

SlideDriver™

Slide Gate Operator

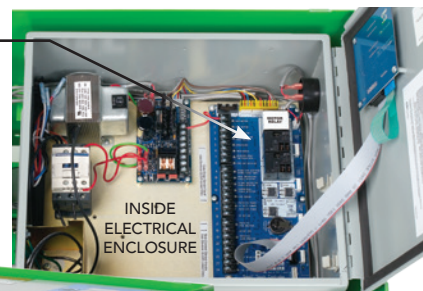
Ultra reliable • Unlimited cycles • Secure • Long/Heavy gates • Low maintenance

- **Moves up to 20,000 lb** (9,072 kg) gates with ease
- **Longest life and lowest maintenance.** SlideDriver reliably secures tens of thousands of sites worldwide and lasts decades
- **Smooth travel and less wear.** 1 ft/s (30 cm/s) to 3 ft/s (91 cm/s) Emergency Fast Close available on SlideDriver 50VF2/3
- **31 models** including UPS, Correctional Facility and Modular
- **Tested and listed by Intertek**, a nationally recognized testing lab. Visit hysecurity.com for more on the significance of UL 325



SMART TOUCH CONTROLLER provides the ultimate in reliability, configurability and system troubleshooting.

SEAMLESS SYNCHRONIZATION with all HySecurity operators for dual gate, Sally port or other specialized applications.



Smart Touch Controller keypad & display

INDUSTRIAL GRADE COMPONENTS ensure extremely low maintenance and exceptionally long life.



SlideDriver 15
1,500 lb gates (680 kg)
1 ft/s (30 cm/s)



SlideDriver 40
4,000 lb gates
(1,814 kg)
1 ft/s (30 cm/s)



SlideDriver 80
8,000 lb gates
(3,629 kg)
1 ft/s (30 cm/s)



SlideDriver 200
20,000 lb gates
(9,072 kg)
1 ft/s (30 cm/s)



SlideDriver 30F
3,000 lb gates
(1,361 kg)
1.7 ft/s (50 cm/s)



SlideDriver 50VF 2/3
5,000 lb gates
(2,268 kg)
Field adjustable 2.2 ft/s (70 cm/s) or 3 ft/s (90 cm/s) and Emergency Fast Close

Visit www.hysecurity.com

For specifications, tech support, pictures and email subscriptions

HySecurity®
Simple. Reliable. Secure.®

1-800-321-9947 • www.hysecurity.com

Ultra Reliable High Security

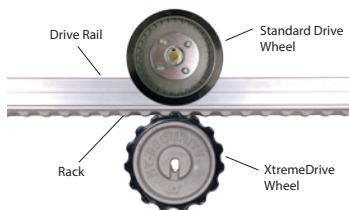
Distributed by:

See the latest from HySecurity at www.hysecurity.com

HySecurity operators secure the world's critical infrastructure and key assets where ultimate reliability is vital. **SlideDriver** delivers uncompromising quality to industrial customers worldwide, where ease of use, consistent operation, low maintenance, long life and high reliability is expected.



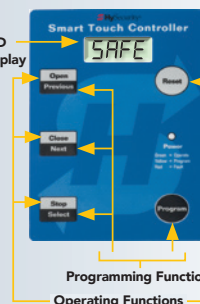
The AdvanceDrive Wheel



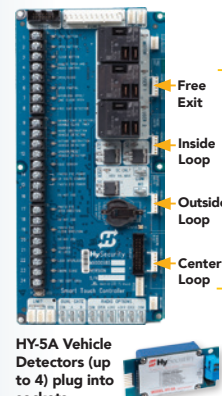
The XtremeDrive traction rack and drive wheel system

SMART TOUCH CONTROLLER AND S.T.A.R.T. (Smart Touch Analyze & Retrieve Tool)

- Microprocessor-based (Non-PLC)
- 21 field configurable inputs
- 3 field configurable user relay outputs
- 4 plug-in HY-5A vehicle detector sockets
- RS-485 and RS-232 communication
- Date & time stamped fault logs, errors and security alerts
- PC interface provided for easy configuration and quick troubleshooting using Smart Touch Analyze and Retrieve Tool (S.T.A.R.T.)



Smart Touch Controller Keypad



Smart Touch Controller Board

31 SlideDriver™ Models

					FAST Operators	
	1,500 lb (680 kg) gates 1 ft/s (30 cm/s)	4,000 lb (1,814 kg) gates 1 ft/s (30 cm/s)	8,000 lb (3,629 kg) gates 1 ft/s (30 cm/s)	20,000 lb (9,072 kg) gates 1 ft/s (30 cm/s)	3,000 lb (1,361 kg) gates 1.7 ft/s (50 cm/s)	5,000 lb (2,268 kg) gates 2.2 ft/s (70 cm/s) or 3 ft/s (91 cm/s)
Model	SlideDriver 15	SlideDriver 40	SlideDriver 80	SlideDriver 200	SlideDriver 30F	SlideDriver 50VF2/3
Part #	222 SS ST	222 E ST	222 X1 ST	444 XS ST	222 EX 1.7 ST	222 X3 ST
Duty Cycle	Continuous					
Horsepower	1 hp	1 hp	2 hp	5 hp	2 hp	2 hp
Drive Wheels	Two 6" (15 cm) AdvanceDrive wheels	Two 6" (15 cm) AdvanceDrive wheels	One 8" (20 cm) AdvanceDrive wheel, One 8" XtremeDrive wheel and 27 ft (8 m) of rack	Two 8" (20 cm) AdvanceDrive wheels, Two 8" XtremeDrive wheels and 52 ft (16 m) of rack	Two 6" (15 cm) AdvanceDrive wheels	Two 8" (20 cm) AdvanceDrive wheels
Gate Weight Max.	1,500 lb (680 kg)	4,000 lb (1,814 kg)	8,000 lb (3,629 kg)	20,000 lb (9,072 kg)	3,000 lb (1,361 kg)	5,000 lb (2,268 kg)
Gate Length	Limited only by weight					
Drawbar Pull	300 lb (136 kg)	300 lb (136 kg)	600 lb (272 kg)	1,200 lb (544 kg)	300 lb (136 kg)	300 lb (136 kg)
Rate of Travel	1 ft/s (30 cm/s)				1.7 ft/s (50 cm/s)	Field adjustable, 2.2 ft/s (70 cm/s) or 3 ft/s (91 cm/s) Emergency Fast Close 3 ft/s (91 cm/s)
Temperature Rating	-40° F to 158° F (-40° C to 70° C) using environmentally friendly Uniflow fluid or -10° F to 158° F (-23° C to 70° C) using biodegradable fluid. No heater necessary.					
1 Phase Power	115/208/230V 60 Hz 110/220V 50 Hz	115/208/230V 60 Hz 110/220V 50 Hz	208/230V 60 Hz 220V 50 Hz	230V 60 Hz	208/230V 60 Hz 220V 50 Hz	208/230V 60 Hz 220V 50 Hz
3 Phase Power	208/230/460/575V 60 Hz, 220/380V 50 Hz					
Communication	RS-232, RS-485					
User Controls	Smart Touch Controller with 70+ configurable settings. Smart Touch keypad and display or a PC using S.T.A.R.T. software.					
Relays	Three configurable user relays: one 30VDC, 3A solid state and two 250VAC, 10A electromechanical					
ETL Listed (UL 325)	Usage Class I, II, III, IV	Usage Class I, II, III, IV	Usage Class III, IV	Usage Class III, IV	Usage Class III, IV	Usage Class III, IV
Warranty	5 year					

Additional SlideDriver models available

UPS Backup*	SlideDriver 15 UPS*	SlideDriver 40 UPS*	SlideDriver 80 UPS*	SlideDriver 200 UPS*	SlideDriver 30F UPS*	-
Correctional Facility	-	SlideDriver 40-C	SlideDriver 80-C	SlideDriver 200-C	SlideDriver 30F-C	SlideDriver 50VF2/3-C
Modular	SlideDriver 15-M	SlideDriver 40-M	SlideDriver 80-M	SlideDriver 200-M	SlideDriver 30F-M	SlideDriver 50VF2/3-M

* 1000 cycles/day expected duty cycle. Actual duty cycle depends on site specific conditions and gate configuration.

OPTIONAL ACCESSORIES: HY-5A intelligent vehicle detectors, 12 in (30 cm) base riser, tamper proof heavy gauge cover, cabinet lock, solenoid lock, Fire and Emergency Access Lock Box, heater, strobe light, photo eye, snowbrush and blade kit, XtremeDrive rack kit, custom colors and more.

SYSTEM DESIGN SUPPORT: Contact HySecurity for CAD drawings, tech manuals, help with custom site requirements or other specifications support. Download operator specifications online at www.hysecurity.com or call to speak with a HySecurity representative today.



Contact HySecurity for an operator/parts distributor near you.
phone **800-321-9947** fax **888-321-9946**
www.hysecurity.com • info@hysecurity.com



Submittal Package for Model SlideDriver 15 (Part # 222 SS ST)

What's Included

Smart Touch Controller Brochure

Operator Specifications

Important Safety Information

Entrapment Protection Devices for Sliding Gates

Placement & Use of Secondary Pedestrian Entrapment Sensors

Technical Drawings

Detector Loop Installation

User Menu Functions

Installer Menu Functions

Options for User Programmable Output Relays 1 – 3

Wiring Control Inputs

Limited Warranty



**If you can think it,
you can do it**

With HySecurity Smart Touch and Smart DC Controllers

 **HySecurity**
Simple. Reliable. Secure.®

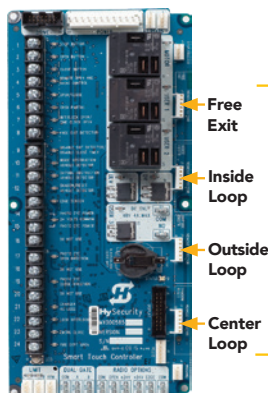
Inimitable Intelligence

Unmatched Performance

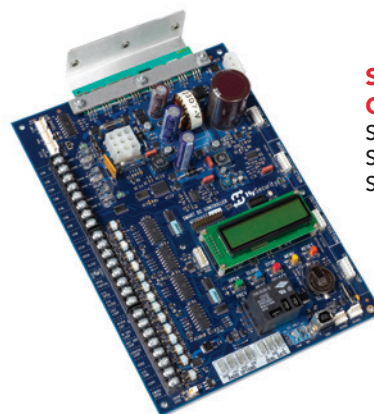
Smart Touch and Smart DC controllers take the trouble out of troubleshooting, the angst out of configuration and the expense out of installing custom PLCs and off-board relays ... and the "dumb" out of gate operators.

Smart Touch Controller Board

SlideDriver
StrongArm
StrongArm M30
StrongArm M50
SwingRiser
HydraLift
HydraSwing



HY-5A Vehicle
Detectors (up
to 4) plug into
sockets



Smart DC Controller Board

SlideSmart DC
SwingSmart DC
StrongArmPark DC

Most gate operators are brainless. They open and close when commanded, and stop when they hit an obstruction.

But many installations aren't simple. They demand functionality consistent with site needs and they're part of an elaborate system of safety, security, vehicle detection and gate hardware that necessitates options well beyond the capability of all unintelligent gate operators.

HySecurity solved this challenge with a single platform, solid state, user and installer configurable controller – available in AC and DC versions, for our entire line of gate operators.

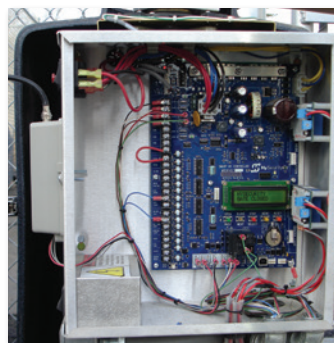
HySecurity end-users save thousands of dollars in out-of-the-box configurability that otherwise would be spent on unnecessary peripherals, custom PLC design and programming, and time consuming installation. HySecurity's Smart Controllers offer more than 70 configurable settings from a simple automatic Close Timer to saving and reporting critical date and time stamped security breach & system malfunction alerts.

HySecurity's Smart Controllers offer installation, reliability, security and safety options beyond any other operator – and they come with every gate operator HySecurity manufactures.

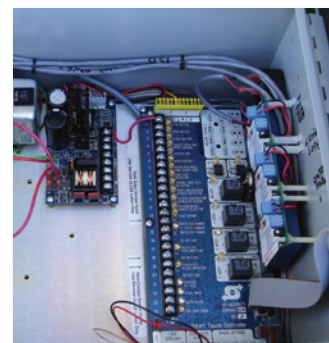
INTELLIGENT & CONFIGURABLE

High security sites require perimeter integration and communication with the facility security command and control system. HySecurity regularly adds the newest reporting and security event detection enhancements to operator software.

Field updates by facility service technicians, are easily and quickly applied with the latest free software upgrade downloadable from HySecurity's website.



Smart DC Controller in a
SwingSmart gate operator



Smart Touch Controller in a
SlideDriver gate operator

ALERT, REPORTING & BENEFITS

Security and breach reporting

- Tailgate monitoring
- Gate open too long
- Unauthorized vehicle entry
- Gate forced open
- Vehicle loitering outside
- Trigger external cameras, floodlights, sirens, flashers

Gate malfunction alert

- Gate failure
- AC power failure
- Malfunction of vehicle detector or loop (requires HY-5A vehicle detector)

Gate operation and alerts

- Gate fully closed
- Gate fully opened
- Gate partially opened
- Gate external lock activation/deactivation
- Easy integration with other gate operators, as a sally port or dual gate system
- Easy installation configuration

Safety

- Warn before and/or during operation buzzer
- Turn on flashing lights before and/or during operation
- Actuate siren or flashing light before and/or during operation
- Safe mode: Gate edge or inherent entrapment sensor (IES) stops and reverses gate
- Entrapment mode: Two successive IES sensor activations (gate hits) requires manual operator reset

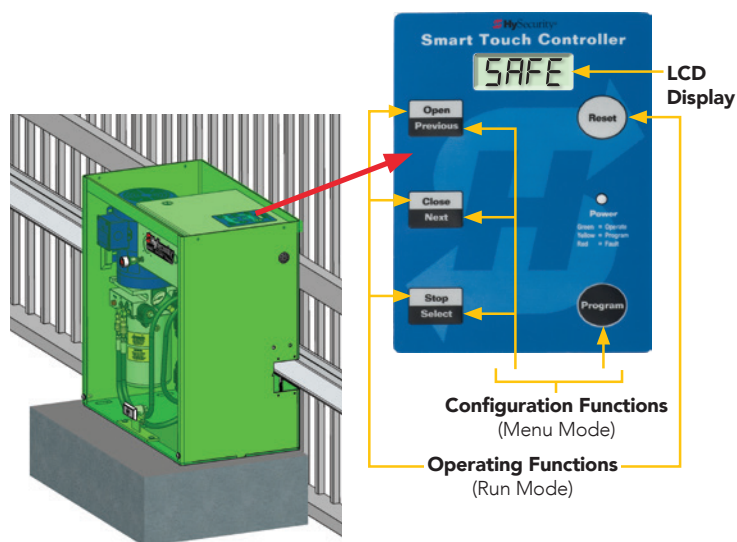
Real time communication to site security system

- Security breach or system operational malfunctions
- RS 485 port for network protocols or connections
- Ethernet available via converter
- Dry contact connection to one or more Smart Touch user relays

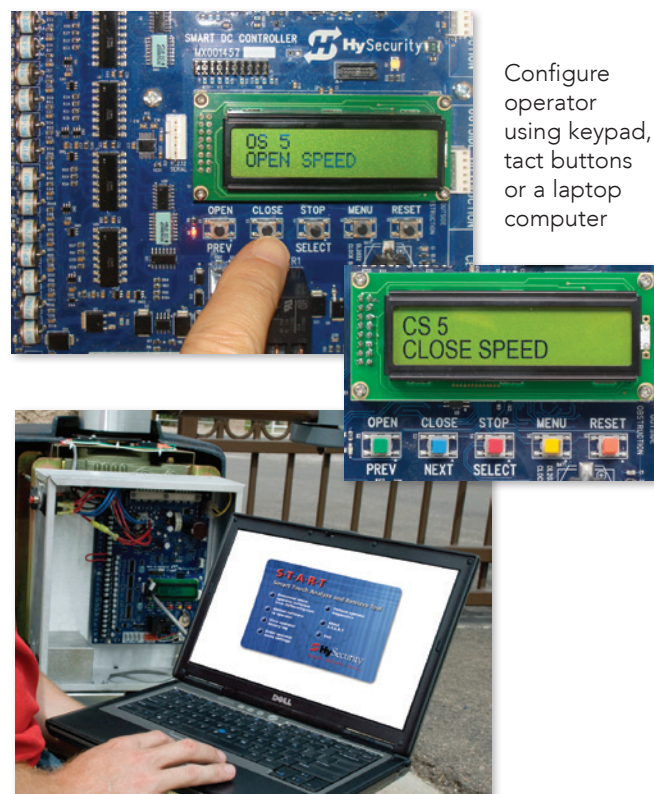
S.T.A.R.T.

Smart Touch Analyze and Retrieve Tool allows users to upload new operator software, download history or event logs, generate diagnostics, and program the operator.

Smart Touch Controller Keypad



HySecurity's Smart Touch Controller and keypad are safely located and easily accessible inside the enclosed chassis



Configure operator using keypad, tact buttons or a laptop computer

Easily configure the operator, troubleshoot by downloading date and time stamped event log, and save operator configuration to a computer file. Customized menus can be used to re-configure a new board or other operators.

Smart Touch & Smart DC Controllers

Another HySecurity Innovation

SMART TOUCH CONTROLLER AND SMART DC CONTROLLER

Features and Benefits:

- Menu mode for installer and end user configuration
- Patented Anti-Tailgate mode
- Ample user inputs
- Solid state and SPDT installer configurable relay outputs for many interface options
- Optional plug-in HY-5A vehicle detectors that can't crosstalk
- USB and RS-232 for connection to laptop
- Easy dual and sequential gate using RS-485 communication
- RS-485 (ethernet optional) communication for remote monitoring and control
- Robust design assures ultra-reliability
- Configurable "warn before operate" buzzer
- Configure operator using LCD, keypad, or laptop computer using S.T.A.R.T. software
- Troubleshoot operator with downloadable date & time stamped event log
- Unparalleled power surge/lightning strike protection
- Easy one wire input terminal connections and common wire buss
- Approved to the latest UL 991 and UL 325 standards
- Listed for use in all UL defined application classes (I – IV) depending on operator

TYPICAL SITES: Airport, government, freight handling, nuclear, power, railway, military base, embassy, water treatment, petrochemical, correctional facility, law enforcement, fire department, port, sports arena, drawbridge, corporate campus, airport runway, traffic control, Department of Transportation, gated community, residential, prison, freight handling

ACTUAL SITES: *Kinder Morgan Tank Farm*, Arizona • *BP Petroleum Farm*, Colorado • *Exxon Mobile World Headquarters*, Houston • *Budweiser, Magellan Oil, Monsanto*, Missouri • *White Sands Missile Range*, New Mexico • *Metro Transit*, New York • *911 Center*, Houston • *The Pentagon*, Washington DC • *Lawton Airport*, Arizona • *Oakland International Airport, Port of Long Beach*, California • *Denver International Airport*, Colorado • *Marine Corps Air Station*, Arizona • *Edwards AFB*, California • *Air Force Academy*, Colorado • *Bolling AFB*, Anacostia, DC • *Nellis AFB*, Nevada • *Praxair*, many states • *Caesar's Palace*, Las Vegas • *Pepsi World Headquarters*, New York • *Tucson Police Department*, Arizona • *Hawthorn Police Department*, California • *Fairfax County Courthouse*, Virginia • *Seattle Police Department*, Washington • *United Nations*, New York • *Baghdad International Airport* • *Doha International Airport*, Qatar • Embassies worldwide • U.S./Mexico border



TECHNICAL SPECIFICATIONS for Model SlideDriver 15 (Part # 222 SS ST)
Slide Gate Operator
With Smart Touch Controller
02827 HYS

PART 1 - GENERAL

1.01. INCLUDED IN THIS SECTION

- A. Pre-wired, self-contained, slide gate operator for horizontal sliding gates, including all selected attachments and accessory equipment.
- B. For further information, call the factory at (800) 321-9947.

1.02. RELATED WORK SPECIFIED ELSEWHERE

- A. Fencing: See section 02815.
- B. Cast in place concrete: See section 03300.
- C. Electrical service and connections: See section 16512.

1.03. SUBMITTALS

- A. Shop drawings: Submit shop drawings under the provisions of Section 01300. Submit drawings showing connections to adjacent construction, range of travel, and all electrical and mechanical connections to the operator. Drawings shall also show the size and location of the concrete mounting pad. Underground electrical runs and inductive vehicle obstruction loop locations shall be shown on shop drawings.
- B. Installation instructions: Submit two copies of manufacturer's installation instructions for this specific project.
- C. Submit manufacturer's completed warranty registration form to Project Manager.
- D. Test reports:
 - 1) Submit affidavits from the manufacturer demonstrating that the gate mechanism has been tested to 200,000 cycles without breakdown.
 - 2) Each operator shall bear a label indicating that the operator mechanism has been tested for full power and pressure of all hydraulic components, full stress tests of all mechanical components and electrical tests of all overload devices.

1.04. QUALITY ASSURANCE

- A. Manufacturer: A company specializing in the manufacture of hydraulic gate operators of the type specified, with a minimum of ten years experience.
- B. Installer: A minimum of three years experience installing similar equipment, provide proof of attending a HySecurity factory technical training within previous three years, or obtain other significant manufacturer endorsement of technical aptitude, if required, during the submittal process.

1.05. CODES AND REGULATORY REQUIREMENTS

- A. Operators shall be built to UL 325 standards and be listed by a testing laboratory. Complete all electrical work according to local codes and National Electrical Code. All fieldwork shall be performed in a neat and professional manner, completed to journeyman standards.
- B. Current safety standards require the use of multiple external sensors to be capable of reversing the gate in either direction upon sensing an obstruction. See also 2.02D.
- C. Vehicle gates should never be used by pedestrians. Separate pedestrian gates must always be provided when foot traffic is present.

- D. Current safety standards require gate operators to be designed and labeled for specific usage classes. HySecurity model SlideDriver 15 (222 SS ST) is listed for use in all UL 325 Usage Classes: I, II, III, and IV.

1.06. PRODUCT DELIVERY AND STORAGE

- A. Comply with 01600.
- B. Store products upright in the original shipping containers, covered, ventilated and protected from all weather conditions.

1.07. WARRANTY

- A. Provide a five-year limited warranty against all defects in materials or workmanship. Defective materials shall be replaced with comparable materials furnished by the manufacturer, at no cost to the owner. Freight, labor and other incidental costs are not covered under the factory warranty, but may be covered by a separate service agreement between installing company and the owner.
 - 1) To ensure validation of warranty, return completed warranty registration form (included in Installation and Reference manual) to manufacturer.

PART II – PRODUCTS

2.01. GATE OPERATORS

- A. HySecurity gate operator model SlideDriver 15 (222 SS ST) with Smart Touch Controller, or other comparable operator, as approved by the architect or specifier. Substitute operators that are approved will be published in an addendum, not less than ten days prior to bid opening. Requests for substitution will include the amount of savings to be passed on to the owner.

2.02. OPERATION

- A. Operation shall be by means of a metal rail passing between a pair of hydraulically driven solid metal wheels with polyurethane treads. Operator motors shall be hydraulic, geroller type, and system shall not include belts, gears, pulleys, roller chains or sprockets to transfer power from operator to gate panel. The operator shall generate a minimum horizontal pull of 300 pounds (136 kg) without the drive wheels slipping and without distortion of supporting arms. Operator shall be capable of handling gates weighing up to 1500 pounds (680 kg). Gate panel velocity shall not be less than 1.0 foot (.30 m) per second and shall be stopped gradually to prevent shock loads to the gate and operator assembly.
- B. Standard mechanical components shall include as a minimum:
 - 1) Supporting arms: Cast aluminum channel. Arms shall incorporate a fully bushed, 1-1/2" (38 mm) bronze bearing surface, acting on arm pivot pins. (item 2 below)
 - 2) Arm pivot pins: 3/4" (19 mm) diameter, stainless steel, with integral tabs for ease of removal.
 - 3) Tension spring: 2-1/2" (63.5 mm) heavy duty, 800 pound (363 kg) capacity.
 - 4) Tension adjustment: Finger tightened nut, not requiring the use of tools.
 - 5) Drive release: Must instantly release tension on both drive wheels, and disengage them from contact with drive rail in a single motion, for manual operation.
 - 6) Limit switches: Fully adjustable, toggle types.
 - 7) Electrical enclosure: Oversized, metal, with hinged lid gasketed for protection from intrusion of foreign objects, and providing ample space for the addition of accessories.
 - 8) Chassis: 1/4" (6.35 mm) steel base plate, and 12 Ga. (2.66 mm) sides and back welded and ground smooth.
 - 9) Cover: 16 Ga. (1.52 mm) zinc plated steel with textured TGIC polyester powder coat finish. All joints welded.
 - 10) Finish: Zinc plated steel with textured TGIC polyester powder coat finish, proven to withstand 1000-hour salt spray test.
 - 11) Drive wheels: Two 6" (152 mm) Dia. metal hub with polyurethane tread.
 - 12) Drive rail: Shall be extruded 6061 T6, not less than 1/8" (3.175 mm) thick. Drive rail shall incorporate alignment pins for ease of replacement or splicing. Pins shall enable a perfect butt splice.
 - 13) Hydraulic hose: Shall be 1/4" (6.35 mm) synthetic, rated to 2750 PSI (19 MPa).
 - 14) Hydraulic valves: Shall be individually replaceable cartridge type, in an integrated hydraulic manifold.

- 15) Hose fittings: At manifold shall be quick-disconnect type, others shall be swivel type.
 - 16) Hydraulic fluid: High performance type with a viscosity index greater than 375 and temperature range -40F to 167F degrees (-40C to 75C).
 - 17) A zero to 2000 PSI (13.79 MPa) pressure gauge, mounted on the manifold for diagnostics, shall be a standard component.
 - 18) The hydraulic fluid reservoir shall be formed from a single piece of metal, non-welded, and shall be powder painted on the inside and the outside, to prevent fluid contamination.
- C. Minimum standard electrical components:
- 1) Pump motor: Shall be a 1 HP, 56C, TEFC, continuous duty motor, with a service factor of 1.15, or greater. Standard voltages available, single or three phase.
 - 2) All components shall have overload protection.
 - 3) Controls: Smart Touch Controller Board with 256K of program memory containing:
 - a) inherent entrapment sensor;
 - b) built in "warn before operate" system;
 - c) built in timer to close;
 - d) liquid crystal display for reporting of functions;
 - e) 26 programmable output relay options;
 - f) anti-tailgate mode;
 - g) built-in power surge/lightning strike protection;
 - h) menu configuration, event logging and system diagnostics easily accessible with a PC and HySecurity's free START software;
 - i) RS232 port for connection to laptop or other computer peripheral and RS485 connection of Master/Slave systems or network interface.
 - 4) Transformer: 75 VA, non-jumpered taps, for all common voltages.
 - 5) Control circuit: 24VDC.
- D. Required external sensors: See 1.05B. Specify photo eyes or gate edges or a combination thereof to be installed such that the gate is capable of reversing in either direction upon sensing an obstruction.
- E. Optional control devices (*choose one, or more, of the following*): card reader, key-switch, radio control, pushbuttons, vehicle detectors, keypads or seven day timers.
- F. Optional alert devices: Flashing lights or rotating beacon. Configurable audible beacon included as standard.
- G. Other options (*choose from the following list*):
- 1) Lock for operator cover.
 - 2) Custom color chassis and cover: Zinc plated and prime painted with textured finish coat.
 - 3) Electric Solenoid gate panel deadbolt lock.
 - 4) Drive wheel manual release indicator switch.
 - 5) Heater with thermostat control for cold or damp climates.
 - 6) Weather-stripped drive rail slot in chassis, and snow wiper blades for drive rail.
 - 7) Through Beam or Reflective type photo eyes, open and close direction.
 - 8) Gate edge and transmitter radio reversing device.
 - 9) HY-5A plug in loop detectors.
 - 10) Key operated cable manual release (secure side of gate).
 - 11) Pneumatic remote gate release devices. Places operator in "manual mode" from remote location (lockable box on public side of gate).
 - 12) HySecurity factory drive rail.
 - 13) XtremeDrive System
 - 14) 115/208/230 VAC single phase and 208/230/460 VAC three phase available. (50 Hertz is available specify voltage)
 - 15) Other SlideDriver models available for gate speeds from 1 to 3 feet (.30 m - .91 m) per second.
 - 16) UPS battery powered and solar models available.
 - 17) Stainless steel chassis and cover, painted, for marine, caustic, or other extreme environments.
 - 18) Hot dip galvanized chassis and cover, unpainted, for marine, caustic or other extreme environments.
 - 19) Available Modular configuration which includes separate metal enclosure to house electrical control box, pump, and electric motor assembly.

2.03. FACTORY TESTING

- A. Fully assemble and test, at the factory, each gate operator to assure smooth operation, sequencing

and electrical connection integrity. Apply physical loads to the operator to simulate field conditions. Tests shall simulate physical and electrical loads equal to the fully rated capacity of the operator components.

- B. Check all mechanical connections for tightness and alignment. Check all welds for completeness and continuity. Check welded corners and edges to assure they are square and straight.
- C. Inspect painted finish for completeness. Touch up imperfections prior to shipment.
- D. Check all hydraulic hoses and electrical wires to assure that chafing cannot occur during shipping or operation.

PART III – EXECUTION

3.01. SITE EXAMINATION

- A. Locate concrete mounting pad in accordance with approved shop drawings.
- B. Make sure that gate is operating smoothly under manual conditions before installation of gate operators. Do not proceed until gate panel is aligned and operates without binding.

3.02. INSTALLATION

- A. Install gate operator in accordance with the manufacturer's printed instructions, current at the time of installation. Coordinate locations of operators with contract drawings, other trades and shop drawings.
- B. Installer shall insure that the electric service to the operator is at least 20 AMPS. Operator wattage is 1500.

3.03. FIELD QUALITY CONTROL

- A. Test gate operator through ten full cycles and adjust for operation without binding, scraping or uneven motion. Test limit switches for proper "at rest" gate position.
- B. All anchor bolts shall be fully concealed in the finished installation.
- C. Owner, or owner's representative, shall complete "punch list" with installing contractor prior to final acceptance of the installation and submit completed warranty documentation to manufacturer.

3.04. CONTINUED SERVICE AND DOCUMENTATION

- A. Train owner's personnel on how to safely shut off electrical power, release and manually operate the gate. Additionally, demonstrate the general maintenance of the gate operator and accessories and provide one copy of "Installation and Reference" manual for the owner's use (a second manual is available upon request). Manuals will identify parts of the equipment for future procurement. Direct maintenance personnel to HySecurity's website, specifically the technical support sections.

NOTE: HySecurity reserves the right to change these specifications at any time, without notice and without prejudice. Call (800) 321-9947 if you are not sure that you have the latest edition.

NOTE: Operators manufactured by HySecurity are intended for use in controlling vehicular traffic and are not intended to be used by pedestrians or to control pedestrian traffic. **Always install a separate pedestrian gate.**

Section 1 — Important Safety Information — READ FIRST

Important Safety Information – Review before Installation

Automatic gate operators provide user convenience and security. However, because these machines can produce high levels of force, it is important that all automated gate system designers, installers and end users be aware of the potential hazards associated with improperly designed, installed or maintained systems. Keep in mind that the gate operator is only one component of the automated gate system. It is the joint responsibility of the specifier, designer, purchaser, installer and end user to verify that the system is appropriately configured for its intended use. All parties should be informed that entrapment in a moving gate can cause serious injury or death.

Common Industry Symbols



**Attention
-Take Note-**



**-Danger-
Keep Away**



**Entrapment
Zone**



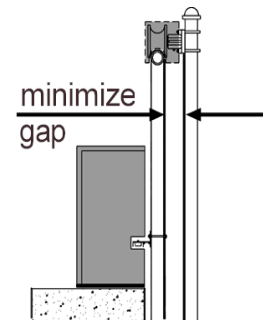
**Possible
Pinch Point**

Important Instructions for Gate System Designers & Installers:

WARNING: To reduce the risk of serious injury or death, read and follow all instructions found in the gate operator manual and on the warning labels.

Install an Automatic Gate Operator only when:

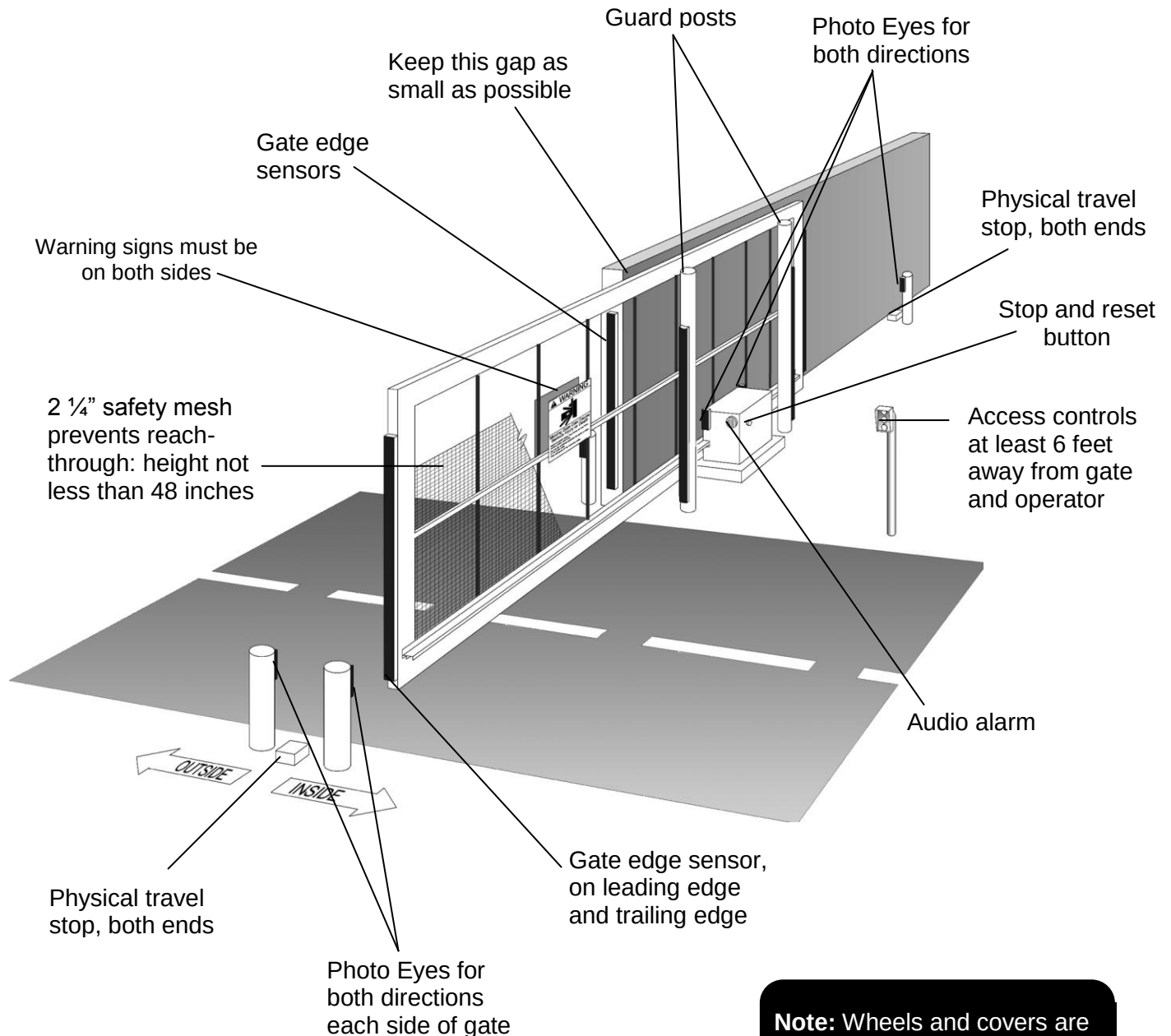
- ❑ The entry is configured for vehicular use only. Pedestrians must be directed to a separate walk-through entrance. The WARNING signs that have been supplied with this operator must be installed in a manner clearly visible on both sides of the gate.
- ❑ All openings of a horizontal slide gate are guarded or screened, from the bottom of the gate to a minimum of 4 feet (1.2m) height above the ground, to prevent a sphere 2¼ inches (57mm) in diameter from passing through an opening anywhere in the gate or the portion of the adjacent fence that is covered in the open position.
- ❑ All exposed pinch points, rollers and wheels are guarded. To reduce the risk of entrapment, the gate must also be installed so that enough clearance is provided between the gate and adjacent structures both when opening and closing. Minimize the parallel gap between the gate and the fence.
- ❑ The gate has been constructed with physical stops to prevent over-travel in both directions and has guard posts that prevent the gate from falling in the event of a roller failure.
- ❑ You have reviewed and met all ASTM F-2200 and UL 325 automated gate system standards.





Attention

Sliding Gate Entrapment Protection



Note: Wheels and covers are not shown. However, all gate wheels must be covered.

This schematic view is not meant to recommend a specific configuration. It is not meant to point out the important elements of a proper automatic vehicular gate installation. The gate operator is only one component in the total system. **Always install a separate pedestrian gate.**

Section 1 — Important Safety Information — READ FIRST!

Site, Gate, Equipment and Regulatory Requirements

- ❑ The gate moves freely in both directions. Never over-tighten a clutch or pressure relief valve to compensate for a stiff gate.
- ❑ The operator will be installed on the secured (non-public) side of the gate.
- ❑ The operator will be properly grounded and the intended supply voltage matches the voltage label on the operator.



The potential for lightning discharge exists with all gates, fences, and gate operators. National Electric Code (NEC) requires a separate earth ground in addition to the required equipment ground.

HySecurity recommends grounding the operator with a separate ground rod to shield the operator against electromagnetism and other electrical signals that may cause erratic operation with or damage to the Smart DC Controller.

NOTE: If you do not ground the operator with a separate ground rod, you risk voiding the Limited Warranty.

- ❑ The gate operation controls have been mounted far enough away from the moving gate such that users cannot touch the gate while operating the controls. All easily accessible controls must have a security feature to prevent unauthorized use.
- ❑ The operator controls will be located in line-of-sight to the gate. Radio controls and other remote access controls must be connected only to the **Remote Open input**.
- ❑ Required external entrapment sensors will be installed. Be certain to carefully review the instructions for placement, installation and adjustment of these external entrapment sensors. External entrapment sensors must function to reverse the movement of the gate **in both opening and closing directions**. If edge (contact) sensors are used, they are to be mounted on the leading and trailing edges of the gate, as well as post mounted on the inside and outside of the gate (See illustration on page 4). If photo eyes or other non-contact sensors are used, they are to be mounted in locations most likely to guard against entrapment. A combination of contact and non-contact sensors may be used, but all must be recognized components under the UL 325 standard. See page 32 for details on the requirements.
- ❑ If entrapment protection is provided by a continuous pressure actuation control, a placard stating "WARNING" – "Moving Gate has the Potential of Inflicting Injury or Death - Do Not Start Gate Unless Path is Clear" must be posted. Additionally, no other activation device shall be connected and no automatic closing device, of any kind, shall be used.
- ❑ The automatic operator is labeled as appropriate for both the type and UL usage class of the gate.

NOTE: Slide Driver 50VF2, 50VF2-EFO and 50VF3 sliding gate operators must be installed only for Class III & IV applications.

Class I: Intended to serve single to four family residential uses

Class II: Multi-family use, or any application intended to serve the general public

Class III: Commercial applications **not** intended to serve the general public

Class IV: Highest security. Security personnel prevent unauthorized access

- ❑ Sliding gate operators installed in Class III & IV applications do not have a speed restriction and the secondary entrapment sensor requirement is met if the system is configured as described for Class I & II use, or by the following alternative means, such as:
 - Employing the use of a 100dB buzzer which sounds at least 3 seconds before the gate moves.
 - Employing the use of a constant hold-type push button control.

Section 1 — Important Safety Information — READ FIRST!



WARNING: To reduce the risk of serious injury or death, read and follow all instructions found in this manual and on warning labels.

Save These Important Owner and User Instructions:

(Installers – be certain to instruct the owners and users about the following items.)

- ❑ Automatic gates are for vehicular use only! Provide walkways and signs to direct pedestrians to a separate walk-through entrance. Because an automatic gate can start at any time without warning, always keep people away from the gate area. The Warning signs that have been supplied with this operator must remain installed, in manner clearly visible on both sides of the gate.
- ❑ Never allow children to use or play with the controls that operate the gate. Keep all remote controls away from children, especially radio transmitters.
- ❑ Teach all users how to turn off the electric power source and how to release and move the gate manually. Use the manual release only when the gate is not moving.
- ❑ Test gate operator functionality monthly. The gate **MUST** reverse direction of travel upon contact with a rigid object, and/or stop upon sensing a second sequential activation prior to reaching a full travel limit. Also test for the normal function of any non-contact sensors. If the gate system employs the use of a transmitting edge sensor, be especially certain to routinely test and replace its battery.
- ❑ **KEEP AUTOMATIC GATES PROPERLY MAINTAINED.** Have a professional gate installer perform routine entrapment protection sensor tests. This includes photo eyes and gate edges. Repair gate hardware when encountered to keep the gate running smoothly. Failure, to make timely repairs or adjust and test a gate operator properly, can increase the risk of injury or death.
- ❑ In addition to appropriately placed external entrapment sensors, ask your installer to reduce the pressure relief valve setting to the lowest setting allowable that reliably operates the hydraulic gate. This valve controls the force of the operator, and the sensitivity of the inherent reversing sensor.
- ❑ **Do not attempt to disable or muffle the Warn Before Operate buzzer, except in Class IV restricted access locations. This buzzer provides an alert that the gate is about to move.**



Section 4 — Entrapment Protection Devices for Sliding Gates

Refer to the illustration on page 4.

UL 325 Standard Requirement for Entrapment Protection Devices

Gate Operator Category & Usage Class

	Horizontal Slide, Vertical Lift, Vertical Pivot		Swing and Vertical Barrier (arm)	
Usage class	Primary type ^a	Secondary type ^a	Primary type ^a	Secondary type ^a
Vehicular I and II	A	B1, B2, or D	A, or C	A, B1, B2, C, or D
Vehicular III	A, B1, or B2	A, B1, B2, D, or E	A, B1, or C	A, B1, B2, C, D, or E
Vehicular IV	A, B1, B2, or D	A, B1, B2, D, or E	A, B1, C, or D	A, B1, B2, C, D, or E

NOTE: The same type of device shall not be utilized for both the primary and the secondary entrapment protection means. Using a single device to cover both the opening and closing directions is in accordance with the requirement; however, a single device is not required to cover both directions. A combination of a Type B1 for one direction and a Type B2 for the other direction is the equivalent of one device for the purpose of complying with the requirements of either the primary or secondary entrapment protection means.

^aEntrapment protection sensor types:

Type A - Inherent entrapment sensing systems.

Type B1 - A non-contact sensor (photoelectric sensor or the equivalent).

Type B2 - A contact sensor (edge sensor device or the equivalent).

Type C - Inherent adjustable clutch or pressure relief device.

Type D - An actuating device requiring continuous pressure to maintain opening or closing motion of the gate.

Type E - An inherent audio alarm, which warns a minimum of 3 seconds before operation.

UL Usage Class Information:

The automatic vehicular operator must also be labeled as appropriate for both the type and usage class of the gate. Installers must verify that the gate operator is labeled for the intended application.

The Usage Classes are:

Class I: Intended for use in a location with one to four single family dwellings, or a parking area associated therewith.

Class II: Intended for use in a commercial location or building such as a multi-family housing unit (five or more single family units) hotel, garages, retail store or other building servicing the general public.

Class III: Intended for use in an industrial location or building such as a factory or loading dock or other locations not intended to service the general public.

Class IV: Intended for use in a guarded industrial location or building such as an airport security area or other restricted access locations not servicing the general public, in which unauthorized access is prevented via supervision by security personnel.

Section 4 — Placement & Use of Secondary Pedestrian Entrapment Sensors

WARNING: To reduce the risk of serious injury or death, read and follow all instructions in the gate operator handbook and on the warning labels.

Automatic gate operators are intended for vehicular use and pedestrians must be routed to a separate main gate. However, to provide a degree of protection should anyone happen to stray into the area of an automatic gate, sensors are required. Generally two types of external sensors may be used:

- Contact type sensors, such as an edge sensor
- Non-contact sensors, such as photoelectric sensors

Current industry standards require the use of either type, or both, of these sensors as a secondary device in Class I and Class II automatic sliding gate installations because the general public is likely to be present. Although alternative options exist for Class III and IV installations, we highly recommend the use of external sensors for all automatic gate applications.

The specifier or installer may choose either photoelectric sensors or edge sensors, or use these devices in combination, but both the open and closing directions of gate travel must be guarded. The UL 325 standard for automatic sliding gates specifically requires the following:

- One or more non-contact sensors (photoelectric eyes) shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate.
- One or more contact sensors (edge sensors) shall be located at the leading edge, trailing edge and post mounted both inside and outside of a sliding gate.
- A hard-wired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate is not subjected to mechanical damage.
- A contact sensor that transmits its signal to the gate operator shall be located such that the signal is not impeded by building structures or other obstructions and shall function under its intended end-use conditions.
- The contact and non-contact sensors must be tested and labeled as “Recognized Components” under the UL 325 standard in order to be deemed acceptable for use in this application.

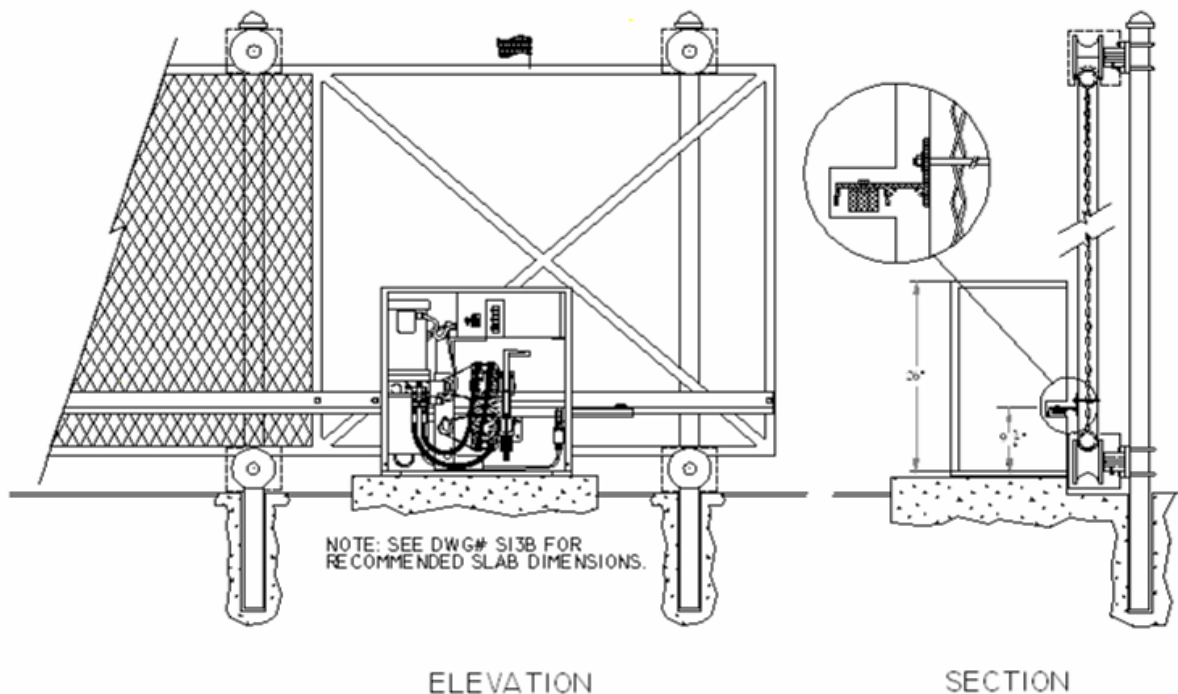
Study the entrapment protection schematic and consider your specific installation to determine where the greatest risks of entrapment exist. Locate edge sensors and/or the photoelectric sensors accordingly. Be certain that a sufficient number of sensors are used so that both directions of gate travel are properly guarded.

Section 2 — Technical Drawings

NOTES:

DRIVE RAIL HEIGHT IS MARKED ON THE SIDE OF EACH CHASSIS.

COVERS MUST BE USED FOR PROTECTION ON ALL EXPOSED WHEELS AND/OR HARDWARE. COVERS ARE SHOWN HERE AS DOTTED LINES.



NOTES:

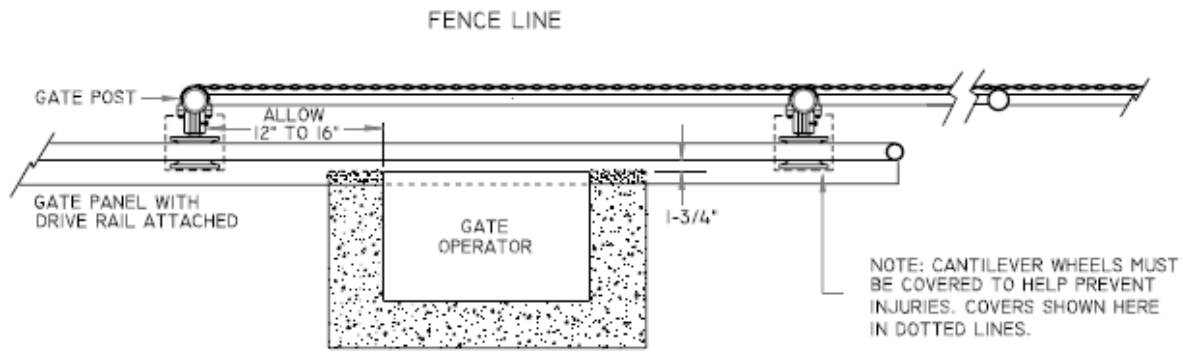
CONSULT FENCE CONTRACTOR FOR RECOMMENDED CANTILEVER POST SPACING. 50% OF GATE OPENING GENERALLY PROVIDES SMOOTH OPERATION.

RIGHT HAND CANTILEVER GATE IS SHOWN IN THE FULLY CLOSED POSITION. OPERATOR COVER OMITTED FROM DETAIL. (DO NOT SCALE).

IT MAY BE NECESSARY TO SHIM DRIVE RAIL IF GATE PANEL IS 'BOWED'. RAIL MUST BE INSTALLED IN A STRAIGHT LINE.

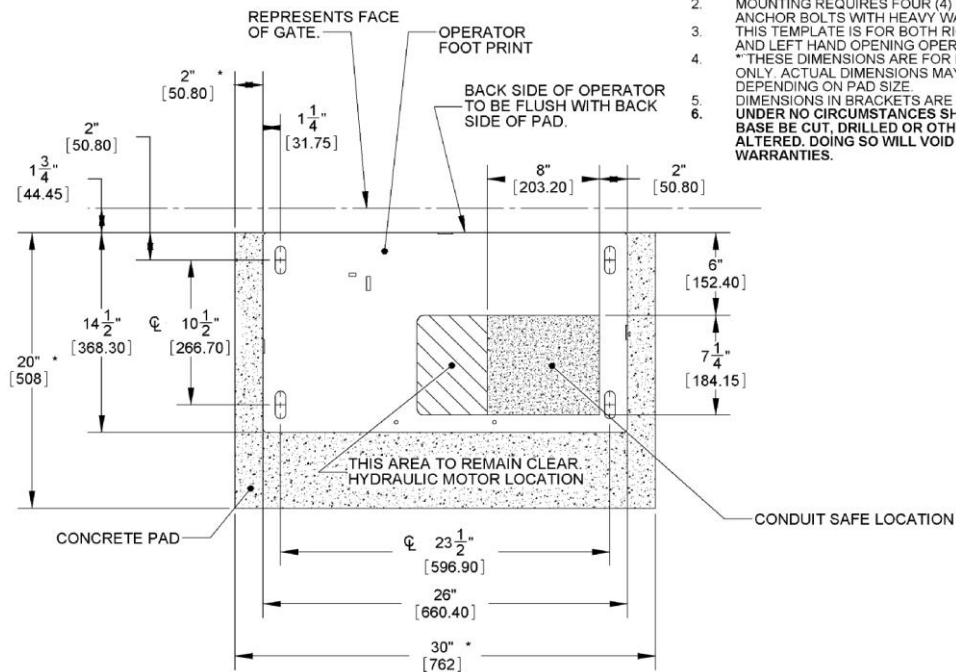
HYSECURITY INSTALLATION OF CHASSIS weather, ventilation	TITLE Slide Gate Operator (typ) R.H. Cantilever Gate Panel	DRAWN	DATE	THIRD ANGLE PROJECTION	REV
		KERI	6/12/00		—
		CHECKED	DATE	PART NUMBER	
		SHOP	MM/YY/00	N/A	
		APPROVED	DATE	DRAWING NUMBER	CHT OF
		ENGRNG	MM/YY/00	S13A	1 1

Section 2 — Technical Drawings



NOTE:

MINIMUM CONCRETE SLAB DIMENSIONS RECOMMENDED ARE:
30" WIDE, 20" FROM FRONT TO BACK AND 16" DEEP.
CHECK LOCAL FROST CONDITIONS AND SOIL CHARACTERISTICS
FOR EXACT REQUIREMENTS IN YOUR AREA.



NOTES:

1. RECOMMENDED MINIMUM CONCRETE SLAB DIMENSIONS: 20" W X 30" L X 16" D. CHECK LOCAL FROST CONDITIONS AND SOIL CHARACTERISTICS FOR EXACT REQUIREMENTS IN YOUR AREA.
2. MOUNTING REQUIRES FOUR (4) 1/2" X 6" ANCHOR BOLTS WITH HEAVY WASHERS. THIS TEMPLATE IS FOR BOTH RIGHT HAND AND LEFT HAND OPENING OPERATORS.
3. * THESE DIMENSIONS ARE FOR REFERENCE ONLY. ACTUAL DIMENSIONS MAY VARY DEPENDING ON PAD SIZE.
4. DIMENSIONS IN BRACKETS ARE MILLIMETERS.
5. UNDER NO CIRCUMSTANCES SHOULD THE BASE BE CUT, DRILLED OR OTHERWISE ALTERED. DOING SO WILL VOID ANY AND ALL WARRANTIES.
- 6.

NOT SCALE

TITLE

Slide Gate Operator (typ) R.H.
Cantilever Gate Panel

DRAWN

KERI

DATE

6/12/00

THIRD ANGLE PROJECTION

PART NUMBER

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DATE

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DRAWING NUMBER:

SI3B

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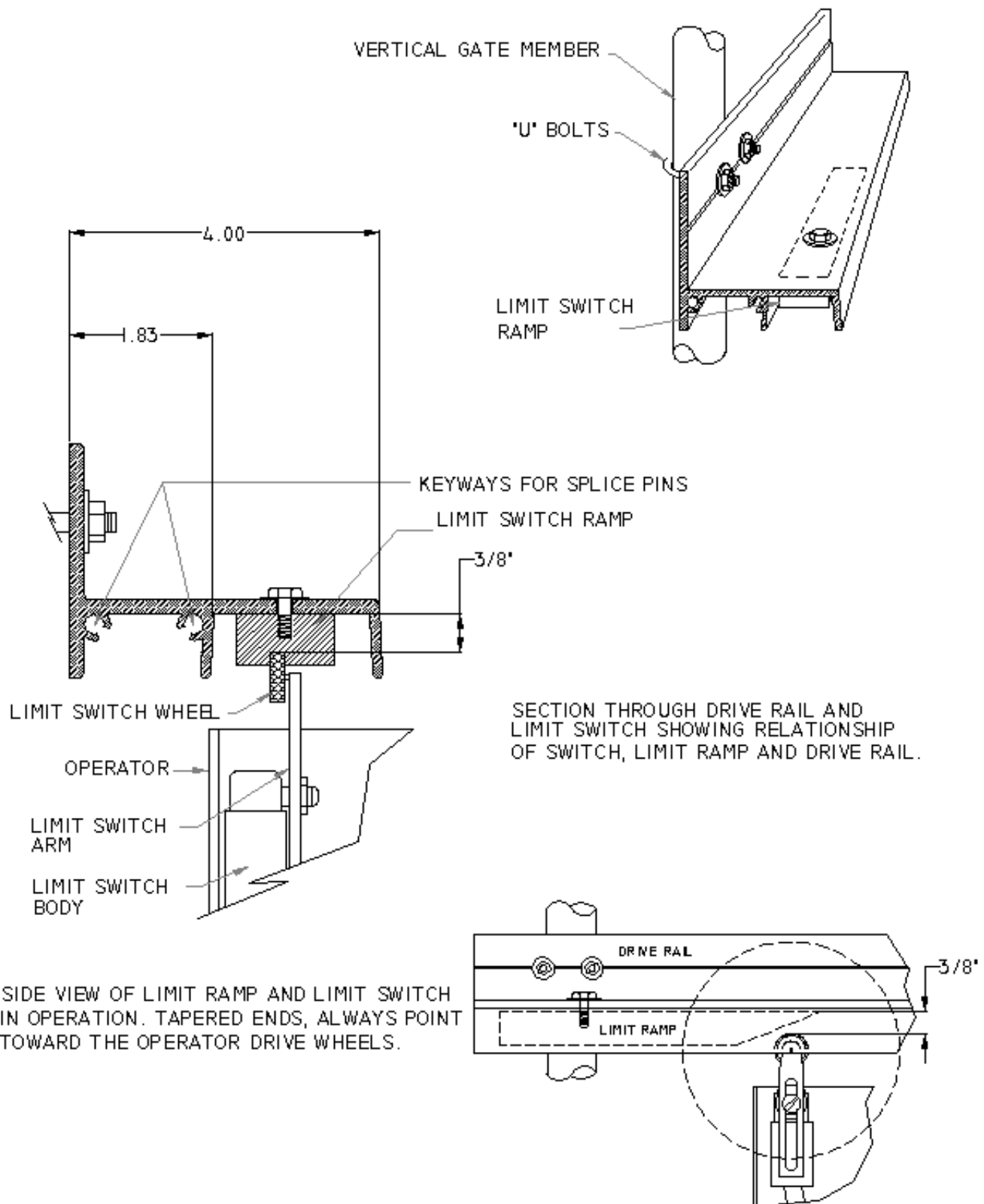
SHT

OF

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Section 2 — Technical Drawings



NOTE: ALUMINUM RAIL SHOWN, STEEL RAIL SIMILAR.

S22 REV A

Section 5 —Detector Loop Installation

Detector Basics

The vehicle detector passes a small current flow through the “loop” which then becomes an inductive coil. When a vehicle passes over a loop the detector senses the resultant drop in the inductance, and actuates the detector output.

Loop Configurations

Configurations differ depending on the application. In parking applications with our StrongArm operator (HTG 320), a loop may be as small as 4ft x 6ft (1.2m x 1.8m). In traffic applications employing one of our sliding gate operators, or swing gate operators, the smallest loop should not be less than six feet square.

Rules to Follow for Security Gate Applications

NOTE: Refer to the drawing on page 39.

1. The side of the loop closest to the gate shall be located at least 4 feet (1.2 meters) distant from its line of travel.
2. The shortest side of the loop shall be between 6 and 8 feet (1.8 and 2.4 meters) in length. The longest side of the loop shall be between 6 and twenty 20ft (1.8 and 6m) in length. For applications that need to span a wide area, use several smaller loops. Do not exceed a maximum of 200ft² of loop area (61m²) to only one detector.
3. In applications with multiple loops, keep each loop at least 6ft (1.8m) apart. This avoids “cross talk”. It is possible to have loops closer together by selecting different frequencies. An advantage of using HySecurity model HY-5A detectors is that problematic “cross talk” is not possible.
4. For greater sensitivity and less chance of false calls caused by the motion of the gate, it is better to use multiple smaller loops, connected in a series circuit, to one detector instead of one large, single loop.
5. To avoid interference, keep loops at least 2 inches (5cm) above any reinforcing steel. Do not route loop wires with, or in close proximity to, any other conductors, including other loop leads, unless shielded lead-in cable is used. Never route high voltage circuits in PVC conduit near a loop.
6. Loop and lead-in wire should be one continuous piece. Avoid splices, if possible. If a splice is necessary for any reason, “pot” the splice in epoxy or use heat shrink to ensure that the quality of the splice covering is the same as the original wire jacket.
7. Use only number 14, 16, or 18 gauge stranded wire with a direct burial jacket. Cross linked polyethylene insulation types, such as, XLPE or XHHW, will last much longer and are less prone to damage during installation than conventional insulation types. Preformed loops can be used before road surfacing or under pavers.
8. Twist loose tails of lead-in wires tightly, approximately 10 turns per foot (10 times per 30cm).

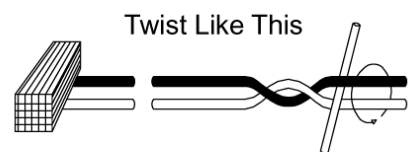
Twist lead-in at least 10 turns per foot



Like This



Not Like This



E31a

Section 5 —Detector Loop Installation, continued

9. Follow this guide for the correct number of turns in the loop;

12 to 20 sq. ft = 5 turns (3.6 to 6 sq. meters)

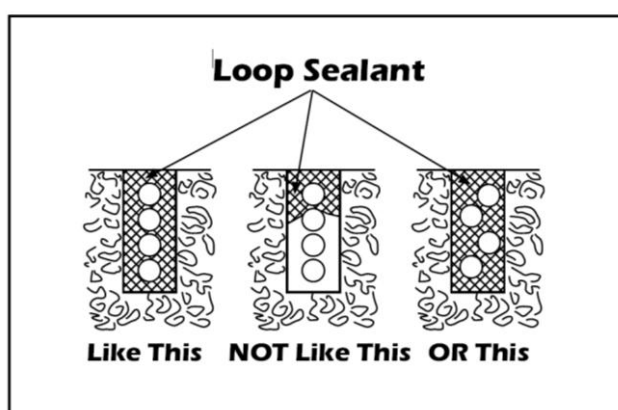
20 to 60 sq. ft. = 4 turns (6 to 18 sq. meters)

60 to 240 sq. ft. = 3 turns (18 to 73 sq. meters)

10. This guide is written from a design perspective, but installation workmanship practices are equally important to insure proper operation and long loop life. The best way to insure a quality installation is to employ a professional installer experienced with detector loops. A few important practices are:

- The slot in the surface should be cut $\frac{1}{4}$ " wide x $1\frac{1}{2}$ " deep (6.3mm x 38mm).
- The corners of the cut must be at an angle or core drilled to relieve stress on the wires.
- After the wire is installed, the slot must be completely backfilled with a non-hardening sealer.

NOTE: If the loop wires are able to move in the slot after the sealer has set, the detector may give false calls.



Detector Logic

HySecurity recommends that vehicle detectors be used for free open and obstruction sensing logic only. The exception is in parking applications with our StrongArm operator (HTG 320) where detectors may be also used to close the gate. In applications employing our swing, vertical lift, or sliding gate operators, closing logic cannot be used. Because of their slower speeds, closing logic is a poor choice for security gate systems. Since there are several ways that the gate may be left standing open and because there is a loss of safety, our circuit has not been designed to accommodate “detect to close” logic.

Loop Diagnostics

The following tests cannot guarantee a functioning loop, but failure of either test means that the loop is definitely suspect, even though it may still be functioning at the time.

Test #1:

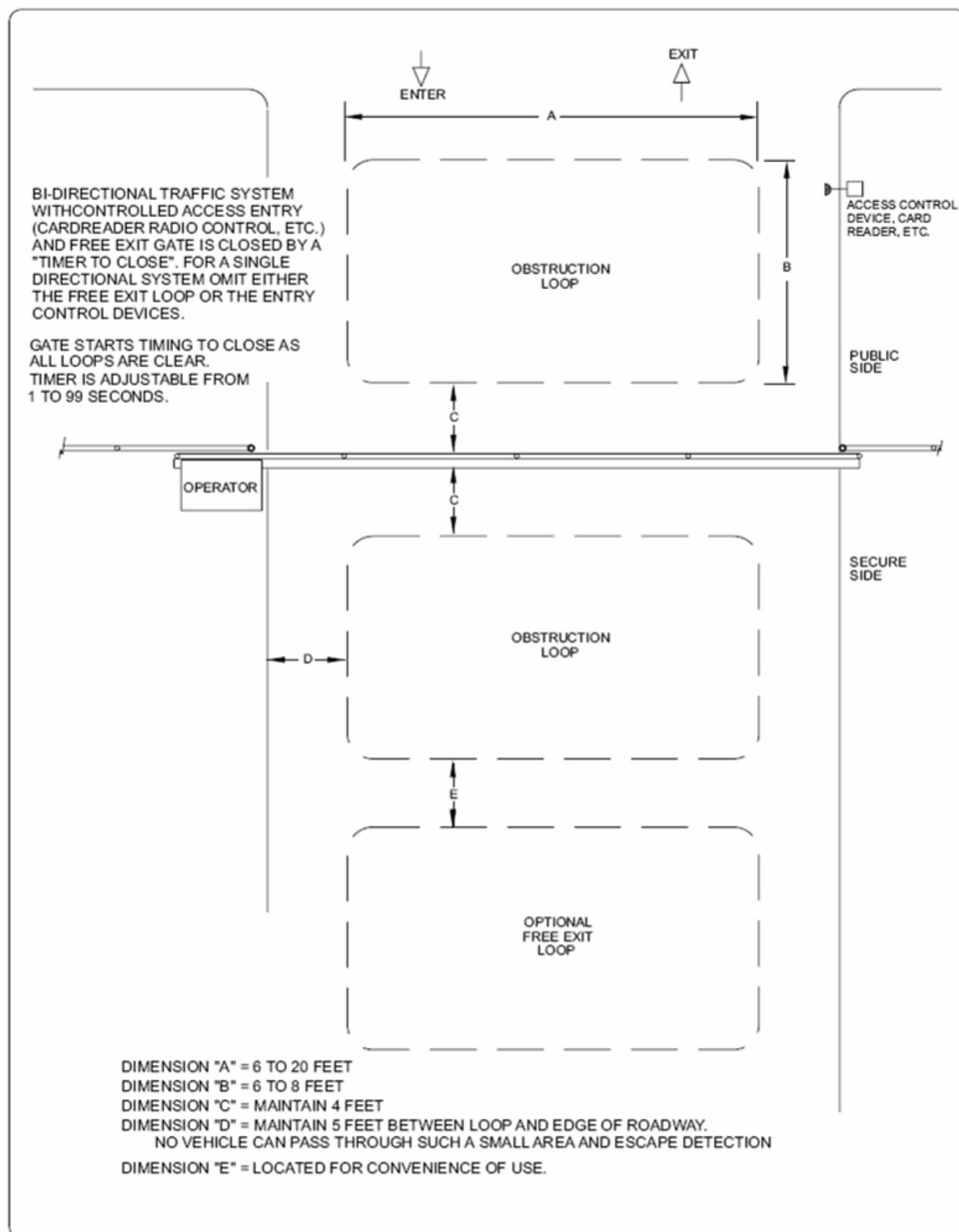
Resistance of the loop and lead-in wire should not exceed 4.0 Ohms.

Test #2:

The resistance to earth, as measured with a 500V “Megger”, should be 100 Megohms or more. Loops may function at 10 Megohms or less but will not be reliable (e.g. when the ground is wet from rainfall). Low resistance indicates broken or moisture saturated insulation. This is common if inappropriate wire insulation has been used.

See also Detector and Loop Fault Diagnostics on page 43 for additional tests that may be performed with HySecurity HY-5A detector modules.

Section 5 —Detector Loop Installation, continued



 seattle, washington	TITLE	DRAWN	DATE	THIRD ANGLE PROJECTION		REV
	SLIDE GATE LOOP LAYOUT	DB	05/15/00			A
		CHECKED	DATE	ERN NUMBER	DATE	
		APPROVED	DATE	DRAWING NUMBER E96		
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Section 3 —User Menu Functions

Initial Power Up – When power is turned ON, the display will disclose the software revision:

Display Revision Number	2s delay	Displays software version Number, ex. [h2.17]
-------------------------	----------	---

Operator Status Displays (system data) and accessing the User Menu Settings:

If the gate is stopped in Run Mode, pressing the PROGRAM button accesses the User Menu. When the PROGRAM button is pressed, the operator status displays (shown in the following chart) scroll past. The scrolling display stops at the Close Timer setting, which is the beginning of the User Menu.

Operator Status Displays	Time	Description
S1 [SLAu] or [LEAd]	2s	SLAVE Operator or LEAd Operator (master)
S2 [ot 7] Gate type (1-7)	2s	Operator type: 1 =HSG, 2 =HRG, 3 HVG, 4 =HTG, 5 = SW24, 6 = SW38, 7 = 50VF
S3 [rh] or [Lh] Hand setting	2s	Displays hand configuration [rh] or [Lh]
S4 [uC] UL usage class (1-4)	2s	Installer setting of usage class: type 1-4
S5 [d] 24VDC Buss Voltage	2s	Actual VDC buss voltage
S6 [CC] Life cycle counter	2s	High digits of 6 digit life cycle counter
S7 [] Life cycle counter	2s	Last 4 digits of 6 digit life cycle counter

Read through the options available in the User Menu and the Installer Menu on the next page and you can see that the functions of this gate operator can be configured to suit most any need. Once you have learned to navigate the menus and how to change a setting, as described in the chart on page 18, the full range of features and choices of the Smart Touch Controller are available to use. The User Menu contains the basic programmable items and the Installer Menu contains the more advanced programmable items.

To exit Menu Mode, simply press the PROGRAM button and return to Run Mode.

NOTE: If the display is blinking, you must press SELECT to accept what appears on the display and then press PROGRAM. Also, the operator automatically returns to the Run Mode if there is no key press activity for two minutes.

User Menu Options	Default	Description
U1 [Ct 0] Close timer setting	0	0 = Close timer off or 1 – 99 seconds
U2 [hC 0] Momentary Close	0	0 = momentary, 1 = Constant hold Close PB required
U3 [ho 0] Momentary Open	0	0 = momentary, 1= Constant hold Open PB required
U4 [AP 0] Power loss function	0	0 – 3 (0=Type A, 1 = B, 2 = C, 3 = D)
U5 [ro 0] Radio control option	0	0 = Open only, 1 = Adds close ability when full open
U6 [bF 2] Warn before operate	2	0 =off, 1 = Buzzer alerts 3s before + in motion, 2 = Buzzer alerts 3s before + 2s in motion
U7 [FA 0] Forced open Alert and automatic gate reposition	0	0 = disabled, 1 = sound buzzer (2 pulses/sec) if forced open for more than 4s, time out in 30s
U8 [dA 0] Drift Closed Alert and automatic gate reposition	0	0 = disabled, 1 = sound buzzer (2 pulses/) if drift closed and cannot reopen within four seconds.
U9 [PE 0] Photo Eye Align Mode	0	0= off, 1 = on (auto off when close limit triggered)
U10 [CL 0] Clock set (24 hour type)	0	0= display, 1= set minutes, 2= set hours, 3= day, 4= month
U11 [Ld 5] LCD Contrast set	5	1 - 9 = Adjusts contrast of the display
U12 [dS 0] Data Log	0	0 = Std. 1 = Extended (reset to 0 in 24 hr) (V4.xx software)

These notes refer to the menu above:

- S1 Appears only if the operator is configured as a master or a slave unit.
- U1 Close timer setting does not appear when set for constant contact close function.
- U4 Power loss function only appears if factory has provided DC battery-type operator.
- U6 NEVER disable (turn off) the Warn Before Operate buzzer per UL 325 regulations.

Section 3 —User Menu Functions

The User Menu functions shown in the chart on previous page are described in more detail on this page.

User 1 [Ct _] Close timer setting: Assign how many seconds before the open gate initiates closure. Keep the setting at 0 if a hard-wired, push-button control device is being used.

NOTE: The CLOSE TIMER display does not appear when the HOLD TO CLOSE is set to 1.

User 2 [hC 0] Momentary Close: Set to 0 produces a gate closure when a momentary signal is transmitted. Set to 1 if a constant hold to close signal, such as a push-button control, is being used. A setting of 1 also deactivates the automatic close timer and causes its menu to disappear. You must set HC to 1 to comply with UL 325 Type D protection.*

User 3 [ho 0] Momentary Open: Similar to HOLD TO CLOSE, but configures the OPEN push button for a constant-hold function. 0 = Momentary open signal. A setting of 1 means a constant hold open push button is required. You must set HO to 1 to comply with UL 325 Type D protection.*

User 4 [AP 0] Power loss function: This menu item only appears if the operator is a DC battery-powered (UPS) version. Configures the gate function that will occur if AC power fails.

User 5 [ro 0] Radio control option: Configures radio input for open only (0) or at setting 1 adds the capability for radio input to close the gate when it is fully open.

User 6 [bF 2] Warn before operate: Controls the warn-before-operate buzzer and can be configured three ways:
Set to 1: Buzzer beeps for 3 seconds before gate motion begins and continues through entire gate travel.
Set to 2: Buzzer beeps for 3 seconds before gate motion begins and continues for 2 seconds of gate travel.
Set to 0: Buzzer is disabled. Set at 0 the buzzer will still beep when alerts, faults, errors, or entrapment are detected.

WARNING: Do NOT cut the wires to the buzzer or unplug it as the operator will not be in compliance with UL 325. Failure to comply may result in serious injury or death.

User 7 [FA 0] Forced open Alert and automatic gate reposition: Intended for highly secure facilities. Set to 1, the operator sounds the 3-second “warn before operate” buzzer alarm, and then initiates a closure if the gate is forced open and the closed limit switch disengages. The motor restarts to secure the gate. If the gate does not fully close within 4 seconds, the motor turns off and the alert buzzer sounds for 30 seconds. The display shows *RL E 1*.

User 8 [dA 0] Drift Closed Alert and automatic gate reposition: Set to 1, the operator sounds the 3-second “warn before operate” buzzer alarm and initiates an open command if the gate is forced, or drifts, off the open limit switch. The motor starts to reopen the gate. The motor runs for a maximum of 4 seconds and, if the gate is not fully open at the end of this period, the buzzer sounds for 10 seconds. The display shows *RL E 2*.

User 9 [PE 0] PE Alignment Mode: When set to 1, the operator serves as an aide in photo-eye transmitter/receiver alignment. The buzzer chirps once when the emitter and receiver are not aligned. When the emitter and receiver are aligned, the buzzer chirps twice. If they go out of alignment again, the buzzer will chirp once. The Alignment Mode is reset with a close-limit input or reset input.

User 10 [CL 0] Clock and date set: The Smart Touch Controller is equipped with a 24 hour 365 day clock; thus events of significance are logged and stamped with the time and date. This feature is useful to read historical operation data, which can be accessed with a computer via the USB or RS232 port. To set or adjust the hour, minute, day or month, see page 31.

User 11 [Ld 5] LCD Contrast set: Under some extreme high or low temperature conditions, it may be necessary to adjust the contrast of the LCD display. The display is adjustable from 0-9 with a factory default setting of 5.

User 12 [dD 0] Extended Data Log: Set this item to 1 to record all gate operator open and close events, in addition to the normal alert, fault and error logs. This parameter automatically resets to the default 0 (off) after 24 hours, which is useful when experiencing intermittent problems. Set to 0, the Smart Touch Controller logs pertinent gate operator events such as faults, errors, or menu manipulation.

***NOTE:** For gate operators using Type D entrapment protection, an automatic closing device (such as a timer, loop sensor, or similar device) shall not be employed.

Section 3 —Installer Menu Functions

The Installer Menu is accessed by entering the User Menu first [UL _], and then pressing the RESET button and the OPEN button simultaneously. The display reverts to the usage class [UL _] which is the first menu item in the Installer Menu.

	Installer Menu Options	Default	Description
I1	[uC 0] Set UL Usage Class	0	0 = gate disabled, Set Class 1 through 4 use
I2	[Sh 0] Set Handing of gate	0	0 = gate disabled, r = Right Hand, L = Left Hand
I3	[Fd 0] Load Factory Defaults	0	0 = User settings, 1 = Load defaults (resets full menu)
I4	[bu 0] Choose Buzzer	0	0 = Buzzer not set, 1 = Freq 1, 2 = Freq. 2
I5	[dg 0] Set dual gate type	0	0 = Solo operator, 1 = Slave, 2 = Master, 3 = Sally PortA, 4 = Sally PortB
I6	[SG 0] Set sequential gate	0	0 = not active, 1 = Loop Layout #1, 2 = Loop Layout #2
I7	[Ch 0] Set AC Charger or Solar	0	0 = DC + AC charger 1 = DC + Solar charger
I8	[Fo 0] Enable Fire Dept. Open	0	0 = disabled, 1 = enabled
I9	[oC 0] Enable Emergency close	0	0 = disabled, 1 = enabled
I10	[SE 3] Inherent Entrapment Sensor	3	1 = maximum sensitivity, 9 = Lowest sensitivity
I11	[SS 0] Inherent Sensor function	0	1 = stop only (note, functions in usage class 4 only)
I12	[LC 0] Leaf delay Close	0	0 = none (1-7) ½ second steps (Master/Slave only)
I13	[Lo 0] Leaf delay Open	0	0 = none (1-7) ½ second steps (Master/Slave only)
I14	[rt 0] Maximum run timer	0	0 = 60 Seconds max run, 1 = 300 Seconds max run
I15	[Po 0] Partial Open distance	0	0 = none, or 7 – 99 seconds
I16	[EC 0] PEC reverse to open	0	0 = Close eye stops only, 1 = 2 sec reverse to open
I17	[EO 0] PEO reverse to close	0	0 = Open eye stops only, 1 = 2 sec reverse to close
I18	[gr 0] Edge reverse to open	0	0 = Edge reverses fully open, 1 = 2 sec reversal only
I19	[Sr 1] IES reverse to open	1	0 = IES reverses fully open, 1 = 2 sec reversal only
I20	[PC 0] Set PEO/ PEC – NO/NC	0	0 = Normally Open PE output, 1 = N.C. (supervised)
I21	[gC 0] Set Edge input – NO/NC	0	0 = Normally Open Edge output, 1 = Normally Closed
I22	[tC 1] Time clock/ Interlock input	1	0 = select Time Clock, 1 = select Open Interlock
I23	[dt 0] Disable Free Exit/Close Timer	0	0 = disable Free Exit, 1 = disable Close Timer
I24	[or 1] OOLD detector function	1	0 = pause closing only, 1 = enable reversing to open
I25	[ir 1] IOLD detector function	1	0 = pause closing only, 1 = enable reversing to open
I26	[dL 1] Vehicle detector logic	1	1 = std, 2 & 3 = quick close, 4 = full anti-tailgate*
I27	[r1 0] User relay 1 option	1	0 = disabled, 1 – 24 = see output options page 30
I28	[r2 0] User relay 2 option	6	0 = disabled, 1 – 24 = see output options page 30
I29	[r3 0] User relay 3 option	1	0 = disabled, 1 – 24 = see output options page 30
I30	[tL 0] Gate Open alert	2	0 = 0 sec, 1=15s, 2=45s, 3=75s, 4=105s, 5=135s
I31	[Lt 0] Loitering alert	3	0 = 0 sec, 1=15s, 2=45s, 3=75s, 4=105s, 5=135s
I32	[SA 0] System Address	0	0 = Off, 1-99 = Network “Drop” Address (RS-485)
I33	[ELd0] Test factory ELD*	0	0 = Run mode, 1 = show freq, 2 = show call level 0-7
I34	[iLd0] Test factory IOLD*	0	0 = Run mode, 1 = show freq, 2 = show call level 0-7
I35	[oLd0] Test factory OOLD*	0	0 = Run mode, 1 = show freq, 2 = show call level 0-7
I36	[SLd0] Test factory SLD*	0	0 = Run mode, 1 = show freq, 2 = show call level 0-7

*See page 43 for description of Vehicle Detector & Loop Fault diagnostics

If you wish to restore the factory default settings, go to menu item [Fd_0] and change the setting to 1, then press the PROGRAM button. The entire menu will reset to the factory defaults. You will need to reprogram the operator if you want it to recognize any settings other than its factory defaults.

These Notes Refer to the chart above:

I1, I2, I3a These settings must be configured before the gate operator can function. Once set, the User and Installer Menu items become accessible as well

I3a The Option bu=0 only appears if the Controller has been reset to factory default settings

I5 These settings appear only if the factory has provided a DC powered gate operator

I9 IES stop only setting [SS __] does not appear unless set as a class 4 operator

I10, I11 These settings appear only if the Installer Menu is set for Master / Slave function

I27, I28 These settings appear only if the Installer Menu has set relays r1-r3 for these alerts

Section 3 —Installer Menu Functions

The Installer Menu functions shown in the chart on previous page are described in more detail on the next few pages.

Installer 1 [**UL**] **Set UL Usage Class:** Assign the operator's Usage Class designation per UL 325 standards. The installer must designate a usage class before the operator will function. See page 19.

Installer 2 [**Sh**] **Set Handing of gate** The handing determines which way the gate opens as you view it from the operator side. The installer must designate a left or right handing before the operator will function. See page 19.

Installer 3 [**Fd**] **Load Factory Defaults:** Globally restores all menu settings back to new machine status. To activate, change the setting from 0 to 1 and press the PROGRAM button. Note that if the factory defaults are reinstated, the UL usage class, handing, and buzzer type will need to be set again.

Installer 4 [**bU**] **Select Buzzer Type:** Selects the type of audible buzzer installed on the machine. To set, press the SELECT button; the display flashes 0. Press OPEN and listen to the buzzer volume, and then press OPEN again and listen to the buzzer volume. If the volume increased, press SELECT to change to the louder volume. If the volume decreased, push CLOSE to retain the louder volume then push SELECT to lock in the louder volume.

Installer 5 [**d9**] **Set Solo, Master/Slave type, or Sally Port:** Programs and establishes communication protocols when wiring two operators as dual gates in a Master/Slave or Sally Port site configuration. This menu item appears when the sequenced gate menu item (59) is set to 0 (off). Settings: 1 = Slave, 2 = Master, 3 = Sally Port A, 4 = Sally Port B

Installer 6 [**59**] **Set Sequential Gate status:** Programs and establishes communication protocols when wiring two operators as sequential gates. This menu item appears when the sequenced gate menu item (d9) is set to 0 (off). Settings: 1 = Loop layout #1, 2 = Loop Layout #2

Installer 7 [**Ch**] **Set AC Charger or Solar:** Appears on 24VDC battery (UPS) machines only.

Installer 8 [**Fo**] **Enable Fire Dept. Open:** Enables the Fire Department Open input. When set to [**Fo**], overrides vehicle detectors, photo eyes and gate edges to open a gate. A reset (or two open commands) is required before the gate can be closed.

Installer 9 [**oC**] **Enable Emergency Close:** Enables the Emergency Close input. When set to [**oC**], overrides vehicle detectors, photo eyes and gate edges to close a gate. A reset is required before the gate can be opened.

Installer 10 [**5E**] **Inherent Sensor sensitivity:** Adjusts the sensitivity of the internal inherent sensor. Available settings are 1-9 with 9 being the least sensitive.

Installer 11 [**55**] **Inherent Sensor function:** Only available in UL Class 4 Gate Operators and allows an option whereby the inherent sensor will only stop the gate.

Installer 12 [**LC**] **Leaf delay Close:** Only appears if the Gate Operator is set up as a Master or a Slave. Available settings are 1-7. Each increment adds ½ second, to a maximum of 3½ seconds time delay, before the operator activates when commanded to close.

Installer 13 [**Lo**] **Leaf delay Open:** Only appears if the Gate Operator is set up as a Master or a Slave. Available settings are 1-7. Each increment adds ½ second (with a maximum of 3½ seconds) time delay following a command to open before the operator activates.

Installer 14 [**rE**] **Maximum run timer:** Allows an optional setting of 300 seconds if changed to [**rE**] as opposed to the maximum run timer default setting of 60 seconds.

Installer 15 [**Po**] **Partial Open distance:** Activates the partial open input and allows an adjustable distance by setting the open duration. The available time settings are 7-99 seconds. The default setting [**Po**] leaves this input inactive.

Installer 16 [**EC**] **PEC (photo eye close) reverse to open:** The default setting is non-reversal if the close photo eye is triggered. The optional setting of [**EC**] will cause the gate to reverse to open for two seconds if triggered while closing.

Section 3 —Installer Menu Functions – continued

Installer 17 [E0 0] **PEO (photo eye open) reverse to close:** The default setting is non-reversal if the open photo eye is triggered. The optional setting of [E0 1] will cause the gate to reverse to close for two seconds if triggered while opening.

Installer 18 [gr 0] **Edge reverse to open:** The default setting is to reopen fully. The optional setting of [gr 1] sets the gate at a 2-second reversal if triggered while closing.

Installer 19 [5r 1] **IES (inherent sensor) reverse to open:** The default setting is a 2-second duration reversal if the inherent sensor is triggered. The optional setting of [5r 0] will cause the gate to reopen fully if triggered while closing.

Installer 20 [PC 0] **Set PEO/ PEC – NO/NC:** The default setting is photo eyes with Normally Open outputs. The optional setting [PC 1] will require a Normally Closed (NC) output. If set for NC, the connection is also supervised and any open or short circuit fault will generate a FAL2 alert, which requires a Stop button reset to re-enable any function if triggered.

Installer 21 [9C 0] **Set Edge input – NO/NC:** The default setting is edge sensor with Normally Open (NO) outputs. The optional setting [9C 1] will require a NC output..

Installer 22 [tC 1] **Time clock / Interlock input:** This menu item configures the input at terminal #7 to be either for the gate interlock function, as described on page 29, or for an external time clock to open input. The default setting is [tC 1] for the interlock function.

Installer 23 [dE 0] **Disable Free Exit / Close timer:** Configures the input at Terminal No. 9 on the controller circuit board to disable either the Free Exit Detector on terminal #8, or the Timer To Close function. Default setting is [dE 0] allowing disabling of the free exit detector.

NOTE: The free exit is disabled when the gate is at its closed limit. If the closed limit is not tripped, the free exit continues to work.

Installer 24 [or 1] **OOLD (Outside Obstruction Loop Detector) function:** The default is for full reversal when the OOLD is triggered. The optional setting [or 0] causes the gate to only pause when triggered. Gate closure begins as soon as the loop is clear again.

Installer 25 [ir 1] **IOLD (Inside Obstruction Loop Detector) function:** The default is for full reversal when the IOLD is triggered. The optional setting [ir 0] causes the gate to only pause when triggered. Closure begins as soon as the loop is clear again.

Installer 26 [dL 1] **Vehicle detector logic:** Configures quick close and anti-tailgate logic. There are four modes. See the full description on page 44.

Installer 27, 28, 29 [r1 0], [r2 0], [r3 0] **User output relay 1 - 3 options:** Configures the function of the three user output relays. The choices are described in detail starting on page 30.

Installer 30 [tL 0] **Gate Open alert:** Adjusts the time delay before activating the user relay function #8, described on page 30. Time settings up to 135 seconds.

Installer 31 [Lt 0] **Loitering alert:** This menu item is to adjust the time delay before activating the user relay function #13, described on page 30. Time settings up to 135 seconds.

Installer 32 [5A 0] **System Address:** Sets the system address for network communication; 0 = no network communication, 1-99 sets individual polling addresses. Requires v4.24 software or higher.

Installer 33 [EL d0] **Factory ELD:** Controls the HY-5A Free Exit detector, see page 43.

Installer 34 [iL d0] **Factory IOLD:** Controls the HY-5A IOLD detector, see page 43.

Installer 35 [oL d0] **Factory OOLD:** Controls the HY-5A OOLD detector, see page 43.

Installer 36 [SLd]. **Factory SLD:** Controls the HY-5A Shadow detector, see page 43.

Section 3 —Options for User Programmable Output Relays 1-3

The Smart Touch Controller is able to interface with many types of external devices through the use of three user-programmable output relays. All of the output functions described below are accessible in the Installer Menu under the selection [r1__], [r2__] and [r3__].

NOTE: The User Relays will operate normally to less than 18VDC.

Access the Installer Menu and program the output relays according to the following steps:

1. Select the relay you wish to use; either [r1__], [r2__] or [r3__].
 2. Enter the appropriate function using the associated number listed in the table.
1. **Close limit output:** Creates an interlock signal to another operator's interlock input, or simply to indicate that the gate is secure. The relay is released when the fully-closed limit switch is tripped. The relay is energized when the fully-closed limit is released.
 2. **Close limit pulse output:** Used in a sequenced system to command a second machine to close. Generates a brief pulsed output that occurs when the close limit is triggered.
 3. **Open limit output:** Indicates a fully-opened position. This output becomes active when an open-limit is triggered and releases when the open-limit is released.
 4. **Open limit pulse output:** Trips a sequenced barrier arm gate operator to open. Generates a brief pulsed-output when the open-limit is triggered. An additional pulse is also generated with any new open command even when the gate is already fully-opened.
 5. **Warn before/during operate output:** Controls an external warning device. This output operates at the same time as the internal warn before operate buzzer.
 6. **Gate Lock output:** Controls external solenoid locks or magnetic locks. In both directions of travel, this output is activated about 7/10ths of a second before the operator starts moving the gate and remains active while moving as well as for a few seconds after stopping.
 7. **Gate forced open output:** Activated if the gate is forced off the closed limit switch and operator is not able to restore the gate to full closed within four seconds. This alarm resets itself in 30 seconds.
 8. **Gate open too long output:** Activates when the gate is open longer than a user-selected period of time. Adjustable from 0 delay to 135 seconds delay in 15-second time increments. Installer Menu I30
 9. **Safety Mode Alert output:** Activated when system is in the Safety Mode or the Entrapment Mode. Safety Mode occurs upon an impact with an obstruction. Entrapment Mode means the gate is stopped and occurs if the internal inherent sensor triggers while the system is in the Safety Mode.
 10. **Entrapment Mode Alert output:** Activated only when system is in the Entrapment Mode.
 11. **Unauthorized Vehicle Entry output:** Activated when one or more of the relay options has been programmed for Tailgater activation. If that is the case, then while the gate remains unsecured and the OOLD and then the IOLD are both tripped in that order for a second time without a renewed open command, a tailgater alert output is generated on the configured relay to warn of an unauthorized entry. This can happen only if loops are installed properly. The maximum distance (span) between loops is 8 feet (2.4 meters). This output releases when an access control input signals open or the gate reaches the close limit position.
 12. **Outside Obstruction Vehicle Detector output:** Interlocks an entry device to prevent pedestrian use. This output is active whenever the OOLD is tripped.
 13. **Special output from "OOLD" only when gate is closed:** Annunciates a vehicle or indicates loitering. Adjustable from 0 delay to 135 seconds delay in 15-second time intervals. Installer Menu I31
 14. **Gate nearing full travel output:** Applies to operators with RPM sensors only. Activated when the gate is three feet from full travel in both the open and close directions. This output is used to reduce the sensitivity of a proximity sensor near the ends of gate travel.
 15. **Gate Failure output:** Activated to report occurrence of a problem. Indicates the system in an Error Mode, Fault Mode or Entrapment Mode. If active, the gate is disabled.
 16. **Motor Running output:** Active when the motor is running and the gate is in motion.
 17. **AC Power Failure output:** This relay is normally energized and drops with loss of AC power. This output is also active on DC machines when the battery charger is off.
 18. **DC Power Failure output:** Activated when the battery power is very low, but the output ceases when the battery is dead. The relay is triggered when the battery is less than 20 Volts.
- Flasher Relay:** Controls flashing lights that pulse once per second. The relay is constantly activating except when the open limit switch is triggered.

Section 3 —Options for User Programmable Output Relays 1-3, cont.

19. **Flasher Relay:** This output is intended to control flashing lights that pulse once per second. This relay is flashing all the time, except when the open limit switch is triggered.
20. **Free Exit Loop Vehicle Detector output:** Available with software version h3.23 and higher. Active whenever the ELD is tripped.
21. **Inside Obstruction Vehicle Detector output (available in h3.23 and higher software):** Activated when the Inside Obstruction Vehicle Detector (IOLD) is tripped.
22. **Reset/Shadow Loop Detector output:** (Not used in SlideDriver.) Activated when the Reset or Shadow loop detector (RLD/SLD) is tripped. Since this input is not used for a sliding gate, User Relay 22 can be used in combination with a detector to perform the function of an arming-loop detector or annunciation-loop detector because there is no associated gate control logic.
23. **Gate Lock Output:** Available with software version h3.25 or h4.23 and higher. Activates when the Lock Interlock Input (Terminal No. 22) is active at the start of an Open cycle and remains on until the Lock Interlock releases or 10 seconds passes, whichever is sooner. Also, activates at the start of a Close cycle and releases 1 second after reaching the Close limit..
24. **Gate at Partial Open Position:** Available with software version h3.25 and higher. Active when the partial open position is reached or exceeded.
25. **DC Power Alert:** Deactivates when the software detects a low battery voltage (below 21VDC, but greater than 18VDC) for a duration of 2 seconds or more. To slow battery drain, accessory power loads are shed.

Clock Functions

Setting the Time and Date

The Smart Touch Controller is equipped with a 24 hour (military time), 365 day clock, so that significant events can be logged and stamped with the time and date. This troubleshooting feature is useful to record key historical operational data and a log of Alerts, Faults and Errors. The log can be accessed via the RS232 port. Optional software and a serial communication cable are required in order to read this log. Contact your HySecurity distributor or HySecurity to purchase software and download cable*.

1. To set or adjust the time, go the User menu item [CL 0] and push the SELECT button, so that [CL 0] blinks. Using the PREVIOUS and/or NEXT buttons, change the setting from [CL 0] to 1, 2, 3 or 4 depending upon which setting is to be changed. 1 = minutes / 2 = hours / 3 = days / 4 = months.
2. Push the SELECT button. The display will change to a blinking (adjustable) value. Different displays will appear (see table below) based on which [CL] value is selected:

Setting	Value	Display
[CL 1]	minutes	[ni 0-59]
[CL 2]	hours	[hr 0-23]
[CL 3]	days	[dA 1-31]
[CL 4]	months	[no 1-12]
[CL 0]	Run Mode	None

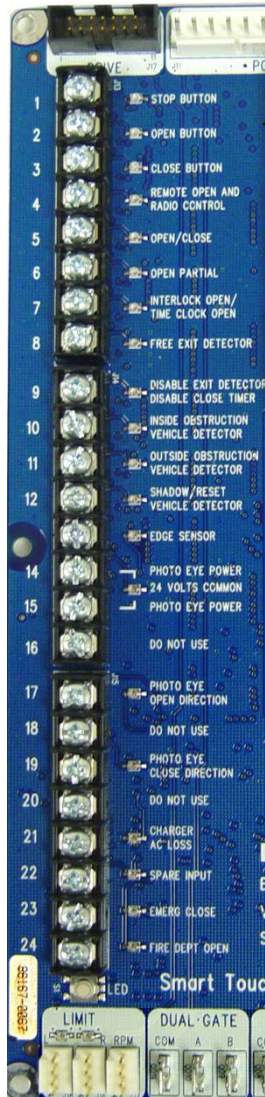
3. Change the hour, minute, day or month to the desired value using the PREVIOUS and/or NEXT buttons, then press the SELECT button to enter the change. [CL 0] will appear.
4. To change another setting, Press the SELECT button, (display will blink), then move to that setting using the PREVIOUS and /or NEXT buttons and repeat steps 2 and 3 until the clock is fully set.
5. When finished, be sure [CL 0] is displayed, then push PROGRAM to exit.
6. A lithium disk battery supports the clock so that the time is not lost when the main power is off. This battery should be replaced about every five years. Use a DL 2025 / DL 2032 or CR 2025 / 2032 battery.

* **START** Configuration and Diagnostic software is available at no charge from our website – www.hysecurity.com. A serial communication cable and USB adaptor (Part MX000667) can be ordered through your HySecurity distributor.

Section 3 — Wiring Control Inputs

1. Test the open and close function of the gate before wiring to accessory devices (external control inputs). This makes it easier to troubleshoot if an unexpected functionality arises. The Smart Touch Controller has a tact button you can push which lights an LED next to the active inputs. This button is in bottom left corner of the Smart Touch Controller board.
2. All the Smart Touch Controller inputs listed below are shown as a single input. The second wire is connected to the Common Terminal Bus (COM) on the Smart Touch Controller.

NOTE: The Emergency Close and Fire Dept. Open inputs are an exception and require a +24V input. The +24V is located on the spade terminals next to the Common Bus. Refer to the photograph on the next page.



Smart Touch Controller Inputs

1.	*Stop Push button N.C. input, jumper to Common if unused
2.	*Open Push Button Not for radio or remote access controls
3.	*Close Push button Not for radio or remote access controls
4.	Remote Open & Radio Control For radio / remote open device – Program to Close using Smart Touch Controller keypad
5.	Open/Close button Pushbutton or radio controls
6.	Partial Open Installer adjustable from 7- 99 seconds
7.	Open interlock input or Time clock Open programmable
8.	Free Exit vehicle detector
9.	Disable Free Exit vehicle detector or Timer to Close Free Exit is only disabled if Close Limit Switch is tripped. If the gate is partially opened, the Free Exit detector will trigger the gate to open fully.
10.	Inside Obstruction vehicle detector Inside reversing loop
11.	Outside Obstruction vehicle detector Outside reversing loop
12.	Shadow/Reset vehicle detector Shadow function used for Swing gates only - Reset function is for Arm gates
13.	Edge Sensor One input works for both travel directions
14-15.	Photo eye Common Power 24V common connection for open and close photo eyes
17.	Photo eye Open direction
19.	Photo eye Close direction
21.	Charger AC power loss Only used in DC, battery type operators
22.	Spare Input Software ≤ h3.26,- non functional, Gate Lock Interlock Input Software > h3.26, prevents start until external gate lock releases
23.	**Emergency Close Must menu enable and input +24 Volts to trigger. Requires constant hold or maintained input. This overrides photo eyes, gate edges & vehicle detectors.
24.	**Fire Dept. Open Must menu enable and input +24 Volts to trigger. Overrides photo eyes, gate edges, and vehicle loops.

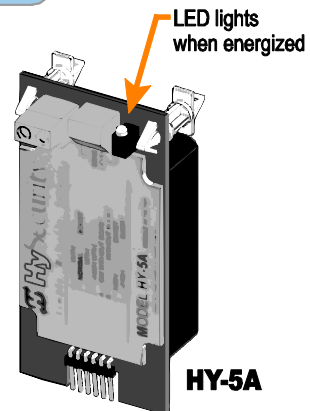
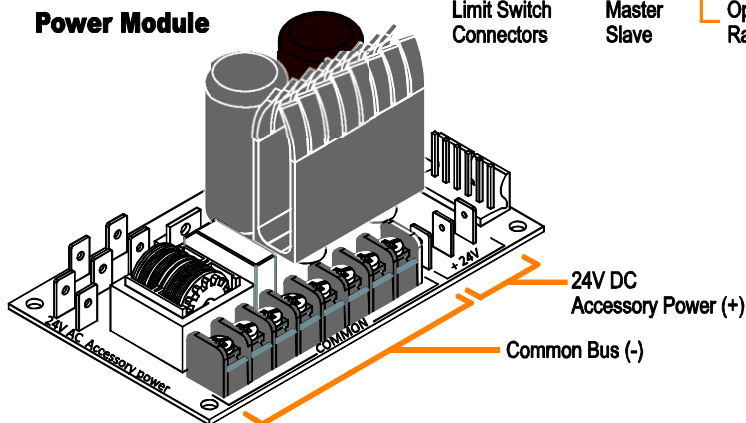
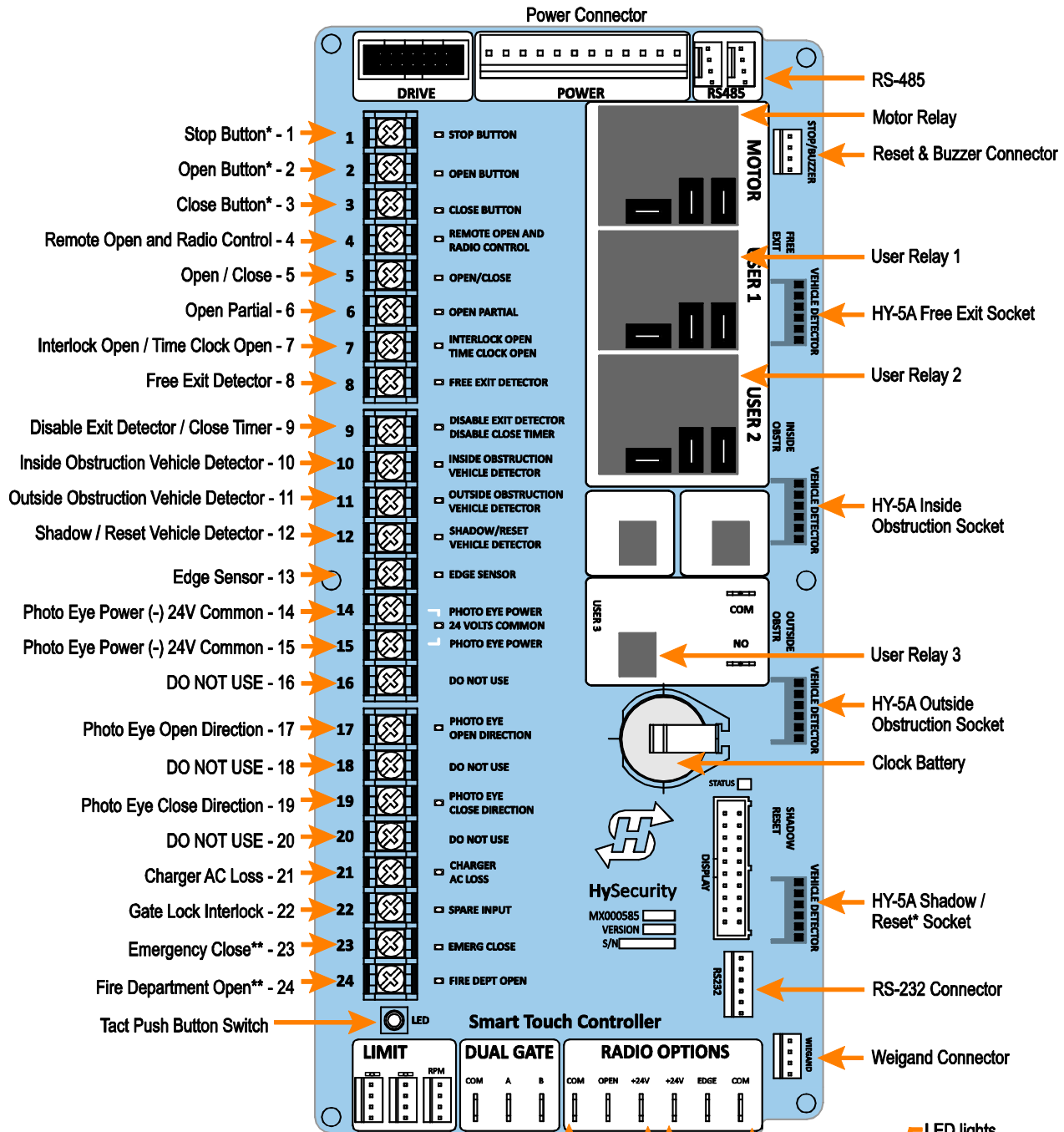
↑
Tact button



CAUTION: *Only connect an external control to terminals #1, 2 or 3 when the controls are located in clear view of the entire gate area. For controls that need not be in line of sight, use input terminals #4, 5, 6 or 7.

****The Emergency Close and Fire Dept. Open inputs are to be used only if access to these controls is guarded and supervised.**

Section 3 — Wiring Control Inputs



LIMITED WARRANTY

1. Warranty.

HySecurity Gate, Inc. ("HySecurity") warrants that at the time of sale each of its products will, in all material respects, conform to its then applicable specification and will be free from defects in material and manufacture. This warranty does not extend to items listed as "accessories" in HySecurity's price list, when those items carry another manufacturer's name plate and they are not a part of the base model. HySecurity disclaims all warranties for such accessory components, which carry only the original warranty, if any, of their original manufacturer. HySecurity hereby assigns its rights under such manufacturer warranties—to the extent that such rights are assignable—to Buyer.

The following additional durational warranties apply to HySecurity's products. *The term of these additional warranties is determined by whether (1) the product is purchased through an authorized HySecurity distributor and (2) whether a timely and complete warranty registration is submitted to HySecurity. It is therefore important that you register your product with HySecurity within the 60 day period described below.*

1(a) Five Year / Seven Year Warranty Items (Registered Gate Operators Purchased from Authorized Distributors)

For any gate operator product that is purchased from an authorized HySecurity distributor (this excludes product purchased through internet resellers or any distributor not authorized by HySecurity), if the online Warranty registration is completed at www.hysecurity.com/warranty within 60 days of the date of purchase by the dealer/installer or if the warranty registration form sent with every HySecurity gate operator is completely filled out and returned to HySecurity within the same 60-day period, the following Warranty terms will apply: HySecurity will warrant that the product will remain serviceable for the following periods:

- a. Hydraulic Gate Operators: Five Years or 500,000 gate cycles (whichever occurs first) after the date of installation, or
- b. Electromechanical operators: Five Years after the date of installation—unless installed in a single family residential application, in which case the warranty term shall be Seven Years after the date the product is shipped from HySecurity; *provided that* the Five Year warranty period will not extend beyond Seven Years from the date that the product was shipped from HySecurity. This warranty does not apply to the components described below, which have the shorter warranty period indicated:
- c. Hydraulic Gate Operator Drive Wheels: Two Years from date of installation.
- d. Batteries used in all D.C. operators: One Year from date of shipment from HySecurity.
- e. Items subject to normal wear including, but not limited to, chains, belts, idler wheels, sprockets, fuses and motor brushes: One Year from date of installation.

1(b) One Year Warranty Items (Operators Not Purchased from an Authorized Distributor or Registered within 60 Days)

For any gate operator product that is not purchased from an authorized HySecurity distributor or for which the online Warranty registration or warranty registration form sent with every HySecurity operator was not filled out completely or not returned to HySecurity within 60 days of the date of purchase by the dealer/installer, the following One-Year Warranty will apply to that product: HySecurity warrants that the product will remain serviceable for the following periods, which begin on the date that the product was shipped from HySecurity:

- a. All Gate Operators: One Year or 100,000 gate cycles whichever comes first.
- b. Hydraulic Gate Operator Drive Wheels: One Year

1(c) Replacement Parts

HySecurity warrants that replacement parts (whether new or reconditioned) will remain serviceable for One Year from the date that the product was shipped from HySecurity.

1(d) Limitations and Exclusions Applicable to Each of the Preceding Warranties

The preceding warranties shall not apply to equipment that has been (1) installed or maintained improperly or contrary to instructions; (2) subjected to negligence, accident, vandalism, or damaged by severe weather, wind, flood, fire, or war; or (3) damaged through improper operation, maintenance, storage or abnormal or extraordinary use or abuse. Any modification made to products will void the warranty unless the modifications are approved in writing by HySecurity, in advance of the change (this exclusion does not apply to normal installation of approved accessories and/or protective devices or sensors).

THESE ARE THE ONLY WARRANTIES GIVEN BY HYSECURITY AND ARE IN PLACE OF ALL OTHERS.

These warranties extend to HySecurity's Distributors, to the Dealer/Installer, and to the First User of the product following installation. They do not extend to subsequent purchasers. Dealer/Installers or First Users may receive a replacement HySecurity Warranty form by calling HySecurity at 800-321-9947.

2. Exclusion of Other Warranties.

The warranties contained in Section 1 are the exclusive warranties given by HySecurity and supersede any prior, contrary or additional representations, whether oral or written. Any prior or extrinsic representations or agreements are discharged or nullified. HYSECURITY HEREBY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES—WHETHER EXPRESS, IMPLIED, OR STATUTORY—INCLUDING ANY **WARRANTY OF MERCHANTABILITY, ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE.**

3. Buyer's Exclusive Remedies for Any Nonconformity.

If a HySecurity product fails to conform to the warranties in Section 1, Buyer must notify and order replacement parts from the Distributor through which the product was purchased within a reasonable time and in no event more than thirty (30) days after the discovery of the nonconformity. HySecurity will investigate and, in the event of a breach, will provide, within a reasonable period of time, one of the following: (1) repair or replacement of any nonconforming products or components or (2) refund of the price upon return of the nonconforming items. Replacement goods will conform to this warranty for the unexpired duration of the warranty period for the original, nonconforming product. HySecurity reserves the right to supply used or reconditioned material for all warranty claims. This warranty does not cover or extend to any incidental expenses, including labor, shipping, travel time or standby time, that are incurred for inspection or replacement of any nonconforming items. As a condition of warranty coverage, warranty claims must be submitted in accordance with the following paragraph. THE REMEDY SELECTED BY HYSECURITY IN ACCORDANCE WITH THIS PARAGRAPH SHALL BE THE EXCLUSIVE AND SOLE REMEDY OF BUYER FOR ANY BREACH OF WARRANTY. IN NO EVENT SHALL HYSECURITY BE OBLIGATED TO INDEMNIFY BUYER FOR ANY BREACH OF WARRANTY.

For warranty coverage, you must follow the procedures described on HySecurity's form, "RMA Procedures." A current version of the form is available from HySecurity.

4. Exclusion of Consequential and Incidental Damages.

IN NO EVENT SHALL HYSECURITY BE LIABLE FOR ANY INCIDENTAL, SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, WHETHER RESULTING FROM NONDELIVERY OR FROM THE USE, MISUSE, OR INABILITY TO USE THE PRODUCT OR FROM DEFECTS IN THE PRODUCT OR FROM HYSECURITY'S OWN NEGLIGENCE OR OTHER TORT. This exclusion applies regardless of whether such damages are sought for breach of warranty, breach of contract, negligence, or strict liability in tort or under any other legal theory. This exclusion does not apply to claims for bodily injury or death.

5. Severability.

If any provision of this warranty is found to be invalid or unenforceable, then the remainder shall have full force and effect, and the invalid provision shall be partially enforced to the maximum extent permitted by law to effectuate the purpose of the agreement.

6. Applicable Law.

This Warranty will be interpreted, construed, and enforced in all respects in accordance with the laws of the State of Washington, without reference to its choice of law principles. The U.N. Convention on Contracts for the International Sale of Goods will not apply to this Warranty.

Product Warranty & Registration: Go online to www.hysecurity.com and fill out the product warranty and registration form. To extend operator warranty beyond 1 year, you must fill out and return the registration within 60 days of purchase.