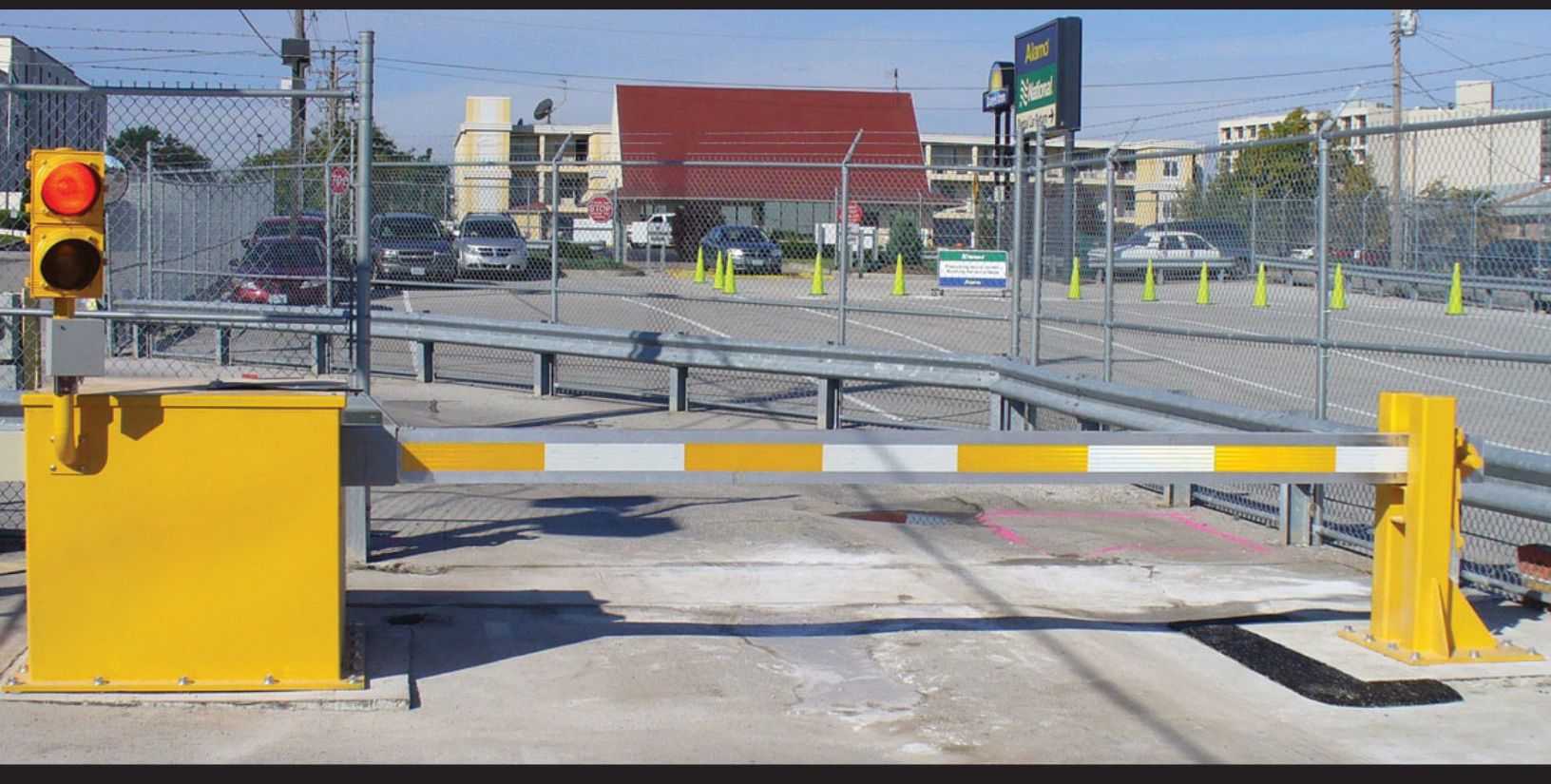


M530[™]

ANTI-RAM BARRIER ARM

M30

PRODUCT DETAIL SPECIFICATION



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Section 1 Accreditation

1.01 Electric Drop Arm Barrier system

1.01.1 Designation – High Security Drop Arm Barrier System

1.02 ASTM F2656-07, Annex A1, M530 with 12' Drop Arm

1.02.1 Test Date 12' Arm April 28, 2012

1.02.2 Tested by Transportation Research Center (TRC Inc.)

1.02.3 Test Location East Liberty, OH

1.02.4 Certification Rating ASTM M30/P1

1.03 Test Vehicle

1.03.1 Make/Type 1989 Ford F700 Medium Duty Truck

1.03.2 GVW 15,090 Lbs. (6844.7 kg)

1.03.3 Speed achieved 29.7 mph (47.8 km/h)

1.03.4 Penetration: Negative -26.4" (-673mm)

1.04 ASTM F2656-07, Annex A1, M530 with 22' Drop Arm

1.04.1 Test Date 22' Arm October 8, 2012

1.04.2 Tested by Transportation Research Center (TRC Inc.)

1.04.3 Test Location East Liberty, OH

1.04.4 Certification Rating ASTM M30/P1

1.05 Test Vehicle

1.05.1 Make/Type 1996 Navistar International 4700 medium-duty truck

1.05.2 GVW 15,222 Lbs. (6904.7 kg)

1.05.3 Speed achieved 29.58 mph (47.6 km/h)

1.05.4 Penetration: Negative 1.2' feet (375mm)

1.06 Experience

1.06.1 The Manufacturer shall have at least 50 similar systems installed and in operation.

Section 2 General

2.01 Responsibilities

2.01.1 The manufacturer shall be responsible for furnishing each M530 vehicle barrier system including all mounting, installation and counterbalance kits.

2.01.2 The installer shall be responsible for furnishing installation materials, and providing installation, and field testing of each anti-ramming M530 vehicle barrier system including the associated equipment as specified.

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- 2.01.3 The Owner/Operator (End User) or facility architect will assume responsibility of providing traffic and safety engineering, including all necessary safety features to be used at each barrier site location, including, but not limited to: sidewalks for pedestrian traffic, sufficient roadway lighting, caution signage, traffic (stop) lights, audible warning alerts, visual warning alerts (such as flashing or strobe lights), secondary traffic control devices (such as gate arms), security guard control points, etc.
- 2.01.4 The Manufacturer shall supply a M530 vehicle barrier system including, Electric Actuation Unit (EAU), operator control panels, all mounting, installation and counterbalance kits.
- 2.01.5 The Manufacturer shall insure that the design and materials of the M530 vehicle barrier system are the same as those used in the crash test of the barrier, and approved by ASTM.
- 2.01.6 The installer shall install the M530 vehicle barrier system and shall consist of a single drop arm across a roadway this drop arms can be 12', 14', 16' 18', 20' or 22' in length.
- 2.01.7 Retaining walls, fixed barriers or other devices shall be provided by the installer or facility architects on either side of the barrier set, to prevent vehicles from going around the barriers
- 2.01.8 The Buyer, in conjunction with the Owner/Operator (End User) requirements, will provide the manufacturer with a written sequence of operation.
 - 2.01.8.1 Sequence of operation will include but not limited to: the vehicle barrier system sequencing, vehicle loop detector functions, gate arm functions, traffic lights, annunciators and all other equipment directly controlled by the system.
 - 2.01.8.2 If the written sequence of operation is not provided by Buyer, then the manufacturer shall supply a default PLC program for basic M530 vehicle barrier system operation only. Additional sequences or functions requested by the Buyer beyond the basic default functions are to be provided by the manufacturer upon written request only and at additional fees to the Buyer. (PLC Only)

2.02 **Quality Assurance**

- 2.02.1 The manufacturer shall be a company specializing in the supply of vehicle barrier systems with a minimum of 10 years' experience.
- 2.02.2 The manufacturer shall provide a complete M530 vehicle barrier system that has been fabricated, assembled and tested for proper operation prior to shipment.
- 2.02.3 The manufacturer shall have performed an actual crash test on the type of vehicle barrier system being provided.

2.03 **Submittals**

- 2.03.1 The manufacturer shall submit to the Buyer drawings on the M530 vehicle barrier system.
 - 2.03.1.1 Detail drawings shall show the top assembly layout and overall dimensions of each major element of the barrier system equipment, including the wedge, EAU and operator control panels.
 - 2.03.1.2 Detail drawings shall show the foundation and anchoring requirements of the M530 vehicle barrier system equipment.
 - 2.03.1.3 Detail drawings shall show the layout of a typical M530 vehicle barrier system.
 - 2.03.1.4 A detail electrical schematic drawing shall be provided.

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- 2.03.1.5 A detailed electrical schematic including associated wiring shall be provided showing all electrically connected components, including the interface points for connection to equipment.
- 2.03.1.6 The schematic drawings shall represent the entire M530 vehicle barrier system, with all manufacturer supplied equipment connected and integrated together as a system.
- 2.03.1.7 Detail interconnect drawings shall show the minimum conduit size and number of wires required to run between each of the barrier system equipment.
- 2.03.2 The manufacturer shall submit to the Buyer a crash test certification on the M530 vehicle barrier system
 - 2.03.2.1 A copy of the ASTM crash rating letter, certifying the manufacturer's barrier shall be provided.
 - 2.03.2.2 If an Engineered system is provided a certificate of conformance that the M530 vehicle barrier system delivered conforms to the crash rating, performance and the requirements of this specification.
 - 2.03.2.3 The manufacturer shall submit to the buyer a complete list of equipment, materials, including the manufacturer's descriptive data and technical literature, catalog cuts, and installation instructions. As well as Nameplate data which shall be permanently attached to each M530 vehicle barrier and power unit. The data shall be legibly marked on corrosion-resistant metal plates and shall consist of the following:

Manufacturer Name – Ameristar Security Products
Model Number – M530 Drop Arm Barrier
Serial Number – (TBD)
Type of barrier – Electric, Manual
Date of manufacture – (TBD)

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- 2.03.2.4 The manufacturer shall submit to the buyer a typical bill of material (BOM) and spare parts data for each different item of material and equipment used.
- 2.03.2.5 The Buyer will distribute M530 vehicle barrier system submittal documentation and drawings to the Owner/Operator (End User), as necessary.

2.04 Final Documentation

- 2.04.1 After completion of field tests the Installer shall provide to the Manufacturer up-dated Red-lined drawings, conforming to the “as-built” equipment provided.
- 2.04.2 After completion of field tests the manufacturer shall provide to the Buyer a comprehensive parts and component documentation on the M530 vehicle barrier system, that conforms to the “as-built” equipment provided.
 - 2.04.2.1 A Parts List, or Bill of Material, shall be provided on all major parts and components used in the M530 vehicle barrier system.
 - 2.04.2.2 A recommended Spare and Consumables Parts List shall be provided. Spare parts shall be those that can be field replaced. Consumables shall include items frequently required for maintenance and service, such as, but not limited to: lights, fuses, lubricants, springs, counter weights, elements, etc. All items shall be provided with a part number, recommended quantity, and a brief description of the item, with current unit prices and source of supply.
- 2.04.3 After completion of field tests the manufacturer shall submit to the Buyer an Operation and Maintenance (O&M) Manual.
 - 2.04.3.1 A Preface section, with the manufacturer’s name, model number and service contact information.
 - 2.04.3.2 A Safety Warnings and Cautions section applicable during operation, maintenance, service and/or repair.
 - 2.04.3.3 An overview and general description of the M530 vehicle barrier system, including all equipment provided, and a summary of features or characteristics.
 - 2.04.3.4 A complete drawing package of the barrier system ordered.
 - 2.04.3.5 A theory of operation, for all electrical circuits.
 - 2.04.3.6 An Operating Instructions section, including as a minimum procedures for system start-up, barrier operation, shut down and manual operation.
 - 2.04.3.7 A Maintenance Instructions section, including as a minimum routine maintenance requirements, a chart of periodic maintenance activities and intervals, lubrication instructions and component adjustment.
 - 2.04.3.8 A Troubleshooting section, with probable cause and an itemized list of equipment checks.
 - 2.04.3.9 A Reference Information section, including abbreviations and acronyms, torque values and a list of applicable barrier drawings and documentation.
- 2.04.4 After completion of performance verification tests the installer shall submit to both the Buyer and manufacturer a M530 vehicle barrier system PVT Report.
 - 2.04.4.1 Upon completion and testing of the installed M530 vehicle barrier system, a Test Report shall be submitted showing both the test data and results of any field tests, including the demonstration and compliance with the specified performance criteria of this specification.

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- 2.04.4.2 Each test report shall indicate the final position of component adjustments and set points.
- 2.04.5 The Buyer will distribute M530 vehicle barrier system final documentation and drawings to the Owner/Operator (End User), as necessary.
- 2.05 **Delivery, Storage & Handling**
 - 2.05.1 All equipment shall be prepared and protected by the manufacturer to be shipped by conventional shipping methods.
 - 2.05.2 The M530 vehicle barrier system equipment shall be protected by suitable methods for the intended shipping and storage environments.
 - 2.05.2.1 Packaging, preservation, pallets and crating shall prevent mechanical damage to the equipment during both shipping and handling.
 - 2.05.2.2 Forklift provisions (min 10,000 pound capability) shall be provided for the lifting and handling of equipment. (Barrier Weight Approx. – 12' 3,550lbs, 22' 5,400lbs.)
 - 2.05.2.3 Shipping containers and crates shall be identified with the type of equipment.
 - 2.05.2.4 Shipping documents shall be provided with the contents of each container or crate.
 - 2.05.3 Equipment received on-site shall be placed in a storage area that is protected from the weather, humidity, excessive temperature variation, dust, dirt and/or other contaminants.
 - 2.05.3.1 Equipment shall be stored covered.
 - 2.05.3.2 Both equipment and structural materials shall be stored on pallets.
 - 2.05.3.3 Equipment shall not be stored directly on the ground, and shall be protected from standing water, and other conditions that might cause rust or corrosion.
 - 2.05.3.4 Equipment shall be stored in an area that is not subjected to potential damage by other construction activities.
- 2.06 **Warranty**
 - 2.06.1 Full warranty is available for download on manufactures website: www.ameristarsecurity.com

ANTI-RAM BARRIER ARM**PRODUCT DETAIL SPECIFICATION****Section 3 System Configuration****3.01 Barrier**

- 3.01.1 Height from top of grade level to centerline of barrier arm equal to 31 in +/- 1"
- 3.01.2 12ft barrier weight approximately 3550lbs.
- 3.01.3 18ft barrier weight approximately 4600lbs.
- 3.01.4 22ft barrier weight approximately 5,400lbs
- 3.01.5 Barrier fully open equal to 86 degree angle.
- 3.01.6 Each barrier comes standard with mounting and installation kits.
- 3.01.7 Each barrier comes standard with a built in counterbalance kit for manual operation which removes the need for manual hand pumps.

3.02 Finish

- 3.02.1 The barrier and casing shall be protected from the effects of long term corrosion.
 - 3.02.1.1 Standard finish is hot dipped galvanized for all steel components
 - 3.02.1.2 Aluminum barrier arm, with red/white reflective striped
 - 3.02.1.3 If the customer requires the Housing and receiver to be painted the standard color is yellow.
 - 3.02.1.4 When an alternate color is required, the Buyer will specify the custom color to the manufacturer at the time of ordering.

3.03 Foundation Type 1 – Shallow Mount

- 3.03.1 The Shallow mount foundation is a single continuous pour from housing to receiver.
- 3.03.2 Excavation Depth equal to 12"
- 3.03.3 Width front to back equal to 72"
- 3.03.4 Length equal to 12' – 240", 14' – 264", 16' – 288", 18' – 312", 20' – 336", 22' – 360"
- 3.03.5 Concrete strength minimum of 4000 psi concrete must be used
- 3.03.6 Soil Compaction of not less than 95% maximum dry density

3.04 Foundation type 2 – Deep mount

- 3.04.1 The Deep mount foundation consists of two pours one for the housing, one for the receiver.
- 3.04.2 Excavation Depth equal to 36" (X2)
- 3.04.3 Width front to back equal to 60" (X2)
- 3.04.4 Length equal to 60" (X2)
 - 3.04.4.1 Spacing between Foundations equal 12' – 118", 14' – 142", 16' – 166", 18' – 190", 20' – 214", 22' – 238"
- 3.04.5 Concrete strength minimum of 4000 psi concrete must be used
- 3.04.6 Soil Compaction of not less than 95% maximum dry density

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3.05 Barrier Performance & Parameters

- 3.05.1 The standard width of the barrier shall be no less than 10' feet. When the standard barrier width is insufficient, the Buyer may specify an alternate barrier width per the following, at the time of ordering.
 - 3.05.1.1 Optional Barrier Widths: 12', 14', 16', 18', 20', and 22'
- 3.05.2 When ordering make sure to include a right hand or left hand version. To determine the version needed stand on the secure side of the barrier looking at the barrier, if the housing (EAU) is on the right it is a right hand version if it is on the left it is a left hand version.
- 3.05.3 The barrier housing assembly is where all electrical connections for the barrier are terminated. Including
 - 3.05.3.1 Barrier Arm Assembly
 - 3.05.3.2 Electric Motor and gearbox
 - 3.05.3.3 Variable frequency drive (VFD)
 - 3.05.3.4 Proximity sensors
 - 3.05.3.5 The Barrier Control Panels
- 3.05.4 All Barrier components can be worked on without blocking a lane of traffic or Diverting Traffic.
- 3.05.5 Each barrier pivot joint shall be provided with a grease-less bushing system.
- 3.05.6 The Barrier Drop Arm is designed to be the only part of the barrier damaged on impact and can be easily removed or replaced with 4 bolts.
- 3.05.7 The barrier has an optional integrated traffic light(s) which can attached to the housing assembly.
- 3.05.8 The barrier shall be capable of at least 150 complete up/down cycles per hour.
- 3.05.9 The barrier motion shall be instantly reversible in either direction.
- 3.05.10 A 16' barrier can rise in approximately 4-7 seconds, when operating at normal ambient temperature conditions.

Section 4 Electric

4.01 Electrical

- 4.01.1 The M530 vehicle barrier system shall operate on a standard 220 VAC, Single Phase, 60 Hertz electrical power feed. When the standard electrical power feed is not available, the Buyer will specify an alternate electrical power feed to the manufacturer at the time of ordering.

4.01.1.1 *Optional* – Electrical power voltages which may be factory configured are as follows:

Description	Conductors	Voltage	Frequency
Single Phase	2 Wire w/neutral	120 VAC	60 HZ
Single Phase	2 Wire wo/neutral	208 – 240 VAC	60 HZ
3 Phase	3 Wire wo/neutral	460 - 480 VAC	60 HZ

4.01.1.2 *Optional* – Electrical power frequency may be factory configured for 50 Hz electrical service.

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- 4.01.2 The site facility shall provide a main power disconnect, circuit protection (such as a circuit breaker or fusible disconnect) and utility electrical power feed wiring, for connection to the M530 vehicle barrier system HPU electrical enclosure, sump pumps, barrier heaters, electric gate arms and/or other equipment as required.
- 4.01.3 All voltages required by electrical circuits other than the main electrical power feed, shall be provided by additional electrical circuit components, such as control transformers and DC power supplies.
- 4.01.4 All electrical circuits shall be provided with overload and short circuit protection.
 - 4.01.4.1 The main incoming electrical power feed shall be provided with a circuit breaker. BY SITE INSTALLERS.
 - 4.01.4.2 Each motor starter shall be provided with overload relays.
- 4.01.5 Electrical controls shall be provided integral to the EAU, with self-contained wiring to all mounted components. Field wiring requirements shall be minimized.
- 4.01.6 Electrical controls shall be enclosed in an integral, sealed, NEMA 4, or 4X (or IP 65 equivalent) enclosure, for protection of electrical switchgear from moisture and weather conditions.
- 4.01.7 Electrical controls such as circuit breakers, fuses, terminal blocks, motor starter, relays and PLC shall be DIN rail mounted for ease of replacement.
- 4.01.8 The electrical enclosure shall be mounted integral to the EAU, and located up front where accessible from the weather proof enclosure hinged maintenance access door.
- 4.01.9 The enclosure internal wiring shall be provided in easy to access wiring raceways, with removable raceway covers.
- 4.01.10 The electrical enclosure shall have additional space inside for DIN rail mounted accessories, such as traffic light relays, and vehicle loop detector modules.
- 4.01.11 All high voltage electrical switchgear shall be mounted inside the electrical enclosure (including, but not limited to: motor starters, heater contactors, etc.).
- 4.01.12 Electrical switchgear components shall be either UL and/or CE labeled.

Section 5 System Controls

5.01 Type 1 PLC System:

- 5.01.1 Shall have electrical controls and monitoring programmable, utilizing either a ruggedized, industrial type Programmable Logic Controller (PLC).
 - 5.01.1.1 The PLC shall be a standard commercial, off the shelf PLC, and shall not use “custom” sole source printed circuit type control boards.
 - 5.01.1.2 The PLC shall be microprocessor based, to permit programming of the M530 vehicle barrier system control and monitoring functions.
 - 5.01.1.3 Control and monitoring functions for the control circuit shall function through the PLC.
 - 5.01.1.4 The PLC shall utilize solid state electronic input switching for high reliability.
- 5.01.2 Shall have HMI interface screen integrated into the PLC.

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- 5.01.3 Shall be NEMA 4 and door mounted on circuit enclosure panel
- 5.01.4 Shall have FREE downloadable software which does not require licensing agreements.
- 5.01.5 Have easy to replace I/O modules. Modules shall utilize removable terminal strips and be capable of replacement without disturbing wiring. The PLC shall utilize I/O module slots for expandable I/O. The PLC shall be capable of being programmed by factory trained and authorized technicians.
 - 5.01.5.1 The PLC programming shall allow simplified configuration of controls and monitoring to suit specific on-site conditions. Hard-wired control relays alone shall not be used.
 - 5.01.5.2 The PLC programming shall be capable of being field reprogrammed on-site, utilizing a standard laptop PC, with Windows based programming software. Software shall be in an industry standard programming format. A proprietary programming language or use of machine code shall not be used. The PC, programming cable and programming software are not deliverable items with the vehicle barrier system.
 - 5.01.5.3 The PLC programming logic (code) and configuration for the M530 vehicle barrier system shall be capable of being stored as an electronic file for re-load of the microprocessor in the future.
 - 5.01.5.4 The PLC programming monitoring and troubleshooting shall be capable of being performed utilizing a laptop computer, to aid in fault diagnostics.
- 5.01.6 Shall be able to update via micro SD card
- 5.01.7 Shall utilize Terminal blocks
 - 5.01.7.1 Shall be PCB Style with screw terminations.
 - 5.01.7.2 PCB's shall be for hardware specific terminations (i.e. 3 wires of the down sensor)

5.02 **Type 2 ACPCS Solution (PC Based)**

- 5.02.1 Be a Standard off the shelf PC Solution utilizing a Windows OS (Win XP, 7 or 8)
- 5.02.2 Utilize a user friendly GUI Interface designed for ease of user configuration
 - 5.02.2.1 Point and click programming allows for quick changes in the system
 - 5.02.2.2 Allows for touch screen displays and functionality
 - 5.02.2.3 Real time diagnostic of all I/O's within the system (updated in 100ms increments)
- 5.02.3 Utilize microprocessor based control panels, to permit programming of M530 vehicle barriers
- 5.02.4 Control panels allow for seamless integration of
 - 5.02.4.1 Solid state Form C relay outputs with a varying range from 12-24VDC at 5 amps to 120VAC at 3amp per output.
 - 5.02.4.2 Supervised NO / NC programmable inputs.
 - 5.02.4.3 Card reader connections – Supports Mag-stripe, Prox, RFID, Barcode, Weigand
 - 5.02.4.4 Communications from TCPIP, RS-232, and RS-485
- 5.02.5
- 5.02.6 Shall allow for I/O Expansion from 62 inputs – 496 Inputs, 53 Output – 424 Outputs per system.
- 5.02.7 Shall allow for real time on-screen System event recording. (Updated in 100ms increments)
 - 5.02.7.1 With programmable archiving and history retrieval

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- 5.02.8 Shall allow for seamless integration of Intrusion detection Sensors
 - 5.02.8.1 Sensors include, photo cells, ported coax, fiber optics, microwave, etc.
- 5.02.9 Shall allow for seamless integration of Access Control technologies
 - 5.02.9.1 With built in personnel database for independent asset tracking
- 5.02.10 Shall allow for seamless integration of CCTV cameras up to 32 per system (analog and/or Digital)
 - 5.02.10.1 With built in DVR functionality, as well as real time alarm tagging.
- 5.02.11 Shall allow for seamless integration of Wrong way and Over Speed detection (utilizing Doppler Radar) up to 8 Radar heads per system.
- 5.02.12 Shall allow for enterprise solution
 - 5.02.12.1 Stand-alone system
 - 5.02.12.2 Network multiple standalone system to a single monitoring facility
 - 5.02.12.3 Has obtained DIACAPP Certified
- 5.02.13 Shall allow for mobile management VIA Motorola PDA

5.03 **Controls General**

- 5.03.1 All control and monitoring circuits, including signals, shall operate using low voltage, +24 VDC for safety, outside of the main electrical enclosure. To minimize the possibility of electrical noise, AC voltage signals shall not be used (PLC Only). This requirement is not applicable to the ACPCS System, electric motor electrical power, sump pumps, barrier heaters, electric gate arms and/or other equipment as required.
- 5.03.2 The control circuit shall have additional optional interfaces with auxiliary equipment for control and monitoring such as: card readers, loop detectors, traffic lights, etc. made possible through connection to a main terminal strip.
- 5.03.3 Limit switches shall be provided for monitoring the barrier raised/lowered position. The proximity switches shall be:
 - 5.03.3.1 Shock resistant, and use an electronic, solid state construction. The non-contact type sensor shall have no moving parts, and shall not be sensitive to adjustment and/or affected due to the barrier movement or stopping.
 - 5.03.3.2 Resistant to water and shall be capable of being submerged (i.e. due to rain water, melting snow, wash down, etc.).
 - 5.03.3.3 Provided with a connector, so that the switch can be easily disconnected, without requiring the removal of wiring.
 - 5.03.3.4 Used at a low voltage signal level for safety (i.e. not high voltage).

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- 5.04.1 Operator control panels and associated control circuit shall be provided to interface between all barrier locations, operator control panels and the HPU.
 - 5.04.1.1 The Main Operator Control Panel shall be physically located at the site (such as a security room) to allow operation of all barriers.
 - 5.04.1.2 The Remote Operator Control Panels shall be physically located in close proximity to each set of barriers, (such as a guard booth).
 - 5.04.1.3 All operator control panels shall be mounted in an indoor, covered environment, and shall not be exposed to weather and environmental conditions.
 - 5.04.1.4 All operator control panels will be mounted in such way that the operator always has visual (eye or camera) supervision on the barrier, when operating the barrier.
- 5.04.2 The control circuit shall be part of the PLC or ACPCS and associated equipment, integral with the HPU electrical enclosure.
 - 5.04.2.1 The control circuit functions and monitoring shall be programmed into the PLC or ACPCS.
 - 5.04.2.2 The operator control panel switches and indicators shall interface with the PLC or ACPCS Inputs/Outputs.
 - 5.04.2.3 All operator control panel switches and indicators shall be pre-wired to wiring terminal strips. The terminal strips shall provide an interconnection side to allow connection of site field wiring.
- 5.04.3 All operator control panel circuits, including signals, shall operate using low voltage, +24 VDC for safety.
- 5.04.4 A Main Operator Control Panel shall be supplied for control and indication of all M530 vehicle barrier system functions. The Default Main Operator Control Panel shall have:
 - 5.04.4.1 A key lockable main Power On/Off switch (key switch), with an associated green color main power On/Off indicator light.
 - 5.04.4.2 A set of illuminated pushbuttons for Up/Down control, to raise and lower each set of barriers.
 - 5.04.4.3 A set of Up/Down indicator lights for indicating the position of each set of barriers when in the full Up or full down position. The Up indicator lights shall be red, and the down indicator lights shall be green. The indicators lights shall be provided integral to the Up/Down illuminated pushbuttons switches.
 - 5.04.4.4 A key lockable Arm/Disable switch to permit operation of each of the Remote Operator Control Panels in the vehicle barrier system.
 - 5.04.4.5 An optional emergency stop switch to immediately stop the movement of the barrier in any position. The button will be red, following safety standards. The emergency stop cannot be activated when the EFO is active. EFO can be activated when emergency stop is active. OPTIONAL
- 5.04.5 Custom Master Control panels can be built to conform to all site requirements, or to conform to the ACPCS specification 34 41 26.00 10.
- 5.04.6 One or more Remote Operator Control Panels shall be provided for control and indication of each set of barriers within the overall M530 vehicle barrier system. Each Default Remote Operator Control Panel shall have:
 - 5.04.6.1 A green color panel on indicator light for indicating the panel has been enabled for operation by the remote armed key switch on the Main Operator Control Panel.

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- 5.04.6.2 A set of illuminated pushbuttons for Up/Down control, to raise and lower each set of barriers.
- 5.04.6.3 A set of Up/Down indicator lights for indicating the position of each set of barriers when in the full Up or full down position. The Up indicator lights shall be red, and the down indicator lights shall be green. The indicators lights shall be provided integral to the Up/Down illuminated pushbuttons switches.
- 5.04.6.4 A key lockable Arm/Disable switch to permit operation of each of the Remote Operator Control Panels in the vehicle barrier system.
- 5.04.6.5 An optional emergency stop switch to immediately stop the movement of the barrier in any position. The button will be red, following safety standards.
- 5.04.6.6 Reset: A keyed switch for emergency stop Reset, to restore the vehicle barrier system to normal operation after activating the emergency stop function.
- 5.04.7 Custom Remote, Overwatch, or Local controls panels can be built to conform to all site requirements, or to conform to the ACPCS specification 34 41 26.00 10.
- 5.04.8 Operator control panel labeling shall use both text and graphic elements. A clear plastic overlay shall be provided to protect the panel surface and labeling from normal usage, and occasional panel cleaning.
- 5.04.9 Operator control panels shall be provided as a standard sloped, electrical enclosure console, suitable for countertop mounting. When alternate industry standard 19 inch (483 mm) rack mount panels are required in lieu of the console, the Buyer will specify the use of 19 inch (483 mm) panels to the manufacturer at the time of ordering. **Note:** Only the panels are provided (i.e. the rack enclosure is excluded).
- 5.04.10 The operator control panels shall use electrical industry standard, industrial grade, electrical components. Switches and indicators shall be no less than the 0.89 inch (22.5 mm) switch industry standard size.
- 5.04.11 Electrical switch and indicator components shall be either UL and/or CE labeled.
- 5.04.12 Electrical switch and indicator components shall be mounted in a sealed, NEMA 1, 3 or 12 (or IP 64 equivalent) enclosure, for protection against moisture and weather conditions, excluding the 19 inch (483 mm) panels.
- 5.04.13 All wiring to operator control panel components shall be terminated at terminal blocks, for ease of on-site field interconnection with other vehicle barrier system equipment and accessories.
 - 5.04.13.1 The terminal strips shall be standard high density, industrial grade, PCB style connectors for field wiring, and screw type connectors for internal system wiring, and fixed count, ring lug type terminals shall not be used.
 - 5.04.13.2 The terminal blocks shall be DIN rail mounted.

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Section 6 Products

6.01 Manufacturer and model procurement

6.01.1 The vehicle barrier system shall be a **SP M530 Model DBA** active electro hydraulic, barrier type manufactured by:

Ameristar Perimeter Security USA.

1555 N Mingo Road

Tulsa, OK, 74116

Phone: 918-835-0898

Fax: 918-835-1002

<http://www.ameristarsecurity.com/>

6.01.2 United States government and federal agencies may inquire to Ameristar Perimeter Security about procuring the SP M530 vehicle barrier, installation and construction labor through GSA Schedule GS-07F-0183K.