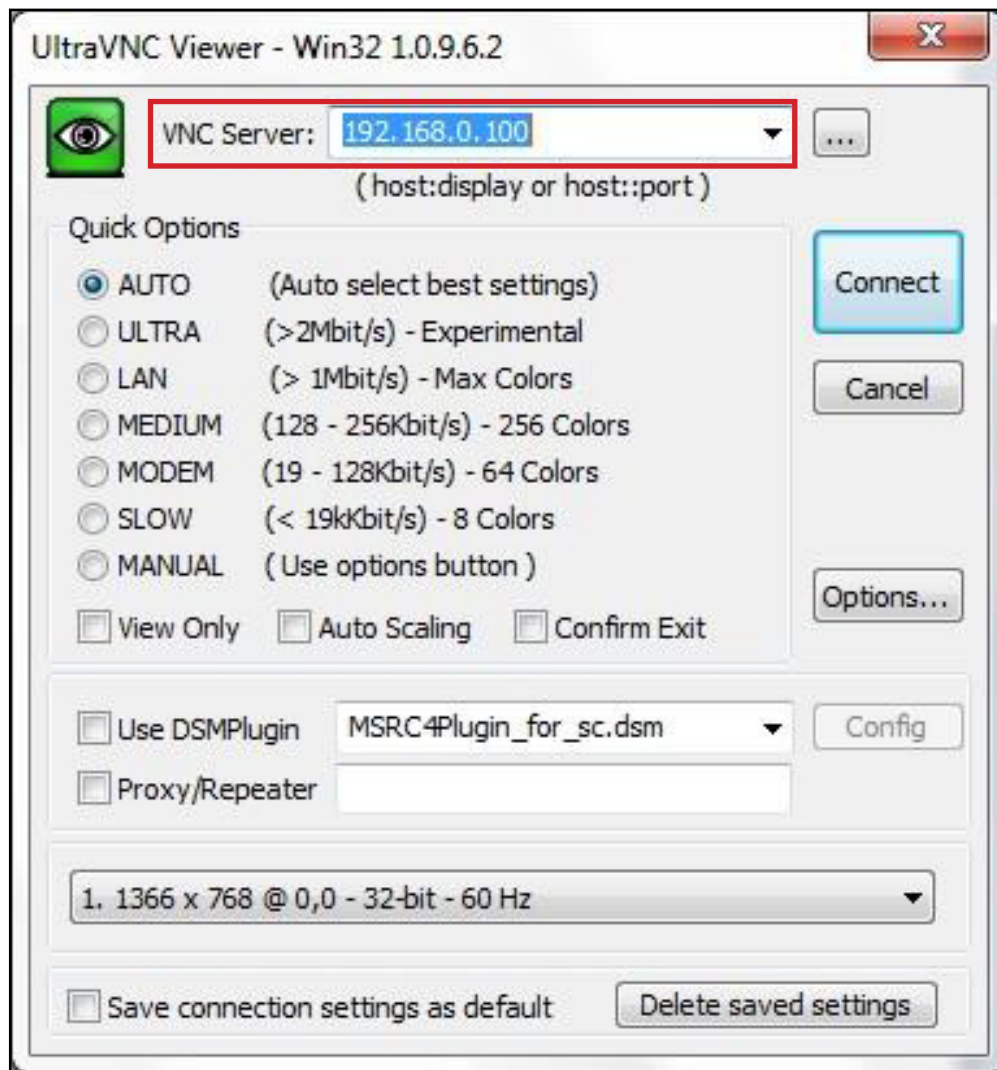
Operating System Configuration

Operating system settings are configured using the **UltraVNC Viewer** application.

- It is assumed that the turnstile is powered ON and connected to the computer or facility network.

1. Launch UltraVNC Viewer.
2. Enter the turnstile IP address in the **VNC Server** field [Fig. 21]:
 - If this is a newly installed or non-networked turnstile, enter the factory default turnstile IP address: **192.168.0.100**.
 - If the turnstile has already been configured with a facility network IP address, enter that network IP address.
3. Click the **Connect** button.

Fig. 21 UltraVNC Viewer



Operating System Configuration (cont.)

4. Enter: **alvarado** for the password at the VNC Authentication window [Fig. 22].
5. Click the **Log On** button.

Fig. 22 UltraVNC Viewer



6. Upon password verification, the SU5000 desktop will appear onscreen [Fig. 23]. Communication with the turnstile is now established.

Fig. 23 SU5000 Desktop



Setting the Local System Time

The operating system time is factory set to Pacific Time (U.S. and Canada). The operating system time should be set for your local time. To set the time, follow the instructions below.

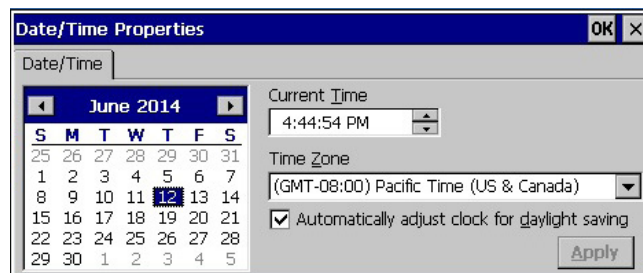
1. Double-click the time display in the bottom right corner of the SU5000 desktop to bring up the 'Date / Time Properties' window [Fig. 24].

Fig. 24 Time Display



2. Enter the correct **Date**, **Current Time**, and **Time Zone** in the appropriate fields [Fig. 25].
3. Press **OK** to save the time setting.

Fig. 25 Date/Time Properties Window



Setting the Local System Time

4. Click **Start**, click **Programs**, and click **SaveReg** [Fig. 26].

Fig. 26 Saving the Registry

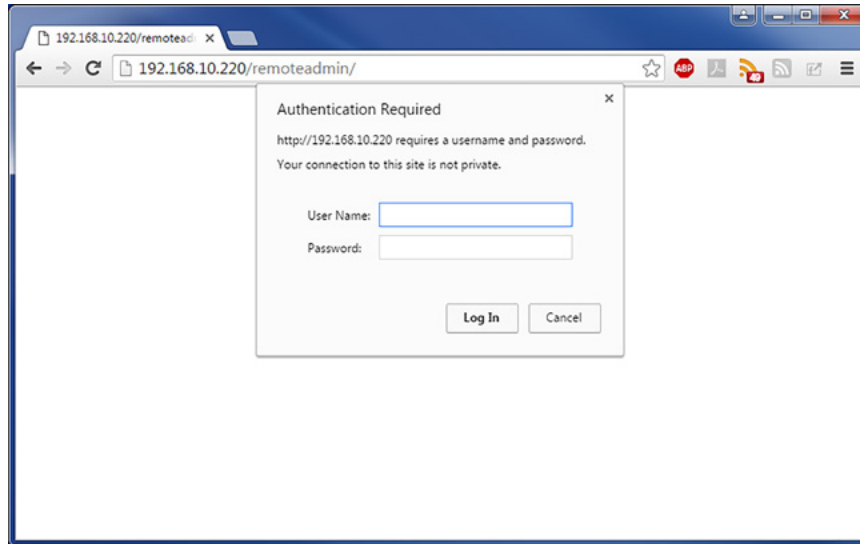


Setting the Turnstile IP Address

The turnstile IP address only needs to be configured on networked turnstiles.

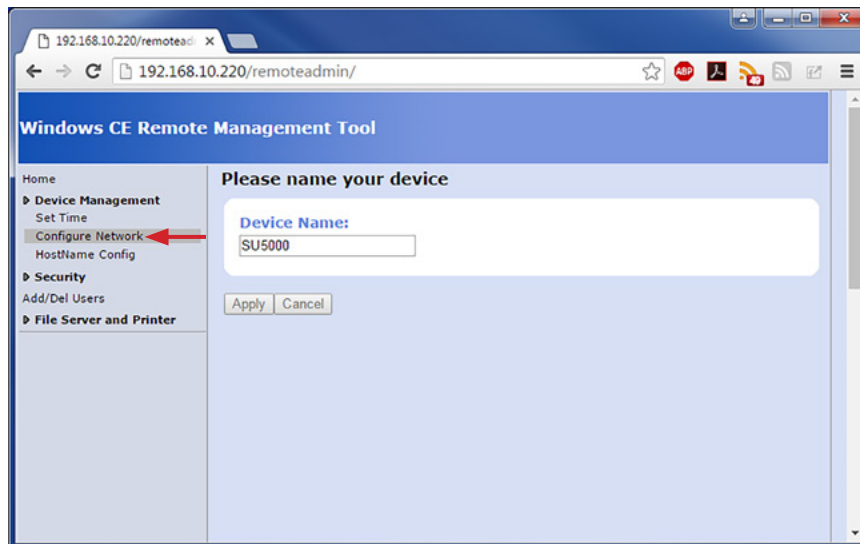
1. Open a web browser on your computer.
2. Type the SU5000's **IP address** into the address bar and press **Enter**. The default IP address is 192.168.0.100.
3. Enter **admin** into the *User Name* field and **alvarado** into the *Password* field. Click **Log In** [Fig. 27].

Fig. 27 Remote Admin - Authentication Required



4. Click the arrow for **Device Management** to expand the list and select **Configure Network** [Fig. 28].

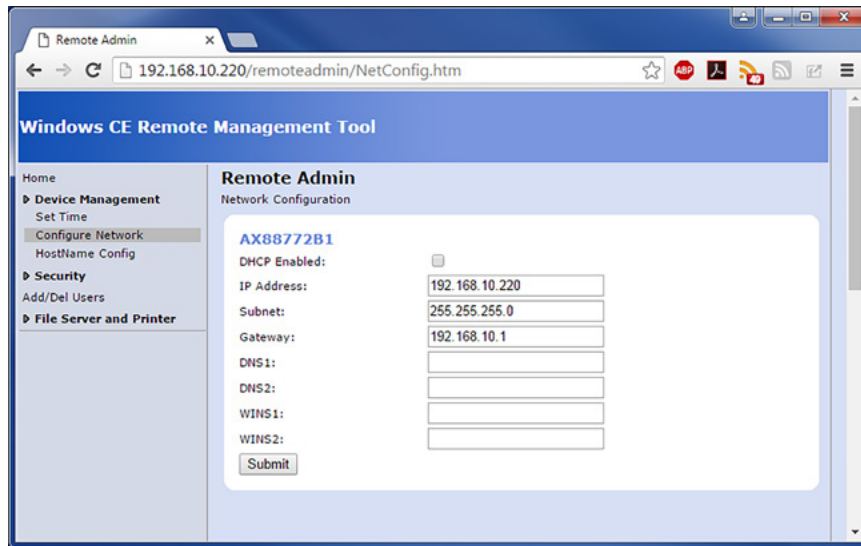
Fig. 28 Remote Admin - Device Management Menu



Setting the Turnstile IP Address (cont.)

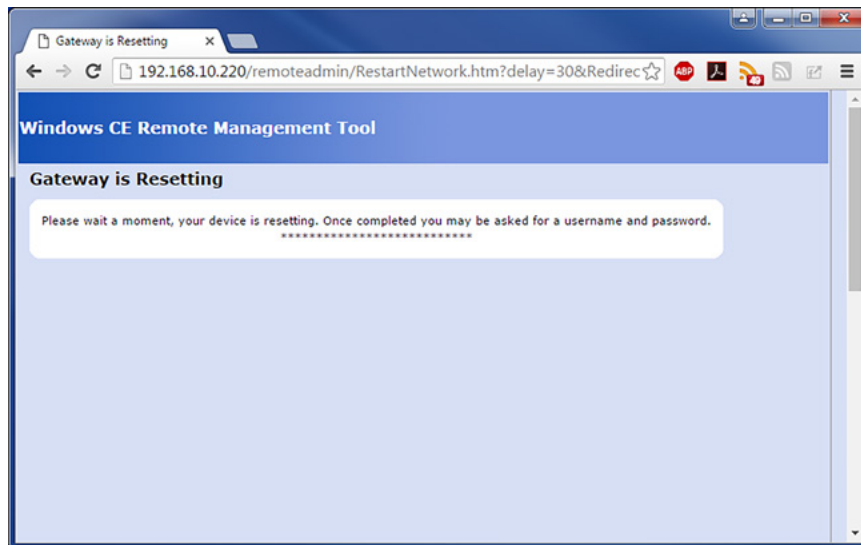
5. Enter the correct network information into the appropriate fields. Click **Submit** when finished [Fig. 29].

Fig. 29 Remote Admin - Network Configuration



6. Wait for the Gateway to finish resetting. If the new IP address is on the same subnet as it was before, you will go back to the *Network Configuration* page. Otherwise, you will lose connection to the *Remote Admin* tool. Either outcome indicates the network configuration changed successfully.

Fig. 30 Remote Admin - Gateway Resetting



Maintenance

Preventative maintenance should be performed periodically after installation to ensure the product maintains its visual exterior and optimal performance. To maintain the SU5000, follow the instructions below as needed. Due to the various types of exterior finishes on the SU5000, different types of care must be taken to keep the unit clean and undamaged.

Cleaning the Cabinet Exterior

Regular cleaning is the best way to maintain any stainless steel or finished equipment and prevent corrosion.

1. Stainless steel surfaces may be cleaned using any commercially available stainless steel cleaner or polish. If a heavier scratch mark is apparent, a metal blend and finish pad by 3M Company or equivalent may be used followed by a stainless steel cleaner. **ALWAYS POLISH IN THE DIRECTION OF THE GRAIN.**
2. Color powder coat finished cabinet surfaces may be cleaned using a soft damp cloth. Any deep scratched in this type of finish should be touched up to prevent rust or corrosion from forming. If left untreated, rust can spread under the powder coat finish.

Cleaning Moving Barriers, Side Panels and Sensor Lens Covers

Use cleaning products that are specifically recommended for use on acrylic surfaces. We recommend two products:

- ***Brillianize***
- ***Novus #1***

The two recommended products will clean the material and leave a greaseless shine that will repel dust and resist fingerprints. **DO NOT** use scouring compounds or chemical cleaners like Windex that contain ammonia or alcohol.

1. Using a soft cloth, clean the acrylic surfaces according to the instructions provided with the recommended cleaning product. **DO NOT SCRUB THE ACRYLIC!**
2. Check for cracks or scratches on the acrylic sensor lens covers. Sensor lens covers should only be replaced if they are inhibiting the function of the unit.

Maintenance (cont.)

Interior Maintenance

Internal Maintenance should occur once every year. Refer to the *SU5000 Installation Instructions* for details on how to access the interior of the turnstile. Dust build up is the most important concern inside the cabinet. Use canned air dust remover to clean out all the dust from the inside of the cabinet and specific areas noted below.

1. **Printed Circuit Boards (PCBs):** Using canned air dust remover, blow out the dust on the printed control boards.
2. **Sensors:** Using canned air dust remover, clean the dust from the optical sensors.

Weekly Safety Check

Perform the following safety check on a weekly basis to ensure that the turnstile is safe and ready for user operation. If the turnstile does not pass the Activation or Unsafe to Open tests, do not use the turnstile. Contact your service professional or Alvarado for assistance.

1. **Barrier Alignment** - Ensure that the barriers are properly aligned in the Home Position. If necessary re-home the barrier(s). Refer to the *SU5000 Installation Instructions* for instructions on setting the Home Position.
2. **Attachment** - Verify that the barriers, top channel lids, and cabinet panels are secure. If necessary, tighten screws.
3. **Passageway** - Check the turnstile passageway and entry and exit areas for trash or other debris that may impede traffic or be a safety hazard.
4. **Test Activation** - Activate the turnstile and complete a passage in both the entry and exit directions.
5. **Unsafe to Open Entry / Unsafe to Open Exit** - Perform an Unsafe to Open test in both the entry and exit directions. Verify the turnstile responds with the Unsafe to Open alarm condition. Refer to the Turnstile Operation section on Page 30 for more information on Unsafe to Open operation.

Troubleshooting

Use this troubleshooting section to diagnose and resolve common turnstile issues. If your particular issue is not covered in this troubleshooting section, please contact Alvarado Technical Support for further troubleshooting assistance.

Symptom	Possible Cause	Solution
Unit will not turn on	No power	Make sure that there is power to the turnstile power terminal block. Check if LEDs are lit on the I/O control board and the seven-segment display is showing a number.
	Blown fuse	Check fuse. If necessary replace with a 2.5A (slo-blo) fuse.
Constant auditory alarming	Communication/ low-voltage cable	Check the I/O control board to see if amber LEDs are lit. If they are lit, the most likely problem is a loose or improper communication connection. Disconnect the black 16-pin connectors from the I/O control board and motor controller boards, apply contact cleaner / lubricant to connector pins and reseal. Retry operation. If condition persists, perform the same process on the 16-pin connectors going into and out of the light boards and sensor boards. Retry operation. Alvarado Technical Support has a process document and can provide additional instructions.
Barriers operate erratically	Digital position encoder is not in place	Verify the digital position encoder is secured to the pulley shaft with all the locks tabs in place. [Fig. 31]. NOTE: After re-seating the digital position encoder, the barrier home position must be reset PRIOR to power cycling the turnstile.
Barriers do not move.	Blown 24VDC fuse on the motor controller board.	Locate the motor controller board fuses [Fig. 32]. Using a multimeter, check the 24VDC 6.3A fuse for continuity. If the fuse is blown, contact Alvarado for replacement instructions.
Blocked Sensor Auditory Alarms sounds after 15 seconds (default).	Wire or cable blocking sensors	Check for a stray wire or cable in front of the transmit and receive operational sensors (horizontal arrays). Tuck any stray wire or cable out of sensor viewing area. If this does not resolve the problem, contact Alvarado Technical Support for instructions on using the ADR-UP and ADR-DN buttons on the I/O control board to perform diagnostics on sensors.
Barriers either stay open or start to close then open back up	Safety sensor blocked	Check for a stray wire or cable in front of the individual transmit and receive safety sensors. Tuck any stray wire or cable out of sensor viewing area. If this does not resolve the problem, contact Alvarado Technical Support for instructions on using the ADR-UP and ADR-DN buttons on the I/O control board to perform diagnostics on sensors.
Barriers do not align in closed position	Home Position needs to be reset	Follow the Setting the home position instructions located in the <i>SU5000 Installation Instructions</i> .

Troubleshooting (cont.)

Fig. 31 Digital Position Encoder

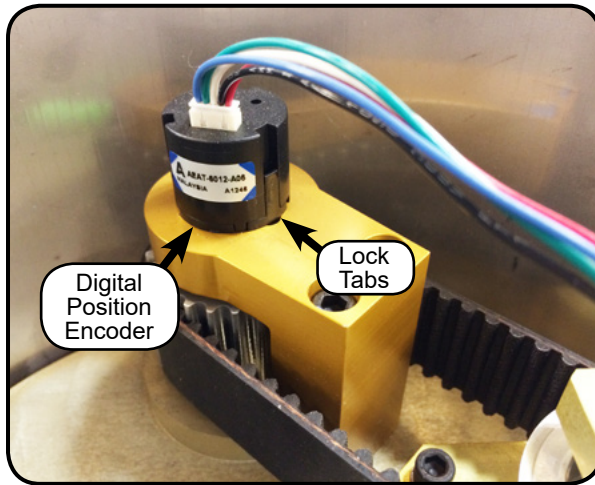
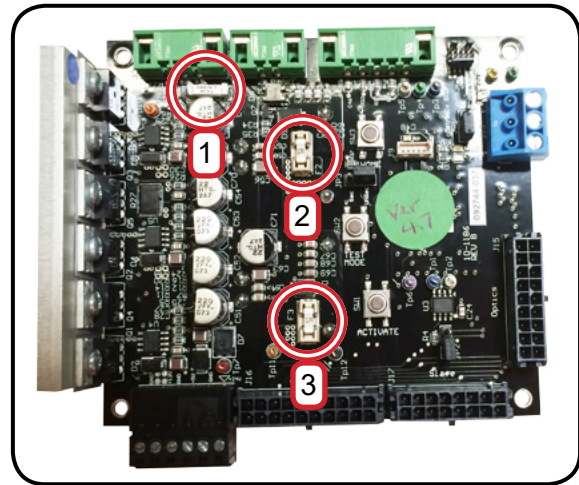


Fig. 32 Motor Controller Board Fuses



FUSES

- 1) 24VDC 6.3A
- 2) 12VDC 2A
- 3) 5VDC 3A

Revision History

Revision	Date	Author	Description
1-0	7/14/14	A. Flores	Original document.
1-1	11/18/15	A. Flores	Updated LaneConfig Installation and User Guide references.
1-2	3/24/16	A. Flores	UL 2593 and CSA C22.2 #247 Certifications
1-3	6/28/16	D. Bohannon	Updated sections on changing network configuration and date/time settings related to Amanda boards.
1-4	8/3/16	A. Flores	Removed UL325 Listing. Updated GateKeeper section to include web-based functionality.

