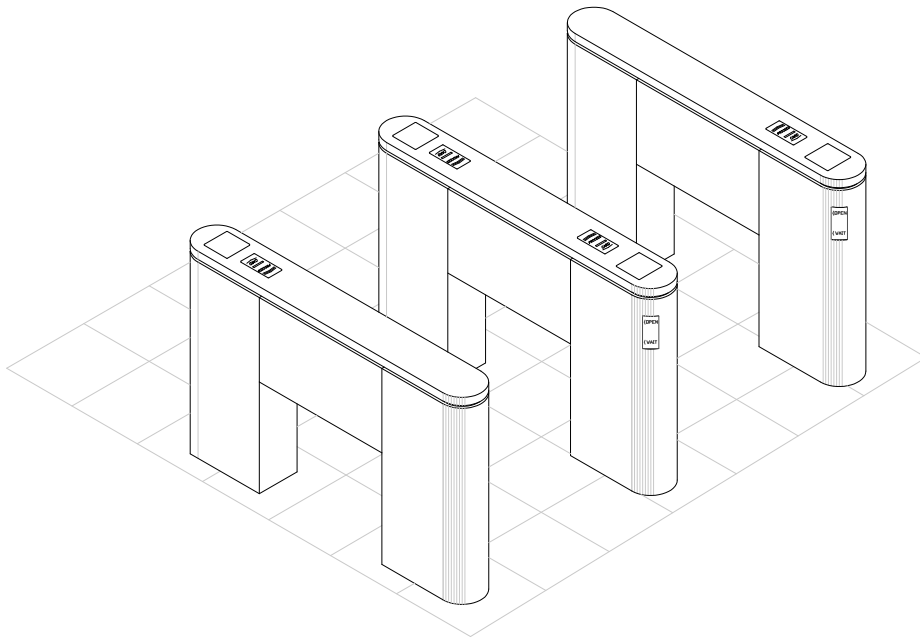


DS!

ES810 & ES811

DESIGNED SECURITY, INC.

A Detex Company



OPTICAL TURNSTILE

INSTALLATION

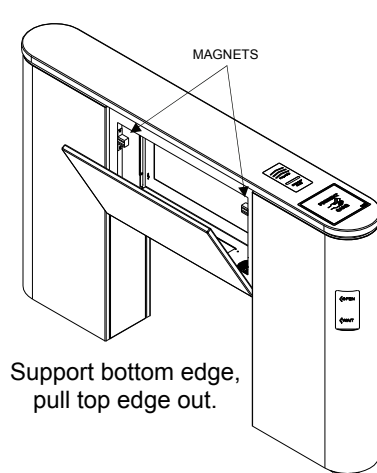
ACCESS

For **Base Plate Access** into each leg of the bollard, lift up then pull the access panel out at the bottom (panel found on the inside of each leg) as shown in figure below. Replace by reversing this procedure. On the Stainless Steel Open Center model only, the side panel should be removed first, and then each Lower Access panel may be pushed out from behind by reaching down into each leg of the bollard.

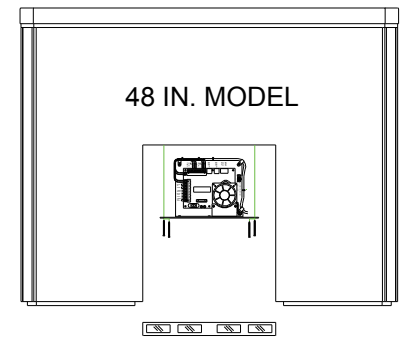
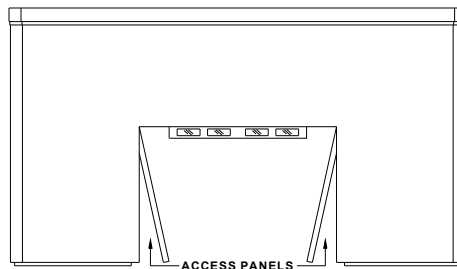
Side Panel removal on all models is covered in more detail below.

All wiring for ES810/811 and associated access control equipment (card readers, etc.) may be accessed at these points. Wiring may be run from the conduit pass-through hole in base plate to the electronics' shelf or reader mounting points through various openings found in the bollard for this purpose.

- On the **Wood Laminate** model, cable runs and wiring the MPU controller can be accessed by removing the panel as shown in the drawing below, left. Also, access to the MPU is available by removing the retaining screws at the opposite end from the hinge and the assembly will rotate down.

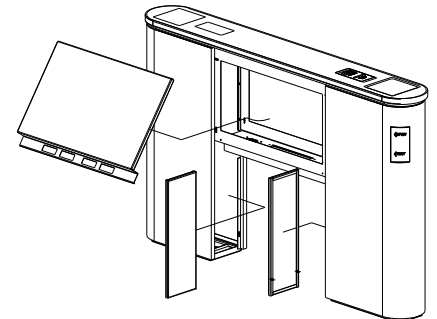


WOOD LAMINATE MODELS



- For access to **Electronics** and wiring, remove side panel by supporting the bottom and pulling the top of the panel out to release magnetic attach points. See drawing, above left.
- On the **48in. Laminate** model, the MPU is accessed by removing 4 screws as shown above, right. There is no hinge.

OPEN CENTER MODEL



- On the **Open Center** model, access to the MPU may be achieved by removing the side panel. To remove the side panel, place fingers behind the lip at the bottom of the panel, then pull away by placing the thumbs on each pedestal section. Cover may be replaced by pressing into the mounting points until it pops into place.

FULL SIDE MODEL

- On the **Full Side** model, the side panel may be removed by inserting 5/32 Hex T-Handle wrench into small holes in upper corners of side panel, then turn counter-clockwise to unlock. Then tilt out top of panel and lift up off of alignment pins at bottom.



Sensor Cover may be removed on all models to adjust for sensor alignment if necessary, more detail about sensor alignment may be found elsewhere in this instruction.

Base mounting points are accessed by removing the inner panels on Laminate and Open Center pedestals.

MOUNTING

- Verify that the bollards are mounted parallel to one another and in a straight line (if not parallel, sensor alignment may be more difficult). When viewed from the entrance/un-secure side, the right-most Bollard will be the first "smart" Bollard (unit with electronics). The left-most bollard will have reflectors only.
- Recommended mounting anchors are 1/2" diameter bolts.
- Remove cover over sensors and reflectors.
- Run wires from Access Control System to the Electronics package. Provide enough service loop in cabling to allow shelf to swing down on hinge (approximately four (4) feet of service loop from conduit).
- After the MPU Controller has been released from the underside of bollard and allowed to swing down, all interface wiring can be accomplished.

WIRING

- Refer to the enclosed drawing "Wiring Diagram" for Input, Output and Light array connection details.
- Connect N/O dry contact from "Exit Valid Card" output of the access system to TB2-10 & 12 (Valid 1). Set hold time on this contact, for valid card input, to less than 0.5 second, or as near as possible.
- Connect N/O dry contact from "Entry Valid Card" output of the access system to TB2-11 & 12 (Valid 2). Set hold time on this contact, for valid card input, to less than 0.5 second, or as near as possible.
- Connect N/O dry contact from "Invalid card" output of the access system to TB2-7 & 9 (Invalid). Set the hold time on this Input for Invalid, to less than 0.5 second, or as near as possible. This input is optional.
- Connect N/O passageway Bypass from remote monitoring equipment to TB2-7 & 8 (Bypass) for bypassing passageway operation or to reset the MPU.
- Connect N/O Alarm output from MPU, on TB2-5 & 6 to alert remote monitoring equipment of an alarm condition.
- Connect 12 VAC 6 amp power supply to TB2-13 & 14. Wire gauge should be 14 AWG for a wire run of 50 feet or less and 12 AWG for 50 - 100 feet. Greater distances may require appropriate gauge wire.
- After connections have been made to the MPU Controller close the electronics shelf but do not replace the cover.

FREE EXIT MODE ENABLE

- Enable Free Exit Mode by shorting the Sensor 4 and Common terminals TB1-11 & 12.

INFRARED SENSOR BEAMS (Will not pass through glass)

- The Infrared beams from the sensors pass through IR-Passing Plexiglas and will not pass through ordinary glass. If the IR Plexiglas becomes damaged or needs replacement, please contact DSI for additional information or replacement parts.

SENSOR ALIGNMENT

Once the bollards are in place and the wiring is complete, the system may be powered up and checked for proper alignment of the IR optical sensors. IR optical sensor alignment may be verified by observing the two LED's on the end of each sensor. Red LED off and Green on indicates the sensor is aligned and has a "Lock" state.

- If the bollards are in alignment the IR optical sensors may not require any further adjustment.
- If IR optical sensor alignment is required, loosen the mounting screws holding the sensor to the controller plate and adjust as required. Observe the sensor LED for "Lock' indication (Red LED Off and Green LED On).
- One technique that can be used to increase accuracy would be to cover adjacent sensors and reflectors in order to prevent alignment with the wrong reflector. Another technique would be to use a card with a dime-sized hole to cover the reflector being used. This would focus the beam to a tighter tolerance.
- Once the IR sensors are aligned, and connections to the access control system verified, the passageway should operate normally, allowing passage on a valid input for that direction, as well as sounding an alarm for an invalid passage, and remote control of the lane if these inputs are connected to remote switches.

ADJUSTMENTS

- Adjustment P.1 (Alarm Reset) sets the delay on the Alarm Auto Reset (adjustable 1 - 20 seconds).
- Adjustment P.2 (Valid Access Delay) sets the time allowed for a valid card user to walk through the passageway before the system resets for the next user (adjustable 1 - 20 seconds).

LIGHT ARRAYS

The vertical and horizontal Light Arrays provide visual cues to the user.

- All Exit-side nomenclature is referenced as "1" (Valid 1, Horizontal 1, Vertical 1) All "Exit" side hardware (Light Arrays, Reader) are mounted on the right-hand side, when facing the lane from the "EXIT" or "Secure" side. This places these pieces of hardware in the bollard across the lane from the MPU/Electronics Package.
- All Entry-side nomenclature is referenced as "2" (Valid 2, Horizontal 2, Vertical 2) All "Entry" side hardware (Light Arrays, Reader) are mounted on the right-hand side, when facing the lane from the "ENTRY" or "Un-Secure" side. These pieces of hardware are used in the same bollard the MPU/ Electronics Package is mounted in.
- Each Horizontal Light Array is connected to the appropriate Horizontal Array connection (1 or 2) on the MPU board that corresponds with the Valid 1 or Valid 2 Input. The Horizontal Array has three modes; Present Card (Card Arrow is lit); Alarm or In Use (Bar is lit); and Proceed (Arrows)
- The Vertical Light Array is connected to the appropriate Vertical Array connection (1 or 2) on the MPU board that corresponds with the Valid 1 or Valid 2 Input. The Vertical Array has two modes; Open (lane available for use); Wait (Lane in use or Alarm)

SPECIFICATIONS

Technical Data: (electrical)

Power: 12VAC @ 4 Amp/Walkway

Inputs:

Access Control:

Valid Entry	N/O Dry Contact	(Output from Access Control)
Valid Exit	N/O Dry Contact	(Output from Access Control)
		(Momentary closure validates user access to lane)
Invalid	N/O Dry Contact	(Output from Access Control)
		(Momentary closure alerts that Invalid ID attempted to use lane)

Bypass:

N/O Dry Contact (held = Bypass, momentary = Resets lane)

Free Exit Mode Enable:

Free Exit Mode may be enabled by placing a shorting jumper across TB-1 Pins 11&12

Outputs:

Alarm Contact	(N/O) closes on Lane Violation	- 500mA @ 30 VDC
Invalid Card	(N/O) closes on Invalid Input	- 500mA @ 30 VDC

Technical Data (mechanical):

Size: 60" Long X 38" High X 8" Wide (Dimensions may vary on custom models)

Mounting: 12 gauge steel base at each end of the bollard with four 1/2" mounting holes and a 3x4" conduit hole

Finish:

Top surface - DuPont Corian

Side panel - Nevamar/Formica laminate over millwork; Stainless Steel

Note: Custom finishes available. Contact factory.

WARRANTY

The DSI Optical Turnstile Product you have purchased is warranted to be free of defects in material and workmanship when properly installed, used and maintained according to instructions. DSI will, for a period of three (3) years from date of purchase, repair or replace any part which, upon our examination, proves to be defective under normal use. **DSI/DETEX SHALL NOT BE LIABLE FOR ANY DIRECT, INCIDENTAL OR CONSEQUENTIAL LOSS OR DAMAGE ARISING OUT OF THE FAILURE OF THIS DEVICE.**

DSI Power Wire-Run Gauge Calculator

Use this form to determine the wire gauge of the power trunk for equipment.

If used to calculate a:

- **“DAISY CHAIN”** application - one where all equipment is attached to the same trunk, you will need to calculate the total load and the total distance in wire run to the last load on the chain.
- **“HOME RUN”** application - where each piece of equipment is on a separate trunk returning to the central power supply, you use this form to determine the gauge for each run.
 1. Specify total Current load of all devices sharing this trunk, in Amps.
 2. Specify Distance of actual Wire Run (in feet) from power supply to most remote load.
 3. Multiply figures from line 1 and line 2
 4. Match final number to Table below to determine Wire Gauge needed to provide adequate Voltage.

TABLE

up to 45	22AWG
45 to 90	18AWG
90 to 170	16AWG
170 to 275	14AWG
275 to 415	12AWG
415 to 680	10AWG

If your result is greater than 680, make individual supply runs to each device, or sub-sets of devices, which are within the above parameters.

EXAMPLE: 3 devices @ .250, .500, .125 amps - total amps of .875

Distance of 150 ft.

150 times .875 = 131.25

131.25 falls into the category of 16 AWG wire.

SECURE SIDE

ACCESS CONTROL SYSTEM

EXIT
↓

EXIT
↓

EXIT
↓

EXIT VGA

EXIT VGA

EXIT VGA

EXIT HGA

EXIT HGA

EXIT HGA

A

A

A

MPU

MPU

MPU

ENTRY
↑

ENTRY
↑

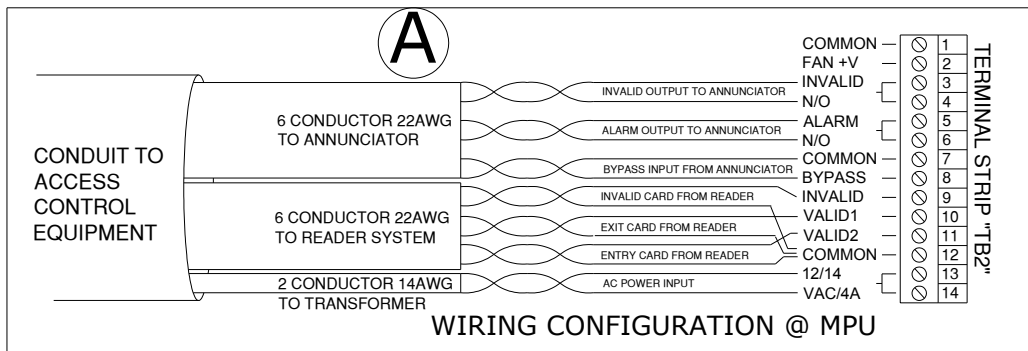
ENTRY
↑

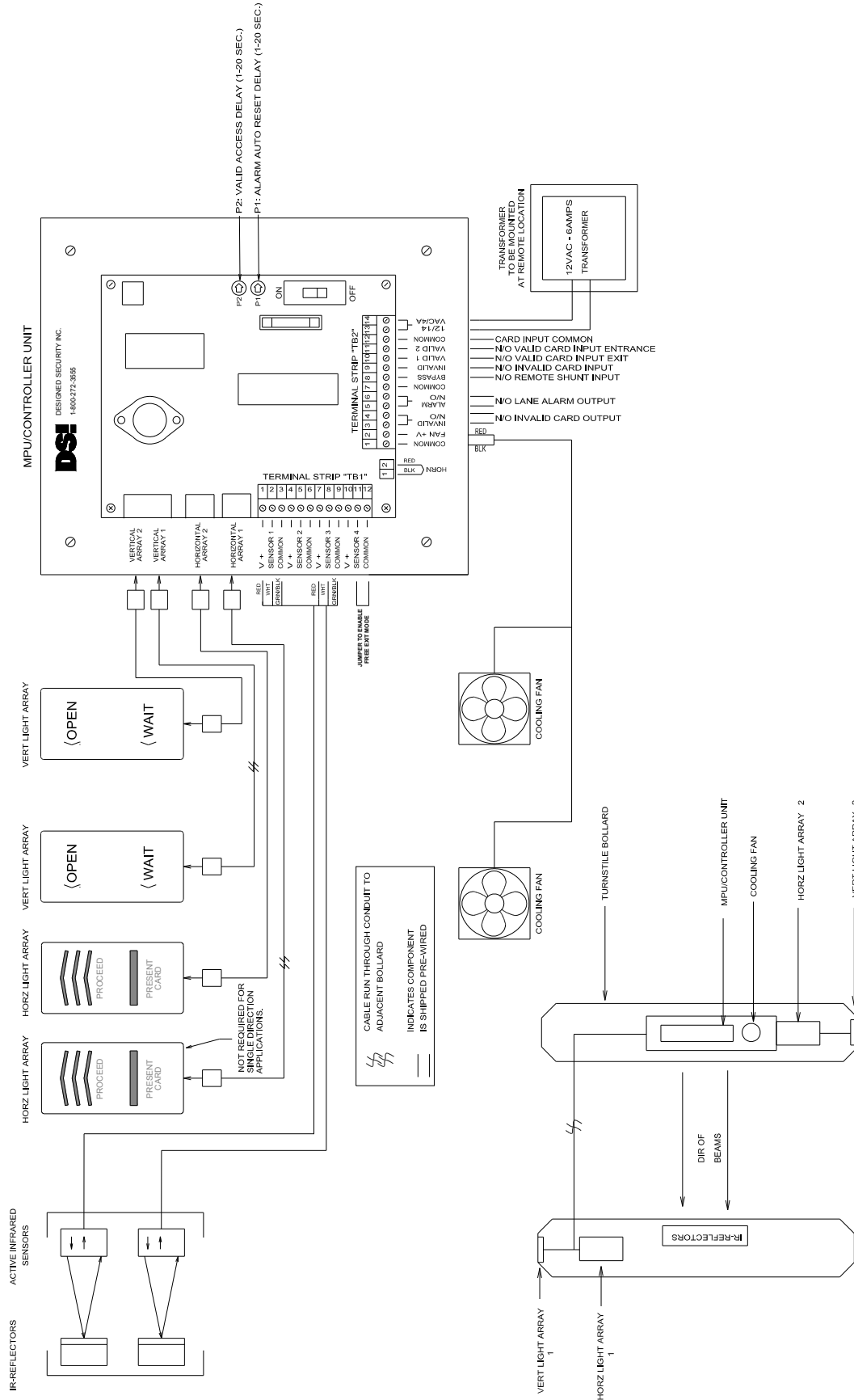
POWER SUPPLIES LOCATED IN
REMOTE LOCATION

UNSECURE SIDE

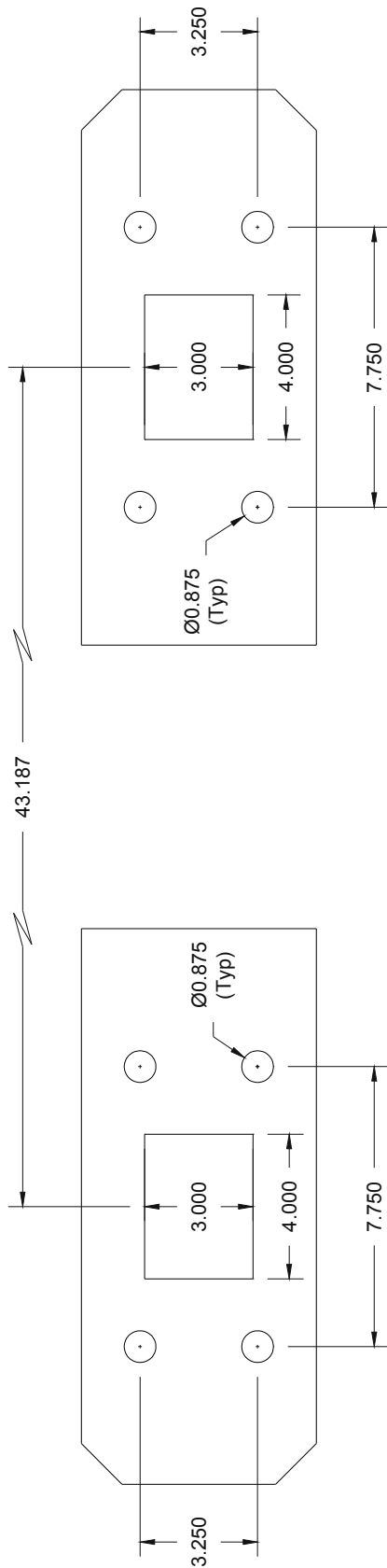
TYPICAL BOLLARD CONFIGURATION

VGA = VERTICAL GRAPHIC ARRAY
HGA = HORIZONTAL GRAPHIC ARRAY





ES810/811 WIRING DIAGRAM



BASE PLATE DETAIL

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