# EDC

## Waist High Turnstile

The EDC is Alvarado's most popular waist high turnstile. It is a rugged, multi-purpose turnstile used to provide bi-directional access control, patron flow control and/or patron counting. It is designed to provide years of trouble-free operation.



## 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

The versatile EDC provides highly reliable bi-directional access control, pedestrian flow control and patron counting. Our turnstiles are installed in thousands of locations worldwide.

Our electric lock model, EDC-6X, provides bi-directional access control. The turnstile has a robust turnstile controller that allows easy integration with facility access control systems and devices such as push buttons. Card or biometric readers can be installed on the turnstile lid, or lid cutouts can be provided for installation of readers inside the turnstile cabinet. Electric lock control models provide a dry contact output upon rotation that can be used either for passage feedback and/or a count passage output.

The manual (non-electric) EDC provides crowd control and patron counting using a magnetic contact switch. Counts can be output to a local counter that is installed in the turnstile cabinet or to Alvarado's GateWatch automated facility counting software, which provides real-time entry, exit and in-venue totals and a historic database.

All Alvarado turnstiles are designed to provide years of service. Our turnstiles have stainless steel internal components and an adjustable rotary dampener that slows and cushions the rotation and self-centers the arms to the home position. Our turnstiles also have a locking, stainless steel, hinged lid; manual key override controls that allow easy field configuration; and hidden anchoring, which means no exposed bolts or fasteners for a better-looking installation.

All waist high turnstiles ship fully assembled for quick and easy installation. Turnstiles are available in satin stainless steel or powder coat finishes.

## AVAILABLE CONFIGURATIONS

### EDC-3 (MANUAL CONTROL)

Using the included key lock control, the EDC-3 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.

### EDC-6X (ELECTRIC LOCK CONTROL)

Provides separate electric lock controls for both directions. The key lock override controls described for the EDC-3 model above are included. The EDC-6X interfaces with virtually any access control system.

## AVAILABLE FINISHES

### POWDER COATED

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

### STAINLESS STEEL

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

## 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.

## CONTROLS, OPERATIONAL MODES AND FUNCTIONALITY

### CONTROL MECHANISMS

| | |
|---|---|
| Turnstile Control Board (TCB) | The turnstile control board (TCB) is a controller installed in the turnstile cabinet that 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. |
| Locking Control | 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. |
| Opto-Interruptor Detection Assembly | Rotation of the turnstile is detected by an internal opto-interrupter assembly. No mechanical microswitches are used. |

### HYDRAULIC DAMPENING AND SELF-CENTERING

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 EDC-6X turnstile offers the following user configurable passage modes:

| | |
|---|---|
| **Controlled Passage** | 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. |
| **Free Passage** | 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. |
| **No Passage** | No passage is allowed. The roto is locked in place. Valid electronic credentials are ignored. |
| **Remote Passage Mode Configuration** | 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 3-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 seperate key switch is required for each rotation direction. |

## PASSAGE MODES - MANUAL CONTROL MODELS

Manual turnstiles offer the following user configurable passage modes:

| | |
|---|---|
| **Free Passage / No Passage** | Using the included key lock control, the EDC-3 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

| | |
|---|---|
| **Operational Configuration** | Available configurations are fail-lock/fail-lock (standard) or fail-safe/fail-safe. |
| **Field Configuration Changes** | Our turnstile design makes it very easy to change configurations in the field. |
| **Automatic Turnstile Relock** | This feature 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. |
| **Independent Turnstile Testing** | 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. |

**Junction Box** 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. 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 the turnstile:

**Dry Contact** 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. Various outputs are also available to provide information on operational status and activity. A description of available input and output signals is provided below.

**Serial** 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.

### ALTERNATIVE CABINET STYLES

The EDC is also available in the following cabinet styles:

**Extended Cabinet** For applications requiring wider passage lanes. Both the cabinet and the arm assembly are extended to create a longer, wider passageway for pedestrians.

**Bullnose Cabinet** Cabinets have attractive, rounded "bullnose" ends for a highly aesthetic appeal.

## 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 many types of proximity readers underneath the lid. Contact Alvarado for more information.

## 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.

## EXPEDITED MANUFACTURING TIMES

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

## FAIL-SAFE / FAIL-SAFE OPERATION

Both sides of the turnstile will unlock upon loss of power and provide free passage in both directions. Fail-lock/fail-lock mode is default.

## 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.

## PUSH BUTTON ASSEMBLY

Unlocks the turnstile for one passage. The stainless steel push button assembly can be supplied separately (uninstalled) or attached to the turnstile.

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

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

| | |
|---|---|
| **Controlled Passage** | 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. Controlled passage can be either single direction or bi-directional. |
| **Free Passage** | An authorization signal is not required for a user to pass through the turnstile. |
| **No Passage (Direction Closed)** | 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

| | |
|---|---|
| **Red Light** | Normal “ready” state; indicates the turnstile is locked and ready for card presentation. |
| **Green Light** | 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

| | |
|---|---|
| **Yellow Light** | Normal “ready” state; indicates the turnstile is locked and ready for card presentation. |
| **Green Light** | 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. |
| **Red Light** | Illuminates when the access control system provides an “unauthorized” input. The turnstile remains locked. |

## SHIPPING AND SITE PREPARATION

### SHIPPING

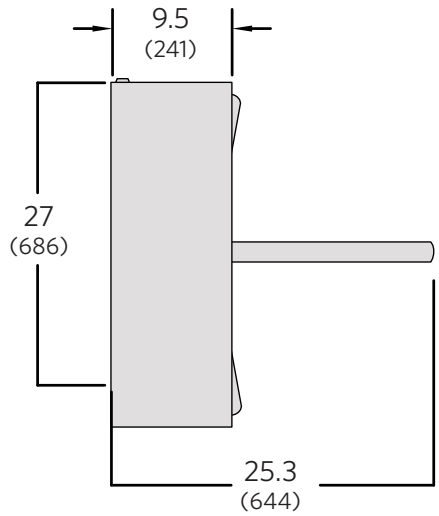
EDC turnstiles are shipped assembled.

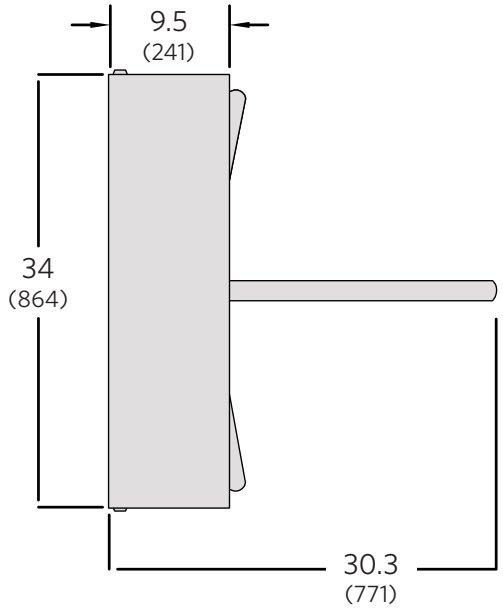
### SITE PREPARATION

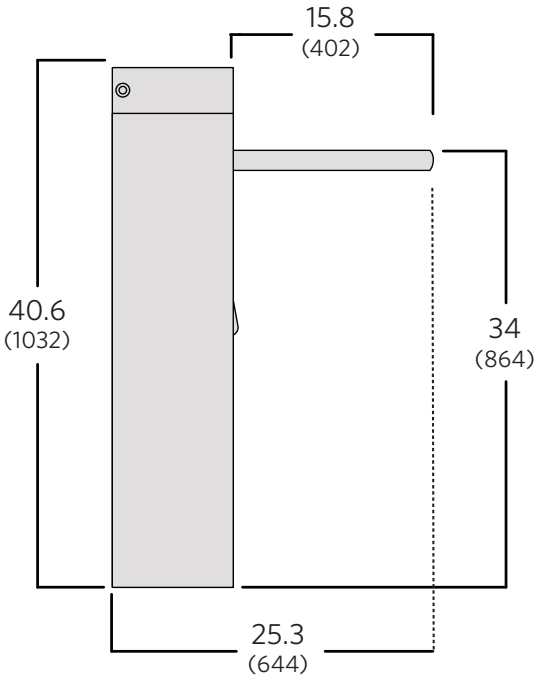
All turnstiles must be installed on a firm foundation in a manner that allows the required power and activation signal cabling to be pulled into the unit (electrically controlled models). The recommended slab platform should be 4″ deep, level concrete. Concrete anchors, bolts and washers are included 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

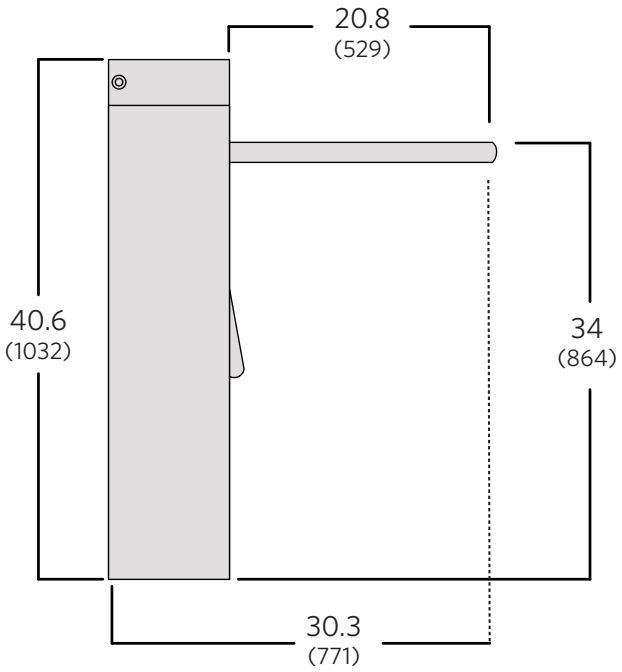
Dimensions are shown in inches (mm). All measurements are approximate.




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




Extended Cabinet
Models: EDC-E-3/EDC-E-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 | 125 lbs. | 57 kg | |
| Shipping Weight | 175 lbs. | 79 kg | Includes weight of shipping crate(s) |
| 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.