

# DSI<sup>®</sup>

DESIGNED SECURITY, INC.

*A Detex Company*

# ES831



*\*Custom model shown in stone and bronze*

Bi-Directional Barrier Arm Turnstile

Model ES831





The Designed Security, Inc. **ES831 bi-directional optical turnstiles** with hands-free barrier arms enhance the security of access control systems. The ES831 provides a visual as well as a psychological barrier while communicating to pedestrians that authorization is required to gain access to a facility or area.

Where high-speed pedestrian throughput and aesthetics are priorities, ES831 barrier arm turnstiles can grant access for up to 60 people per minute per lane and are surfaced to match the interior of any lobby with standard or custom designs and finishes. Compatible with most reader and access control technology, they detect, deter, and report attempts to enter without a valid card or by "tailgating" behind authorized personnel.

This system can be field selected as a Card-in/Free-exit, or Card-in/Card-out system configuration.

**Designed Security, Inc. Optical Turnstiles with Barrier Arms meet the standard of the Americans with Disabilities Act of 1990.**

**Product Description/Technical Information**

**Configuration:** Field selectable Card-in/Card-out, or Card-in/Free-exit pedestrian control.

**Card Readers:** Card readers to be supplied by others and may be mounted by DSI.

**Local Annunciation:** Visual and audible annunciation is provided at each passageway to provide status of passageway, indication of valid card read, invalid card or alarm condition.

Vertical Graphic Arrays/VGA's are solid state.  
Nomenclature: OPEN/CLOSED/WAIT (flashes on alarm condition).

Horizontal Graphic Arrays/HGA's are solid state.  
Nomenclature: PRESENT CARD/PROCEED (with arrow sequence) and Flashing Red Bar (for alarm condition).

**Audible:** Distinctive tones for valid card and alarm condition. Short chime sounds to indicate access has been granted. Buzzer sounds upon alarm condition.

**Remote Annunciation:** Interfaced to access control and/or security monitoring systems. (Optional)

**Control Inputs:** N/O - momentary "**Entry Card**" (max. 1 sec. pulsed closure)  
N/O - momentary "**Exit Card**" (max. 1 sec. pulsed closure)  
N/O - momentary "**Invalid Card**"  
N/O - maintained "**Bypass/Reset**"  
N/O - maintained "**Entry Closed**"  
N/O - maintained "**Exit Closed**"  
N/O - maintained "**Arm Disable**"  
N/O - maintained "**Free Exit**"  
N/O - maintained "**Emergency**" (Situation)  
N/O - maintained "**Voice Enable**" (Horn Disable) [optional]

**Status Outputs:** N/O - "**Alarm**" signal  
N/O - "**Time Out**" signal  
N/O - "**Valid Passage**" (after valid card read) signal  
N/O - "**Bypass/Reset**"  
N/O - "**Invalid Card**"  
Aux. Output Power - "+/- 12 VDC @ 2 amp (max)"

Relays rated 1.0 amp @ 30 VDC/contacts provided for interface to building access control, fire/life safety, security, CCTV, and monitoring systems.

**Components:** All components and electronic sub-assemblies including the microprocessor controller of the Optical Turnstiles are mounted within the bollards; thus reducing the total cost of installation, labor hours, conduit, wire, and cable.

**Pedestrian Throughput:** Typical pedestrian throughput is 60 people per minute, 3600 per hour, per lane.

**Product Description/Technical Information (contd.)**

- Interface:** The DSI Optical Turnstiles will utilize the building access control system to grant or deny access.
- Code Compliance:** The Americans With Disabilities Act of 1990/ADA, nonrestrictive barrier-free design provides equal access. NFPA 101 Life Safety Code and most standard building codes.
- Manufactured:** The microprocessor, Vertical Graphic Arrays/VGA's and Horizontal Graphic Arrays/HGA's are solid state in design and all barrier arm components are designed for virtually maintenance free operation.
- Operation:** High-speed/nonrestrictive pedestrian passageways. Passageways are truly bi-directional at all times. Arm shall act as a "soft barrier" to control passage while allowing users to "push-to-clear" for emergency egress.
- Barrier Arm:** Arm travels in a 180° horizontal plane and shall be electro-mechanically driven. (No pneumatic components or compressed air supply will be used.)  
The barrier arm will be extended at all times and will swing open when valid access credentials are presented. The arm shall move 90° from the extended position to the retracted position in the direction the user is traveling.
- Arm Construction:** The barrier arm shall be constructed of anodized aluminum with a satin brushed finish. The arm weight shall be minimized to reduce the inertia of the arm in motion. The arm shall have sufficient strength to withstand vertical forces expected in the workplace environment without permanent damage.
- Arm Length:** 17" beyond the bollard provide coverage over a 36" wide space with a maximum of 2" between arm tips.
- Clearance Sensors:** Six (6) IR optical beams within the passageway shall sense direction, detect tailgaters and obstructions.
- Emergency Egress:** "Push-to-Emergency Exit" design is built into the barrier-arm so the pedestrian passageway does not obstruct emergency evacuation of the facility. Alarm outputs activate if arms are pushed away. Force required to push arm away is consistent with ADA specifications.
- Finish:** **Top Surface:** Avonite Black Lava, Nevamar Laminate or stainless steel.  
**Side Surface:** Stainless steel, Formica, Nevamar Laminate.
- Bollard Dimensions:** 64" long x 38" high x 10" wide.
- Bollard Spacing:** 36" recommended to meet ADA requirements.

**Product Description/Technical Information (contd.)**

**Bollard Mounting:** The bollards shall be secured to the floor through the use of four (4) anchor bolts at each end of the assembly. Concealed access panels shall be provided on the bollard's side to provide access for anchoring.

**Conduit Size:** Limited by all components including the microprocessor being located in the bollards. All required wiring is low-voltage and can be run in one conduit. Maximum size 1.5" if all I/O functions are utilized.

**Power Requirements:** 24VDC @ 4 amps. per passageway. Power supply supplied by others and can be mounted in equipment room. (Backup power source should be considered for many applications.)

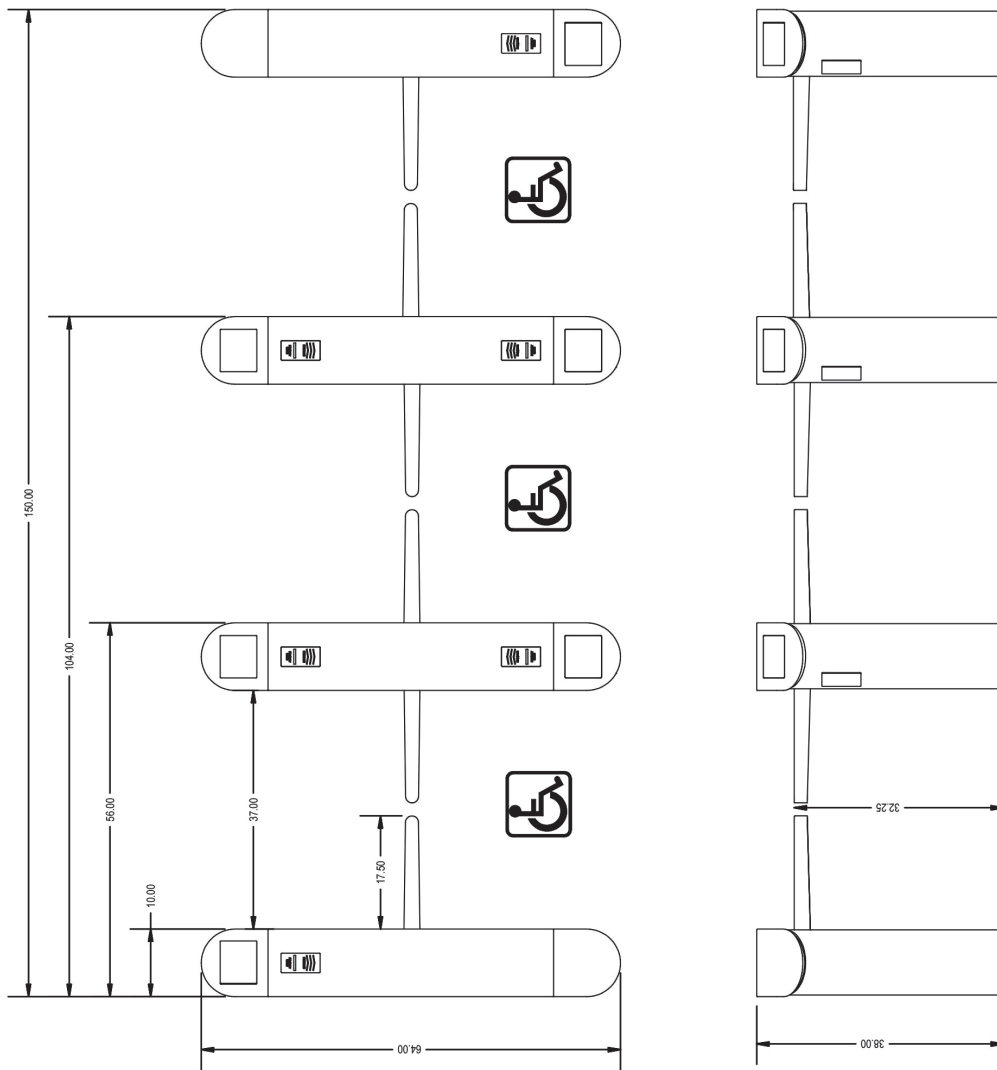
**Wiring Requirements: From access control systems to control bollard:**  
(Some connections may be optional.)

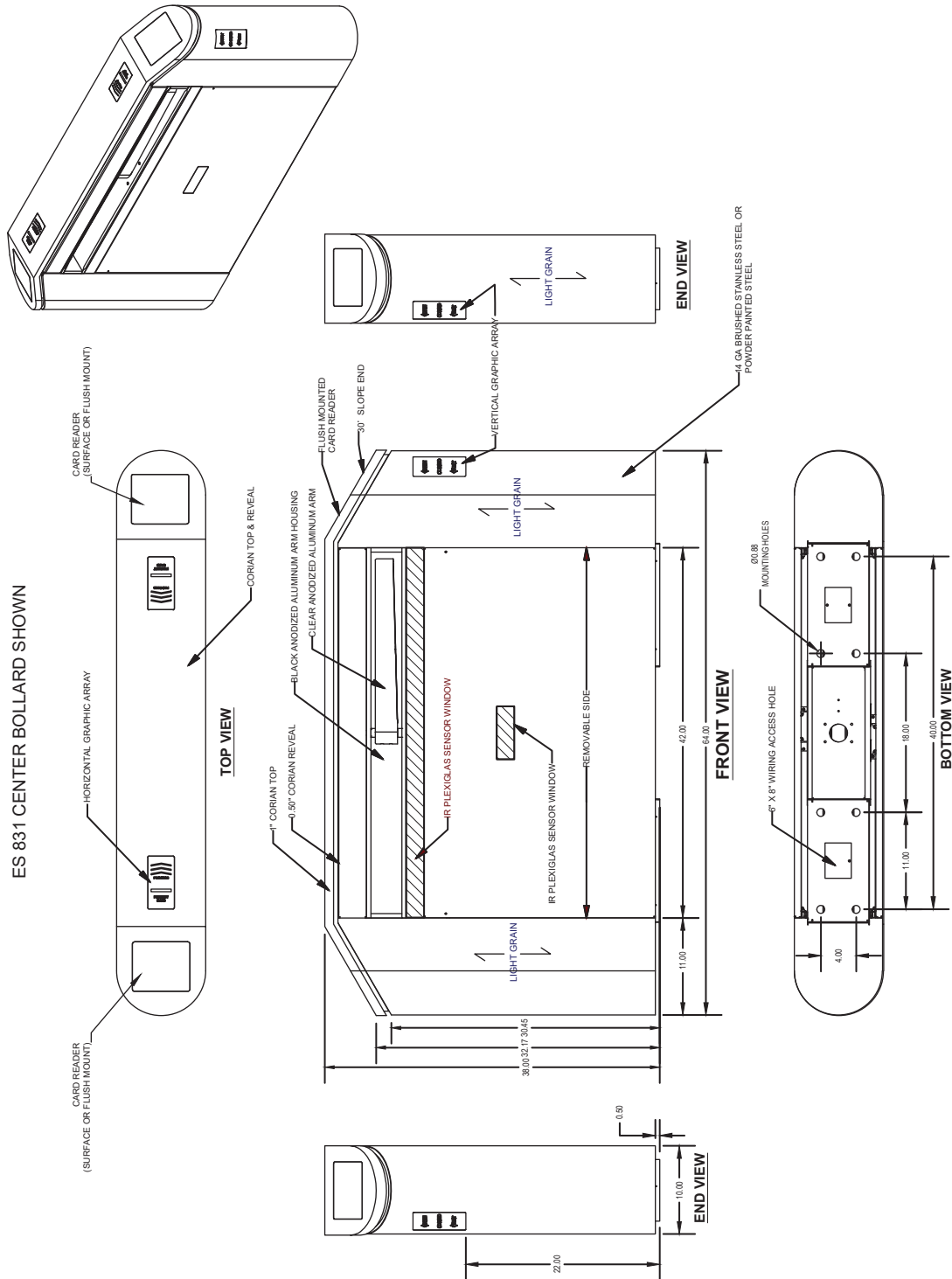
<b>Card reader cable</b>	as specified by manufacturer
<b>"Entry Granted" (Input)</b>	2 conductor/22 ga. (min.)
<b>"Exit Granted" (Input)</b>	2 conductor/22 ga. (min.)
<b>"Invalid Card" (Input)</b>	2 conductor/22 ga. (min.)
<b>"Bypass lane" (Input)</b>	2 conductor/22 ga. (min.)
<b>"Emergency Situation" (Input)</b>	2 conductor/22 ga. (min.)
<b>"Arm Operation Disable" (Input)</b>	2 conductor/22 ga. (min.)
<b>"Free-Exit Enable" (Input)</b>	2 conductor/22 ga. (min.)
<b>"Entry Closed" (Input)</b>	2 conductor/22 ga. (min.)
<b>"Exit Closed" (Input)</b>	2 conductor/22 ga. (min.)
<b>"Alarm Condition" (Output)</b>	2 conductor/22 ga. (min.)
<b>"Passage Completed" (Output)</b>	2 conductor/22 ga. (min.)
<b>"Time Out" (Output)</b>	2 conductor/22 ga. (min.)
<b>"lane Bypassed" (Output)</b>	2 conductor/22 ga. (min.)
<b>24VDC Power</b>	2 conductor/12 ga. (min.)

**Wiring from control bollard to adjacent passageway bollard:**

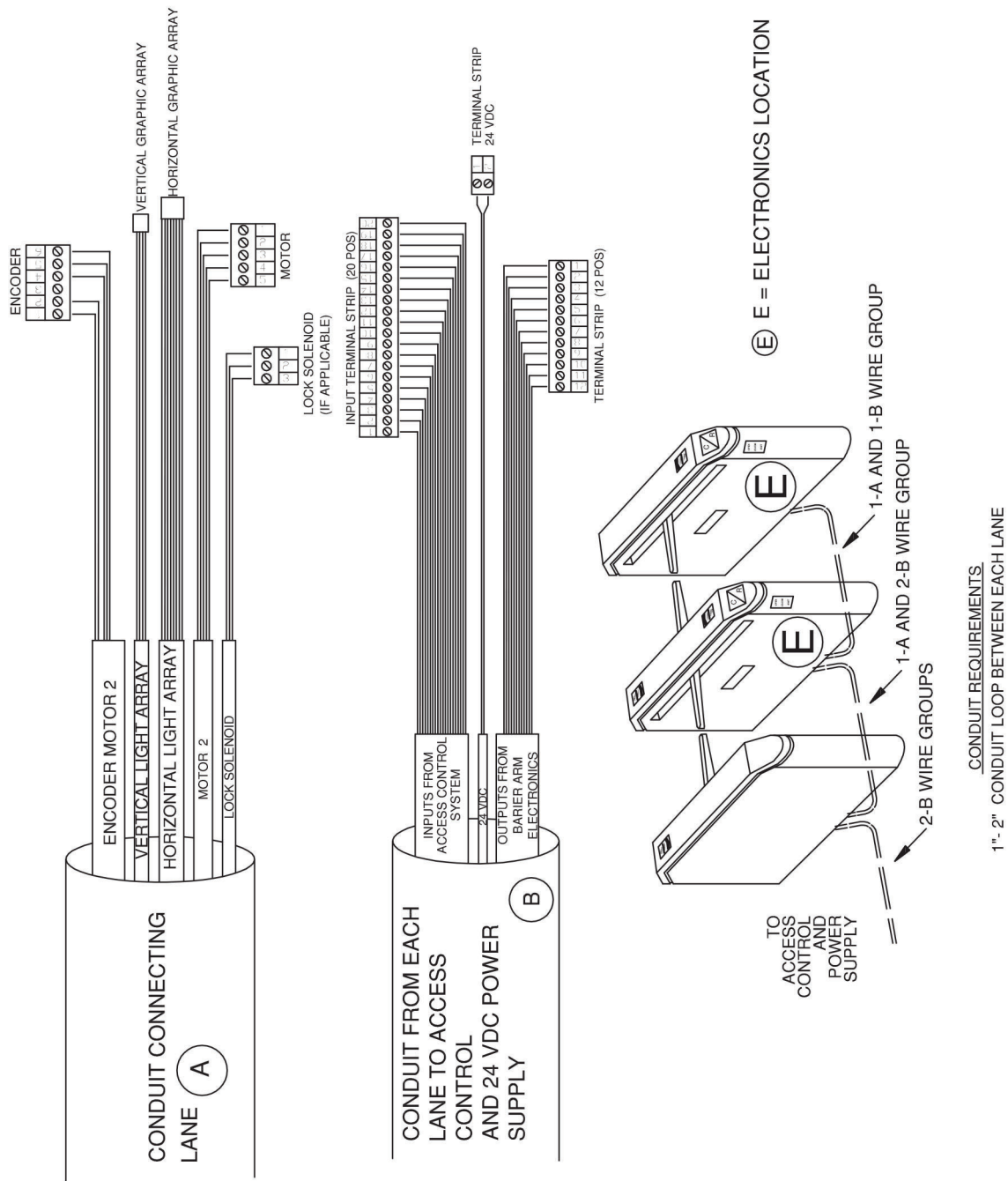
<b>Card reader cable</b>	as specified by manufacturer
<b>Horiz. Graphic Display</b>	8 conductor telephone cable/26 ga.
<b>Verti. Graphic Display</b>	4 conductor telephone cable/26 ga.
<b>Motor Cable</b>	4 conductor shielded cable/18 ga.
<b>Encoder Cable</b>	4 conductor shielded cable/22 ga.

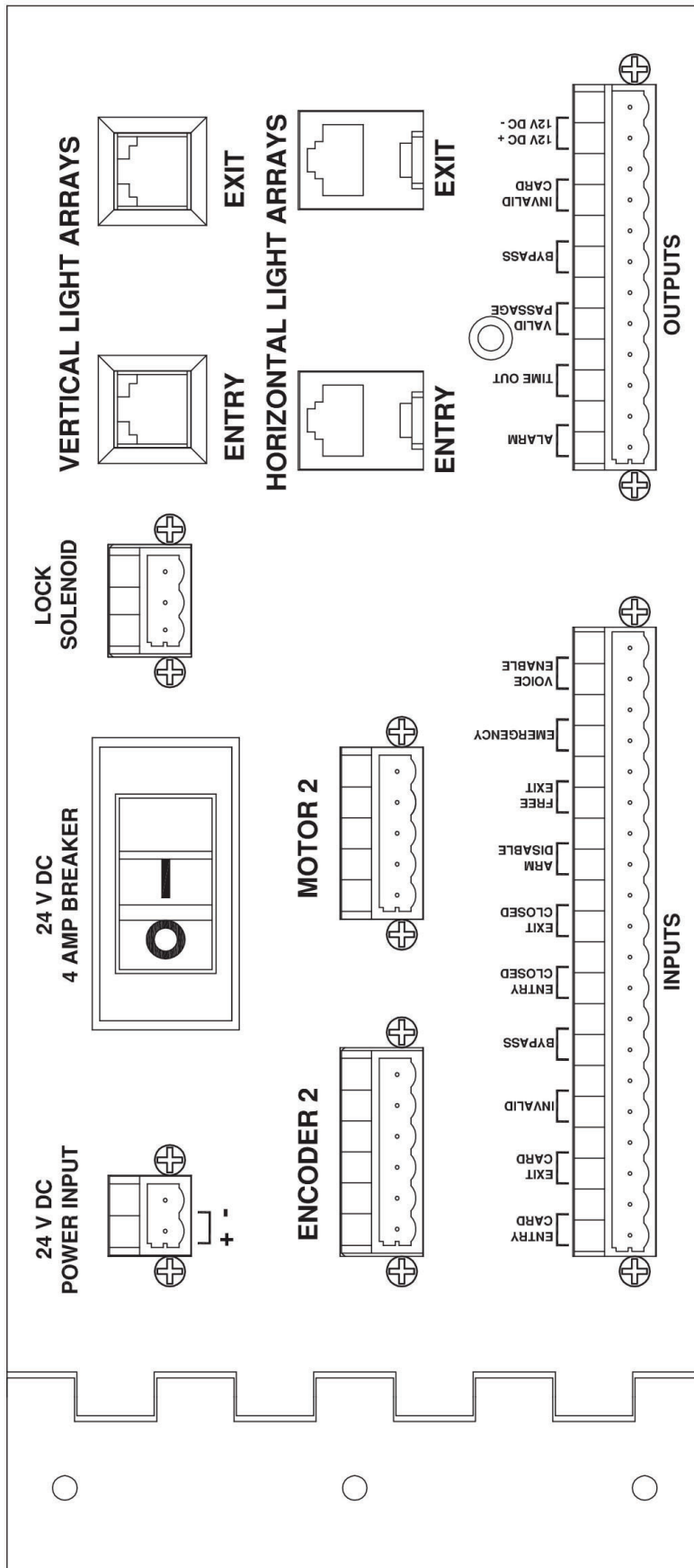
**Note:** Wiring may vary depending on options and conduit runs.











## ES831 Accessories

### Floor plates

Floor Plates are used where floors cannot be core drilled such as in landmark buildings. The Floor Plates provide a mounting surface for the turnstiles and provide a wire way to run all cables. The ES831 floor plates meet the standard of the Americans with Disabilities Act of 1990.

### Card reader decals

Provides an icon to help communicate to users where the card reader is located.

### Power Supply

The PS/DC24 Power Supply is a regulated and filtered, multiple output power supply intended for use with access control and fire alarm systems. Power management applications include optical turnstiles, door management alarms, annunciator panels, lock power, reader and associated security device power. Battery standby is optional, based upon application.

## ES831 Options

### Visitor/Bar code reader

DSI can provide a bar code reader system in the turnstiles to process a temporary visitor badge. Please call to confirm the configuration of your specific readers.

### Card reader mounting

DSI provides, free of charge, card reader mounting during the fabrication of the turnstiles, in some cases, where multiple readers and/or access control boards are used, there may be an extra charge.

### Card collector

This option is used in buildings with a large amount of visitors. The system will collect the visitors' card prior to allowing them to exit the turnstile. The card can then be reused after being removed from the collection drawer.

### Voice module

The Voice module uses a digital recording to help convey commands to the users of the turnstile. Standard messages include "Proceed" and "Present Card". The voice module is also used with the card collector to prompt visitors leaving the turnstile to return their badge.

### Locking arm

The locking arm option is used in applications where a hard-barrier is required on the entrance side of the turnstiles. The ES831 utilizes an automatic locking mechanism that engages only when someone enters the walkway without a valid card read, thus extending the life of the product. Once the arms are locked they will remain in the locked position until the walkway is cleared of pedestrians, it is now ready for the next user.