

# EDC

## Waist High Series Turnstiles

Our EDC series turnstiles are designed to provide years of trouble-free operation. Electro-mechanical versions provide bi-directional access control. Manual versions are used for patron flow control or patron counting.



### COMMON APPLICATIONS

- Employee and Visitor Access Control
- Pedestrian Traffic Flow Control
- Patron Counting

### TYPICAL INSTALLATION SITES

- Corporate Lobbies and Entrances
- Fitness Clubs
- Colleges and Universities
- Arenas and Stadiums
- Amusement Parks



## FUNCTION

EDC series turnstiles provide highly reliable bi-directional access control, pedestrian flow control and patron counting.

Electric lock control models integrate easily with facility access control systems. In controlled passage mode, upon receipt of a valid card signal from an access control system, the turnstile unlocks allowing the user to pass in the requested direction.

The EDC provides ample room for installation of card or biometric readers. Readers can be installed on the turnstile lid, or optional lid cutouts can be provided for installation of proximity readers underneath the turnstile lid (see the Options section for more information).

Manual models are non-powered and are used for crowd control and/or patron counting. A non-contact magnetic switch issued to generate passage counts on manual models.

For either manual or electric turnstiles, counts may be output to a local counter installed in the cabinet (one counter is required per rotation direction). Counts can also be output to Alvarado’s GWCB12 count controller and Alvarado’s GateWatch10 facility counting software, which is a networked application that provides real-time entry, exit and in-venue totals as well as a historic database of passage activity. The GWCB12 is an IP enabled device allowing communication to GateWatch10 over an Ethernet network. The addition of counters and use of the GWCB12 and GateWatch10 are available options.

EDC series turnstiles are designed to provide years of service. They have stainless steel and investment cast internal components and an adjustable rotary dampener that both slows and cushions the arm rotation and automatically self-centers the arms to the home position. All models have built in key override controls located on the underside of the turnstile facia to allow easy field operational mode changes.

The EDC design uses hidden anchoring and has no exposed bolts or fasteners to provide a superior looking turnstile suitable for nearly any indoor or outdoor installation.

The turnstiles ship fully assembled for quick and easy installation. Available finishes are satin stainless steel or color powder coat available in dozens of colors.

## AVAILABLE CONFIGURATIONS\*

| Configuration | Cabinet Length | Arm Length | End and Lid Style | Electric Lock Control |
|---------------|----------------|------------|-------------------|-----------------------|
| EDC-3         | Standard       | Standard   | Square            | No                    |
| EDC-6X        | Standard       | Standard   | Square            | Yes                   |
| EDC-E-3       | Extended       | Extended   | Square            | No                    |
| EDC-E-6X      | Extended       | Extended   | Square            | Yes                   |
| EDC-BN-3      | Standard       | Standard   | Bullnose          | No                    |
| EDC-BN-6X     | Standard       | Standard   | Bullnose          | Yes                   |
| EDC-EBN-3     | Extended       | Extended   | Bullnose          | No                    |
| EDC-EBN-6X    | Extended       | Extended   | Bullnose          | Yes                   |

\* Full dimensions for each available model are shown on pages 9-10



## AVAILABLE FINISHES

### STAINLESS STEEL

The cabinet and lid are fabricated from #304 stainless steel polished to a #4 satin finish.

### POWDER COATED

The cabinet is powder coated over stainless steel. The stainless steel lid, and the head and arms are not powder coated. Powder coating is available in a variety of colors.

## MATERIALS

### LID

The lid is fabricated from 16-gauge stainless steel, regardless of finish. The lid is mounted to the cabinet with two hinge assemblies and secured with two cam locks.

### CABINET

The cabinet is fabricated from 14-gauge stainless steel. The cabinet contains the control mechanism and electrical components as well as two internal mounting tubes, which allow the turnstile to be installed without the use of visible anchors, bolts or fasteners.

### ROTATING HEAD AND ARMS

The rotating head is fabricated from a solid piece of aluminum, machined to a conical shape and drilled to accept three turnstile arms. The arms are 1.5" OD x 16-gauge #304 stainless steel tubing sealed at one end by a welded stainless steel cap. The arms are press fit into the head and welded from the back, allowing for assembly without the use of visible exterior fasteners. This improves aesthetics and eliminates the possibility of the arms being removed through tampering.

## CONTROLS, OPERATIONAL MODES AND FUNCTIONALITY

### CONTROL MECHANISMS

#### Turnstile Control Board (TCB)

The turnstile control board (TCB) is a controller installed in the turnstile cabinet of electric lock control (6X) models. The TCB controls activation and turnstile functions. Activation for either direction of operation is achieved by supplying a momentary dry contact to the TCB. Terminal strips on the board provide access to the available I/O. Communication between the turnstile and access control system is in the form of dry contact inputs and outputs. A primary power to low voltage, UL Listed transformer located in the turnstile cabinet provides appropriate low voltage power to the TCB. The transformer may be bypassed by providing either 10VAC or 13.5VDC directly to the TCB.



|                                            |                                                                                                                                                                                                                                                                             |
|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Locking Control</b>                     | The locking and unlocking of the turnstile is controlled with hardened steel lock arms that are moved into the appropriate locked or unlocked position by continuous duty rated solenoids and spring assemblies. There is independent control of each rotational direction. |
| <b>Opto-Interrupter Detection Assembly</b> | Rotation of the turnstile is detected by an internal opto-interrupter assembly. No mechanical microswitches are used.                                                                                                                                                       |

## HYDRAULIC DAMPENING AND SELF-CENTERING

All EDC series turnstiles have a hydraulic dampener that provides a controlled rotation, smoothly returning the turnstile arms to the home position.

## RATCHET / ROLLER BEARING ASSEMBLY

The ratchet is a stainless steel investment casting, holding six precision roller bearings.

## PASSAGE MODES - ELECTRIC LOCK CONTROL MODELS

Electrically controlled turnstiles offer the following user configurable passage modes:

|                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Controlled Passage</b>                | The arms are locked in place in the home position. Upon receipt of an authorization signal from an access control system, the turnstile unlocks in the appropriate direction, allowing a single passage in the authorized direction. The arms return to the home position after the user has passed through the turnstile. Controlled passage can be either single direction or bi-directional.                                                                                         |
| <b>Free Passage</b>                      | An authorization signal is not required for a user to pass through the turnstile. Either rotation direction can be set to free passage using the key locks located on the underside of the cabinet.                                                                                                                                                                                                                                                                                     |
| <b>No Passage</b>                        | No passage is allowed. The roto is locked in place. Valid electronic credentials are ignored. Either or both dimensions can be set to no passage.                                                                                                                                                                                                                                                                                                                                       |
| <b>Remote Passage Mode Configuration</b> | The above passage modes can be controlled remotely through inputs on the TCB. The access control system uses these inputs to set the desired mode, or Alvarado offers an optional three-position key switch (Remote Turnstile Mode Key Switch Option) that is field wired into the TCB. Turning the key to one of three positions places the turnstile in Controlled Passage mode, Free Passage mode or No Passage mode. A separate key switch is required for each rotation direction. |

## PASSAGE MODES - MANUAL CONTROL MODELS

Manual turnstiles offer the following user configurable passage modes:

|                                  |                                                                                                                                                                                                                                                               |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Free Passage / No Passage</b> | Using the included key lock control, the turnstiles can be configured to provide free passage in both directions; free passage in one direction and restricted passage (locked) in the opposite direction; or restricted passage (locked) in both directions. |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



**FUNCTIONALITY - OTHER FEATURES AND TOOLS (ELECTRIC LOCK CONTROL MODELS)**

|                                      |                                                                                                                                                                                                                                                     |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operational Configuration</b>     | Available configurations are fail-safe/fail-safe (standard) or fail-lock/fail-lock.                                                                                                                                                                 |
| <b>Field Configuration Changes</b>   | Our turnstile design makes it very easy to change operational configurations in the field.                                                                                                                                                          |
| <b>Access Timeout</b>                | Adjusts the time a user is allowed to pass through the turnstile after an activation (unlock) signal has been received. The default setting is 20 seconds before the turnstile automatically relocks. Additional settings are 5, 10 and 15 seconds. |
| <b>Independent Turnstile Testing</b> | The turnstile control board includes test activation buttons which allow the unlocking function to be tested independent of the access control system. This is an excellent tool for troubleshooting.                                               |
| <b>Junction Box</b>                  | The transformer assembly in the turnstile cabinet includes a fused junction box with UL Listed transformer.                                                                                                                                         |

**CARD READERS / PHYSICAL ACCESS DEVICES**

Installers can mount card readers or access devices directly to the top of the turnstile lid. Alvarado can also, as an option, provide a 3" x 4" cutout fitted with scratch resistant acrylic on either side (or both sides) of the lid to allow installation of an appropriate sized proximity reader under the lid. See options.

**TURNSTILE INTERFACE TO ACCESS CONTROL SYSTEM**

There are two types of interfaces to allow an access control system to operate with electric lock control turnstiles:

|                    |                                                                                                                                                                                                                                                                                                                 |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Dry Contact</b> | Single passage activation is achieved by supplying an isolated, voltage-free, momentary dry contact of 1 second or less to the appropriate location on the turnstile control board. An output is provided when the turnstile is rotated. A description of available input and output signals is provided below. |
| <b>Serial</b>      | Alvarado offers an optional turnstile controller that accepts an RS-232 or RS-485 serial communication activation signal. Contact Alvarado for information (see Options).                                                                                                                                       |

A description of the available input and output signals (dry contacts) from the turnstile control board are provided below:

| Input Signal                          | Entry / Exit |
|---------------------------------------|--------------|
| Passage Direction Closed              | √            |
| Passage Direction Open                | √            |
| Good Card (Single Activation)         | √            |
| Bad Card (Used with JS3 Light Option) | √            |

| Output Signal     | Entry / Exit |
|-------------------|--------------|
| Rotational Signal | √            |



## OPTIONS

### 220VAC

A 220VAC, 50 - 60 Hz transformer is substituted for the standard 110VAC transformer.

### BATTERY-POWERED COUNTERS

A lithium battery powered LCD seven-digit counter is installed in the turnstile. Each rotation of the turnstile arms generates a count. One counter is required per direction of travel. Counters can be ordered as resettable or non-resettable. Resettable counters can be reset to "0" using a key switch integrated into the turnstile cabinet.

### CARD READER CUTOUT

A 3" x 4" cutout in the lid is fitted with scratch resistant acrylic allowing the attachment of appropriately sized proximity readers underneath the lid.

### COMPUTERIZED COUNTING

Each turnstile rotation outputs a count to GateWatch, Alvarado's computerized patron counting software. GateWatch provides real-time entry, exit and in-venue totals in conjunction with Alvarado turnstiles.

### CUSTOM INTEGRATION

Alvarado can provide custom integration of other access control components. Contact Alvarado with custom requirements.

### DROP ARM

The horizontal turnstile arm drops down to provide a clear passageway on loss of power or receipt of a fire alarm input located on the TCB. Available on electric lock control (6x) models only.

### EXPEDITED MANUFACTURING TIMES

Expedited manufacturing times are available. Contact Alvarado for more information.

### FAIL-LOCK / FAIL-LOCK OPERATION

Both sides of the turnstile remain locked upon loss of power. Available on electric lock control (6x) models only.

### JUNCTION BOX WITH POWER PLUG RECEPTACLES

The power junction box inside the turnstile cabinet includes two power receptacles, providing a convenient way to power devices using a plugged power supply. 110VAC and 220VAC versions available.



**PORTABLE BASEPLATE**

The turnstile is mounted to a black powder coated baseplate with a stainless steel guide rail. Wheels and a handle allow for easy maneuverability. Available on manual models only.

**PUSH BUTTON ASSEMBLY**

Unlocks the turnstile for one passage. The stainless steel push button assembly is supplied loose for installation at a location remote from the turnstile, like at an attendant desk (uninstalled) or attached to the turnstile. Available on electric lock control (6x) models only.

**RKO-3 (REMOTE TURNSTILE MODE KEY SWITCH)**

A 3-position key switch is provided that allows one rotation direction to be placed in one of three operational modes. A key switch is required for each direction of operation.

|                                          |                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Controlled Passage</b>                | The arms are locked in place in the home position. Upon receipt of an authorization signal from an access control system, the turnstile unlocks in the appropriate direction, allowing a single passage in the authorized direction. The arms return to the closed position after the user has passed through the turnstile or the user defined time frame for an entry to occur expires. |
| <b>Free Passage</b>                      | An authorization signal is not required for a user to pass through the turnstile.                                                                                                                                                                                                                                                                                                         |
| <b>No Passage<br/>(Direction Closed)</b> | No passage is allowed. The arms are locked in place. Valid electronic credentials are ignored.                                                                                                                                                                                                                                                                                            |

**SERIAL INTERFACE TURNSTILE CONTROL BOARD**

The standard turnstile control board is substituted with a control board that accepts an RS-232 or RS-485 serial communication activation signal. Contact Alvarado for more information.

**USER NOTIFICATION ACTIVATION LIGHTS (JS-3 LIGHTS)**

Available for use with electric lock control models, an LED array is located under the lid. The JS-3 option allows the user to select one of two signal arrays: red/green or yellow/green/red. The user selection is made via a jumper on the turnstile control board.

The light arrays function in one of the following manners:

**RED / GREEN SELECTION**

|                    |                                                                                                                                                                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Red Light</b>   | Normal "ready" state; indicates the turnstile is locked and ready for card presentation.                                                                                                                                                               |
| <b>Green Light</b> | Illuminates when the access control system provides the turnstile control board an "authorized" input. When the green light illuminates, the turnstile will unlock and remain unlocked until the turnstile is rotated or the time for passage expires. |



**YELLOW / GREEN / RED SELECTION**

|                     |                                                                                                                                                                                                                                                        |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Yellow Light</b> | Normal “ready” state; indicates the turnstile is locked and ready for card presentation.                                                                                                                                                               |
| <b>Green Light</b>  | Illuminates when the access control system provides the turnstile control board an “authorized” input. When the green light illuminates, the turnstile will unlock and remain unlocked until the turnstile is rotated or the time for passage expires. |
| <b>Red Light</b>    | Illuminates when the access control system provides an “unauthorized” input. The turnstile remains locked.                                                                                                                                             |

**SHIPPING AND SITE PREPARATION****SHIPPING**

EDC turnstiles are shipped assembled.

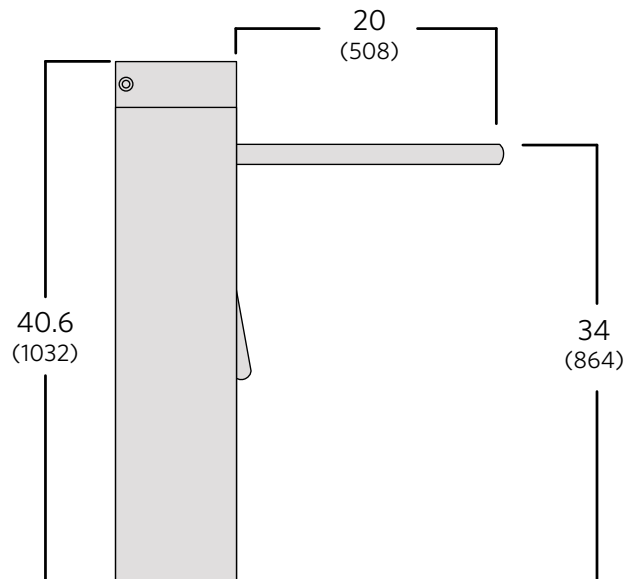
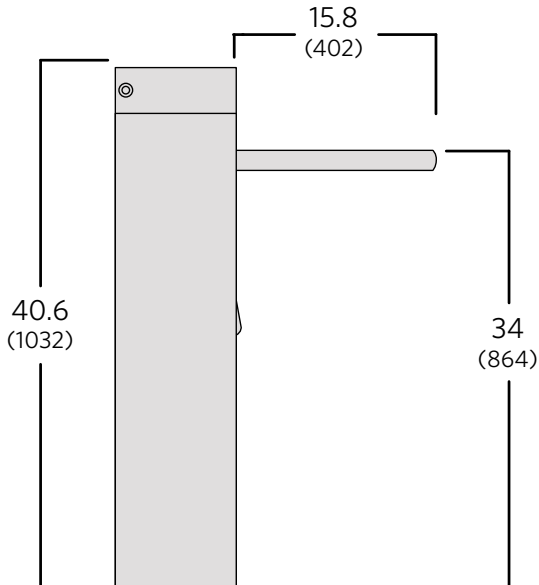
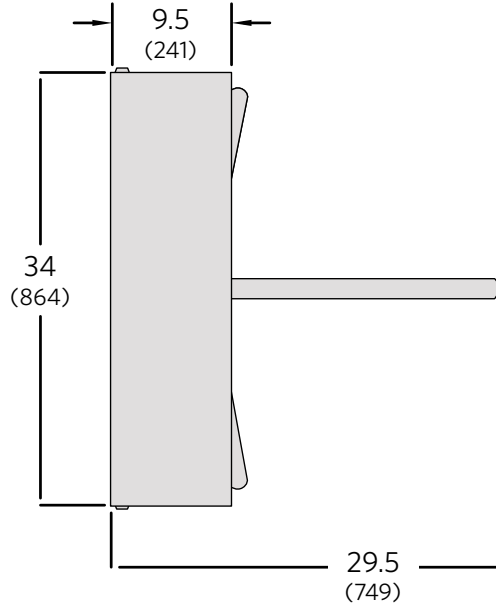
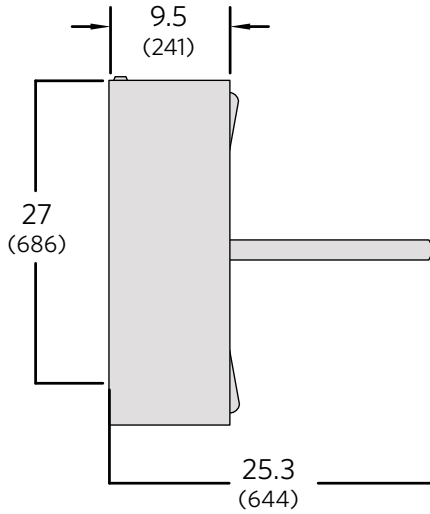
**SITE PREPARATION**

All turnstiles must be installed on a firm foundation in a manner that allows the required power and activation signal cabling to be pulled into the unit (electrically controlled models). The recommended slab platform should be 4” deep, level concrete. Concrete anchors, bolts and washers are included with each turnstile. Installation should be performed by a skilled installer following Alvarado’s directions and instructions. Detailed drawings and installation manuals are available online.



### TECHNICAL DIMENSIONS

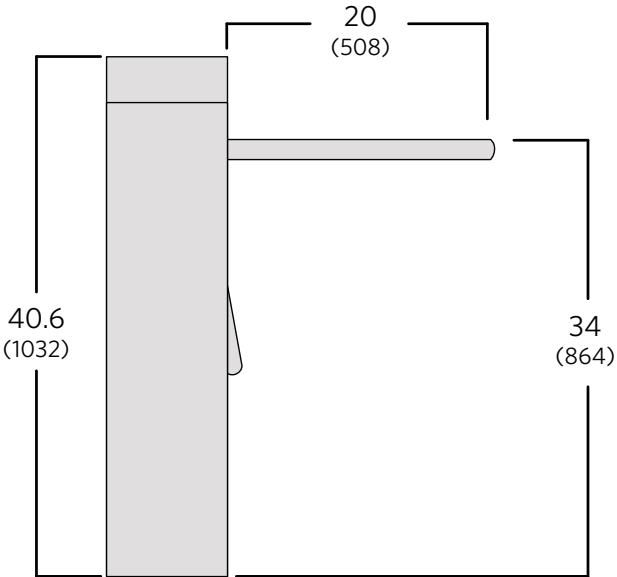
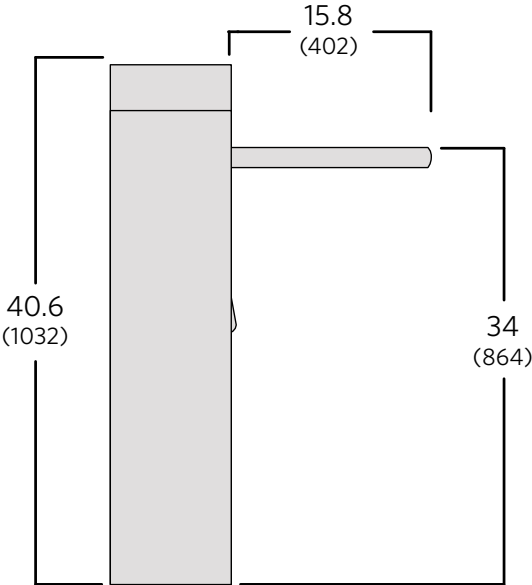
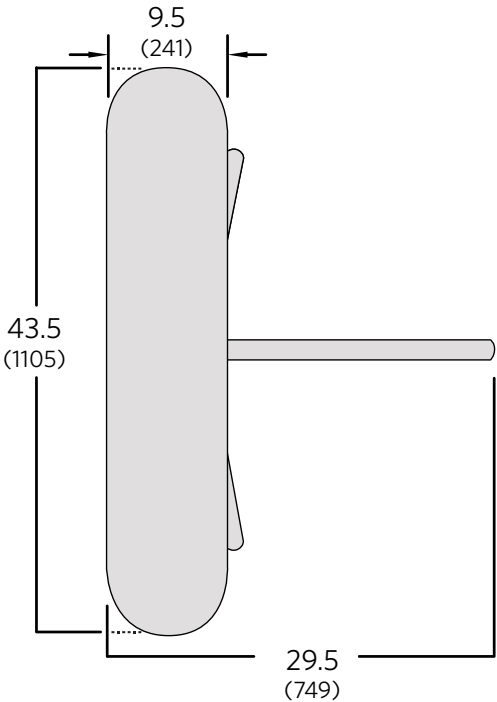
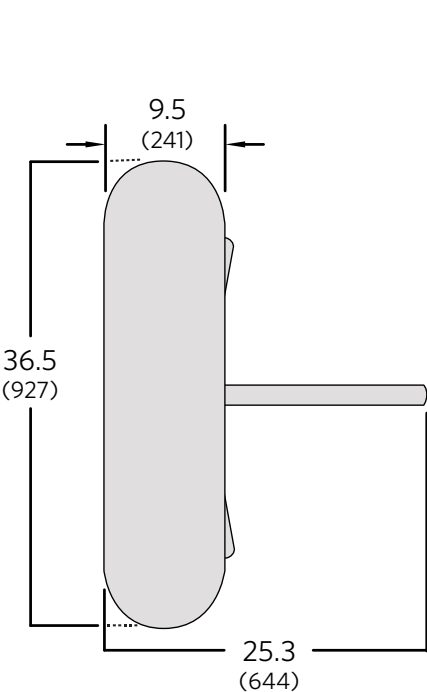
Dimensions are shown in inches (mm). All measurements are approximate.



Standard Cabinet  
Models: EDC-3/EDC-6X

Extended Cabinet  
Models: EDC-3/EDC-6X

Dimensions are shown in inches (mm). All measurements are approximate.



Standard Cabinet (Bullnose)  
Models: EDC-BN-3/EDC-BN-6X

Extended Cabinet (Bullnose)  
Models: EDC-EBN-3/EDC-EBN-6X



| Electrical                                   | Description                                                                                                                                                                                                                                                                                                                                        |                                   |
|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| UL Rated Transformer                         | 110-120VAC, 60 Hz or 220-240VAC, 50 Hz (optional)                                                                                                                                                                                                                                                                                                  |                                   |
| Power Requirements                           | Max power consumption is approximately 65W per turnstile with all available electrical options.                                                                                                                                                                                                                                                    |                                   |
| Operational Voltage                          | Primary power is stepped down and rectified for low-voltage 12VDC operation.                                                                                                                                                                                                                                                                       |                                   |
| On/Off Switch                                | An on/off switch is located on each power junction box inside the top channel. A visible green LED is illuminated on the TCB when power is "on."                                                                                                                                                                                                   |                                   |
| Surge Protection                             | The TCB uses Transient Voltage Suppressor (TVS) devices to provide superior lightning and surge protection. The TCB is rated to 500A (6kV) for lightning and industrial surges (per IEC 61000-4-5). Protection against ESD is provided (per IEC 61000-4-4). Control signal lines are protected by bi-directional TVS devices up to 600W per input. |                                   |
| Turnstile Control Board (TCB) Weatherization | The TCB is conformal coated to protect electronic circuitry from environmental damage.                                                                                                                                                                                                                                                             |                                   |
| Bi-Directional Solenoid Drivers              | Each TCB provides one solenoid driver per rotation direction.                                                                                                                                                                                                                                                                                      |                                   |
| Weights and Environmental                    |                                                                                                                                                                                                                                                                                                                                                    |                                   |
| Product Weight                               | EDC 160 lbs.   EDC-BN 190 lbs.   EDC-E 180 lbs.   EDC-EBN 210 lbs.                                                                                                                                                                                                                                                                                 | 73 kg   86 kg   82 kg   95 kg     |
| Shipping Weight                              | EDC 330 lbs.   EDC-BN 370 lbs.   EDC-E 360 lbs.   EDC-EBN 380 lbs.                                                                                                                                                                                                                                                                                 | 150 kg   168 kg   163 kg   172 kg |
| Operating temperature                        | 10° to 140° F                                                                                                                                                                                                                                                                                                                                      | -10 to 60° C                      |
| Storage Temperature                          | -30° to 160° F                                                                                                                                                                                                                                                                                                                                     | -34 to 71° C                      |
| Relative Humidity                            | 0-90% (non-condensing)                                                                                                                                                                                                                                                                                                                             | --                                |

### WARRANTY

For a period of one year from the date of shipping, Alvarado will replace or repair, at Alvarado’s option, any products or parts which are defective in materials or workmanship, provided recommended installation and maintenance procedures are followed. This warranty is void if damage is due to improper installation, maintenance or use. This warranty is limited to parts only, and does not cover labor or shipping charges incurred in connection with the removal or replacement of warranted products or parts.

This warranty is expressly made in lieu of any and all other warranties, expressed or implied, including, but not limited to implied warranties of merchantability and fitness for a particular purpose. Alvarado shall not be liable for any loss or damage, directly or indirectly, arising from the use of purchased products. In no event shall Alvarado be liable to buyer for consequential damages, special damages, incidental damages, loss of use, business interruption, loss of profits, or damages of any kind arising out of the use or inability to use a purchased product. In NO event shall Alvarado be liable for damages which exceed the purchase price of a covered product.

