ALVARADO
dormakaba Group

ARCHITECTURAL SPECIFICATION
SU2000 Barrier Free Optical Turnstile

SECTION 08 42 00 – Entrances
SECTION 11 14 00 – Pedestrian Control Equipment
SECTION 28 16 00 – Intrusion Detection
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 the SU2000 Optical Turnstile.

   B.   For further information, contact Alvarado at +1 909.591.8431, or information@alvaradomfg.com.

1.02   REFERENCES
   A.   L.A. Testing Laboratories.

   B.   CE marked in accordance with appropriate European Directives

1.03   QUALITY ASSURANCE
   A.   Manufacturer shall be a company specializing in the manufacture of optical security turnstiles and shall have a minimum of 10 years' experience.

   B.   Installer shall have a minimum of three years' experience installing similar equipment, or shall supply a factory-trained supervisor 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 and / or installation templates, 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 indoors in a controlled environment, protected from weather, construction activities and debris.

   C.   Use forklift, pallet jack or equivalent equipment for moving.

1.06   PROJECT/SITE CONDITIONS
   A.   Install on a level floor.

1.07   WARRANTY
   Alvarado warranties its optical products against defects in material and workmanship for a period of 18 months from the date of invoicing. 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
   A.   SU2000 Barrier Free Optical Turnstile, no substitutions. Include the following options: GateKeeper Control and Monitoring Software.

2.03 CONSTRUCTION
   A. <u>Exterior</u>: #304 stainless steel, #4 satin finish.

   B. <u>Interior Frame</u>: Black, powder coated steel with openings for conduit.

   C. <u>Decorative Lid</u>: Solid surface acrylic, Manufacturer: Livingstone; Color: Starry Night Black.

2.04 DIMENSIONS

(NOTE TO SPECIFIER: Select desired passage opening dimensions)

   A. <u>Passage Opening</u>:
       1. *Standard:* 28" (711mm)
       2. *Special Needs*: 36" (914mm)

   B. <u>Left and Right End Cabinets</u>:
       1. *Length:* 17" (432mm)
       2. *Height:* 39" (991mm)
       3. *Width 4*" (102mm)
   C. <u>Center Expansion Cabinets</u>:
       1. *Length:* 17" (432mm)
       2. *Height:* 39" (991mm)
       3. *Width 4*" (102mm)

2.05 EQUIPMENT
   A. <u>Types of Units</u>: The installation shall consist of end and center lanes, as required by the installation. Center cabinets shall have the same height, length and nominal width dimensions as end cabinets. Units shall be bi-directional in operation.

   B. <u>Passage Modes</u>:
       1. *Controlled Passage*: Each patron must present a valid electronic credential to the integrated reader before passage is allowed. Upon receipt of an authorization signal from the access control system, a single passage in the authorized direction is allowed. The turnstile resets after the user has passed through the turnstile or the time frame allowed for entry expires. The turnstile will buffer multiple inputs to maximize throughput.
       2. *Free Passage*: All patrons are allowed to pass.
       3. *No Passage (Direction Closed)*: No passage is allowed. Valid electronic credentials are ignored.

   C. <u>Optical Detection</u>**:**
       1. Strategically placed optical sensors and a sophisticated detection algorithm detects patrons, determines the direction of patron movement, and (in conjunction with the facility access control system) detects unauthorized users.
       2. Each sensor to consist of a separate transmitter and receiver operating on a high speed communication bus.
       3. The sensors and system:
           a. Must have the capability of tracking a user's passage from entry to exit point
           b. Must consistently detect closely following tailgaters on allowed entries while avoiding generating false alarms for commonly carried objects
           c. Must detect patrons travelling in the opposite direction when passage has been allowed
       4. Sensitivity settings to be adjustable via an included configuration utility.
       5. Sensor operation shall not be affected by natural or indoor lighting.
       6. Sensors to be deployed at various heights to detect persons crawling through the passage area.
       7. The optical system to provide superior processing speed and throughput of up to one person per second, subject to the access control system limitations.

   D. <u>System Integration</u>:
       1. Units shall integrate with third-party access control systems through the use of dry contact inputs and outputs.
       2. Custom methods of integration (through TCP commands) shall be available.
       3. *Available Inputs*: Available inputs shall include:

a. Passage allowed, access granted x 2
b. Passage denied, access denied x 2
c. Direction closed, no passage x 2
d. Direction open, free passage x 2
e. Single override entry x 2
f. Emergency override x 1
g. TCP port
4. *Available Outputs*: Available outputs shall include:
a. Authorized passage x 2
b. Unauthorized passage x 2
c. Unauthorized presence x 2
d. Free passage x 2
e. Sensor blocked x 1
5. *Configuration Capabilities*: Units shall come with Alvarado's GateConfig, which is a web-based utility that allows the installer to conveniently configure settings for installed turnstiles. The utility must allow dissemination of operational settings for a single unit, or all installed units, over an Ethernet network. Configurable unit features available from the web-based utility to include:
a. User definable operational and alarm sounds
b. Access timeout configuration
c. Unauthorized entry sensor control
d. Blocked sensor time
e. Alarm duration
6. *Diagnostic Capabilities:* The web-based utility shall also provide the following diagnostic capabilities:
a. Operational debug
b. Optic debug
7. *Power:* Power requirements are as follows:
a. 110/220 VAC run to main controller cabinet; power stepped down to 24/12/5VDC for operation.
b. Power / digital signals run between cabinets via a conduit run interconnect cable.

E. <u>User Interface</u>**:**
1. *Enter / Exit User Display: LED Status Icons*: The unit to have illuminated status user icons visible looking down on the lid, on each side of the unit. Status user icons to be as follows:
a. An illuminated yellow means the turnstile is ready for card presentation.
b. An illuminated green means valid credentials have been presented and / or passage is allowed in the direction of the arrow.
c. An illuminated red X symbol means that passage is prohibited in the direction of the arrow.
d. A flashing red stop X symbol means invalid credentials have been presented or the turnstile has an alarm condition.
2. *Open / Closed Status Lights*: The unit to have an opaque end piece mounted to the upper end "leg" of each side of the turnstile diffusing green and red signal LED's. The lights to function as follows:
a. Green consistently illuminated means the turnstile is open for use.
b. Red consistently illuminated shall signify the turnstile is closed for use.
c. A flashing red shall signify an alarm condition.
d. The timing and length of illumination shall be user definable.
3. *User Definable Sounds*: Each unit shall allow user to define the duration and type of audible sounds (in the form of .wav files) that play for the following alarms and operations.
c. Access accepted
d. Access denied
e. Unauthorized presence
f. Unauthorized passage
g. Blocked sensor
h. Loitering
i. Crawl violation

F. <u>Operator Interface for Control</u>**:**
1. *Control Software*: Alvarado's GateKeeper web-based control and monitoring software shall be provided. Communication between the control software and the units shall be TCP/IP.
2. *Features of Control Software*: The software shall include or provide:

      a. Three different levels of access, with the level of access dependent on the level of the operator. Access levels shall be password protected.
      b. Real time status of installed units.
      c. Change of operational status modes in real time.
      d. Monitoring of alarm conditions and screen alerts showing alarm conditions.
      a. Ability to place individual or all units in emergency override condition.
      b. Ability to allow a single passage through an individual lane in either direction.
      c. Apply settings/changes to one or all units.
4. *Event Scheduler*: An integrated event scheduler allowing modes and access direction settings to be changed automatically at scheduled times.
5. *Reporting*: A detailed log of all activity for defined periods.

2.06 SECURITY EQUIPMENT

A. Reader Integration:
1. Mullion sized proximity readers can be installed on the end panels of the turnstile.
2. Readers can be factory installed, or installed in field by installer.
3. Readers and installation are not part of the product and must be purchased separately from Alvarado.

2.07 OPTIONS

(NOTE TO SPECIFIER: The following options are available - delete or use the following as desired)

A. Alternate Lid Colors: Cabinet lids can be ordered in any available Livingstone color.

B. Alternate Cabinet Colors: Cabinets can be power coated or plated. Contact Alvarado for color availability.

C. 220VAC: 220VAC, 50 Hz power supply and EU wiring schem*e*.

D. Baseplates: Baseplate for either a single turnstile or multi-turnstile configurations. Power coated black with a sprayed non-slip coating in walkway area. Baseplate houses interconnection cable.

E. Monitoring and Operational Mode Scheduling Software (GateKeeper): Web-based communication and control software.

F. Turnstile Key Controls: 3-position key switches installed in turnstile cabinet provide quick method of placing the turnstile direction in Controlled Passage, Free Passage or No Passage mode.

2.08 FACTORY TESTING

A. Product shall be fully assembled at the factory.

B. Check all mechanical connections.

C. Check all electrical connections.

D. Provide 24-hr factory burn in testing.

E. Inspect product finish. Touch up prior to packaging.

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. Floor must be level within the footprint of the turnstile.
2. Primary power must be installed prior to turnstile installation.
3. Power and communication wiring to come from the floor through conduit stub up locations per manufacturer directions, or via alternate methods if manufacturer is contacted and approves.

B. Installation: Install turnstiles in accordance with manufacturer instructions. Installer to be factory trained or a factory representative shall be present to oversee installation.

C. <u>Adjustment</u>: Installer shall adjust turnstiles for proper performance after installation.

D. <u>Instruction</u>: 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.

E. <u>Cleaning</u>: Clean metal, acrylic and optic surfaces carefully after installation to remove excess caulk, dirt and labels following the manufacturer directions.

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