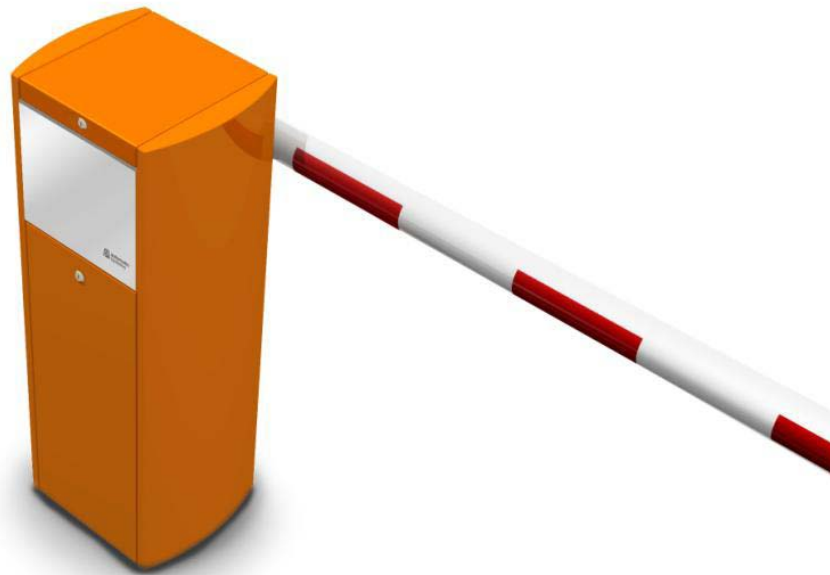


BL229 Toll Barrier



Engineering Specifications

ENGINEERING SPECIFICATIONS

BL229 Toll Barrier

SECTION 08 34 56 – Security Gates

SECTION 11 12 33 – Parking Gates

SECTION 28 13 00 – Access Control

SECTION 34 71 13 – Vehicle Barriers

PART I – GENERAL

1.01 SECTION INCLUDES

This section covers the furnishing and installation of a toll barrier.

1.02 REFERENCES

- A. The toll barrier must be certified by a recognized laboratory according to UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.
- B. The toll barrier must be certified by a recognized laboratory according to CAN / CSA - C22.2 no. 247-92 (R 2008) – Standards for Operators and Systems of Doors, Gates, Draperies, and Louvers.

1.03 SYSTEM REQUIREMENTS

- A. The toll barrier must control and restrict vehicle traffic between secured and unsecured zones.
- B. Must feature rising arm to block vehicle's and prevent access to restricted areas without authorization.
- C. Must be mechanically locked at the vertical (up position), and the horizontal (down position).
- D. Must be able to automatically operate and must be bidirectional, allowing traffic in both directions.
- E. Must be configurable in one of three (3) states:
 - 1. Open - arm remains in the open or up position.
 - 2. Closed - arm remains in the closed or down position.
 - 3. Automatic - arm is normally in the closed position and controlled by the associated entry/exit hardware.
- F. Must be able to use the access control system to grant or deny access to the facility and operate with a variety of user authentication devices such as card reader devices, ticketing systems or barcode reader systems.
- G. Must permit the operator to manually raise and lower the gate whenever the manual unlocking lever is activated.
- H. The arm must be made of either aluminum or rubber covered carbon fiber.
- I. Barrier's arm must be break-away to avoid damage to the arm mechanism if an impact occurs.
- J. Design of the unit must provide visual and for intuitive process.

1.04 SUBMITTALS

- A. Submit product data: equipment description, dimensions, electrical wiring diagrams for installation, and manufacturer's technical manuals on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
 - 4. Operation and maintenance manuals.
- B. Provide shop drawings and indicate component connections, anchoring methods and installation details.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver equipment to job site in manufacturer's packaging undamaged, and with complete installation instructions.
- B. Store indoors in a controlled environment, protected from construction activities and debris.

1.06 PROJECT/SITE CONDITIONS

- A. Install the toll barrier on leveled concrete base.

1.07 QUALITY ASSURANCE

- A. The rising barrier must be manufactured in North America.
- B. Manufacturer Qualifications:
 - 1. Manufacturer must be a company specialized in designing and manufacturing rising barriers with a proven minimum experience of ten (10) years.
- C. Source Limitations: obtain the toll barriers from Automatic Systems.

1.08 WARRANTY

- A. Automatic Systems warrants its products against parts defects for a period of one (1) year from the date of invoicing. This warranty excludes normal wear on finishes or damage that occurs due to abuse or misuse. Obtain full warranty terms from Automatic Systems.

PART II – PRODUCTS

2.01 MANUFACTURERS

- A. Manufacturers: subject to compliance with requirements, provide products by the following:
 - 1. AUTOMATIC SYSTEMS AMERICA INC, 4005 Matte Boulevard, Unit D, Brossard, Quebec, J4Y 2P4, CANADA
Phone : 800 263 6548
Fax : 450 659 0966
Homepage : www.automatic-systems.com E-mail : sales@automatic-systems.com
- B. Products:
 - 1. Toll barrier, Model BL229 Toll

2.02 CONSTRUCTION

- A. Operator frame
 - 1. Frame must be manufactured from 14 gauge to ¼ in. (2 mm to 6.5 mm) thick steel, corrosion-protected by powder coat paint (standard color: orange),
- B. Access panels
 - 1. The top and side panels must be removable to allow easy access to both the electro-mechanical drive and electronic control units
 - 2. Openings must be key-locked
- C. Arm

*** NOTE TO SPECIFIER ** Oval aluminum arm with breakaway feature is the standard for the BL229 toll barrier. At an additional cost, other material is available [as options listed in brackets].*

Delete the following subparagraphs in brackets if no optional material is required, or retain the material that is appropriate for the project.

- 1. To be oval and manufactured from aluminum (maximum 10 ft / 3m)
 - 2. [To be manufactured from carbon fiber with a rubber cushion (maximum 10 ft / 3m)]
- D. Enclosure
 - 1. Design of the unit's enclosure must ensure an IP 43 degree of protection.

2.03 DIMENSIONS

- A. Arm length:
 - 1. The arm length for equipment must be maximum 10 ft (3m)
- B. Operator dimensions:
 - 1. Overall dimensions of BL229 Toll operator:
 - a. Height: 41 ½ in (1055mm)
 - b. Footprint: 13 ½ in x 16 in (345mm x 410mm)
 - 2. Rotation axis height
 - a. 34 ¼ in (870mm)

2.04 OPERATION

- A. Automatic mode (arm Normally Closed & Controlled by a loop or access control device):
 - 1. Command to barriers. In stand-by position, the passageway must be blocked by the arm.
 - 2. Upon receipt of a signal from the access control system or the inductive loop, the arm must open, freeing the passageway,
 - 3. The obstacle immediately closes after passage or after a configurable delay.
- B. Power Failure
 - 1. In case of power failure, the barrier can open/close manually once the mechanical lever is unlocked.
 - 2. After the power has been restored, the unit must return to its previous operating mode.
- C. Emergency Operation
 - 1. The unit can be set to remain open upon receiving an emergency signal. The obstacle opens and allows unobstructed exit / entrance,
 - 2. This operating mode continues as long as the emergency signal is active.
 - 3. After the emergency signal has been turned off, the unit must return to its previous operating mode.

2.05 SECURITY

- A. Must provide operator and arm to securely block the passageway:
- B. Must have mechanical locking integrated. The arm must be mechanically locked in the closed position to prevent any attempted break-in.
- C. The cabinet's side panels and top cover must be key-locked.

2.06 SAFETY

- A. In case of emergency or power failure, the operator must have a manual lever for unlocking the arm
- B. Must provide minimum 10 ft (3m) wide passageway.
- C. Passage can be monitored in both directions by means of a loop detector, infrared beams, safety edge or other means of monitoring, to ensure user safety and prevent arm from closing when a vehicle is passing the barrier:
 - 1. If a presence is detected in the obstacle safety area during the opening motion, the arm will complete its opening unless a stop command is issued.
 - 2. If a presence is detected in the safety area during a closing motion, the arm can be set to either immediately stop or re-open depending on the selected mode. The obstacle will operate again after the safety zone has been cleared.
- D. The arm controller motor must be provided with an entrapment protection device that automatically reverses or stops the movement whenever the arm strikes an object during a closing action.
- E. The operator must be equipped with an inductive analog sensor for precise arm position detection.

2.07 VEHICLE GUIDANCE

- A. Visual notification with clear graphics must be incorporated into each passageway (one for each direction) to control flow and to warn users.

2.08 DRIVE UNIT

- A. Three-phase asynchronous geared motor combined with crank-and-rod linkages ensuring perfect mechanical locking in both extreme positions.
- B. Variable-speed controller ensuring progressive accelerations and gradual decelerations, for safe movement without vibrations.

2.09 CONTROLLER

- A. Microprocessor-based controller with the following characteristics:
 - 1. The logic must be equipped with:
 - a. Digital screen to facilitate the configuration of the barrier,
 - b. LED indicators showing the status of the inputs and outputs,
 - c. 1 analog and 14 digital inputs,
 - d. 3 output relays, 4 digital outputs and 1 analog output.
 - 2. The logic must be equipped with two (2) loop detector connectors when loops are used as safety or to control the barrier opening/closing.
 - 3. The barrier operator may be equipped with an extension module that adds 4 inputs and 4 outputs.

2.10 POWER SUPPLY

- A. Power supply: 120 Volts AC 60 Hz
- B. Nominal power consumption:
 - 1. At rest: 50W
 - 2. In operation: 500W

2.11 PERFORMANCE

- A. Opening Time & Closing Time:
 - 1. The obstacle opening time: 0.6 to 1.7 seconds
 - 2. The obstacle closing time: 1 to 2 seconds
- B. MCBF: 2.000.000 average number of cycles between breakdowns, when respecting manufacturer's recommended maintenance.
- C. Operating Temperatures: -4° to 113°F (-20° to 45°C) without heater.

2.12 OPTIONAL EQUIPMENT

**** NOTE TO SPECIFIER **** Delete the following subparagraphs in brackets if no optional equipment is required, or add as necessary.

- 1. [Push button(s) box]
- 2. [Key switch on housing]
- 3. [Inductive loops for car or truck detection]
- 4. [Presence detector].
- 5. [Photo electric cell (automatic opening, closing, safety) fixed on post or housing]
- 6. [Detector for breakaway arm]
- 7. [Traffic lights fixed on a post on housing]
- 8. [STOP traffic sign]
- 9. [50 W heater for operation in temperatures as low as -20°C (-4°F)]
- 10. [400 W heater for operation in temperatures as low as -40°C (-40°F)]
- 11. [Raised base]
- 12. [Non standard color]
- 13. [Optional I/O board]
- 14. [Traffic light optional board for third party traffic signs]

PART III – EXECUTION

3.01 INSPECTION

- A. Installer must examine the installation location and advise the Contractor of any site conditions inconsistent with proper installation of the product. These conditions include but are not limited to the following:
 - 1. Toll barrier operator must be installed on a level concrete pad,
 - 2. Power supply and control wiring must be installed. Follow manufacturer's recommendations.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 INSTALLATION

- A. Install toll barrier in strict accordance with manufacturer's instructions. Set units level. Anchor securely into place.

3.03 ADJUSTMENT

- A. Installer must adjust toll barrier for proper performance after installation.

3.04 INSTRUCTION

- A. A factory trained installer must demonstrate to the owner's maintenance crew the proper operation and the necessary service requirements of the equipment, including exterior maintenance.

3.05 CLEANING

- A. Clean barrier operator and area carefully after installation to remove excess caulk, dirt and labels.

3.06 MAINTENANCE

- A. Maintain the equipment according to the manufacturer's instructions.

Automatic Systems reserves the right to change this specification at any time without notice.

END OF SECTION