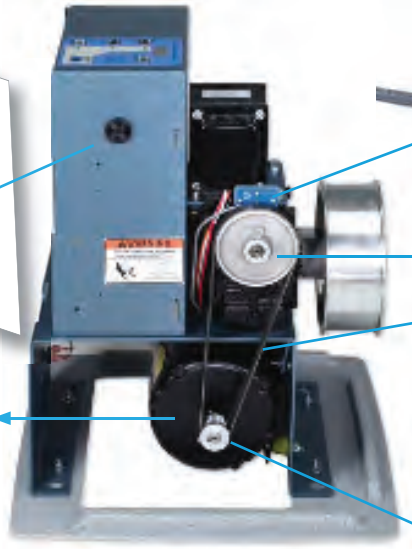
INSTALLATION AND REFERENCE MANUAL

SlideWinder

HySecurity

UL 325 & UL 991

Side View A

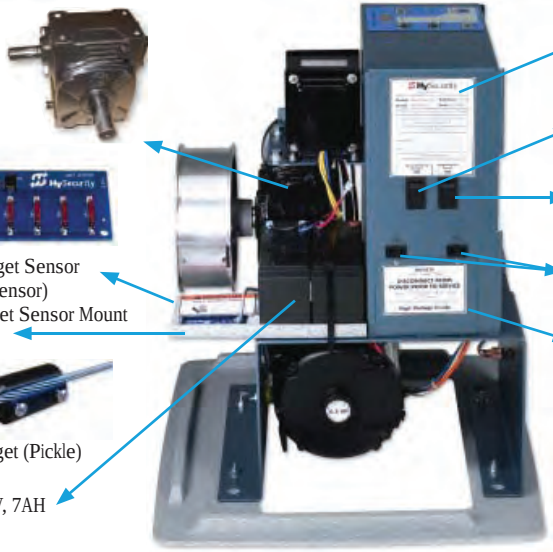


26. Cover, Plexiglas over Control Board Enclosure
25. Alarm Piezo Buzzer
24. Motor, SlideWinder 24 1/2 hp, 3-Phase
23. Motor, SlideWinder 38 1 hp, 3-Phase

27. RPM/Position Sensor
28. Large Pulley
29. Micro V Drive Belt

30. Drive Belt Cover (not pictured)
31. Small Pulley

Side View B



Serial # & Model
36. Reducer, Gearbox
37. AC and Battery Charger Power Switch
38. DC and Drive Motor Power Switch
35. Limit Target Sensor (Pickle Sensor)
39. 115V / 3 Amp Convenience Outlets
34. Limit Target Sensor Mount (plastic)
40. Access Cover for AC Power Connection
33. Limit Target (Pickle)
32. Two, 12V, 7AH Batteries

See complete parts list on inside back cover

Additional Parts

41. SlideWinder 24: two 40 ft cables
42. SlideWinder 38: two 62 ft cables
43. SlideWinder 38 backmounted: two 80 ft cables

49. Warning Sign kit Gate Plackards & wire ties

44. Photo Eye Mounting Brackets (one for each direction)

45. Gate Attachment Kit
(2) Cable Brackets
(2) Eye bolts with washers and nuts
(2) Cable Collars

48. Optional Heavy Duty Batteries + Wiring Harness 12V AGM 110 AH, (for extended DC operation, requires 2 batteries and base riser)

46. Cable Cutters (optional)

47. Cable Crimp Tool (optional)

Complete and Keep

Having equipment and installation details on hand can be helpful if you ever need assistance with SlideWinder operation, maintenance or service.

Model [ ] 1/2 hp [ ] 1 hp

Serial Number of SlideWinder gate operator_____

(Note: You'll need this serial number to receive SlideWinder's 5-year Warranty support)

Owner's Name_____

Installation Address_____

City_____State_____Zip_____

Location of this unit on site _____

_____

Installation company_____Phone_____

Installation date_____

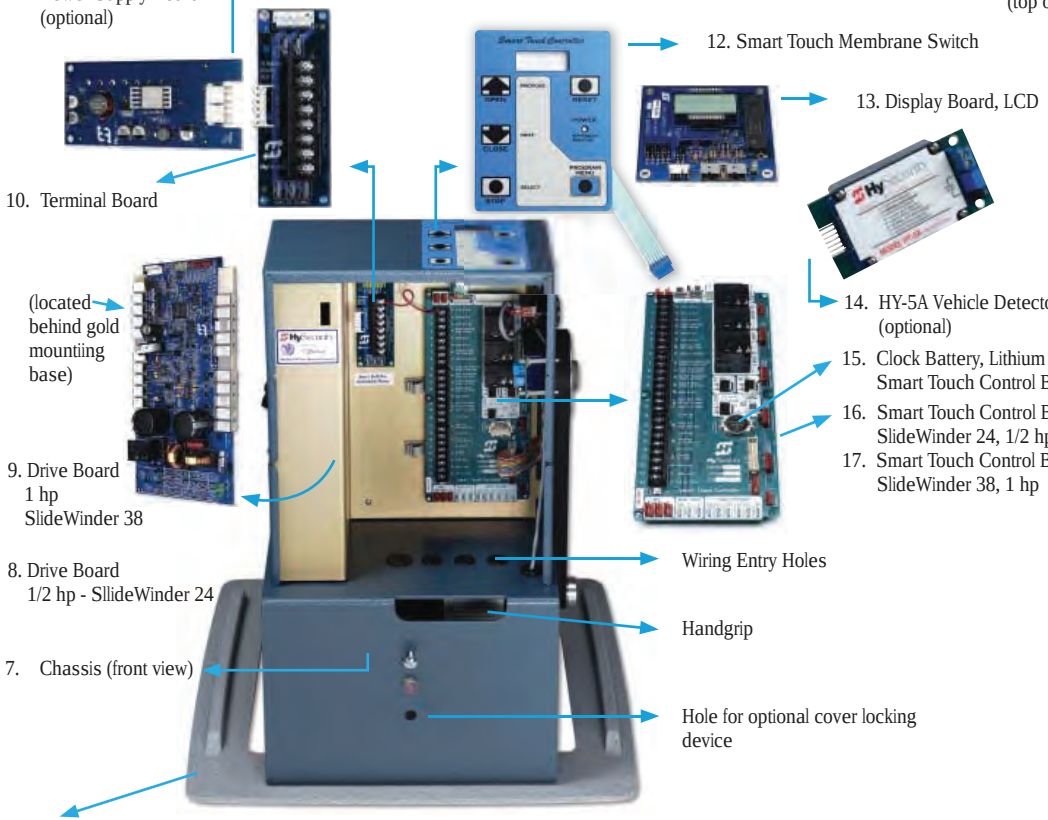
Installer _____

Be sure to register this SlideWinder Operator. Complete and send in the Warranty Card included with this unit. Refer to the back of this manual for warranty and service

HySecurity

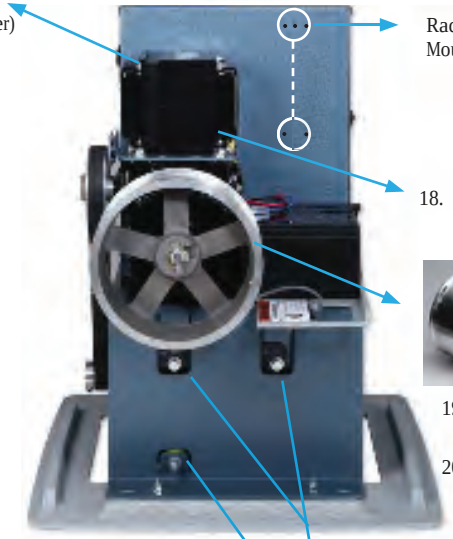
SlideWinder Parts

Front



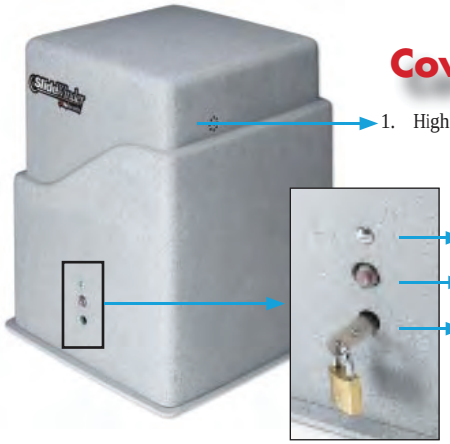
11. 12V DC Accessory Power Supply Board (optional)
10. Terminal Board
12. Smart Touch Membrane Switch
13. Display Board, LCD
14. HY-5A Vehicle Detector (optional)
(located behind gold mounting base)
15. Clock Battery, Lithium on Smart Touch Control Board
16. Smart Touch Control Board SlideWinder 24, 1/2 hp
17. Smart Touch Control Board SlideWinder 38, 1 hp
9. Drive Board 1 hp SlideWinder 38
8. Drive Board 1/2 hp - SllideWinder 24
Wiring Entry Holes
Handgrip
7. Chassis (front view)
Hole for optional cover locking device
6. Polyethylene Mounting Base (not used with base riser)
5. Base Riser Kit (12") (optional) includes stiffener (not pictured)

Back



Circuit Breakers (top of transformer)
Radio Receiver Mounting Holes
18. 56V 500 VA Transformer
19. Cable Drum 1-hp SlideWinder 38
20. Cable Drum 1/2 hp SlideWinder 24
21. Motor Mounting Bolts
22. Belt Tensioning Spring, Bolt & Nut

Cover



1. High Impact Polyethylene Cover
2. Cover Mounting Bolt
3. Reset Button
4. Cover Locking kit (optional)

See complete parts list on inside back cover

A message from the President

This handbook is not just part of an exciting new gate operator, but represents the realization of a significant new HySecurity personal vision. HySecurity's engineers dreamed and debated how to create a quality operator, designed from the ground up to address significant but unmet customer needs. After years of team building, engineering, testing, failures, patience, commitment, and dare I say, lots of cash, the SlideWinder you purchased was born.

I sometimes ask; "If we had understood the technical difficulty and resource challenges we'd face, would we have had the guts to tackle SlideWinder?" I don't know that answer, but can certainly say that SlideWinder happened only because the company's vision remained clear and strong, carrying us through the gigantic hurdles it takes to create a product which is such a revolutionary departure from the traditional chain driven machines.

Introducing SlideWinder

Cable Drive, UPS Backup Slide Gate Operator

SlideWinder is a cable-winch slide gate operator using a 5/32" stainless steel cable to move the gate. SlideWinder's stainless steel cables are attached to a winch, can't slip and won't rust. SlideWinder is powered by an ultra-reliable, variable speed, low voltage, 3-phase motor. It uses ANY single phase incoming power, 115 V, 208 V, 230 V, 50 or 60 Hz. which is converted to 24 V DC to charge the batteries and then synthesized into 3-phase AC to power the motor. This provides SlideWinder's super-precise positioning (a few tenths of an inch) and SlideWinder's graceful start-up and stop.

UPS Backup (not open and die!)

SlideWinder's unique Uninterruptible Power Supply (UPS) keeps your automated gate running for 1,000 feet of gate travel (depending on size/weight of gate and accessory power requirements) using its two standard 12 V batteries. Adding heavy duty batteries in SlideWinder's 12" base riser adds 35,000 or more feet of gate travel after an AC power outage.

Continuous operation after power failure is a significant advantage over traditional "Open and Die" battery backup systems that leave your perimeter unsecured upon losing AC power. SlideWinder allows installers to power all access controls and accessories from its onboard batteries.

Unchain yourself

SlideWinder is Simple, Reliable, Secure and Elegant, doing away with the Achilles Heel of most electromechanical operators: the ugly, open-to-the-elements, stretching, maintenance prone chain, replacing it with the simple, clean, no maintenance, rust free stainless steel cable. Step ten feet away from your gate and the cable virtually disappears.

Accessory compatibility

SlideWinder Slide Operators are fully compatible with all standard access control devices and entrapment protection devices, some of which are listed next.

Operator and parts sales

HySecurity sells operators, accessories and replacement parts through its nationwide network of authorized distributors. Your HySecurity distributor may be found by calling the company which installed your SlideWinder or by calling HySecurity directly at 800-321-9947.

Warranty replacement or repair

HySecurity distributors provide extensive warranty service to HySecurity purchasers through their installation companies. Contact your HySecurity installer to get quick and efficient warranty response.

On the web

For the latest information on HySecurity products, visit us at www.hysecurity.com.

Technical Support

HySecurity
www.hysecurity.com

Model: **Pull Force:**
Serial: **Date:**

Protected under Patents 6,092,338 and 6,194,851 B1

This operator is for vehicular use only in Application Classes 1-4
Use UL 325 recognized Entrapment Protection Sensors ONLY

Installed by: _____

Date: _____

For manual operation
turn OPERATOR DC Power off and push gate open

AC and Battery Charger	OPERATOR DC Power
ON	ON

You get nationwide installation and technical support

HySecurity's nationwide distributor and installer network provide quick and professional installation and technical support for all HySecurity operators.

Lift the operator cover to display the label (shown at left) which lists your installer. Many installers add their own company label to this manual and your operator.

Call HySecurity at 800-321-9947 to locate your installer or distributor.

This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

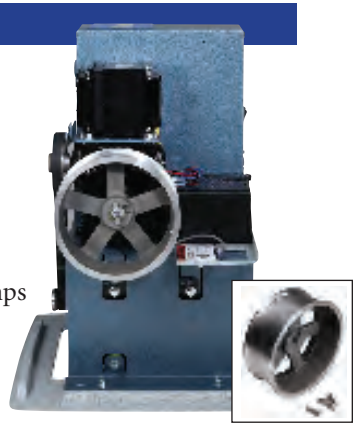
Contents

SlideWinder Models

Available models

SlideWinder 24

½ HP
125 lb. pull force
1,200 lb maximum gate weight
24' maximum gate travel*
UL Class I-IV
115 volts single phase / 6 amps
208 - 230 volts single phase 3.1 - 3 amps
50 or 60 Hz.



SlideWinder 38

1 HP
200 lb. pull force
2,000 lb maximum gate weight
38' maximum gate travel*
UL Class I-IV
115 volts single phase / 6 amps
208 - 230 volts single phase 3.1 - 3 amps
50 or 60 Hz.

* Minimum gate travel is 10'. SlideWinder cannot be programed to move a gate less than 10' and not greater than the maximum gate travel for that model.

Future Models

SlideWinder 24F	Fast		Installer adjustable variable speed version up to 2'/sec. on SlideWinder 24	UL Class I-IV for speeds up to 1'/sec.; UL Class III-IV for speeds above 1'/sec.
SlideWinder 24S		Solar	Solar powered version of SlideWinder 24	UL Class I-IV
SlideWinder 24FS	Fast	Solar	Fast (up to 2'/sec.) solar powered version of SlideWinder 24F	UL Class I-IV for speeds up to 1/sec.; UL Class III-IV for speeds above 1'/sec.
SlideWinder 38F	Fast		Installer adjustable variable speed version up to 2'/sec. on SlideWinder 38	UL Class I-IV for speeds up to 1/sec.; UL Class III-IV for speeds above 1'/sec.
SlideWinder 38VF	Very Fast		Installer adjustable variable speed version (up to 3'/sec.) on SlideWinder 38	UL Class I-IV for speeds up to 1'/sec; UL Class III-IV for speeds above 1'/sec.
SlideWinder 38S		Solar	Solar powered version of SlideWinder 38	UL Class I-IV
SlideWinder 38FS	Fast	Solar	Fast (up to 2'/sec.) solar powered version of SlideWinder 38F	UL Class I-IV for speeds up to 1'/sec; UL Class III-IV for speeds above 1'/sec.

Safety for Installers

⚠ MANDATORY

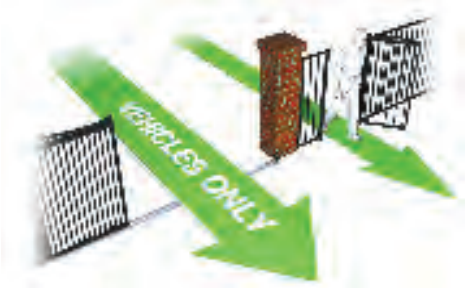
Review before gate system design or installation

Automatic gate operators provide user convenience and security. However, because these machines can produce high levels of force, it is imperative that gate operator system designers, installers and end users be aware of potential hazards associated with improperly designed, installed or maintained systems. The gate operator is only one component of the total gate operating system. It is the joint responsibility of the specifier, designer, purchaser, installer and end user to verify that the total system is appropriately configured for its intended use.

Additionally, certain municipalities have established licensing, codes or regulations that regulate automated gate system design and installation. Consult local government agencies for up-to-date rules and regulations prior to gate system design or installation.

Before completing installation, be certain to provide owners and users the Safety Information on pages 17 - 20.

Underwriter Laboratories (UL) and the American Society for Testing and Materials (ASTM) are responsible for many current regulations regarding gate operators and automated gates. These standards are revised periodically. Go to www.ul.com for the most up-to-date UL 325 gate operator standard. Go to www.astm.org for the most up-to-date ASTM F2200 gate and fence standard.



Review this important information thoroughly before you install *anything*

Use this list of primary considerations before and after installation to make sure your SlideWinder installation meets UL 325 and ASTM F2200 Standard requirements. For a latest edition copy of operator and gate standard requirements, see www.ul.com and www.astm.org.

⚠WARNING

A moving gate can cause serious injury or death. Read and follow all Installation Manual, Reference Manual and Warning Label instructions.

Make Sure the Gate Operator Usage Class is Correct for the Site and Type of Gate

SlideWinder meets all UL listing Class requirements

Class I

Intended for use in a home of one to four single family dwellings, or a parking area associated with a one to four single family dwelling.

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 buildings 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.

Gate Moves Freely

Make sure the gate moves freely in BOTH directions. A gate that moves easily reverses with less contact force.

Gate Speed Must Meet UL Speed Restriction

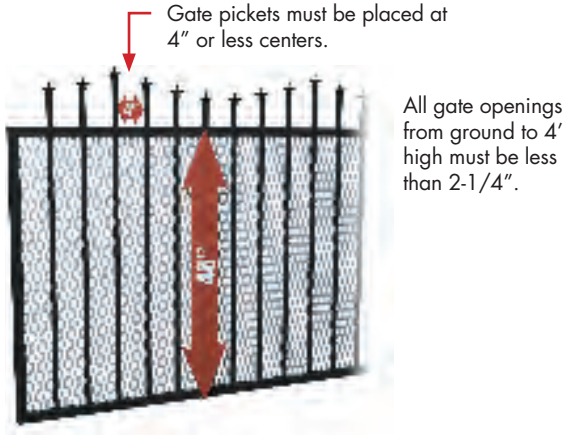
Sliding gate operators installed in Class I & II applications must not move the gate faster than one foot per second. Operators in class III and IV do not have a speed restriction. SlideWinder must be installed and configured to meet the UL user classification.

No Pedestrian Use

The automated entry must be for vehicles only. Pedestrians must be directed to a separate walk-through entrance.

Screen or Enclose Openings in Gate

Do not install an automatic operator on a gate not in compliance with the latest ASTM F2200 Standard. Provide guards and/or screening of any openings from the bottom of the gate to at least 4 feet (1.2 m) above the ground, to prevent a sphere 2¼ inches (57 mm) 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. Gate may be screened as in illustration, or gate may have 2" or less space between pickets. All openings between 48" and 72" above grade must be small enough to prevent a 4" sphere from passing through the opening.



Never Install Access Control Devices Within Reach of Gate

Never install access control devices within reach of gate. People attempting to use the operator can be seriously injured or killed by the moving gate. See below for proper access control placement.

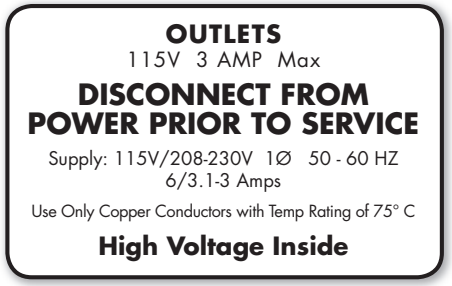
Operator Mounted on Secure Side of Gate

Install the operator inside the gate on the secured (non-public) side so that only authorized users can touch or access any part of it. Gate operating controls must be mounted far enough away from the moving gate (6-feet minimum) such that users cannot touch the gate while operating controls. All easily accessible controls must have a security feature to prevent unauthorized use.

Incoming Power Matches Operator Voltage

Check electrical ground and AC power supply.

The operator must be properly grounded and intended supply voltage must match the voltage label on the operator. SlideWinder operates using any SINGLE PHASE AC power.



Locate Reset Controls Where User Has Clear View of Gate

The Open and Stop inputs also perform a reset function and must be located such that the user will have a clear view of the gate. Connect radio and other remote access, non-reset controls only to the Remote Open input (Smart Touch Controller Terminal #4).

Install Physical Stops

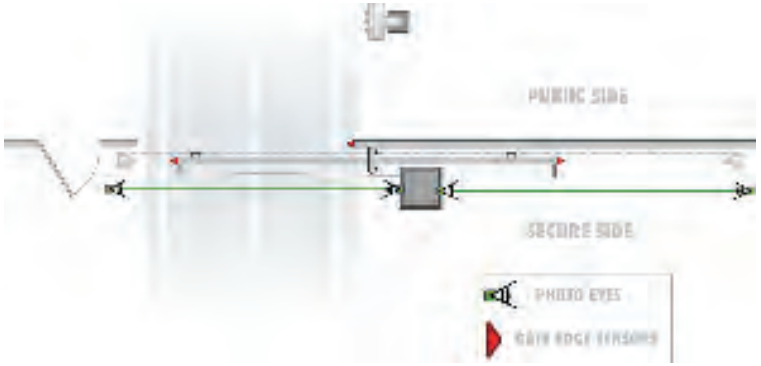
Install physical stops to prevent over-travel in both directions and **guard posts** to prevent the gate from falling if a roller fails.

Install Mechanical Guards on All Exposed Pinch Points, Rollers and Wheels

Verify that you have covers installed on all exposed gate support wheels to prevent pinch points. Insure that the entire gate installation meets ASTM exposed pinch point spacing requirements. For full details, look up the latest ASTM F2200 Standard Specification for Automated Vehicular Gate Construction at www.astm.org.

Install External Entrapment Sensors

Carefully review this guide's instructions for placement, installation and adjustment of these sensors. External entrapment protection sensors must reverse gate while opening AND closing. If edge (contact) sensors are used, mount them on both leading and trailing gate edges, as well as on any posts on the inside and outside of the gate. If photo eyes or other non-contact sensors are used, mount them as close as possible to the gate where they can best guard against entrapment. You can use a combination of contact and non-contact sensors, but all must be recognized components under the UL 325 standard. See pages 14 - 15 and 77 - 82 for more details on these and other requirements.



Install Warning Signs

Install the warning signs supplied with Slidewinder on the INSIDE and OUTSIDE of Gate so they are clearly visible from both sides of the gate.

Don't Install Slide Gate Operator Where Gate Will Move Up or Down Hill

The ASTM F2200 standard dictates that automated slide gates not be installed in a manner that could allow a gate to run away in an open or closed direction. This standard requires that in order to be compliant, any automated slide gate must be nearly level.

Secondary pedestrian entrapment sensors

⚠ WARNING: To reduce the risk of serious injury or death, read and follow all Installation Manual, Reference Manual and Warning Label instructions.

Automatic gate operators are intended only for vehicular use and pedestrians must be routed to a separate pedestrian gate. However, sensors are still required in order to provide a degree of protection should anyone stray into the area of an automatic gate. Generally there are two types of external sensors that may be used: Contact sensors, such as edge sensors, and non-contact sensors, such as photoelectric eyes. 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 there are alternatives for Class III and IV installations, HySecurity highly recommends the use of external sensors for all automatic gate applications.

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

PHOTOELECTRIC EYES 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.

CONTACT SENSORS One or more contact sensors (edge sensors) shall be located at the leading edge, trailing edge and post(s) mounted both inside and outside of a sliding gate.

CONTACT SENSOR SECURITY A hardwired contact sensor shall be located and its wiring arranged so that communication between the sensor and gate is not subjected to mechanical damage.

CONTACT SENSOR COMMUNICATION 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.

UL 325 LISTING 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 safety illustrations in this manual's Installation section and consider your specific installation to determine where greatest entrapment risks exist. Locate edge sensors and/or photoelectric sensors accordingly. Be certain that a sufficient number of sensors are used so that both directions of gate travel are properly guarded.

Go to www.ul.com for the most up-to-date list of gate operator Underwriter Laboratory standards (UL 325). Go to www.astm.org for a complete list of ASTM F2200 gate and fence standards.

Underwriter Laboratories (UL) and the American Society for Testing and Materials (ASTM) are responsible for many current regulations regarding gate operators and automated gates. These standards are revised periodically. Go to www.ul.com for the most up-to-date UL 325 gate operator standard. Go to www.astm.org for the most up-to-date ASTM F2200 gate and fence standard.

UL 325 standards for entrapment protection devices

Gate Operator Category

Horizontal Slide
Vertical Lift
Vertical Pivot
Swing Vertical
Barrier (arm)

Note: The same type of device shall not be utilized for both primary and secondary entrapment protection. Use of a single device for 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 one Type B1 for one direction and one Type B2 for the other direction is the equivalent of one device and is in compliance with the requirements of either primary or secondary of entrapment protection.

Usage class	Primary*	Secondary*	Primary*	Secondary*
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

*Entrapment protection sensor types:

Type A	Inherent entrapment sensing systems.
Type B1	A non-contact sensor (photoelectric sensor or equivalent).
Type B2	A contact sensor (edge sensor device or 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.

Go to www.ul.com for the most up-to-date UL 325 gate operator standard. Go to www.astm.org for the most up-to-date ASTM F2200 gate and fence standard.

Notes

Safety for Owners and Users

Review this important information thoroughly before operating your automated gate system

Installers: Be sure that owners and users are shown this important information.

Automatic gates are a great convenience. Yet like other powerful equipment they have to be installed, used and maintained properly to work correctly. Educate all gate system users about the following important do's and don'ts:

⚠WARNING

MOVING GATE CAN CAUSE SERIOUS INJURY OR DEATH.

Automatic gate operators move gates with high force. Gate and operators must be installed and used in a way that reduces the risks of people being struck or entrapped by the moving gate. To reduce the risk of serious injury or death, carefully follow all applicable standards, and instructions in this SlideWinder manual and all warning labels. Owners must educate all gate system users about proper use of an automated gate system.

OWNER SAFETY

No Pedestrian Use

The automated entry must be for vehicles only. Pedestrians must be directed to a separate walk-through entrance.

Gate Operating Controls Must Not Be Within Reach of Gate

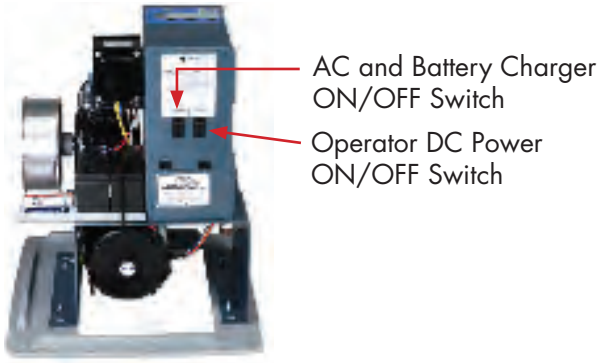
People attempting to use the operator can be injured or killed by the moving gate. All operating controls must be located at least six feet away from any moving gate parts. Never try to operate the gate by reaching between, through or around the fence or gate.

Never Allow Children to Use or Play with Gate Controls, Gate or Operator

Keep all remote controls, especially radio transmitters, away from children. Make sure children are prevented from playing on or around gate.

Manual Gate Operation

Teach all users how to turn off electric power and how to move the gate manually. SlideWinder allows a gate to be pushed manually when the Operator DC Power switch is turned off.

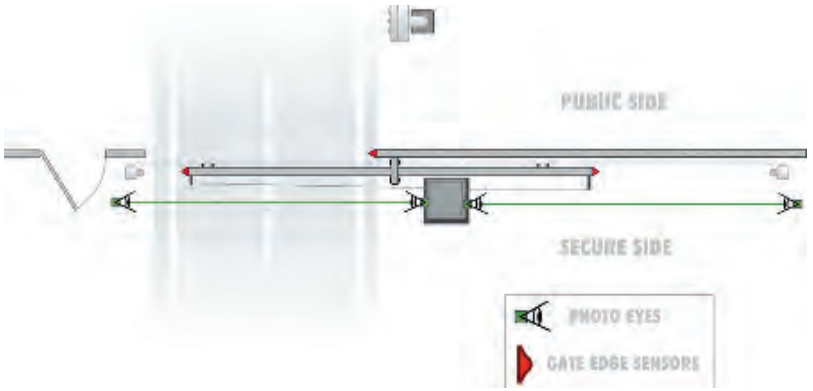


Test Gate Reversing Sensors Monthly

The gate must reverse its direction of travel upon contact with a rigid object, and/or stop when it senses a second activation signal in a row before it reaches its full travel limit. Also test for the normal function of any contact or non-contact sensors. If the gate system uses a transmitting edge sensor, be especially certain to test and replace its battery regularly.

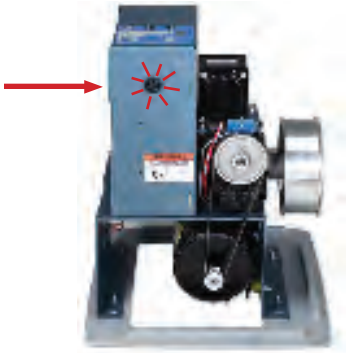
Maintain Gate System Professionally

Have a professional gate installer routinely test the entire gate operator and entrapment protection sensors, such as photo eyes and gate edges. Repair gate hardware as necessary to keep the gate running smoothly. Failure to adjust and test a gate operator properly can increase the risk of injury or death.



Don't Muffle or Disconnect Warn Before Operate Buzzer

The **Warn Before Operate Buzzer** provides an alert that the gate is about to move.



Notes

Notes

Notes

SlideWinder Installation

Step-by-step

1. **LOCATE CONDUITS, POUR PAD and MOUNT SLIDEWINDER** using a template to locate conduit and drill anchor bolts. Pages 26-29.

   Mount base riser (Optional) for installations that require additional height for snow accumulations, retrofitting SlideWinder to existing, non-conforming conduit locations, for placement of larger batteries for extended operator cycling after AC failure, or for easier access to operator controls.

2. **SET BELT TENSION** SlideWinder's belt must be tensioned after bolting chassis to pad. SlideWinder's drive is active even when stopped. Page 30.

3. **CONNECT POWER** You may install SlideWinder without access to AC power, using SlideWinder's pre-charged batteries for cable installation and many post installation cycles. Page 31.

4. **SET SLIDEWINDER UL 325 USER CLASSIFICATION** Pages 32 - 33.

5. **SET SLIDEWINDER GATE HANDING** (left or right hand gate). Pages 34 - 35.

6. **ATTACH CABLES TO SLIDEWINDER AND GATE** Pages 36 - 45.

7. **SET OPEN AND CLOSE LIMITS** Pages 47 - 48.

8. **ATTACH LIMIT TARGET (PICKLE)** Pages 49.

Pad and Conduits

Pour pad and mount SlideWinder

1. **PAD PLACEMENT**
   Pad and SlideWinder must be placed so the Polyethylene mounting base (facing gate) is a minimum of 1″ from the face of the gate. SlideWinder may be placed farther away to meet site requirements.

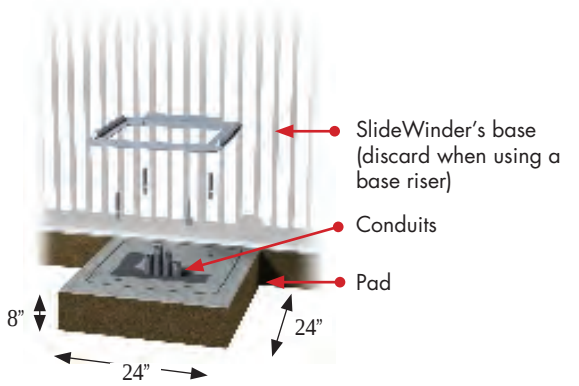
2. **MINIMUM PAD DIMENSIONS**
   Recommended pad dimensions: 24″ x 24″ x 8″ or larger. Depth is dependent on local climate conditions. Build pad depth below frost line.

3. **LEVEL / SQUARE PAD**
   Make sure pad is level in all directions.

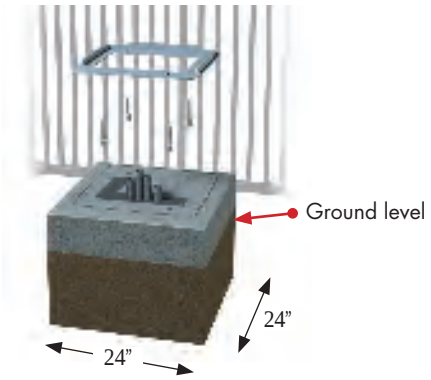
4. **USE OPERATOR or TEMPLATE**
   Use SlideWinder Polyethylene base or a template to locate and drill pad mounting holes and to determine conduit placement. NOTE: Conduit location is different for standard SlideWinder, SlideWinder with 12″ base riser, or SlideWinder with 12″ base riser and larger batteries.

5. **BASE RISER (Optional)**
   Use base risers if needed for snow conditions, easier conduit routing (retrofit non-conforming conduit locations) or to house larger batteries for more gate cycles in the event of AC power outage. The base risers can be cut down and used as a skirt to enclose installer-manufactured risers.
   DO NOT use Intermediate Polyethylene mounting base when using base riser.

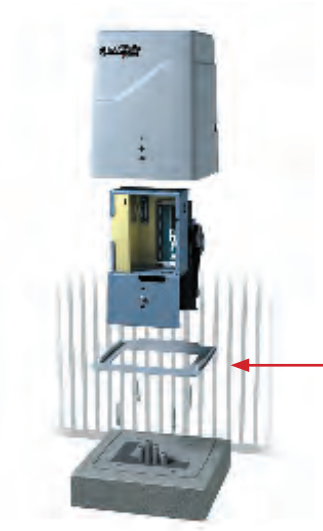
6. **MOUNT SLIDEWINDER**
   Mount SlideWinder to pad using four ½″ by 4″ min. anchor bolts (not supplied)



A. Operator pad and V-track pad poured on ground level, 8″ minimum depth.

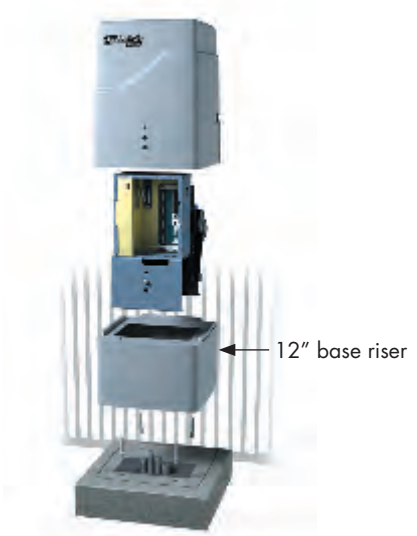


B. Above ground operator pad. Determine pad depth based upon local frost conditions. Pads must be poured below frost line.



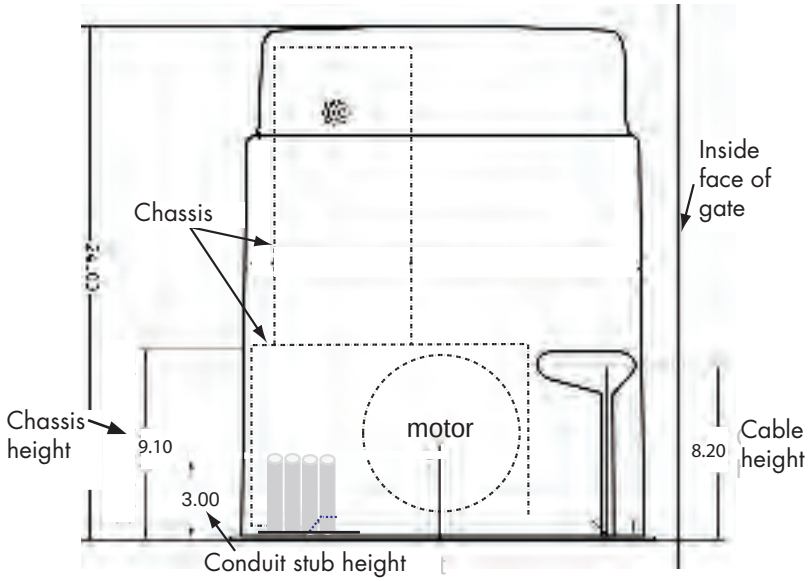
SlideWinder comes with a Polyethylene mounting base attached to chassis. Discard when using a base riser.

C. SlideWinder – no base riser. Attached Polyethylene mounting base is retained.

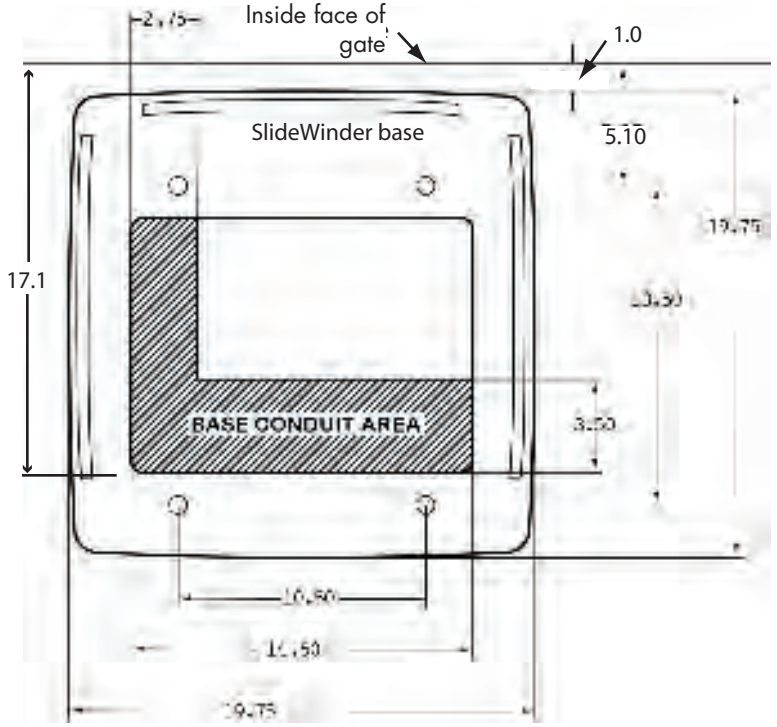


D. SlideWinder with 12″ base riser. Eliminate Polyethylene mounting base that comes attached.

Conduit locations / SlideWinder dimensions



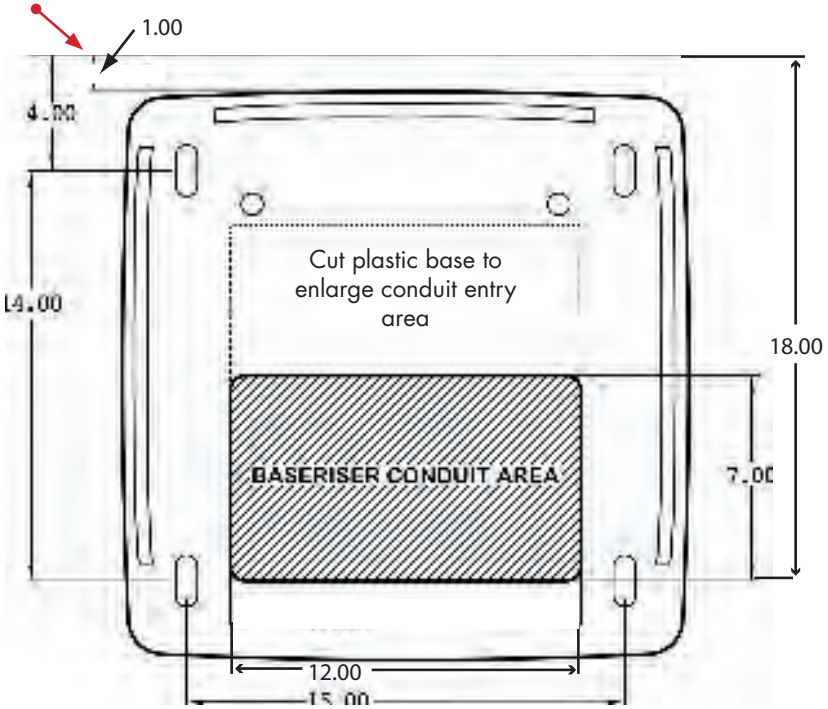
SlideWinder Profile



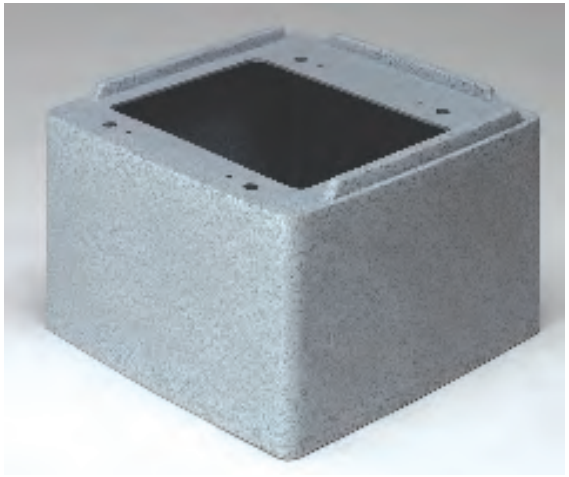
SlideWinder (no base riser)

Conduit locations / SlideWinder with base riser

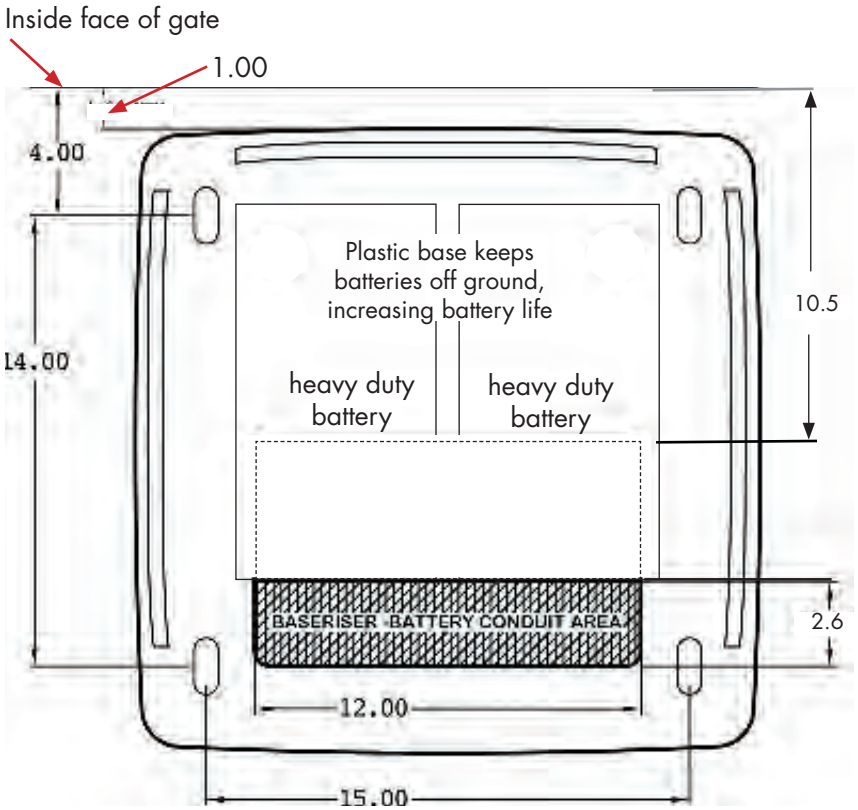
Inside face of gate



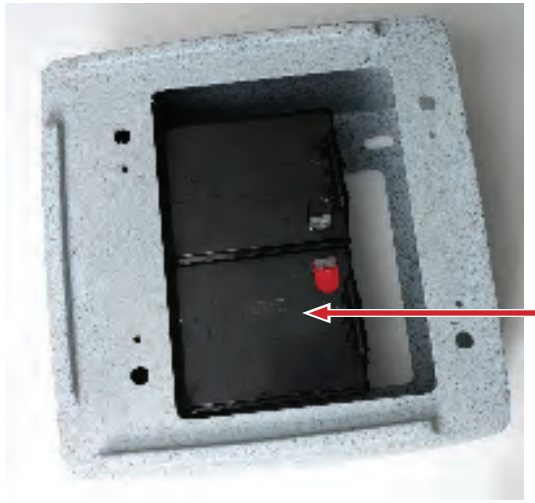
SlideWinder with 12″ base riser



Conduit locations / SlideWinder with base riser and heavy duty batteries



SlideWinder with 12" base riser
AND heavy duty batteries

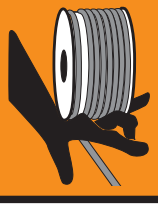


Mechanical Adjustments

Set belt tension

ATTENTION

SlideWinder's belt must be tensioned after bolting chassis to pad. SlideWinder's drive is active even when stopped. Turn off DC power before procceding.

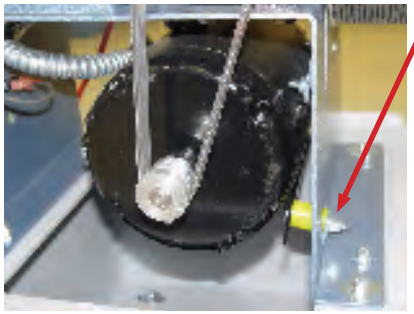


⚠WARNING

Pinch Hazard. Risk of serious Injury. Make sure DC power is off before removing belt cover or adjusting belt tension.

1. With DC power off and machine bolted to the pad, remove the belt cover.

2. Place a straight edge on the belt long enough to span both pulleys. Pull the belt with two fingers from the middle of the span. The belt should deflect no less than 1/2" nor more than 5/8".



3. If tension is out of range, adjust the nut at the front base of the machine. Tightening nut increases tension.

Power Specifications and Connections

Connect power

ANY SINGLE PHASE AC

SlideWinder recognizes and adjusts automatically to any single phase power (no special wiring).

- 115 VAC
- 208 VAC
- 230 VAC
- 50 or 60 Hz.

NO AC NECESSARY FOR INSTALLATION

Don't wait for the electrician. SlideWinder's batteries come fully charged, with power to spare for installation and many gate cycles.

CONDUIT CONNECTIONS

SlideWinder is intended for permanent installation. All conduits must be properly connected to control box.

WIRE SIZE vs. DISTANCE IN FEET*

	12 gauge	10 gauge
120V	1000'	1,600'
208 - 230V	2,000'	3,200'

*If two SlideWinders are on one circuit, reduce allowable distance to half the amount shown above.

Power Connection (not necessary for initial installation)

1. Open AC wiring panel.

2. Feed AC wires through pad into conduit.

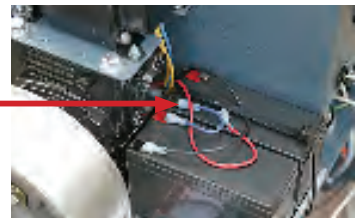
3. Feed AC wires through conduit into wiring panel. Secure to chassis.

4. Attach black, green and white wires with wire nuts or crimp bonds.

5. Secure wiring box with cover plate.

Battery Connection

1. Connect loose red spade connector to unconnected red battery terminal.



User Class and Handing

Installer menu settings: User class and hand

When you power up the SlideWinder for the first time, it immediately takes you to the **Installer Menu Mode** to set two functions only: **UL 325 User Class** and **Gate Handing**. These settings are mandatory before proceeding to next installation step: installing brackets and cables.

UL 325 user classes

Class I

Intended for use in a home of one to four single family dwellings, or a parking area associated with a one to four single family dwelling.

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 buildings 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.

Set UL 325 user class

Smart Touch Essentials

SlideWinder is programmable through the Smart Touch membrane keypad located on top of SlideWinder's chassis. In Operate Mode, these buttons also control the operator functions Open, Close, Stop and Reset.

Program functions are accessed by pressing the Program Menu button. When turning on SlideWinder's power for the first time, you're automatically routed to SlideWinder's program functions. You must program SlideWinder's UL 325 Class and gate handing before any other programming or gate operation.

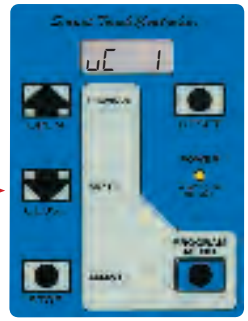
In program mode, SlideWinder's buttons change from

OPEN	**to Previous**
CLOSE	**to Next**
STOP	**to Select**

After selecting UL Class and gate handing, SlideWinder immediately reverts to Operate mode, allowing you to attach the cable to the gate and operator and then set SlideWinder's "never forget" limits.

1. Turn on DC power switch
(You can also turn on AC power—but AC is not required for installation)

2. When you turn on DC power, the LCD display reads UL 0 (User Class undefined). Press the Select (Stop) button. The display flashes, indicating you may scroll through that menu item's choices using the Previous and Next buttons.



or

3. Then, Push the PREVIOUS or NEXT button (Open or Close) to scroll display until you reach the UL 325 User Class for your application. Display reads UL 1, UL 2, UL 3, or UL 4.

4. When you've chosen the appropriate UL 325 User Class, push the SELECT (stop) button to select the User Class on the LCD display.

In this example, UL 1 was chosen for UL User Class 1 (up to 4 single family residential units).

Setting	LCD Display	Effect
UL 325 User Class 0	UL 0	Default (no setting)
User Class 1	UL 1	Single (up to 4 units) Family Residential
User Class 2	UL 2	Commercial, multi-family residential, serving public
User Class 3	UL 3	Non-public, industrial
User Class 4	UL 4	Guarded, non-public Industrial or prison

Determine gate handing

Do you have a left or right hand gate?

LEFT HAND GATE OPENS LEFT
when looking from the secure, non-public side of gate.

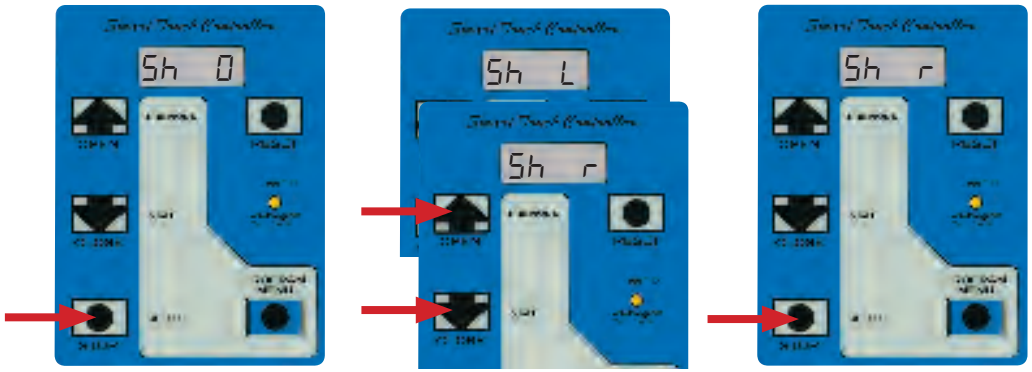
GATE LEADING EDGE
Closest to the road

GATE TRAILING EDGE
Farthest from the road

RIGHT HAND GATE OPENS RIGHT
when looking from the secure, non-public side of gate.

Set gate handing

After you pushed **Select** to choose **User Class** in the previous section on page 33, pushing **Previous or Next** takes you to **Gate Handing**.



1. Push Select button
Sh (set handing) starts blinking, indicating you can scroll through handing options using Previous and Next buttons.

2. Push Previous or Next button to scroll to:
Left Hand Gate Sh L
Right Hand Gate Sh r

3. Press Select button to set choice
SlideWinder beeps once and resets.

4. Ready to attach cable brackets
SlideWinder's LCD screen continuously flashes 3 messages:

LErn CLoS 000_0

and beeps 3 times every minute, telling you it is ready to electronically learn its limits. The next step instructs you to attach cable brackets and SlideWinder's cable prior to having SlideWinder learn its "Never Forget" limits.

Setting	LCD Display	Effect
No Handing Set	Sh 0	Default (no setting)
Set Hand Right	Sh r	Right Hand: opens to right as seen from secure side
Set Hand Left	Sh L	Left Hand: opens to left as seen from secure side

Installing Brackets and Cables

Overview
Right hand gate – CLOSED

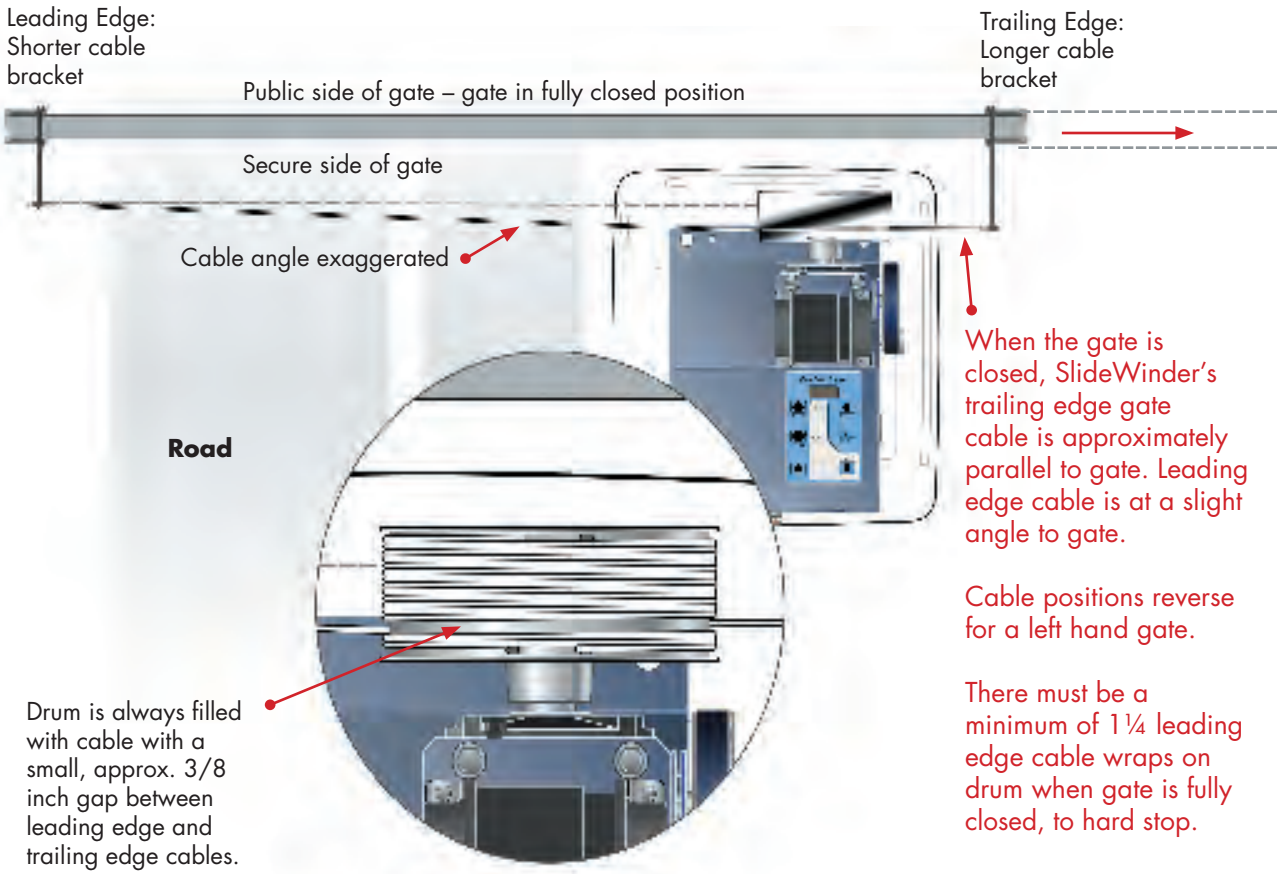
(See page 45 for left hand gate)

NOTICE!

SlideWinder's cable must be installed, in order, in the following steps. Failure to read and follow these instructions will lead to operator malfunction and or cable failure.

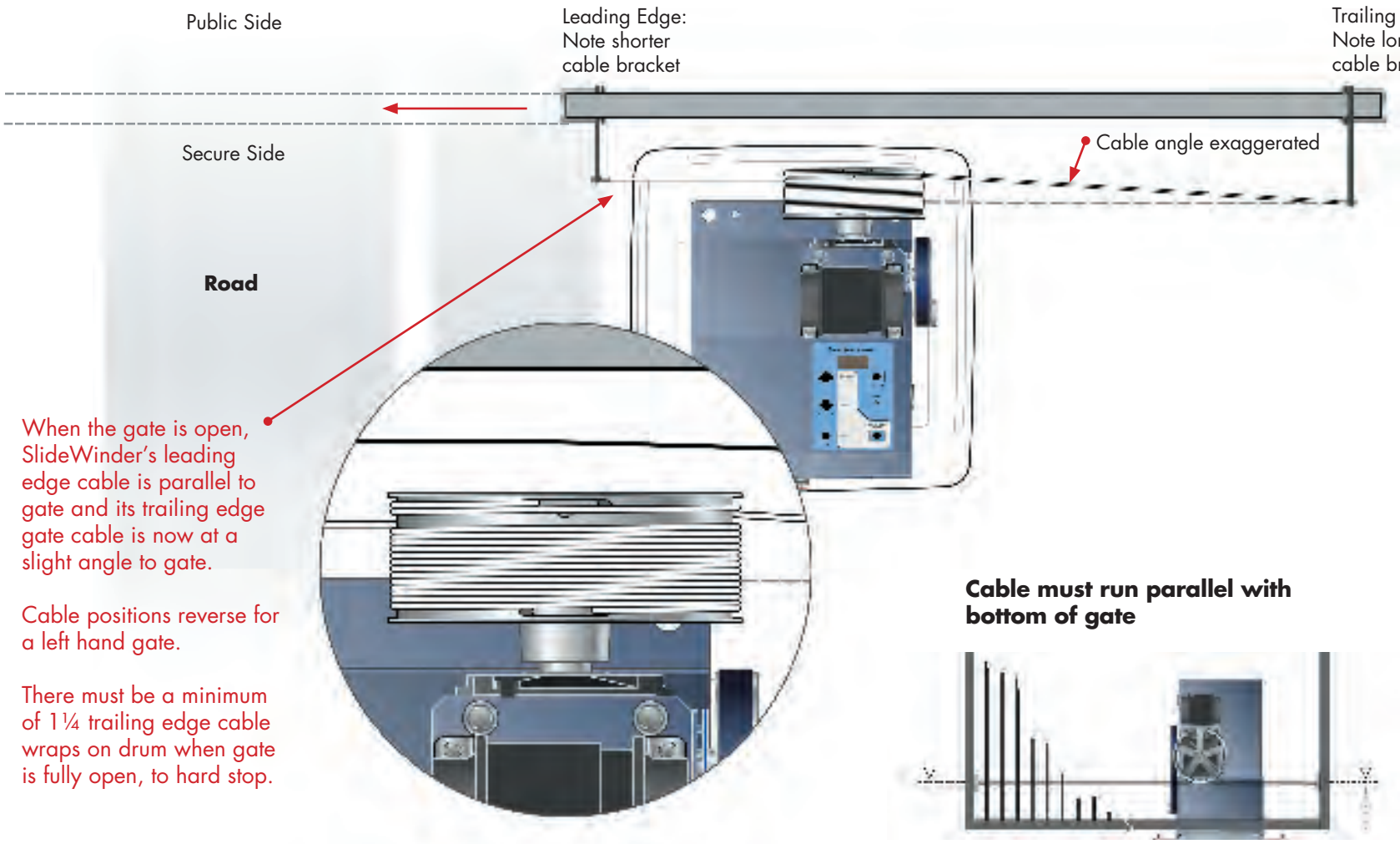
OVERVIEW

1. Attach leading edge gate bracket (temporarily).
2. Attach trailing edge gate bracket (temporarily).
3. Attach leading edge cable to drum, then bracket.
5. Adjust bracket to align cable.
6. Attach trailing edge cable to drum, then bracket.
7. Adjust bracket to align cable.
8. Weld or U-bolt leading edge bracket to gate.
9. Weld or U-bolt trailing edge bracket to gate.
10. Tension cable, run gate several cycles, then retension cable.
11. Trim cable



Overview
Right hand gate – OPEN

(See page 45 for left hand gate)



When the gate is open, SlideWinder's leading edge cable is parallel to gate and its trailing edge gate cable is now at a slight angle to gate.

Cable positions reverse for a left hand gate.

There must be a minimum of 1¼ trailing edge cable wraps on drum when gate is fully open, to hard stop.

Cable must run parallel with bottom of gate

Temporarily attach LEADING EDGE bracket

1. Measure distance . . .
between gate face and drum face. Add 5/8 inch to measurement to set the proper distance of the cable bracket hole from the gate face.

2. Measure height. . .
top of gate frame to bottom-center lip of SlideWinder's drum.

Use same measurement to set the center height of both leading and trailing cable brackets.

3. Temporarily, C-clamp
leading edge gate bracket to gate using the two dimensions. Bracket must be attached to inside of gate frame as pictured above.

Now, you're ready to temporarily attach **trailing** gate bracket to gate. See illustration on pages 36, 37 and 44 for right hand gate final alignment; 45 for left hand gate.

NOTICE

DO NOT ATTACH BRACKETS PERMANENTLY

Cable alignment is critical to successful SlideWinder operation. Do not permanently attach cables until later, after cables have been attached and you have aligned brackets.

NOTE: Tubular cable bracket must be attached to the inside of gate frame.

Temporarily attach TRAILING EDGE bracket

4. Temporarily attach trailing edge gate bracket

Use same vertical measurement as you used for Leading Edge Gate Bracket. Use chart at right to determine distance of the hole in the cable bracket from face of gate.

NOTICE

DO NOT ATTACH BRACKETS PERMANENTLY

Cable alignment is critical to successful SlideWinder operation. Do not permanently attach cables until later, after cables have been attached and you have aligned brackets.

Gate Travel	Distance from gate face to face of SlideWinder Drum *Use measurement from page 32.*	Add	Distance from gate face to hole in gate bracket
12′ - 16′	+ _____ ″	+ 1 1/2	= _____
16′ - 20′	+ _____ ″	+ 1 7/8	= _____
20′ - 24′	+ _____ ″	+ 2 1/4	= _____
24′ - 28′	+ _____ ″	+ 2 1/2	= _____
28′ - 32′	+ _____ ″	+ 2 7/8	= _____
32′ - 36′	+ _____ ″	+ 3 1/8	= _____
36′ - 38′	+ _____ ″	+ 3 1/4	= _____

5. Determine distance bracket hole extends beyond gate frame using above chart

The trailing edge gate bracket extends farther from gate frame than the leading edge bracket. See diagram on page 37.

Attach leading gate cable to drum

(Right hand gate pictured: Instructions fit left or right hand gate)

NOTICE

DO NOT WRAP CABLE MANUALLY

Only wrap cable onto drum using Smart Touch controller's Open and Close commands to automatically feed it onto drum. Manually wrapping cable twists it, resulting in cable wear and possible operator malfuction.

Right hand gate pictured

(opens to right when viewed from secure side)

1. **Open gate to hard stop**
   Manually push gate to fully open position. NOTE that this is a right hand gate. Left hand gate will appear opposite.

2. **Lay out leading edge** cable. Stretch road-side (leading edge) cable with crimped ball end nearest SlideWinder and lay across roadway towards gate closure.

3. **Attach cable to drum**
   Put leading edge gate cable into slot on inside of drum (nearest chassis), feeding cable from drum bottom.

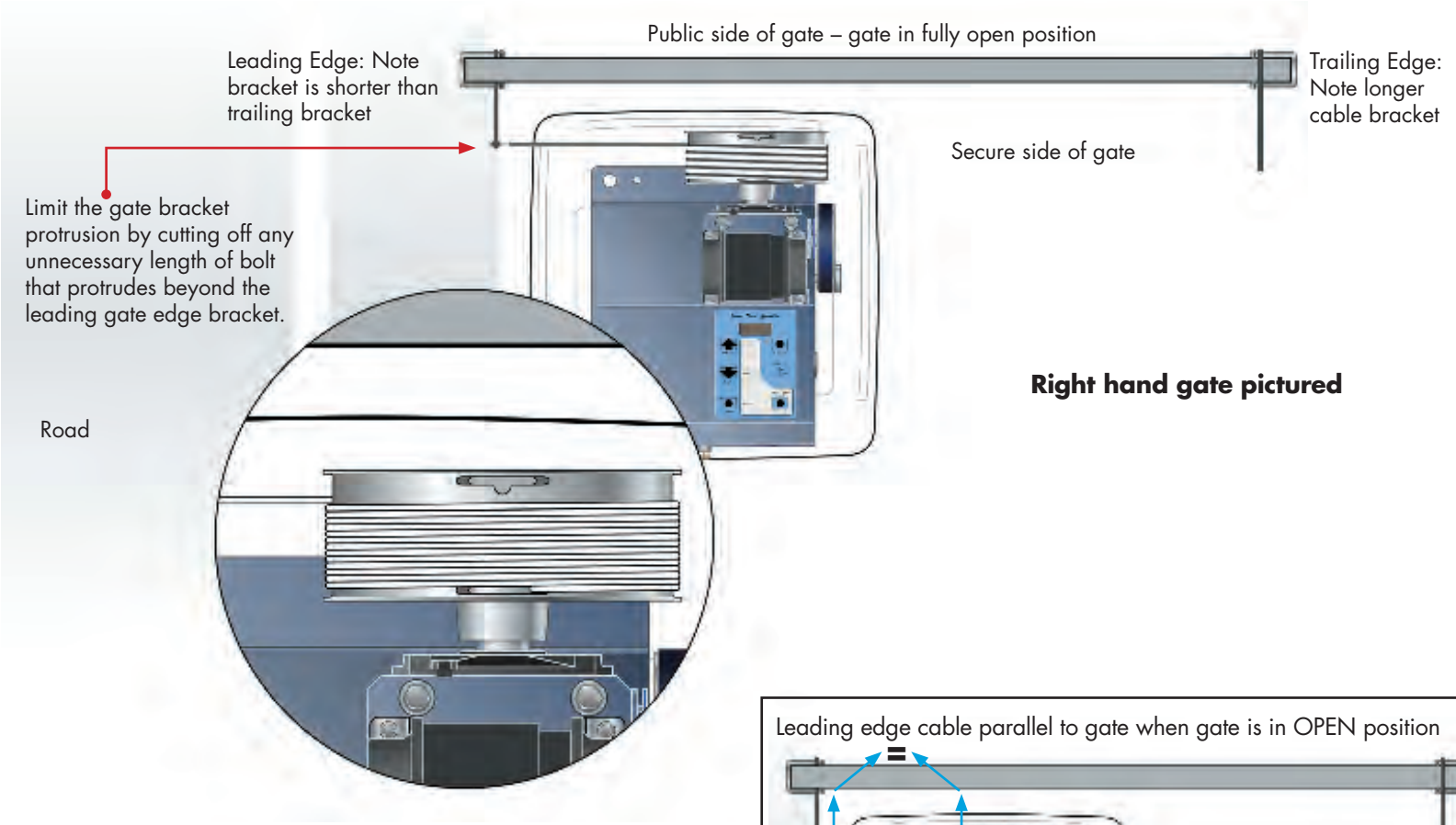
4. **Feed cable onto drum**
   While holding cable with a gloved hand, about a foot away from the drum, push and hold OPEN button, causing drum to feed cable from bottom inside of drum.

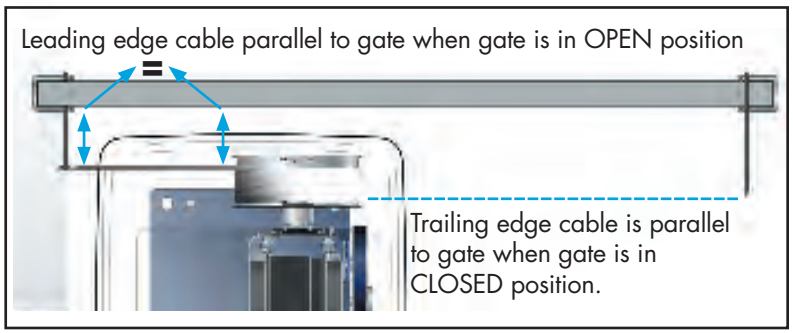
   If cable winds over top of drum, gate handing needs to be reversed. See pages 35 - 37 and page 60 in Installer Menu.

Continued on page 42

Leading edge gate cable attachment and bracket placement

Attach leading edge cable first. This illustration shows leading edge cable attachment for a right hand gate. For a left hand gate, attach the right side cable first. For both left and right hand gates, leading edge cable must be parallel to gate when gate is open.





Feed approximately 13¼ leading edge cable wraps onto drum for SlideWinder 24 as pictured; 20¼ leading edge cable wraps for SlideWinder 38, leaving room for at least 1¼ cable wraps for either operator. Note: You must wind the proper leading edge cable wraps as above in order to get a full 24-feet of gate travel (SlideWinder 24) or a full 38-feet of gate travel (SlideWinder 38).

Attach leading gate cable to drum; then attach bracket to gate

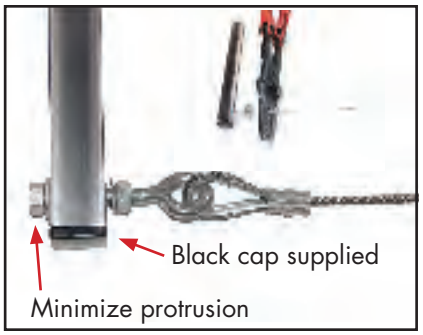
(Right hand gate pictured: Instructions for left or right hand gate installation)

5a. With your **gloved** hand keep feeding cable on drum. Carefully add cable by pressing and releasing the Open button, keeping cable wrapped tightly together.

5b. To keep cable wound tightly together, stop winding and manually push the wraps together several times. SlideWinder 24 drum pictured in this and previous photos.

SlideWinder 38 drum pictured

5c. Stop winding when you have a minimum space for 2 wraps of trailing edge cable and with the drum slots facing up (12:00 position). SlideWinder 24's drum will have approx. 13+ cable wraps when fully loaded. SlideWinder 38 will have approximately 20 cable wraps when fully loaded.



6. Attach cable to leading gate bracket using crimp tool. Adjust bracket so cable is parallel to gate face and bottom of gate rail when gate is fuly open. Minimize protrusions of threaded bolt end. Keep bolt at max extension for later cable tightening. See illustrations next page.

Cut this end of bracket

7. Cut leading edge tubular bracket in place and permanently weld or U-bolt to gate. Be certain to mount on inside of gate frame to reduce protrusion.

Eliminate slack but don't tighten cable yet.

See cable attachment illustration on next page

Attach trailing edge gate cable last

Right hand gate pictured

8. Lay out gate trailing edge cable

While gate is still in open position, Stretch SlideWinder trailing edge cable with crimped ball end nearest SlideWinder and lay toward end of gate.

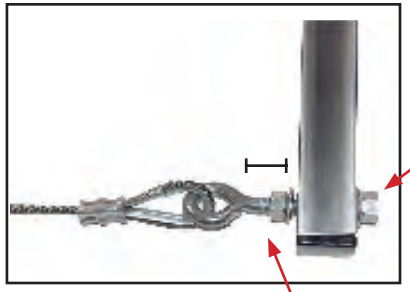
9. Insert cable into drum

Put gate tail cable into slot on outside of drum (close to gate), wrapping cable from drum bottom.

10. Hand wrap cable onto drum

Wrap at least 1¼ wraps by hand (don't use SlideWinder motor). This should leave empty space for about 1 open winding between leading edge and trailing edge cables.

11. Attach cable to gate bracket Tighten cable, but don't over tighten. Cycle gate closed so trailing gate edge is closest to SlideWinder. Adjust gate bracket so cable is parallel to face of gate and bottom gate rail. See illustration on page 41 and 44 - 45.



Minimize protrusion of threaded bolt end.

Note: Keep bolt at maximum extension for later cable tension adjustment.

12. Permanently weld and/or U-bolt trailing edge cable bracket, then cut off extra bracket length.

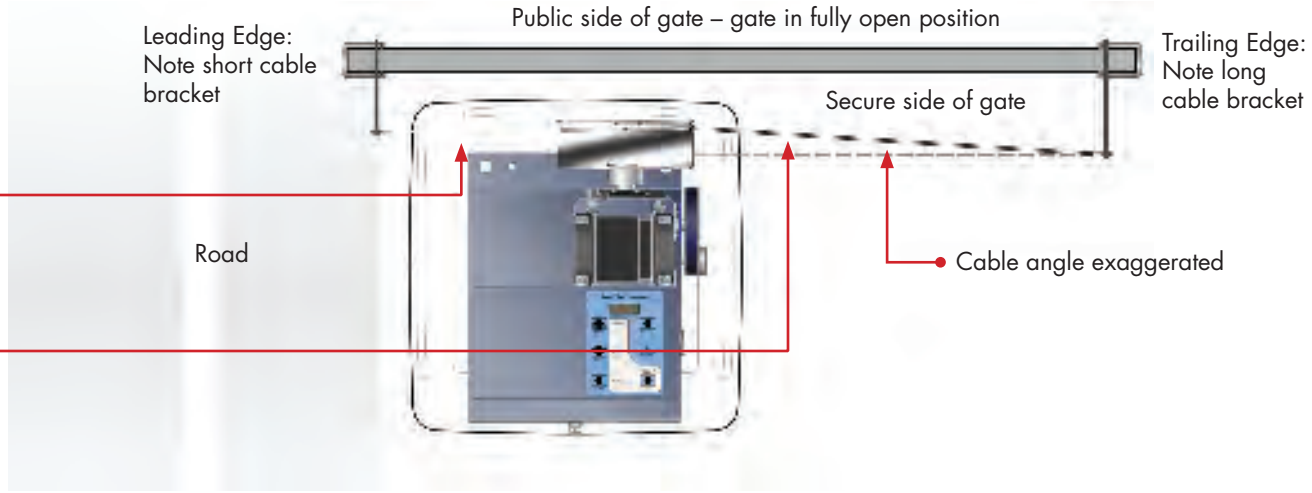
See cable attachment illustration on next two pages

RIGHT HAND GATE OPEN: Completed cable/bracket position

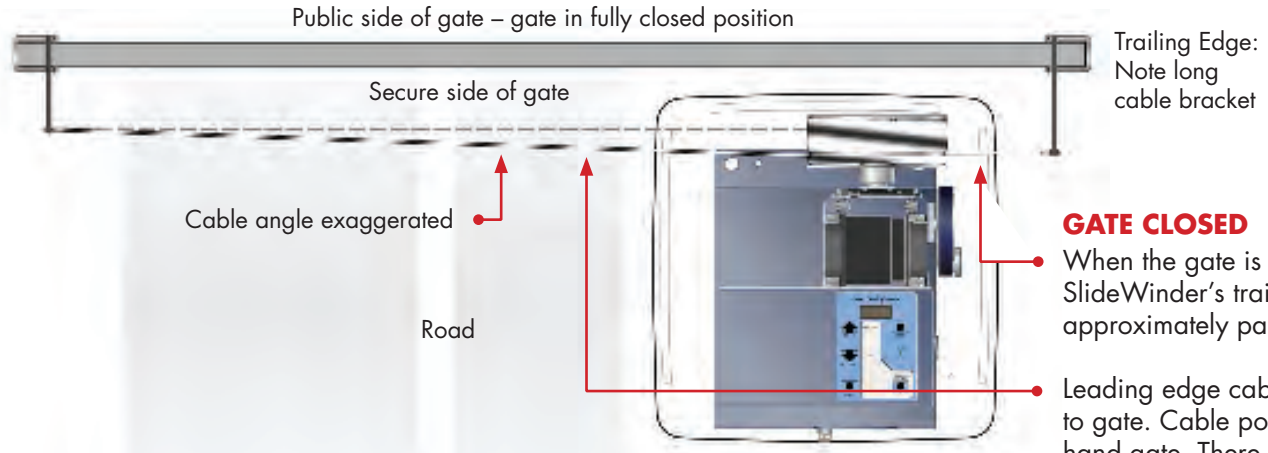
GATE OPEN

When the gate is fully open, SlideWinder's leading edge cable is approximately parallel to gate.

The trailing edge cable will be at a slight angle to gate. Cable positions reverse for a left hand gate.



RIGHT HAND GATE CLOSED: Completed cable/bracket position

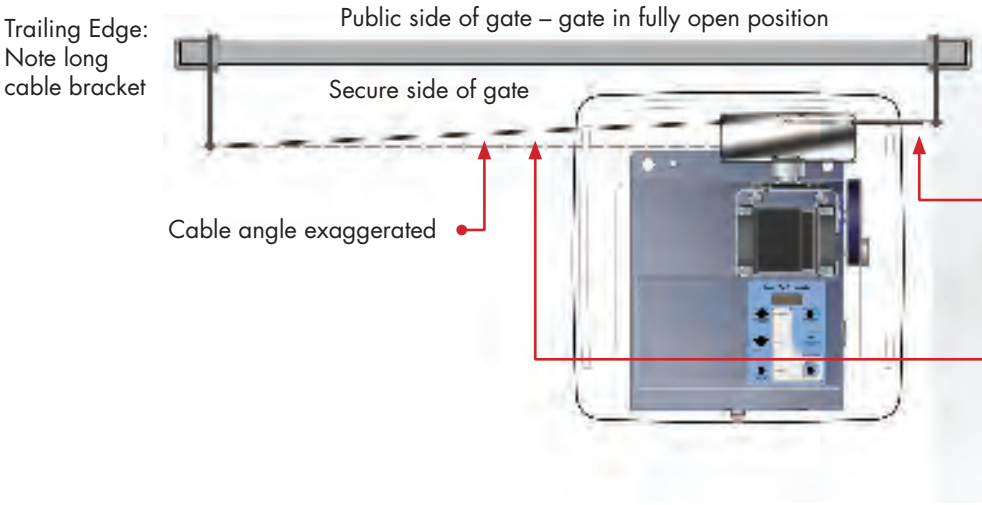


GATE CLOSED

When the gate is in fully closed position, SlideWinder's trailing edge gate cable is approximately parallel to gate.

Leading edge cable will be at a slight angle to gate. Cable positions reverse for a left hand gate. There must be a minimum of 1¼ leading edge cable wraps on drum when gate is fully closed.

LEFT HAND GATE OPEN: Completed cable/bracket position

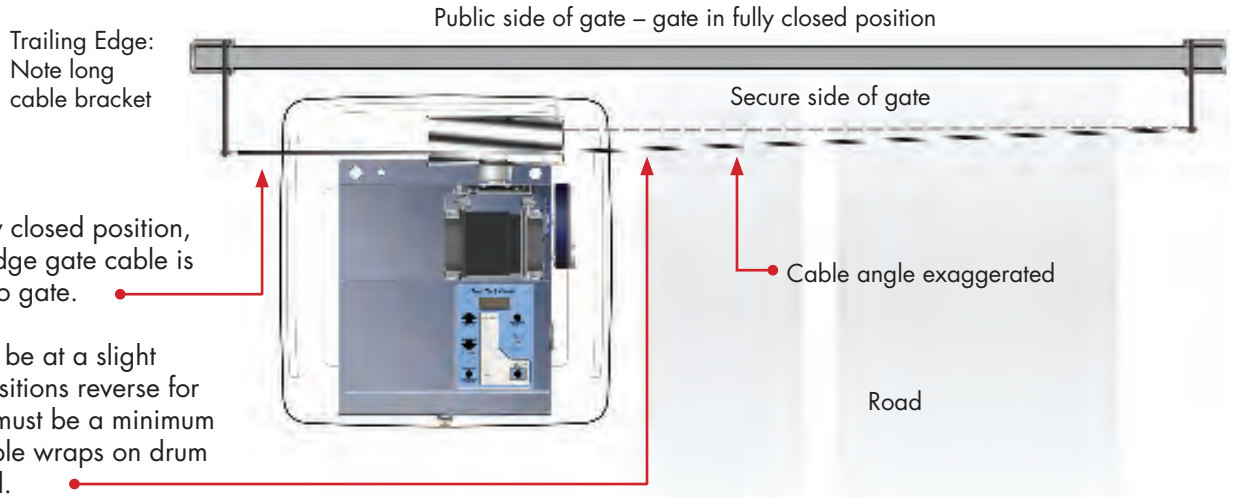


GATE OPEN

When the gate is fully open, SlideWinder's leading edge cable is approximately parallel to gate.

The trailing edge cable will be at a slight angle to gate. Cable positions reverse for a left hand gate.

LEFT HAND GATE CLOSED: Completed cable/bracket position



GATE CLOSED

When the gate is in fully closed position, SlideWinder's trailing edge gate cable is approximately parallel to gate.

Leading edge cable will be at a slight angle to gate. Cable positions reverse for a left hand gate. There must be a minimum of 1¼ leading edge cable wraps on drum when gate is fully closed.

Notes

"Never Forget" Limits

Set SlideWinder's "*Never Forget*" Open and Close limits

OVERVIEW

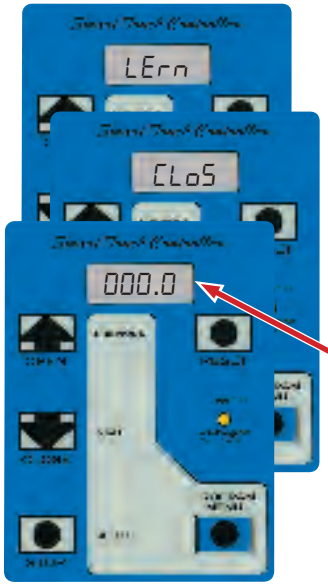
The next installation step sets SlideWinder's limits for the first time and guides you through installing SlideWinder's limit target (Pickle).

"*Never Forget*" limits
SlideWinder NEVER forgets its limits. Not when it loses AC power. Not when it loses AC and DC power. SlideWinder always remembers where to stop within a quarter inch.

Lose power? Limits remembered!
Should SlideWinder lose AC power, SlideWinder keeps running until its batteries are exhausted, usually for 25 or more cycles (standard batteries). If it loses AC and DC power, SlideWinder can't tell whether the gate was moved while power was out. When AC or DC power returns, SlideWinder automatically searches and locates its limit target (Pickle) and restores its original open and close limits.

AL 15 (AL 15)
AL 15 (Altert 15) indicates that SlideWinder has not found its limit target (Pickle). If SlideWinder loses power while signaling an AL 15, you are returned to Limit Learn mode to manually re-learn SlideWinder limits.

Set limits first, then install pickle
Don't install Limit Target (Pickle) until after you've set SlideWinder's limits. Installing Pickle first may damage SlideWinder by allowing the Pickle to be wound onto SlideWinder's drum.



SET CLOSE LIMIT

1. While attaching cable to SlideWinder and the gate, SlideWinder's LCD screen has been toggling the message:

LErn CLoS 000_0
(see note below)

LErn CLoS means that once the cable is attached, SlideWinder is ready to learn its "Never Forget" close limit.

000.0 is an inch and tenths of an inch counter showing SlideWinder's current gate position and allowing precise gate positioning. You may reset the counter to 000_0 by pressing the Reset button while in Learn Limit mode.

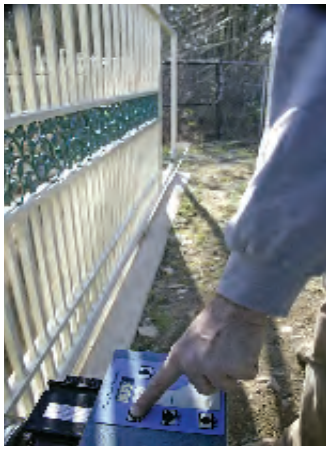
Note: The value shown will not be 000_0 since the gate moved during the earlier cable attachment sequence.

2. Push and hold Close button . . .
until you reach the gate's fully closed position. If you pass the fully closed position, take your finger off the Close button and push Open until you are satisfied that the gate is in its fully closed position. You can toggle between Open and Close as often as necessary to select the gate's exact closed position.

NOTE: SlideWinder 24 will not learn limits less than 10 feet nor greater than 24 feet. SlideWinder 38 will not learn limits less than 10 feet nor greater than 38 feet.

3. Push Stop (Select) button twice

Once the gate is at its exact closed position, push SlideWinder's Stop button twice (quickly). SlideWinder beeps to confirm the close limit setting.

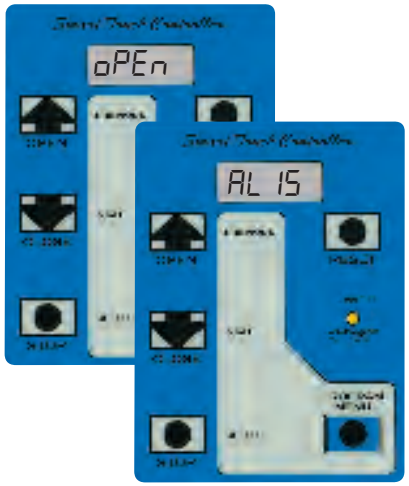


4. Set Open Limit

SlideWinder now toggles the message:

LErn oPEn 000.0

This message means SlideWinder is ready to learn its open limit. Simply follow the learn close limit procedure, this time moving the gate by pushing the Open button until it reaches its fully open position. After you've checked the accuracy of that position, push Stop (Select) twice quickly. SlideWinder beeps to confirm the open limit setting.



5. Ready to find "Pickle"

Now SlideWinder's LCD toggles the message:

oPEn and AL 15

AL 15 is an Alert indicating that SlideWinder hasn't found its Limit Target (Pickle). The Pickle is a limit detection backup device that you will install next.

Note: If you lose AC and DC power before SlideWinder's pickle is installed and/or located, SlideWinder takes you back to Step 1, Learn Close Limit.

ERASE & RELEARN LIMITS

It's easy to change your limits if you decide that your first limit settings are wrong. Simply, push the Program/Menu button twice and the display will read: cL 0. Now, push and hold the Reset button and while holding it, push the Open (Select) button.

This takes you to the Installer Menu. uC 1, 2, 3, or 4,appears on SlideWinder's display depending on the User Class you selected earlier.

- Push Open (Previous) or Close (Next) button–scroll to LL 0.
- Push Stop (Select) button. LL 0 blinks (Learn Limit default).
- Scroll Open or Close until display reads LL 1 (Relearn Limits).
- Push Stop (Select) to select Learn Limit mode.
- Push Program/Menu button and relearn limits.

SlideWinder is back in Limit Learn program mode. Follow previous **"Set SlideWinder's "Never Forget" Open and Close Limits"** instructions to reset close and open limits.

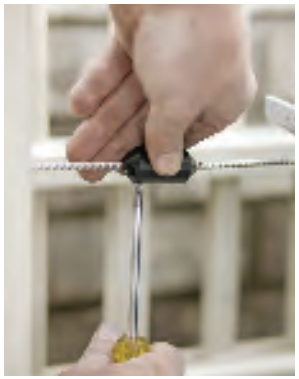
NOTE: SlideWinder 24 will not learn limits less than 10 feet nor greater than 24 feet. SlideWinder 38 will not learn limits less than 10 feet nor greater than 38 feet.

Attach limit target (Pickle) to cable

1. Open or close gate so that left gate edge (when facing gate from secure side) is closest to operator (may be open or closed depending on gate handing).

2. Using a Sharpie, or a piece of tape/wire, mark the cable approximately two inches away (exact position not critical) from where it begins winding on SlideWinder's drum (the cable on SlideWinder's left as you look at SlideWinder/gate from the secure side). This marks the proper end position of SlideWinder's Pickle.

3. After you've marked the cable, push OPEN or CLOSE on SlideWinder's membrane switch, moving the cable mark so it's visible, away from the drum. When it is visible, push STOP. This installer used a piece of electrical tape to indicate Pickle placement. Remove tape when you've attached and secured the Pickle.



Pickle Sensor
Pickle (at gate full travel, Pickle should be minimum of 2" from drum)

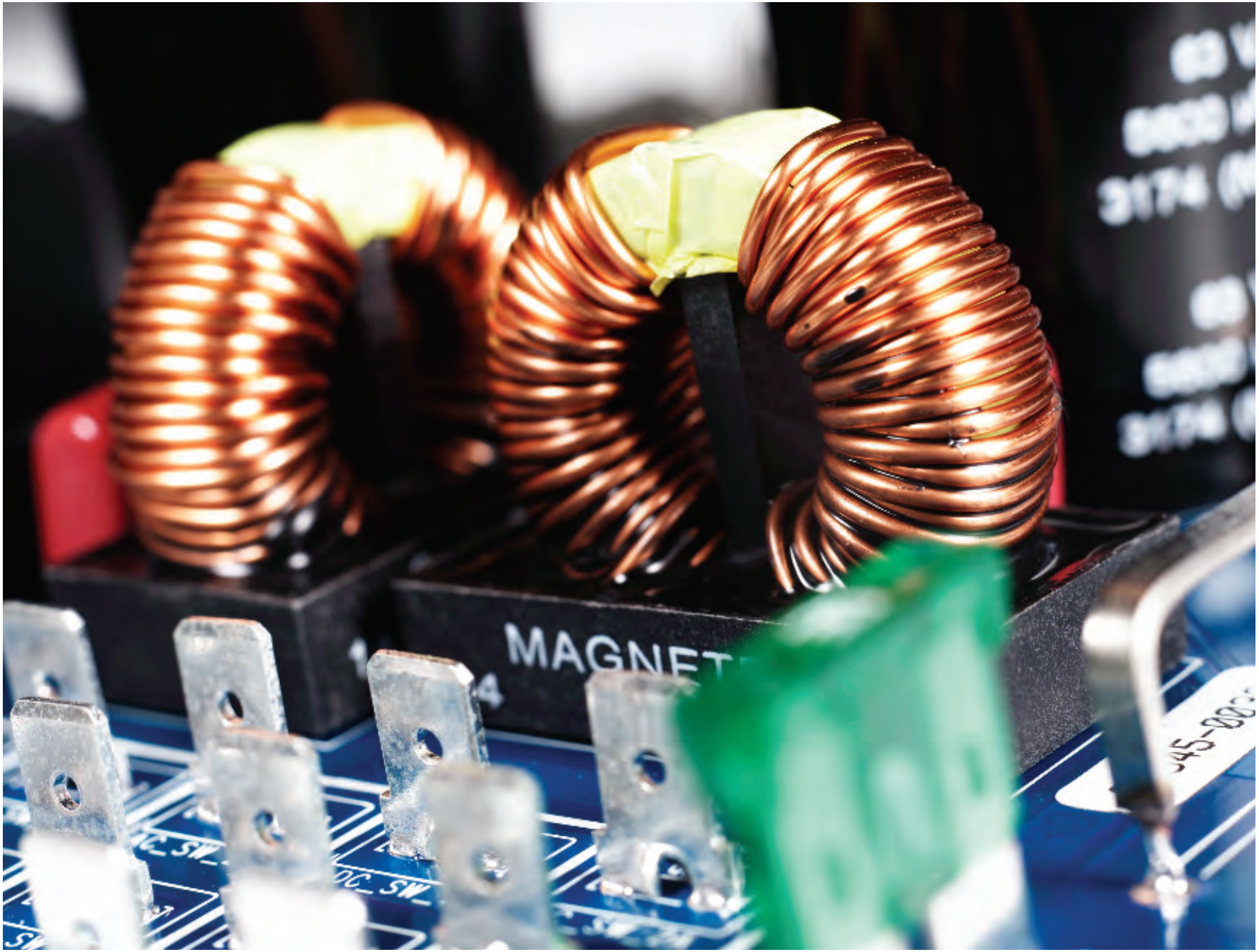
4. Learn the "Pickle"
SlideWinder "sees" the Pickle on its next cycle. When the Pickle travels underneath the Pickle Sensor, SlideWinder beeps and AL 15 (Alert 15) is erased, leaving SlideWinder's display reading OPEn, CLoS, or StoP, depending on position of the gate. If your display reads anything else, refer to Alerts, Faults and Errors in this manual's Reference/Troubleshooting section.

SlideWinder is now in Operate mode, ready for secondary entrapment sensors and other accessory installation.

Notes

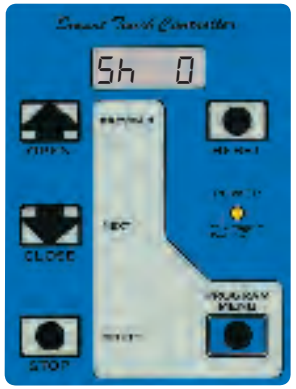
Notes

Reference


MAGNET

Basic operation

You must learn to navigate and change menu settings within the Smart Touch Controller before an installation can be completed or any control settings or function changes can be made. Until you configure a new operator, its controls don't function. SlideWinder's display is locked in Menu Mode until User Class 1-4, and Left or Right hand use have been selected (see pages 32 - 35).



1. There are five buttons on the membrane keypad that control everything. The Open, Close and Stop buttons serve as a three-button control station. In Menu Mode, they become Previous, Next and Select buttons. The Program Menu button is used to enter and exit Menu Mode. The Reset button clears all Errors and Faults and returns control to its normal state.
2. When in a Menu Mode, change setting by pressing the Previous, Next and Select buttons in the following sequence:
   a. Press Next to move forward through the list of available menu items, or press Previous to move back to a recently passed item.
   b. Press Select to allow a menu setting change. The menu item flashes, indicating that it can be changed.
   c. Press Next to move forward or Previous to go back to an earlier choice.
   d. When you have located the desired setting, press Select again and Smart Touch accepts the change and stops blinking.
   e. Smart Touch does not allow an exit to Run Mode while the display is blinking. Press the Select button to stop the blinking, then press Progam Menu to exit to Operate Mode.
   f. Pressing Next or Previous when the menu item is not blinking moves to the next or previous menu item.
   g. When done, press Program Menu to exit to Operate Mode.
3. Once configured, SlideWinder is in Operate Mode. To gain access to the User or Installer Menu from Operate Mode, follow these steps:
   a. Note that the Program Menu button does not function unless the gate is at rest and no open or close inputs are active. Verify system status by looking at LEDs on Smart Touch board. If this is a Solar operator or it us running without AC, press the LED button on the board to disclose active inputs. There also must not be any Alerts, Faults or Errors present. Press the Reset button to clear SlideWinder if necessary.
   b. Press the Program Menu button and watch the LCD scroll the system data, or press the Program Menu key a 2nd time to skip the scroll. The scrolled data displays the information below and on page 57.

System Scroll (see details on page 56 - 57)

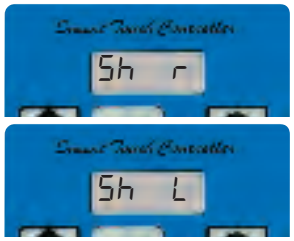
Master Slave
(only if Master Slave operator)

SLAu = Slave

LEAd = Master

Basic Operation System Scroll continued

Operator type
- ot 5 = SlideWinder 24
- ot 6 = SlideWinder 38



Gate Handing
- Sh r = Right hand gate (opens to right when viewed from secure side)
- Sh L = Left hand gate (opens to left when viewed from secure side)

UL User Classes 1 - 4

See pages 8 or 32 for complete list of UL 325 User Classes

24 V DC Buss Voltage
typically between 19.9 V - 29.9V

1st 2 digits of 6 digit life cycle counter (without next screen, depicts, 990,000)

Last 4 digits of 6 digit life cycle counter (combined, this readout would indicate SlideWinder's lifecycles at 994,567)

c. The LCD display scroll stops at the menu item for the automatic close timer setting [Ct --]. This is the first item in the User Menu.

d. To access the more detailed Installer Menu, SlideWinder must first be in User Menu. Then press and hold the Reset button and simultaneously press the Open button. The LCD changes to display the UL usage class menu item [uC --]. This is the first item in the Installer Menu.

4. Pressing the Program Menu button when the User or Installer Menu is not blinking returns the system to the Operate Mode.

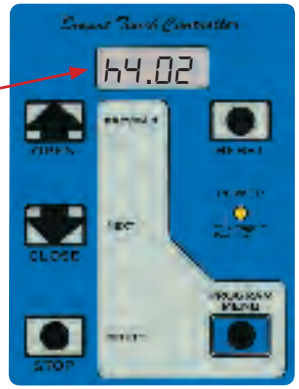
Set operator handing and usage class

See pages 32 - 35 in the Installation section of this manual.

Basic operation continued

Initial power up

When power is on, SlideWinder displays its software revision. Record this number when calling your Installer or Distributor for Tech support.



System data and accessing the User Menu settings

When the gate is stopped in Operate Mode, pressing the Menu button accesses the User Menu. After the menu button is pressed, the LCD scrolls operator system data (see table below). Scrolling stops at the close timer setting, which is the beginning of the User Menu. To exit Menu Mode, the display must not be blinking. Simply pressing the Program Menu button returns the display to Operate Mode and re-enables controls. Menu mode also automatically returns to Operate Mode if there is no activity for two minutes.

SlideWinder can be configured to suit almost any need. Once you have learned to navigate its menus, as described on page 33 - 35 and 55 and how to change a setting, the full range of SlideWinder features and choices are available to you. The User Menu contains basic configuration items and the Installer Menu contains more advanced menu items.

System Scroll

Setting	Display	Alpha	Time	Description	Notes
Master or Slave Operator	SLAu LEAd	SLAu LEAd	2 sec	SLAVE Operator LEAd Operator (master)	Only appears if Operator is configured as a Master or Slave unit.
Operator Type	ot 1 ot 2 ot 3 ot 4 ot 5 ot 6	ot 1 ot 2 ot 3 ot 4 ot 5 ot 6	2 sec	SlideDriver SwingRiser HydraLift StrongArm SlideWinder 24 SlideWinder 38	Displays model configuration for this operator. Each Smart Touch board is specific for each operator type. Be certain that the read out in the scroll matches the type of operator type being used.
Gate Handing (open to R or L)	Sh r Sh L	Sh r Sh L	2 sec	Right hand gate (opens right when seen fr. secure side) Left hand gate (opens left when seen fr. secure side)	Displays handing configuration for this operator.
UL User Class	uC 1 uC 2 uC 3 uC 4	uC 1 uC 2 uC 3 uC 4	2 sec	1 - 4 family residential 5+ family residential and public - commercial Commercial - not intended for public High security - monitored by guard personnel	Displays the selected UL user class configuration for this operator. (See pages 8 or 32 for a more thorough description)
24V DC Buss Voltage	d___	d___	2 sec	Actual DC buss voltage	Typically 19.9V – 29.9 Volts
Life Cycle Counter	CC__	CC__	2 sec	High 2 digits (hundred thousands and ten thousands) of 6 digit life cycle counter	CC XX combine these and next digits to determine total life cycles
Life Cycle Counter	____	____	2sec	Last 4 digits (thousands, hundreds, tens and ones) of 6 digit life cycle counter	XXXX combine with above to determine total life cycles

User menu settings

Software Revision #

To access SlideWinder's User Menu, press the Menu Program button once and wait for the system scroll to complete. Or, press the Menu Program button twice to skip the system scroll.

User Menu

Setting	Display	Alpha	Description	Notes
Close Timer	Ct 0 Ct 1 - 99	**Ct 0** Ct 1 - 99	Close timer off (default setting) Close timer – adj. 1 to 99 seconds	Automatic close timer for the gate. Factory default is 0 which is off. May be configured up to 99 sec. Close timer menu does not appear if set for constant hold close. (next menu item hC 1)
Momentary Close	hC 0 hC 1	**hC 0** hC 1	Momentary input (default setting) Constant hold input required to close gate	Push and release (Momentary) or Constant Push of close button required to close gate.
Momentary Open	ho 0 ho 1	**ho 0** ho1	Momentary input Constant hold input required to open gate	Push and release (Momentary) or Constant Push of close button required to open gate.
Power Loss Function	AP 0 AP 1 AP 2 AP 3	**AP 0** AP 1 AP 2 AP 3	Normal operation on UPS to 21V, then stay open Normal operation on UPS to 21V, then lock closed Auto open 5 sec. after AC loss, then stay open Stay closed until open command , then stay open	Below 21V, the close timer is disabled, however the controls still function until the voltage drops to 18V When set to AP 1, the open override requires a Stop input immediately followed by an Open input. See page 72 for detailed description of modes.
Remote Open Radio Control Input	ro 0 ro 1	**ro 0** ro 1	Input is open only – for remote devices and radios As above, but is also a close input when full open	Default setting is open only. When set to ro 1, this input will also close a gate that is fully open.
Warn Before Operate	bF 0 bF 1 bF 2	bF 0 bF 1 **bF 2**	Warning buzzer disabled (not recommended) Buzzer sounds 3 sec before + during any motion Buzzer sounds 3 sec before + first 2 sec of motion	We strongly advise keeping this advance warning feature active to alert those in the vicinity that the gate is about to move. Never cut or unplug the wires

User Menu continued

Setting	Display	Alpha	Description	Notes
Photo Eye Align	PE 0 PE 1	**PE 0** PE 1	Alignment mode off (default) Activate alignment mode – chirps buzzer (automatically off when close limit is triggered)	Aids in Photo Eye alignment. Buzzer chirps once when Photo Eye is aligned and twice when Photo Eye is blocked. See Installing Photo Eye Sensors on pages 81 - 82.
Clock Set (24 hour)	CL 0 CL 1 CL 2 CL 3 CL 4	**CL 0** CL 1 CL 2 CL 3 CL 4	0 = Menu Mode (must be returned to CL 0 to exit) 1 = Set minutes 2 = Set hours 3 = Set day 4 = Set month	Menu to set Smart Touch Controllers internal clock. This is a very important aide to troubleshooting tech issues as the event log is sequenced with a date/time stamp. Scroll within each menu item to select minutes, hours, day and the month.
LCD Contrast	Ld 5 Ld 1 - 9	**Ld 5** Ld 1 - 9	(default contrast level) range of adjustment	Adjusts LCD display contrast.

***Photo Eye alignment:** HySecurity's energy management prevents a photo eye from being powered up until an open or close command is received. This means that when SlideWinder is at rest, your photo eyes are not energized, saving battery power.

Selecting SlideWinder's PE 1 menu option turns Photo Eye power on for the duration of photo eye alignment. This allows one installer to determine when photo the photo eyes are correctly aligned.

For a complete description of Photo Eye installation techniques, see page 81 - 82.

Installer menu settings

Push the Menu button two times to access User Menu (second time eliminates system scroll), then access the Installer Menu by pressing the Reset button and while holding it, pressing the Open button.

To restore the factory default settings, go to menu item Fd 0 and change the setting to Fd 1. Then press Select and press the Program Menu button to return to Operate Mode.

The entire menu resets to factory defaults

Setting	Display	Alpha	Description	Notes
UL Usage Class	uC 0 uC 1 uC 2 uC 3 uC 4	**uC 0** uC 1 uC 2 uC 3 uC 4	Gate Disabled (default) 1- 4 family residential 5+ family residential – public commercial Private commercial – not intended for public High security – monitored by personnel	SlideWinder won't operate until configured. (See pages 8 or 32 for a detailed description of each user classification as defined by UL 325)
Gate Handing	Sh 0 Sh r Sh L	**Sh 0** Sh r Sh L	Gate Disabled (default) Set for right handed gate Set for left handed gate	SlideWinder won't operate until configured. A right handed gate opens to the right when viewed from the secure side with the operator also on the secure side.
Factory Default Reset	Fd 0 Fd 1	**Fd 0** Fd 1	Normal setting Set to 1 to reset entire menu to factory default, then press the Menu button	Globally overwrites all menu settings with the factory defaults. Handing, UL class and limit settings will all need to be re-entered.
Master/Slave type setting	dg 0 dg 1 dg 2	**dg 0** dg 1 dg 2	Solo gate operator (default) Slave gate operator Master gate operator	When installing a Master / Slave pair, this must be configured. If power is turned off or communication severed, an Err4 will be reported.
AC Charger or Solar Charger	Ch 0 Ch 1	**Ch 0** Ch 1	Standard AC powered SlideWinder Solar powered SlideWinder – no AC power	Set this menu to Ch 1 if your SlideWinder is charged by a solar panel.
Enable Fire Department Open Input	Fo 0 Fo 1	**Fo 0** Fo 1	Input disabled (default) Input enabled	When activated, the fire dept open input overrides gate edges and photo eyes to open the gate. A reset input is required before the gate can be closed.
Enable Emergency Close Input	oC 0 oC 1	**oC 0** oC 1	Input disabled (default) Input enabled	When activated, the emergency close input overrides vehicle detectors, gate edges and photo eyes to close the gate. A constant close input is required. A reset input will be required before the gate can be opened.

Bold or Red indicate Default settings

Installer Menu continued

Setting	Display	Alpha	Description	Notes
Inherent Sensor Sensitivity	SE 2 SE 1-9	**SE 2** SE 1-9	Default sensitivity is 2 Level 1 is the highest sensitivity	SlideWinders inherent sensor measures both the motor speed and current separately for each direction.
Inherent Sensor Function	SS 0 SS 1	**SS 0** SS 1	Reverse gate for 2 sec. (default) Stop gate only (UL class 4 only)	The SS 1 option menu only appears in operators set to UC 4. This is for highest security use only.
Leaf Delay Close	LC 0 LC 1-7	**LC 0** LC 1-7	No delay (default) Adds delay in ½ sec steps (master / slave only)	The LC option menu only appears in operators set as master or slave. Up to 3.5 sec. delay before closing.
Leaf Delay Open	Lo 0 Lo 1-7	**Lo 0** Lo 1-7	No delay (default) Adds delay in ½ sec steps (master / slave only)	The Lo option menu only appears in operators set as master or slave. Up to 3.5 sec. delay before opening.
Maximum Run Timer	rt 0 rt 1	**rt 0** rt 1	60 seconds maximum run (default) 300 seconds maximum run	This menu option will never need to be adjusted in a SlideWinder. If triggered LCD reads FAL 1.
Partial Open Distance	Po 0 Po 10-20 Po 10-30	**Po 0** Po 10-20 Po 10-30	Input disabled (default) 10 feet minimum – 1 foot incr. to full open 20 feet maximum – SlideWinder 24 30 feet maximum – SlideWinder 38	The partial open input may be used for large gates where less than full travel is needed sometimes. The 10 foot minimum requirement is to prevent use solely as a pedestrian gate.
Photo Eye Close Function	EC 0 EC 1	**EC 0** EC 1	Close photo eye only stops gate (default) Close photo eye reverses open for 2 seconds	If a blocked photo eye is cleared within 5 sec, the gate will self start to continue its previous travel.
Photo Eye Open Function	EO 0 EO 1	**EO 0** EO 1	Open photo eye only stops gate (default) Open photo eye reverses open for 2 seconds	A blocked photo eye in either direction will prevent a gate from starting to move.
Gate Edge reverse function	gr 0 gr 1	**gr 0** gr 1	Edge reverses gate fully open (default) Edge reverses the gate for only 2 sec.	If the edge has been activated several times in a row, the reversal will reduce to 1/2 second. Triggers SAFE mode only.
Inherent Sensor reverse function	Sr 0 Sr 1	Sr 0 **Sr 1**	Reverse fully open / reverse to close for 2 sec. Stop and reverse the gate for 2 sec. (default)	Menu Sr 0 allows the inherent sensor to reverse a gate to full open. All reversing to close is 2 sec max. First activation triggers SAFE mode. Second activation triggers entrapment EntEr mode.
Photo Eye Type	PC 0 PC 1	**PC 0** PC 1	For photo eyes with N.O. output (default) For N.C output (creates a supervised function)	The PC 1 setting requires two photo eyes (open & closed) both with N.C. outputs. The supervised logic will report a FAL2 if a fault is detected.

Bold or Red indicate Default settings

Installer Menu continued

Setting	Display	Alpha	Description	Notes
Gate Edge Input NO / NC	gC 0 gC 1	**gC 0** gC 1	For edge sensors with a N.O. output (default) For edge sensors with a N.C. output	
Convert Input Interlock Open or Time Clock	tC 0 tC 1	tC 0 **tC 1**	Input used with 7 day time clock to open gate Input used as an open interlock (default)	Configures the input at #7 from its default use as an open interlock (see page 96) to instead be used as an input for an external seven day time clock device.
Convert Input Disable ELD or Disable Timer	dt 0 dt 1	**dt 0** dt 1	Input used to disable the Free Exit detector Input used to disable the Close Timer	Configures the input at #9 from its default use of disable the Free Exit detector to instead be used to disable the internal close timer.
OOLD Detector Function	or 0 or 1	or 0 **or 1**	OOLD detector pauses closing gate only OOLD reverses gate to fully open (default)	If the pause only option is chosen the gate will start closed again as soon as the OOLD loop is cleared.
IOLD Detector Function	ir 0 ir 1	ir 0 **ir 1**	IOLD detector pauses closing gate only IOLD reverses gate fully open (default)	If the pause only option is chosen the gate will start closed again as soon as the IOLD loop is cleared.
Vehicle Detector Logic	dL 1 dL 2-3 dL 4	**dl 1** dL 2 - 3 dL 4	Standard detector logic (default) Faster close logic (speeds close timer) Full anti-tailgate function (requires 2 detectors)	Configures fast close logic and anti-tailgate logic. There are four modes. Full description on page 90
User Relay 1 Settings	r1 0 r1 1- 19	**r1 0** r1 1 - 19	User relay 1 disabled (default) Configure relay for option 1-19	This menu configures the function of User Relay 1 for 1 of 19 choices. For details, see pages 67 - 68
User Relay 2 Settings	r2 0 r2 1- 19	**r2 0** r2 1 - 19	User relay 2 disabled (default) Configure relay for option 1-19	This menu configures the function of User Relay 2 for 1 of 19 choices. For details, see pages 67 - 68
User Relay 3 Settings	r3 0 r3 1- 19	**r3 0** r3 1 - 19	User relay 3 disabled (default) Configure relay for option 1-19	This menu configures the function of User Relay 3 for 1 of 19 choices. For details, see pages 67 - 68
Gate Open Alert	tL 2 tL 1	**tL 2** tL 1 - 5	2 = 45 second delay (default) 1=15s, 2=45s, 3=75s, 4=105s, 5=135s delay	Adjusts time delay before activation of User relay function #8. This Menu only appears if the #8 User relay function has been selected. See page 68
Loitering Alert	Lt 3 Lt 1-5	**Lt 3** Lt 1 - 5	3 = 75 second delay (default) 1=15s, 2=45s, 3=75s, 4=105s, 5=135s delay	Adjusts time delay before activation of User relay function #13. This Menu only appears if the #13 User relay function has been selected. See page 68

Bold or Red indicate Default settings

Installer Menu continued

Setting	Display	Alpha	Description	Notes
Open Speed	oS 1 oS 0-9	**oS 1** os 0-9	Open speed of 1 foot/second (default) 0=.75'/sec, each digit adds .25'/sec speed. 3= 1.5'/sec, 5= 2'/sec, 9= 3'/sec	SlideWinder model 24 is limited to 1'/sec. maximum SlideWinder model 36F can be set for up to 2'/sec. SlideWinder model 36VF can be set for up to 3'/sec.
Close Speed	cS 1 cS 0-9	**cS 1** cs 0-9	Close speed of 1 foot/second (default) 0=.75'/sec, each digit adds .25'/sec speed. 3= 1.5'/sec, 5= 2'/sec, 9= 3'/sec	SlideWinder model 24 is limited to 1'/sec. maximum SlideWinder model 36F can be set for up to 2'/sec. SlideWinder model 36VF can be set for up to 3'/sec.
Learn Limit Reset	LL0 LL 1	**LL0** LL1	Normal setting Set to 1 to erase the learned limit position, then press the Menu button	Erases all learned limit settings and upon pressing the Menu button exits into the Limit Learn Mode.
Test ELD Detector	ELd0 ELd1 ELd2 ELd3	**ELd0** ELd1 ELd2 ELd3	0 = Run Mode (must set to ELd0 to exit menu) 1 = Display loop frequency 2 = Display call level (scale of 0-7) 3 = Set detector frequency (1, 2 , 4 or 4)	Reads useful data from the HY-5A vehicle detector. Use frequency to verify loop stability. Use call level to test sensitivity. Increase if call level is less than 4. Only change frequency if there is interference.
Test IOLD Detector	iLd0 iLd1 iLd2 iLd3	**iLd0** iLd1 iLd2 iLd3	0 = Run Mode (must set to iLd0 to exit menu) 1 = Display loop frequency 2 = Display call level (scale of 0-7) 3 = Set detector frequency (1, 2 , 4 or 4)	Reads useful data from the HY-5A vehicle detector. Use frequency to verify loop stability. Use call level to test sensitivity. Increase if call level is less than 4. Only change frequency if there is interference.
Test OOLD Detector	oLd0 oLd1 oLd2 oLd3	**oLd0** oLd1 oLd2 oLd3	0 = Run Mode (must set to oLd0 to exit menu) 1 = Display loop frequency 2 = Display call level (scale of 0-7) 3 = Set detector frequency (1, 2 , 4 or 4)	Reads useful data from the HY-5A vehicle detector. Use frequency to verify loop stability. Use call level to test sensitivity. Increase if call level is less than 4. Only change frequency if there is interference.
Test SLD Detector	SLd0 SLd1 SLd2 SLd3	**SLd0** SLd1 SLd2 SLd3	0 = Run Mode (must set to SLd0 to exit menu) 1 = Display loop frequency 2 = Display call level (scale of 0-7) 3 = Set detector frequency (1, 2 , 4 or 4)	Reads useful data from the HY-5A vehicle detector. Use frequency to verify loop stability. Use call level to test sensitivity. Increase if call level is less than 4. Only change frequency if there is interference.

Bold or Red indicate Default settings

Set the clock

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 both time and date. This feature is useful to record key historical operational data and a log of Alerts, Faults and Errors all of which can be accessed via the RS232 port with a PC computer or a PDA using the Palm OS. Optional HySecurity supplied software and cables are required in order to read this data.

1. To set or adjust the time or date, go the User menu item CL 0 and push the **Select button**, so that CL 0 blinks. Press the **Next button** to change the setting from CL 0 to 1, 2, 3 or 4 depending upon which setting is to be altered. 1 = minutes / 2 = hours / 3 = days / 4 = months.
2. Once you have selected a blinking setting CL 1-4, push the **Select button** to change the display to a blinking (adjustable) value. The following letters will be displayed on the left side to aid in knowing which setting is being made:
   a. CL 1 = minutes - display n: 0-59
   b. CL 2 = hours ---- display hr 0-23
   c. CL 3 = days ----- display dA 1-31
   d. CL 4 = months - display no 1-12
3. Make any required change to the hour, minute, day or month in the typical manner by using the **Next or Previous buttons**, then press the **Select button** to enter the change, just as typical for all of our other menu settings.
4. **When done, be certain to restore the setting to CL 0 because the Menu button will not function to allow the user to exit the clock setting mode until the user has changed the setting back to [CL 0], which places the clock in its normal display mode.**
5. A lithium disk battery supports the clock so that the time setting is not lost when main power is turned off. This battery should be replaced about every five years. Use a DL 2025 / DL 2032 or a CR 2025 / 2032 battery.

EXAMPLE: January 4, 8:43 pm

Display (in order of appearance)	Setting	Scroll
CL 1	minutes	n: 43
CL 2	hours	hr 20
CL 3	days	dA 04
CL 4	month	no 01

Wiring accessories

1. Test the basic open and close operator function before wiring the external control inputs. This makes it easier to troubleshoot if an unexpected function issue arises.
2. Each input has an LED to indicate when that input is active. Input LED's are always active unless this is a Solar Power Operator or it is running without AC power. To disclose the input status for Solar operators or during an AC power failure, the LED tact button must be pushed. This button is in the bottom left hand corner near #24 Fire Department Open input.
3. All control device inputs listed are shown as a single input. The 2nd wire is connected the Common Buss on the Terminal Board. The Emergency Close and Fire Dept. Open inputs are an exception and require a +24 Volt input in order to be activated. The +24 is available on spade terminals at the bottom of the Terminal Board.

✱Do not connect an external control to terminals 1 or 2 unless the controls are located with a clear view of the entire gate area. For controls not within sight, use input terminals 3, 4, 5, 6 or 7.

The Emergency Close and Fire Dept. Open inputs may be used only if access to these controls are guarded. Supervision is required when controls are activated.

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	Also stops an opening gate
4	Remote Open & Radio Control	For radio / remote open device - menu opt. to also close
5	Open/Close button	Pushbutton or radio controls
6	Partial Open	Installer adjustable from 10 feet to full open travel
7	Open interlock input or Time clock Open	Menu configurable to either function
8	Free Exit vehicle detector	
9	Disable Free Exit vehicle detector / Disable Close Timer	Menu configurable to either function
10	Inside Obstruction vehicle detector	Inside reversing loop
11	Outside Obstruction vehicle detector	Outside reversing loop
12	Shadow/Reset vehicle detector	Shadow is for Swing gates only Reset function is for Arm gates
13	Edge Sensor	One input works for both directions
14-15	Photo eye Common Power	Supply for PE power (–) 24V
17	Photo eye Open direction	Spans the gate storage area
19	Photo eye Close direction	Spans the roadway
21	Charger AC power loss	Not used in SlideWinder
22	Spare Input	Unused - may have custom function applications
23	*Emergency Close	Must menu enable and input +24 Volts to trigger Overrides photo eyes, gate edge & vehicle detectors.
24	*Fire Dept. Open	Must menu enable and input +24 Volts to trigger Overrides photo eyes & gate edge.

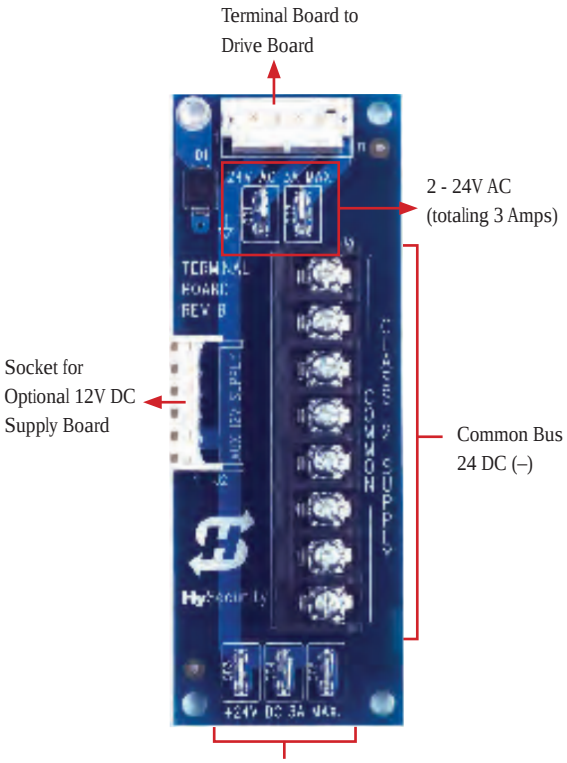
All control inputs are very sensitive therefore the size of the wire is not a significant issue. Twenty gauge wire will serve for a range of 3.5 miles.

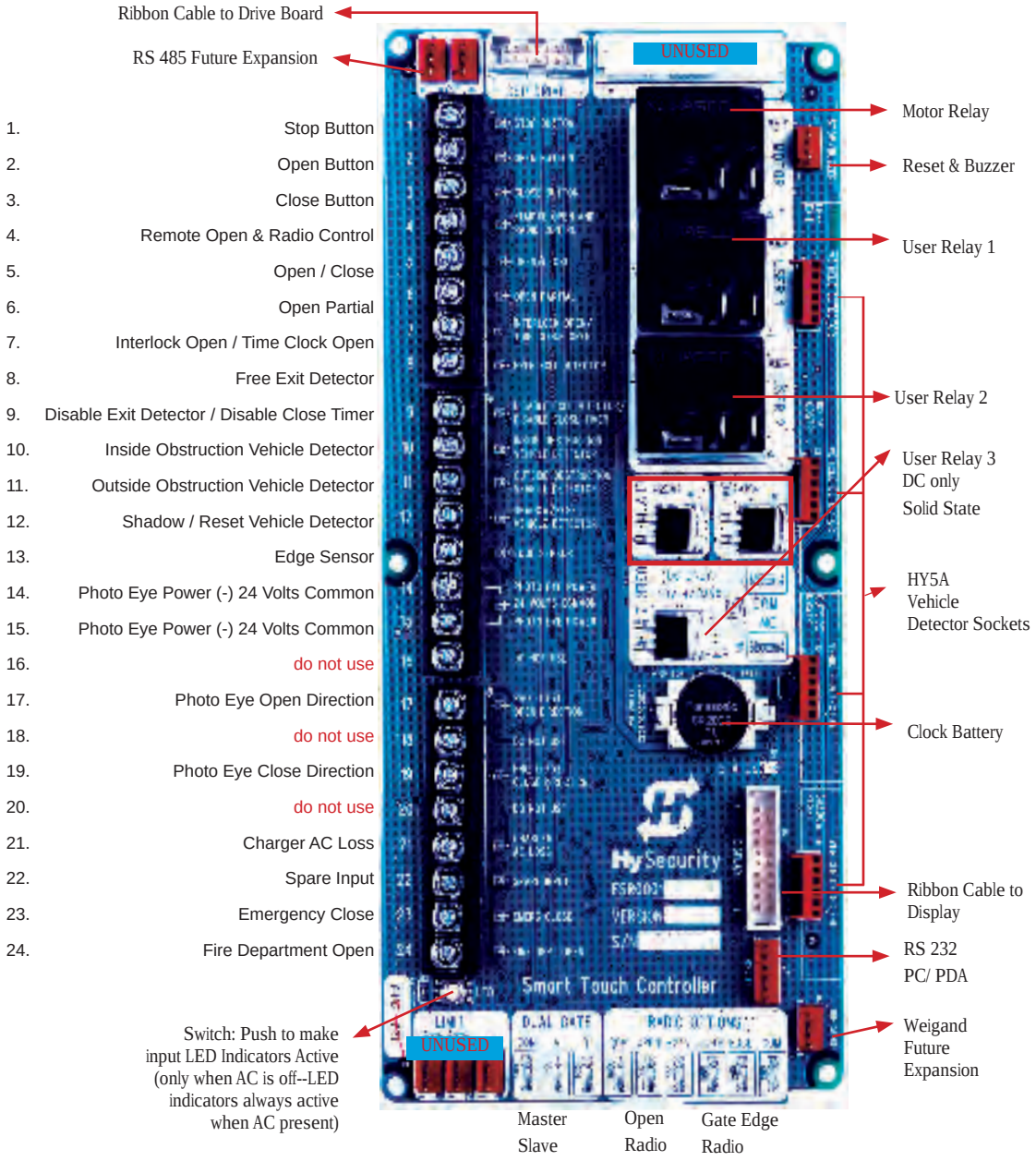
Wiring accessories continued

Smart Touch Controller - SlideWinder 24 Part #: ESR0001785
Smart Touch Controller - SlideWinder 38 Part #: ESR0001786

Terminal Board

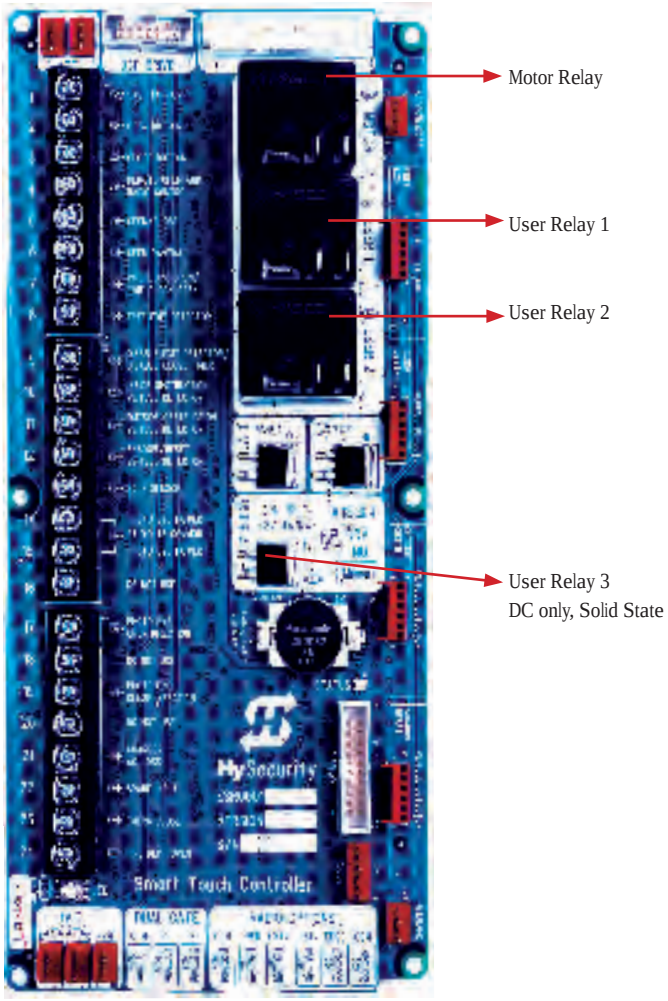
Part #: ESR00075





User programmable relays

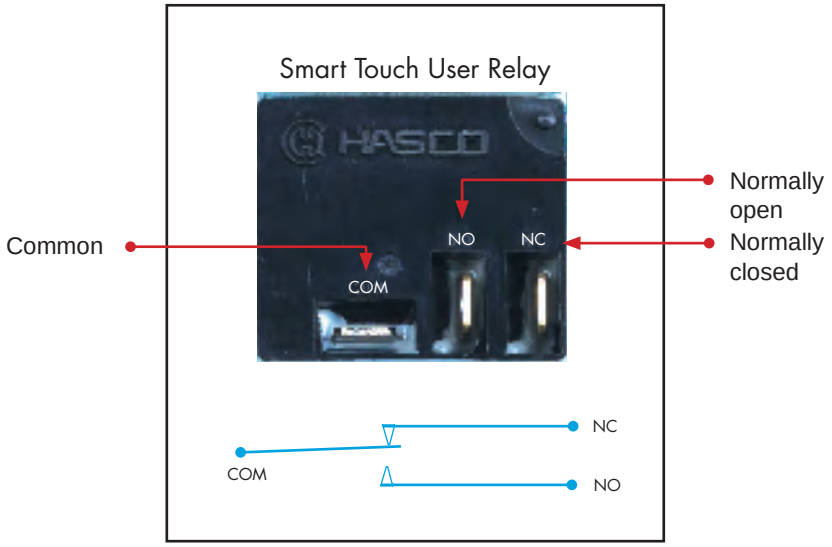
SlideWinder's Smart Touch Controller can be set to interface to many types of external devices through the use of programmable output relays. All of the output functions listed below are accessible in the Installer Menu under the selection r1 -- , r2 -- and r3 -- . Select which relay you wish to use and enter the appropriate function by the numbers as listed below.



1. **Close limit output:** This output can also be used to create an interlock signal to another operators interlock input, or simply to indicate that the gate is secure. The relay is released at full closure.
2. **Close limit pulse output:** This output may be used in a sequenced system to command a 2nd machine to close. A brief pulsed output that occurs when the close limit is triggered.
3. **Open limit output:** This output is used to indicate a full open position indication. This output becomes active when the open limit is triggered and releases when the open limit is released.
4. **Open limit pulse output:** This output may be used to trip a sequenced barrier arm gate operator to open. A brief pulsed output occurs when the open limit is triggered. An additional pulse is also generated with any new open command even when the gate is already fully open.
5. **Warn before/during operate output:** This output may be used to control an external warning device. This output will operate at the same time as the internal warn before operate buzzer.
6. **Gate lock output:** This output may be used to control external solenoid locks or magnetic locks. In both directions of travel, this output will be activated about 7/10th of a second before the operator starts moving the gate, and remains active while moving and 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.

User programmable relays continued

8. **Gate open too long output:** Activates when the gate has been open longer than a user-selected period of time. Adjustable from 0 delay, then 15 seconds delay to 135 seconds delay in 30-second time increments.
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 (requires two obstruction vehicle detectors):** Activated when a 2nd vehicle enters from the outside, without a valid input from an access control device. This output releases when an access control input signals open or the gate reaches the close limit position.
12. **Outside Obstruction Vehicle Detector output:** This output is active whenever the (OOLD) vehicle detector is tripped. This output may be used to interlock to an entry device to prevent pedestrian use.
13. **Special output from "OOLD" only when gate is closed:** Used to annunciate a vehicle or to indicate loitering. Adjustable from 0 delay, then 15 to 135 seconds delay in 30-second time intervals.
14. **Gate nearing full travel output:** This output is activated when the gate is three feet from full travel in both the open and close directions. This output can be used to reduce the sensitivity of a proximity sensor near the ends of gate travel.
15. **Gate Failure output:** This output is activated to report that a problem has occurred. Indicates that system in an Error Mode, Fault Mode or Entrapment Mode. If active, the gate is disabled.
16. **Motor Running output:** This output is active when the motor is running and the gate is in motion.
17. **AC Power Failure output:** This relay is normally energized, but drops with loss of AC power.
18. **DC Power Failure output:** This output is activated when the battery power is below 21 volts, but the output ceases when the battery is below 18 volts.
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. ONLY USE THE ELECTRONIC RELAY 3 FOR THIS FUNCTION!



Notes

Battery basics

SlideWinder is a unique, Uninteruptible Power Supply gate operator. It runs with or without AC power, usually for a thousand feet of gate travel or more. With optional heavy duty batteries, SlideWinder may run 35,000 feet or more of gate travel after AC power loss.

Most "battery backup" gate operators are merely, "Open and Die," systems. Upon power loss, they *open and die*, leaving your perimiter completely unprotected.

While a few gate operators claim the benefit of DC operation, none use SlideWinder's hybrid VFD (variable frequency drive) system, offering the benefits of battery operation after power failure and the ultra-high reliablity of an industrial 3-phase motor (no brushes to replace).

SlideWinder is manufactured to the stringent and industry leading HySecurity standard. Nonetheless, it is worthwhile to review the specific requirements and demands of a battery powered gate operator.

Batteries contain sulfuric acid. If batteries are dropped or damaged, do not get acid in the eyes, on skin, or on clothing.

Be certain to observe polarity when connecting the batteries, or adding accessories. Reversed polarity will blow a fuse and result in a non-functional operator. Red is (+) positive, and black is (-) negative.

If shorted, batteries generate a very high current. Observe special care when connecting the battery wires so that polarity is correct.

Since SlideWinder runs on batteries, load control is important. Easier moving gates drain less battery energy, preserving more cycle capacity during a power failure. Special precaution should be made to select energy efficient access controls and accessories. While SlideWinder is not affected by energy inefficient devices while AC is present, DC cycles will be severly limited if energy inefficient accessory devices sap battery power during an AC outage.

SlideWinder with two standard gel batteries and runs most gates 1,000 or more feet of gate travel after AC loss.

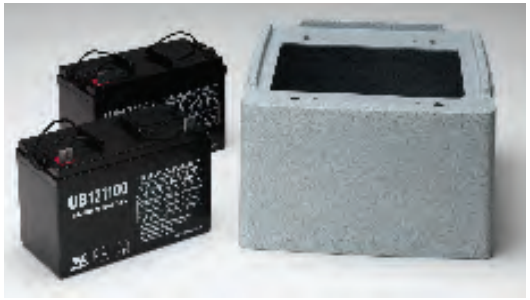
Batteries have a finite life. As the batteries age they lose energy storage capacity. If total back up capacity is critical, replace the batteries every 3 and 5 years, depending on heat exposure. Properly dispose of or recycle used batteries.

SlideWinder comes with standard batteries that normally cycle 1,000 feet of gate travel after an AC power loss (depending on gate resistance, accessory and access control efficiency, climate and health of batteries). Replacing the two standard batteries with two heavy duty batteries enclosed in a 12" base riser, increases gate travel to approximately 35,000 feet, depending on the same conditions listed above. See your HySecurity distributor or visit www.hysecurity.com for more details.

Batteries are rated to perform to capacity at a temperature of 77 degrees Fahrenheit. Below 77 degrees, their "amp hour" capacity is temporarily reduced. For example, at freezing, the capacity is 75%, at 10 degrees Fahrenheit, the capacity is 50%.

Batteries can be damaged by excessive heat, which may shorten their life span. SlideWinder's standard, light granite cover color helps keep internal temperatures as cool as possible.

SlideWinder's two optional heavy duty batteries and base riser, runs most gates 35,000 feet of travel or more after power loss.



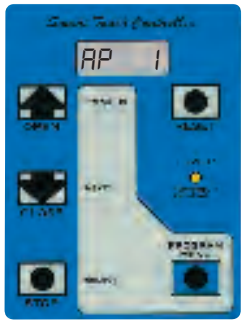
Configuring SlideWinder for Power Loss

SlideWinder's Smart Touch Controller User Menu provides four power loss function configurations. Since SlideWinder contains an Uninterruptible Power Supply system, the installer must decide depending upon customer preference what is to happen when the AC line power fails. There are four functional choices provided in the User menu item AP.

AP 0 FULL FUNCTION ON UPS, UNTIL LOW BATTERY THEN STAY OPEN

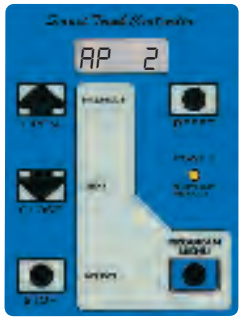
(default setting)

SlideWinder functions normally until the batteries drop to 21 Volts, then it opens itself and stays open until the battery voltage recovers to 24 Volts. The gate can still be closed by a activating either the Close Pushbutton or Emergency close input. The gate will reopen by any command until the battery voltage drops to 18 Volts. At 18 Volts, a fully closed gate will stay closed, but in any other position, the gate will open fully one last time and then the controls and LCD will completely shut down. The gate can now only be moved manually.



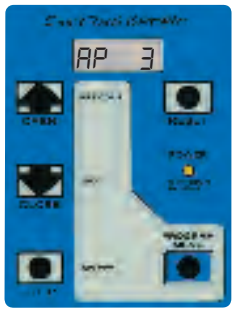
AP 1 FULL FUNCTION ON UPS, UNTIL LOW BATTERY THEN LOCK CLOSED

SlideWinder functions normally until the batteries drop to 21 Volts, then it closes itself and locks closed until the battery voltage recovers to 24 Volts. The gate can be manually opened by a sequenced combination of a Stop Pushbutton input followed within 1 second by an Open Pushbutton input. The Fire Department open input can open the gate without the special Stop pre-enabling input. If open, the gate can be closed by either the Close Pushbutton or Emergency close input until the battery voltage drops to 18 Volts. At 18 Volts, a fully closed gate will stay closed, but in any other position, the gate automatically opens one last time and then the controls and LCD will completely shut down. The gate can now only be moved manually.



AP 2 AUTO OPEN 5 SECONDS AFTER AC LOSS THEN STAY OPEN

SlideWinder automatically opens five seconds after the loss of AC power and stays open until AC power is restored. The gate can be manually closed by a Close Pushbutton input or an Emergency close input and will then re-open by any open command until the battery drops to 18 Volts. At 18 Volts, a fully closed gate will stay closed, but in any other position, the gate then opens one last time and then the controls and LCD will completely shut down. The gate can now only be moved manually.



AP 3 STAY CLOSED UNTIL NEXT OPEN COMMAND THEN STAY OPEN

Same as AP 2, except SlideWinder initially does nothing after loss of AC power, but then stays open after the next open command from any input. The gate can be manually closed by a Close Pushbutton input or an Emergency close input and will then re-open by any open command until the battery drops to 18 Volts. At 18 Volts, a fully closed gate will stay closed, but in any other position, the gate then opens one last time and then the controls and LCD will completely shut down. The gate can now only be moved manually.

Uninterruptible Power Supply (UPS)

Introduction

SlideWinder's "built in" Uninterruptible Power Supply (UPS) can keep your gate running for up to 1,000 feet of travel using its two standard 12 V batteries*. Adding optional Heavy Duty batteries in SlideWinder's 12" base riser allows 35,000 or more feet of gate travel after loss of AC power*.

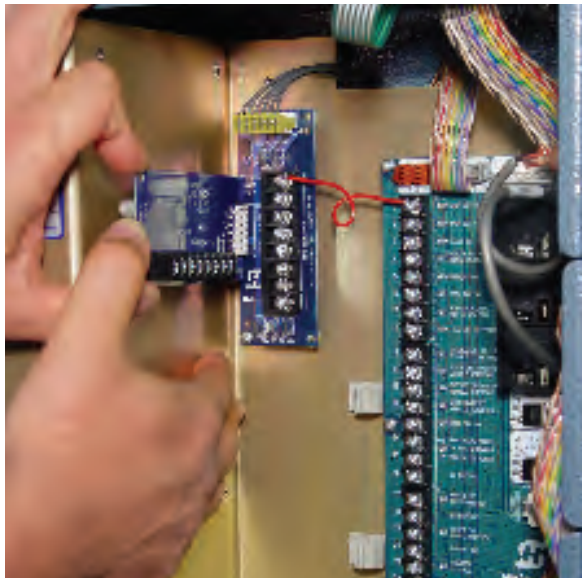
Continuous operation after power failure is a significant advantage over traditional "Open and Die" battery backup systems that leave your perimeter unsecured. For a complete UPS system, SlideWinder allows the option of powering all access controls and accessories from onboard batteries.

Standard SlideWinder batteries

Plan to use low power accessories

If the site requires fully automatic gate function during an AC power loss, it is important that all accessories function from DC and not AC power. SlideWinder's terminal board provides 24 VDC and up to 3 Amps current. HySecurity also offers an accessory plug in power supply that provides 12 VDC and up to 3 Amps current.

NOTE: The less accessory current required, the longer the UPS cycle life will be during AC power failure. A well known and huge power wasting culprit is the standard light bulb. All accessory illuminating lamps must be LED (light emitting diode) type. During AC power failure, the idle accessory current draw usually is a far more significant battery drain than the power to occasionally open the gate. Ideally, for long UPS life, the total all accessory load powered from SlideWinder should draw less than ½ Amp. Choose your accessories with this in mind.



Installing SlideWinder's optional 12 VDC accessory power supply board for accessories requiring 12 volt power.

*Actual DC gate travel after AC power loss depends upon size/weight of gate, accessory power requirements and duration of power outage.

Uninterruptible Power Supply (UPS) continued

Typical low current accessories you may want to supply from SlideWinder's UPS

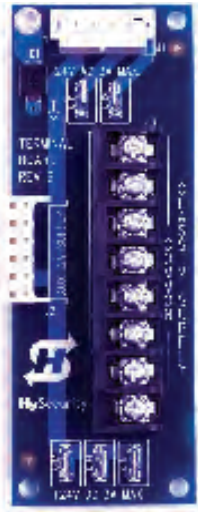
1. Vehicle Detectors: Use 24VDC detectors: All detectors draw very little current. HySecurity's HY-5A detector is an excellent choice because of its features and extremely low power draw.
2. Radio Receivers: Use 24VDC radios: All radio receivers draw very little current. Wire radio receivers to the terminals at the bottom of the Smart Touch Controller.
3. Photo Eyes: The Smart Touch controller only activates photo eyes while the gate is moving (unique to Smart Touch). Only use photo eyes powered by 24 VDC. Be certain to wire the (-)24V side of the photo eye to terminal #14 or 15 and the +24V side connects to one of the three +24 VDC spade connectors on the Terminal board. In this configuration a switched photo eye will use very little power.
4. Keyless Entry / Card Readers: These devices are frequently powered by a plug in transformer, which may be used with the receptacles provided on SlideWinder's chassis; however there will be no power to these during AC loss. If access control device function is necessary during AC loss, carefully check both the voltage and current demanded by these accessories and connect to SlideWinder's 24 VDC or 12 VDC accessory power supplies.
5. Telephone Entry: Most telephone entry equipment draws a fair bit of power, especially if it employs a large or colorful display screen. Be especially careful to check their current requirement because if any significant UPS time is demanded, use of HySecurity's optional Heavy duty batteries may also be required to meet customer expectations.

* Remember that both SlideWinder's 24VDC and 12VDC accessory power supplies are limited to 3 Amps maximum total for both.

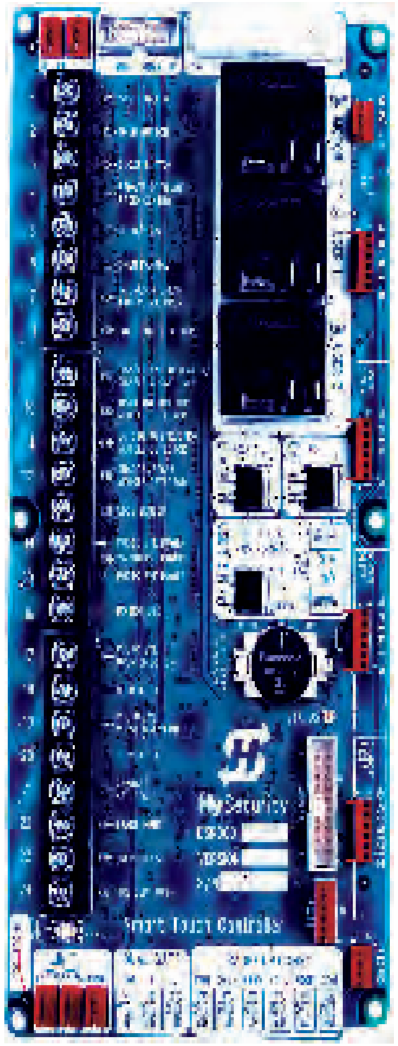
Need some kind of copy and pictures related to wiring here.

Optional 12 VDC accessory Power Board

Terminal Board (provides common for Smart Touch inputs and 24 VAC and 24 VDC)



Smart Touch Board



Notes

Overview secondary pedestrian entrapment sensors

⚠ WARNING: To reduce the risk of serious injury or death, read and follow all Installation Manual, Reference Manual and Warning Label instructions.

Automatic gate operators are intended only for vehicular use and pedestrians must be routed to a separate pedestrian gate. However, sensors are still required in order to provide a degree of protection should anyone stray into the area of an automatic gate. Generally there are two types of external sensors that may be used: Contact sensors, such as edge sensors, and non-contact sensors, such as photoelectric eyes. 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 there are alternatives for Class III and IV installations, HySecurity highly recommends the use of external sensors for all automatic gate applications.

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

PHOTOELECTRIC EYES 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.

CONTACT SENSORS One or more contact sensors (edge sensors) shall be located at the leading edge, trailing edge and post(s) mounted both inside and outside of a sliding gate.

CONTACT SENSOR SECURITY A hardwired contact sensor shall be located and its wiring arranged so that communication between the sensor and gate is not subjected to mechanical damage.

CONTACT SENSOR COMMUNICATION 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.

UL 325 LISTING 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 safety illustrations in this manual's Installation section and consider your specific installation to determine where greatest entrapment risks exist. Locate edge sensors and/or photoelectric sensors accordingly. Be certain that a sufficient number of sensors are used so that both directions of gate travel are properly guarded.

Go to www.ul.com for the most up-to-date list of gate operator Underwriter Laboratory standards (UL 325). Go to www.astm.org for a complete list of ASTM F2200 gate and fence standards.

Underwriter Laboratories (UL) and the American Society for Testing and Materials (ASTM) are responsible for many current regulations regarding gate operators and automated gates. These standards are revised periodically. Go to www.ul.com for the most up-to-date UL 325 gate operator standard. Go to www.astm.org for the most up-to-date ASTM F2200 gate and fence standard.

UL 325 standards for entrapment protection devices

Gate operator category

Horizontal Slide
Vertical Lift
Vertical Pivot
Swing Vertical
Barrier (arm)

The same type of device shall not be utilized for both primary and secondary entrapment protection. Use of a single device for 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 one Type B1 for one direction and one Type B2 for the other direction is the equivalent of one device and is in compliance with the requirements of either primary or secondary of entrapment protection.

Usage class	Primary*	Secondary*	Primary*	Secondary*
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

*Entrapment protection sensor types:

Type A	Inherent entrapment sensing systems.
Type B1	A non-contact sensor (photoelectric sensor or equivalent).
Type B2	A contact sensor (edge sensor device or 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.

Go to www.ul.com for the most up-to-date UL 325 gate operator standard. Go to www.astm.org for the most up-to-date ASTM F2200 gate and fence standard.

Gate reversing sensors (contact)

1. Follow the guidelines in the Entrapment Protection Schematic on the next page to plan the most appropriate mounting positions for the edge sensors to be installed. For sliding gates, one or more sensors shall be located at the leading edge, trailing edge and post mounted both inside and outside of a sliding gate. A requirement of the UL 325 standard is that an edge sensor be laboratory tested and "recognized" under UL 325.
2. Drill holes through the edge's mounting channel and through the surface that each gate edge is to be mounted. Securely fasten every edge sensor. The edge sensors should all be placed not higher than 6" above the ground.
3. Edge sensors that are not attached to the moving gate, such as post mounted sensors are wired in parallel and directly connected to the gate operator:
   a. Mount a gate edge to the wall, pilaster or end post of the fence that aligns with the gate when it is in the open position.
   b. Always route the leads of the edge sensors to the gate operator so that they are protected from physical damage.
   c. Connect one edge sensor lead to our Common Bus on the Terminal board and the other to terminal #13, which is labeled Edge Sensor input.
4. Edge sensors mounted to the leading edge or trailing edge of the gate panel should be used with an edge transmitter and a receiver in order to transmit to the gate operator. We do not recommend the use of retractable cord reels or curl cords because of durability problems with these devices in outdoor environments.
   a. Mount gate edge sensors to the leading edge and trailing edge of the gate so that entrapment protection is provided in both directions of travel.
   b. Mount one or two edge transmitters (Linear Model #3022 or equivalent) onto the gate panel near the upper corner of the leading edge of the gate. Both gate edges will function correctly if only one transmitter is used, but wiring both edges to a single transmitter may be impractical or displeasing visually.
   c. Connect the edge(s) to the terminals in the edge transmitter and set the DIP switches of the transmitter to match the setting in the receiver to be used.
5. Mount a commercial style radio receiver* (external antenna type) on the inside of the operator, on the backside of the electrical box, above the batteries. Route the wires to the area on the Smart Touch Controller marked Radio Options. Only three wire connections are needed because the 24-Volt supply and the radio output share a wire. Being certain to observe polarity, crimp the black radio power wire together with one of the radio output wires into a .25" spade connector and connect to the COM terminal. Connect the red wire to the +24V terminal and connect the other radio output contact wire to the spade marked EDGE. Note that this terminal is the same as the #13 input terminal labeled Edge Sensor on the main control board.
   a. Mount an external antenna onto the top of a fixed post of the fence near the operator.
   b. Connect the antenna into the socket on the radio receiver.
   c. Set the DIP switches in the receiver to match the same code used in the transmitter.
6. Test the operation of the reversing edge to make sure that it is functions correctly. Advise the user of the gate to be certain to retest this vital function weekly.

* If there is also to be a radio receiver for a hand held transmitter to operate the gate, be certain to use a two channel commercial receiver. Remember that the transmitter and receiver must have their codes set the same or they will not function.

Entrapment protection diagram

⚠ ATTENTION

This diagram is meant to point out some elements of a proper automatic vehicular gate installation. Every installation will differ depending on the demands of the site, the type of access control and entrapment protection equipment, and the type of gate selected. Use this diagram for as a starting point guide only.

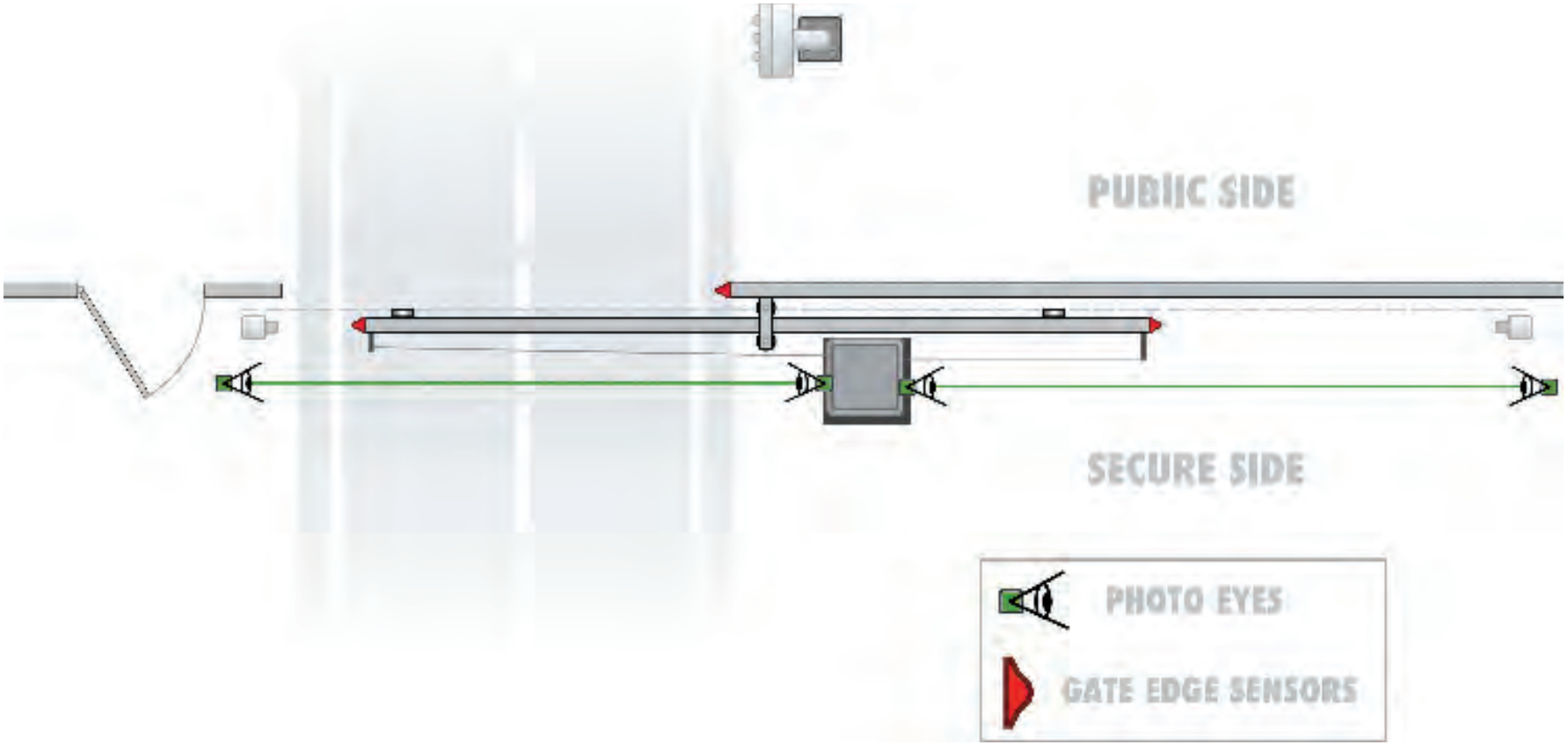


Photo eyes (non-contact)

Follow the guidelines in the Entrapment Protection diagram (page 80) to plan the most appropriate mounting positions for the photo-eye sensors to be installed. If there are no other secondary external entrapment protection sensors (typically an edge sensor), at least two photoelectric sensors are required to serve to reverse the gate in each direction of travel. The Smart Touch Controller has two photoelectric sensor inputs (Photo eye open and Photo eye close).

There are two common types of photoelectric sensors, thru beam and retro-reflective, each has advantages. Thru beam sensors are generally more powerful and function more reliably with dirty optics and in poor weather. Retro-reflective sensors more conveniently doesn't require installation and electrical wiring of a remote emitter required in a thru beam system, but is more problematic in poor weather. Avoid use of a retro-reflective device to span distances greater than 24 feet outdoors or performance will probably be unsatisfactory.

Compatibility

A requirement of the UL 325 standard is that a photoelectric sensor be laboratory tested and "recognized" under UL 325. In order to be compatible with a HySecurity operator, a photo eye must be rated to function from 24 Volts DC source power.

Installation

Mount the photo eyes approximately 15" to 30" above the ground and as close to the gate as possible. Unless there are also gate edges for entrapment protection, a minimum of two photo eyes will be required to function for both the open and closing directions of travel. HySecurity offers accessory mounting brackets to mount photo eyes inside SlideWinder. In some situations, an additional photo eye should be installed on the public side of the gate. The installation locations described above are intended for pedestrian detection, if photo eyes are also to be used for vehicular detection, consider, in addition to the low elevation photo eye for cars, another photo eye at a height of around 55" to detect semi-trucks.

Configuration

If the photo eye has an internal switch for setting Light Operate vs. Dark Operate, select Light Operate. If the photo eye has a relay output and has both NO and NC terminals, some experimentation may be required to determine the proper connection. This is because in the Light Operate mode the output relay is normally energized and releases when the beam is blocked. Some manufacturers label an output as NO, when it is actually an NC contact. If the photo eye has a solid-state output you must, choose a sinking type connection.

Connection

Three wires to the receiver and two wires to the emitter are all that is required.

a. The +24 Volt source power is obtained at one of the three spade terminals on the terminal board.

b. The -24 Volt source power is obtained from spade terminals on our terminals #14 or 15, labeled (Photo Eye Power) on the Smart Touch Controller board.

c. The photo eye NO or NC output connects to the Smart Touch Controller board at terminal #19 if the photo eye spans the road, or at terminal #17 if the photo eye spans the gate's open storage area.

Supervised connection

This option requires both an open and close photo eye. If the photo eyes being installed have a true NC output (one that is NC when the photo eye is powered, aligned and set for Light Operate) then a supervised connection is recommended. A supervised connection will signal a system Fault and prevent gate operation if either the open or close photo eye connection ever becomes an open circuit or a short circuit. The Installer Menu item [PC_0] must be changed to [PC_ 1] to enable this feature. See Installer menu on pages 60 - 63.

Photo Eyes (non-contact) continued

Photo Eye function

This option requires both an open and close photo eye. A tripped photo eye will prevent the gate from starting in either direction if the gate is stationary. If tripped while in motion, the standard function is to pause the gate motion and then automatically restart again if the photo eye is clear within five seconds. An optional setting in the Installer Menu will cause a 2 second reversal of travel.

Alignment

Most photo eyes require careful optical alignment in order to aim the emitter beam to the center of the receiver or reflector. In order to avoid false triggering, it is important to carefully align the system, especially with retro-reflective photo eyes. The best way to assure true centering of the beam is with some trial testing where the emitter is shifted to move the beam left and right and up and down until the range of the invisible cone of the infrared beam is known. Photo eyes usually provide alignment aid LED's for this setup, but they can be hard to see. HySecurity has provided a unique feature that causes our buzzer to chirp when the photo eye enters and exits alignment. Set the User menu item [PE_0] to [PE_ 1] and the buzzer will provide an audible indication both when the beam is broken and remade.

Notes about retro-reflective systems

Correct installation and alignment of a retro-reflective photo eye and its reflector is important for a trouble free installation. Any system operating at a range greater than 16 feet is more prone to false triggering due to dirty optics, condensation or poor weather. If care is taken in the initial mounting and alignment of the 3-inch reflector, the chance of problems is greatly reduced.

Taking steps to protect the photo eye and the reflector from being exposed to fog and being absolutely certain the photo eye is perfectly aligned greatly reduces false system triggering. The ideal mounting of a retro-reflective photo eye is inside an enclosure of some sort.

The ideal mounting for the reflector is suspended inside a twelve inch long piece of 3-inch PVC conduit. Cut the opening of the PVC conduit at a 45-degree angle to act as a drip shield. Hold the reflector against the backside of the PVC conduit by attaching a 3-inch threaded connector. Do not cement the connector, so that the reflector can be reached for future cleaning. To create a mounting base, attach a 3-inch aluminum flange (electric meter hub) to the connector. This whole package can be mounted to any flat surface.

Locate the reflector in the center of the invisible beam of infrared light to achieve the most sensitive alignment. The beam center is determined by the following test: while holding the reflector in your hand, slowly raise it until the beam is no longer returned, and the photo eye trips. Mark this maximum height. Now lower your hand and determine the lower limit of the infrared beam by watching for the trip point. Mark this position as well. Repeat the same procedure for left and right at the center elevation of the beam, as determined by the previous test. Once the four limits have been determined, either mount the reflector in the center of the area outlined or realign the eye for the position of the reflector. If the photo eye is realigned, be sure to perform the centering test again to verify that the reflector is truly in the center.

Vehicle detector installation overview

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, a loop may be as small as 3' x 6'. In a traffic application employing one of our sliding gate, swing gate or vertical lift gate operators, the smallest loop should not be less than six feet square.

Preformed loop in PVC conduit

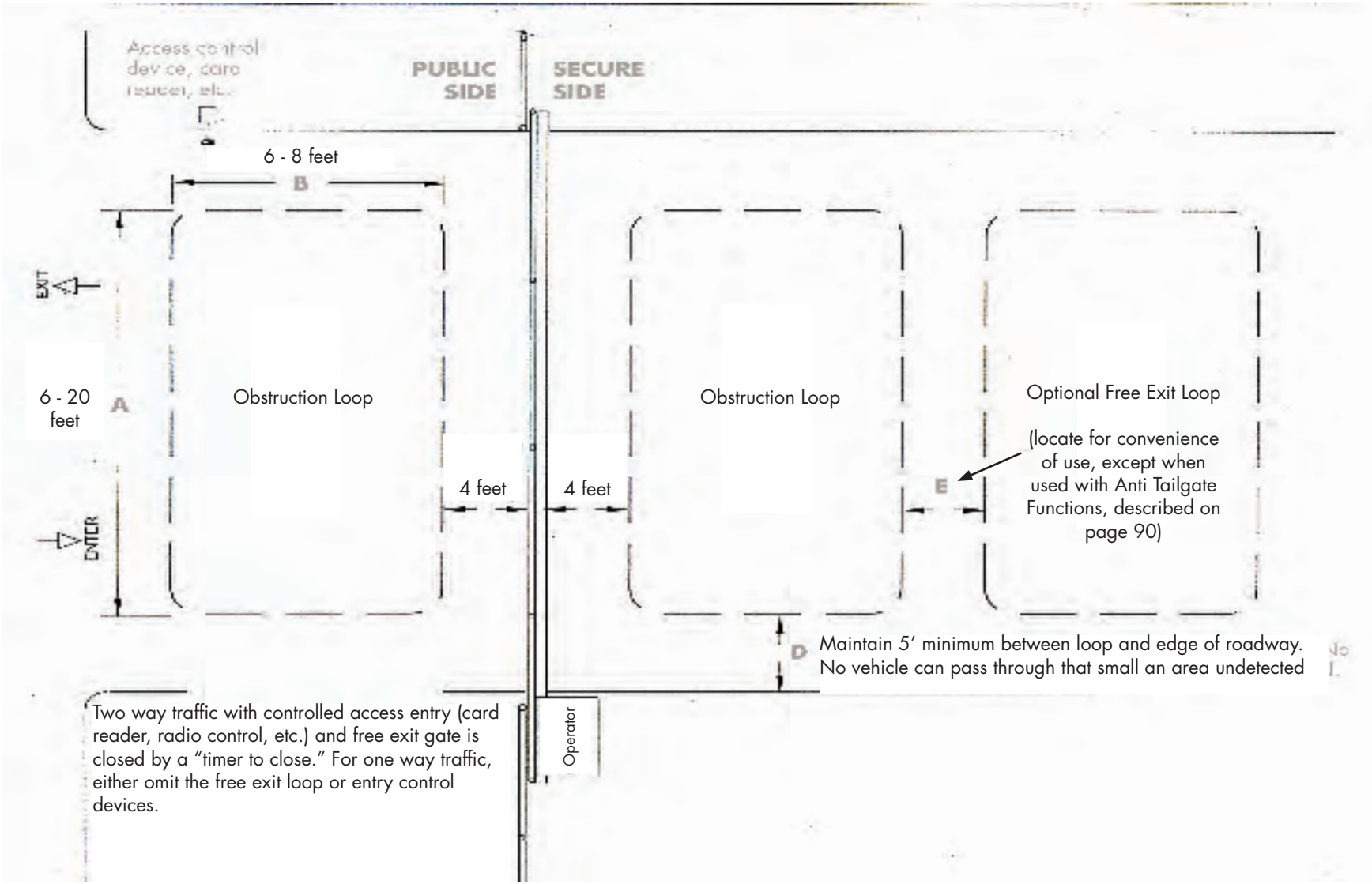
Rules to follow for security gate applications

1. The side of the loop closest to the gate shall be located at least four (4) feet distant from its line of travel.
2. The shortest side of the loop shall be between six (6) and eight (8) feet in length. The longest side of the loop shall be between six (6) and twenty (20) feet in length. For applications that need to span a wide area, use several smaller loops. Do not exceed a maximum of 200 square feet of loop area to only one detector.
3. In applications with multiple loops, keep each loop at least six feet 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 two smaller loops, connected in a series circuit, to one detector instead of one large, single loop
5. To avoid interference, keep loops at least two (2) inches 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.
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 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 ten times per foot.

9. Follow this guide for the correct number of wire turns according to the perimeter size of the loop:

   10 to 13 lf. = 5 turns 14 to 26 lf. = 4 turns 27 to 45 lf. = 3 turns 46 to 100 lf. = 2 turns

Slide gate loop layout



Vehicle detector installation overview continued

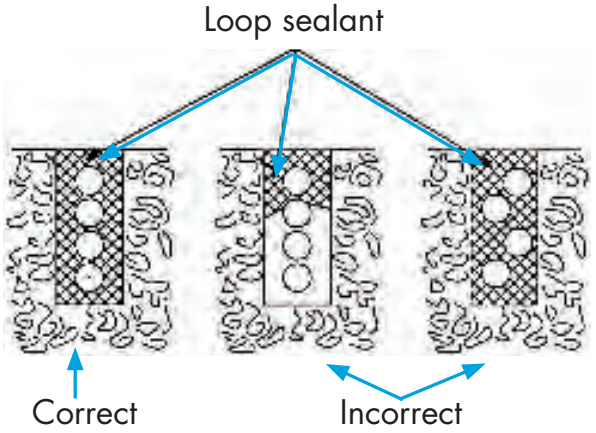
10. This guide is written from a design perspective, but installation workmanship practices are equally important to insure proper operation and long loop life. The best way to insure a quality installation is to employ a professional installer experienced with detector loops. A few important practices are:
    - The slot in the surface should be cut ¼" wide x 1 ½" deep.
    - 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 that 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 Gate Operators recommends that vehicle detectors be used for free open and obstruction sensing logic only. The exception is in parking applications with our StrongArm (barrier arm) operator 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.

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.

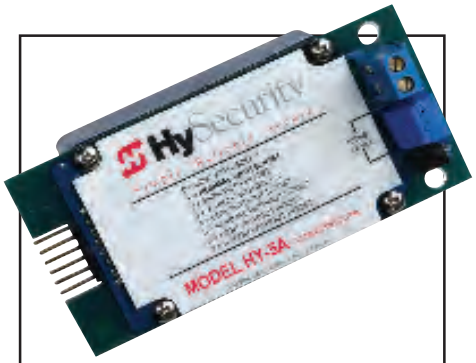
Test #2:

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.

Also see section titled "Detector & Loop Fault Diagnostics" on page 88 for additional tests that may be performed with HySecurity HY-5A mini detector modules.

Introducing HY-5A

SlideWinder's Smart Touch Controller provides a feature rich interface to four different vehicle detector inputs. Standard box type 11 pin (24 Volt DC or 24 Volt AC) vehicle detectors may be connected in the traditional manner, see page 89. HySecurity also offers a custom, diagnostics-rich mini detector module that plugs directly into the Smart Touch Control board. Not only is the field installation much faster, but there is also a large performance benefit. The HySecurity HY-5A detector is controlled by the Smart Touch microprocessor to achieve many benefits over common box type detectors. You may combine HY-5A and standard box detectors.



HySecurity HY-5A, diagnostics-rich vehicle detector

HY-5A benefits

a. Loop frequency is automatically set and monitored by the Smart Touch Controller

b. Cross talk between multiple loops is impossible

c. The best operating frequency for each loop is automatically chosen

d. Smart Touch can report the both loop frequency and call strength on its LCD display

e. Smart Touch will report loop malfunctions and store this data in its EEprom memory

f. Most detector or loop faults that could occur are reported and displayed on the LCD display

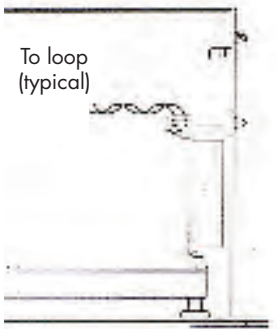
g. Smart Touch records the vacant loop frequency so that when power is turned on, a car over the loop is not missed. A tremendous improvement adding protection from vehicle damage.

Vehicle Detector inputs

There are four vehicle detector inputs available both on the main terminal strip and as direct plug in modules.

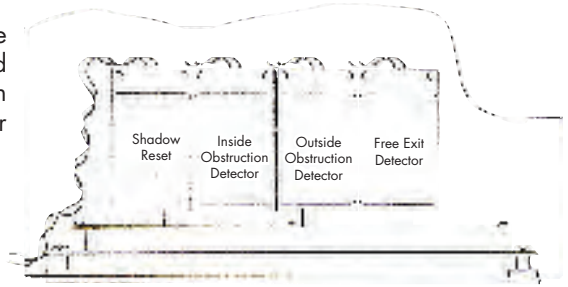
1. Free Exit Loop Detector - "ELD"
2. Outside Obstruction Loop Detector - "OOLD" (outside reversing loop)
3. Inside Obstruction Loop Detector - "IOLD" (inside reversing loop)
4. Shadow Loop Detector - "SLD" (this is for swing gates only)

It is not mandatory to use two separate detectors for inner and outer obstruction detection, however the benefits of using this additional detector are great. Several new features are possible, such as 2nd vehicle intrusion detection, loitering alert and selectable non-reversing. Multiple obstruction detectors may be mandatory because not more than 200 sq-ft of loop area may be connected to any one detector or the sensitivity becomes inadequate.



Profile of HY-5A on Smart Touch Controller

4 – HY-5A vehicle detectors mounted on Smart Touch Controller



HY-5A vehicle detector installation

1. Insert the locking end of each of two 1" long white plastic standoffs into the mounting holes on the detector.
2. Plug the detector into the appropriate socket along the right side edge of the Smart Touch Controller board for the detector function that is desired. Be careful to align the six detector pins into the socket correctly, and then snap the standoffs into the holes on the right side of our control enclosure.
3. Route the loop wires through the wire clips provided and connect the loop leads to the two terminals directly on the detector. Tighten the terminal screws securely.
4. The detectors are self tuning. Press SlideWinder's Reset button to re-tune all detectors.
5. Once enabled, if the detector module is unplugged, a communications alert [AL 10] will be triggered, then if the fault continues, [Err3] "detector failed" is displayed. The operator will also run as if the affected detector is triggered. Flashing red light on HY-5A also indicates communication loss. Error 3 [Err3] can only be cleared by pressing Reset which electronically uninstalls the detector. See Detector & Loop Diagnostics on page 88.
6. Smart Touch automatically governs frequency selection of all Hy-5A detectors. This simplifies installation and guarantees no cross talk between multiple loops. The frequency can also be manually selected if needed, see installer menu options.
7. Sensitivity is the only adjustment on the detector itself. Generally sensitivity does not need to be increased unless the loop is large loop or there are multiple loops connected to one detector. Do not exceed more than 200 sq/ft of loop area to one detector.

The rotary switch for sensitivity has eight settings, which are as follows:

0 = Low, 1 = Normal, 2 = Medium, 3 = High (0-3 with the boost feature*), 4 = Low, 5 = Normal, 6 = Medium, 7 = High (4-7 no boost feature*)

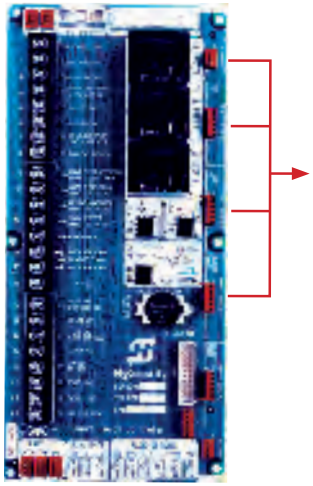
*Boost increases the sensitivity during a call and is very useful for maintaining continuous detection when the signal may become weak, such as semi-trucks.

8. Vehicle detector functions are configurable in the Installer Menu:

Display	Description*	Installer Menu Options
or 0 or 1	pause closing only **enable reversing to open**	Outside Obstruction Loop Detector function
ir 0 ir 1	pause closing only **enable reversing to open**	Inside Obstruction Loop Detector function
dL 1 dL 2-3 dL 4	**standard logic** fast close timer full anti-tailgate*	Vehicle detector logic See page 90

bold or red = default

The outside and inside Obstruction Loop Detectors "OOLD" or "IOLD" are factory configured to fully re-open the gate as the default setting. In the Installer menu, each detector can be set individually so that when the gate closes, there is only a pause if triggered. To change the IOLD setting, go to the menu item ir__ and set to 0. For the OOLD, go to the menu item or__ and set to 0. See page 90 for optional Vehicle Detector logic modes and anti-tailgate options.



HY-5A Vehicle Detector Sockets on SlideWinder's Smart Touch Board (see page 46 for Smart Touch detail view)

Detector & loop fault diagnostics

If HySecurity HY-5A mini detector modules are used, the Smart Touch Controller has ability to store and report detector and loop fault information for performance diagnostics. If The Smart Touch Controller senses a loop or detector problem, the LCD display will flash the abbreviation for the affected detector (ELd - ioLd - ooLd - SLd) then it will flash the appropriate Alert Code ALE_ to disclose the nature of the problem and the buzzer will chirp.

Alert	Loop abnormal frequency change	ALE7	ALE7
Alert	Loop shorted to ground	ALE8	ALE8
Alert	Loop disconnected	ALE9	ALE9
Alert	Loop detector active >5 minutes	AL 12	AL12
Alert	Loop detector communication	AL 10	AL10
Alert	Loop detector function	AL 11	AL11
Error	Loop detector failed	Err3	Err3

Even if the loop problem self heals, historical data about detector/loop performance and a log of Alerts, Faults and Errors can be retrieved from the Smart Touch Controller by downloading from the RS232 communications port. This requires optional HySecurity software and cables, and a PC computer or a PDA using the Palm OS, in order to read this data.

Frequency

Knowing the exact frequency of a loop can be useful as a diagnostic tool and verifying that the loop frequency is stable is also very valuable information. To view the actual loop frequency of a specific vehicle detector, go to the setting for that detector, then change the selection to a flashing 1 and then press the Select button. The display will flash between F_xx which are the high digits, then the low digits of the loop frequency counter. For example: F.05 + [3413] would represent a frequency of 53,413 Hertz. The highest digit will probably be only a single digit because loop frequency is usually a five-digit number, between 20,000 to 80,000 Hertz.

Changing the loop frequency:

HY-5A detectors can never crosstalk, but if for any reason, you want to manually change the loop frequency, change the menu selection to a flashing 3 and then press the Select button. Each detector has a choice of four frequencies. To exit, press the Menu button and the controller will perform a reset and tune to the new frequency setting.

Call strength level:

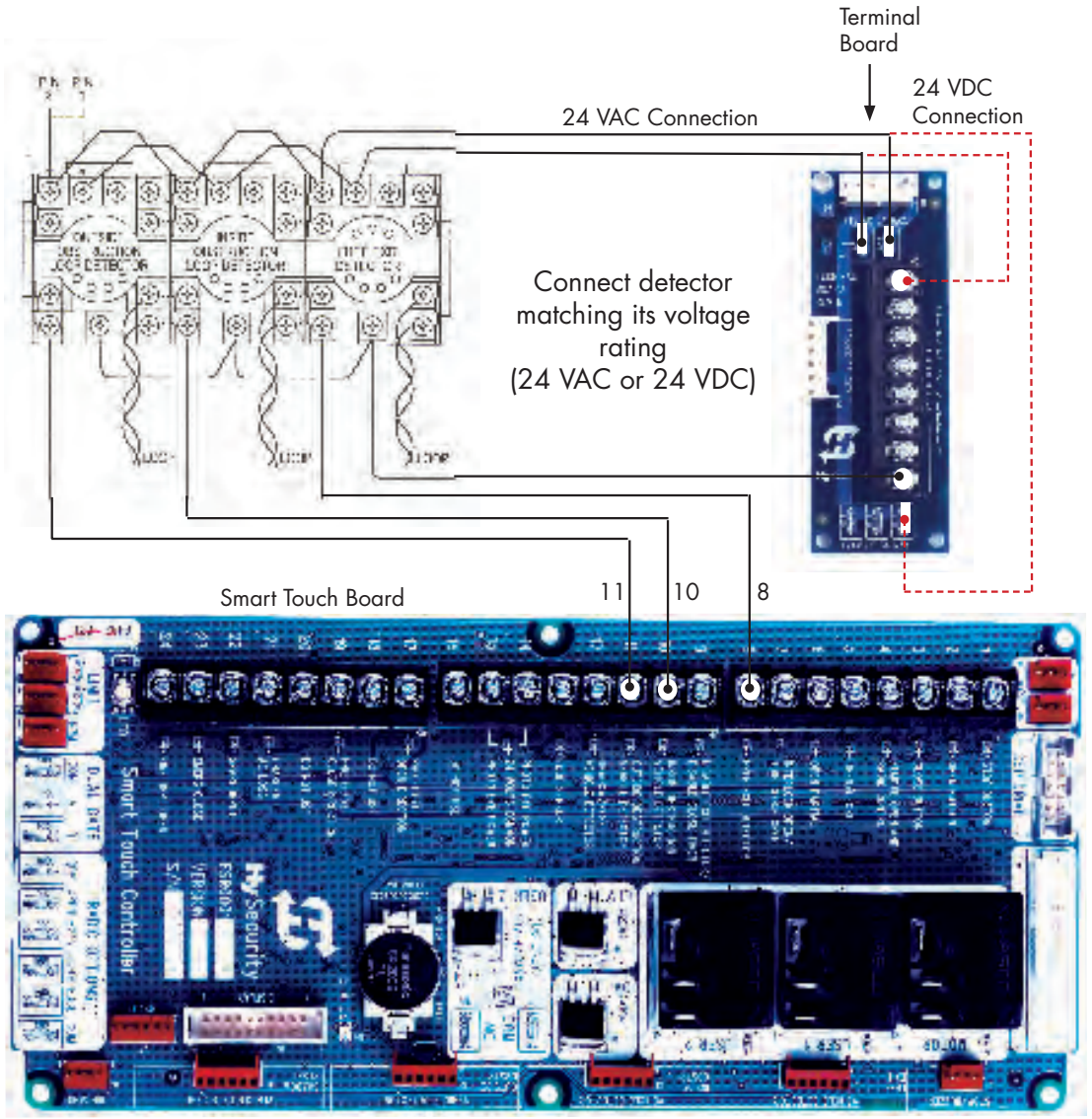
Knowing the strength level of a detector call is valuable because it provides information about how well the loop is actually "seeing" a specific vehicle. For example, it may be useful to check to see if the loop is easily detecting the middle of a high bed semi-truck. The strength of a detector call can be displayed in real time, on a scale of 1-7. As indicated in the table below, when a detector's menu setting is set to 2, and the Select button is pressed, the LCD display will read LE_x. **If the call strength is level 4 or less, consider increasing the sensitivity level**, by adjusting the rotary switch on the HY-5A detector.

Installer Menu Options	Alpha	Description	Description
ELd0 ELd1 ELd2 ELd3	ELd0 ELd1 ELd2 ELd3	Run show freq show call level 0-7 set Freq 1-4	Test factory Free Exit Loop (ELD)
iLd0 iLd1 iLd2 iLd3	iLd0 iLd1 iLd2 iLd3	Run show freq show call level 0-7 set Freq 1-4	Test factory Inside Obstruction Loop Detector (IOLD)
oLd0 oLd1 oLd2 oLd3	oLd0 oLd1 oLd2 oLd3	Run show freq show call level 0-7 set Freq 1-4	Test factory Outside Obstruction Loop Detector (OOLD)
SLd0 SLd1 SLd2 SLd3	SLd0 SLd1 SLd2 SLd3	Run show freq show call level 0-7 set Freq 1-4	Test factory Shadow Loop Detector (swing gates only - SLD)

Red or Bold indicates default setting

Ordinary 11 pin box type vehicle detector installation

1. If standard 11 pin vehicle detectors are to be used, mount these on 11 pin sockets inside the control panel, near the Smart Touch controller.
2. Both 24 Volts AC or DC are available, so either detector voltage may be used. (24 VAC is not available if AC power is off) 24 VAC is available at the spade terminals near the top of the terminal board. 24 VDC is available from the Common Bus and the +24 V spade terminals at the bottom of the terminal board.
3. Connect 24 Volt power to the detector. Polarity does not matter if the detector is a 24 AC model. If a DC detector is used, pin #1 is (+) on a DC detector and pin #2 is (-).
4. Connect the detectors output pin #6 to the common Buss on the terminal board and the output pin #5 to one of the four detector inputs (depending upon the detector function required) on the Smart Touch Controller terminal strip.
5. If multiple detectors are used, join the wires from socket to socket rather than run each to the same location separately. The only wire that must be separate is the output wire to the Smart Touch Controller as well as the loop input wires.
6. Always keep the loop wires well twisted at all places beyond the area of the loop. The lead in portion sealed in a saw cut does not need to be twisted so long as the wires are encapsulated in loop sealant and cannot move.



Vehicle detector configuration and anti-tailgate modes

Standard and Anti-tailgate modes are selectable under item dL __ in the Installer Menu

(See installer menu on page 60 - 63)

The detector function modes that result in Anti-Tailgating logic (modes 3 & 4 below) require the use of a separate inner and outer obstruction detectors.

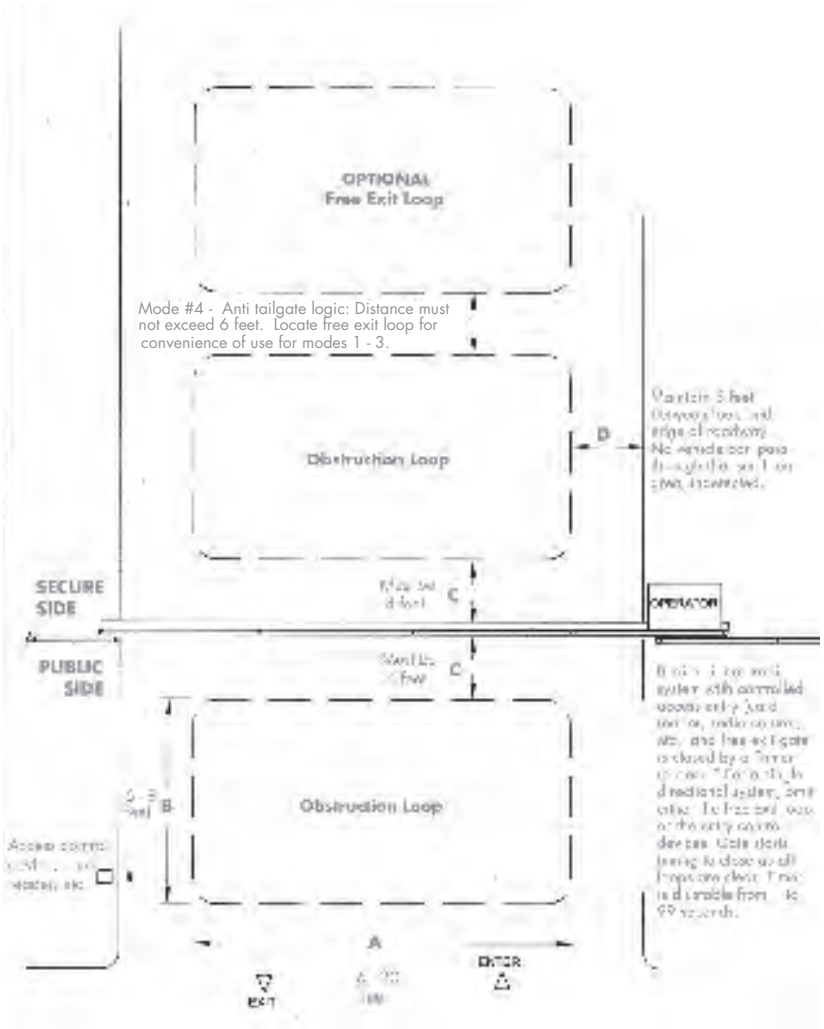
In order to use any vehicle detector logic mode other than mode 1, all the loops must be placed with the geometry and spacing as shown in the loop layout drawings on page 84 and this page.

MODE 1: (**Default**) An input from either the Free Exit, OOLD, IOLD or the Shadow detector will hold the gate open, reset the close timer, and block all close inputs.

MODE 2: Same function as mode 1, except the close timer is allowed to time out, even with the Free Exit, OOLD, IOLD or Shadow detector inputs active. If the close timer has counted to zero, the gate will close when all detector inputs are clear.

MODE 3: Same functions of mode 1, however the close timer is forced to zero when both the OOLD & IOLD are tripped simultaneously. Additionally, any other close inputs are memorized and the gate closes immediately when all open commands and vehicle detector inputs are clear.

MODE 4: Full Anti-tailgate logic. Same as Mode 3 functions, plus the gate will stop during the opening cycle when both the OOLD & IOLD are tripped simultaneously. When the OOLD & IOLD loops are cleared, the gate closes immediately. The OOLD and IOLD can be individually set so that, if tripped while closing, the gate may pause only or reverse to reopen. In this mode, the free exit detector input, ELd, is blocked while the gate is closing.



Notes

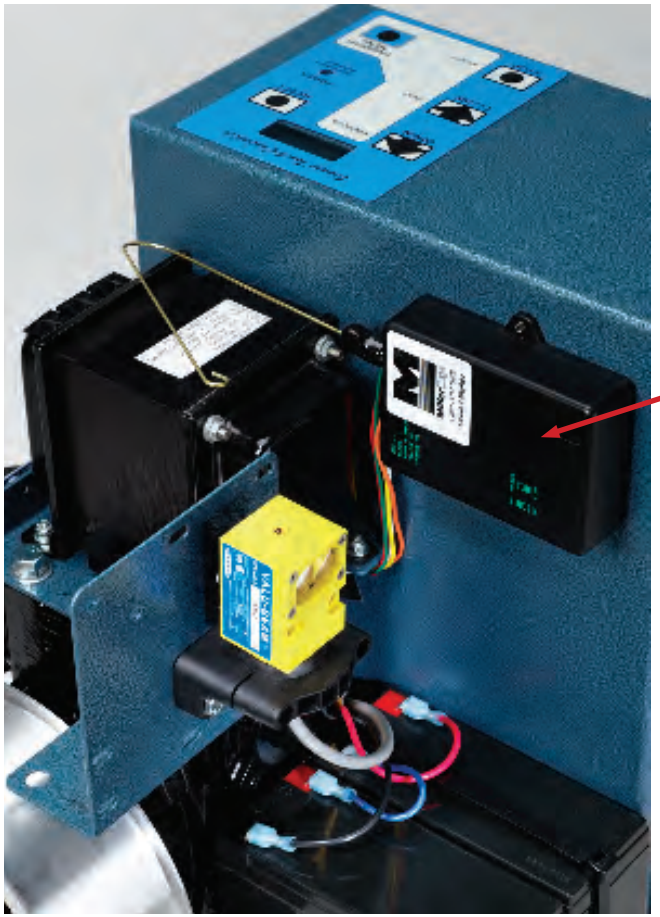
Notes

Radio receivers

Mount internal receiver and antenna

Mount a commercial style 24-Volt radio receiver (external antenna type) on the inside of the operator, on the backside of the electrical box. Route the wires to the area on the Smart Touch Controller marked Radio Options. Only three wire connections are needed because the 24-Volt supply and the radio output share a wire. Being certain to observe polarity, crimp the black radio power wire together with one of the radio output wires into a .25" spade connector and connect to the COM terminal.

Connect the red wire to the +24V terminal and connect the other radio output contact wire to the spade marked OPEN. Note that this terminal is the same as the #4 input terminal labeled Remote Open on the main control board.



Radio receiver mounted on back of chassis using pre-drilled hole(s) (do not drill through chassiss)

Radio receivers continued

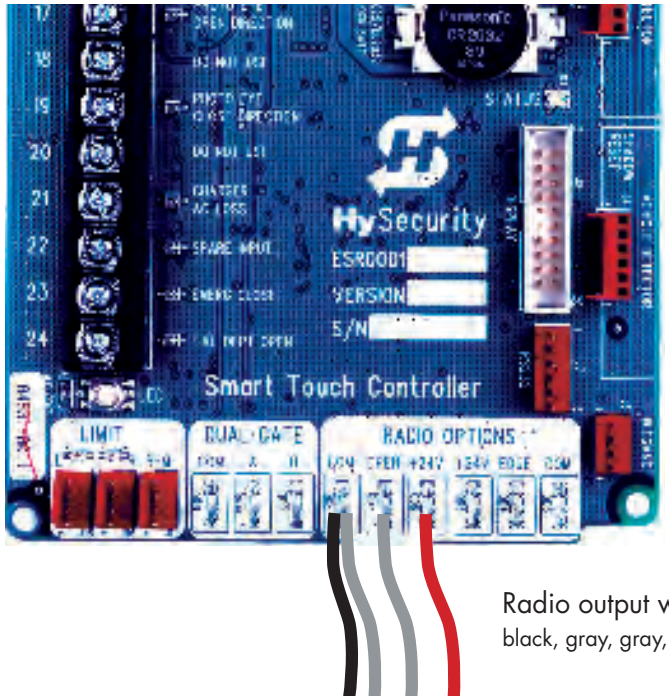
Mount external antenna – set dip switches

Mount an external antenna onto the top of a fixed post of the fence near the operator.

Connect the antenna into the socket on the radio receiver.

Set the DIP switches in the receiver to match the same code used in the transmitter.

If there is also to be an edge sensor transmitter to reverse the gate, be certain to use a two channel commercial receiver. Remember that each transmitter and receiver must have their codes set the same or they will not function.



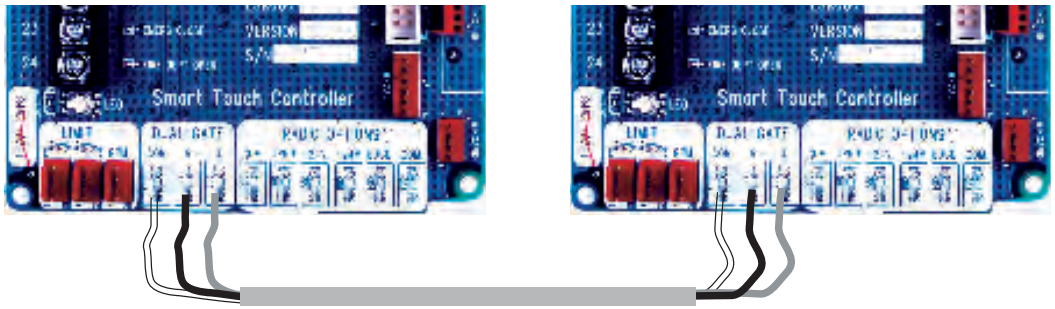
Radio output wires
black, gray, gray, red

Connect a master slave pair

Configuring two operators to be a Master & Slave pair is easy with the Smart Touch Controller. There is no need to order a special model or any adapters. The area of the board marked Dual Gate employs a 3-wire RS485 serial port for communication between Master & Slave operators.

1. An electrical conduit for the interconnecting wires must span between the two operators.
2. Complete the installation of both of the operators as separate machines and verify that their basic functions are correct as solo operators before interconnecting them.
3. The two gate operators can be supplied by one home run from a one 20 Ampere circuit breaker in the main panel. Verify the wire size is sufficient for the load of two SlideWinders – see page 31.
4. External control inputs, vehicle detectors and entrapment protection sensors may be connected to either gate operator without regard to preference.
5. To interconnect the two operators, route a twisted pair with a ground wire between the electric control boxes and connect to the RS485 Dual Gate terminals, in matching order on both machines: In the RS485 shaded area connect the terminals for Master Com to Slave Com with the ground wire, and connect the Master A to Slave A and the Master B to Slave B using the twisted pair of wires.

6. The Installer Menu in each machine must be set as a Master or a Slave under menu item d9__. Set one operator as a Slave d9 1 and the other as a Master d9 2. If the function of any external input is to be different than the factory default, configure for the desired function on the operator where that input is connected. Internal functions, such as the close timer or reversal distance, are controlled by the Master operator regardless of the settings in the Slave.
7. Once set as a Master or a Slave, SlideWinders will be in constant communication. If that communication stops because wires are severed or one operator is turned off, both machines cease functioning and the LCD displays Err4, which is a Master/Slave communication error. This error cannot be reset until both machines are functional and communicating properly again.



Connecting an interlocked pair

An interlocked pair of operators is not a Master/Slave system, but is simply two gate operators interlocked such that one cannot open unless the other is fully closed. This connection is used frequently at correctional facilities for Sally port gates. The Smart Touch controller provides both an interlock input #7 and the interlock output contact that is required.

1. User relay 1, 2 or 3 on the Smart Touch board may be used to provide the necessary interlock function. Connect a total of four wires between operator #1 and operator #2 as follows: One wire from the common bus of each operator to the COM terminal of a User relay in the other operator. Then connect a wire from the NO terminal of same User relay to the Interlock input (#7) of the other operator.
2. For the interlock to function, the User relay chosen must be configured to perform function #1. The User relays are configured in the Installer Menu as item r 1__, r2__ or r3__ according to the definitions described on page 62.
3. Since the interlock input terminal #7 is convertible to alternately be used as a time clock input, it is possible that it may need to be switched to perform the interlock function. To verify this, go to the Installer Menu and set item tC__ to tC 1.

Connecting to an external lock mechanism

An external solenoid lock or maglock can be controlled by the Smart Touch controller to unlock just before gate motion begins.

1. User relay 1 or 2 on the Smart Touch board must be used to create the output for a solenoid lock. Connect the voltage matching the lock solenoid to the selected User relay 1 or 2 COM and connect a solenoid coil to the NO output of the same relay (connect a maglock coil to the NC output). The other solenoid or maglock coil wire connects directly to the supply source matching the coil voltage.
2. The external lock function must be selected for the user relay chosen by setting the menu to output function 6. The User relays are configured in the Installer Menu as item r 1__ or r2__ according to the definitions described on page 62.

Connecting a gate secure position indicator

An external device can be signaled by the Smart Touch controller to indicate the gate is secure.

1. User relay 1 or 2 on the Smart Touch board may be used to provide the output for position indication. Connect a voltage source matching the indicator light to the selected User relay COM terminal and connect the gate secure light to the NC output of the User relay. The other indicator light wire connects directly to the supply source matching the light. If a light is required to signal an unsecured gate, connect it to the same User relay NO output.
2. To create the gate secure / unsecured indication function, the User relay chosen must be configured to perform function #1. The User relays are configured in the Installer Menu as item r 1__ or r2__ according to the definitions described on pages 67 - 68.

Notes

Notes

Troubleshooting

LCD Display	Alpha	ERROR, FAULT, ALERT or other status	Possible Cause to Investigate
SAFE	SAFE	Safe Mode Alert Close timer disabled	Occurs when either the Edge sensor or Inherent sensor has been tripped. In SAFE mode, the automatic close timer is disabled, but any command will reset and/or start the gate in motion. Safe Mode clears when full travel is reached. Gate binding or cable binding on the drum could cause false triggering.
Entr	Entr	Entrapment Mode Alert Buzzer alerts and the gate operator will not function until reset	Occurs when the Inherent sensor is tripped when the gate is already in SAFE Mode. The operator will not function until reset, which can be performed by pressing any of the following inputs: Stop PB, Open PB or Reset. A reset input places the operator into SAFE mode. Gate binding or cable binding on the drum could cause false triggering.
noAC	noAC	No AC input power – Advisory only	Advisory message informing of AC power loss
Lo24	Lo24	Low 24V UPS batteries - Advisory only All functions are still normal.	Occurs when the battery voltage has dropped to less than 22 Volts. At this level, the batteries are 80% depleted. Normal function until 21Volts
bAt - dEAd	bAt - dEAd	Extremely low UPS batteries – no automatic operation - batteries below 21 Volts	Occurs when the battery voltage has dropped to less than 21 Volts. At this level, the batteries are 90% depleted. The gate will automatically open or close depending upon setting chosen – see page 55. No additional automatic function is possible, but limited push button control is available to 18 Volts.
bAdP	bAdP	Critically low 24V supply power This message can only occur on initial start up if power is critically low.	DC power is below 14V – no control functions will be allowed at all. Check AC power source. Check condition of batteries. Check charger function. Check wiring to batteries. Check solar panels if used.
LErn	LErn	LErn is associated with learning the full travel limit stops	LErn oPEn will be displayed when learning the open limit stop position. LErn CloS will be displayed when learning the closed limit stop position. LErn will also be displayed in the re-learn mode after a power loss.
too - Long	too - Long	Message displayed if attempting to teach a limit setting greater than maximum travel.	SlideWinder 24 will learn limits not less than 10 feet and a max of 24 feet SlideWinder 38 will learn limits not less than 10 feet and a max of 38 feet
too - Shrt	too - Shrt	Message displayed if attempting to teach a limit setting less minimum travel.	SlideWinder 24 will learn limits not less than 10 feet and a max of 24 feet SlideWinder 38 will learn limits not less than 10 feet and a max of 38 feet
FAiL	FaiL	Corrupt software or bad board	This message occurs If updating software and communication is broken. Reload software again to clear the FaiL message. This message may also indicate to replace the Smart Touch board
--------	-------	No display – operator non functional	1. Check the AC power to the SlideWinder 2. Check the three circuit breakers on the top the 500 VA transformer. 3. Check the 30A fuse on the lower right corner of the drive board. This is accessed through the cover where the AC input wires connect.
--------	-------	No display – operator functional, but not the membrane switch buttons	Check the ribbon harness that connects the Smart Touch controller with the display board at each end.

LCD Display	Alpha	ALERTS (advisory, not serious)	Alerts self clear when the problem goes away
ALE 1	ALE1	Gate forced open	This alert occurs if the gate is forced open from the full close limit and is prevented from re-closing.
ALE2	ALE2	Gate drift closed	This alert occurs if the gate drifts closed from the full open limit and then is prevented from re-opening.
ALE3	ALE3	Gate drift in transit – Advisory only	This alert appears if the gate drifts three times in a five minute period The most likely cause is a gate built on a sloping track.
ALE4	ALE4	Thermal overload alert	This alert will temporarily disable the operator but will automatically reset itself when it cools down. Then the operator will be in SAFE mode.
ALE5	ALE5	Not used in SlideWinder	
ALE6	ALE6	Drive belt slipping	This will occur if the drive belt is slipping. Check belt tension as described on page 26 and tighten as required.
ALE7	ALE7	Hy-5A vehicle detector – Abnormal frequency change alert	This message will also signal which detector generated the alert ELD, SLD, IOLD or OOLD. This alert indicates an unstable loop frequency. The loop and lead in wires should be checked for problems or replaced.
ALE8	ALE8	Hy-5A vehicle detector – Shorted loop alert	This message will also signal which detector generated the alert ELD, SLD, IOLD or OOLD. This alert indicates the loop or lead in wires are shorting out and should be checked for problems or replaced.
ALE9	ALE9	Hy-5A vehicle detector – Disconnected loop alert	This message will also signal which detector generated the alert ELD, SLD, IOLD or OOLD. This alert indicates the loop wires are loose or disconnected and should be checked for problems or replaced.
AL 10	AL10	Hy-5A vehicle detector – Communication alert	This message will also signal which detector generated the alert ELD, SLD, IOLD or OOLD. This alert indicates the detector is not properly communicating with the Smart Touch controller. This will occur if a detector is unplugged or the connection is unstable for some reason. If the communication is not re-established within 30 seconds the controller will self reset and the message changes from AL10 to ERR3.
AL 11	AL11	Hy-5A vehicle detector – Malfunction alert	This message will also signal which detector generated the alert ELD, SLD, IOLD or OOLD. This alert indicates the Hy-5A detector malfunction and should be checked for problems or replaced.
AL 12	AL12	Detector input triggered too long - More than 5 minutes	This message will also signal which detector generated the alert ELD, SLD, IOLD or OOLD. This alert works for Hy-5A detectors as well as any input connected to the terminal strip for standard box detectors. The problem may be because a car is parked on the loop or may be the loop is unstable and holding the detector triggered. Check for problems.
AL 13	AL13	Stiff gate alert – Advisory only	This message occurs if the Smart Touch controller senses that the gate is hard to move. Check the gate for damage or gate hardware for excess drag or if the gate is heavy.

LCD Display	Alpha	ALERTS continued (advisory, not serious)	Alerts self clear when the problem goes away
AL 14	AL14	Stuck gate alert	This message occurs if the Smart Touch controller senses that it cannot move the gate at all. Check the gate for damage or gate hardware for excess drag or if the gate is heavy.
AL 15	AL15	Missing limit target (pickle)	Check to see if the limit target (pickle) is installed on the cable such that it reaches within two inches of the drum when the gate has moved to its left most position. The pickle should not be more than one inch below the sensor. Check to see if the sensor is plugged into the drive board.
AL 16	AL16	Crash of internal communication bus	This is not as serious as it looks, but does trigger a system reset. This alert may occur if plugging or unplugging an Hy-5A detector with the power on or by plugging the harness to the display board. Frequent crashes would suggest replacing the Smart Touch controller.
AL 17	AL17	Bad or missing 3V disc battery Replace 3V battery	Replace the 3V disc battery that controls the internal clock, with the AC power turned on. Use a CR2032 battery and for instructions on setting the clock see page 60.
AL 18	AL18	Bad 24V UPS batteries Replace main batteries	Replace the 24V batteries that provide the UPS capability. The Smart Touch controller monitors the condition of these batteries any will trigger an AL18 if it determines the batteries are performing poorly. Batteries should last 3-5 years depending upon heat – the same as a car battery.
LCD Display	**Alpha**	**FAULTS (more serious than Alerts)**	**Faults require a stop input or reset to clear**
FAL 1	FAL1	Maximum run timer fault	The maximum run timer will not allow a cycle that exceeds one minute duration. Press the Stop or reset button to clear and restore operation. In SlideWinder, a FAL1 fault should never occur. Call factory.
FAL2	FAL2	Supervised photo eye fault Photo eye missing or not working	This fault can only occur if the special supervised photo eye function has been chosen and a fault is detected. See page 69 for details.
FAL3	FAL3	Not used in SlideWinder	Not used in SlideWinder
FAL4	FAL4	Gate no load fault	The SlideWinder detects no load – cables disconnected. Re-install cables and press stop or reset to clear the fault and restore operation.
LCD Display	**Alpha**	**ERRORS (most serious reports)**	**Errors require a reset to clear and usually something to be fixed.**
Err 1	Err1	Directional motion error	Wrong direction motion detected. Check wiring to motor. Press reset to clear the error.
Err2	Err2	Not used in SlideWinder	
Err3	Err3	Hy-5A vehicle detector – Communication failed Smart Touch will behave as if the detector is triggered, usually holding the gate fully open	This message will also signal which detector generated the error ELD, IOLD or OOLD. This error indicates the detector is not communicating with the Smart Touch controller. This will occur if a detector is unplugged or the detector has failed. To correctly remove a detector, the reset button must be pressed to uninstall it, which clears the error.

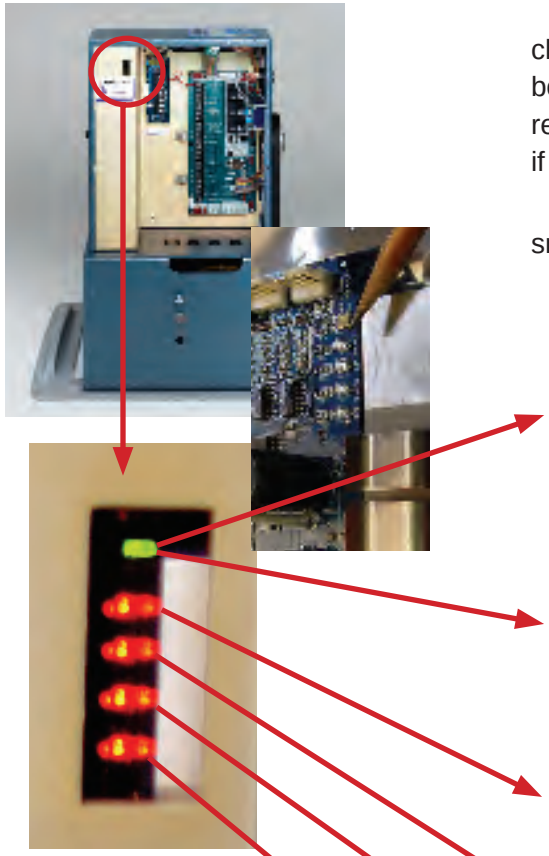
LCD Display	Alpha	Errors are the most serious reports	Errors require a reset to clear and usually something to be fixed.
Err4	Err4	Master – Slave communication failed	This message occurs when an operator has been configured as a Master or a Slave and the Smart Touch controller does not sense communication to another machine. Be certain the power is turned on to both operators and the wires that are connected to A & B are not broken. Try configuring the operator as a solo unit and testing for normal function. See page 80 for Master – Slave information.
Err5	Err5	General protection error	Report this error to HySecurity engineering.
Err6	Err6	Smart Touch controller – Drive board communication failed	This error message occurs when the Smart Touch controller senses no communication to the Drive board. Check for a loose ribbon cable from the top of the Smart Touch board to the top of the Drive board. Check the status of the LED's at the top of the drive board and call the factory.
Err7	Err7	Checksum error in menu	This error message may occur after loading new software into the Smart Touch controller. Call the factory for help in clearing this error.
Err8	Err8	RPM sensor problem	Check the wiring to the RPM sensor located behind the large pulley. Also check the condition of the sensor and replace it if damage is visible. The gap between the sensor and the pulley should be about 1/8 inch.
Err9	Err9	Disconnected 24V UPS batteries	SlideWinder will function with very old or worn out batteries but the Smart Touch controller triggers an error if the batteries are totally disconnected. Check the wiring connection to the 24V UPS batteries. Check the 30A fuse on the lower right corner of the drive board. This is accessed through the cover where the AC input wires connect.

Other messages on the LCD display:

If the SlideWinder receives a command to open or close and cannot, the LCD display will signal what device is preventing operation.

a. If the stop input is held active and the open or close inputs are triggered, the display will flash StoP.
b. If the open input is held active and the close input is triggered, the display will flash oPEn.
c. If the open or close inputs are triggered, and the close photo eye is active the display will show PEC.
d. If the open or close inputs are triggered, and the open photo eye is active the display will show PEo.
e. If the open or close input are triggered, and the gate edge sensor is active the display will show gEb.
f. If the close input is triggered, and a vehicle detector is active the display will show ELd, ioLS, ooLd or SLd depending upon which detector is active and preventing gate closure.
g. If while teaching SlideWinder its limits the Inherent sensor is triggered, the display will show iES.

Drive board



The Drive Board, which controls the three phase electric motor and is also the battery charger, is mounted behind the gold panel on the left side of the control enclosure. The drive board has no user serviceable parts except for a 30 Amp ATO fuse which is accessible by removing the wiring access window plate on SlideWinder's left side. This fuse should only fail if the 24 Volt batteries are plugged in backwards.

There are 5 troubleshooting LEDs on the drive board. They can be viewed through the small vertical "window" in the gold panel. Their purpose is described below.

LED	Indication	Details
Top Green LED	Blinking when communicating normally to Smart Touch Controller	If this LED is off there is no communication between the Drive Board and the Smart Touch Controller. 1. Check to verify that the DC power switch is turned on. 2. Check to make verify the Smart Touch Controller is not in Menu Mode. 3. Check to make certain the ribbon cable between the Drive Board and the Smart Touch Controller is plugged in.
Red LED	Drive Board fault	If the top LED is red, the Drive Board has declared an internal fault. Call factory
2nd LED Red	Limit target seen	This LED only lights when the Limit Target (Pickle) is detected by the Limit Target sensor. If not lit when the Pickle is under the sensor, there is a sensor problem or the sensor is unplugged.
3rd LED Red	Input at 115V	This LED lights when 115V has been applied. This LED will be extinguished when powered by 230V
4th LED Red	Charger active	Solid LED is high charge, flashing LED is float charge mode
5th LED Red	RPM sensor	This LED will blink slowly if the gear box input pulley is moving slowly. This LED will appear steady on when the gate is running. This LED may be on or off when the gate is at rest.

Notes

Schedule

SlideWinder is a very simple machine and requires little maintenance. Please review the following maintenance items and schedule:

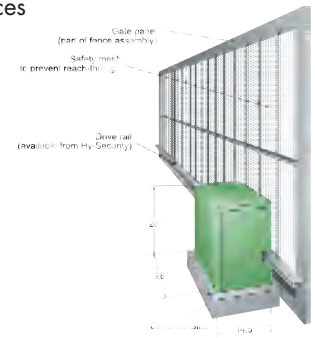
	Maintenance Interval	
Monthly	**External Entrapment Protection Sensors**	UL325 requires that your gate be fitted with entrapment protection sensors that reverse the gate in both directions of travel. These sensors must be tested monthly to verify proper function. If your gate employs an edge sensor transmitter, replace its battery annually.
Every 3 months	**The gate and its rollers**	Your gate must roll freely without binding or there will be problems. A stiff gate may falsely trigger the inherent reversing sensor, cause travel to reverse and the LCD to display SAFE or Entr. A stiff gate requiring 80% or more of available power may also trigger the LCD to display AL13. This is an advisory message suggesting the gate hardware be checked. A stuck gate will trigger AL14. Lubricate and align your gate as needed to keep it operating smoothly.
Every 6 months	**Cable tension**	SlideWinder's cable cannot slip, so it does not need to be tight, but should also not hang too loose or the pickle may hit the left side cover. Because the cable is very strong, tension should not change over time. If the gate gets damaged, cable tension could be affected.
Every 6 months	**Cable winding and alignment**	SlideWinder's cable drum must always be full of cable, except for a small gap between the two cables. There must only be one layer of cable on the drum without overlap, or binding will occur. See page 44 - 45 for a diagram of a properly aligned cable.
Every 6 months	**Gear box lubrication**	The gear box should not need any attention. If you experience an oil leak, the gear box needs replacing.
Every 6 months	**Clean**	Keep SlideWinder clean and free of debris, insects and rodent nests to protect electronics and drive.
Every 6 months	**Drive belt**	SlideWinder's Micro-V belt is the same technology as those used in modern cars and seldom requires replacement. The belt must however be properly tensioned upon SlideWinder installation. See page 30. If the belt slips, SlideWinder's LCD displays ALE6. If the belt slipped without the gate moving, it is possible to burn a flat spot, which will make a thumping sound when running. If the belt becomes cracked or worn from slipping it should be replaced.
As needed	**Motor noise**	If you hear a noise that sounds like a bad motor bearing (thumping), monitor the noise for a few dozen cycles. In most cases the noise is caused by crystallization of bearing grease. Over time these bits get reabsorbed into the grease. Bad bearings should only occur in a very old SlideWinder after high cycle use. Noise can also be caused by a damaged drive belt.
As needed or after 3 years	**24V UPS batteries**	All batteries wear out. They should last three to five years under normal service. SlideWinder does not depend upon its batteries to function normally, but UPS capability is greatly reduced as batteries age. Heat and deep discharge cycles lessen battery life. SlideWinder's LCD displays Err9 if the batteries are disconnected, and this must be remedied before the operator will function. The LCD displays AL18 when the Smart Touch controller detects the batteries have aged and should be replaced. This alert is advisory and does not affect function.
As needed or after 5 years	**3V disc battery**	The Smart Touch controller uses a lithium disc battery to run its internal clock. This battery should be changed every five years. If this battery is bad, the LCD will display an advisory message AL17. See page 66 for location.

SlideDriver™

SlideDriver
A dozen premium operator models to automate a 500 lb. to 20,000 lb. slide gate.

Ultra low maintenance due to small number of moving parts. Hydraulic operator. AC (every voltage/phase) & DC models.

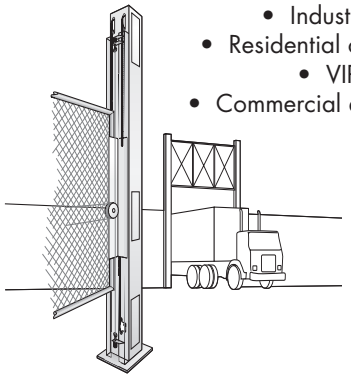
- Power plants
- Railroad yards
- Industrial facilities
- Residential communities
- VIP residences
- Embassies



HydraLift™

HydraLift
Premium vertical lift gate operator that allows quick traffic inflow / outflow in multiple lane applications. Also used where space for slide gate is unavailable. Ultra low maintenance due to small number of moving parts. Hydraulic operator. AC (every voltage/phase) & DC models.

- Power plants
- Railroad yards
- Industrial facilities
- Residential communities
- VIP residences
- Commercial applications



StrongArm™

StrongArm

Loooong Arm. StrongArm is available from 10′ to 36′ arm lengths. This super-tough hydraulic barrier arm operator meets the demands of continuous duty applications. It long outlasts its competition. Hydraulic operator. AC (every voltage/phase) & DC models.

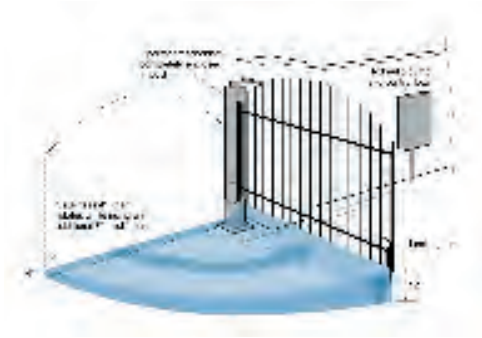
- Corporate campuses
- Residential communities
- Airport taxiways
- Multiple lane applications
- Freight yards

SwingRiser™

SwingRiser

Swing and lift action clears curbs, or up to 10″ of elevated road or snow. As comfortable in industrial as in elegant commercial or residential applications. Long life under infrequent or continuous duty. Hydraulic operator. AC (every voltage/phase) & DC models.

- VIP residences
- Commercial parking
- Railway yards
- Corporate campuses



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 specificaton and will be free from defects in material 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

d. Batteries used in all D.C. operators: One Year from date of shipment from HySecurity.

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.

Notes

Notes

Parts List

Front Cover Callout	SlideWinder Part or Callout	Part Number
1	Cover, high impact Polyethylene	MSWCR SWG 001
2	Cover Mounting Bolt	MFATS 004 016
3	Reset Button	ESR00039
4	Cover locking kit (includes padlock)	AEKKT SWG
5	Base Riser kit (includes Base Riser & internal Stiffener)	MSWBR SWG WHT
6	Base Plate, Polyethylene mounting, Base, drive belt cover and limit sensor mount packaged and sold together)	MSWCF SWG 003
7	Chassis	MSCWS SWG 001
8	Drive Board 1/2 hp (SlideWinder 24)	ESR00077
9	Drive Board 1 hp (SlideWinder 38)	ESR00076
10	Terminal Board (24 V AC and DC outputs and common strip	ESR00075
11	12V DC Accessory Power Supply Board (optional)	ESR00076
12	SmartTouch Membrane Switch	ESR00038
13	Display Board, LCD	ESR00019
14	HY5A Vehicle Detector (optional)	EECDE HY 5A
15	Clock Battery, 3V Lithium (on Smart Touch Board)	EDCBY CR 2032
16	Smart Touch Control Board, SlideWinder 24 (1/2 hp model; ot5)	ESR0001785
17	Smart Touch Control Board, SlideWinder 38 (1 hp model; ot6)	ESR0001786
18	56V 500 VA Transformer	ETRTR 056 500
19	Cable Drum, SlideWinder 38 - 1 HP	MSWGD 038
20	Cable Drum, SlideWinder 24 - 1/2 HP	MSWGD 024
21	Motor Mounting Bolts, 5/16" x 3/4" zinc hex head	MFACS 005 012
22	Belt Tensioning Spring	MSLSP UR 075
22	Belt Tensioning Bolt	MFACB 005 032
22	Belt Tensioning Nut	MFAHN 005
23	Motor, low voltage, SlideWinder 38, 1 hp, 3-phase	EMOB6 435 SLIDB
24	Motor, low voltage, SlideWinder 24, ½ hp, 3-phase	EMOB6 435 SLIDA

Front Cover Callout	SlideWinder Part or Callout	Part Number
25	Alarm, piezo buzzer	ESR00080
26	Cover, Plexiglas over control boards	ECPSW SWG 001
27	RPM / Position Sensor	ESR00074
28	Pulley, large	MSWPL SWG
29	Drive Belt, Micro-V	MBDMV SWG 001
30	Drive Belt Cover (not pictured; available as part of #5)	
31	Pulley, small	MSWPS SWG 001
32	Battery kit, standard, 24V - 7AH	EDCBY 24V UB
33	Limit Target Assembly (Pickle)	MSWLT DEL
34	Limit Target Sensor Mount; available as part of #6	
35	Limit Target Sensor	ESR00070
36	Reducer, Gearbox	MSR00008
37	AC and Battery Charger Power Switch	ESWRS 120 020
38	DC and Drive Motor Power Switch	ESWRS 120 020
39	115V / 3 Amp Convenience Outlet	ESR00082
40	Access Cover for AC power connection.	MEPSP SWG 002
41	Cables: SlideWinder 24—40' cables	MWROPE SWG 40
42	Cables: SlideWinder 38—62'cables	MWROPE SWG 62
43	Cables: SlideWinder 38—80' cables	MWROPE SWG 80
44	Photo Eye mounting brackets (optonal, one for each direction)	EECPH SWG 001
45	Gate attachment kit;, 2 brackets; two eye bolts, nuts, washers, 2 cable collars, 2 cable crimps	MSCWS SWG RES
46	Cable Cutters (optional)	TSWGC 001
47	Cable Crimp tool (optional)	TSWGC 002
48	Heavy duty battery kit for extended DC operation; includes 2-12V 110 AH batteries & wiring harnesses	AEKBB SWG

Numbers refer to parts callout on the Inside Front Cover of this manual

Parts List

Front Cover Callout	SlideWinder Part or Callout	Part Number
49	Warning Sign kit; gate plackards and wire ties	SAFETY KIT
49	Warning Sign (alone-not a kit)	SLAOP 049
NP	Gold Back Pan (Smart Touch, Terminal Board and drive board mounted to Back pan	EENBP SWG 001
NP	Harness: (Smart Touch to drive board)	ESR00078
NP	Fuse, 30A (lower right corner of drive board)	ESWFU ATO 30
NP	Harness: control board to display board	ESR00046
NP	Harness: buzzer and stop	ESR00044
NP	Harness: (drive board to terminal board)	ESR00079
NP	START Download Cable (Smart Touch Analyze and Retrieve Tool)	ESR00024
NP	Set screw (for pulleys)	MFASS 004 006
NP	¼ key (for drum)	MFAKS 004 016
NP	Battery Wire Red	E14RED24 02 02
NP	Battery Wire Black	E14BLK24 02 02
NP	Battery Wire Blue	E14BLU03 02 02
NP	Battery Harness (for heavy duty batteries)	ESR00081
NP	Power Wire Black	E14BLK09 02 00
NP	Power Wire White	E14WHI09 02 00
NP	Ground Wire Yellow Green	E14YGRN05 05 00
NP	Drum Bolt	MFACS 006 020
NP	Drum Washer	MFAFW 006 222
NP	Drum Lock Tab Washer	MSTLW 222 001
NP	Back Pan (gold colored mounting pan)	EENBP SWG 001
NP	Charger Wire Yellow	E14YEL09 02 03
NP	DC Wire Blue	E14BLU09 02 03
NP	Charger Wire White / Black	E14WBLK09 02 03
NP	DC Wire Blue White	E14WBLU09 02 03
NP	Transformer Mount	EECTR SWG 001
NP	Cable Holder	ESR00056
NP	Elevator Bolt 1/4-20 X 1	MFAEL 004 016
NP	Push fastners for mounting Limit Target Sensor	MFPF 003

NP = Not Pictured

HySecurity

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Kent, WA 98032-1876
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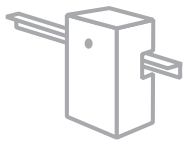
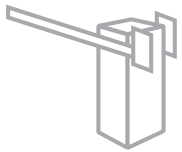
SlideWinder



SlideDriver



StrongArm

SwingRiser

HydraLift