

**MODEL DSC1450
PHALANX® TYPE BARRIER SYSTEM
SELF CONTAINED, SURFACE MOUNTED
Programmable Electro-Mechanical DSC1450 Drive System**



Typical barricade shown in final test. Note stainless steel cover removed.

This Procurement Specification defines a Traffic Control Barricade using Delta Scientific Corp. – PHALANX® TYPE plate barrier.

SYNOPSIS

- The DSC1450 is a surface mounted vehicle barricade that consist of four components. Two buttresses, a road plate and hinge plate. The four separate component design makes for easy shipment handling and installation. The barrier components are lag bolted in place to existing concrete surfaces such as parking structures and parking lots to be used as an anti-theft device and or traffic control device. The barricade features a self-contained programmable electro-mechanical drive system, controls and an integral barrier arm. Typical installation is four hours or less.
- ® Phalanx is a registered trademark of Delta Scientific Corporation, Palmdale, California.
- The prime mover is the Delta Programmable Electromechanical Drive System, (PEDS) remote control panel(s), control logic, with other options as defined herein pertain to the electro-mechanical version of the barricade

- The DSC1450 has been engineered to withstand a 10,000 pound vehicle traveling at 30 miles per hour.
- Normal operating speed is 5 seconds for the Electro-Hydraulic power units.
- The DSC1450 can be installed on a flat existing concrete roadway. Normally no excavation is required.
- Time of installation at a prepared site is typically less than 4 hours for a qualified crew.
- A complete range of Prime Movers, Control Options, Interface Packages, Sensors, Signal Lights, Safety Provisions etc. is available.

1.0 SCOPE

This specification defines the procurement of a PHALANX® Electro-mechanical BARRIER SYSTEM Model DSC1450. Each System consists of one Barrier the CONTROLS AND LOGIC CIRCUITS, FEATURES and OPTIONS as defined herein.

2.0 SYSTEM CONFIGURATION

2.1 BARRIER

- 2.1.1 Barrier Construction. Each Barrier shall be a surface mount assembly that has a Steel Ground Frame that can be attached directly to an existing roadway, slab and girder floor or other specifically prepared base structures. The Barrier shall have a heavy steel Ramp that can be deployed to the guard position. In that position, it presents a formidable obstacle to approaching vehicles. Upon impact, forces shall be first absorbed by the ramp and then transmitted to the barrier buttresses, and the underlying structure/ roadway.
- 2.1.2 Barrier Height. In the full guard position the height of the Barrier shall be 32 inches [81.28 cm] as measured from the high point of the raised barrier Ramp to the underlying structure / roadway.
- 2.1.3 Free Traffic Opening. The unobstructed distance between Buttresses shall be 144 inches [366 cm]. Alternate widths are available.
- 2.1.4 Foot Print shall be 60 inches [152 cm] by the clear opening width + 40 inches. Example: 144 inch [336 cm] clear opening equals a total width of 184 inches (437 cm). A 60 inch by 184 inch foot print. The two buttresses, hinges, and thrust transfer blocks shall be welded to the road frame. It shall have a series of drilled 0.75 inch [19 mm] clearance holes to accommodate concrete anchor bolts. Clear opening lengths

Note: Size, number, pattern and diameter of mounting holes can be varied to meet specific underlying structure conditions.

- 2.1.5 Buttrresses. The buttrress shall be 32.5 inches [82.6 cm] high by 60 inches [152.4 cm] deep by 24 inches [61 cm] wide for the "power unit buttrress" or 16 inches [41 cm] wide for the non power unit buttrress.
- 2.1.6 The power buttrresses shall contain the Electro-Mechanical actuator, control and logic circuits, locks and safety devices, and spring assist if applicable.
- 2.1.7 Finish. The roadway plates shall have a non-skid surface. (Special stripping and colors optionally available.)
- 2.1.8 TA812 Signal Gate. An electrically operated aluminum arm signal gate shall be supplied to alert vehicle drivers of the barrier position. The gate operator shall interface with the Barrier control circuit and be delivered pre-wired. The control circuit shall close the gate at the Barrier "up" command and remain closed until the Barrier is fully lowered. The arm shall be ___ foot (6, 8, 10 or 12 foot can be specified) long and be striped with reflective yellow/black tape. The gate assembly shall be in integral part of the power buttrress.

- 3.0 PROGRAMMABLE ELECTO-MECHANICAL DRIVE SYSTEM (PEDS)
CONTROL AND LOGIC CIRCUITS
- 3.1 The PEDS consists of the Linear Actuator, the Programmable Controller, Control Panels and Control Cabinet.
- 3.2 Controller
 - 3.2.1 The Controller sets the overall speed of operation as well as the profiles of the barricade throughout its up - down travels, whether raising to the Guard Position or lowering to the clear position, The speed of the barrier is ramped 'up' to running speed and then ramped 'down' for softer positioning at both ends of the cycle, lower power consumption and enhanced life.

- 3.3 System Power. Max power requirement up to 42000 watts each Barrier with
Typical operation at 1000 watts. Length dependent.
- 3.4.1 Control Circuit.
- 3.4.2 Voltage. The control circuit shall operate from a 220/240 volt, 50/60 Hz 10 amp supply. An internally mounted transformer and power supply shall reduce this to 24 VDC for all external control stations.

(The following control station(s) can be specified)

3.5 TOUCH SCREEN CONTROLS

Note. Touch Screen Controls including Touch Screen with Video Monitoring are available in a wide range of options and combinations. For detailed information contact Delta Scientific Engineering.

- 3.5.1 General. The controls shall consist of an eight-inch flat screen control panel with color graphic display. The panel will show control “buttons” and graphic representation of the barricade status and cycling graphic displays of the vehicle barricade(s) that changes position (up or down) with the operation of the vehicle barricade. The display will also indicate red when the barricade is in the secure up position (gate closed) and green when in the down and open position (gate open). The flat screen shall be capable of controlling up to four barricades, emergency fast mode and reset, data logging of touch screen events and arming and disarming with a keypad password. Master and multiple Slave Panel combination shall be available.
- 3.5.2 Plug and Play. The touch screen control panel shall be capable of “Plug and Play” by linking the panel to the Programmable Logic Controller in the motor drive unit (HPU) (EMD) via a category five data cable with Ethernet connectors.
- 3.5.3 Screen Button Safety. To reduce the possibility of accidental actuation of the controls, the screen buttons shall be programmed to require a holding contact by the operator in order to actuate the barricade.
- 3.5.4 Data Logging. The touch screen control panel shall have the capability to data log the date, time and events that occur with the control panels. Access to the data will be password protected and downloadable with a USB thumb drive. The touch screen control panel shall be capable of upgrades and changes with a password protected and unloadable from a USB thumb drive.
- 3.5.5 Site Specific Displays. The touch screen control panel shall be capable of site specific labeling of the barricades displayed. Such as “Exit Barrier” or VIP Drive Barrier”. (This shall be available on a customized contract basis.)

4.0 Accessory Equipment (Any or all of the following may be selected):

- 4.1 Stop/Go Traffic Lights. Red/Green 8 inch traffic lights shall be supplied to alert vehicle drivers of the Barrier position. The green light shall indicate that the Barrier is fully down. All other positions shall cause the light to show red. Brackets shall be supplied to allow light(s) to be located on a (3.5 inch OD post) (wall) (3.5 inch OD post - back to back). The light operating voltage shall be 120 volts (alternately 240 volts), power consumption 40 watts per light.
- 4.2 Safety Interlock Detector. A Barrier detector safety loop shall be supplied to prevent the Barrier from being accidentally raised under an authorized vehicle. The detector shall utilize

digital logic have fully automatic tuning for stable and accurate long term reliability. The output of the detector shall delay any Barrier rise signal when a vehicle is over the loop.

- 4.3 IR beam safety interlock. Infrared sensor mounted in the buttress suppress the normal up command if a vehicle or pedestrian is blocking the beam. (Emergency fast mode will not be limited).

Other Control Options:

- 4.4 Remote Control Master Panel. A remote control master panel shall be supplied to control Barricade function. This panel shall have a key lockable main switch with "main power on" and "panel on" lights. Buttons to raise and lower each Barricade (or set) shall be provided. Barricade "open" and "closed" indicator lights shall be included for each Barricade (or set).
 - 4.4.1 Voltage. The remote control panel shall operate on 24 VDC.
 - 4.4.2 Construction. The remote control station shall be a standard 19 inch electronics rack type surface mount panel with all devices wired to a terminal strip on the back.
 - 4.4.3 (Option) Panel shall be equipped with a timer circuit to notify the operator via an annunciator "squealer" that the Barricade has been left in the open position for too long a time period. The time interval shall be customer selectable.
- 4.5 Remote Control Slave Panel. A remote control slave panel shall also be supplied to control the Barricade operation. This panel shall have a "panel on" light that is lit when enabled by a switch on the remote control panel. Buttons to open and close each barricade set shall be provided. Barricade "open" and "closed" indicator lights shall be included for each Barricade (or set).
 - 4.5.1 Voltage. The remote control panel shall operate on 24 VDC.
 - 4.5.2 Construction. The remote control station shall be a standard 19 inch electronics rack type surface mount panel with all devices wired to a terminal strip on the back.
 - 4.5.3 (Option) Panel shall be equipped with a timer circuit to notify the operator via an annunciator "squealer" that the Barricade has been left in the open position for too long a time period. The time interval shall be customer selectable.
- 5.0 PERFORMANCE
 - 5.1 EXPERIENCE. Barrier and auxiliary equipment shall be of proven design. Manufacturer shall have over 10,000 vehicle barriers in field operation for a minimum of 20 years with documented field experience for all major components and design features.
 - 5.2 The DSC1450 has been certified by mathematical analysis to be capable of stopping and destroying a truck weighing 10,000 pounds gross vehicle weight) traveling 30 mph

6.0 ENVIRONMENTAL DATA (Please supply the following):
Barrier shall operate satisfactorily under the following environmental conditions:

6.1 Extremes in temperature

Yearly maximum drybulb temp _____ °F/C.

Yearly minimum drybulb temp _____ °F/C.

6.2 Snowfall

Maximum expected hourly rate _____ inches/hour.

Roadway will be (DSC1450ly/manually/chemically) cleared _____.

7.0 QUALITY ASSURANCE PROVISIONS

7.1 Testing. Upon completion, the Barrier system will be fully tested in the manufacturer's shop. In addition to complete cycle testing to verify function and operating speeds, the following checks shall be made:

7.2 Identification. A nameplate with manufacturer's name, model number, serial number and year built shall be located within the maintenance access area.

7.3 Workmanship. The Barrier and subsystems shall have a neat and workmanlike appearance.

7.4 Dimensions. Principal dimensions shall be checked against drawings and ordering information.

7.5 Finish. Coatings shall be checked against ordering information and shall be workman like in appearance.

8.0 PREPARATION FOR SHIPMENT

8.1 The Barrier system shall be crated or mounted on skids as necessary to prevent damage from handling. The shipping container(s) shall be of sufficient structural integrity to enable the assembly to be lifted and transported by overhead crane or forklift without failure.

9.0 MANUFACTURER'S DATA

9.1 Drawings and installation data. The Barrier system drawings and installation, maintenance and operating manuals shall be sent to purchaser within 4 weeks of order. ___ additional copies shall be supplied (1 copy supplied at no cost).

10.0 DISCLAIMER

Please note - careful consideration must be devoted to the selection, placement and design of a Barrier installation. Just as in the case of any Barricade system, perimeter security device or security gate that blocks a roadway or drive, care must be taken to ensure that approaching vehicles as well as pedestrians are fully aware of the Barrier and their

operation. Proper illumination, clearly worded warning signs, auxiliary devices such as semaphore gates, stop-go signal lights, audible warning devices, speed bumps, flashing lights, beacons, etc. should be considered.

Delta has information available on many such auxiliary safety equipment not specifically listed herein. It is strongly recommended that an architect and or a traffic and or safety engineer be consulted prior to installation of a Barrier system. Delta will offer all possible assistance in designing the operating equipment, controls and the overall system but we are not qualified nor do we purport to offer either traffic or safety engineering information.

11.0 PROCUREMENT SOURCE

11.1 The Model DSC1450 Phalanx ® Type Barrier System shall be purchased from:

DELTA SCIENTIFIC CORPORATION
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Palmdale, California, 93551, USA
Phone (661) 575 1100
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