Architectural Specification

Exit Lane Breach Control Model FlipFlowTM

SECTION 08320- SECURITY DOORS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. This section covers the furnishing and installation of a complete Automatic Security Breach Door System. Provide complete system that has been fabricated and tested for proper operation at the factory. It includes side walls, canopy, ceiling, automatic doors, hardware, glass, drive systems, sensor systems, battery back-up, necessary anchoring, sprinkler system and guide rails.

1.2 RELATED SECTIONS

A. Section 07915 - Sealants, Caulking and Seals
B. Section 08400 - Entrances and Storefronts
C. Section 08710 - Door Hardware
D. Section 08810 - Glass and Glazing
E. Section 09600 - Flooring
F. Section 16123 - Electrical Supply and Termination

1.3 QUALITY ASSURANCE

A. Manufacturer shall be a company specializing in the supply of automatic security breach doors with a minimum of 10 years' experience.

1.4 SUBMITTALS

A. Submit project specific shop drawings and finish samples.
B. Indicate pertinent dimensions, general construction, component connections, anchorage methods and locations.

1.5 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 and construction activities.

1.6 PROJECT/SITE CONDITIONS

A. Install security breach doors on finished floor only. Floor must be level ± 1/16" (1.5mm) at all locations within the footprint of the security breach door.

1.7 WARRANTY

record-usa warrants its products against defects in material and workmanship for a period of one (1) year from the date of substantial completion or one and one half (1-1/2) years from date of shipment. This warranty excludes glass breakage, normal wear on finishes or damage that occurs due to abuse, misuse or acts of God.

PART 2 PRODUCTS

2.01 MANUFACTURER

record-usa
4324 Phil Hargett Court
Monroe, NC 28110
(800) 438-1937

2.1 FUNCTION

The FlipFlow security breach door system is an automatic high capacity anti-pass back system, providing the regulation of passenger/user traffic flow in airports, industrial manufacturing facilities, and other sensitive areas in various types of buildings. Pedestrians may pass through the FlipFlow in single file and in one direction only. Attempts at reverse entry are detected by an intelligent sensor system and the automatic doors will inhibit such action. In addition, an alarm is generated locally and an alert message is generated for remote monitoring.

2.2 APPLICATIONS

A. Passenger flow regulation in airports (separates the secure airside from the non-secure landside)
B. Protection of other sensitive areas in seaports and railway stations.
C. Access to sensitive areas in public, commercial, and industrial buildings
D. Entrances to court houses or judicial buildings
E. Side entrance in supermarkets

2.3 CONSTRUCTION

A. Self-supporting aluminum construction. Two double leaf record-usa door operators are provided as standard for a long life. Both entrance and exit doors are equipped with a robust electromechanical lock to inhibit door open motion in the full closed position.
B. A master control, supplemented with a modular, expandable sensor system, monitors passenger flow.
C. Transparent side panels in laminated security glass facilitate monitoring requirements.
D. Passage status is indicated by red/green traffic-light style indicators at both the entrance and exit doors.
E. Interior lighting is provided by six (6) spot lights.
F. Battery backup capable of operating FlipFlow and spot lights for up to one hour after loss of power.
G. A flush mounted sprinkler system will be installed as standard that provides for temporary removal of ceiling panels without taking the sprinkler system out of service or removing the sprinkler.
H. Adhesive anchoring with threaded rods that can be cut to any length and require 2 3/8" embedment into concrete shall be recommended as required.
I. Access to all components within the ceiling panel must be from inside of tunnel. Access from top of unit will not be allowed or permissible.

2.4 SURFACE TREATMENT/GLASS SPECIFICATIONS

A. ALUMINUM PARTS:
   a. Powder Coated to match architectural specification
   b. Standard RAL colors

2.5 OPERATION MODES

A. FLOW MODE:

a. Motion sensor detects approaching pedestrian(s) and actuates entrance doors.
b. Pedestrian(s) proceed into the anti-pass-back passageway.
c. The entrance doors close when motion is no longer detected and a presence is not detected in the door leaf swing areas.
d. The pedestrian(s) continue through the passageway.
e. Pedestrian(s) exit the anti-pass-back passageway.
f. Red/Green traffic lights indicate when passage is allowed.
g. Interior spot lights are on.
h. Both entrance and exit doors may be open at the same time.
i. Pedestrians who have passed more than one-halfway through the passageway cannot reverse direction without causing the entrance doors to close and lock.

B. INTERLOCK MODE:

a. Motion sensor detects approaching pedestrian(s) and actuates entrance doors.
b. Pedestrian(s) proceed into the anti-pass-back passageway.
c. The entrance doors close when motion is no longer detected, or if 3 or more pedestrians have entered the passageway. Threshold safety beams inhibit closing if the threshold is occupied.
d. After the entrance doors have closed, the exit doors will automatically open, allowing exit from the passageway. A pedestrian in the passageway will have a nominal 5 – 6 second delay before exiting.
e. When all pedestrians have exited the passageway, the exit doors will close.
f. The interior of the passageway is scanned for objects, and if clear, the entrance doors will automatically re-open. If objects are detected, the exit doors will reopen and remain open until the object has been removed.
g. Red/Green traffic lights indicate when passage is allowable.
h. Interior spot lights are on.
i. The entrance and exit doors are interlocked and prevented from being open at the same time.

C. OPEN MODE

a. Entrance and exit doors are kept open.
b. Traffic through the FlipFlow can be freely accessed in both directions.
c. The monitoring sensor systems are disabled (optional alarm contact available to indicate incorrect walking direction).
d. Green traffic light indicates unhindered passage.
e. Interior spot lights are on.
f. A motion sensor in the passageway detects pedestrian(s) and actuates the exit doors.

D. LOCKED MODE

a. Both entrance and exit doors are closed and locked.
b. Traffic through the FlipFlow is inhibited in both directions.
c. Red traffic lights indicate no access.
d. Interior spot lights are off.

E. EMERGENCY MODE

a. Both automatic doors are equipped with battery packs. During a power failure, the doors complete a final movement (entrance doors are closed and locked; exit doors are opened). The tunnel can be freely exited to the landside.

1. An emergency open button inside the tunnel is a recommended option for emergency evacuations.

2.6 OPTIONS

A. INSIDE MONITORING AND OBJECT DETECTION- a range of sensors is available to allow monitoring the interior passageway of the FlipFlow. Detection of objects as small as 2" by 2" by 2" (50mm x 50mm x 50mm) is possible with implementation of an optional complete sensor detection system.

B. OBJECT DETECTION - the following options are available individually or in combination:

a. Detection of stationary objects attached to interior surfaces.

b. Volumetric inside monitoring, allowing unauthorized persons remaining inside the tunnel to be monitored (should always be used with stationary object detection on the floor).

C. SIDE RAILS AND BARRIER AT EXIT

a. Additional glass guide rails are installed on the exterior of the exit doors, and include two low height stainless steel swing barrier gates. This will increase security and deter attempts to enter the exit door from the landside. Inhibiting access on the landside will reduce nuisance interference of the exit doors and subsequently increase throughput of the FlipFlow.

D. INTEGRATION OF ACCESS CONTROL SYSTEM- A special operation mode is available in the closed/locked position:

a. The connection of an access control system (card reader, etc.) admits a single passage of the FlipFlow from the landside to the airside.

b. For security reasons, only one door is opened at the same time.

c. After the passage has completed, the designated operation mode is resumed.

2.7 INCORRECT USE AND ALARM OUTPUTS

A local audible alarm (sonalert) is actuated when alarms occur. A dry contact, rated 25W at 24VDC, will actuate, and can be used to turn on a flashing strobe for visual notification. Additionally, the following individual alarm outputs are provided, each with dedicated dry contacts, and can be used for remote monitoring and/or integration with a building management system.

A. INTRUSION: An audible alarm is immediately enabled if a person tries to gain access to the passageway from the landside. The entrance doors will close and lock unless deliberately inhibited.

B. WRONG DIRECTION: An audible alarm is immediately enabled if a pedestrian has travelled more than half-way through the passageway then stops and attempts to turn around and walk back through the entry doors.

C. FLOW DISTURBANCE: An audible alarm is enabled when normal traffic flow has been hindered by external influences. This includes obstructing access to travelling through the FlipFlow, and/or detection of a person or object in the FlipFlow passageway when both entry and exit doors are closed.
D. TECHNICAL DISTURBANCE: A malfunction in either of the door operators or the monitored sensors and cameras will enable the audible alarm, and actuate a separate dry contact.
E. Optional verbal alarms may be programmed from script to allow for better passenger access and directional flow control.

2.8 REMOTE CONTROL

A. REMOTE CONTROL: Inputs are provided for external control of the following functions, and can be controlled by remote contacts or a building management system, and have priority over the local controller.
   a. Immediately open both Entry and Exit doors.
   b. Immediately close and lock the Entry doors, and open the Exit doors.
   c. Switch the FlipFlow from Interlock mode to Flow mode, and back.

PART 3 EXECUTION

3.1 MAINTENANCE AND CLEANING

A. An optional switch for maintenance work, accessible via a service hatch -
   a. Suppresses alarm outputs.
   b. Allows a service technician to access, service, adjust, and test the FlipFlow.
   c. A local audible alarm is actuated if the maintenance switch is not reset after a preset, configurable time delay.
   d. Dry contact output, similar to above Alarm Outputs, as defined in 2.07, can be used for remote monitoring of service hatch access.

B. An optional switch that allows for simple cleaning of the passageway is available.
   a. Access to interior of passageway is by opening the Exit doors; the Entry doors are closed and locked.
   b. Alarm outputs are suppressed.
   c. A local audible alarm is actuated if the maintenance switch is not reset after a preset, configurable time delay.
   d. Dry contact output, similar to above Alarm Outputs, can be used for remote monitoring of service hatch access.

3.2 EXAMINATION AND PREPARATION

A. Installer shall examine the location and advise of any site conditions unacceptable for proper installation of product. These conditions include, but are not limited to the following:
   a. Identification and planning for expansion joints, project access, onsite staging areas, site configuration/temporary construction enclosures, and work hours as related to other activities.
   b. Floor must be level and smooth with no deviations in excess of 1/16” from a twelve (12) foot location, in any direction. The ability for the breach door system to be installed level shall be verified prior to installation of any part of the security breach

door system.

c. Power supply must be installed and verified to be of the correct voltage.
d. Required facility systems such as security interface and electrical power must be ready for connection/termination at time of installation.

3.3 INSTALLATION

A. System shall be installed by a record-usa factory trained and approved technician only. A factory provided certificate will serve as proof of training.
B. System shall be installed by an AAADM and record-usa factory certified technician.
C. System shall be installed in accordance with manufacturer's provided instructions.
D. System must be set level, plumb, with uniform hairline joints, and anchored securely into place.
E. Assembly dimensional tolerances, as indicated within manufacturer's recommended instructions, must be maintained.
F. All alignment with adjacent work must be maintained.
G. Coordinate installation with facility requirements such as electric power and security interface.
H. Adjust door, hardware and sensors for smooth operation and smooth performance. Doors must meet all safety codes and standards.
I. Installer shall demonstrate to the owner's dedicated staff the proper operation of the door and the necessary service requirements such as lubrication, cleaning, and inspection of components.
J. After installation and turnover, a quarterly planned maintenance agreement will initiate to ensure safety, reliability and durability over the life expectancy of the FlipFlow.

3.4 OPERATIONAL ADJUSTMENTS

Operational adjustments in the field shall be achievable with field personnel. An engineer from the manufacturer should not be required to adjust the physical system or software programming.

3.5 TRAINING

Manufacturer/installer shall provide a minimum of eight (8) hours of on-site training.