

**ARCHITECTURAL SPECIFICATION**  
**EDC-EBN-6X Waist High Turnstile**

*(NOTE TO SPECIFIER: Select product model depending on desired finish)*

**AVAILABLE FINISHES**  
**EDC-EBN-6XSS – Stainless Steel**  
**EDC-EBN-6XPF – Powder Coat Finish****SECTION 11 14 00 – Pedestrian Control Equipment**  
**SECTION 28 10 00 – Electronic Access Control and Intrusion Detection****PART I – GENERAL****1.01 SECTION INCLUDES**

- A. This section covers the furnishing and installation of an electrically controlled waist high security turnstile.
- B. For further information, contact Alvarado at +1 909.591.8431, or email [information@alvaradomfg.com](mailto:information@alvaradomfg.com).

**1.02 REFERENCES**

- A. L.A. Testing Laboratories, per UL325.
- B. CE marked in accordance with appropriate European Directives.

**1.03 QUALITY ASSURANCE**

- A. Manufacturer shall be a company specializing in the manufacture of waist height turnstiles for a minimum of 10 years.
- B. Installer shall have at least one year of experience installing turnstiles, or shall supply a factory representative during installation of the product.

**1.04 SUBMITTALS**

- A. Submit manufacturer's descriptive literature for specified equipment, including options.
- B. Provide, upon request, site specific drawings showing product placement.
- C. Provide installation and operation manuals.

**1.05 DELIVERY, STORAGE AND HANDLING**

- A. Deliver materials to job site in manufacturer's packaging undamaged, complete with installation instructions.
- B. Store off ground, under cover, protected from weather, construction activities and debris.
- C. Use forklift, pallet jack or equivalent equipment for moving.

**1.06 PROJECT/SITE CONDITIONS**

Install on a level concrete pad.

**1.07 WARRANTY**

Alvarado warrants its products against defects in material and workmanship for a period of one (1) year from the date of invoicing. The warranty covers defects in materials and workmanship. Obtain full warranty terms from Alvarado.

**PART II – PRODUCTS****2.01 MANUFACTURER**

Alvarado Mfg. Co., Inc. 12660 Colony Street, Chino, CA 91710.

## 2.02 PRODUCT

EDCX-BN-6X, no substitutions.

## 2.03 CONSTRUCTION

### A. Interior Operating Mechanism:

1. The ratchet assembly shall be cast stainless steel. Laminated steel is not acceptable.
2. Bearings shall be sealed, precision type.
3. Rotation shall be hydraulically dampened and shall self-center using a long-lasting rotational style dampener. The hydraulic dampening shall be of a quality such that when lock arms are disengaged, the turnstile shall rotate only once when spun with force.

### B. Cabinet:

1. The cabinet shall be formed and welded 14-gauge stainless steel. Exterior welds are ground smooth and polished. There shall be no exterior fasteners visible on the cabinet.
2. The lid shall be 16-gauge stainless steel, have hinged operation and shall contain two cam lock assemblies (locks keyed alike) to securely attach the lid to the cabinet. The mating between the lid and cabinet shall be flush (not overlapping).
3. The interior portion of the cabinet shall have a splash lip at the point where the lid and cabinet meet to protect the interior portion of the cabinet from water.
4. Ends and lid of the cabinet shall be rounded.

### C. Head and Arms:

1. The turnstile head shall be a solid piece of aluminum, machined to an attractive conical shape. Finish shall be clear anodized.
2. The turnstile arms shall be 1.5" x 16-gauge stainless steel tubing polished to a #4 satin finish. The visible portion of the arms shall have a welded stainless steel cap with welds polished smooth. The arms shall press fit into the head and be welded from the back for superior holding strength over arms fastened into the head. The arms shall extend 20" from the inside edge of the cabinet.
3. There shall be no exterior fasteners visible on the head and arm assembly.

## 2.04 EQUIPMENT

A. General: The turnstile shall provide electric lock control in both directions. Upon receipt of an authorization signal from an access control system, or a push button device, the turnstile will unlock and allow a single user to pass through the turnstile in the direction requested. The turnstile will reset after the user has passed through the turnstile or with 20 seconds if passage does not occur.

### B. Mechanical Operation:

1. Turnstile Locking / Unlocking: A solenoid/spring assembly shall move the lock arms into the "locked" or "unlocked" position. Each lock arm shall be controlled independently. In the event a user places forward pressure on the turnstile arm during activation, once the pressure is removed from the arm during the allowed passage time, the turnstile will unlock. This operation is required so that a user does not have to wait for the turnstile to "timeout and reset" or be manually reset by an operator before another activation will be accepted.

### C. Electrical Operation:

1. The turnstile shall contain a junction box into which the installer wires primary power (110VAC or optional 220VAC). The junction box shall provide fuse protection.
2. The power junction box shall contain an on/off switch. When the switch is in the "on" position, a green LED shall illuminate on the turnstile controller.
3. A UL rated transformer shall be joined into the junction box and shall step down the primary power to low voltage, 12VDC operation.
4. The turnstile shall be fail-lock in the electrically controlled directions.
5. Solenoids shall be continuous-duty rated and shall be activated using a firing current of 12VDC and held in place using a lower holding current of 6VDC. The purpose of the lowered holding current is to reduce overall power consumption of the turnstile and to lengthen the life of the solenoids.
6. The turnstile shall have key overrides allowing the operating technician to override the access control system and unlock one or both directions of the turnstile.
7. Electrical operation of the turnstile shall be tested and approved by Los Angeles Testing Laboratories.

### D. Turnstile Control:

1. The turnstile shall have a microprocessor based turnstile controller which shall be conformal coated to provide protection against environmental damage.
2. All inputs and outputs of the turnstile controller shall be opto-isolated to provide significant protection against power surges, noise, ground loop, and damage from remote lightning strikes.
3. The turnstile shall accept a momentary dry contact activation signal of 1 second or less.
4. Once the turnstile is activated (unlocked) the user is allowed a defined time to pass through the turnstile after activation, before the turnstile automatically relocks. The turnstile shall ship with a default setting of 20 seconds. Additional settings of 5, 10 and 15 seconds shall be user selectable through dip switch settings on the turnstile controller.
5. When a rotation of the turnstile occurs, rotation shall be detected by an electrical opto-interrupter. No mechanical micro-switches shall be used in the operation of the turnstile.
6. Upon rotation, the turnstile shall provide a momentary dry contact output to signify a rotation has occurred. The dry contact is provided as "feedback" signal that a passage has occurred. One output per rotation direction.
7. The turnstile shall have two solenoids, one per direction of operation.
8. In the event the turnstile needs to be converted from fail-lock to fail-safe, or vice versa, it shall be possible simply through the purchase of a conversion kit. The average conversion time shall be less than 10 minutes per turnstile.
9. The turnstile shall have two test buttons, one per direction of rotation, that simulate the control system interface signal. The purpose of the test buttons is to provide the installer a simple method of troubleshooting by isolating turnstile functionality from the activation system.
10. It shall be possible to maintain either rotation direction in a continuous unlocked state through the application of a sustained dry contact that is independent from the standard "unlock" activation signal.

## 2.05 SECURITY EQUIPMENT

- A. Reader or Activation Device Integration: Card readers or other access devices shall be attached to the top of the turnstile. As an option, a 3" x 4" cutout fitted with acrylic can be provided on either side (or both sides) of the lid to allow installation of an appropriate-sized proximity reader(s) under the lid.

## 2.06 FINISHES

*(NOTE TO SPECIFIER: Select the finish desired)*

- A. Stainless Steel: The cabinet and lid shall be fabricated from stainless steel with a #4 satin finish.
- B. Powder Coat: The cabinet shall be painted in a powder coat color specified by the project requirements. The stainless steel lid shall have a #4 satin finish. The aluminum head and stainless steel arms shall not be painted.

## 2.07 OPTIONS

*(NOTE TO SPECIFIER: Select the options desired)*

- A. User Notification Activation Lights (JS-3 Lights): An LED array is installed on the underside of the lid behind scratch resistant acrylic. The JS-3 option allows the user to select, via a jumper on the turnstile control board, one of two signal arrays: red / green or yellow / green / red. The two available modes of operation are:
  1. Two-Light Operation
    - i. Red Light – Normal "ready" state; indicates the turnstile is locked and ready for card presentation.
    - ii. Green Light – Illuminates when the access control system provides the turnstile controller an "authorized" input. When the green light illuminates, the turnstile will unlock and remain unlocked until user passage, or the time for passage expires.
  2. Three-Light Operation
    - a. Yellow Light – Normal "ready" state; indicates the turnstile is locked and ready for card presentation.
    - b. Green Light – Illuminates when the access control system provides the turnstile controller an "authorized" input. When the green light illuminates, the turnstile will unlock and remain unlocked until user passage, or the time for passage expires.

- c. Red Light – Indicates the access control system provides the turnstile controller an “unauthorized” input. The turnstile remains locked..
- B. Fail-Safe / Fail-Safe Operation: Both sides of the turnstile will unlock upon loss of power to provide free passage in both directions.
- C. Junction Box with Power Plug Receptacles: Junction box includes two AC power receptacles.
- D. Remote Turnstile Mode Keyswitch (RKO-3): A three-position key switch is provided that allows the turnstile to be placed in one of three operational modes: Controlled Passage, Free Passage or No Passage. A key switch is required for each direction of operation.
- E. Battery-Powered Counter: A lithium battery-powered seven digit LCD counter is installed. Each rotation of the turnstile arm generates a count. Counters include a key to reset the counter to “0”. One counter required per rotation direction.
- F. Card Reader Cutout: A 3” x 4” cutout in the lid is fitted with scratch resistant acrylic. Proximity reader is attached on the underneath of the lid.
- G. Computerized Counting: Each turnstile rotation outputs a count to GateWatch, Alvarado’s computerized patron counting software.
- H. 220VAC: A 220VAC 50-60 Hz UL rated transformer is provided. 220VAC units are CE marked.

## **2.08 FACTORY TESTING**

- A. Product shall be fully tested at the factory prior to shipment.
- B. Check all electrical connections.
- C. Provide factory burn-in testing.
- D. Inspect product finish. Touch up prior to shipment.

## **PART III – EXECUTION**

### **3.01 SITE EXAMINATION**

- A. Inspection: Installer must examine the installation location and advise the Contractor of any site conditions inconsistent with proper installation of the product. Installation shall not begin until unacceptable conditions are rectified. These conditions include but are not limited to the following:
  - 1. Turnstile must be installed on a level concrete pad.
  - 2. Primary power must be installed prior to turnstile installation.
  - 3. Power and control wiring to come from the ground through conduit stub up locations per manufacturer direction, or via alternative methods if manufacturer is contacted and approves.
- B. Installation: Install turnstiles in accordance with manufacturer’s instructions.
- C. Adjustment: Installer shall adjust turnstiles for proper performance after installation.
- D. Instruction: A factory trained installer shall demonstrate to the owner’s maintenance crew, or designated representative, the proper operation and the necessary service requirements of the equipment, including exterior maintenance.
- E. Cleaning: Clean turnstile and area carefully after installation to remove excess caulk, dirt and labels.

**Note: this specification includes recommended options. Alvarado Mfg. Co., Inc. reserves the right to change this specification at any time without notice.**