



EDCX

Product Name

Waist High Turnstile – Model EDCX

Manufacturer

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Product Description: The EDCX is a waist high three arm turnstile designed to control access into and out of security and entertainment facilities. The various versions of the EDCX are designed to interface with virtually any access control system or reader to provide the electric locking control required in controlled access facilities.

The variations of the EDCX are:

- **EDCX-4X** – Electric lock control in one direction, opposite direction no passage.
- **EDCX-5X** – Electric lock control in one direction, opposite direction free rotating,
- **EDCX-6X** – Separate electric lock controls in both directions.

Materials: All tubing and sheet metal meets appropriate ASTM Standards.

Mechanical Components:

- The **Cabinet** is constructed from formed and welded 14 gauge cold rolled steel (or #304 stainless steel if stainless steel model is ordered). All exterior welds are ground smooth and polished and there are no exterior fasteners visible on the cabinet. The inside of the cabinet contains two interior mounting tubes that allow the turnstile to be installed without the use of visible exterior anchors, bolts or fasteners. The main interior components contained within the cabinet are as follows:
 - a. **Ratchet Assembly** – The Ratchet Assembly combines precision investment stainless steel castings and hardened machined steel parts.
 - b. **Roller Bearing Assembly** – The Roller Bearing Assembly consists of six precision roller bearings that ride on a precision cast investment stainless steel cam to produce a precise smooth one way or bi-directional rotation.
 - c. **Hydraulic Dampening Assembly** – The Hydraulic Dampening Assembly provides a smooth braking effect during the rotation of the turnstile to eliminate “rumpslap” and turnstile over rotation. It also automatically self centers the arms to the “home” position. The hydraulic dampening tension is adjustable.
 - d. **Mechanical Turnstile Control:** The locking and unlocking of the unit is controlled by two stainless steel lock arms that move into the appropriate locked or unlocked position by a continuous duty rated solenoid and spring assembly. There is one solenoid / spring assembly per lock arm, allowing for independent control of each rotational direction.
 - e. **Opto Interrupter Rotation Wheel Assembly:** This assembly consists of two opto-interrupters, which are small industrial grade transmit and receive LEDs, and aluminum rotation disc attached to the turnstile cam. As the turnstile is rotated, the rotation disc “interrupts” the opto-interrupters. The Alvarado Turnstile Controller (“ATC”) uses these interrupts to provide access control functionality without the use of mechanical contact microswitches.
- The **Lid** is constructed from formed and welded 16 gauge #304 stainless steel polished to a #4 satin finish.
- The **Head** is a solid piece of aluminum, machined to an attractive conical shape, drilled to accept the three turnstile arms and then anodized. The turnstile arms are press fit into the head and welded from the back to create a precise tight fit without the use of exterior welds or fasteners.
- **The Arms** are constructed of 1.5” OD x .065” stainless steel tubing. A stainless steel cap is welded to the end of each arm. Each weld is then ground smooth and the arms polished to a #4 satin finish. When at rest, the arms create a 90-degree passageway so that the arms do not impair the patron passageway.

Electrical Components and Functionality:

The EDCX has the following electrical requirements and standard functionality:

- **Power Operation Requirements** – The EDCX turnstile operates on 24 VDC. The maximum draw for a single MSTX under any operating circumstance is 75 watts.
- **Power Input Requirements** – 110 VAC input standard. A 110VAC to 24 VAC transformer is provided with all EDCX's. 24VAC can also be run directly into the Alvarado Turnstile Controller. The ATC rectifies the low voltage AC to DC and provides all power required for turnstile operation and peripherals.
- **Power Related Apparatus** – Each EDC contains following:
 - ◇ A junction box for simple method of wiring primary power into the turnstile;
 - ◇ A power on/off switch;
 - ◇ A 110 volt AC plug to provide power for installation tools and/or power for access control equipment such as readers (not available if 24VAC is run directly into the turnstile);
 - ◇ A panel mount fuse (15 amp) on the primary AC input line;
 - ◇ A ground fault interruption circuit;
 - ◇ Alvarado Turnstile Controller (ATC-S)
 - ◇ 110VAC to 24VAC transformer.
- **ATC Surge Protection** -- The Alvarado Turnstile Controller has line to line surge protection of the single phase low voltage AC input to 125 amps. It also contains a varister that switches to a high impedance state to protect the circuit in the event of a power surge.

Activation and Operational Characteristics:

An Alvarado Turnstile Controller supplies all activation and operational characteristics for the MSTX turnstile. The ATC provides a simple clearly marked terminal strip interface for access control providers. MSTX Turnstile activation functionality is as follows:

- **Turnstile Activation** – Activation for either or both directions is achieved by supplying a dry contact of any duration. Two inputs are provided for each direction of control – one for card accept and one for card reject.
- **Time Delay** – If the turnstile is not rotated after a valid card signal is received, it will relock after 20 seconds. This time delay feature is provided in both directions of operation.
- **Bi-directional Solenoid Drivers** – One solenoid driver per rotation direction.
- **Feedback to Access Control System and/and Counting Outputs** -- A double pole, single throw, relay is provided in each direction of operation. This allows the turnstile to provide a “feedback” signal (in the form of an opto isolated contact closure) and/or to provide a count output in each direction of rotation without the use of a mechanical microswitches.

- **Field Activation Testing** – Two field activation testing buttons are provided, one for entry control and one for exit control. This feature provides a simple way for installers to test turnstile activation independent of the access control system to assist with installation and field service.
- **Fail Safe/ Fail Lock Configurable** – The ATC-S allows the turnstile to be electrically placed in either fail safe or fail lock mode.

Finishes: The EDCX is available is available with the following finishes:

- **Powder Coated** -- Available in a wide variety of colors. Sub-assemblies are sand blasted to prepare for the powder coating finish. The powder is electrostatically applied, then baked to assure proper curing and adhesion.
- **Stainless Steel** – All external fabricated materials are composed of #304 stainless steel, polished to a #4 satin finish.

Size: EDCX units have an overall height of 40.5” from the floor to the top of the cabinet. The cabinet dimensions are 27” long by 9.5” wide. From the inside of the cabinet the arms extend 15.5”.

Shipping: EDCX turnstiles are fully assembled in a solid enclosed wooden crate. Each EDCX unit includes mounting hardware (anchors, bolts, washers, etc.) to install the turnstile into a concrete base. Alvarado ships product throughout the world.

Installation: All EDCX units must be installed on a firm foundation. The recommended platform is 4” deep, level concrete and allowances for electrical and signal wiring must be made. No imbedded fasteners are needed for installation. Installation should be performed by a skilled installer following the manufacturer’s directions and instructions (supplied with the turnstile).

Options:

Many options are available for the EDCX turnstiles. They include:

- **Failsafe Operation** - The electronically controlled direction(s) will unlock upon power loss (thus providing free passage in the failsafe direction(s)). The EDCX unit is supplied in a fail-lock mode as standard. This means that if power is interrupted to the turnstile it will remain locked in the electrically controlled direction(s).
- **Timed Delay Relay** - This option allows for a finite time to complete entry or exit through the EDCX unit. The finite time is field adjustable.
- **Card Reader Mounting Plate** - One or more mounting plate(s) for an access control reader and/or pin pad.
- **Portable Base** – The turnstile is affixed to non-skid diamond base plate with a guide rail. The standard opening is 18”.
- **Battery Powered** – The EDCX is available in a battery powered version for use in conjunction with certain admission control systems.

- **Counter** – A lithium battery powered LCD counter is installed in the turnstile, each rotation of the turnstile arm generates a count. One counter per direction of travel is required. The counter battery has an expected life of six years.
- **Extended Cabinet** – An extended cabinet EDCX is available. The Extended Cabinet EDCX has an overall height of 40.5” from the floor to the top of the cabinet. The cabinet dimensions are 34” long by 9.5” wide. From the inside of the cabinet the arms extend 15.5”. Turnstile arms with a length of 20.5” are available on the Extended Cabinet EDCX.
- **Bullnose EDCX** – Rounded ends are added to both ends of the standard EDCX cabinet. Bullnose EDCX’s have an overall height of 40.5” from the floor to the top of the cabinet. The cabinet dimensions are 36.5” long by 9.5” wide. From the inside of the cabinet the arms extend 15.5”.
- **Extended Bullnose EDCX** – Rounded ends are added to both ends of the extended cabinet EDC. Extended Bullnose EDC’s have an overall height of 40.5” from the floor to the top of the cabinet. The cabinet dimensions are 43.5” long by 9.5” wide. From the inside of the cabinet the arms extend 15.5”. Turnstile arms with a length of 20.5” are available on the Extended Bullnose EDCX.
- **Key Overrides** – One key override per direction of travel. Key override may be either mechanical or electrical (depending on the operation of the turnstile).
- **Key Overrides** – One mechanical key override is required per direction of travel.
- **Red and Green or Red/Green/Yellow “go/no go” LED Lights** – Red and green or red, green and yellow “go/no go” lights.

If red/green lights are utilized:

- ◇ There is no light illuminated when the turnstile is ready for card presentation.
- ◇ An illuminated green light indicates that the access system has provided a contact that a good card has been presented. When the green light illuminates, the turnstile will unlock. The green light will stay illuminated until such time as the turnstile is rotation or the time delay period expires.
- ◇ An illuminated red light indicates that the access system has provided a contact that a bad card has been presented. The turnstile will remain locked.

If yellow/green/red lights are utilized:

- ◇ An illuminated yellow light indicates the turnstile is ready for card presentation.
- ◇ An illuminated green light indicates that the access system has provided a contact that a good card has been presented. When the green light illuminates, the turnstile will unlock. The green light will stay illuminated until such time as the turnstile is rotation or the time delay period expires.

- ◇ An illuminated red light indicates that the access system has provided a contact that a bad card has been presented. The turnstile will remain locked.

- **Turnstile “Open”, Turnstile “Closed” Light Control and/or Remote Locking/Unlocking of Turnstile**

The turnstile accepts inputs from a continuous dry contact emitting device (toggle switch or latching button) to provide control of optional “turnstile open” and “turnstile closed” LED lights and/or to provide remote locking and unlocking of the turnstile. Only LED lights are supported. If “turnstile open” and “turnstile closed” lights are not used, the turnstile can still be remotely locked and unlocked.

Three states of operation are provided for in each direction. The states of operation are independent, meaning that the turnstile can be in one state in the entry direction and another state in the exit direction. The states of operation are initiated (or changed) simply by providing a continuous dry contact input to the appropriate location on the supplied terminal strip.

The states of operation are:

1. Standard – In this state of operation, the turnstile is in a standard card accept/card reject mode. The turnstile “open” light is constantly illuminated and if a red/green/yellow turnstile “go/no go light” is installed, it will be illuminated “yellow” indicating the turnstile is ready for presentation of a card.
2. Always Open – In this state of operation, the turnstile is **always unlocked**, overriding the access system. If installed, the turnstile “open” light will be illuminated. If a turnstile “go/no go light” is installed, it will be illuminated “green”.
3. Always Closed -- In this state of operation, the turnstile is **always locked**, overriding the access system. If installed, the turnstile “closed” light will be illuminated. If a turnstile “go/no go light” is installed, it will be illuminated “red”.

- **Custom Integration** – Alvarado can provide custom integration of virtually any access control component including bar code and proximity readers, displays and lights.

Warranty: Alvarado Manufacturing Co., Inc. warrants the EDCX, from defects in material or workmanship, for the period of ONE YEAR from date of shipment. Complete details of the warranty are available from Alvarado by request.

Technical Services: Technical information is available from Alvarado Manufacturing Co., Inc., representatives, distributors, and dealers.