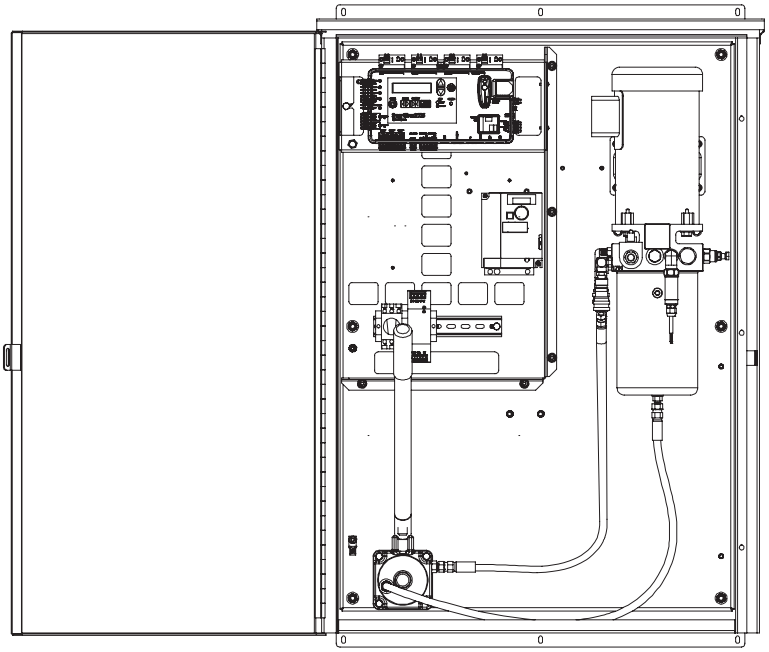
HydraSupply II



Hydraulic Power Unit for HydraSwing, SwingRiser, and Modular SlideDriver

Installation and Programming Manual

HySecurity
a Nice brand

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Safety Requirements

Important Safety Information!

Hazards, associated with automatic gates, can be reduced with proper site design, installation, and use. Installers, maintenance crews, and owners/users must read and follow the safety requirements found in Nice | HySecurity® product manuals.

Safety Messages

The safety messages below inform you about potential hazards that can result in injury. Safety messages specifically address level of exposure to operator and are preceded by one of four words: **DANGER, WARNING, CAUTION** or **NOTICE.**

DANGER

Indicates a hazardous situation which, if not avoided, **WILL** result in **DEATH** or **SERIOUS INJURY.**

CAUTION

Indicates a hazardous situation which, if not avoided, **COULD** result in **MINOR** or **MODERATE INJURY.**

WARNING

Indicates a hazardous situation which, if not avoided, **COULD** result in **DEATH** or **SERIOUS INJURY.**

NOTICE

Addresses practices not related to personal injury. Indicates damage to equipment is probable if the hazardous situation is not avoided.

Industrial Symbols

These international safety symbols may appear on product or in its literature to alert of potential personal injury hazards. Obey all safety messages that follow these symbols to avoid possible injury or death.

Symbol	Safety Hazard
	Entrapment Zone
	Possible Pinch Point

Symbol	Safety Hazard
	Attention: Take Notice
	Danger: Keep Away

It is important that only qualified installers handle installation of HySecurity Gate vehicular gate operators. A "qualified" installer has one of the following:

1. A minimum of three years experience installing similar equipment.
2. Proof of attending a HySecurity Technical Training seminar within the past three years.
3. Significant manufacturer endorsements of technical aptitude in gate operator installation and operation.

Underwriter Laboratories (UL) and the American Society for Testing and Materials (ASTM) are responsible for current safety standards and regulations regarding gate operators and automated gates. All aspects of gate installation must comply with the appropriate safety standard. For the most up-to-date ASTM F2200 Gate and Fence Standards, refer to www.astm.org. For UL 325 Safety Standard, refer to www.ul.com. Consult local government agencies for up-to-date rules and regulations as certain municipalities have established licensing, codes or regulations that regulate automated gate system design and installation.

General Safety Information

A gate operator is only a component in a gate system. The other parts of the gate system can include the gate, the external entrapment sensors, access controls, and vehicle detectors. To have a gate system that provides for safety, security, and reliable operation it is essential these components operate together as a system.

It is the responsibility of the system designer and/or installer to ensure any safety or operational issues have been addressed.

Safety Requirements

WARNING

To reduce the risk of injury or death:

- **READ AND FOLLOW ALL INSTRUCTIONS!**
- Never let children operate or play with gate controls. Keep the remote control away from children.
- Always keep people and objects away from gate. **NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE!**
- Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of injury or death.
- Use the emergency release only when the gate is not moving.
- **KEEP GATES PROPERLY MAINTAINED!** Read the user's manual. Have a qualified service person make repairs to gate hardware.
- The entrance is for vehicles only. Pedestrians must use separate entrance.
- **SAVE THESE INSTRUCTIONS!**

Identifying Gate Operator Category and UL 325 Usage Class

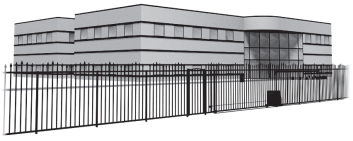
The UL 325 standard covers gate operators. Within this safety standard several Usage Classes are described that define different types of installations where gate operators can be applied. Some operators are restricted in their usage application. Appropriate Usage Classes are shown in the Specifications.

Class I:

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

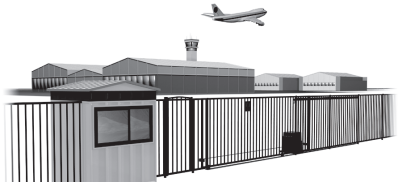
Class II:

Intended for use in a commercial location or building such as a multi-family housing units (five or more single family units) hotels, garages, retail stores or other buildings servicing general public.



Class III:

Intended for use in an industrial location or building such as factories or loading docks or other locations not accessible by the general public.



Class IV:

Intended for use in guarded industrial locations or buildings such as an airport security area or other restricted access location, not servicing general public, in which access is monitored by security personnel or via closed circuitry.

Safety Requirements

Vehicular Traffic Only

WARNING

This automatic gate operator is not designed nor is it intended for pedestrian traffic. Vehicular gate operators must by their nature be powerful to function reliably. This power can cause injury or death. Accordingly, direct all pedestrian traffic to a separate walk-through gate.

Install this gate operator only when:

- The operator is appropriate for the construction of the gate and the Usage Class of the site.
- All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 1.83 m (6 ft) above the ground to prevent a 57.2 mm (2-1/4 in) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position.
- All exposed pinch points are eliminated or guarded.
- Guarding is supplied for exposed rollers.

The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening. For pedestrian access in the vicinity of an automated vehicular gate, separate pedestrian access shall be provided or available. The pedestrian access shall be in a location such that a pedestrian shall not come in contact with a moving vehicular access gate during the entire path of travel of the vehicular gate. A pedestrian gate shall not be incorporated into an automated vehicular gate panel.

The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.

The gate must be properly installed and work freely in both directions prior to the installation of the gate operator. Do not over-tighten the operator clutch or pressure relief valve to compensate for an improperly installed, improperly functioning, or damaged gate.

Permanently mounted controls intended for user activation must be located at least 1.83 m (6 ft) away from any moving part of the gate and where the user is prevented from reaching over, under, around or through the gate to operate the controls. ***Exception:*** Emergency access controls only accessible by authorized personnel (e.g. fire, police, EMS) may be placed at any location in the line-of-sight of the gate.

The Stop and/or Reset button must be located in the line-of-sight of the gate. Activation of the reset control shall not cause the operator to start.

A minimum of two (2) WARNING SIGNS shall be installed, in the area of the gate. Each placard is to be visible by persons located on the side of the gate on which the placard is installed.

For gate operators utilizing a non-contact sensor (Photo Eye):

- See instructions on the placement of non-contact sensors for each type of application.
- Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle trips the sensor while the gate is still moving.
- One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.

For a gate operator utilizing a contact sensor (Edge):

- One or more contact sensors shall be located where the risk of entrapment or obstruction exists, such as at the leading edge, trailing edge, and postmounted both inside and outside of a vehicular horizontal slide gate.
- A hardwired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate operator is not subjected to mechanical damage.
- A wireless device that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless device shall function under the intended end-use conditions.
- One or more contact sensors shall be located on the inside and outside leading edge of a swing gate. Additionally, if the bottom edge of a swing gate is greater than 152 mm (6 in) but less than 406 mm (16 in) above the ground at any point in its arc of travel, one or more contact sensors shall be located on the bottom edge.

Safety Requirements

Use of Vehicle Detectors

Use of vehicle detectors (loop detectors) is strongly encouraged to prevent damage to vehicles caused by gates closing on them. This is not considered to be a safety item as most vehicle detectors cannot provide protection to pedestrians. In some situations, photoelectric devices may be used as vehicle detectors, but should be wired accordingly.

Gate Construction and Safety

Gate construction plays a very important role in ensuring the safety of any automated gate system. The standard for gate construction is ASTM F2200. Below are key areas to address in gate design for safety. For complete information consult the standard. Copies of the standard are available at: https://www.astm.org/Standards/F2200.htm.

Another source of information is available from DASMA, the Door and Access System Manufacturer's Association. The Association publishes Technical Data Sheets, one of which concerns ASTM F2200. For more information, see:

http://www.dasma.com/PDF/Publications

General Requirements for Gate Construction:

- Gates shall be constructed in accordance with the provisions given for the appropriate gate type listed. Refer to ASTM F2200 for additional gate types.
- Gates shall be designed, constructed and installed to not fall over more than 45 degrees from the vertical plane, when a gate is detached from the supporting hardware.
- Gates shall have smooth bottom edges, with vertical bottom edged protrusions not exceeding 0.50 in (12.7 mm) other than the Exceptions listed ASTM F2200.
- The minimum height for barbed wire shall not be less than 6 ft (1.83 m) above grade. The minimum height for barbed tape shall not be less than 8 ft (2.44 m) above grade.
- An existing gate latch shall be disabled when a manually operated gate is retrofitted with a powered gate operator.
- A gate latch shall not be installed on an automatically operated gate.
- Protrusions shall not be permitted on any gate. Consult ASTM F2200 for exceptions.
- Gates shall be designed, constructed and installed such that their movement shall not be initiated by gravity when an automatic operator is disconnected.
- For pedestrian access in the vicinity of an automated vehicular gate, a separate pedestrian gate shall be provided. The pedestrian gate shall be installed in a location such that a pedestrian shall not come in contact with a moving vehicular access gate. A pedestrian gate shall not be incorporated into an automated vehicular gate panel.
- Any non-automated gate that is to be automated shall be upgraded to conform to the provisions of this specification.
- This specification shall not apply to gates generally used for pedestrian access and to vehicular gates not to be automated.
- Any existing automated gate, when the operator requires replacement, shall be upgraded to conform to the provisions of this specification in effect at that time.

The following provisions shall apply to Class I, Class II, Class III, and Class IV vehicular horizontal slide gates:

All weight bearing exposed rollers 8 ft (2.44 m), or less, above grade shall be guarded or covered.

All openings shall be designed, guarded, or screened from the bottom of the gate to the top of the gate or a minimum of 72 inch (1.83 m) above grade, whichever is less, to prevent a 2-1/4 inch (57 mm) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position. The gate panel shall include the entire section of the moving gate, including any back frame or counterbalance portion of the gate.

A gap, measured in the horizontal plane parallel to the roadway, between a fixed stationary object nearest the roadway (such as a gate support post) and the gate frame when the gate is in either the fully open position or the fully closed position, shall not exceed 2-1/4 inches (57 mm).

Exception: All other fixed stationary objects greater than 16 inches (406 mm) from the gate frame shall not be required to comply with this section.

Safety Requirements

Positive stops are provided to limit travel to the designed fully open and fully closed positions. These stops shall be installed at either the top of the gate, or at the bottom of the gate where such stops shall horizontally or vertically project no more than is required to perform their intended function.

All gates shall be designed with sufficient lateral stability to assure that the gate will enter a receiver guide. Consult ASTM F2200 for details on various gate panel types.

External Entrapment Protection Sensors

Most HySecurity gate operators are equipped with a Type A, Inherent Entrapment Sensor (IES). UL 325 Safety Standard compliance requires installation of external entrapment protection sensors, the number of which, depends on entrapment hazards that exist at each particular installation.

To comply with UL 325, the following external sensors may be used:

- Contact sensors, such as edge sensors
- Non-contact sensors, such as photo eyes

Site designer or installer can choose either photo eyes, edge sensors, or a combination of these devices.

UL 325 Safety Standard for automatic sliding gates specifically requires that edge sensors, photo eyes, or a combination of both devices be installed to protect against pedestrian entrapment in BOTH directions of gate travel and wherever entrapment hazards exist.

UL 325 Standard Definitions

- The operator shall monitor for the presence of every device at least once during each open and close cycle (32.1.8)
- It shall not be possible to make simple modifications in the field by adding, suppressing or changing, either on the operator or external entrapment protection device(s), to bypass, interfere with, or otherwise defeat the monitoring function. (32.1.10)
- Entrapment zones are now defined for each gate type (4.23, 4.24, 4.29, 4.34).

Slide Gates: To enable fully automatic operation, all SLIDE gate operators will require a minimum of TWO monitored external entrapment protection sensors (one for each direction) to protect entrapment zones in both the open and close direction of travel.

Preferred solution for slide gates: *A photo eye for the close direction and a hard-wired edge sensor for the open direction that is mounted to the face of the leading post of the fence behind the gate. (Reach through injuries are the most common hazard associated with automatic sliding gates).*

Swing Gates: To enable fully automatic operation, all SWING gate operators will require a minimum of ONE monitored external entrapment protection sensor to protect entrapment zones in either the open or close direction of travel. However, an additional monitored sensor is required if there is a risk of entrapment in both directions of gate travel.

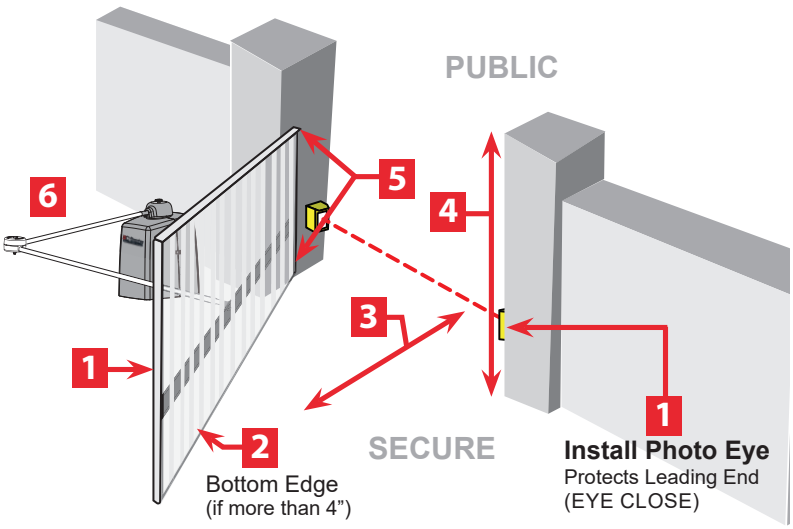
Preferred solution for swing gates: *A photo eye for the close direction and/or a hard-wired wrap-around edge sensor on the leading edge of the gate, which protects for both directions of gate travel.*

IMPORTANT NOTICE!

Installers must assess each specific site and install sensors that protect all potential entrapment zones. For more information or to see the latest operator manuals, go to: support.hysecurity.com

Entrapment Zone Points:

1. Leading Edge
2. Bottom Edge Entry / Exit
3. Gate/Vehicle
4. Posts
5. Post Pivot / Pinch Points
6. Arm Movement



Swing Gate Potential Entrapment Zones

Safety Requirements

UL 325 Recommended Sensor Listing:

Edge sensors and photo eyes must be tested and labeled as “Recognized Components” or otherwise certified to UL 325 requirements in order to be deemed acceptable for use in a gate operator.

Study all Safety Instructions and consider your specific installation to determine where greatest entrapment risks exist. Locate edge sensors and/or photo sensors accordingly. Be certain that a sufficient number of sensors are used so that pedestrians are protected from entrapment in both directions of gate travel and all hazard areas are fully protected.

Nice/HySecurity gate operators utilizing the SmartCNX Controller or the SmartTouch 720/725 Controller require external entrapment sensors that are BlueBus capable, or have a 10k Ohm or 4-wire pulsed monitoring output. Mercury Controllers require external entrapment sensors that are BlueBus capable, or have a 10k Ohm monitoring output. Other Nice/HySecurity gate operators require external entrapment sensors that utilize Normally Closed (NC) contact means of monitoring. The operator instructions shall list the maximum number of open and close entrapment protection devices capable of being connected to the operator.

Refer to UL website at www.ul.com for most up-to-date list of gate operator safety standards (UL 325). Refer to www.astm.org for a complete list of ASTM F2200 Gate and Fence Standards.

Recommended External Entrapment Protection Sensors List

UL 325

The following sensors have been tested with Nice | HySecurity gate operators by an independent laboratory and certified to comply with UL 325 7th Edition. Select sensors from this list for UL compliant gate automation solutions. Contact the sensor manufacturer for specific recommendations for use.

Recommended Sensors					Compatible Control Boards				
Type	*Mfg. Part # or Model*	*Brand*	*Nice | Hysecurity Part #*	*Max Range*	*Smart Touch*	*Smart DC*	*SmartCNX / SmartTouch 725*	*1050*	*Mercury 310*
Photo Eyes (Retro -Reflective)	E3K-R10K4-NR-1	Omron	MX000999	40 ft	•	•	•		
	NIR-50-325	EMX	-	45 ft	•	•	•	•	•
	IRB-RET	EMX	-	53 ft	•	•	•	•	•
	IRB-RET2	EMX	-	53 ft	•	•	•	•	•
	E-931-S50RRGQ	Seco-Larm	-	46 ft	•	•	•		•
Photo Eyes (Thru-Beam)	Blue Bus Era Photo Eyes	Nice | HySecurity	EPMB/A, EPMOB/A EPLOB/A, EPMAB/A EMBORB/A	45 ft			•	•	•
	OVS-50TNR	Optex	-	33 ft	•	•			
	IRB-MON	EMX	MX3990	65 ft	•	•	•		•
	IRB-MON2*	EMX	MX5792-01	65 ft	•	•	•		•
	E-960-D90GQ	Seco-Larm	-	90 ft	•	•	•		•
Edge Sensors	Sentir Series**	ASO Safety	"AS1502-* AS1501-*"	-	•	•	•	•	•
	CPT Models	Miller Edge	-	-	•	•	•	•	•
Edge Sensor Converters	Hy2NC (Converts 10K to NC Monitoring)	HySecurity	MX4018	-	•	•			
	GEM103 (Converts 10K to Pulsed Monitoring)	Miller Edge	-	-				•	
Edge Wireless Kits	iGAZE RE Kit	Transmitter Solutions	-	-	•	•	•	•	•
	WEL-200	EMX	-	-	•	•	•	•	•
	RB-G-K10C	Miller Edge	-	-	•	•	•	•	•
Multi-Input Module	The Solution – MIM-62	Miller Edge	-	-	•	•	•		•

*IRB-MON2 photo eyes are pre-bundled with HySecurity SwingSmart DC, SlideSmart DC and SlideDriver operators.
**Sentir Series ASO edge sensors are pre-bundled with HySecurity SlideSmart DC, and SlideDriver operators.

Stop Button

The stop button clears entrapment mode and resets some faults, errors and alarms.

The external stop button for the HydraSupply II is located on the left side of the cabinet.

Press the **Stop button** while the gate is opening or closing to stop gate travel and disable the automatic close timer. The operator requires a new open or close command to resume function.

Inform all users of the location of the **Stop button** and its function.

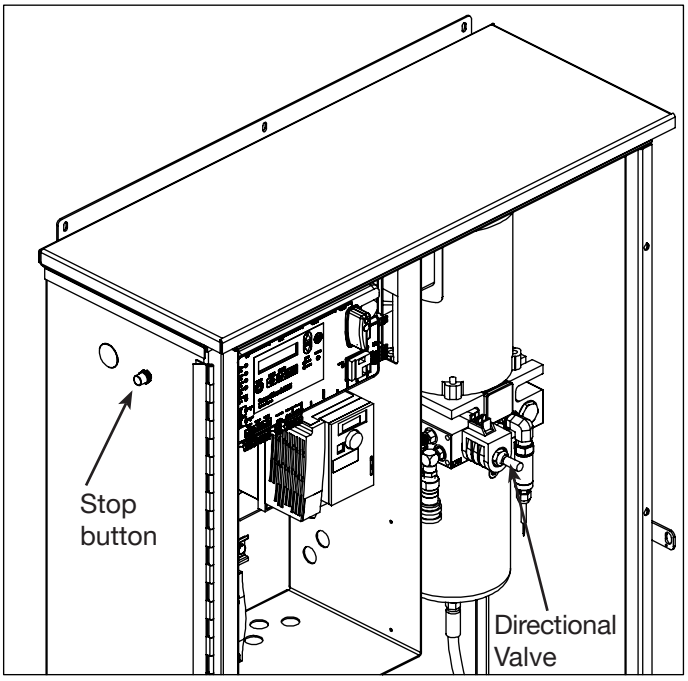


Figure 1. Stop Button and Directional Valve

Manual Operation

NOTE: See operator manual for manual release.

Teach all users how to turn off electric power, and manually move the gate.

To manually move the gate:

1. Open the HydraSupply II cabinet.
2. Set the power switch to OFF.
3. Operate the gate with the hand pump. By default, the gate will close. To make the gate open, pull and turn the directional valve release to lock it out.

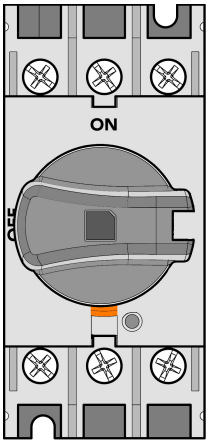


Figure 2. Power Switch Set to OFF

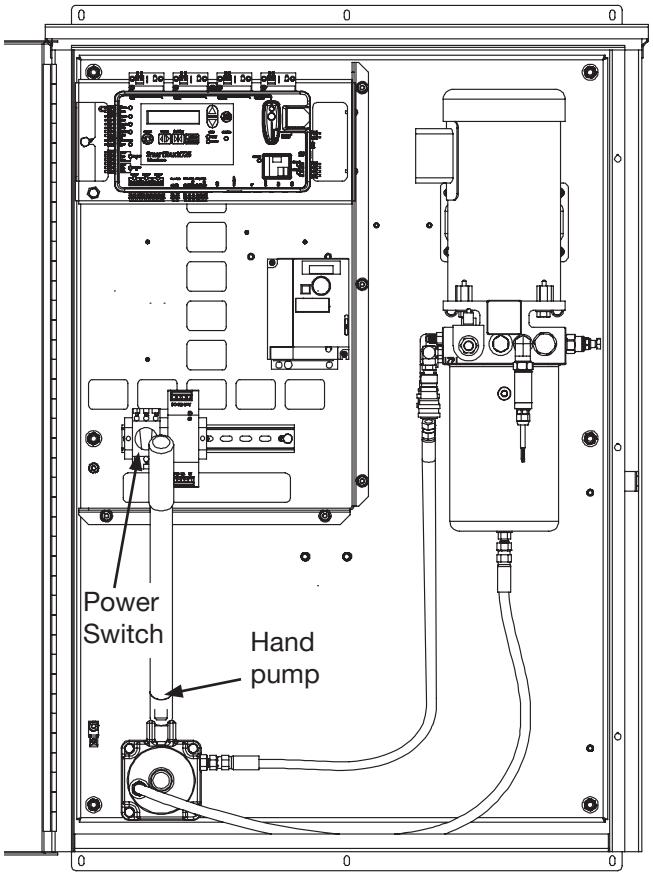


Figure 3. Move the Gate Manually/Hand Pump

To return HydraSupply II to automatic operation, follow these steps:

1. Set the directional valve to default position.
2. Set the Power Switch to **ON**.
3. Press **STOP** or **RESET** to clear any faults.
4. Close the HydraSupply II cabinet.

Plan Site Design

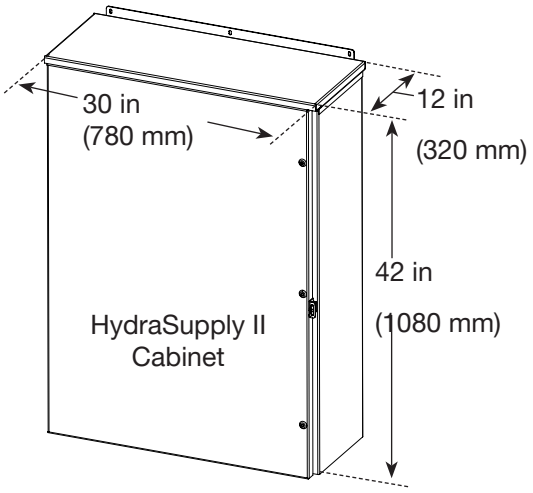
Read & Plan

Read and follow the Safety Requirements prior to installing the HydraSupply II. Read and follow these installation instructions, and make sure to conform to site specifications and all local and federal regulations and codes.

Measure and Calculate

Pay attention to gate travel and clearance around the mounting location. Consider right handing and left handing.

Use the gate operator installation instructions to determine gate geometry and placement of the chassis and gate mount.



Design Vehicle Loops

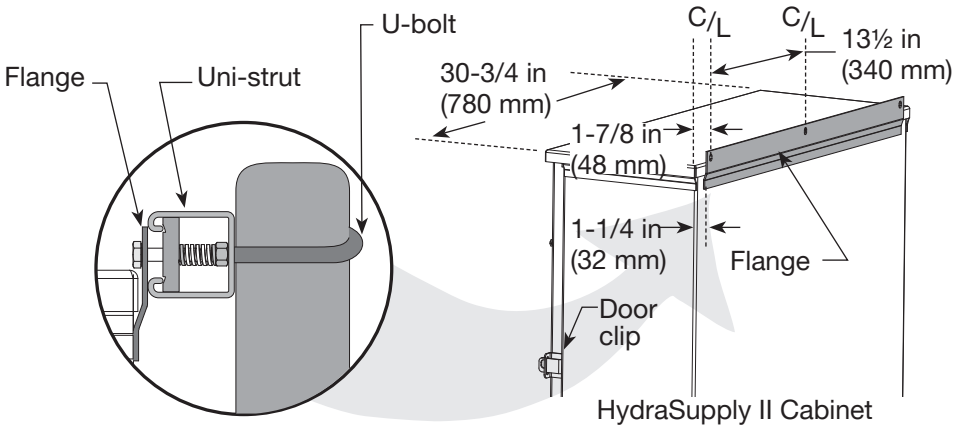
A CLD and one other loop (IOLD or OOLD) are recommended. Three loops are preferred: CLD, IOLD, OOLD (Free Exit, optional)

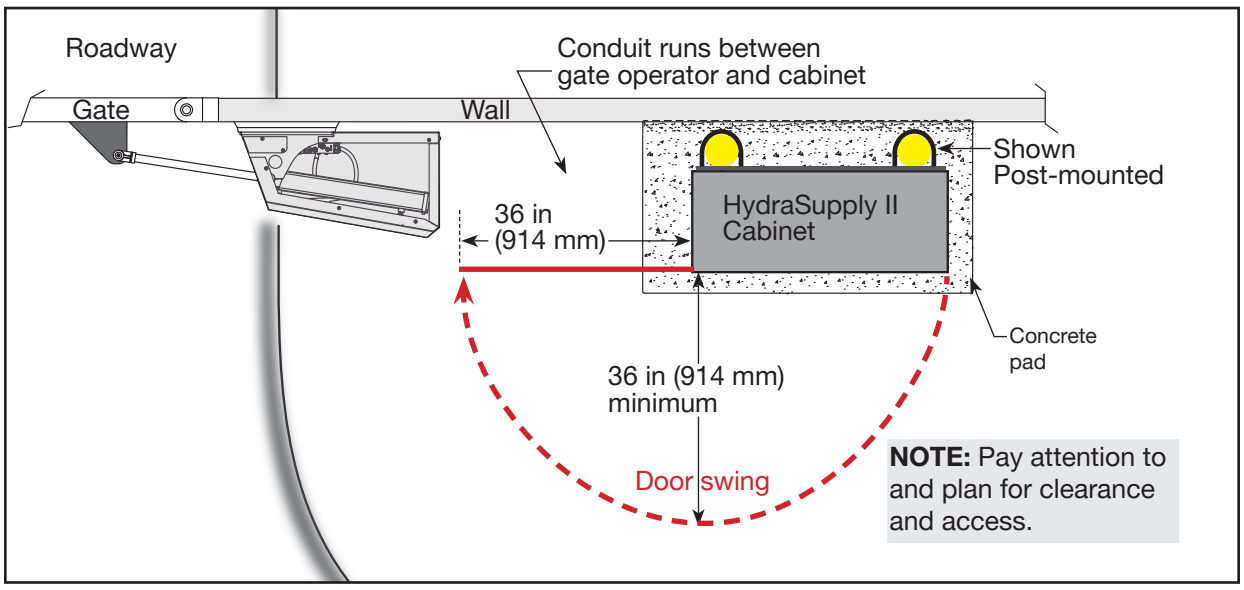
NOTE: Loop layout is dependent on uni-directional or bi-directional traffic and the length of gate and width of roadway. A vehicle must move from one loop to the next without loss of detection.

Wall or post-mount the HydraSupply II cabinet.

If planning a post mount, mounting holes need to be drilled (U-bolts, fasteners, and uni-strut are not provided). The cabinet may also be wall-mounted with anchor bolts.

NOTE: The mounting holes on the top and bottom flanges are 5/16 in diameter.





NOTE: HydraSwing displayed for reference.

Drawings NOT to Scale

Install the Cabinet

WARNING

Obtain help before lifting or moving the HydraSupply II Cabinet. HydraSupply II cabinets can weigh up to 275 lbs (125 kg). Failure to comply may result in serious injury to personnel, damage to the equipment or both.

Install the Earth Ground

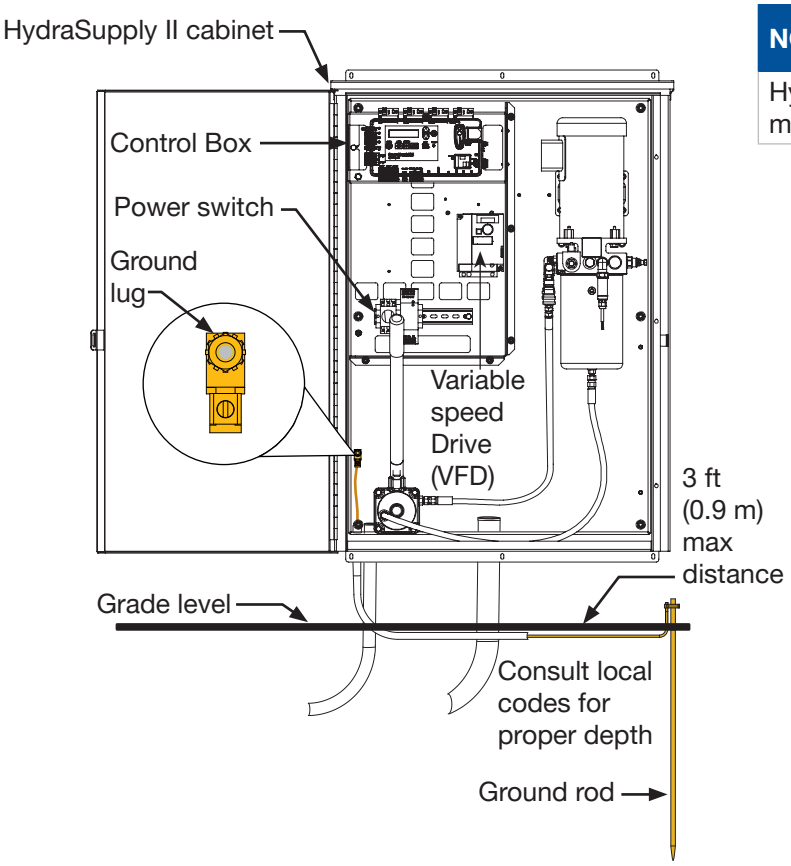
DANGER

The potential for lightning discharge exists with all gates, fences and gate operators. National Electric Code (NEC) - Article 250 requires a separate earth ground in addition to the required equipment ground. Ga. 6 minimum.

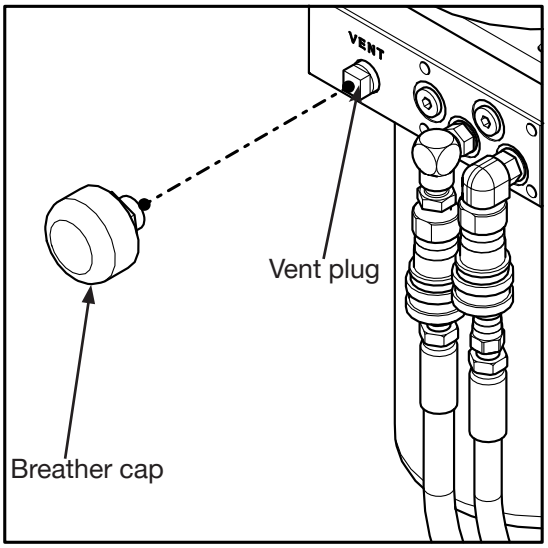
The HydraSupply II must be grounded per NEC, NFPA 780 and local building standards and codes.

Bleed Air From Hoses

Refer to **Bleeding Air from Hydraulic Hoses** on page 78 for instructions to bleed air from the hydraulic hoses.



Replace the Vent Plug



CAUTION

Replace the vent plug with the breather cap before operating the HydraSupply II. Air pressure vents through the cap instead of through the pump seal and prevents rust by allowing condensation to evaporate. If you do not replace the vent plug with the breather cap, you will void the Warranty.

NOTE

HydraSupply displayed is for a HydraSwing operator model.

Wire Sizing and Runs

Supplying a gate operator with the correct electrical service is crucial to the performance of the operator and the life of its electrical components. If the wire size used is too small, the voltage loss, especially during motor startup, will prevent the motor from attaining its rated horsepower. The percentage of horsepower lost is far greater than the percentage of voltage loss.

A voltage loss can also cause the control components to chatter while the motor is starting, substantially reducing their life due to the resultant arcing. There is no way to restore lost performance resulting from undersized wires, except to replace them. To avoid costly rewiring, be sure to choose a sufficient wire size during site planning phases and at initial installation.

NOTICE

DO NOT use undersized power wires. This can lead to power supply brown outs, SmartTouch 720/725 Controller resets, and premature motor failure.

The tables on the following page are based on copper wire and allow for a 5% voltage drop. The ampere values shown are the service factor ampere rating of the motor (maximum full load at continuous duty). Most HydraSupply II operators require a 20A inverse time circuit breaker to be provided in the field. The single phase HydraSwing models, single phase modular SD50F & SD80V, and 208-230V modular SD200 require a 30A circuit breaker.

Always connect electrical power and ground the operator in accordance with the NFPA 780 & NEC, Article 430 and Article 250. Research and adhere to other local codes that may apply.

Low Voltage Control Wiring

The SmartTouch 720/725 Controller has very sensitive control inputs. The following is a chart of maximum distances for wire size:

Wire Size	Maximum Distance
18 ga	7.0 miles (11 km)
20 ga	3.5 miles (5.6 km)
22 ga	2.7 miles (4.3 km)
24 ga	2.0 miles (3.2 km)
26 ga	1.0 mile (1.6 km)
28 ga	3700 feet (1.1 km)

Wire Sizing and Runs

SlideDriver II Wiring Charts (Incoming Power)

The maximum distance shown is from the operator to the power source, assuming that source power is from a panel box with adequate capacity to support the addition of this motor load. The values are for one operator, with no other loads applied to the branch circuit. Avoid placing more than one operator to a circuit, but if you must, be certain to reduce the maximum allowed wire distance by half.

Make sure proper wiring is being used. The following table shows the maximum allowable wire run from the power source to the operator for various wire sizes. Performance of SD50F-series operators on 1Ø and 3Ø, 50 or 60 Hz Power.

Note: Distance shown in U.S. Standard “feet.” Metric equivalent shown in parentheses.

Table 1. SlideDriver II SD15 and SD40 Models, SwingRiser, Single Gate						
Phase Ø	**1**	**1**	**1**	**3**	**3**	**3**
Voltage	**115**	**208**	**230**	**208**	**230**	**460**
Horsepower (Hp)	**1**	**1**	**1**	**1**	**1**	**1**
Maximum Rated Current Draw (A)	**15.6**	**8.8**	**8.5**	**6.3**	**6.1**	**3.7**
Wire Gauge	**Distance**	**Distance**	**Distance**	**Distance**	**Distance**	**Distance**
12	35 (11 m)	115 (35 m)	125 (38 m)	300 (91 m)	340 (104 m)	1135 (346 m)
10	55 (17 m)	185 (56 m)	205 (62 m)	475 (145 m)	545 (166 m)	1800 (549 m)
8	90 (27 m)	290 (88 m)	320 (98 m)	750 (229 m)	860 (262 m)	2835 (864 m)
6	140 (43 m)	450 (137 m)	500 (152 m)	1170 (357 m)	1340 (408 m)	4415 (1346 m)
4	220 (67 m)	705 (215 m)	780 (238 m)	1825 (556 m)	2085 (636 m)	6875 (2096 m)
2	335 (102 m)	1085 (331 m)	1200 (366 m)	2800 (853 m)	3200 (975 m)	10555 (3217 m)

Table 2. SlideDriver II SD50F and SD80V Models. All HydraSwing Models.						
Phase Ø	**1**	**1**	**3**	**3**	**3**	**3**
Voltage (V)	**208**	**230**	**208**	**230**	**380**	**460**
Horsepower (Hp)	**2**	**2**	**2**	**2**	**2**	**2**
Maximum Rated Current Draw (A)	**19.9**	**17.8**	**13.7**	**12**	**8.7**	**8.1**
Wire Gauge	**Distance**	**Distance**	**Distance**	**Distance**	**Distance**	**Distance**
12	150 (46 m)	175 (53 m)	230 (70 m)	295 (90 m)	675 (206 m)	870 (265 m)
10	240 (73 m)	280 (85 m)	370 (113 m)	470 (143 m)	1070 (326 m)	1385 (422 m)
8	380 (116 m)	440 (134 m)	585 (178 m)	745 (227 m)	1685 (514 m)	2180 (664 m)
6	590 (180 m)	685 (209 m)	910 (277 m)	1160 (354 m)	2625 (800 m)	3390 (1033 m)
4	915 (279 m)	1070 (326 m)	1415 (431 m)	1805 (550 m)	4080 (1240 m)	5275 (1608 m)
2	1405 (428 m)	1640 (500 m)	2165 (660 m)	2765 (843 m)	6255 (1907 m)	8085 (2464 m)

200V table on next page.

Wire Sizing and Runs

Table 3. SwingRiser Twin Wire Size Chart - SWR14T, SWR19, and SWR30T					
Phase Ø	**1**	**1**	**3**	**3**	**3**
Voltage (V)	**208**	**230**	**208**	**230**	**460**
Horsepower (Hp)	**2**	**2**	**2**	**2**	**2**
Maximum Rated Current Draw (A)	**14.1**	**13.5**	**8.8**	**8.3**	**4.8**
Wire Gauge	**Distance**	**Distance**	**Distance**	**Distance**	**Distance**
12	110 (33 m)	130 (40 m)	245 (75 m)	280 (85 m)	1130 (344 m)
10	175 (53 m)	205 (62 m)	390 (119 m)	450 (137 m)	1800 (549 m)
8	280 (85 m)	325 (99 m)	615 (187 m)	710 (216 m)	2840 (866 m)
6	445 (135 m)	515 (157 m)	975 (297 m)	1130 (344 m)	4550 (1387 m)
4	710 (216 m)	815 (248 m)	1545 (471 m)	1790 (546 m)	7200 (2194 m)
2	1130 (344 m)	1305 (398 m)	2450 (747 m)	2840 (866 m)	11450 (3490 m)

Table 4. SlideDriver II Wire Size Chart – SD200V				
Phase Ø	**3**	**3**	**3**	**3**
Voltage (V)	**208**	**230**	**380**	**460**
Horsepower (Hp)	**5**	**5**	**5**	**5**
Maximum Rated Current Draw (A)	**26**	**22.7**	**15.6**	**13.2**
Wire Gauge	**Distance**	**Distance**	**Distance**	**Distance**
12	57 (18 m)	73 (22 m)	175 (53 m)	253 (77 m)
10	90 (27 m)	115 (35 m)	280 (85 m)	400 (122 m)
8	145 (44 m)	183 (56 m)	440 (134 m)	633 (193 m)
6	225 (69 m)	285 (87 m)	688 (210 m)	985 (300 m)
4	350 (107 m)	445 (136 m)	1070 (326 m)	1533 (467 m)
2	540 (165 m)	683 (208 m)	1645 (501 m)	2353 (717 m)

Site Power Considerations

HySecurity gate operators are intended for permanent installation. Make sure you prepare the site with the following considerations:

- Make sure all electrical wiring is properly routed via conduits.
- Check the distance of the wiring run from the main panel to the gate operator. Make sure the wire size of the branch circuit supplying power to the gate operator is large enough to avoid excess voltage drop. Refer to Wire Sizing and Runs on page 32.
- Make sure the available power source matches the electrical requirements specified on the voltage nameplate.
- Most HydraSupply II operators require a 20A inverse time circuit breaker to be provided in the field. The single-phase HydraSwing models, single-phase modular SD50F & SD80V, and 208-230V modular SD200 require a 30A circuit breaker.
- Verify that the operator is electrically grounded per NFPA 780 and NEC Article 250 and local codes.

Changing Electrical Connections in the Field

⚠ CAUTION

For in-field conversions, the NEC requires that the voltage label on the operator be changed to match the new configuration. Contact HySecurity for a replacement label.

To reconnect the electric motor, refer to the motor connection diagram found either on the motor's nameplate or inside the motor connection box. Be sure to read the WARNINGS below if planning to convert from 1Ø to 3Ø, or vice versa. The electric motor will need to be replaced.

⚠ WARNING

In-Field, Variable Frequency Drive Connections: VFD operators are NOT field re-configurable for 1Ø or 3Ø, 208/230VAC input power without changing the VFD. Also, if reconfiguring from 208/230VAC to 460/480VAC the VFD Motor Controller in a 208/230VAC unit must be replaced with a VFD Motor Controller manufactured for the higher (460/480VAC) voltage input. Any electrical damage occurring to the operator will not be covered by the Warranty.

⚠ WARNING

SlideDriver II 50F-series and all 2 hp operators CANNOT be connected to 115/120VAC, 1Ø power or 575V, 3Ø power. If any attempts are made to do so, serious injury and possible electrical shock may result. Any electrical damage occurring to the operator will not be covered by the Warranty.

Wiring AC Power

DANGER

Turn off AC power at the source (circuit breaker panel) before accessing the wires in the HydraSupply II. Follow facility Lock Out/Tag Out procedures. Make sure all power switches are in the OFF position. Follow all electrical code standards and regulations.

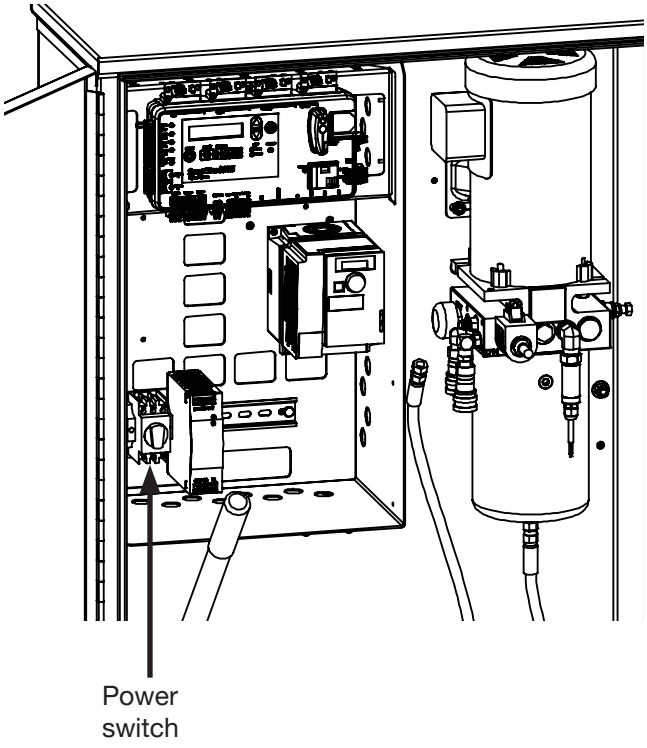
WARNING

Each HydraSupply II is built to run on a specific line power voltage and phase. Failure to ensure that the source voltage, phase, and frequency match as specified on the equipment may result in severe damage to the equipment.

Power connections

Size the primary wires, appropriately. Consider the voltage, horsepower, and length of the wire run from the main power panel. The electrical wiring must be properly routed through conduit that enters the actuator and the HydraSupply II through its base cutout and feeds through one of the knockouts in the control box.

Verify the site input voltage and phase match what is marked on the operator.

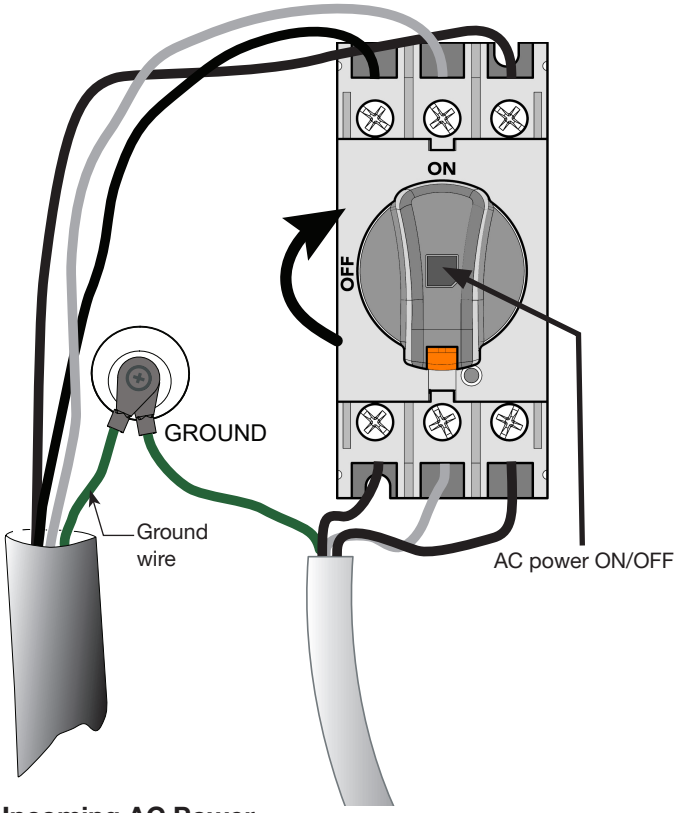


CAUTION

Wiring of HydraSupply II must conform to NFPA and NEC standards and comply with all local codes. When the installation is compliant and complete, turn on AC power at the source and at the control box. For Variable Frequency operators, make sure the connection wires match the voltage found on the operator's nameplate.

Turning the Power Switch ON

The power disconnect switch (power switch) is located the HydraSupply II cabinet.



Incoming AC Power

3Ø supply power connection shown.

NOTE: If AC supply power is single phase (1Ø), omit wire to L2/T2 terminals.

Controller Connections

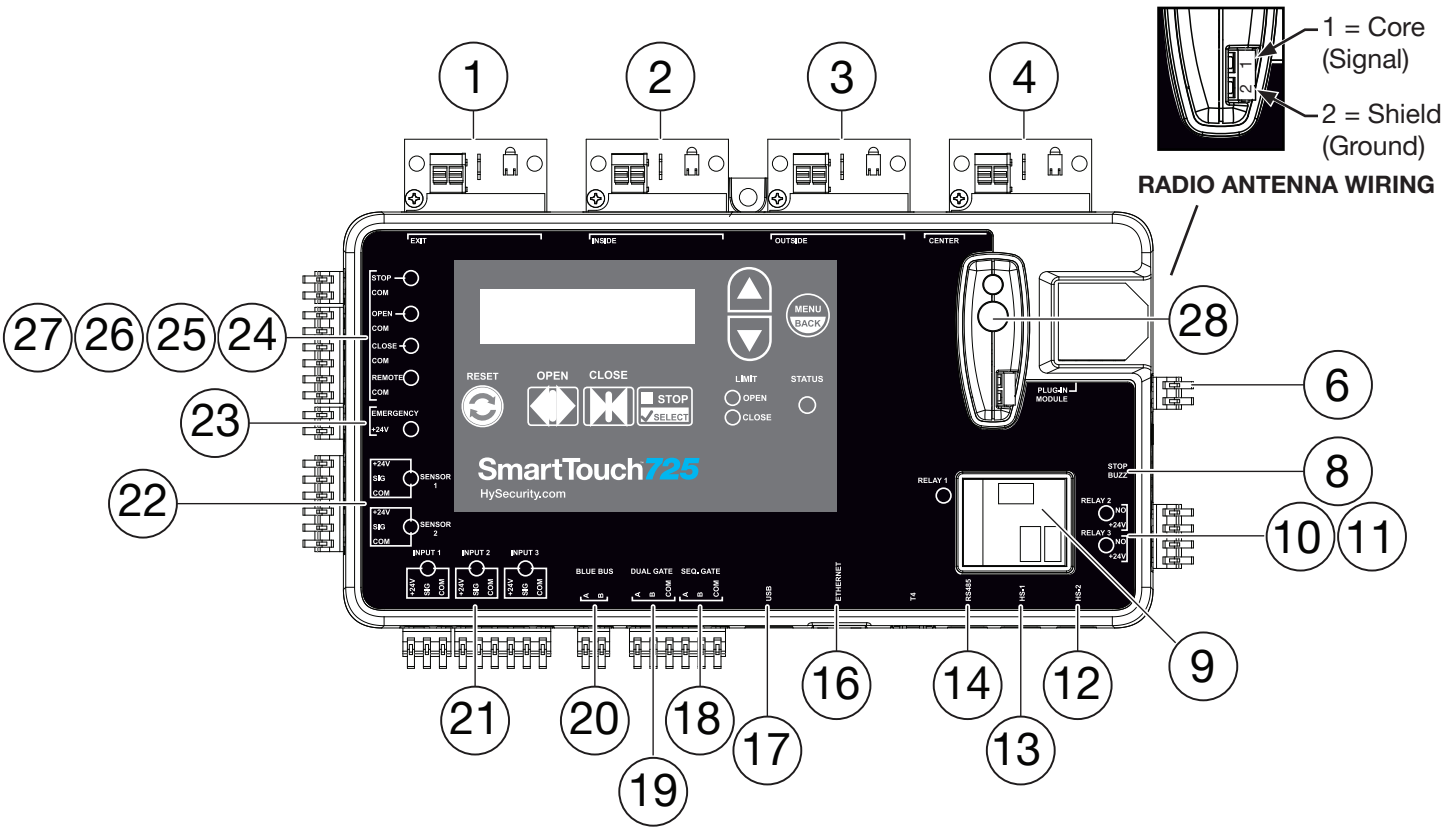


Figure 4. SmartTouch 720/725 Controller Connections

1	Hy5B EXIT Loop	This opens a fully closed gate or reopens a closing gate.
2	Hy5B INSIDE Loop	Reversing loop on secure side.
3	Hy5B OUTSIDE Loop	Reversing loop on public side.
4	Hy5B CENTER Loop	Detect vehicle in swing arc of the gate (swing gate only)
6	OXI Antenna	For use with old OXI receivers that do not have an antenna connection.*
8	Stop/Buzzer Input	External Stop and Buzzer connection
9	Relay 1	Mechanical relay
10	Relay 2	Solid state relay
11	Relay 3	Solid state relay
12	HS-2	Can connect to VFD, HyInverter, or I/O Expansion Module.
13	HS-1	Harness connects communication to I/O Expansion Module (OT2).
14	RS485	Standard VFD Input
16	Ethernet	See Network Setup Menu in the External Communications Menu on **page 60**.*
17	USB	Used for firmware updates and fault log download.
18	Sequenced Gate Connection	For connection to a second operator in a sequenced gate or sally port configuration.
19	Dual Gate Connection	Connection to a second operator in a bi-parting gate system
20	BlueBUS	For use with Nice BlueBUS devices*
21	Programmable Inputs 1-3	Programmable to external entrapment sensors or other types of inputs
22	Programmable Sensor Inputs 1-2	UL 325 required external entrapment sensors
23	Emergency	Programmable to fire department open or emergency close
24	Remote	Programmable for three functions, defaults to step function
25	Close	Close only input
26	Open	Open only input
27	Stop	Stop and reset input
28	OXI	Radio for Nice access control devices.*

* Some features not available on SmartTouch 720.

User Interface

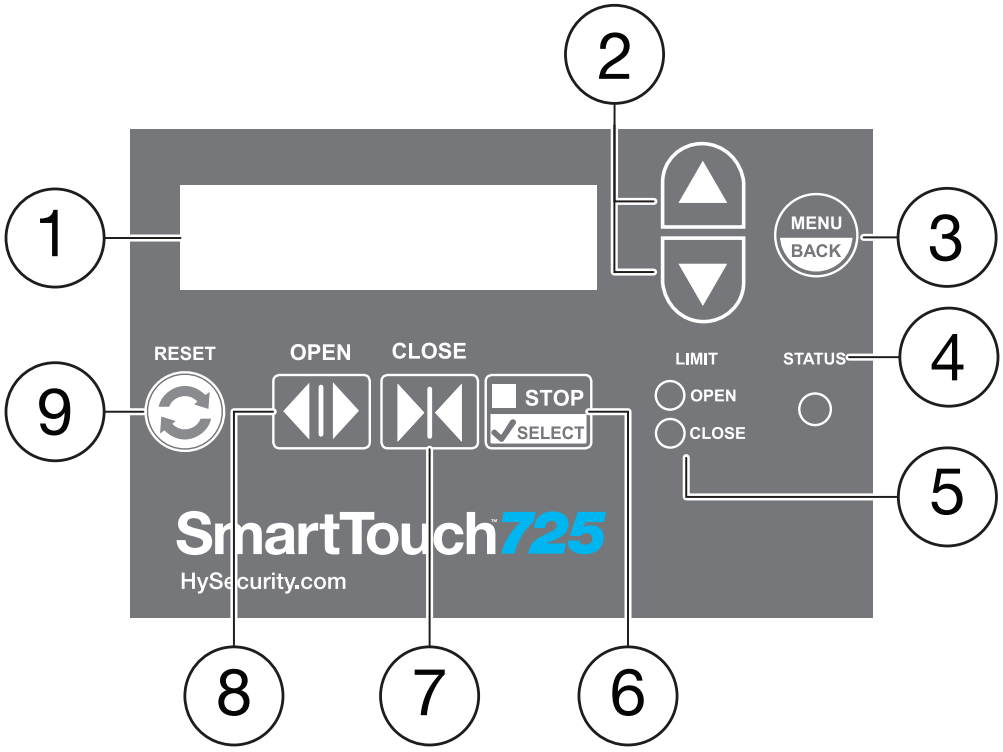


Figure 5. SmartTouch 720/725 Controller User Interface

1	**OLED Display**	16 characters per line, 2 line display. Displays current operator status, menus, and alerts/faults/errors. In h6.03 and later firmware, the display will shut off when none of the on board buttons have been pressed for a while. Pressing any button will turn it back on. This is to save power and extend the life of the display.
2	**Up/Down Arrows**	Navigate through menu and display options while in Menu Mode.
3	**Menu/Back**	Open the configuration menu from the operator status display. Go back from the current menu (exit the current menu).
4	**Status LED**	Indicates gate operator status **a.** **Flashing Red** – An Alert, Fault or Error has occurred. Immediately shut down the machine and correct the fault. **b.** **Solid Red** – Operator is in Menu Mode **c.** **Flashing Green** – Operator is in Run Mode **d.** **Flashing Blue** – Operator is pairing with a Bluetooth device. **e.** **Alternating Blue and Red/Green** – Operator is communicating with a Bluetooth device.
5	**Limit Open/Close**	Solid green when limit flag activates limit sensor.
6	**Stop/Select**	Stops gate travel when in run mode. Press to select current menu option or to confirm setting value
7	**Close**	Closes the gate while in Run Mode.
8	**Open**	Opens the gate while in Run Mode.
9	**Reset**	Press to clear faults and return to Run Mode. Not functional in Menu Mode.

Navigate the Menus

Press MENU/BACK to enter the menus or to exit the current screen (up one level without saving any changes).

Press the UP or DOWN arrow to change the current selection until you find the one you want.

Press SELECT to access the menu or sub-menu. Press SELECT to accept the current option or value.

NOTE

These navigation instructions are the same throughout the SmartTouch 720/725 Controller menus.

CAUTION

Before configuring menus and testing the system, ensure that the hydraulic actuator (HydraSwing, SwingRiser, Modular SlideDriver) are correctly installed and wired according to their respective installation instructions.

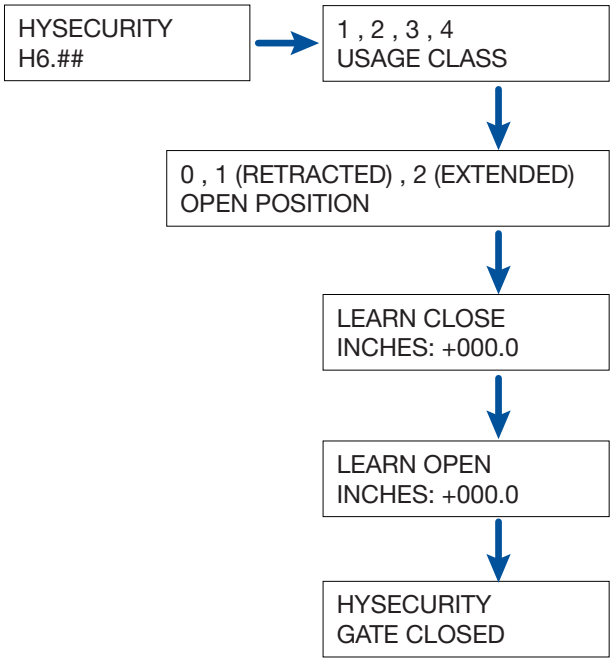


Figure 6. Configuring Setup Menu - HydraSwing

Configure the Setup Menu - HydraSwing (OT9)

The first time the SmartTouch 720/725 Controller powers on set Usage Class and Open Position before normal operation.

Set the power switch to ON. Firmware version appears on the display and then USAGE CLASS - 0.

1. Press SELECT, press the UP or DOWN arrow to navigate to the correct USAGE CLASS, and press SELECT to accept value.
2. Press the UP or DOWN arrow until OPEN POSITION appears on the display, press SELECT, press the UP or DOWN arrow to navigate to the correct option, and press SELECT to accept value.
3. The SmartTouch 725/720 controller enters LEARN LIMIT Mode.
4. LEARN CLOSE appears on the display. Press and hold the CLOSE button until the gate reaches the desired close position. Press STOP twice (2 presses within 1 second) to store the close position.
5. LEARN OPEN appears on the display. Press and hold the OPEN button until the gate reaches the desired open position. Press STOP twice (2 presses within 1 second) to store the open position.
6. STARTING UP flashes on the display.
7. The SmartTouch 720/725 Controller automatically scans for BlueBUS devices and then gate status appears on the display.

NOTE

For HydraSwing Twin models (MN5, 6, 7, 8) program the close limit at the physical stop of the cylinder.

NOTE

After limits are set, the operator will reset and perform a BlueBus scan automatically.

Configure the Setup Menu - SwingRiser (OT2)

The first time the SmartTouch 720/725 Controller powers on set Usage Class and LEARN LIMITS before normal operation.

1. Set the power switch to ON the first time. Firmware version appears on the display and then USAGE CLASS - 0.
2. Press SELECT, press the UP or DOWN arrow to navigate to the correct USAGE CLASS , and press SELECT to accept value.
3. STARTING UP flashes on the display.
4. The SmartTouch 720/725 Controller automatically scans for BlueBUS devices and then gate status appears on the display.

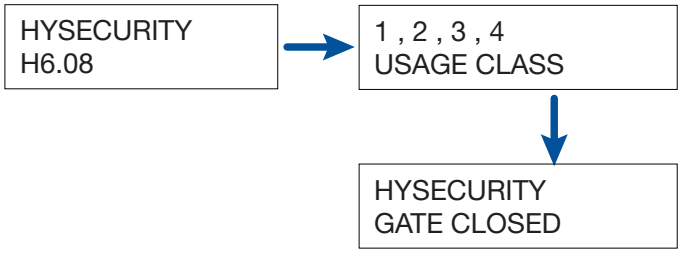


Figure 7. Configuring Setup Menu - SwingRiser

Hydraulic Hose Swap

See actuator installation instructions for information on swapping hydraulic hoses for matching actuator extension and retraction (HydraSwing only).

NOTE

Do not operate HydraSupply II powered gate operators while the hoses are disconnected. Make sure that all hydraulic hoses are securely installed before operating the motor.

NOTE

After Usage Class is set, the operator will reset and automatically perform a BlueBus scan.

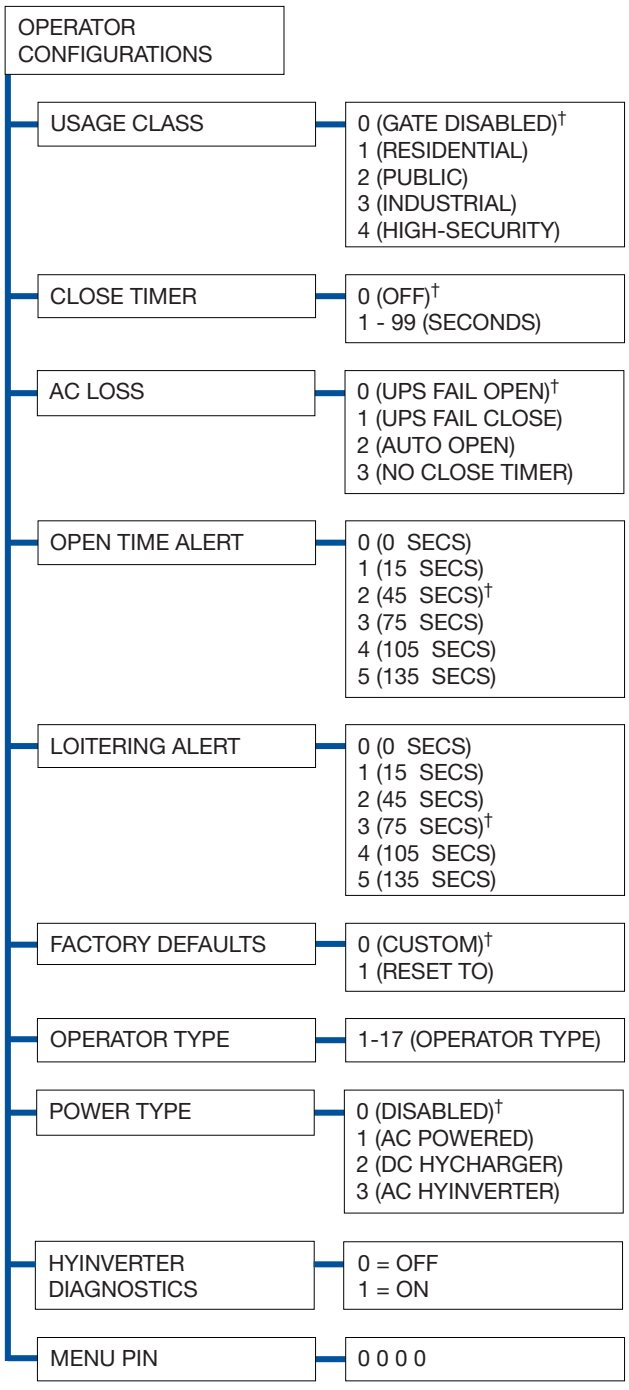
SmartTouch 720/725 Controller Menus

These are the top level menus in the SmartTouch 720/725 Controller. The following pages show the sub-menus with settings and descriptions. These menus are also accessible through the Smart Installer App.

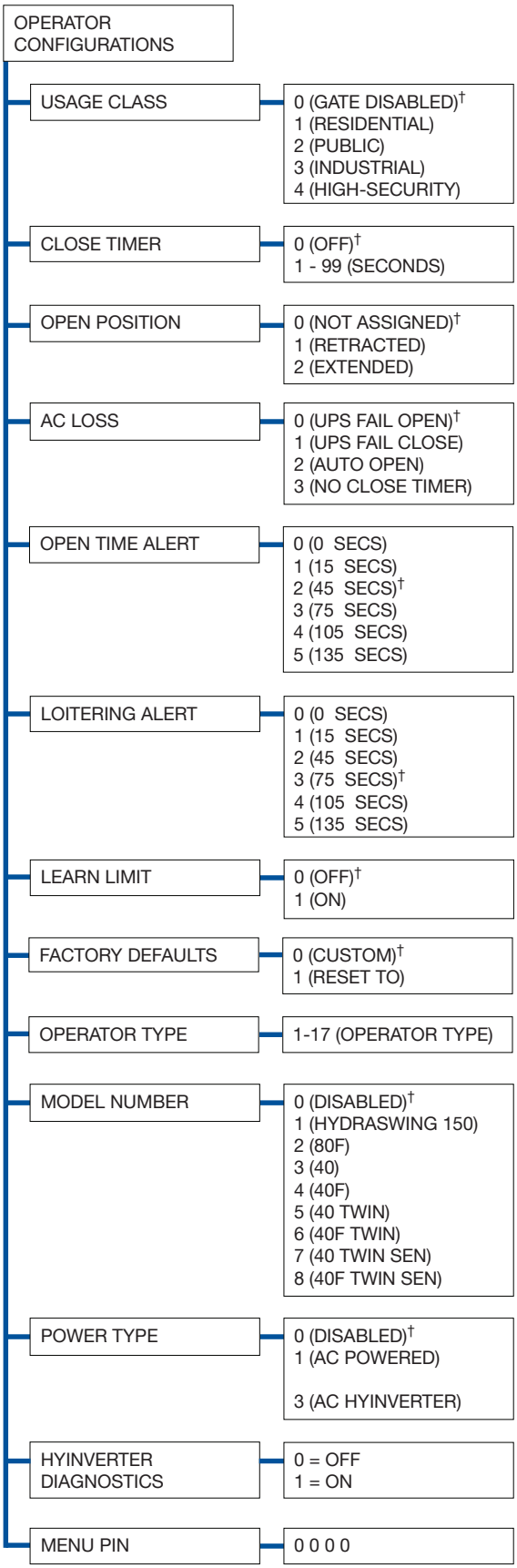
- OPERATOR CONFIGURATIONS
- OPERATOR FUNCTIONS
- OPERATOR COMMUNICATIONS
- PROGRAMMABLE INPUTS
- ENTRAPMENT SENSOR RESPONSE
- USER RELAY OUTPUTS
- LOOP OPTIONS
- EXTERNAL COMMUNICATIONS
- EXPANSION BOARD INPUTS
- DIAGNOSTICS MENU
- 24/7 CLOCK AND TIMER

Operator Configurations

HydraSupply II SwingRiser (OT 2)



HydraSupply II HydraSwing (OT 9)



*SlideDriver II Modular firmware will not be different from OT 1 and OT 7. Refer to the SlideDriver II Digital Installation Manual for full information.

NOTE: The HyInverter Diagnostics menu shows up only when Power Type is set to HyInverter.

NOTE: AC power loss shows up only when Power Type is set to 2 or 3.

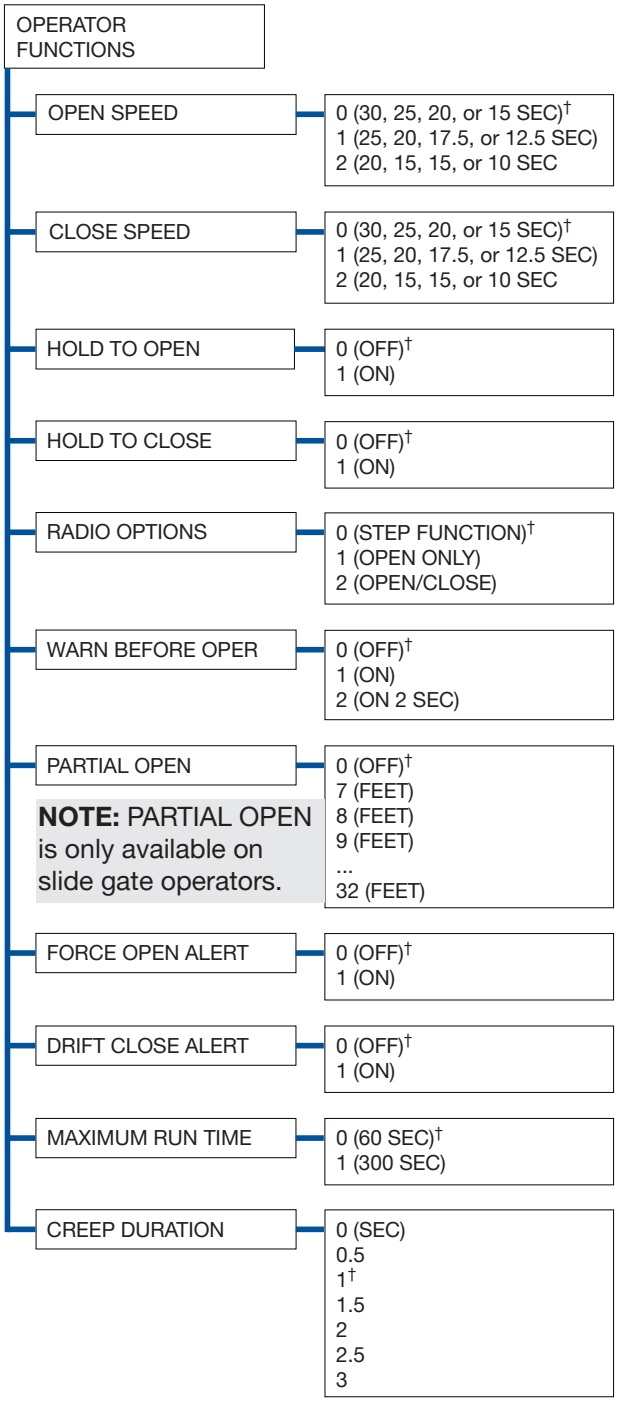
† = Indicates default

Operator Configurations

Table 1. SmartTouch 720/725 Operator Configurations Settings

MENU DISPLAY	SETTINGS	DESCRIPTION
USAGE CLASS	0 = Gate disabled† 1 = Residential 1 to 4 units 2 = Comm./public access 3 = Light industrial 4 = Industrial secure	Assign the operator's Usage Class designation per UL 325 standards. The installer must designate a usage class before the operator will function. HSW 80F and HSW 150 models are approved for only Usage Class 3 and 4 installations.
CLOSE TIMER	0 = OFF† 1-99 (seconds)	Number of seconds before open gate initiates closure after all inputs are clear.
OPEN POSITION (OT9 ONLY)	0 = NOT ASSIGNED† 1 = RETRACTED 2 = EXTENDED	Designates the hydraulic cylinder position when the gate is open.
AC POWER LOSS	0 = UPS FAIL OPEN† 1 = UPS FAIL CLOSE 2 = AUTO OPEN 3 = NO CLOSE TIMER	Action operator performs during an AC power loss. Only appears when POWER TYPE is set to 2 or 3.
OPEN TIME ALERT	0 = 0 (seconds) 1 = 15 2 = 45† 3 = 75 4 = 105 5 = 135	Activates relay (function 8) when gate is open longer than selected time period.
LOITERING ALERT	0 = 0 (seconds) 1 = 15 2 = 45 3 = 75† 4 = 105 5 = 135	Activates relay (function 13) when vehicle is over Outside Obstruction Loop with gate closed longer than selected time period.
LEARN LIMIT	0 = OFF† 1 = ON	(SLIDESMART AND HYDRASWING ONLY) Set to 1 to place operator in learn limits mode. Installer must then set open and close limits.
FACTORY DEFAULTS	0 = CUSTOM† 1 = RESET TO	Set to 1 to erase all installer entered settings and return to factory defaults.
OPERATOR TYPE	OT1 = NON-VFD SLIDEDRIVER II OT2 = SWINGRISER OT7 = VFD SLIDEDRIVER II OT9 = HYDRASWING OT12 = SwingSmart CNX OT15 = SlideSmart CNX	Factory set. Used only if replacing the SmartTouch 720/725 Controller.
MODEL NUMBER (OT9 ONLY)	0 = DISABLED† 1 = HYDRASWING 150 2 = HYDRASWING 80F 3 = HYDRASWING 40 TWIN 4 = HYDRASWING 40F 5 = HYDRASWING 40 TWIN 6 = HYDRASWING 40F TWIN 7 = HYDRASWING 40 TWIN SEN 8 = HYDRASWING 40F TWIN SEN	Assign the operator's Model Number. Preset at factory based on what operator was ordered.
POWER TYPE	0 = DISABLED† 1 = AC POWERED 2 = DC HYCHARGER 3 = AC HYINVERTER	Assign the operator's power type. Preset at factory based on what operator was ordered.
HYINVERTER DIAGNOSTICS	0 (OFF), 1 (ON)	Allows the user to view the diagnostics of the connected HyInverter, including AC Voltage, Battery Charge Level, and HyInverter Temperature.
MENU PIN	0 0 0 0 ^	Allows installer to set a 4-digit security pin to restrict access to SmartTouch 720/725 Controller menus.

Operator Functions



Operator Functions

Table 2. SmartTouch 720/725 Operator Functions Settings

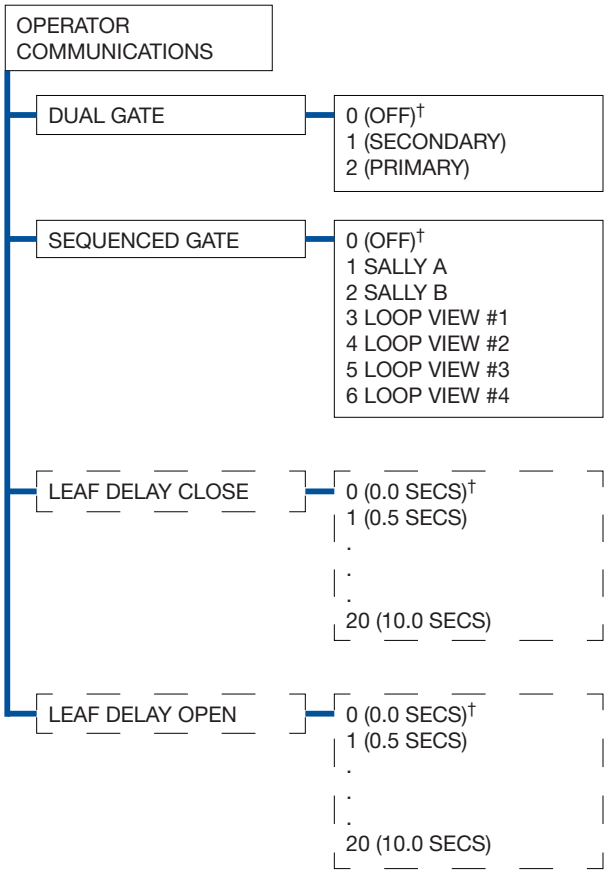
MENU DISPLAY	SETTINGS	DESCRIPTION
OPEN SPEED (OT7 & OT9 ONLY)	0 = 30, 25, 20, or 15 SEC† 1 = 25, 20, 17.5, or 12.5 SEC 2 = 20, 15, 15, 10 SEC	Designates how quickly gate moves in the open direction. Values vary by Model Number. Hidden for all OT1, OT2, and OT7/AD2.
CLOSE SPEED (OT7 & OT9 ONLY)	0 = 30, 25, 20, or 15 SEC† 1 = 25, 20, 17.5, or 12.5 SEC 2 = 20, 15, 15, 10 SEC	Designates how quickly gate moves in the close direction. Values vary by Model Number. Hidden for all OT1, OT2, and OT7/AD2.
HOLD TO OPEN	0 = OFF† 1 = ON	Set to **0** to produce a gate open when a momentary signal is transmitted. Set to **1** if a constant hold to open signal, such as a push button control, is being used. **0** = Momentary close signal **1** = Constant hold open push button required. You must set HOLD TO OPEN to **1** to comply with UL 325 Type D protection.
HOLD TO CLOSE	0 = OFF† 1 = ON	Set to **0** to produce a gate closure when a momentary signal is transmitted. Set to **1** if a constant hold to close signal, such as a push button control, is being used. A setting of **1** also deactivates the automatic close timer and causes its menu to disappear. **0** = Momentary close signal **1** = Constant hold open push button required You must set HOLD TO CLOSE to **1** to comply with UL 325 Type D protection.
RADIO OPTIONS	0 = STEP FUNCTION † 1 = OPEN ONLY 2 = OPEN/CLOSE	Default setting is to function as a STEP function where each consecutive activation reverses or stops the gate. First activation opens the gate. Configures radio input for open only (**1**). If changed to setting **2** then adds capability for radio input to close gate, but only when gate is fully open.
WARN BEFORE OPER	0 = OFF 1 = ON 2 = ON 2 SEC†	Controls warn-before-operate buzzer and can be configured three ways: Set to **0**: Buzzer is disabled Set at **0**, buzzer will still beep when alerts, faults, errors, or entrapment are detected. Set to **1**: Buzzer beeps for 3 seconds before gate motion begins and continues through entire gate travel. Set to **2**: buzzer beeps for 3 seconds before gate motion begins and continues for 2 seconds of gate travel. **⚠ WARNING** Do NOT cut wires to buzzer or unplug it as operator will not be in compliance with UL 325. Failure to comply may result in serious injury or death.
PARTIAL OPEN	0 (OFF)† 7 (FEET) 8 (FEET) 9 (FEET) ... 32 (FEET)	Sets distance (from closed gate position) where gate stops if the partial open input is activated. When a number is entered in PO display, open partial input becomes operational. Only available on slide gate operators. Hidden for swing gate operators.

Operator Functions

Table 2. SmartTouch 720/725 Operator Functions Settings

MENU DISPLAY	SETTINGS	DESCRIPTION
FORCE OPEN ALERT (OT2 ONLY)	0 = OFF† 1 = ON	Intended for highly secure facilities. Set to **1**, the operator sounds the 3-second “warn before operate” buzzer alarm and initiates a closure if the gate is forced open and the closed limit switch disengages. The motor starts to secure the gate. If the gate does not fully close within 4s, the motor turns off and the buzzer sounds for 30 seconds. The display shows ALERT 1 - FORCED OPEN.
DRIFT CLOSE ALERT (OT2 ONLY)	0 = OFF† 1 = ON	Set to **1**, the operator sounds the 3-second “warn before operate” buzzer alarm and initiates an open command if the gate is forced, or drifts, off the open limit switch. The motor starts to reopen the gate. The motor runs for a maximum of 4s and, if the gate is not fully open at the end of this period, the buzzer sounds for 10s. The display shows ALERT 2 - DRIFT CLOSED.
MAX RUN TIMER (OT2 ONLY)	1 = 60 SEC† 2 = 300 SEC	Assigns a motor run time of 60 or 300 seconds. If the gate opening or closure takes longer than 60 seconds, set the run timer to **1**.
CREEP DURATION (OT9 MN 5, 6, 7, 8 ONLY)	0 = 0 SEC 0.5 = 0.5 SEC 1 = 1 SEC† 1.5 = 1.5 SEC 2 = 2 SEC 2.5 = 2.5 SEC 3 = 3 SEC	The CREEP DURATION setting is available in HydraSwing Twin models. It sets the amount of time the cylinders creep to synchronize the gate panels when reaching the Close Limit.

Operator Communications



LEAF DELAY OPEN/CLOSE ONLY APPEAR IF THE GATE OPERATOR IS SET UP AS PRIMARY OR SECONDARY.

† = Indicates default

Operator Communications

Table 3. SmartTouch 720/725 Operator Communications Settings

MENU DISPLAY	SETTINGS	DESCRIPTION
DUAL GATE	0 = OFF† 1 = SECONDARY 2 = PRIMARY	Configures gate operator as a Primary or as a Secondary in a dual-gate installation. When you assign one unit as Primary, you must configure the other as Secondary. **NOTE:** Requires the same board type and firmware version.
SEQUENCED GATE	0 = OFF† 1 = SALLY A 2 = SALLY B 3 = LOOP VIEW #1 4 = LOOP VIEW #2 5 = LOOP VIEW #3 6 = LOOP VIEW #4	This menu is used to configure a Sally Port or Sequenced gate system. For a Sally Port, set one operator to Sally A and the other to Sally B. For sequenced gates, set both operators to the same Loop View setting. Establishes communication after wiring two or more gate operators as sequential gates. Sequenced gate can be a mix of different control boards, for example, one STC725 board and one SmartDC board. **NOTE:** After selecting SEQUENCED GATE settings, set the CLOSE TIMER in each gate operator.
LEAF DELAY CLOSE	0 = 0.0 (seconds)† 1 = 0.5 2 = 1.0 ... 20 = 10	Only appears if the gate operator is set up as PRIMARY or SECONDARY. Available settings are **1** through **20**. Each increment adds 0.5 second time delay following a command to close before the operator activates. Provides up to a 10 second time before the gate starts closing.
LEAF DELAY OPEN	0 = 0.0 (seconds)† 1 = 0.5 2 = 1.0 ... 20 = 10	Only appears if the gate operator is set up as PRIMARY or SECONDARY. Available settings are **1** through **20**. Each increment adds 0.5 second time delay following a command to close before the operator activates. Provides up to a 10 second time delay before the gate starts opening.

Dual and Sequenced Gate Setup

Dual (or bi-parting) gate setup:

1. Install the primary and secondary operators.
2. Set up external entrapment sensors on both operators. Vehicle detectors may be installed in either operator. Make these connections before you connect the operators.
3. Test cycle the operators independently to make sure there are no problems with gate travel and open/close limits.
4. Install a twisted shielded 2 pair wire harness between the two operators. Match A-A, B-B, and COM-COM. Install the grounding shield on only one of the controller mounting brackets.

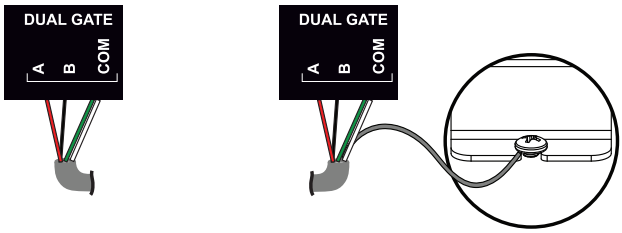


Figure 8. Dual Gate Connection

Sequenced gate wiring:

Sequenced gate wiring is similar to dual gate wiring. Instead of the DUAL GATE terminal, use the SEQ GATE terminal. Install a twisted shielded 2 pair wire harness between the two operators. Match A-A, B-B, and COM-COM. Install the grounding shield on only one of the controller mounting brackets (Figure 9). Refer to **page 27** through **page 26** for Loop View diagrams.

When sequenced gates are being used in barrier arm and security gate system, both operators must be set to the same loop view setting. When sequenced gates is used for a Sally Port system, then one gate must be set to Sally A and the other must be set to Sally B.

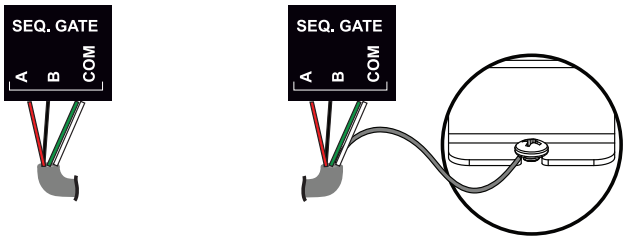


Figure 9. Sequenced Gate Connection

5. Set one operator as the primary and the other as the secondary.
6. Test the gate operation.
7. Adjust LEAF DELAY CLOSE and LEAF DELAY OPEN if required.

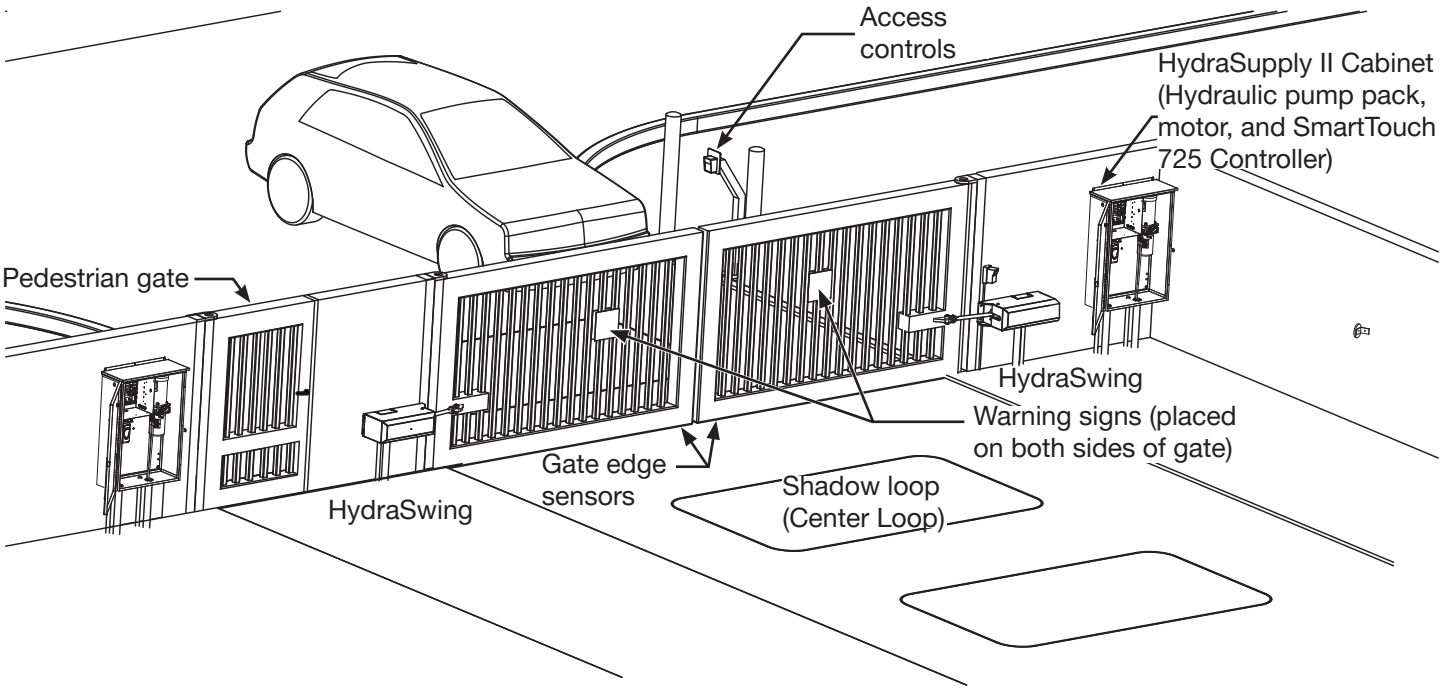
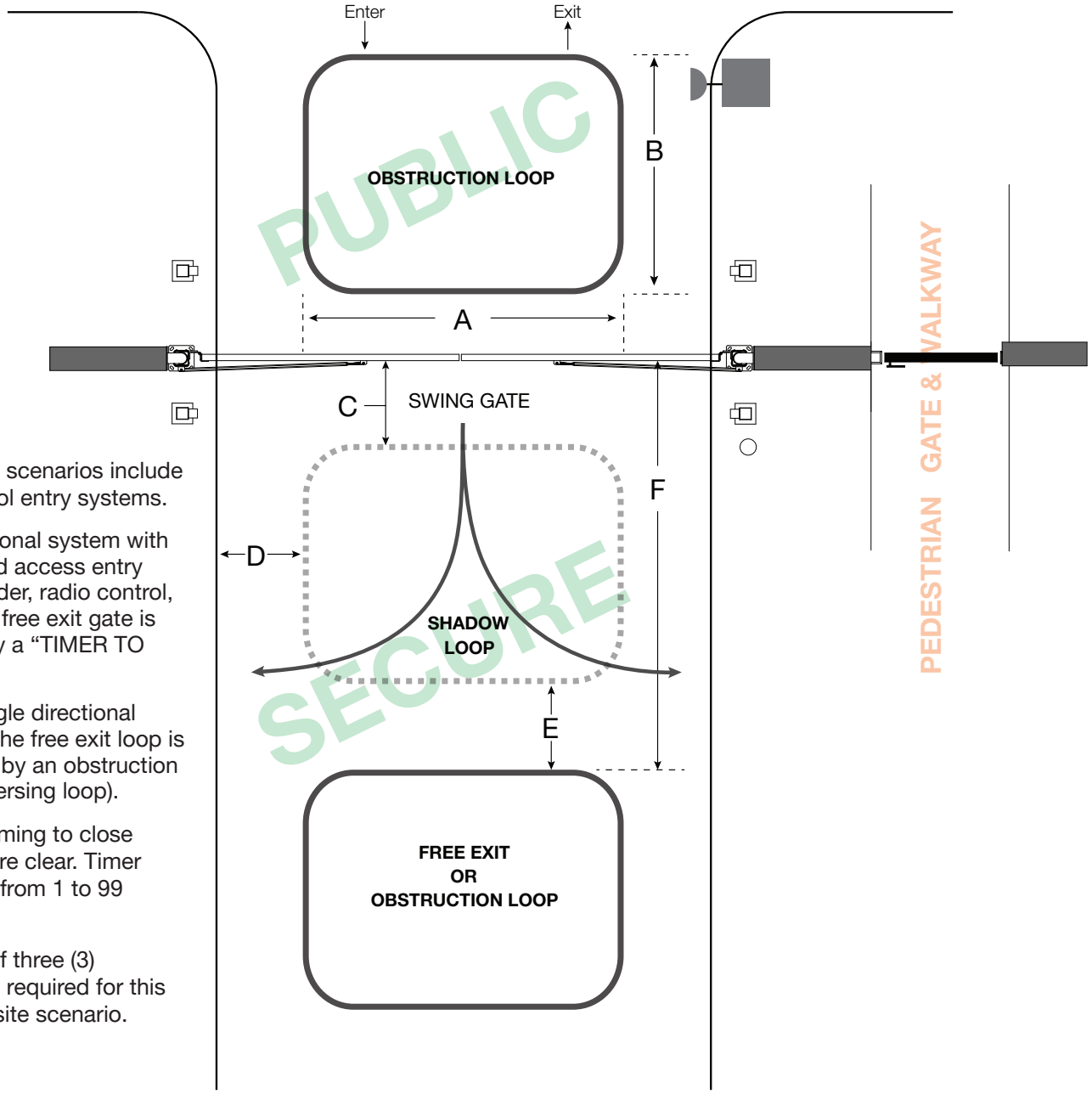


Figure 10. Bi-Parting Gate

Vehicle Detector Loop Layouts - Swing

For Openings less than 28 Feet



Two gate site scenarios include access control entry systems.

- Bi-directional system with controlled access entry (card reader, radio control, etc.) and free exit gate is closed by a “TIMER TO CLOSE.”
- For a single directional system, the free exit loop is replaced by an obstruction loop (reversing loop).

Gate starts timing to close as all loops are clear. Timer is adjustable from 1 to 99 seconds.

A minimum of three (3) detectors are required for this type of gate site scenario.

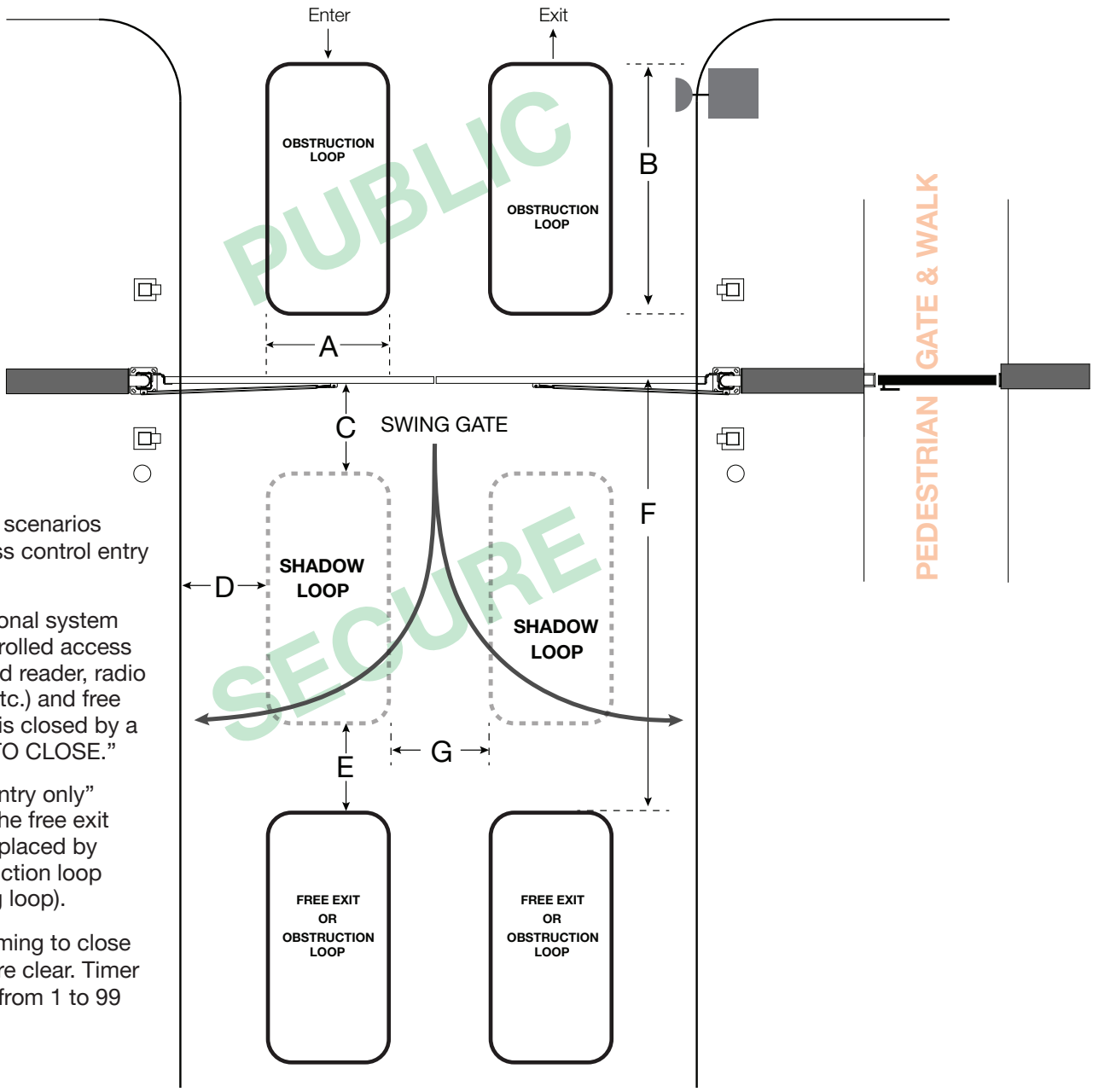
Uni-directional Single Lane Vehicles must pass from one loop to the next without loss of detection.

- Dimension “A” = 6 to 20 ft (183 to 610 cm)
- Dimension “B” = 6 to 8 ft (183 to 244 cm)
- Dimension “C” = Maintain 4 ft (122 cm)
- Dimension “D” = Maintain 3 to 4 ft (91 to 122 cm) between loop and edge of roadway. No vehicle can pass through such a small area and escape detection.
- Dimension “E” = 4 ft maximum (122 cm) Vehicles must be able to pass from one loop to the next without loss of detection.
- Dimension “F” = Distance from gate to free exit loop is gate panel length plus 4 ft (122 cm)

A minimum of three (3) detectors are required for this type of gate site scenario.

Vehicle Detector Loop Layouts - Swing

For Openings greater than 28 Feet



Two gate site scenarios include access control entry systems.

- Bi-directional system with controlled access entry (card reader, radio control, etc.) and free exit gate is closed by a "TIMER TO CLOSE."
- For an "entry only" system, the free exit loop is replaced by an obstruction loop (reversing loop).

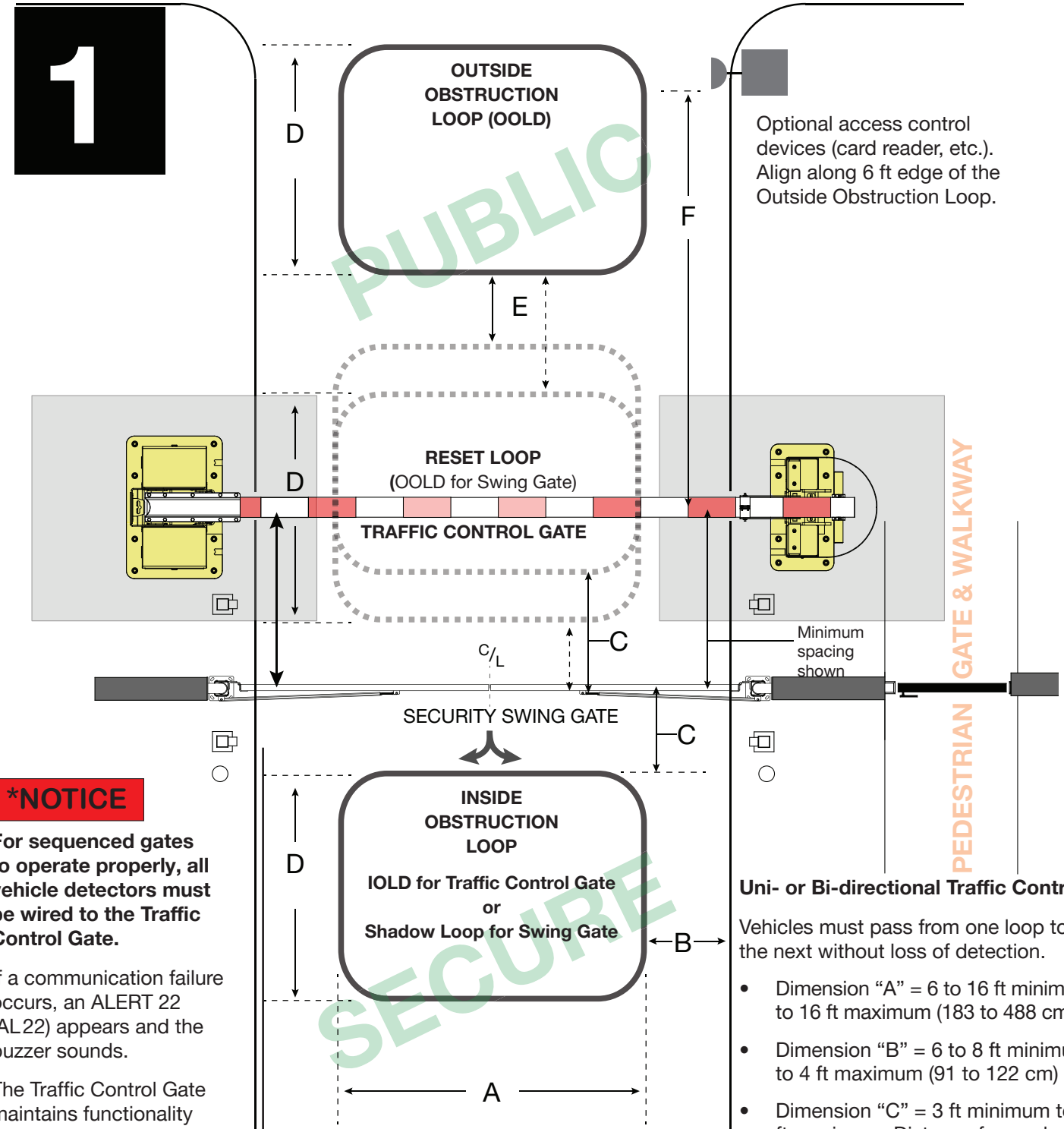
Gate starts timing to close as all loops are clear. Timer is adjustable from 1 to 99 seconds.

Uni-directional Single Lane Vehicles must pass from one loop to the next without loss of detection.

- Dimension "A" = 6 to 20 ft (183 to 610 cm)
- Dimension "B" = 6 to 8 ft (183 to 244 cm)
- Dimension "C" = Maintain 4 ft (122 cm)
- Dimension "D" = Maintain 5 ft (152 cm) between loop and edge of roadway. No vehicle can pass through such a small area and escape detection.
- Dimension "E" = 4 ft maximum (122 cm) Vehicles must be able to pass from one loop to the next without loss of detection.
- Dimension "F" = Distance from gate to free exit loop is gate panel length plus 4 ft (122 cm)
- Dimension "G" = 4 to 6 ft (122 to 183 cm)

A minimum of three (3) detectors are required for this type of gate site scenario.

Sequenced Swing Gate: Loop View #1



Optional access control devices (card reader, etc.). Align along 6 ft edge of the Outside Obstruction Loop.

***NOTICE**

For sequenced gates to operate properly, all vehicle detectors must be wired to the Traffic Control Gate.

If a communication failure occurs, an ALERT 22 (AL22) appears and the buzzer sounds.

The Traffic Control Gate maintains functionality while the Security Gate defaults to open until communication is restored (or the Security Gate is manually closed).

***NOTICE**

Center to center between gates:

4 ft minimum (122 cm), 9 ft maximum (274 cm)

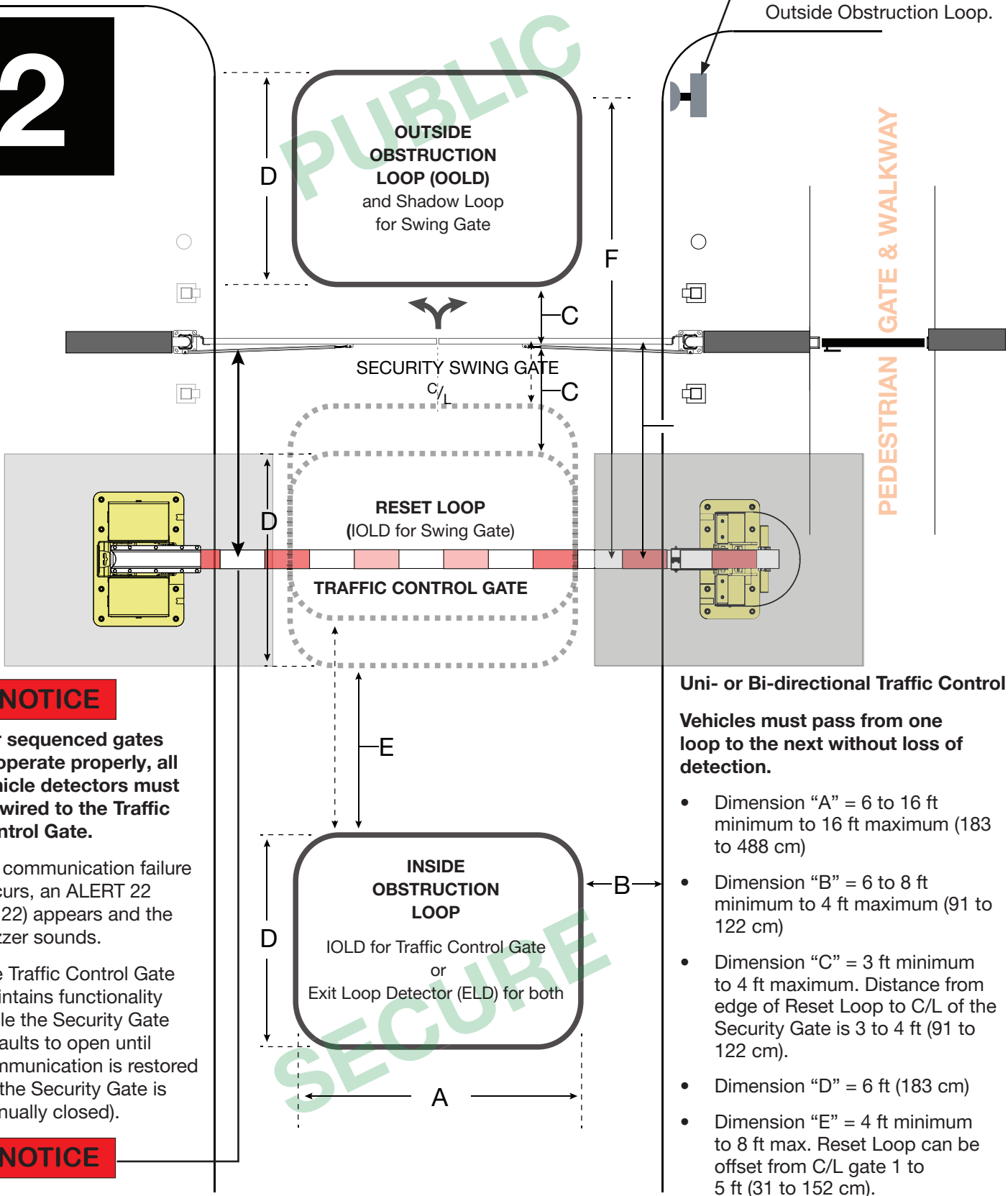
Uni- or Bi-directional Traffic Control

Vehicles must pass from one loop to the next without loss of detection.

- Dimension “A” = 6 to 16 ft minimum to 16 ft maximum (183 to 488 cm)
- Dimension “B” = 6 to 8 ft minimum to 4 ft maximum (91 to 122 cm)
- Dimension “C” = 3 ft minimum to 4 ft maximum. Distance from edge of Reset Loop to C/L of the Security Gate is 3 to 4 ft (91 to 122 cm).
- Dimension “D” = 6 ft (183 cm)
- Dimension “E” = 4 ft minimum to 8 ft max. Reset Loop can be offset from C/L gate 1 to 5 ft (31 to 152 cm).
- Dimension “F” = 10 to 15 ft (3 to 3.6 m)

Sequenced Swing Gate: Loop View #2

2



***NOTICE**

For sequenced gates to operate properly, all vehicle detectors must be wired to the Traffic Control Gate.

If a communication failure occurs, an ALERT 22 (AL22) appears and the buzzer sounds.

The Traffic Control Gate maintains functionality while the Security Gate defaults to open until communication is restored (or the Security Gate is manually closed).

***NOTICE**

Center to center between gates:

4 ft minimum (122 cm), 9 ft maximum (274 cm)

Uni- or Bi-directional Traffic Control

Vehicles must pass from one loop to the next without loss of detection.

- Dimension “A” = 6 to 16 ft minimum to 16 ft maximum (183 to 488 cm)
- Dimension “B” = 6 to 8 ft minimum to 4 ft maximum (91 to 122 cm)
- Dimension “C” = 3 ft minimum to 4 ft maximum. Distance from edge of Reset Loop to C/L of the Security Gate is 3 to 4 ft (91 to 122 cm).
- Dimension “D” = 6 ft (183 cm)
- Dimension “E” = 4 ft minimum to 8 ft max. Reset Loop can be offset from C/L gate 1 to 5 ft (31 to 152 cm).
- Dimension “F” = 10 to 15 ft (3 to 3.6 m)

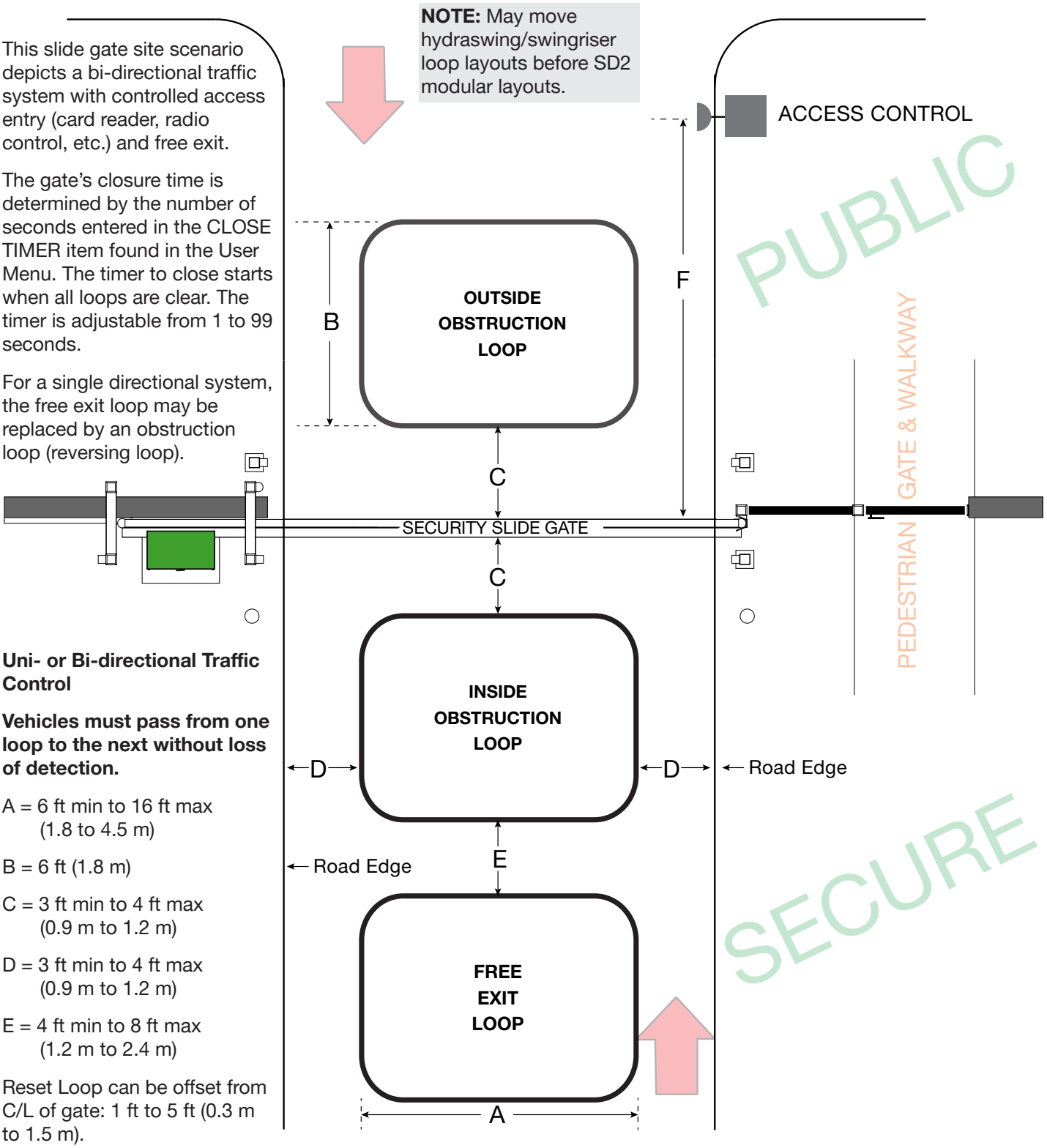
Drawings NOT to scale

Vehicle Detector Loop Layouts - Slide

This slide gate site scenario depicts a bi-directional traffic system with controlled access entry (card reader, radio control, etc.) and free exit.

The gate's closure time is determined by the number of seconds entered in the CLOSE TIMER item found in the User Menu. The timer to close starts when all loops are clear. The timer is adjustable from 1 to 99 seconds.

For a single directional system, the free exit loop may be replaced by an obstruction loop (reversing loop).



Uni- or Bi-directional Traffic Control

Vehicles must pass from one loop to the next without loss of detection.

A = 6 ft min to 16 ft max (1.8 to 4.5 m)

B = 6 ft (1.8 m)

C = 3 ft min to 4 ft max (0.9 m to 1.2 m)

D = 3 ft min to 4 ft max (0.9 m to 1.2 m)

E = 4 ft min to 8 ft max (1.2 m to 2.4 m)

Reset Loop can be offset from C/L of gate: 1 ft to 5 ft (0.3 m to 1.5 m).

F = 10 ft to 15 ft (3 m to 3.6 m)

G = 4 ft to 6 ft (1.2 m to 2.4 m)

H = 0.7 ft (0.2 m)

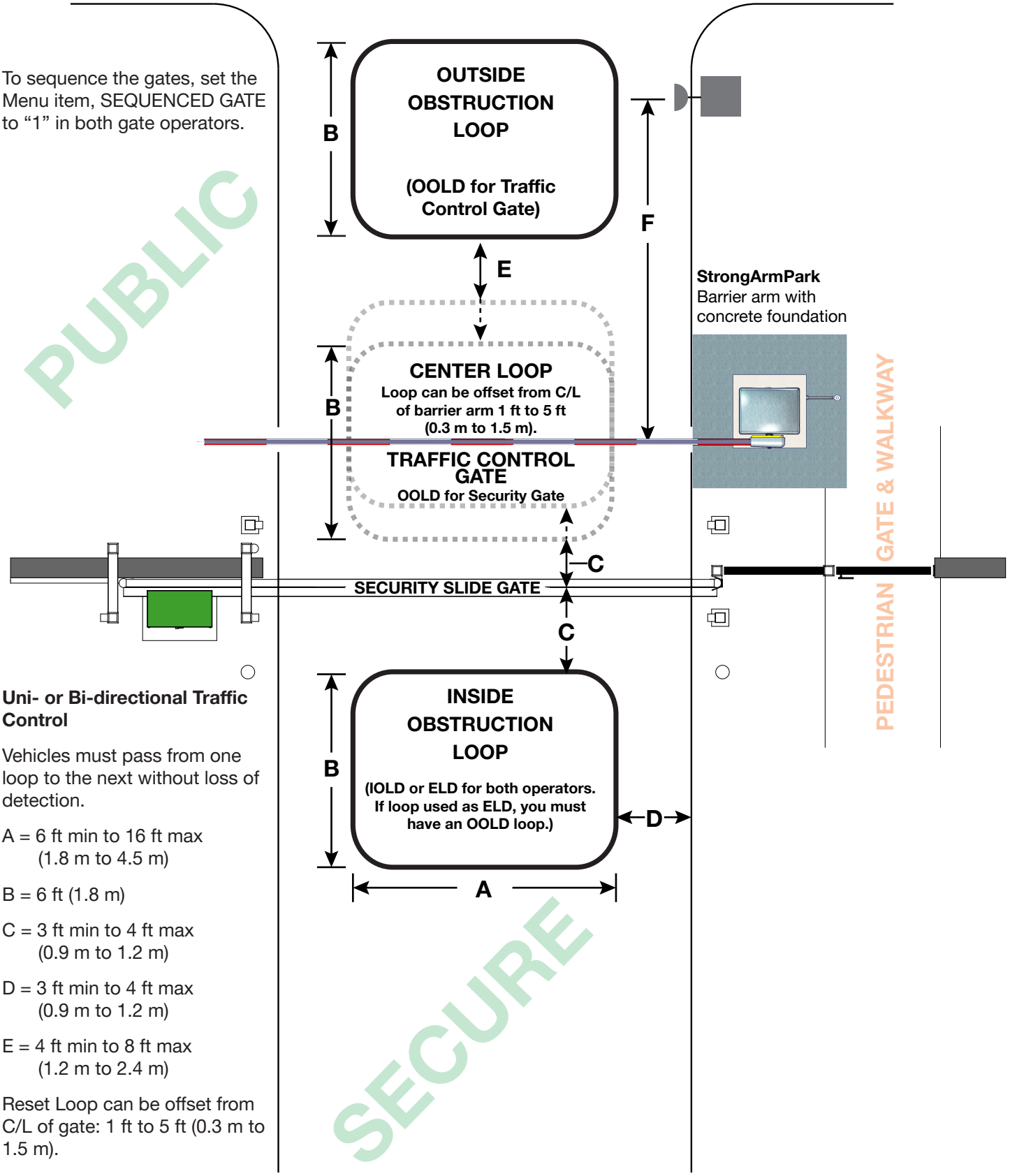
NOTE

A minimum of three (3) detectors are required for this type of gate site scenario. V-track gate shown; other gate types similar.

Drawings NOT to scale

Sequenced Slide Gate: Loop View #1

To sequence the gates, set the Menu item, SEQUENCED GATE to “1” in both gate operators.



Uni- or Bi-directional Traffic Control

Vehicles must pass from one loop to the next without loss of detection.

A = 6 ft min to 16 ft max
(1.8 m to 4.5 m)

B = 6 ft (1.8 m)

C = 3 ft min to 4 ft max
(0.9 m to 1.2 m)

D = 3 ft min to 4 ft max
(0.9 m to 1.2 m)

E = 4 ft min to 8 ft max
(1.2 m to 2.4 m)

Reset Loop can be offset from C/L of gate: 1 ft to 5 ft (0.3 m to 1.5 m).

F = 10 ft to 15 ft (3 m to 3.6 m)

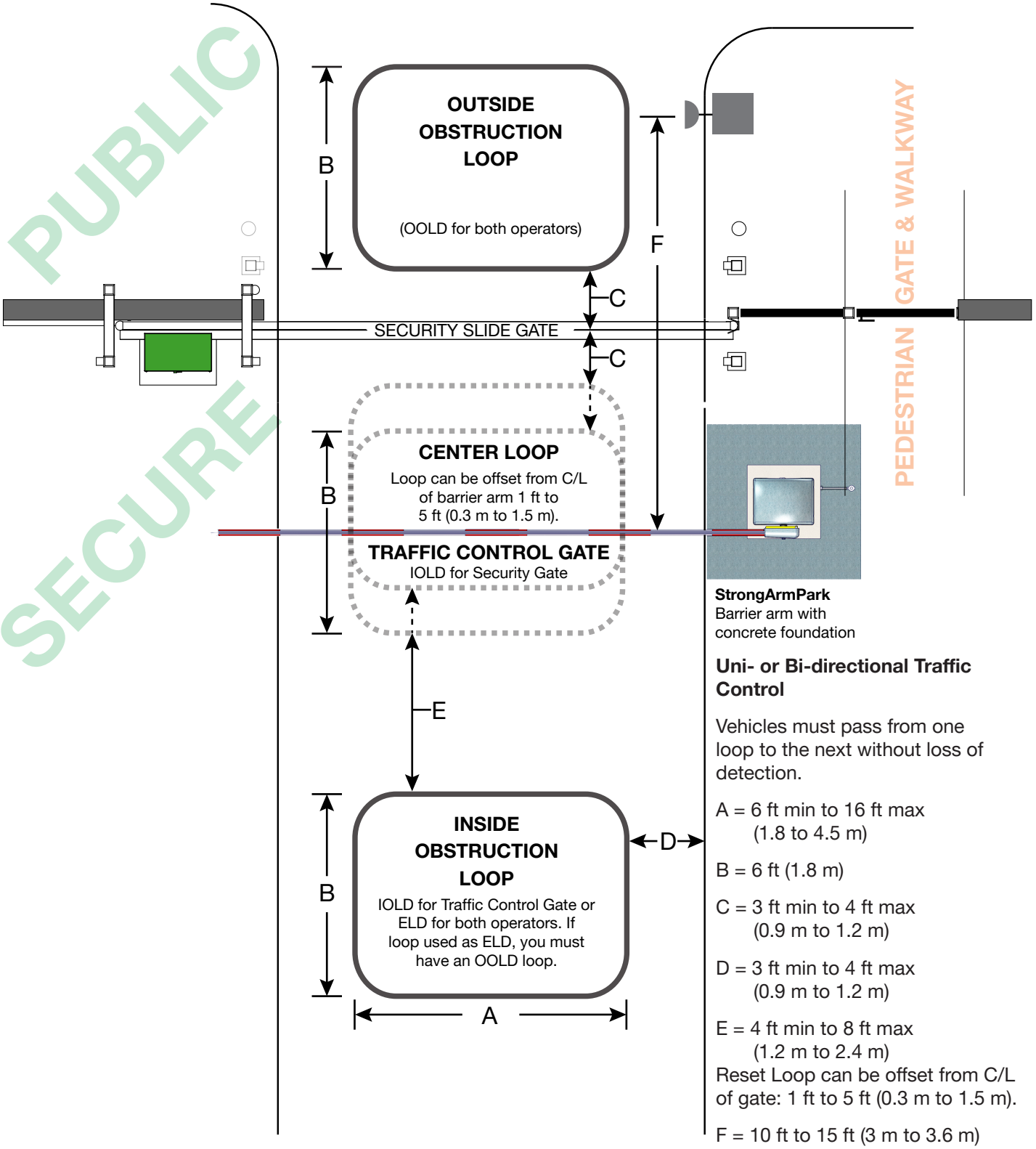
G = 4 ft to 6 ft (1.2 m to 2.4 m)

H = 0.7 ft (0.2 m)

Drawings NOT to scale

Sequenced Slide Gate: Loop View #2

To sequence the gates, set the Menu item,
SEQUENCED GATE to “2” in both gate operators.



StrongArmPark
Barrier arm with concrete foundation

Uni- or Bi-directional Traffic Control

Vehicles must pass from one loop to the next without loss of detection.

A = 6 ft min to 16 ft max (1.8 to 4.5 m)

B = 6 ft (1.8 m)

C = 3 ft min to 4 ft max (0.9 m to 1.2 m)

D = 3 ft min to 4 ft max (0.9 m to 1.2 m)

E = 4 ft min to 8 ft max (1.2 m to 2.4 m)
Reset Loop can be offset from C/L of gate: 1 ft to 5 ft (0.3 m to 1.5 m).

F = 10 ft to 15 ft (3 m to 3.6 m)

G = 4 ft to 6 ft (1.2 m to 2.4 m)

H = 0.7 ft (0.2 m)

Drawings NOT to scale

Sequenced Slide Gate: Loop View #3

To sequence the gates, set the Menu item, SEQUENCED GATE to “3” in both gate operators.

Uni- or Bi-directional Traffic Control

Vehicles must pass from one loop to the next without loss of detection.

A = 6 ft min to 16 ft max (1.8 to 4.5 m)

B = 6 ft (1.8 m)

C = 3 ft min to 4 ft max (0.9 m to 1.2 m)

D = 3 ft min to 4 ft max (0.9 m to 1.2 m)

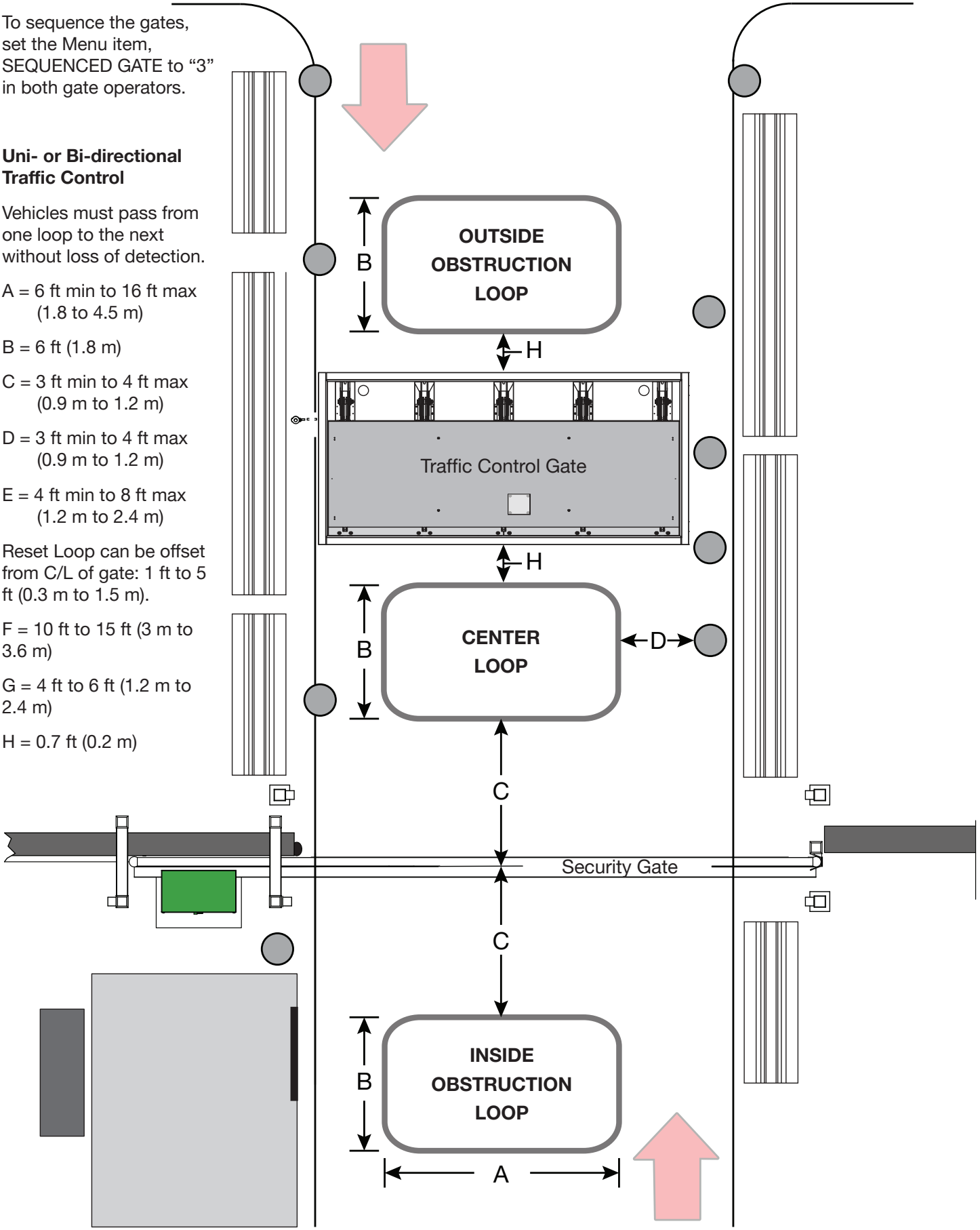
E = 4 ft min to 8 ft max (1.2 m to 2.4 m)

Reset Loop can be offset from C/L of gate: 1 ft to 5 ft (0.3 m to 1.5 m).

F = 10 ft to 15 ft (3 m to 3.6 m)

G = 4 ft to 6 ft (1.2 m to 2.4 m)

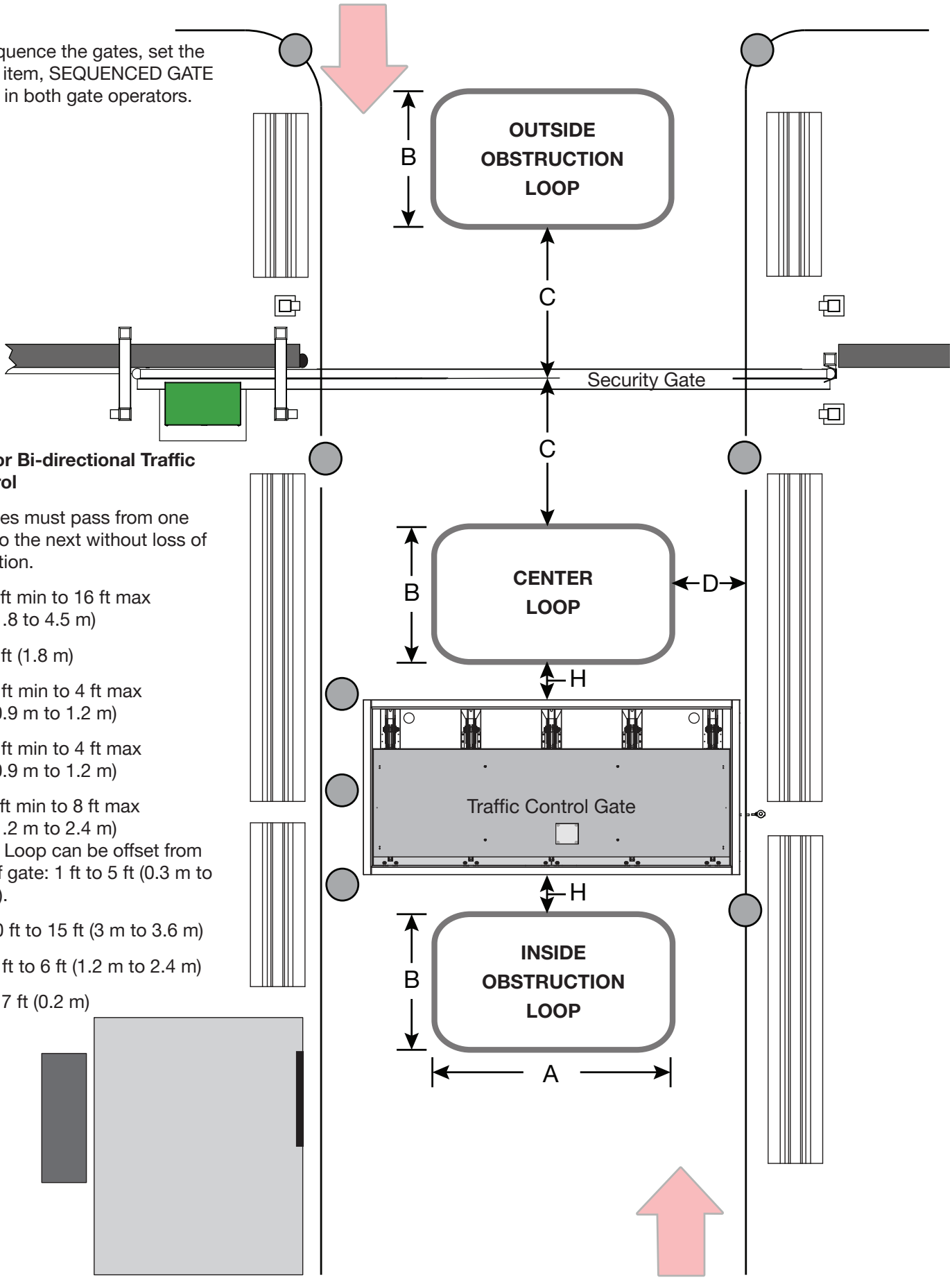
H = 0.7 ft (0.2 m)



Drawings NOT to scale

Sequenced Slide Gate: Loop View #4

To sequence the gates, set the Menu item, SEQUENCED GATE to “4” in both gate operators.



Uni- or Bi-directional Traffic Control

Vehicles must pass from one loop to the next without loss of detection.

A = 6 ft min to 16 ft max (1.8 to 4.5 m)

B = 6 ft (1.8 m)

C = 3 ft min to 4 ft max (0.9 m to 1.2 m)

D = 3 ft min to 4 ft max (0.9 m to 1.2 m)

E = 4 ft min to 8 ft max (1.2 m to 2.4 m)
Reset Loop can be offset from C/L of gate: 1 ft to 5 ft (0.3 m to 1.5 m).

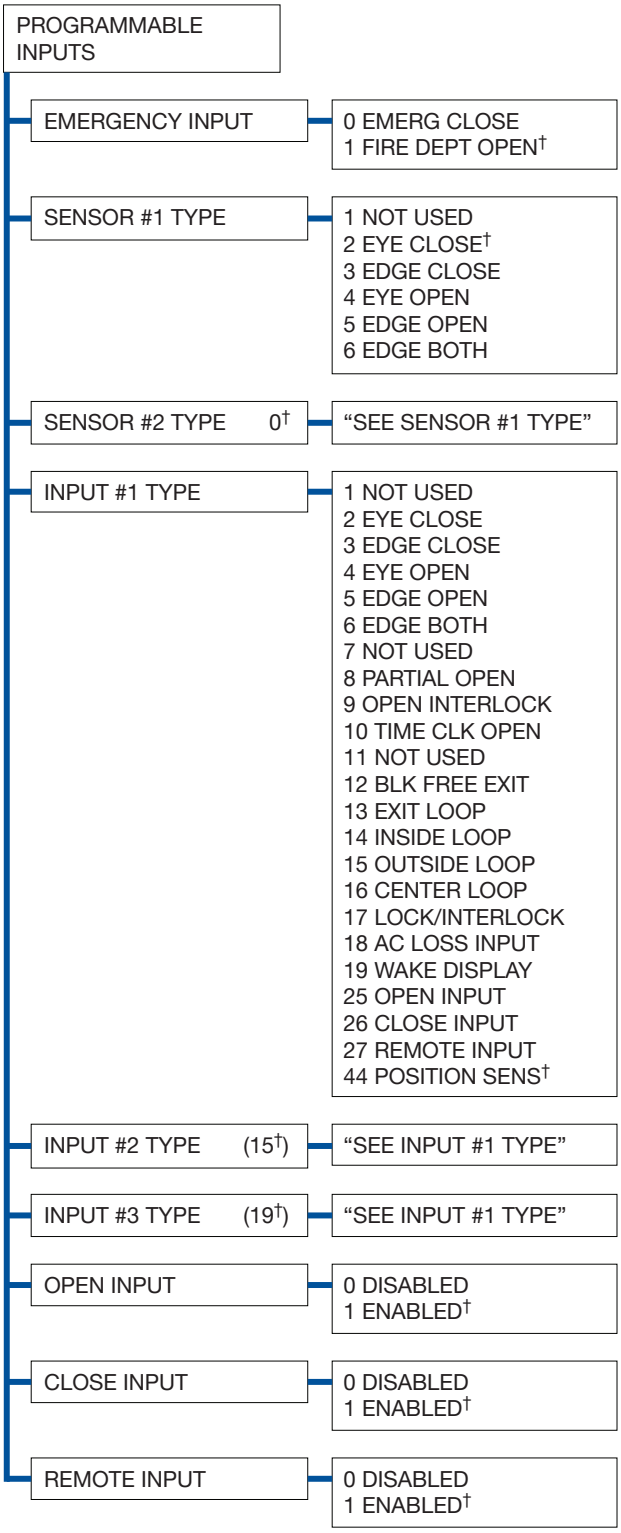
F = 10 ft to 15 ft (3 m to 3.6 m)

G = 4 ft to 6 ft (1.2 m to 2.4 m)

H = 0.7 ft (0.2 m)

Drawings NOT to scale

Programmable Inputs



† = Indicates default

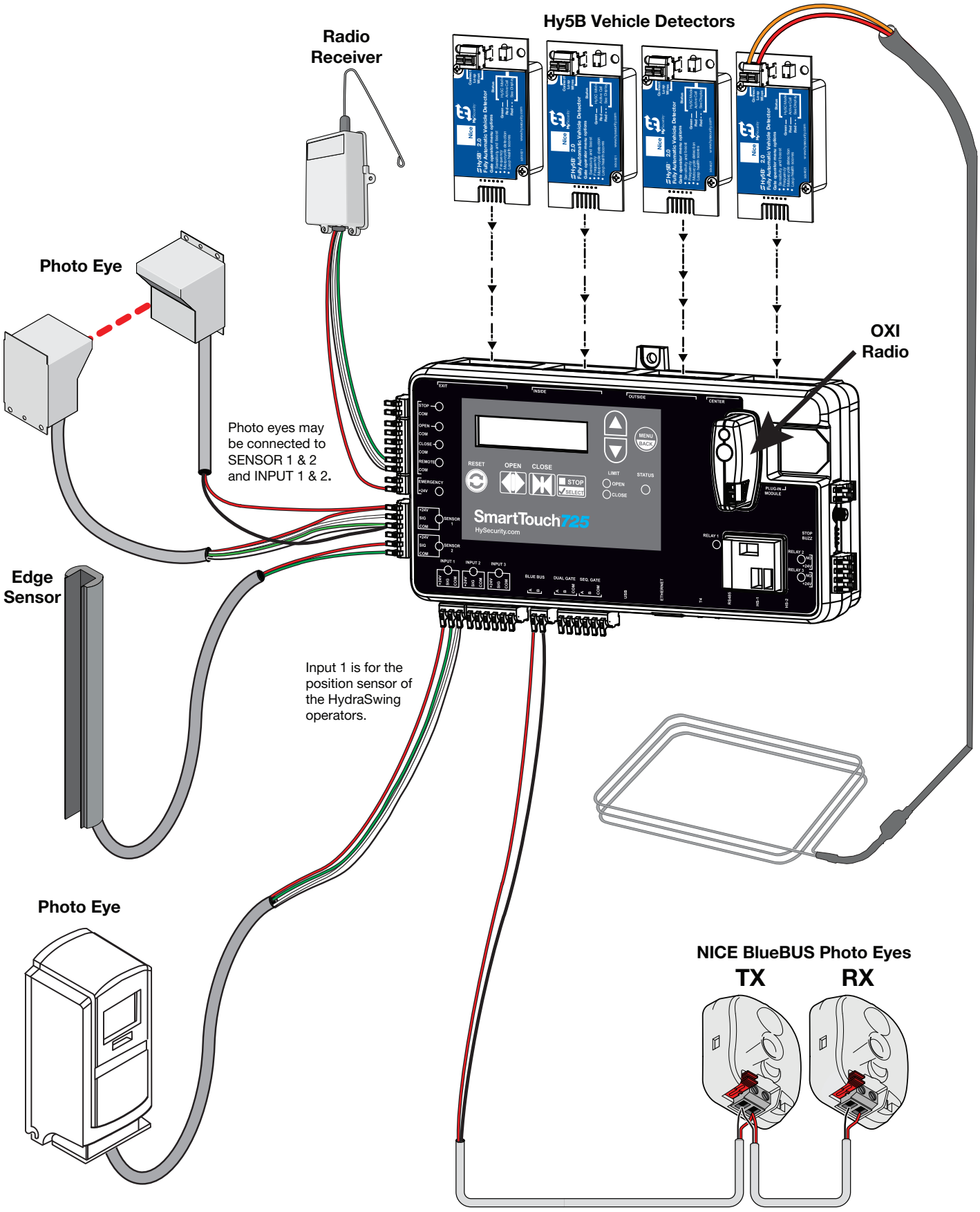
Programmable Inputs

Table 4. SmartTouch 720/725 Programmable Inputs Settings

MENU DISPLAY	SETTINGS	DESCRIPTION
EMERGENCY INPUT	0 = EMERG CLOSE 1 = FIRE DEPT OPEN†	Activation of this input requires a +24VDC signal. Defaults to Fire Department Open input. When set to 1, signal received through this input overrides all photoelectric eyes and edge sensors and opens gate. Pressing RESET button (or the OPEN or the STOP button) is required before gate can be closed. When set to 0, the input can be used as an Emergency Close.
SENSOR #1 TYPE	1 = NOT USED 2 = EYE CLOSE† 3 = EDGE CLOSE 4 = EYE OPEN 5 = EDGE OPEN	Monitored input per UL325 requirements for connection of external entrapment sensors - contact (edge sensor) or non-contact (photo eye). Edge Both is only available in Swing Gate operator types. This setting defaults to Position Sensor input when model number is set to 7 or 8.
SENSOR #2 TYPE	SAME SETTINGS AS SENSOR #1 TYPE 5 = EDGE OPEN†	Same as Sensor #1 Type. Default is not used for SwingRiser and HydraSwing operators. Sensor 2 input defaults to a position sensor if Model Number is set to 7 or 8 for HydraSwing.
INPUT #1 TYPE	1 = NOT USED 2 = EYE CLOSE 3 = EDGE CLOSE 4 = EYE OPEN 5 = EDGE OPEN 6 = EDGE BOTH (SWING ONLY) 7 = NOT USED 8 = PARTIAL OPEN (SLIDE ONLY) 9 = OPEN INTERLOCK 10 = TIME CLK OPEN 11 = NOT USED 12 = BLK FREE EXIT† 13 = EXIT LOOP 14 = INSIDE LOOP 15 = OUTSIDE LOOP 16 = CENTER LOOP 17 = LOCK/INTERLOCK 18 = AC LOSS INPUT 19 = WAKE DISPLAY 25 = OPEN INPUT 26 = CLOSE INPUT 27 = REMOTE INPUT 44 = POSITION SENS†	When set to 2-6, this input will be monitored and requires connection of external entrapment sensor's 10K or 4-wired pulsed output. The common terminal for a monitored sensor must be connected to the switched common at the Sensor 1 or Sensor 2 input. Input 1 default is a position sensor and is not configurable when Operator Type is set to 9 - HydraSwing.
INPUT #2 TYPE	SAME SETTINGS AS INPUT #1 TYPE 15 = OUTSIDE LOOP	Same as Input #1 Type
INPUT #3 TYPE	SAME SETTINGS AS INPUT #1 TYPE (2-6 not applicable) 19 = WAKE DISPLAY	Same as Input #1 Type
OPEN INPUT	0 = DISABLED 1 = ENABLED†	Option to fully disable OPEN INPUT. Can be used to troubleshoot active input alerts.
CLOSE INPUT	0 = DISABLED 1 = ENABLED†	Option to fully disable CLOSE INPUT. Can be used to troubleshoot active input alerts.
REMOTE INPUT	0 = DISABLED 1 = ENABLED†	Option to fully disable REMOTE INPUT. Can be used to troubleshoot active input alerts.

Controller Inputs

SmartTouch 720/725 Controller Input Examples Only



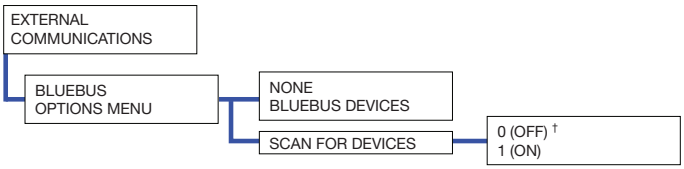
Entrapment Sensor Wiring - BlueBUS

Install a BlueBUS photo eye:

1. Verify the jumpers on transmitter (TX) and receiver (RX) are in the same positions (Figure 11).
2. Install the BlueBUS photo eyes in appropriate locations for entrapment protection, **page 9**.
3. Set the power switch to OFF.
4. Route the wires to the inside of the HydraSupply II cabinet.
5. Install the wires between the TX and RX and then into BlueBUS terminals on the SmartTouch 725 Controller (Figure 12).

NOTE: With BlueBUS technology there are 4 total close direction pairs and 2 open direction pairs available. Pairs may either be connected in parallel to one another or directly to the SmartTouch 725 Controller.

6. Set power switch to ON.
7. In EXTERNAL COMMUNICATIONS MENU, select BLUEBUS OPTIONS MENU, and set SCAN FOR DEVICES to 1 (ON).



8. Display will show EYE CLOSE BlueBUS P1 or the P# for the jumper configuration used.
9. In ENTRAPMENT SENSOR RESPONSE menu, set the desired response action for each entrapment type.
10. Test the function of each sensor pair.

BlueBUS RX LED Status Light	Status
OFF	No power
3 flashes, pause, repeat	Controller has not memorized the pair
Slow flashes	Good signal
Fast flashes	Weak signal
Always on	No signal

Direction	Pair	Jumper Positions (Pairs must match)
CLOSE	P1	
CLOSE	P2	
CLOSE	P3	
CLOSE	P4	
OPEN	P5	
OPEN	P6	

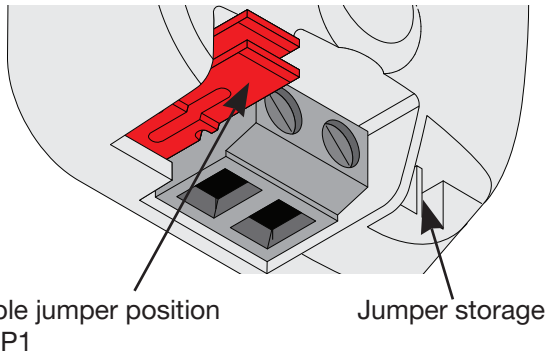
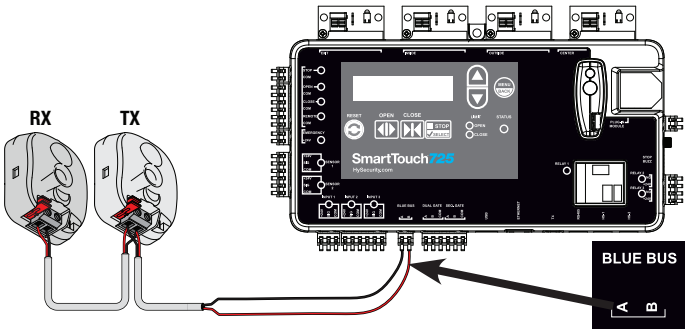


Figure 11. BlueBUS and Jumper Designation



NOTE: Matching wire polarity is not required for BlueBUS photocells.

NOTE: Jumper locations shown here are for a CLOSE P1 installation.

Figure 12. Connect the BlueBUS Photo Eye

† = Indicates default

Entrapment Sensor Wiring

HySecurity provides one edge sensor typically used as hardwired EDGE OPEN and one photo eye typically used as EYE CLOSE with the SlideDriver II 15, 40, 50F, and 80V. SwingRiser and HydraSwing are not shipped with any external entrapment sensors but have sensor 1 preprogrammed to monitor a Photo Eye close.

Install the external entrapment sensor:

1. Set power switch to OFF.
2. Install the entrapment sensor in an appropriate location for entrapment protection, **page 9**.
3. Route the wires to the inside of the HydraSupply II enclosure, then install the wires into input Sensor #1, Sensor #2, or Input #1, Input #2, or Input #3 on the SmartTouch 720/725 Controller (Figure 13).

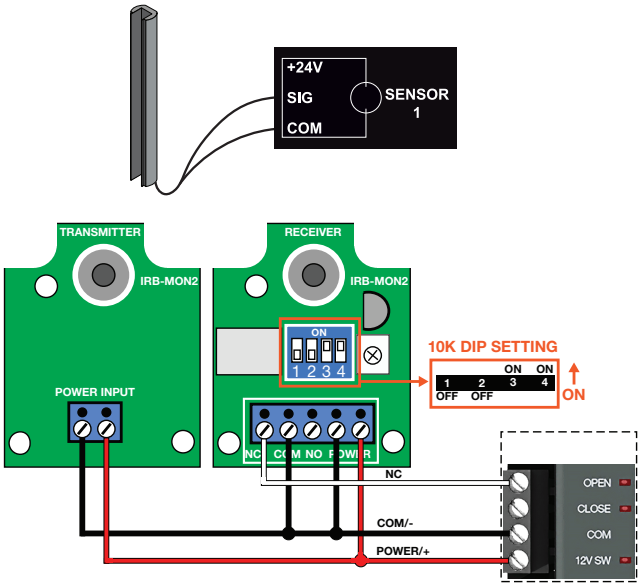


Figure 13. Bundled Sensor Connections

4. Set power switch to ON.
5. In PROGRAMMABLE INPUTS menu, select the SENSOR TYPE or INPUT TYPE for each external entrapment sensor. The indicator LED changes to green when sensor is activated or not installed correctly.
6. In ENTRAPMENT SENSOR RESPONSE menu, set the desired response action for each entrapment type.
7. Test the function of each sensor.

Install a non-BlueBUS photo eye:

Additional photo eyes can connect to the SmartTouch 720/725 Controller terminals Sensor #1 - #2 and Input #1 - #3. Follow the instructions for entrapment sensors.

Set any DIP-switches and jumpers according to manufacturer instructions for 10k output.

† = Indicates default

PROGRAMMABLE INPUTS

EMERGENCY INPUT	0 EMERG CLOSE 1 FIRE DEPT OPEN†
SENSOR #1 TYPE	1 NOT USED 2 EYE CLOSE† 3 EDGE CLOSE 4 EYE OPEN 5 EDGE OPEN 6 EDGE BOTH
SENSOR #2 TYPE 0†	"SEE SENSOR #1 TYPE"
INPUT #1 TYPE	1 NOT USED 2 EYE CLOSE 3 EDGE CLOSE 4 EYE OPEN 5 EDGE OPEN 6 EDGE BOTH 7 NOT USED 8 PARTIAL OPEN 9 OPEN INTERLOCK 10 TIME CLK OPEN 11 NOT USED 12 BLK FREE EXIT 13 EXIT LOOP 14 INSIDE LOOP 15 OUTSIDE LOOP 16 CENTER LOOP 17 LOCK/INTERLOCK 18 AC LOSS INPUT 19 WAKE DISPLAY 25 OPEN INPUT 26 CLOSE INPUT 27 REMOTE INPUT 44 POSITION SENS†
INPUT #2 TYPE (15†)	"SEE INPUT #1 TYPE"
INPUT #3 TYPE (19†)	"SEE INPUT #1 TYPE"
OPEN INPUT	0 DISABLED 1 ENABLED†
CLOSE INPUT	0 DISABLED 1 ENABLED†
REMOTE INPUT	0 DISABLED 1 ENABLED†

ENTRAPMENT SENSOR RESPONSE

IES SENSITIVITY (2†)	0 (MAXIMUM) - 9
PHOTO EYE ALIGN	0 (OFF)† 1 (ON)
EDGE CLOSE LOGIC	0 FULL OPEN† 1 REVERSE 2S
EYE CLOSE LOGIC	0 STOP ONLY† 1 REVERSE 2S 2 FULL OPEN
EYE OPEN LOGIC	0 STOP ONLY† 1 REVERSE 2S
IES STOP ONLY	0 (OFF)† 1 (ON)
IES REVERSAL	0 FULL OPEN† 1 REVERSE 2S

NOTE: When Photo Eye Align mode is turned on, the display will show all the sensor inputs that are programmed for photo eyes and will show if they are active or not (a 1 indicates the eye is present and aligned and a 0 indicates the eye is not aligned or blocked). Any BlueBUS eye will also show up on the display.

List of Entrapment Sensors

Entrapment Sensors Compatible with Hysecurity Operators

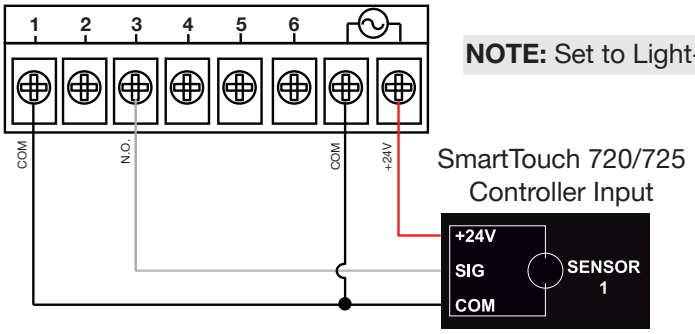
NOTE

The SmartTouch 720/725 Controller inputs use 10k or 4-wire pulsed monitoring. Connect sensor using sensor instructions for the compatible output connections. The SmartTouch 720/725 Controller does not support normally closed inputs.

For a reference of sensors tested with HySecurity Operators, see the table “Recommended External Entrapment Protection Sensors List” on page page 6.

The following examples show wiring to SENSOR 1, but one can also make these connections to SENSOR 2 as well as INPUT 1-3. Remember to change the setting for the SENSOR or INPUT terminal to match the connected device. Reference the manufacturer's installation instructions for help with programming or other setup issues.

Omron E3K-R10K4-NR-1 (Photo Eye)



NOTE: Set to Light-On operation.

Figure 14. Omron E3K

Approved Sensor Wiring

EMX IRB-RET (Photo Eye)

NOTE: Set board as shown in red boxes per Figure 15, below. Jumpers are three pin and placed LEFT or RIGHT as indicated.

DIAGRAM A: 10K OHM RESISTIVE WIRING

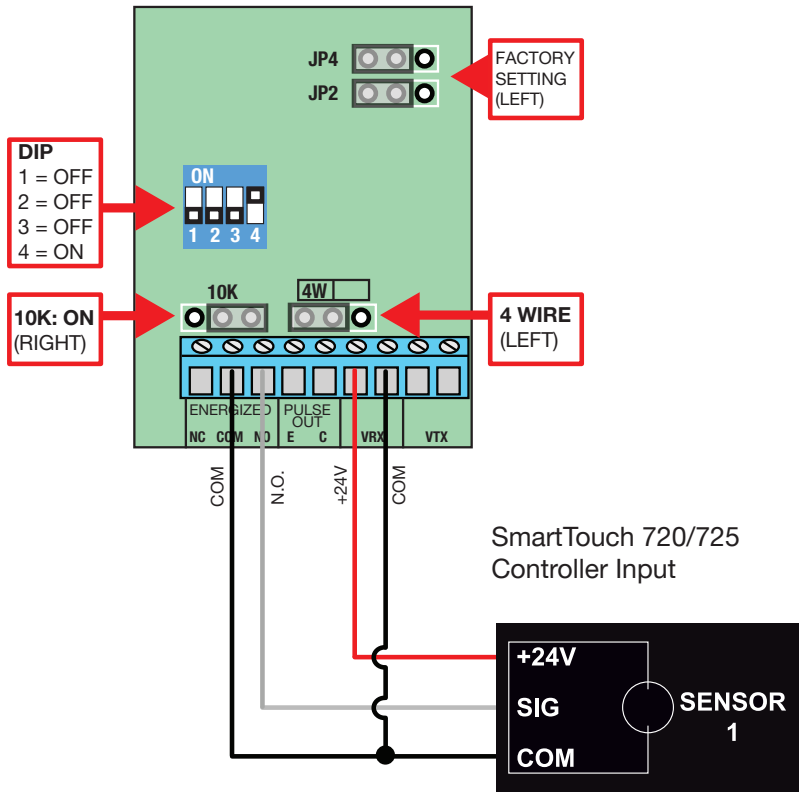


DIAGRAM B: 4-WIRE PULSED WIRING

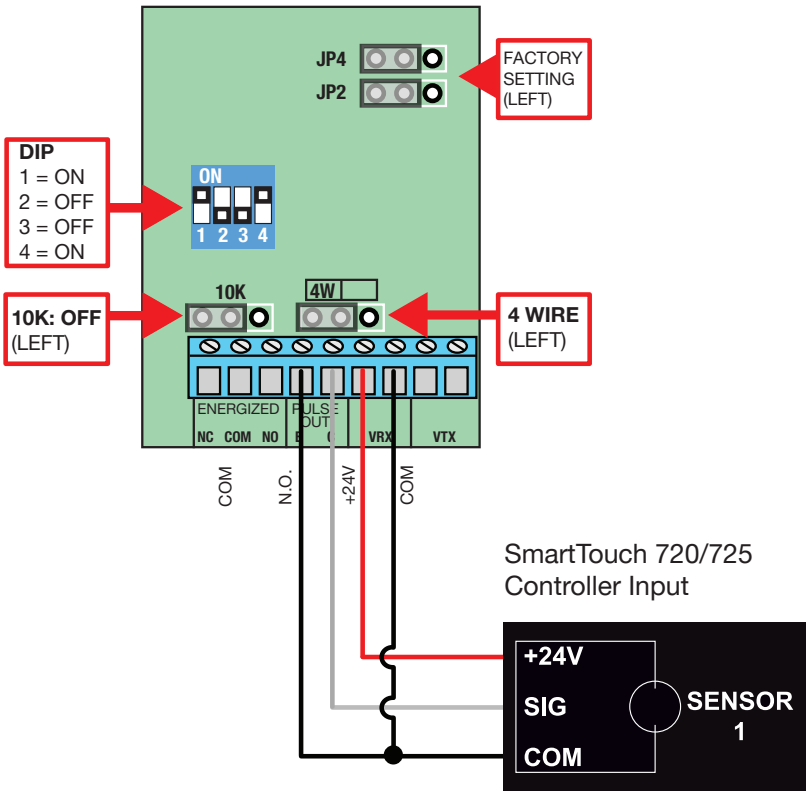


Figure 15. EMX IRB-RET Wiring - 10K OHM Resistive (Top) and 4-Wire Pulsed (Bottom)

Approved Sensor Wiring

Seco-Larm Enforcer Retro-Reflective (E-931-S50RRGQ) (Photo Eye)

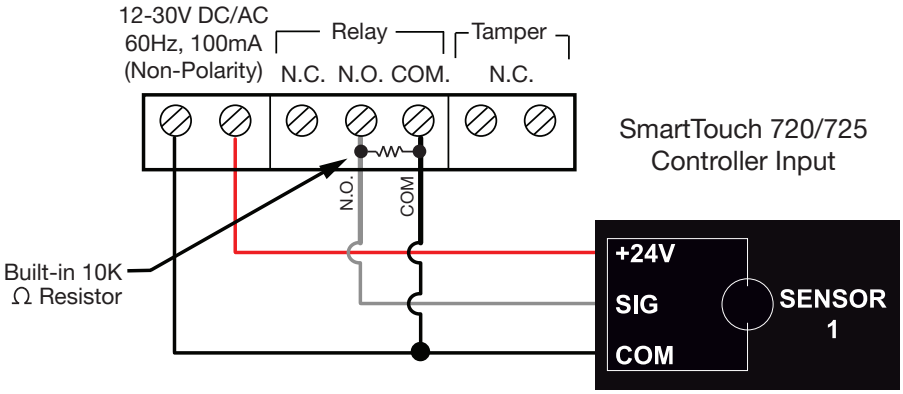


Figure 16. Seco-Larm Enforcer Retro-Reflective (E-931-S50RRGQ)

Seco-Larm Enforcer Through-Beam (E-960-D90GQ)

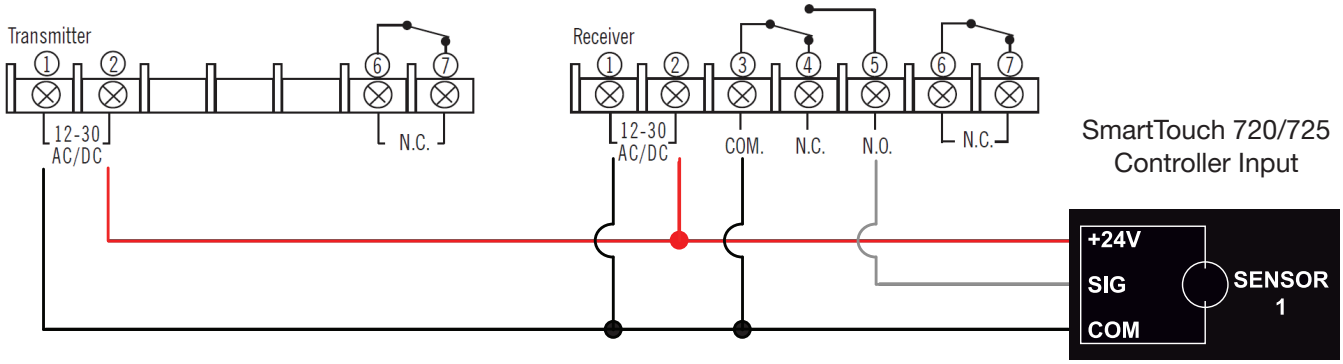
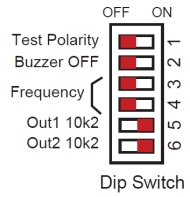
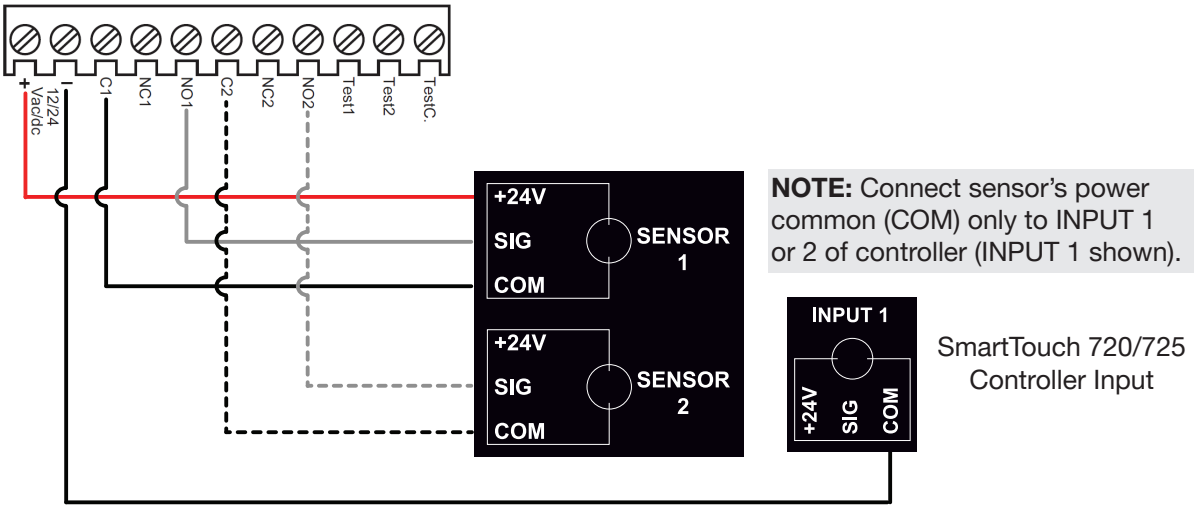


Figure 17. Seco-Larm Enforcer Through-Beam (E-960-D90GQ)

Transmitter Solutions iGaze RE Kit (Photo Eye)



NOTE: Dashed lines indicate the secondary wiring connections if an additional SmartTouch 720/725 sensor input is wired to the sensor. See manufacturer's instructions for details.



NOTE: Connect sensor's power common (COM) only to INPUT 1 or 2 of controller (INPUT 1 shown).

Figure 18. Transmitter Solutions iGaze RE Kit

Approved Sensor Wiring

EMX WEL200 (Edge Sensor)

NOTE: Set board as shown in red boxes per Figure 19, below, for desired configuration. Jumpers are three pin type, and placed UPPER or LOWER as indicated. Dashed lines indicate the secondary wiring connections if an additional SmartTouch 720/725 sensor input is wired to the sensor. See manufacturer's instructions for details.

DIAGRAM A: 10K OHM RESISTIVE WIRING

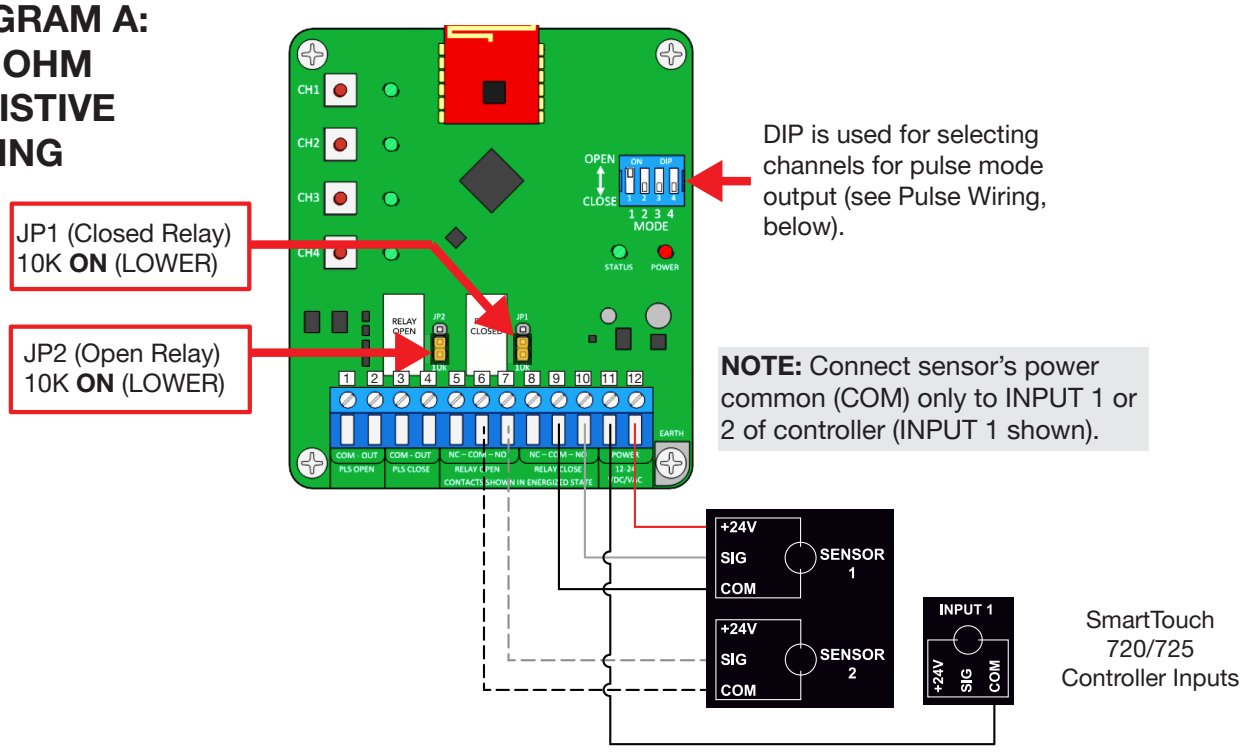


DIAGRAM B: PULSED WIRING

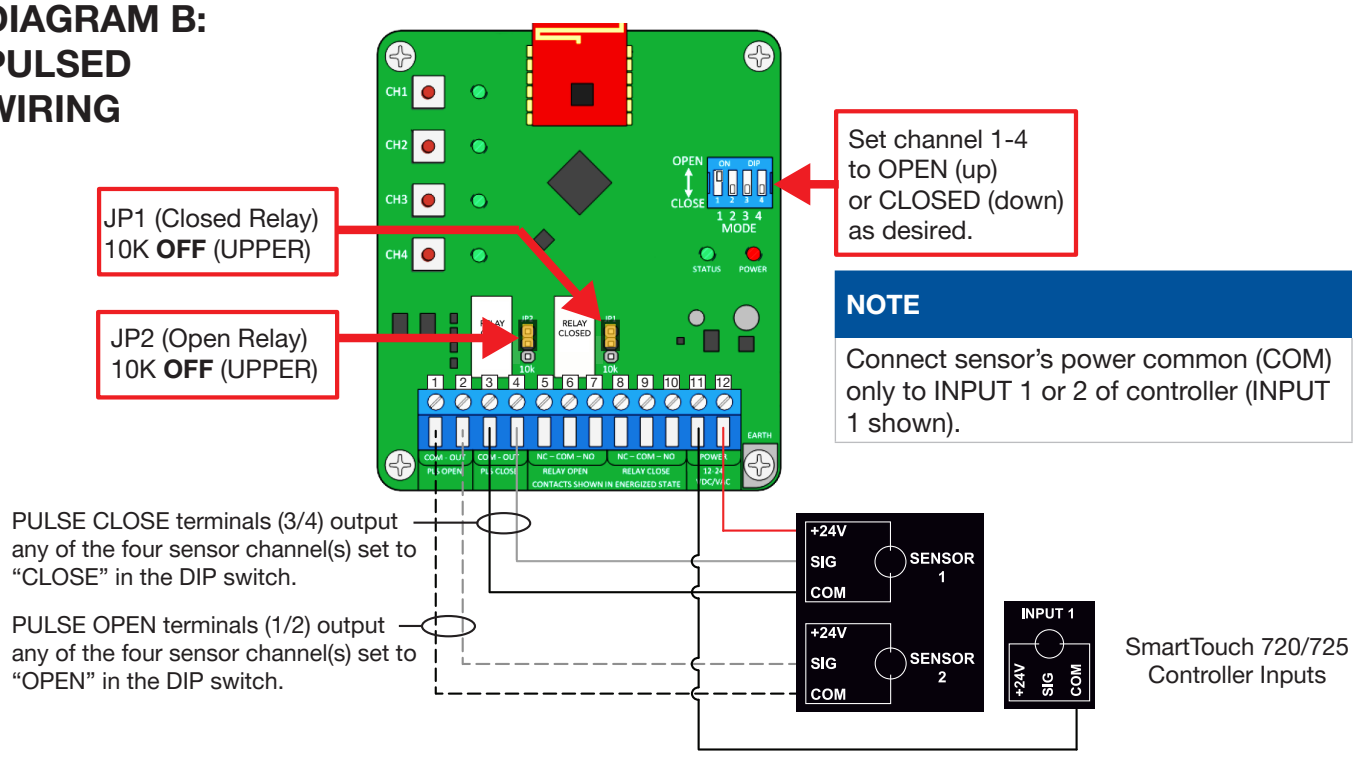


Figure 19. EMX WEL200 Wiring

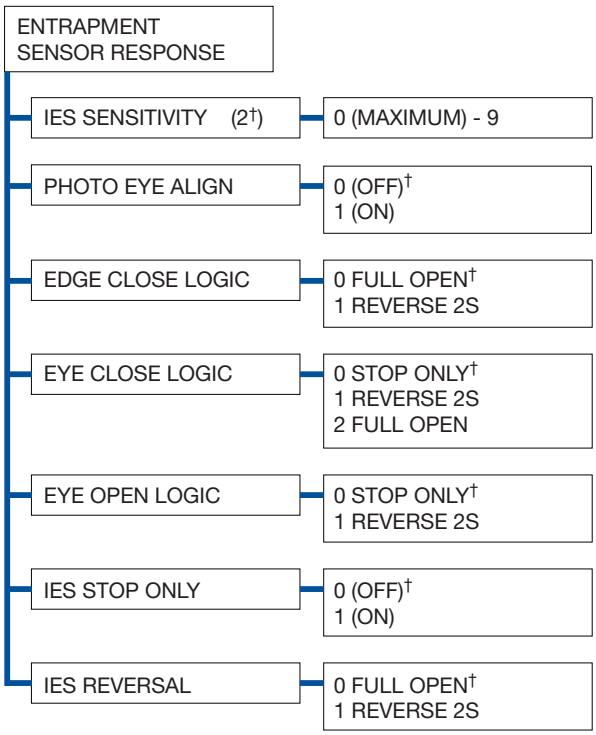
Approved Sensor Wiring

EMX NIR-50-325 (Photo Eye)

Figure 20. EMX NIR-50-325

NOTE: There is a difference between input and sensor COMs. When programmed for an entrapment sensor both will be monitored during gate travel. When there is no AC power present, Sensor COMs switch off while the gate is stopped and Input COMs are always on.

Entrapment Sensor Response



† = Indicates default

Entrapment Sensor Response

Table 5. SmartTouch 720/725 Operator Configurations Settings

MENU DISPLAY	SETTINGS	DESCRIPTION
IES SENSITIVITY	0 (MAXIMUM) 1 2 (DEFAULT)† ... 9 (MINIMUM)	Adjusts the sensitivity of the internal inherent entrapment sensor (IES). Available settings are 0 to 9 with 0 being the most sensitive. HySecurity strongly recommends that you avoid setting the IES sensitivity higher than 6. **NOTE:** Before changing the IES sensitivity, make sure that the gate moves smoothly without obstruction. Fix any issues with gate hardware.
PHOTO EYE ALIGN	0 = OFF† 1 = ON	When set to 1, operator assists photo eye alignment. Buzzer chirps once when transmitter and receiver are not aligned. When transmitter and receiver are aligned, buzzer chirps twice. If they go out of alignment again or if beam is blocked, buzzer will chirp once. Also, when set to 1, the display will show all the sensor inputs that are programmed for photo eyes and will show if they are active or not (a 1 indicates the eye is present and aligned and a 0 indicates the eye is not aligned or blocked). Any BlueBUS eye will also show up on the display. PHOTO EYE ALIGN changes to OFF on the next limit contact, reset, or power cycle.
EDGE CLOSE LOGIC	0 = FULL OPEN† 1 = REVERSE 2S	Default setting is a full-open reversal if gate edge close or edge both is triggered while closing. Optional setting of 1 causes gate to reverse for two seconds if triggered while closing. Gate Edge Open will reverse to full close when all open inputs and loop detectors are not active. There is no adjustment to gate edge open reversal.
EYE CLOSE LOGIC	0 = STOP ONLY† 1 = REVERSE 2S 2 = FULL OPEN	Default setting is non-reversal if photo eye close is triggered while closing. A setting of 1 causes gate to reverse toward open for two seconds if triggered while closing. A setting of 2 reverses the gate to full open.
EYE OPEN LOGIC	0 = STOP ONLY† 1 = REVERSE 2S	Default setting is non-reversal if photo eye open is triggered while opening. A setting of 1 causes gate to reverse travel and close for two seconds if triggered while opening.
IES STOP ONLY	0 = OFF† 1 = ON	In a Usage Class 4 environment, operator can be set to stop gate and not reverse gate travel after an IES trip.
IES REVERSAL	0 = FULL OPEN 1 = REVERSE 2S†	Sets the reversal logic for IES response. Default is reverse for 2 seconds. Set to 0 for full open.

IES Sensitivity and Wind Load Factor

To comply with UL 325 Safety Standards, HySecurity hydraulic gate operators are equipped with a Type A, Inherent Entrapment Sensor (IES). The firmware monitors the hydraulic pressure when a gate is in motion and reverses direction of gate travel when the pressure exceeds a self-adapting threshold. A spike in hydraulic pressure can be caused by the gate hitting a pedestrian, a collision with a vehicle, failing gate hardware, extreme wind gust, or any other force applied against the moving gate. To set the IES sensitivity for your site follow these instructions:

1. Press MENU on the SmartTouch 720/725 Controller.
2. Press the UP or DOWN arrow to navigate to ENTRAPMENT SENSOR RESPONSE, press SELECT.
3. Press the UP or DOWN arrow to navigate to IES SENSITIVITY, press SELECT.
4. Press the UP or DOWN arrow to choose an IES SENSITIVITY, press SELECT to update the setting.
5. Press BACK until the display shows the operator status.
6. Run the operator for 3 uninterrupted gate cycles so the IES can adapt to the new setting.
7. Apply force to the leading edge of the moving gate with an immovable obstruction to trigger the IES. Gate will stop motion and reverse for at least two seconds. “SAFE MODE” appears on the display.
8. Cycle the gate a few times to test the IES sensitivity.

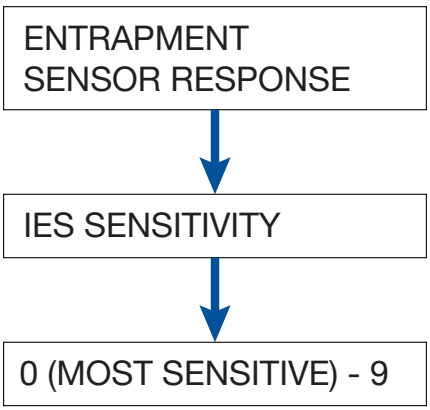
WARNING

Do not enter the path of gate travel to test IES sensitivity. Vehicular gate operators must by their nature be powerful to function reliably. This power can cause injury or death to people caught in the moving gate.

NOTE: The default IES SENSITIVITY of 2 should be sufficient for most sites.

NOTE: In Safe Mode, the automatic close timer is disabled, but any open or close input restarts gate motion. Safe Mode clears when full travel reached or Reset button pushed.

NOTE: A second IES trip before Safe Mode is cleared, results in an Entrapment Mode Alert which can be cleared with a Reset on the display, an open input, stop input, or stop button on SlideDriver II cover or side of HydraSupply.



Environmental Safety/Hazardous Materials and Proper Disposal

Decommissioning is a controlled process used to safely retire a piece of equipment that is no longer serviceable. If the equipment poses an unacceptable and unrepairable safety risk due to wear or damage or is no longer cost effective to maintain (beyond life-cycle reliability) and is to be decommissioned (demolition and dismantlement), be sure to follow rules below.

- Do not pour waste oil directly onto the ground, down a drain or into any water source.
- Contact the county Department of Public Works or recycling agency in your area and arrange for proper disposal of any electrical components, waste or oil associated with this equipment.
- When the life cycle of this equipment is over, remove battery and bring to appropriate facility for lead reclamation. Use safety precautions when handling batteries that contain sulfuric acid.

- When the life cycle of this equipment is over, it is recommended that the frame and all other metal and plastic parts be sent to a recycling center.

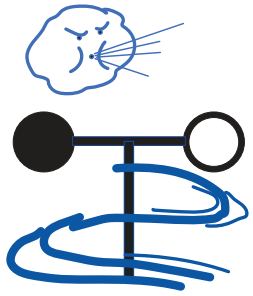
Metal and plastic recycling involves the collection of metal and plastic from discarded products and its transformation into raw materials to use in manufacturing a new product.

Recyclers and manufacturers alike promote the process of recycling metal and plastic. Using a metal and plastic recycling center promotes energy cost savings.

Wind Load Factors & Maintenance

Wind Load Factors & Site Prep

Wind load is always a factor when considering the appropriate gate for a particular site. Solid gate panels produce a larger wind load than gates with slats or open decorative features. If you are installing a gate operator in a high wind area, gate design will affect the load on the gate operator because wind load acts the same as an obstruction. Good gate panel design presents a low surface area to reduce the wind load.



If gate is heavy and near weight capacity of what the gate operator can handle (see specifications), make sure it has an open design that allows wind to flow through it. A solid or semi-solid gate design under certain wind load conditions may cause damage to gate operator and is not covered by the HySecurity Limited Warranty.

Several factors play into calculations of wind load on a gate panel. To find out maximum wind speed in areas around the United States, search for US government wind speed maps on the internet. If you don't know how to calculate for wind load, ask a mechanical engineer or site architect for assistance prior to installing gate operator and gate panels.

When the IES trips, it sends a signal to gate operator to stop and reverse direction. This feature may be falsely triggered in excessively windy conditions because wind itself, acting over surface area of gate panel, can provide necessary force to trigger IES.

Caution: Do not adjust IES sensitivity to accommodate for inappropriately designed gate panels. Loss of IES sensitivity increases mechanical wear on gate hardware and gate operator. It may also pose a safety hazard. Compensating for wind loads by adjusting IES may set IES sensitivity to a level which, when encountering an obstruction, ignores obstruction and fails to reverse direction. For more information, refer to Adjusting the IES Sensitivity.

Maintenance of Gate Systems

To keep your automated gate system performing both safely and reliably it is important to ensure that the components of that system are functioning properly.

At least monthly:

- Disconnect the gate operator and manually move the gate through its range of travel. Note any squeaks from rollers or hinges or areas of binding. The gate should travel smoothly and quietly throughout its range. If it does not, contact a gate professional to correct the problem.
- Reconnect the gate operator and perform the following tests:
    - With the gate opening, block any photo eyes and/or depress any safety edges used to protect the open direction. The gate should stop and/or reverse.
    - With the gate closing, block any photo eyes and/or depress any safety edges used to protect the close direction. The gate should stop and/or reverse.
    - Using a suitable obstruction in the path of the gate (a solid, immovable object), run the gate in the open direction until it contacts the obstruction. The gate should stop and/or reverse.
    - Using a suitable obstruction in the path of the gate (a solid, immovable object), run the gate in the close direction until it contacts the obstruction. The gate should stop and/or reverse.

User Relay Outputs

USER RELAY OUTPUTS

- RELAY 1 – 3 LOGIC
  - 0 DISABLED†
  - 1 CLOSE LIMIT
  - 2 CLOSE PULSE
  - 3 OPEN LIMIT
  - 4 OPEN PULSE
  - 5 WARN B4 OP
  - 6 GATE LOCK
  - 7 FORCE OPEN
  - 8 OPEN 2LONG
  - 9 SAFE MODE
  - 10 ENTRAPMENT
  - 11 TAILGATER
  - 12 OUTSIDE LOOP
  - 13 LOITERING
  - 14 NEAR LIMIT
  - 15 ALERT/FAULT
  - 16 MOTOR RUNNING
  - 17 AC POWER LOSS
  - 18 LOW BATTERY
  - 19 FLASHER
  - 20 EXIT LOOP
  - 21 INSIDE LOOP
  - 22 CENTER LOOP
  - 23 PRISON LOCK
  - 24 PARTIAL OPEN
  - 25 BATTERY OK
  - 26 EXIT PULSE
  - 27 NOT OP AC
  - 28 FLASH AC
  - 29 ARM ENTRY
  - 30 ARM EXIT
  - 31 RESET TKT
  - 32 BACKOFF
  - 33 TRANS IN
  - 34 TRANS OUT
  - 35 TENANT IN
  - 36 TENANT OUT
  - 37 SPEC IN
  - 38 SPEC OUT
  - 39 UNK IN
  - 40 UNK OUT
  - 41 TEST OPEN
  - 42 ARM BREAK
  - 43 WARN THRU
  - 44 POL PULSE
  - 45 OUTS CLOSE
  - 46 TIMER OPEN
  - 47 OXI ACCESSORY
  - 48 OXI ACC/1-MIN
  - 49 BELOW 45DEGF
- RELAY 4 – 11 LOGIC
  - 0 DISABLED† – 49 BELOW 45DEGF

RELAY 4 – 11 ARE VISIBLE AND CONFIGURABLE ONLY WITH I/O EXPANSION MODULE WHICH CONNECTS VIA COMMUNICATION CABLE (MX4330 IN THE I/O EXPANSION MODULE KIT) FROM HS-1 ON THE SMARTTOUCH CONTROLLER TO HS-A ON THE I/O EXPANSION MODULE

† = Indicates default

NOTE: On HydraSupply II OT2 the I/O Expansion Module connects to HS-1 on the SmartTouch 720/725 Controller by default.

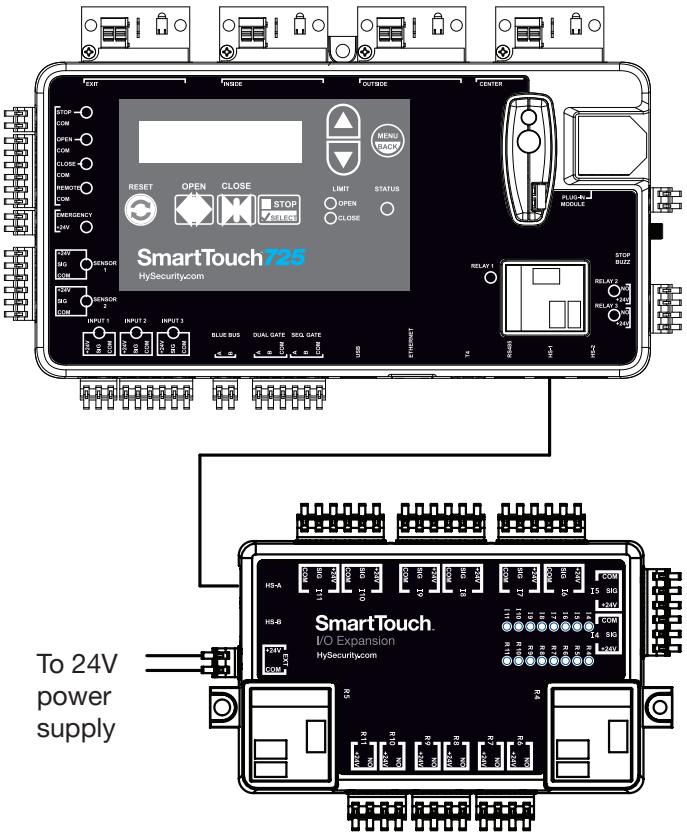


Table 6. SmartTouch 720/725 User Relay Outputs Settings

MENU DISPLAY	SETTINGS	DESCRIPTION
RELAY 1-3 LOGIC	0 = DISABLED† 1 = CLOSE LIMIT 2 = CLOSE PULSE 3 = OPEN LIMIT 4 = OPEN PULSE 5 = WARN B4 OP 6 = GATE LOCK 7 = FORCE OPEN 8 = OPEN 2 LONG 9 = SAFE MODE 10 = ENTRAPMENT 11 = TAILGATER 12 = OUTSIDE LOOP 13 = LOITERING 14 = NEAR LIMIT 15 = ALERT/FAULT 16 = MOTOR RUNNING 17 = AC POWER LOSS 18 = LOW BATTERY 19 = FLASHER 20 = EXIT LOOP 21 = INSIDE LOOP 22 = CENTER LOOP 23 = PRISON LOCK 24 = PARTIAL OPEN 25 = BATTERY OK 26 = EXIT PULSE 27 = NOT OP AC 28 = FLASH AC 29- 40 = PARKING ARM OPERATORS ONLY 41 = TEST OPEN 42 = NOT USED 43 = WARN THRU 44 = POL PULSE 45 = OUTS CLOSE 46 = TIMER OPEN 47 = OXI ACCESSORY 48 = OXI ACC/1-MIN 49 = BELOW 45° F 50 = MODBUS CONTROLLED RELAY	See Table 7, next page. **NOTE:** The relays used for the directional valve, unloader valve, and motor contactor will display their setting, but will not be configurable.
RELAY 4-11 LOGIC	SEE RELAY 1 LOGIC SETTINGS 0†	See Table 7, next page.

User Relay Outputs

Table 7. User-Programmable User Relays - Function Options

No.	Name	Description
1	Close limit output	Creates an interlock signal to another operator's interlock input, or simply to indicate that gate is secure or not. Relay is released when fully-closed limit switch is tripped. Relay is energized when fully-closed limit is released. (Any open command energizes relay.) When a solid state relay (User 2 or 3) is configured to option 1, the relay is energized when the close limit is active and shuts off when an open command is received.
2	Close limit pulse output	Used in a sequenced system to command a second machine to close. Generates a brief pulsed output that occurs when close limit is triggered.
3	Open limit output	Indicates gate is at full-open position. Output becomes active when an open-limit is triggered and deactivates when open-limit is released or a close command is received. Use this output for a traffic light.
4	Open limit pulse output	Triggers a sequenced barrier arm gate operator to open. Generates a brief pulsed-output when open-limit is triggered. An additional pulse is also generated with any new open command even when gate is already fully-opened.
5	Warn before/during operate output	Controls an external warning device. This output is active whenever internal warn before operate buzzer is sounding but the relay output is constant on. Activation timing of this relay is controlled by setting Warn Before Operate.
6	Gate Lock output	Controls external solenoid locks or magnetic locks. In both directions of travel, this output is activated about 7/10ths of a second before operator starts moving the gate.
7	Gate forced open output	Activated if gate is forced off closed limit switch and operator is not able to restore gate to full closed position within four seconds. The buzzer resets itself in 30 seconds but relay stays active until gate receives a run command.
8	Gate open too long output	Activates when gate is open longer than the user-selected period of time. Adjustable from a 0 second to 15 second to 135 seconds delay in 30-second increments. **NOTE:** OPEN TIME ALERT adjustments can be made in the menus.
9	Safety Mode Alert output	Activated when system is in Safety Mode or Entrapment Mode. Safety Mode occurs upon an impact with an obstruction. Entrapment Mode means gate is stopped and occurs if inherent entrapment sensor triggers or if emergency input is activated while system is in Safety Mode.
10	Entrapment Mode Alert output	Activated only when system is in Entrapment Mode.
11	Unauthorized Vehicle Entry output	Activated when a second vehicle enters from outside without a valid input from an access control device. The OOLD and IOLD loops must be capable of being triggered at the same time for this relay to ever activate. This output releases when an access control input signals open or gate reaches the close limit position.
12	Outside Obstruction Vehicle Detector output	This output is active whenever Outside Obstruction Loop Detector is tripped. Interlocks an entry device to prevent pedestrian use.
13	Loitering Alert	Indicates vehicle is loitering on Outside Obstruction Loop with the gate closed. Adjustable from a 0 second to 15 second to 135 second delay in 30-second intervals. **NOTE:** LOITERING ALERT adjustments can be made in the menus.
14	Gate nearing full travel output	Activated when gate is approaching full open or full closed. Relay activates three feet from where firmware expects limit switch to be triggered whether moving toward full open, full close, or in a reverse travel mode.
15	Gate Failure output	Activated to report occurrence of problem. Indicates the system is in an Error, Fault, Alert, or Entrapment Mode. If active, gate is disabled.

User Relay Outputs

Table 7. User-Programmable User Relays - Function Options		
No.	**Name**	**Description**
16	Motor Running output	Active when motor is running and gate is in motion.
17	AC Power Failure output	This relay is normally energized and drops with loss of AC power.
18	DC Power Failure output	Activated when battery power is very low, but output ceases when battery is dead (18 volts). Relay is triggered when battery is less than 21 volts.
19	Flasher Relay	Controls flashing lights to pulse once per second. Relay is constantly pulsing except when open limit switch is triggered. Recommended to use User Relay 2 or 3 since it is an electronic switch.
20	Free Exit Loop Vehicle Detector output	Active whenever Exit Loop is tripped.
21	Inside Obstruction Vehicle Detector output	Active whenever Inside Obstruction Vehicle Detector is tripped
22	Center Loop Detector output	Active whenever Center (Shadow) loop detector is tripped.
23	External Latching Gate Lock Output	Not functional in SmartTouch 720/725 operators.
24	Gate at Partial Open Position	Active when partial open position is reached or exceeded. (Slide gates only)
25	DC Power Alert	Active when on AC power or the battery voltage is above 21V. When used with User Relay 2, this option can shed electrical loads to conserve battery energy.
26	Free Exit Loop Detector pulse	Outputs a 250ms pulse when the free exit vehicle detector is tripped.
27	Not Open (w/ AC power)	Activated when gate is not on open limit and AC power is present. Deactivated when AC power fails or gate is on open limit.
28	Flasher (w/ AC power)	Output identical to relay #19 and pulses relay 500 ms/sec when gate not on open limit and AC power is present. Deactivated when AC power fails or gate is on open limit.
29	Arm Entry Ticket Dispenser	Not used.
30	Arm Exit Ticket Dispenser	Not used.
31	Reset Ticket Dispenser Pulse	Not used.
32	Back off Pulse	Not used.
33	Transient In Pulse	Not used.
34	Transient Out Pulse	Not used.
35	Tenant In Pulse	Not used.
36	Tenant Out Pulse	Not used.
37	Special In Pulse	Not used.
38	Special Out Pulse	Not used.
39	Unknown In Pulse	Not used.
40	Unknown Out Pulse	Not used.
41	Test Open Pulse	Output pulses five seconds after close limit is activated. Typically used for cycle testing.
42	Break-Away Switch Output	Not used.
43	Warn Before	Combination of relays #5 and #16.

User Relay Outputs

Table 7. User-Programmable User Relays - Function Options

No.	Name	Description
44	Partial Open Limit Pulse	Pulses for 250ms when gate, commanded with Partial Open input, reaches Partial Open Limit, or, gate is past Partial Open Limit and Partial Open input is activated.
45	Outside Obstruction/ Arming Loop Detector	Activated when OOLD/OALD detector input tripped and gate closed. Used for testing purposes.
46	Timer Open	Relay activates when 7 day timer is programmed and the timer is active.
47	OXI Accessory	Latching output controlled by an OXI remote. When pairing a remote, a button can be programmed to energize a relay and latch it until the button is pressed a second time.
48	OXI Accessory/1-min	Output controlled by an OXI remote. When pairing a remote, a button can be programmed to energize a relay and latch it for 1 minute or until the button is pressed a second time, whichever comes first.
49	Below 45° F	Used to turn on the relay when the board temperature is below 45 °F. Normally used to turn on a heater because a board temperature of 45 °F often indicates outside temperatures are close to freezing.

Relay Outputs - Basic

The three relays on the SmartTouch 720/725 Controller are configurable to perform a wide range of options for integration with external devices.

- Accessory power limited to 2A at 24VDC across all inputs and relays.
- Relay capacity: (1) Mechanical 20A max at 240VAC (Figure 2421 Item 9). (2) Solid state relays 30VDC, 2A max (Figure 2421 Item 10, 11).

1. Install the relay controlled device according to the manufacturer's instructions.
2. Route the relay wires to the SmartTouch 720/725 Controller.
3. Install the relay wires in the appropriate relay port: mechanical (Relay 1) or solid state (Relay 2 and 3) (Figure 2421).
4. Press MENU on the SmartTouch 720/725 Controller.
5. Press the UP or DOWN arrow to navigate to USER RELAY OUTPUTS, press SELECT.
6. Press the UP or DOWN arrow to navigate to RELAY LOGIC, press SELECT.
7. Press the UP or DOWN arrow to highlight the appropriate setting, press SELECT.
8. Press BACK until the SmartTouch 720/725 Controller resets and operator status displays.

Note: On SlideDriver II the I/O Expansion Module connects to HS-1 on the SmartTouch 720/725 Controller by default.

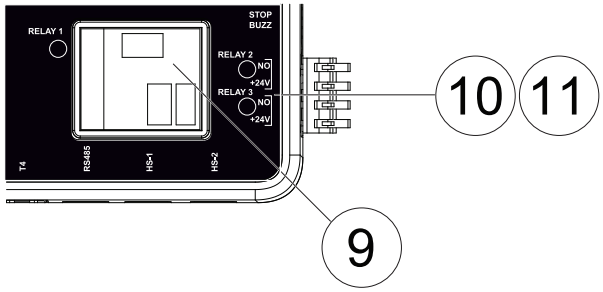
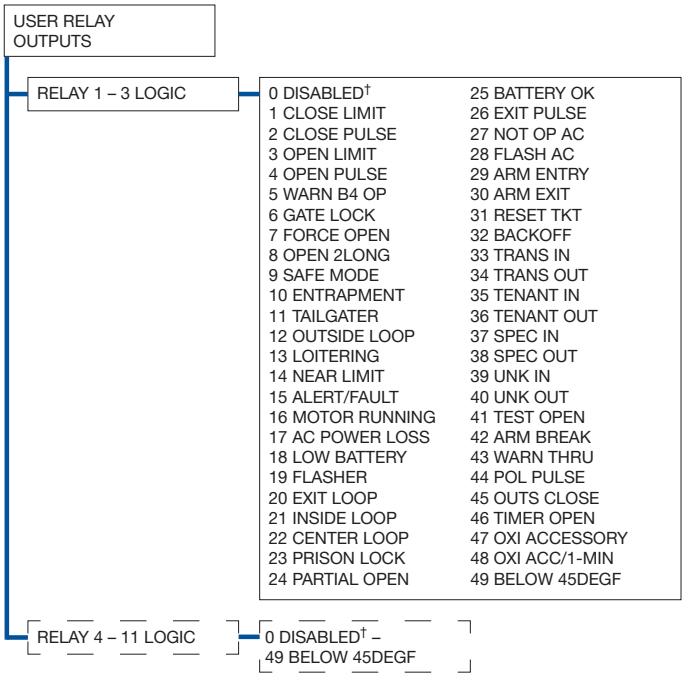


Figure 21. Relay Ports



RELAY 4 – 11 ARE VISIBLE AND CONFIGURABLE ONLY WITH I/O EXPANSION MODULE WHICH CONNECTS VIA COMMUNICATION CABLE (MX4330 IN THE I/O EXPANSION MODULE KIT) FROM HS-1 ON THE SMARTTOUCH CONTROLLER TO HS-A ON THE I/O EXPANSION MODULE

Relay Outputs - Mechanical

Maglocks and solenoids are common examples of relay driven devices used with gate operators to increase security. Follow these instructions to connect a maglock or solenoid to the SmartTouch 720/725 Controller:

1. Follow manufacturers instructions to install and position the relay driven device.
2. Set the power switch to OFF.
3. Connect COM on RELAY 1 to any COM terminal on the SmartTouch 720/725 Controller. HySecurity recommends Input 3 COM.
4. Connect the power lead from the maglock or solenoid to power. You can pull +24VDC from anywhere on the SmartTouch 720/725 Controller labeled +24V.
5. For a maglock, connect to the NC connector on RELAY 1. For a solenoid, connect to the NO connector.
6. Set the power switch to ON.
7. Press MENU on the SmartTouch 720/725 Controller.
8. Use the UP or DOWN button to navigate to USER RELAY OUTPUTS and press SELECT.
9. Use the UP or DOWN button to navigate to RELAY 1 LOGIC and press SELECT.
10. Use the arrow buttons to navigate to 6 GATE LOCK and press SELECT.
11. Press BACK until gate status display appears.

Note: Relay 1 can handle up to 240VAC for external power source use.

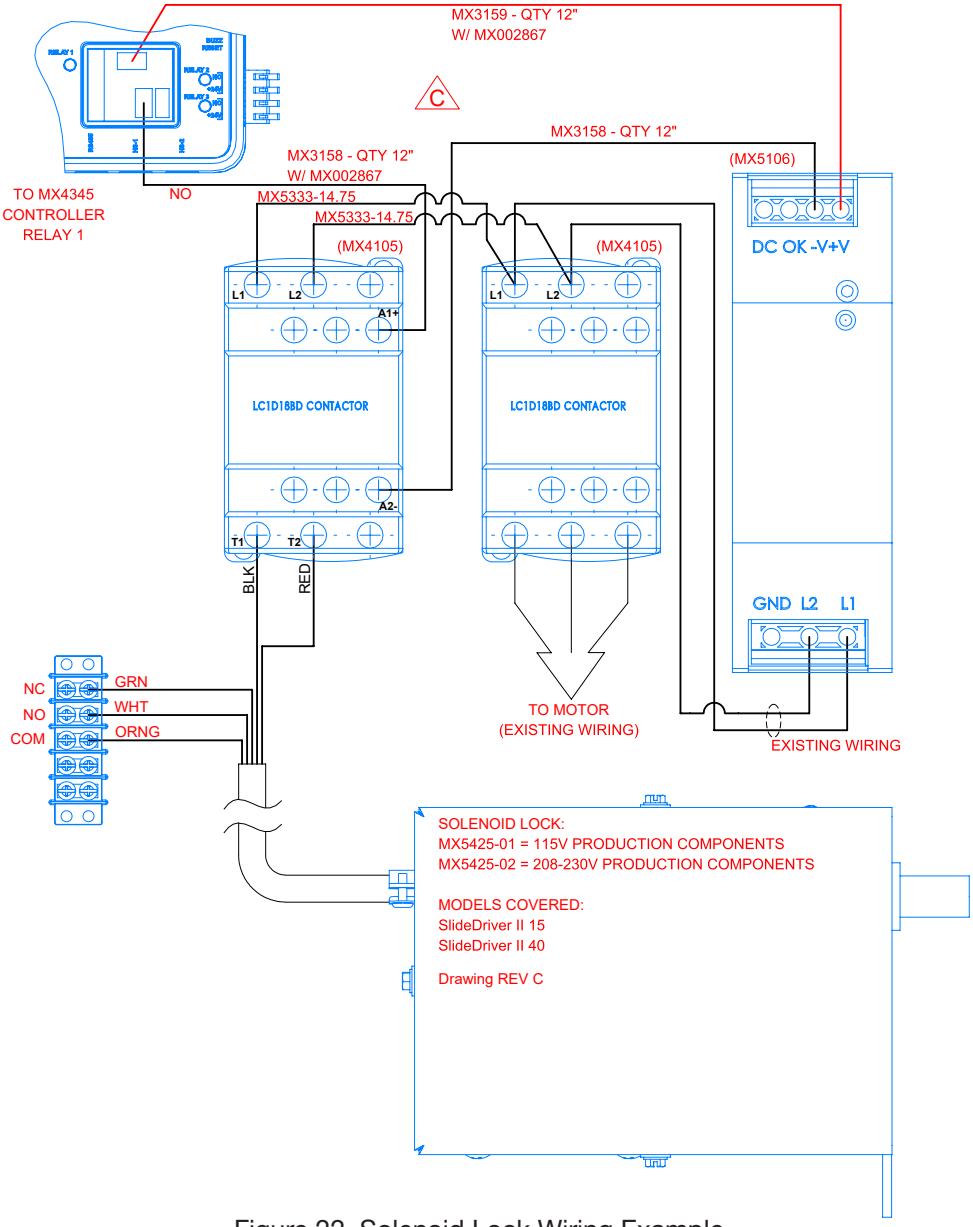


Figure 22. Solenoid Lock Wiring Example

Relay Outputs - Solid State

Solid state relay (Relay 2 and Relay 3) wiring diagrams.

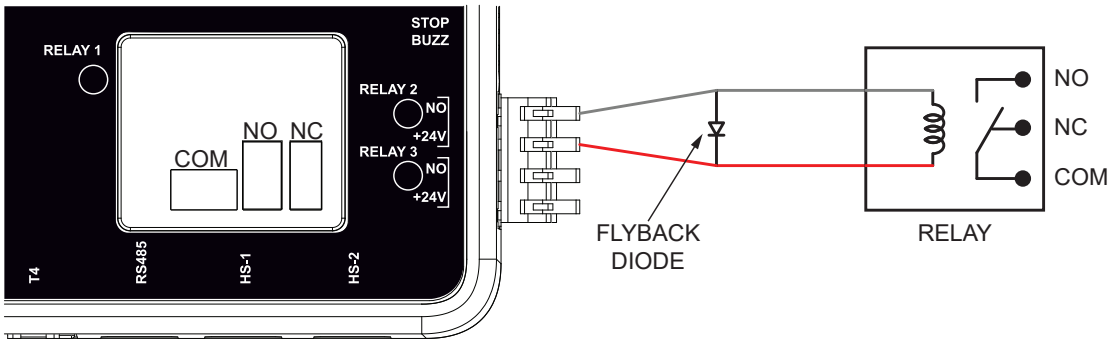


Figure 23. Wiring a 24V Accessory

Note: A flyback diode protects the SmartTouch 720/725 Controller from voltage spikes caused by switching the coil in the relay. HySecurity recommends a 1n4007 diode for use with most accessories.

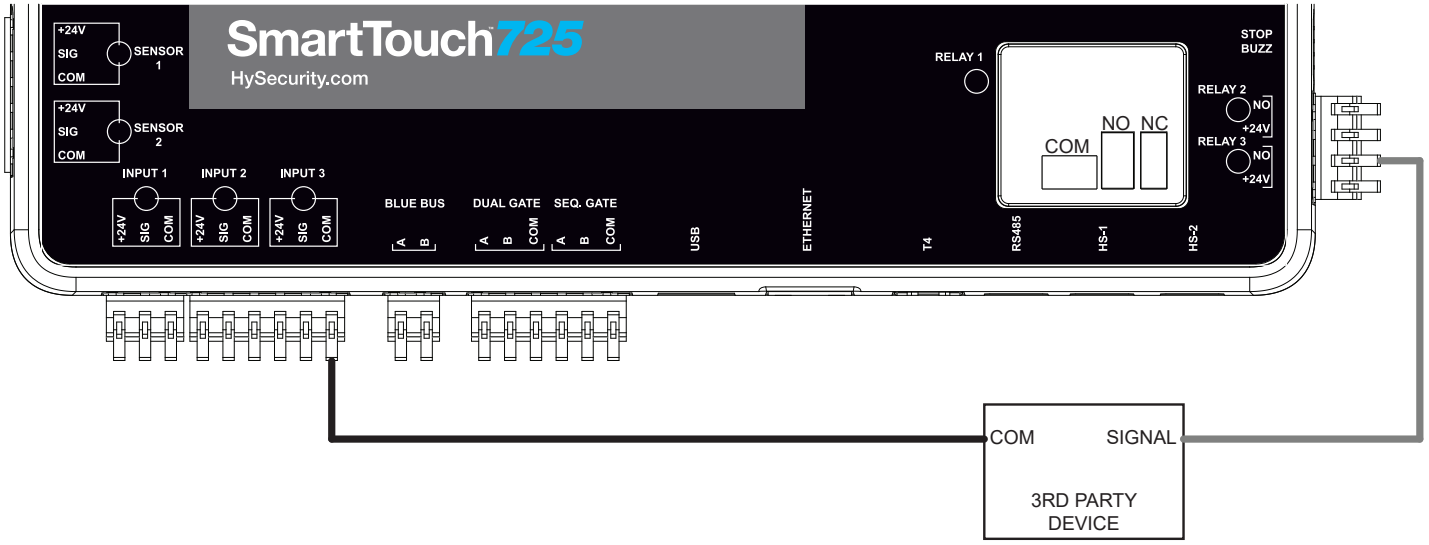


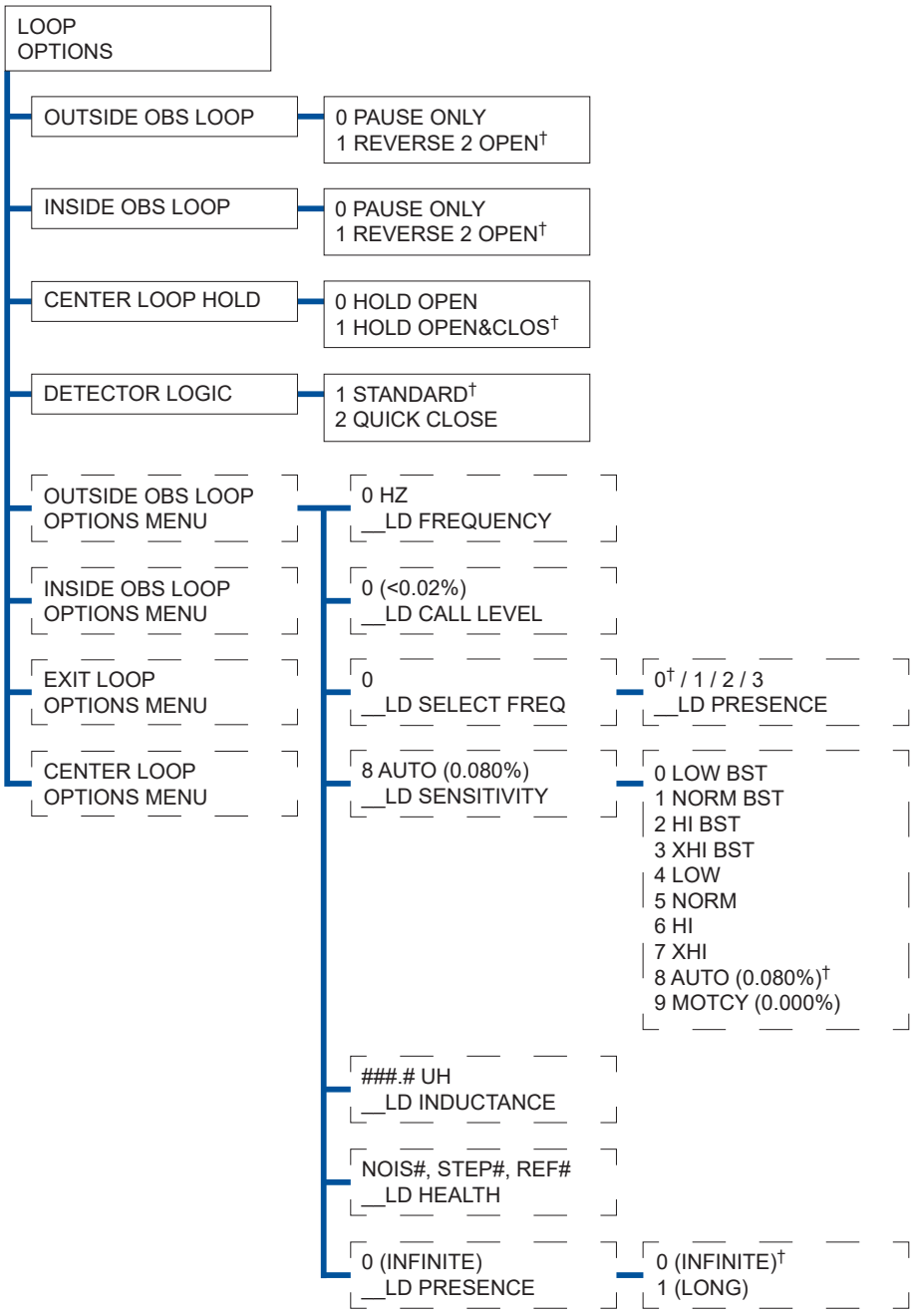
Figure 24. Wiring a 3rd Party Device

Note: Relay 2 and Relay 3 on the SmartTouch 720/725 Controller use a switched common signal when the relay is triggered.

Note: Relay 2 and Relay 3 can only handle up to 24VDC.

Note: See page 89 for additional information about available relays on the I/O Expansion Module.

Loop Options



MENU STRUCTURES FOR LOOP OPTIONS ARE VISIBLE AND CONFIGURABLE ONLY WHEN AN HY5B MODULE IS INSTALLED INTO THE SMARTTOUCH CONTROLLER. OOLD, IOLD, ELD, AND CLD SUB-MENUS ARE IDENTICAL.

† = Indicates default

Loop Options

Table 8. SmartTouch 720/725 Loop Options Settings		
MENU DISPLAY	**SETTINGS**	**DESCRIPTION**
OUTSIDE OBS LOOP	0 = PAUSE ONLY 1 = REVERSE 2 OPEN†	Default is for full reversal when Outside Obstruction Loop is triggered while closing. A setting of 0 causes gate to only pause when triggered. Gate closure continues as soon as loop is clear again.
INSIDE OBS LOOP	0 = PAUSE ONLY 1 = REVERSE 2 OPEN†	Default is for full reversal when Inside Obstruction Loop is triggered while closing. A setting of 0 causes gate to only pause when triggered. Closure begins as soon as loop is clear again.
CENTER LOOP HOLD	0 = HOLD OPEN 1 = HOLD OPEN&CLOS†	Swing only. When set to 1, an active center loop will prevent a full open gate from closing and a full closed gate from opening. When set to 0, an active center loop will prevent a full open gate from closing and will have no effect on a closed gate. The center loop has no effect on a gate that is in between limits or a slide gate.
DETECTOR LOGIC	1 = STANDARD† 2 = QUICK CLOSE 3 = IMMED CLOSE (SLIDE ONLY) 4 = ANTI-TAIL (SLIDE ONLY)	This selection determines whether close timer begins to count down after vehicles have departed detector loops or whether close timer will count down while the loops are occupied. Gate can only close when all loop detectors are clear. Default settings causes Close Timer to start when all loops are clear. A setting of 2 causes Close Timer to start when open limit is reached. A setting of 3 forces the Close Timer to 0 when the OOLD and IOLD are tripped simultaneously (SLIDE ONLY). A setting of 4 stops the gate when OOLD and IOLD are tripped simultaneously and closes from that point when the loops clear (SLIDE ONLY). Swing gate requires a CLD and either IOLD or OOLD depending on site configuration.

NOTE: Loop Options menu continues on next page.

Loop Options

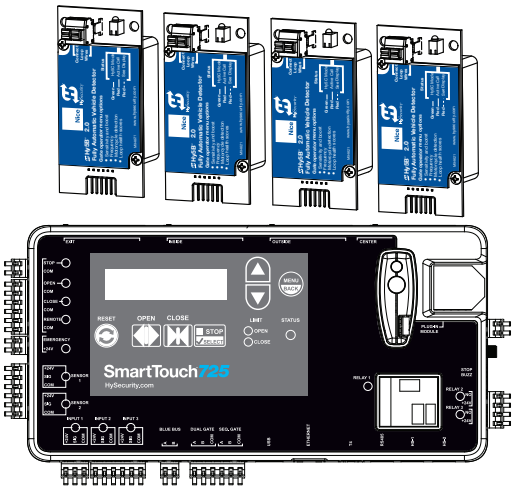
Table 9. SmartTouch 720/725 Loop Options Settings

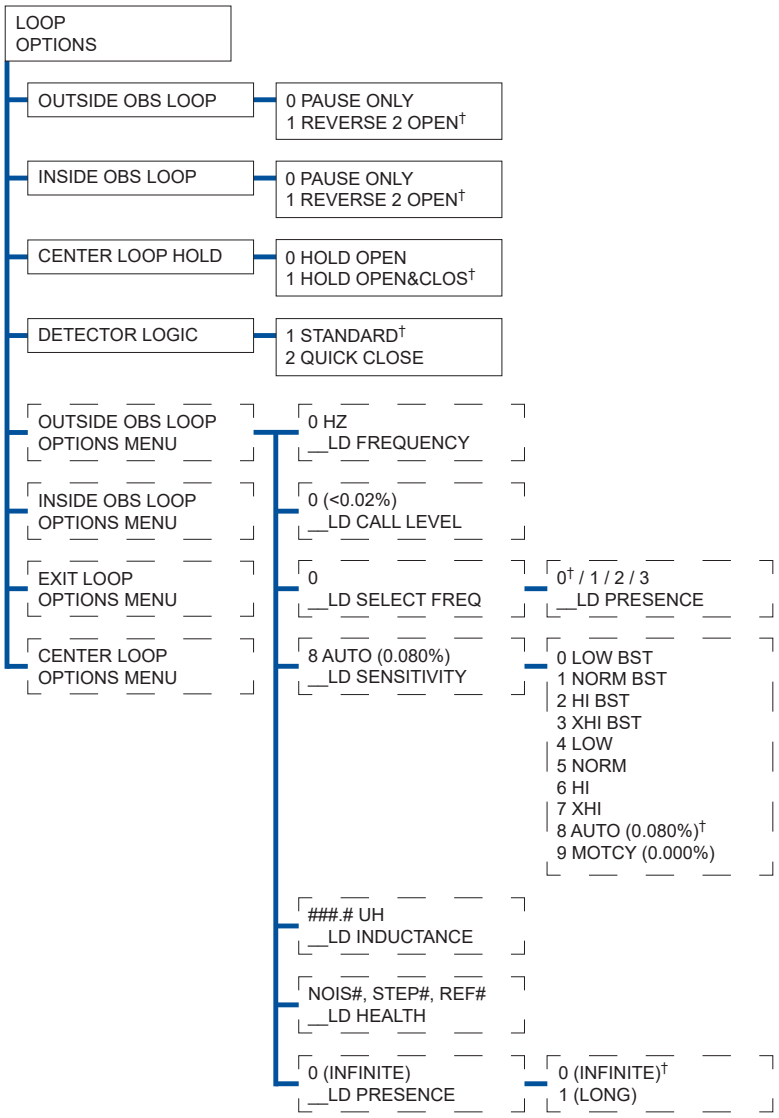
MENU DISPLAY	SETTINGS	DESCRIPTION
OUTSIDE OBS LOOP OPTIONS MENU		Menu structures for loop options are visible and configurable only when an HY5B module is installed into the SmartTouch 720/725 Controller. OOLD, IOLD, ELD, and CLD sub-menus are identical.
__LD FREQUENCY		Displays the center loop detector frequency
__LD CALL LEVEL		Displays the center loop detector call level
__LD SELECT FREQ	0-3	Set the center loop detector frequency 0-3
__LD SENSITIVITY	0 = LOW BST 1 = NORM BST 2 = HI BST 3 = XHI BST 4 = LOW 5 = NORM 6 = HI 7 = XHI 8 = AUTO (0.080%)† 9 = MOTCY	Set the loop detector sensitivity **NOTE:** Automatic Gate Compensation (AGC) can be disabled while in the Hy5B loop menu. In the menu, hold the reset button for 3 seconds. The AGC menu will appear where it can be turned on or off with the arrow buttons and select button.
__LD INDUCTANCE		Displays the center loop detector inductance
__LD HEALTH		Displays the center loop detector health
__LD PRESENCE	0 = INFINITE† 1 = LONG	INFINITE = A site where standing or parked vehicular traffic (on large area loops) is a daily or consistent basis, INFINITE presence setting is a viable option. When loop may have vehicles parked on it for more than several hours and it must hold the call, set presence to INFINITE. LONG = With sensitivity set to A (AUTO) and a large sedan stationary on loop, LONG presence may hold call for many hours before vehicle's presence is tuned out. Then, stationary vehicle is ignored and unaffected portion of loop becomes operational. In contrast, with sensitivity set to M (MOTORCYCLE), default threshold only lasts about 1 hour before presence of motorcycle on loop is tuned out.
INSIDE OBS LOOP OPTIONS MENU	SAME AS OUTSIDE LOOP OPTIONS MENU	
EXIT LOOP OPTIONS MENU	SAME AS OUTSIDE LOOP OPTIONS MENU	
CENTER LOOP OPTIONS MENU	SAME AS OUTSIDE LOOP OPTIONS MENU	

Install an Hy5B and Vehicle Loop Detector

There are 4 Hy5B ports on the SmartTouch 720/725 Controller: Free Exit, Outside Obstruction, Inside Obstruction, and Center. Refer to **page 31** for a standard loop layout illustration.

1. Route the loop detector wires through the operator chassis to the SmartTouch 720/725 Controller.
2. Set the power switch to OFF.
3. Connect the wires to the Hy5B module.
4. Plug the Hy5B into the appropriate port (remove rubber plug).
5. Use zip ties to neatly organize the loop lead wires to keep wires out of the way and prevent them from moving.
6. Set the power switch to ON. The display will show loop detectors 'Initializing'.
7. In LOOP OPTIONS menu configure the appropriate loop detector settings.





MENU STRUCTURES FOR LOOP OPTIONS ARE VISIBLE AND CONFIGURABLE ONLY WHEN AN HY5B MODULE IS INSTALLED INTO THE SMARTTOUCH CONTROLLER. OOLD, IOLD, ELD, AND CLD SUB-MENUS ARE IDENTICAL.

† = Indicates default

SmartTouch 720/725 - Hy5B Loop Diagnostics

Loop Noise Score		
Score	**Meaning**	**Possible Impact on Gate Operation**
7	Near perfect, no discernible noise	None
6	Very slight noise	None
5	Some noise	Not likely - Holding detects
4	Enough noise to be a concern	Not likely - False detects, holding detects
3	Noise probably impacting operation	Likely - False detects, holding detects
2	Significant noise	Likely - False detects, holding detects, will not reset
1	Very significant noise	Very likely - False detects, holding detects, will not reset
0	Severe noise	Very likely - False detects, holding detects, will not reset
-	A valid noise score was not detected	Very likely - False detects, holding detects, will not reset

Loop Step Changes Score		
Score	**Meaning**	**Possible Impact on Gate Operation**
7	No step changes recorded	None
6	One step change recorded	Possible - False detects, locked in call
5	2 to 3 step changes recorded	Likely - False detects, locked in call
4	4 to 5 step changes recorded	Likely - False detects, locked in call
3	More than a few step changes recorded	Very likely - False detects, locked in call
2	Significant number of step changes recorded	Very likely - False detects, locked in call
1	Very significant number of step changes recorded	Very likely - False detects, locked in call
0	Severe number of step changes recorded	Very likely - False detects, locked in call

Loop References Changes Score		
Score	**Meaning**	**Possible Impact on Gate Operation**
7	Very stable reference	None
6	Stable reference	None
5	Edge of normal temperature swing	None
4	Wide temperature swing	Not likely - False detects
3	Edge of effects due to any temperature swing	Not likely - False detects
2	Significant reference movement	Possible false detects
1	Very significant reference movement	Possible false detects
0	Severe reference movement	Possible false detects

SmartTouch 720/725 - Hy5B Loop Diagnostics

Possible Causes of Loop Noise:

- **Inductively-Coupled Loop Cross-talk** – This is interference between two or more active loops. If all detectors used are Hy5Bs, this is not the source of the noise as the operator turns on and off each detector in sequence to ensure that this type of cross-talk cannot occur. If you are experiencing this issue, installing all Hy5Bs will be the most effective mitigation technique. If this is not possible, changing the frequency of one or both of the loops that are interfering usually reduces the cross-talk to acceptable levels.
- **Capacitively-Coupled Interference** – This is interference between electrical wiring in close proximity to each other (usually in the same conduit) for significant distances (usually 50 feet or more). The longer the distance the more pronounced the effect. Twisting of the loop lead in wires will help with this. If a shielded cable is used for the loop wires, the shield of the cable should be left floating (unconnected) at both ends.
- **Other Electrical Interference** – This is usually interference that is coupled in to the loop, lead-in, or detector itself. Changing the loop frequency on the detector may help. If the interference is coupling in to the loop itself, a figure 8 loop may be needed to mitigate the source of interference. If the interference is at the detector, additional shielding may be needed.

Possible Causes of Loop Step Changes:

- **Loose Electrical Connections** – If there are any splices in the loop wires, they should be checked. Wire nuts should never be used in loop connections and usually will create these types of issues. If there are splices, they should be soldered if possible or at the very least crimped.
- **Failed Loop Wire Insulation** – This normally occurs when there is a high moisture content in the air that condenses(rain, fog, or dew) and the loop wire insulation is damaged in some way and this moisture can wick its way to that failure point. Using a megaohm meter on the loop and getting a reading of less than 100 megaohms will usually cause this type of issue.
- **Conductor Fatigue** – If the loop is installed across a joint in the driving surface or the lead-in is exposed to significant vibration, the conductor in the wire may fatigue and change its resistance slightly when flexed. With this type of failure,the failed wire must be replaced.
- **Objects Embedded in the Saw Slot** – It is possible for objects (nails, screws, etc.) to become embedded in the saw slot sealant and over time get pressed down in to the loop wire (especially if good installation practices are not followed). Once this object touches a loop wire conductor, the loop must be replaced.

Possible causes of loop reference changes:

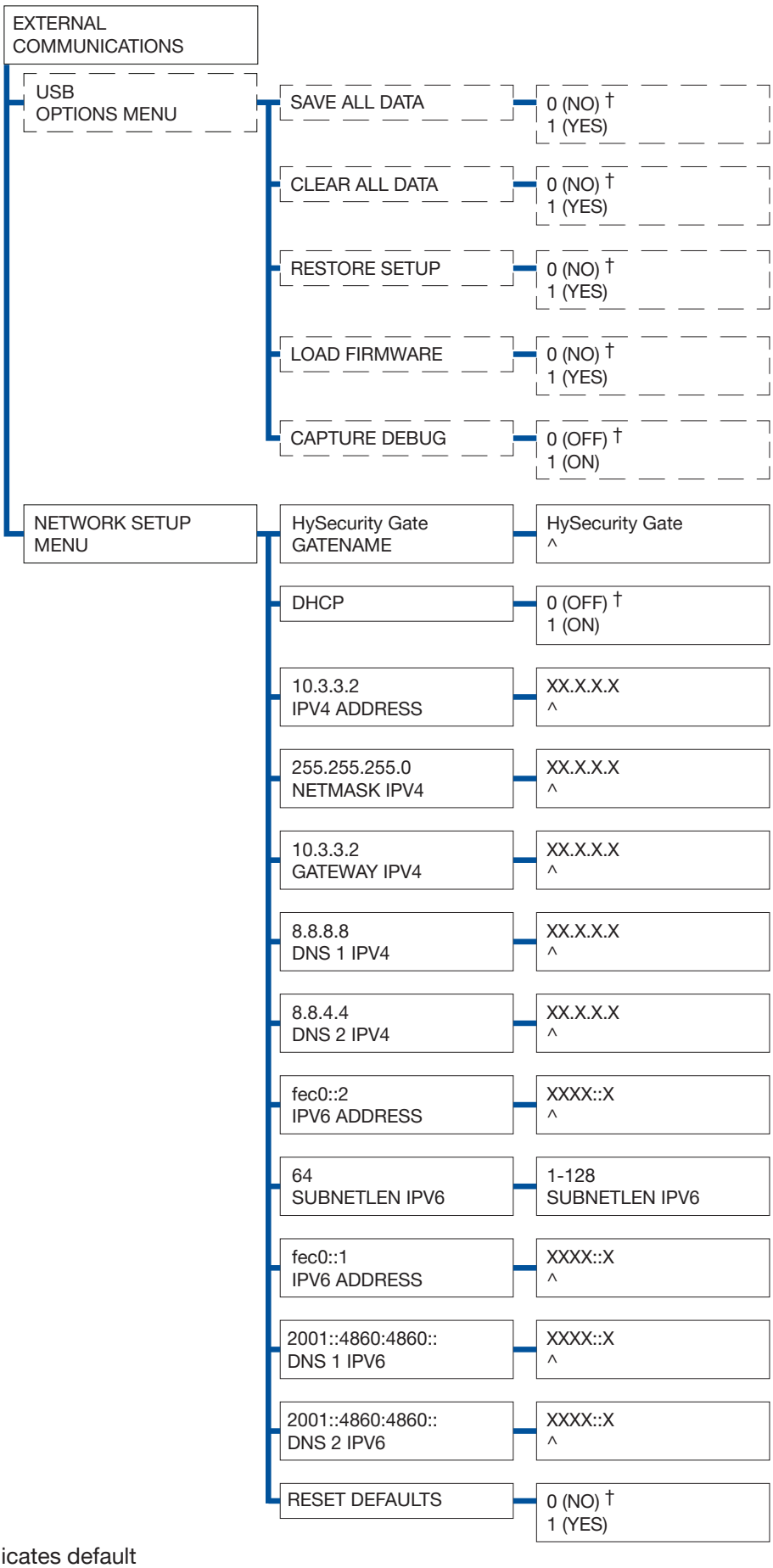
- **Wide Temperature Swings** – The reference within the detector will change with temperature. If there are wide temperature swings during a 24-hour period, this score will go down and is expected and normal. The detector is designed to deal with ambient temperature changes of 2°F every minute. Rates of change faster than that may cause false detections (this usually only occurs if the cabinet is opened). If you are in an area that sees quick temperature changes (hot or cold), some insulation around the detectors may help.
- **Temperature Sensitivity** – It is possible that some of the components on the detector are abnormally temperature sensitive.

NOTE: Refer to Hy5B User and Reference Guide (MX6125) for full information about Hy5B vehicle detectors.

Automatic Gate Compensation

- The HY-5B vehicle detectors have Automatic Gate Compensation (AGC) automatically enabled. In the event a loop is installed too close to the gate, the AGC allows the operator to learn the inductance profile of the gate as it moves past the loop. Most sites do not need this, and the AGC can be disabled. To disable the AGC, enter the desired HY-5B loop menu. While anywhere in that menu, press and hold the **Reset** button until the Disable AGC menu is displayed. Press the **Select** button to allow the setting to be configured, set it to OFF and then press **Select**.

External Communications



† = Indicates default

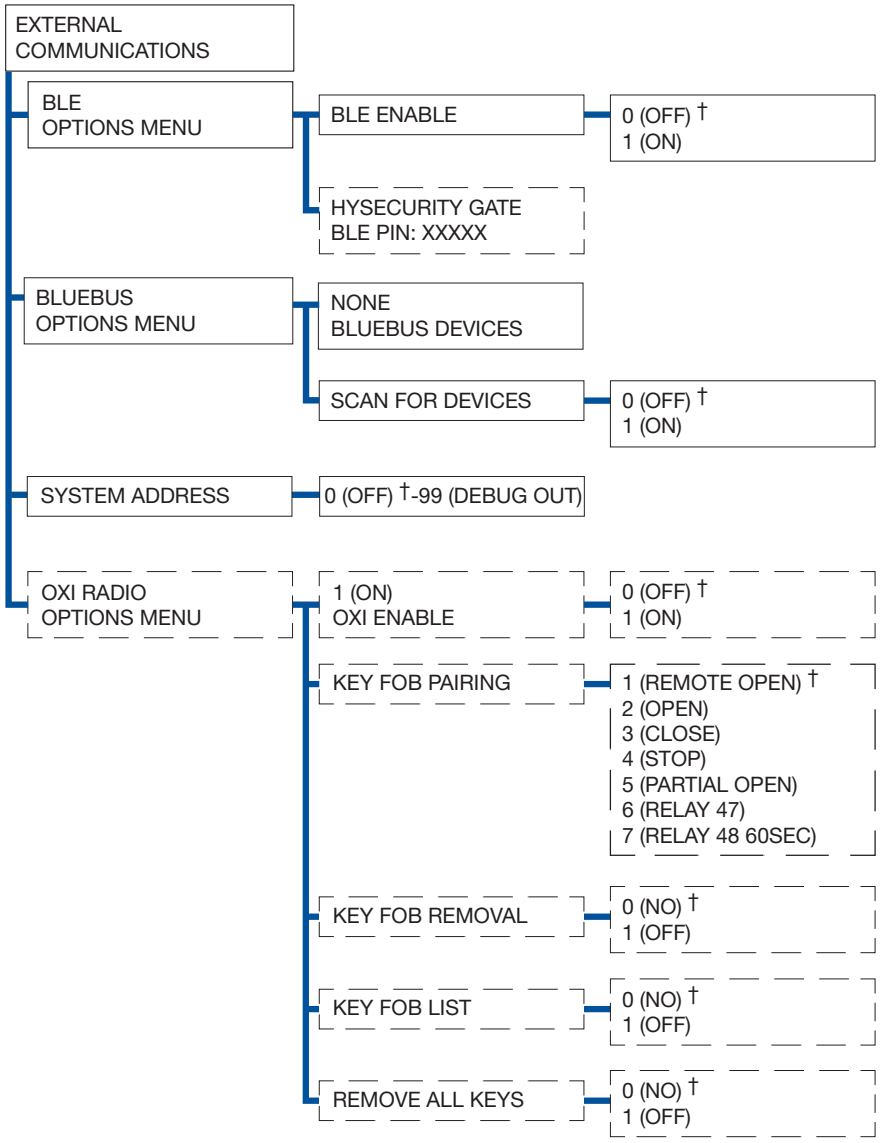
External Communications

Table 10. SmartTouch 725 External Communications Settings		
MENU DISPLAY	**SETTINGS**	**DESCRIPTION**
USB OPTIONS MENU		USB options submenu, only appears when a USB flash drive is connected to the SmartTouch 720/725 Controller.
SAVE ALL DATA	0 = NO† 1 = YES	Saves the event log data, any stored debug data events, and the menu setup file.
CLEAR ALL DATA	0 = NO† 1 = YES	Clears the event log and any stored debug data.
RESTORE SETUP	0 = OFF† 1 = ON	Loads a saved menu setup file onto a new SmartTouch 720/725 controller or operator.
LOAD FIRMWARE	0 = OFF† 1 = ON	Set to ON after plugging in a USB flash drive with firmware updates to load new firmware.
CAPTURE DEBUG	0 = OFF 1 = ON	Saves real time debug data onto a USB flash drive until the setting is changed to 1 (ON) or the stop button is pressed. The debug data can be used to determine if there are any intermittent input activations.
NETWORK SETUP MENU*		Network setup sub-menu
HYSECURITY GATE GATE NAME	HySecurity Gate ^	Set the name of the operator. Default name includes a four digit number for easy identification when pairing with Bluetooth.
DHCP	0 = OFF† 1 = ON	Used to assign dynamic IP addresses to devices on a network.
IPV4 ADDRESS	XX.X.X.X ^	IP address on IPv4
NETMASK IPV4	XXX.XXX.XXX.X ^	Subnet mask on IPv4
GATEWAY IPV4	XX.X.X.X ^	Gateway on IPv4
DNS 1 IPV4	X.X.X.X ^	Domain Name System address 1 on IPv4
DNS 2 IPV4	X.X.X.X ^	Domain Name System address 2 on IPv4
IPV6 ADDRESS	XXXX::X ^	IP address on IPv6
SUBNETLEN IPV6	1-128 (64†)	IPV6 prefix length
GATEWAY IPV6	XXXX::X ^	Gateway on IPv6
DNS 1 IPV6	XXXX::XXXX::XXXX:: ^	Domain Name System address 1 on IPv6
DNS 2 IPV6	XXXX::XXXX::XXXX:: ^	Domain Name System address 2 on IPv6
MAC ADDRESS	XXXXXX-XXXXXX	Manufacturer set Media Access Control address
RESET DEFAULTS	0 = NO† 1 = YES	Reset network settings.
NOTE: External Communications menu continues on the next page.		

*The NETWORK SETUP MENU settings are for the built-in HyNet functionality. Contact an IT professional for assistance with these settings to connect to a network. A separate HyNet User Guide is also available.

External Communications

Continued from **page 61**.



† = Indicates default

External Communications

Table 11. SmartTouch 725 External Communications Settings		
MENU DISPLAY	**SETTINGS**	**DESCRIPTION**
BLE OPTIONS MENU		Bluetooth low energy sub-menu
BLE ENABLE	0 = OFF† 1 = ON	Enable or disable bluetooth low energy. Bluetooth logo will appear on gate status display.
GATE NAME BLE PIN	XXXXXX	PIN to connect to the SmartTouch 725 Controller with the SMART installer app. HySecurity Gate PIN only appears when BLE Enable is set to 1 (ON).
BLUEBUS OPTIONS MENU		BlueBUS sub-menu
NONE, BLUEBUS DEVICES		Lists the configurations of the connected BlueBUS devices.
SCAN FOR DEVICES	0 = OFF† 1 = ON	Change to 1 (ON) to scan for BlueBUS devices. Use this function to install and uninstall BlueBUS device for the firmware to recognize and monitor as an external entrapment sensor(s).
SYSTEM ADDRESS	0 (OFF)† - 99 (DEBUG OUT)	Set system address for network communication: 0 = no network communication 1 - 99 sets individual polling addresses.
OXI MENU		OXI Sub-menu, only appears when a receiver is connected to the SmartTouch 725 Controller.
OXI ENABLE	0 = OFF† 1 = ON	Enables or disables the Nice OXI/A receiver. The rest of the menus only appear when OXI Enable is set to 1 (ON).
KEY FOB PAIRING	1 = REMOTE OPEN† 2 = OPEN 3 = CLOSE 4 = STOP 5 = PARTIAL OPEN 6 = RELAY 47 7 = RELAY 48 60SEC	Set the function to assign to a fob/button and then press the fob button to pair it to the SmartTouch 725 Controller.
KEY FOB REMOVAL	0 = NO† 1 = YES	Set to YES and activate a fob button to remove it from the SmartTouch 725 Controller.
KEY FOB LIST	0 = NO† 1 = YES	Set to YES to use the arrow buttons to scroll through the list of paired fobs. While scrolling through the programmed fobs, pressing SELECT on the displayed key fob button will give the option to delete the individual fob.
REMOVE ALL KEYS	1 = NO† 1 = YES	Set to YES to remove all paired fobs from the SmartTouch 725 Controller.

Connect to The Smart Installer App

NOTE: The SmartTouch 725 Controller initial setup must be completed before you can connect to the Smart Installer App.

Set Bluetooth jumper/switch:

1. Set the power switch to OFF.
2. Remove the rubber plug or OXI receiver from OXI receiver slot (Figure 25).
3. Move the switch to the ON position. (To the left on the slide switch, Figure 26)
4. Place the rubber plug in the OXI receiver slot.

Enable Bluetooth in the menus:

5. Set the power switch to ON.
6. Press MENU on the SmartTouch 725 Controller.
7. Press the UP or DOWN arrow to navigate to EXTERNAL COMMUNICATIONS and press SELECT.
8. Press the UP or DOWN arrow to navigate to BLE OPTIONS MENU and press SELECT.
9. Press the UP or DOWN arrow to select 1 (ON) and press SELECT.
10. Press the UP or DOWN arrow to show HYSECURITY GATE PIN and GATE NAME. Record the PIN and GATE NAME.

NOTE: Bluetooth range with the HydraSupply II cabinet closed is ~10 ft (3 m). Bluetooth range can be increased by removing the cover.

Connect the app and controller:

11. Open the SmartTouch Installer App. Always keep the app up-to-date.
12. Tap Connect.
13. Tap the name of the appropriate operator.
14. Enter the PIN from step 10.
15. Connect button changes color to green to indicate good connection.

HySecurity Installer App QR Code

PRIVACY.FLOWCODE.COM

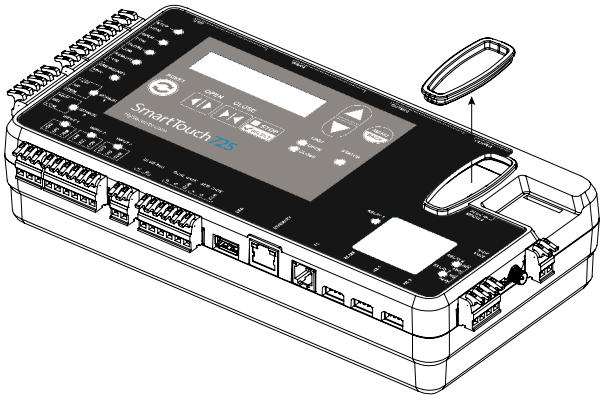


Figure 25. Remove OXI Receiver Cover

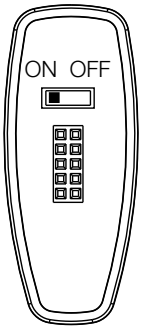


Figure 26. Bluetooth Switch

Figure 27. Bluetooth Enabled Display

Figure 28. Smart Installer App Connect and Disconnect

OXI Installation and Programming

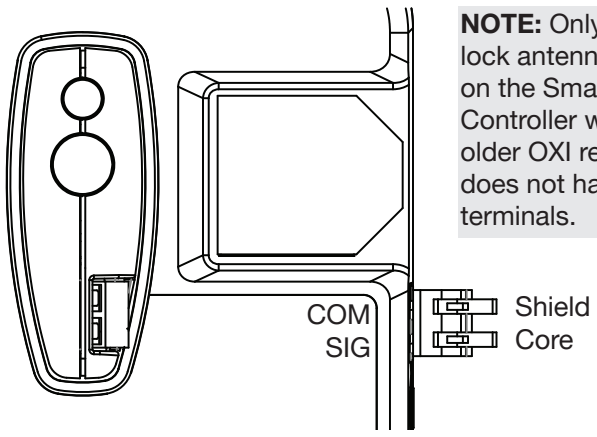
NOTE: The button on the OXI receiver is not needed for programing fobs for the SmartTouch 725 Controller and should not be pressed during the following installation processes.

Install and enable the OXI receiver:

1. Remove the OXI port rubber plug.
2. Install the OXI receiver.
3. Install a coaxial antenna into the OXI receiver terminals for better range (Figure 29). Route the cable through a knock out in the electrical enclosure and conduit to a fixed fence post near the operator. Mount the external antenna on top of the fixed fence post.
4. Press MENU on the SmartTouch 725 Controller.
5. Press the UP or DOWN arrow to navigate to EXTERNAL COMMUNICATIONS and press SELECT.
6. Press the UP or DOWN arrow to navigate to OXI RADIO MENU OPTIONS and press SELECT.
7. Press the UP or DOWN arrow to navigate to OXI ENABLE and press SELECT.
8. Press the UP or DOWN arrow to select ON and press SELECT.

Pair a fob:

1. Open OXI RADIO MENU OPTIONS (steps 4 - 6 to install OXI).
2. Press the UP or DOWN arrow to navigate to KEY FOB PAIRING and press SELECT.
3. Press the UP or DOWN arrow to select the function.
4. Press and hold the appropriate button on the fob.
5. Press SELECT. Display will beep and state PAIRED.
6. Repeat steps 2 - 5 to pair additional fob buttons or fobs.
7. Press MENU until gate status displays.
8. Press the buttons on the fob to test operation.



NOTE: Only use the lever lock antenna terminal on the SmartTouch 725 Controller when using an older OXI receiver that does not have screw terminals.

Figure 29. OXI Antenna Terminal

Remove a single fob in hand:

1. Open OXI RADIO MENU OPTIONS (steps 4 - 6 to install OXI).
2. Press the UP or DOWN arrow to navigate to KEY FOB REMOVAL and press SELECT.
3. Press the UP or DOWN arrow to select 1 (ON).
4. Press and hold the button on the fob and press SELECT to remove.
5. Repeat steps 3 and 4 for every fob button to be removed.

Remove a single fob from a list:

NOTE: It is important to keep a log of fobs and who is responsible for each for this method.

1. Open OXI RADIO MENU OPTIONS (steps 4 - 6 to install OXI).
2. Press the UP or DOWN arrow to navigate to KEY FOB LIST and press SELECT.
3. Press the UP or DOWN arrow to navigate to the fob number in the list and press SELECT.
4. Press the UP or DOWN arrow to select Y and press SELECT. This removes the fob.

Remove all fobs:

1. Open OXI RADIO MENU OPTIONS (steps 4 - 6 to install OXI).
2. Press the UP or DOWN arrow to navigate to REMOVE ALL KEYS and press SELECT
3. Change the setting to 1 (YES) and press SELECT.

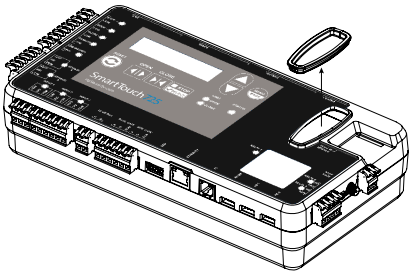


Figure 30. Remove OXI Port Rubber Plug

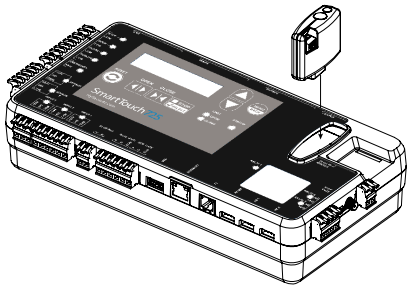


Figure 31. Install OXI Receiver

Firmware Updates and Debug Data

Download the firmware to a USB flash drive:

1. Go to support.hysecurity.com, click on Software, click on SmartTouch 720/725 h6.08 firmware, and download the .cnx firmware file to your computer.
2. Connect a USB flash drive to your computer.

NOTE: FAT32 is the preferred file system for USB flash drives used for SmartTouch 720/725 firmware updates.

3. Navigate to the download folder with the .cnx file.
4. Copy the .cnx file to the root folder of the USB flash drive.
5. Safely disconnect the USB flash drive.

Install the firmware:

1. Move the gate to the open position to allow free flow of traffic. The SmartTouch 720/725 Controller ignores all inputs and outputs during the firmware update.
2. Plug the USB flash drive into the USB port on the SmartTouch 720/725 Controller (Figure 28).
3. Press SELECT when USB OPTIONS MENU appears.
4. Press the UP or DOWN arrow to LOAD SW and press SELECT.
5. Press the UP or DOWN arrow to YES and press SELECT.
6. The display shows LOADING FW while the firmware loads. It could take up to 10 minutes to load the firmware.

NOTE

Do not shut off power. Do not remove the USB flash drive or disconnect any other cable during firmware update. This can cause SmartTouch 720/725 Controller communication to stop and requires a SmartTouch 720/725 Controller replacement.

7. The display shows COMPLETE and the controller beeps once when firmware loading ends.
8. Remove the USB flash drive.

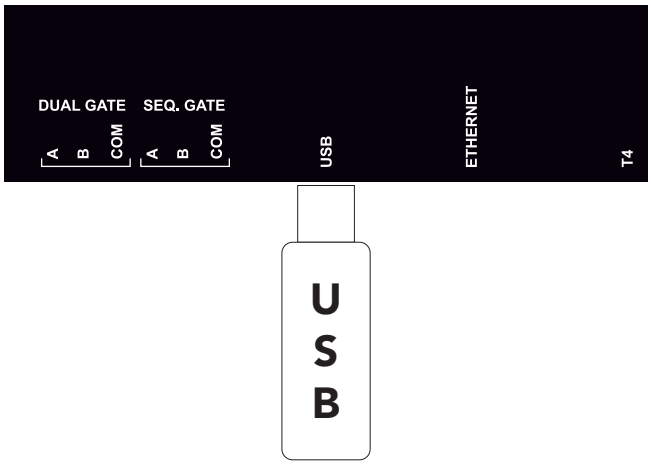
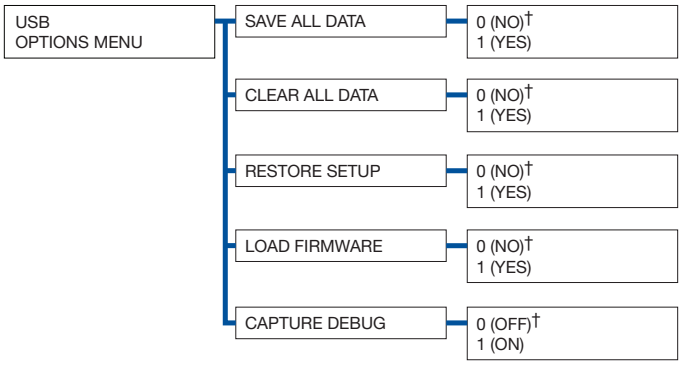


Figure 32. USB Port



SAVE ALL DATA saves the event log data, any stored debug data events, and the menu setup file.

CLEAR ALL DATA clears the event log and any stored debug data.

RESTORE SETUP loads a saved menu setup file onto a new SmartTouch 720/725 Controller or operator.

LOAD FIRMWARE loads new firmware after plugging in a USB flash drive with firmware for updates.

CAPTURE DEBUG saves real time debug data onto a USB flash drive until the setting is changed to 0 (OFF). The debug data can be used to determine if there are any intermittent input activations.

† = Indicates default

I/O Expansion Module Inputs

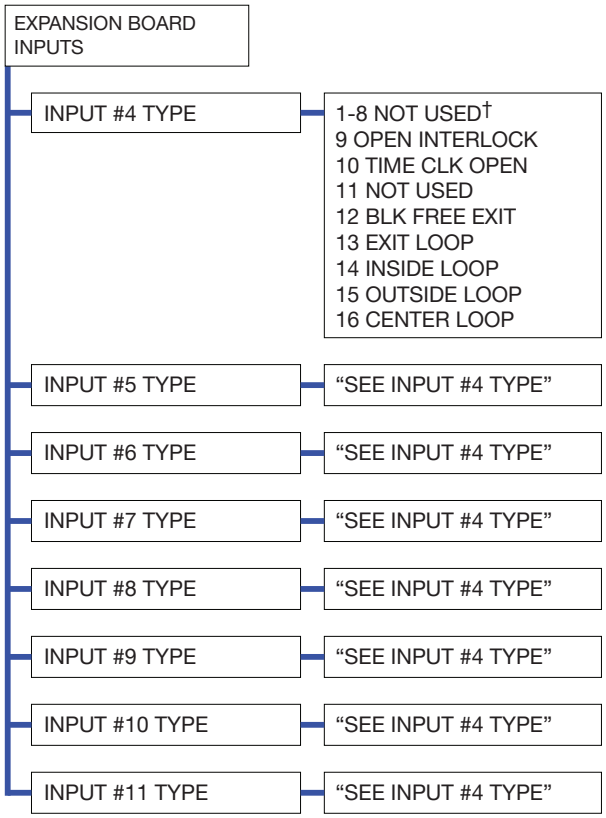


Table 12. SmartTouch 720/725 I/O Expansion Module Inputs Settings

MENU DISPLAY	SETTINGS	DESCRIPTION
INPUT #4-#11 TYPE	1 = NOT USED† 2-7= NOT USED 8 = PARTIAL OPEN (SLIDE ONLY) 9 = OPEN INTERLOCK 10 = TIME CLK OPEN 11 = NOT USED 12 = BLK FREE EXIT 13 = EXIT LOOP 14 = INSIDE LOOP 15 = OUTSIDE LOOP 16 = CENTER LOOP 17 = LOCK/INTERLOCK 18 = AC LOSS INPUT 19 = WAKE DISPLAY 25 = OPEN INPUT 26 = CLOSE INPUT 27 = REMOTE INPUT	Some inputs are preset and named based on their use in the HydraSupply II. These inputs are read-only in the menu. Fixed inputs include limits, pressure transducer, and motor thermal switch or AC loss indicator.

NOTE: For I/O Expansion Module relays see **Relay Outputs** on **page 49**.

† = Indicates default

I/O Expansion Module Inputs

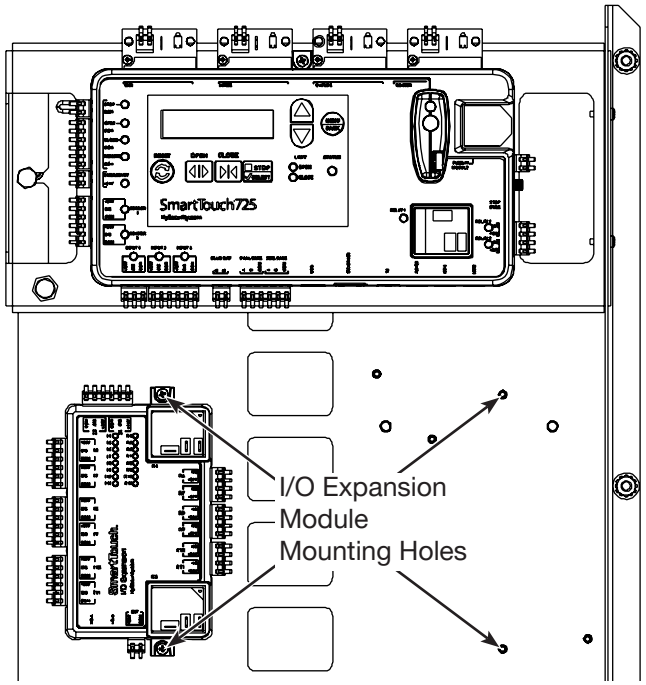


Figure 33. SmartTouch 720/725 I/O Expansion Module Mounting Holes

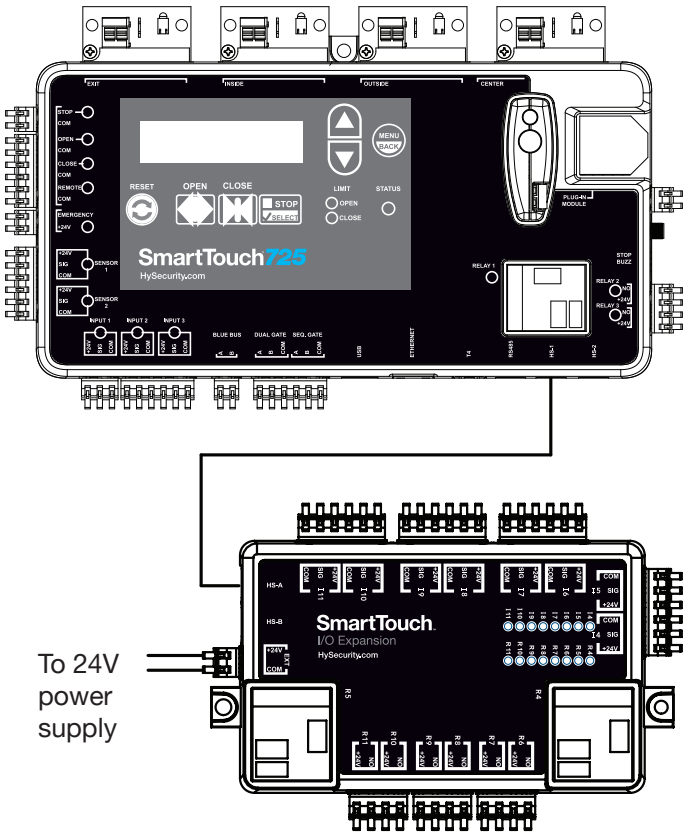


Figure 34. SmartTouch 720/725 I/O Expansion Module Connections

All HydraSupply II operators not equipped with a VFD come with an I/O Expansion Module with the following defaults (visible, not configurable):

I/O Expansion Module Default Settings	
Input/Relay	**Setting**
Input 8	Motor thermal switch/AC power loss
Input 9	Pressure transducer
Input 10	Limit 1 (NC, see Limit functionality)
Input 11	Limit 2 (NC, see Limit functionality)
Relay 4	Motor Contactor
Relay 11	Directional Valve

The other Inputs and Relays are visible and user configurable.

For operators equipped with a VFD, the I/O Expansion Module is an optional accessory and all Inputs and Relays are visible and configurable.

Note: Modular SlideDriver II HydraSupply II without a VFD will use an additional relay (10) on the expansion board to control the unloader valve.

Note: Make sure that the switch on the back of the Expansion I/O board is set to “Bypass.”

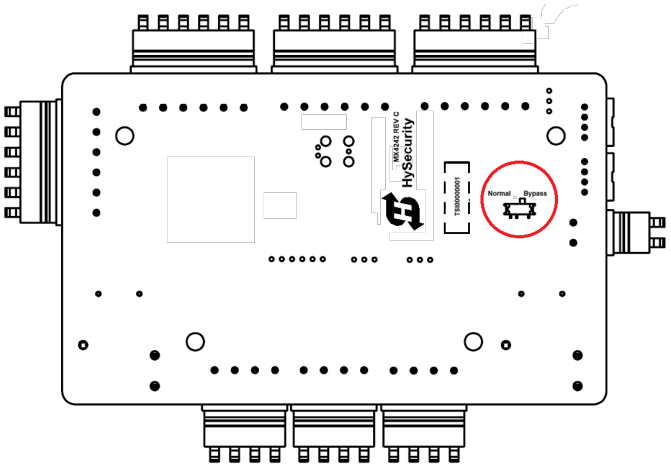
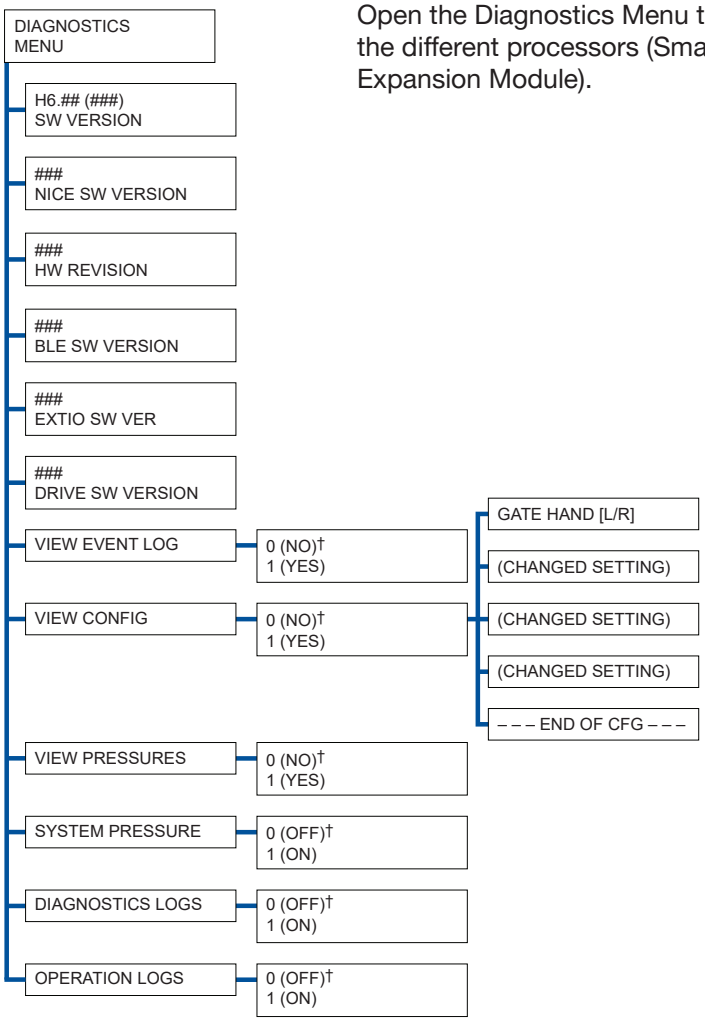


Figure 35. Bypass switch

Diagnostics Menu



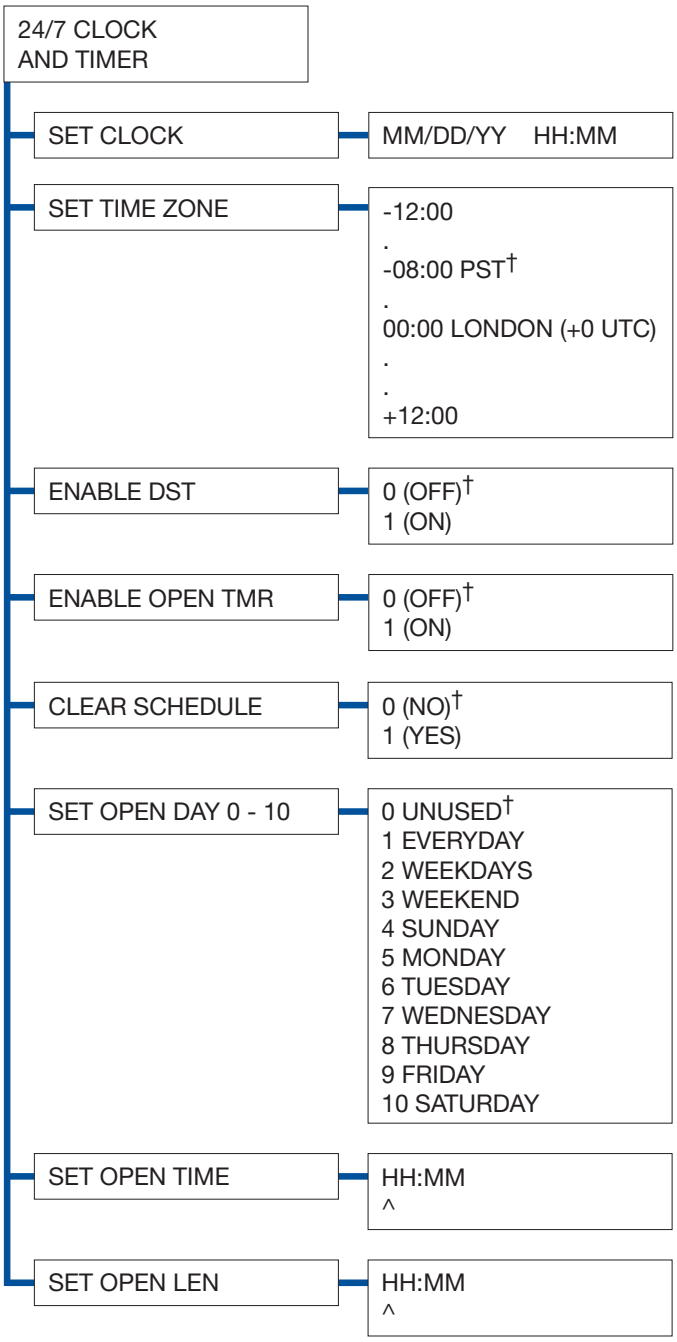
Open the Diagnostics Menu to cycle through a status display of the firmware versions of the different processors (SmartTouch 720/725 Controller, Nice, BLE, Drive module, I/O Expansion Module).

Table 13. SmartTouch 720/725 Diagnostics Menu Settings

MENU DISPLAY	SETTINGS	DESCRIPTION
VIEW EVENT LOG	0 = NO† 1 = YES	View a list of events in the SmartTouch 720/725 Controller's memory.
VIEW CONFIG	0 = NO† 1 = YES	View a list of configuration settings for the operator that are different from the defaults (e.g. gate handing and input settings).
VIEW PRESSURES	0 = NO† 1 = YES	View the last three cycles of system pressure.
SYSTEM PRESSURE	0 = OFF† 1 = ON	View the last three cycles of system pressure and display the running pressure while the gate is in Run Mode.
DIAGNOSTICS LOGS	0 = OFF† 1 = ON	Set to ON to turn on diagnostic logging which logs every aspect of gate operation. Diagnostic logging bogs down the processor and slows response to operate command. Only use when absolutely needed to capture an intermittent issue.
OPERATION LOGS	0 = OFF† 1 = ON	Set to ON to log all inputs that cause gate movement to start or stop, including all external open, close, and stop commands. Ideal for detecting intermittent, unknown open commands.

† = Indicates default

Clock and Timer



† = Indicates default

Clock and Timer

Table 14. SmartTouch 24/7 Clock and Timer Settings		
MENU DISPLAY	**SETTINGS**	**DESCRIPTION**
SET CLOCK	MM/DD/YY HH:MM ^	Set the date and time. Date and time must be set before open timers can be used.
ENABLE OPEN TIMER	0 = OFF† 1 = ON	Enable or disable the open timer. When enabled, any open timer that is programmed will hold the gate open at the programmed time for the programmed duration. Additionally, any relay set to option 46 will be activated regardless of the enable open timer setting.
ENABLE DST	0 = OFF† 1 = ON	Enable DST (Daylight Savings Time)
SET TIME ZONE	-12:00 . -08:00 PST† . 00:00 . . +12:00	Set time zone based on standard UTC/GMT. Do not set based on DST.
CLEAR SCHEDULE	0 = NO† 1 = YES	Clear all programmed open timer settings.
SET OPEN DAY 1-8	0 = UNUSED† 1 = EVERYDAY 2 = WEEKDAYS 3 = WEEKEND 4 = SUNDAY 5 = MONDAY 6 = TUESDAY 7 = WEDNESDAY 8 = THURSDAY 9 = FRIDAY 10 = SATURDAY	Assign day setting to open timer setting 1-8.
SET OPEN TIME 1-8	HH:MM ^	Set the time when the programmed open timer (1-8) turns on the programmed relay or opens the gate.
SET OPEN LENGTH 1-8	HH:MM ^	Set the duration of time that the programmed open timer (1-8) holds the gate open.

Adjusting the Brake Valve

NOTE

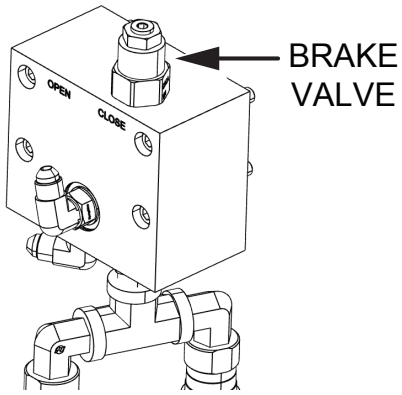
Before adjusting brake control valve, SwingRiser posts must be installed, plumbed, and wired to HydraSupply. Gate must be secured on posts with its index arm attached, adjusted, and tightened. Note that excessively high brake valve settings cause a gate operator to draw more motor horsepower than necessary or desirable. Over time this aspect can cause additional stress and wear on hydraulic power unit and void warranty.

Legacy products have a different manifold assembly. Please contact tech support or refer to the matching legacy documentation for applicable procedures.

NOTE

Brake control valve is for fine-tuning closure speed on the gate. To affect closing speed adjustments on a broader scale, change pump pack's size.

Figure 36. SwingRiser Brake Control Manifold



SwingRiser Brake Valve Adjustment

1. The single brake valve on the left side of the pump pack controls the close speed of the gate. It prevents the gate from exceeding the pump flow rate, and it holds the gate in the open position when stopped.
2. The brake valve is adjusted using a 5/32 hex key and a 9/16 wrench. The screw can be turned clockwise all the way for no braking or up to 4.25 turn counterclockwise for maximum braking. Two turns counterclockwise is a good place to start.
3. The gate swing area should be supervised, and the lane blocked to prevent damage or injuries from unexpected gate movement.
4. The HydraSupply and the gate should fully connected and ready to run. The gate may be powered, or hand pumped to the open position to begin adjustment. The open valve should be in the default position.
5. While holding the position of the adjustment screw with the 5/32 hex key, use the 9/16 wrench to loosen the locknut. Observe the gate while slowly turning the adjustment screw clockwise,, when the gate just starts drifting close or down, turn the screw ½ turn counterclockwise. This is the initial adjustment.
6. The brake valve may need a higher brake setting. If the gate is installed where snow or ice will make the gate heavier. The adjustment screw may be turned counterclockwise for more braking.
7. The gate should be run several cycles to ensure the close direction speed is not excessive. The stop button should be tested several times in the close direction to determine that the gate will stop and hold the gate in position with minimal overtravel.
8. The gate speed can only be controlled down to the pump speed. A brake setting that is excessively tight will cause higher pressure and wear on the motor, pump and cylinder which could void the warranty. It will also generate more heat than necessary.

Bleeding Air from Hydraulic Hoses

NOTE: This process is required for SwingRiser and recommended for HydraSwing, but not required.

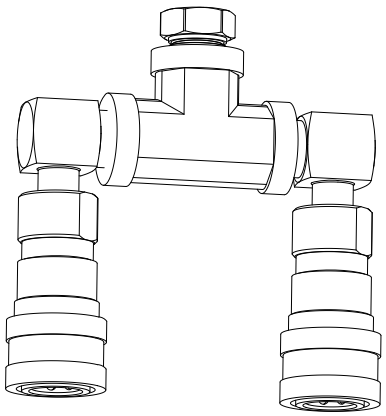


Figure 37. Air Bleeder Tool

Air trapped in the hydraulic systems of SwingRiser (HRG) operators can cause slow and/or jerky operation. In SwingRiser Twin systems (two gate panels operating from a single hydraulic supply), air can prevent the two panels from synchronizing.

If these symptoms are appearing in your operator, you may need to bleed the air from the hoses between the hydraulic supply and the operator post.

In SwingRiser Twin systems, both posts must be bled at the same time. The gate will be inoperative during the bleeding process. If traffic needs to pass, remove the index arm and pivot the gate on the mounting hinges manually.

Look for leaks:

- 7/32” Allen wrench (for cover plate screws)
- Bleeder tool assembly, refer to the HySecurity Price Book for the part number. A single gate requires one Bleeder tool. A twin gate system requires two Bleeder tools.
- Two electrical jumper cables

Detailed instructions on how to use the bleeder tool are shipped with it. You can also find the instructions online by logging into your distributor or installer site and accessing Technical Support Resources, Replacement Part Instructions.

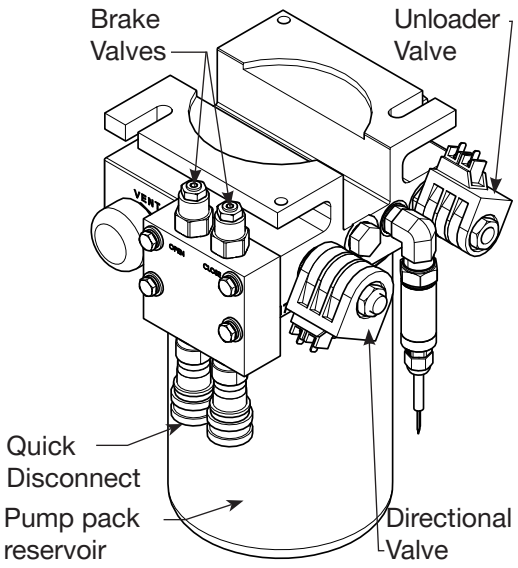
Hydraulic System Maintenance

Fluid Level: Under normal conditions, hydraulic systems do not consume fluid. Check the system thoroughly for leaks before adding any fluid. If fluid needs to be added:

1. Remove the metal plug from the reservoir.
2. Use HySecurity Uniflow hydraulic fluid (part number MX000970). Gallon sold by our distributors.
3. Fill to within ½ in. of the plug level, and then replace plug.

CAUTION: Never use brake fluid. It will severely damage the hydraulic system. Use of any fluid other than fluid recommended by HySecurity may void the operator warranty.

Look for leaks: Occasionally there may be slight seeping at the fittings after some usage. Tightening of the fittings usually corrects the problem. If leaking persists, replace O-rings, fittings, or hoses, if required. No further leaks should occur.



To Change Fluid: Unlike a gas engine, the fluid inside a hydraulic system does not foul, so fluid changes do not need to occur often. HySecurity recommends draining the reservoir and replacing the fluid at intervals of every five years or 200,000 gate cycles, whichever comes first. Fluid breakdown caused by heat is the main concern. If the unit is subjected to high use, or you are using the HySecurity biodegradable fluid option (especially in a warm climate), change the fluid more frequently.

To change the hydraulic fluid:

1. Remove the reservoir from the pump pack and completely empty it.

2. Wipe the reservoir clean and clean the debris screen.

3. Re-assemble the pump unit and refill it with new Uniflow hydraulic fluid. To avoid overfilling, slowly pour the fluid through the filler port near the reservoir’s top until the fluid is within one inch of the port’s opening.

4. Replace the plug and wipe up any spilled fluid. Spilled fluid dries to a sticky and messy consistency.

Cold Weather Issues:

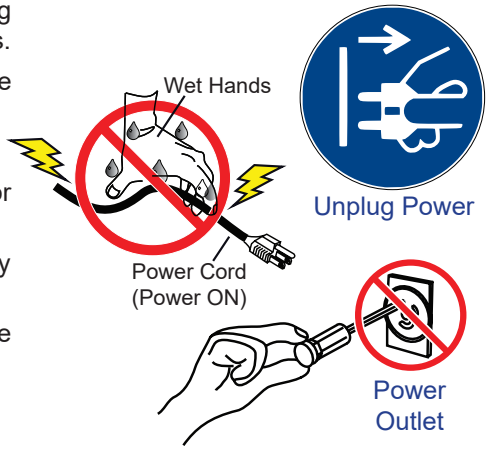
- Check that your reservoir is filled with our Uniflow high-performance fluid.
- Excessive ice buildup can partially or totally jam gate operation. Operate the gate manually while clearing the ice buildup.
- If the operator is located in an area of extreme snow conditions, regular maintenance to dig the operator out may be required. A heater option is recommended.

Note: A biodegradable fluid option does exist (part number MX002836), but it does not have the same fluid viscosity at extremely low temperatures. Uniflow fluid temperature rating is between -40°F and 158°F (-40°C and 70°C). The biodegradable fluid has a temperature rating between -10°F and 158°F (-23°C and 70°C).

Additional Safety Information

Electrical Safety

- Turn gate operator and all circuit breakers OFF before performing maintenance on the gate operator or making contact with output receptacles.
- Never insert any objects into output receptacles during operation. The possibility exists of electrical shock, electrocution, or death.
- Never let power wires lay in water.
- Never use damaged or worn wire when connecting equipment. Inspect for cuts in the insulation.
- Never grab or touch a live power cord or cable with wet hands. The possibility exists of electrical shock, electrocution or death.
- Always make certain that proper power has been selected for the job. See Cable Selection Chart in this manual.



Grounding Safety

- Always make sure that electrical circuits are properly grounded to a suitable earth ground (ground rod) per the National Electrical Code (NEC) and local codes. Severe injury or death by electrocution can result from operating an ungrounded operator.
- Never use gas piping as an electrical ground.

Battery Safety

HySecurity operators use sealed Absorbed Glass Mat (AGM) batteries and HySecurity highly recommends replacing used batteries with new AGM-type batteries.

CAUTION

Batteries used with HySecurity gate operator contain materials considered hazardous to environment. Proper battery disposal is required by federal law. Refer to *Hazardous Waste Regulations* federal guidelines.

To reduce risk of fire or injury to persons:

- Observe polarity between batteries and charging circuit.
- Never mix battery sizes, types, or brands. Charging circuit on HySecurity DC operators is designed for AGM-type batteries, not flooded lead acid-type or lithium batteries.
- Exercise care in handling batteries. Be aware metal found in rings, bracelets, and keys can conduct electricity, short batteries, and cause potential injury.
- Do not open or mutilate batteries. Battery cells contain corrosive materials which may cause burns and other injuries. Material within batteries is toxic.

- Always dispose of batteries properly. Do not place batteries in fire. Battery cells may explode. Follow federal guidelines for proper disposal of hazardous waste.
- Always keep battery cables in good working condition. Repair or replace all worn cables.
- Replace batteries according to instructions found in DC Battery Replacement.
- Do not charge frozen battery. Battery can explode. If frozen, warm the battery to at least 61°F (16°C).

Environmental Safety/Hazardous Materials and Proper Disposal

Decommissioning is a controlled process used to safely retire a piece of equipment that is no longer serviceable. If the equipment poses an unacceptable and unrepairable safety risk due to wear or damage or is no longer cost effective to maintain (beyond life-cycle reliability) and is to be decommissioned (demolition and dismantlement), be sure to follow rules below.

- Do not pour waste oil directly onto the ground, down a drain or into any water source.

Troubleshooting/Alerts/Faults/Errors

Table 15. SmartTouch 720/725 Controller - Troubleshooting

Display Condition	Description Alert, Error or Fault	Possible Causes	Solutions
SAFE MODE	Safe Mode Alert	Occurs when an edge sensor or Inherent Entrapment Sensor (IES) trips. Gate binding, wind, or a faulty edge sensor can cause a false alert. All inputs are still functional during safe mode, but Close Timer is disabled until an operate command is received.	1. Activate any operate command. 2. Remove obstruction. 3. Correct gate hardware. 4. Correct faulty edge sensor. 5. Adjust IES sensitivity.
ENTRAPMENT MODE	Entrapment Mode Alert	Occurs when IES is tripped when gate is already in Safe Mode (two IES trips in one cycle). Operator will not function until it is reset, which can occur by: • An Open or Stop command from a push-button control • Pressing STOP button on operator side • Pressing RESET button below display Gate binding, wind, or a faulty edge sensor can cause a false alert. Emergency Close or Fire Open input activation will also stop the gate in Entrapment Mode.	Refer to solutions above.
NO AC POWER	No AC Input Power Advisory only.	AC power is shut off at source (breaker) or is not connected. AC power switch on operator (lower rocker switch) is turned off. Verify relay output from DC Charger is connected to input 8 of the I/O Expansion Module when operator is configured for DC power.	1. Reset operator circuit breaker or reset circuit breaker at electrical panel. 2. Verify AC power to battery backup system. Have a licensed electrician check wiring. 3. Verify Power Type Setting is correct.
LOADING FW	Firmware is being loaded into SmartTouch 720/725 Controller.	Firmware is currently being loaded. Display will show which specific processor firmware is loading.	Wait for firmware to finish loading.

Troubleshooting/Alerts/Faults/Errors

Table 15. SmartTouch 720/725 Controller - Troubleshooting

Display Condition	Description Alert, Error or Fault	Possible Causes	Solutions
LOW 24VDC	Low 24VDC UPS Batteries Advisory only.	Occurs when battery voltage has dropped to less than 22V. At this level, batteries have about 20% charge. Normal function until 21V. • No AC Power • Wiring / Connector problem	1. Verify AC power. 2. Check all connections. Clean or repair as required. 3. Check battery condition and replace as required. 4. Check charger voltage is 27VDC at red/blue battery wires.
DEAD BATTERY	Extremely low UPS batteries – no automatic operation - batteries below 21V.	Occurs when battery voltage has dropped to less than 21V. At this level, batteries have about 10% charge. Gate will automatically open or close depending upon setting chosen. No additional automatic function is possible, but limited push button control is available down to 18V.	Refer to solutions above.
HYSECURITY BAD POWER	Critically low 24V supply power. This message can occur only on initial start up if power is critically low.	DC power is below 14V – no control functions will be allowed at all.	Refer to solutions above.
No display, LED blinking	SmartTouch 720/725 Controller is in standby. SmartTouch 720/725 Controller is receiving power, but battery voltage is very low.	**Several possible causes:** • SmartTouch 720/725 controls have been inactive for at least 10 minutes and the display has been disabled. Any button push will turn display back on. • AC power has been shut off from the operator for too long and the batteries are drained. • Wiring problem. • 24V output shorted or drawing too much current. • Batteries no longer hold a charge. • Failed SmartTouch 720/725 Controller. • Disconnected com (HSP) wire between SmartTouch 720/725 Controller and I/O Expansion Module or VFD.	Press any button to wake display. Refer to solutions above.

Troubleshooting/Alerts/Faults/Errors

Table 16. SmartTouch 720/725 Controller - Alerts

Display Condition	Description Alert, Error or Fault	Possible Causes	Solutions
ALERT 1 FORCE OPEN	Gate forced open. Alarm will sound.	Gate has been forced off the full close limit and is being prevented from re-closing.	Will self-clear after an open or close input.
ALERT 2 DRIFT CLOSED	Gate drifted closed.	Gate has drifted off the full open limit and is being prevented from re-opening.	Will self-clear after an open or close input.
ALERT 4 MOTOR OVERLOAD	Thermal overload alert. When alert is triggered, gate can only “fully open” until alert is cleared.	For AC operators, the AC motor has a thermal switch that is NC connected to input 8 of the I/O Expansion Module or input 1 of the VFD. When this opens the Alert 4 is declared.	Auto clears when thermal switch input closes and a run command is given.
ALERT 5 BOTH LIM ACTIVE	Both limit sensors are on at the same time.	• Limits sensors not connected correctly • Failed limit sensor	• Repair any wiring issues. • Check limit sensors and replace as required.
ALERT 6 NO MOTION ALERT	The position sensor did not change for 5 seconds after a motor run command.	• 3 Phase electric motor may be spinning wrong direction • No hydraulic pressure or flow. • Failed position sensor	• Check limit sensors and replace as required. • Verify electric motor is spinning the right direction.
ALERT 7 FREQ SHIFT FAULT*	Hy5B detects a frequency change outside normal range.	Likely causes are poor integrity of loops or metallic objects within range.	Check lead-in and roadway loop wires for problems. Replace if necessary.
ALERT 8 LOOP SHORTED*	Hy5B detects a loop shorted to ground.	Caused by inadequate insulation of loop wires.	Refer to solution above.
ALERT 9 LOOP OPEN*	Hy5B detects a lack of continuity in loop wire.	Caused by broken loop wire or wire has come unplugged from detector.	Refer to solution above.
ALERT 10 I2C BUS ERROR*	Communication error detected to a Hy5B vehicle detector.	Caused by removal of Hy5B or lack of integrity of socket connection.	Remove and re-install the Hy5B and press RESET. Replace Hy5B, if necessary.
ALERT 11 DETECTOR FAULT*	A problem detected within an Hy5B vehicle detector.	Caused by a fault within Hy5B.	Remove and re-install the Hy5B and press RESET. Replace Hy5B, if necessary.
ALERT 12 ON TOO LONG*	An input loop (Hy5B or box detector output) is active for more than 5 minutes.	Caused when SmartTouch 720/725 Controller sees an active loop for more than 5 minutes. “Active” loop can be actual or false.	Check traffic patterns at site. Loop and lead in wires should be checked for problems or replaced.

* This message will also indicate which detector the alert applies to: Exit Loop (ELD), Inside Obstruction Loop (IOLD), Outside Obstruction Loop (OOLD), or Center Loop (CLD).

Troubleshooting/Alerts/Faults/Errors

Table 16. SmartTouch 720/725 Controller - Alerts

Display Condition	Description Alert, Error or Fault	Possible Causes	Solutions
ALERT 16 I2C FAILURE		SmartTouch 720/725 has detected an internal communications error. • Excessive electrical noise. • Lack of earth grounding. • Internal problem on SmartTouch 720/725.	1. Determine and remedy source of electrical noise. 2. Install a ground rod. 3. Replace SmartTouch 720/725.
ALERT 17 BAD COIN BATTERY	2 chirps per second every 15 seconds	Small battery on SmartTouch 720/725 is loose or needs replacing.	1. Verify that the battery is properly seated. 2. Replace coin battery. Use a CR2032 coin battery. 3. Restore power. 4. Press RESET button.
ALERT 19 FALSE SLOWDOWN SIGNAL (OT7 ONLY)	2 chirps per second every 15 seconds	Appears only on SD50F operators. Slowdown sensor tripped and released (less than 1 second) in middle of run. Check for loose wires, limits and misaligned rails or limit ramps or wrong slowdown switch was tripped, so open slow down in close direction.	Check handing setting and hoses are connected correctly. Verify limit sensor is centered on limit flag in stop position.
ALERT 20 LI BLOCK OPEN		An interlock contact is closed, indicating that the gate latch (lock) is engaged, preventing the operator from starting.	1. Check the interlock terminal and wiring. 2. Verify proper User Relay option is used.
ALERT 21 VFD TRIPPED	2 chirps per second every 15 seconds	Alert indicates the VFD has experienced a hardware or firmware fault. Gate travel will not occur until the alert is cleared. Any open or close command resets the alert and starts the gate moving, unless the VFD is experiencing a fatal error. If you cannot clear the error alert by pressing the open or close button, contact HySecurity.	Cycle power or press reset on the control board.
ALERT 22 INTLOCK FAILURE	Interlock/Sequential Gate communication lost. Alert auto clears when communication between two operators is restored.	• Appears when communication connection is lost for more than 5 seconds between interlocked or sequenced gate operators. • Solo operator has Sequential gate set to ON.	1. Check cable connections and wiring. Make sure both operators are working properly with compatible firmware versions. 2. Verify Dual Gate and Sequential Gate are both set to (0) on a solo operator.

Troubleshooting/Alerts/Faults/Errors

Table 17. SmartTouch 720/725 Controller - Faults

Display Condition	Description Alert, Error or Fault	Possible Causes	Solutions
FAULT 1 MOTOR RUN TIME	The motor is on longer than the maximum run time selected.	• Drive Wheels not clamped properly or Limit Sensor Failed. • May not be enough hydraulic fluid.	**1.** Ensure wheels are clamped. **2.** Check limit sensors. Replace as required. **3.** Increase Max Run Timer.
FAULT 2 SENSOR or INPUT #	Monitored sensor is missing or not working.	This fault can only occur if monitored sensor check fails. Display will show SENSOR 1, SENSOR 2, INPUT 1, INPUT 2, or INPUT 3.	**1.** Check monitored sensor is connected to SENSOR 1 OR SENSOR 2 COM. **2.** Correct malfunctioning monitored sensor.
FAULT 5 LIMIT FAILED (SlideDriver II 50F only)	Stop limit flag not detected after slow down limit flag.	Stop limit flag is not detected within 5 seconds of slowdown limit flag.	**1.** Verify limits and placement of slow down limit flags. **2.** With drive wheels clamped, test Open (GATE OPENING appears on display). Test Close (GATE CLOSING appears on display). **3.** Manually move the gate, so the limit flags pass by the limit sensors and verify the display shows a slowdown limit trip and stop limit trip for each direction.
FAULT 6 HYINVERTER OVERLOAD	2 chirps per second once per minute	Excess output load on the AC power supply with HyInverter AC causing power loss.	**1.** Check gate hardware for binding (ice, poorly maintained gate, etc.). **2.** Check start/stop switch on 1 hp motor gate operators.
FAULT 9 PROCESSOR COMMUNICATION	2 chirps per second once per 15 seconds	Failed communication between the main HySecurity microprocessor and the processor that controls BlueBUS and OXI accessories.	**1.** Cycle power. **2.** Press the Reset button. **3.** Replace the SmartTouch 720/725 Controller.

Troubleshooting/Alerts/Faults/Errors

Table 17. SmartTouch 720/725 Controller - Errors

Display Condition	Description Alert, Error or Fault	Possible Causes	Solutions
ERROR 1 DIRECTION ERROR	SmartTouch 720/725 Controller detects operator ran in wrong direction.	• Limit sensors wired incorrectly or limit flags installed in wrong location. • Hydraulic Hoses may also be connected to wrong spots.	**1.** Check Limit Sensor wires and limit flag alignment. **2.** Check Hydraulic hose connections **3.** Press RESET to clear fault.
ERROR 2 IES DISCONNECT	Pressure Transducer disconnected or not functional.	• The pressure transducer could be bad. • Loose sensor wires. • Check that you have the most current sensor; visit **support.hysecurity.com** and view the technical bulletins. • Verify the version of the firmware by pressing the Reset button. The firmware version appears on the display. Make a note of it. The firmware version should be h6.## (or later).	Check to see that the pressure transducer is connected properly.
ERROR 3 Hy5B FAILED*	SmartTouch 720/725 Controller detects communication error with a Hy5B vehicle detector.	Caused by Hy5B removal or socket connection integrity.	**1.** Press RESET. **2.** Remove and re-install Hy5B. **3.** Replace Hy5B, if needed.
ERROR 4 PRIMARY-SECONDARY COM	SmartTouch 720/725 Controller detects a communication error between primary and secondary in a dual gate installation.	**Several possible causes:** • Primary/Secondary communication cable is installed incorrectly. • Primary/Secondary not configured properly through Installer Menu. • Operator is not properly earth grounded. • Primary/Secondary communication cable installed in same conduit as high-voltage AC power. • One operator is powered off. • Different firmware versions between operators. Check firmware version currently loaded in operator by pressing RESET. • Dual gate enabled on a solo operator.	**1.** Correct communication cable. **2.** Verify one operator is set as Primary and the other is set as Secondary. **3.** Install ground rod per NEC/NFPA standard. **4.** Install communication cables in a low voltage conduit. **5.** Ensure AC power is present at both operators and all power switches are On. **6.** Make sure both operators are running same firmware version.

* This message will also indicate which detector the alert applies to: Exit Loop (ELD), Inside Obstruction Loop (IOLD), Outside Obstruction Loop (OOLD), or Center Loop (CLD).

Troubleshooting/Alerts/Faults/Errors

Table 17. SmartTouch 720/725 Controller - Errors

Display Condition	Description Alert, Error or Fault	Possible Causes	Solutions
ERROR 5 No display	Display is blank, but the error appears in the log and means that SmartTouch 720/725 Controller detects a serious internal error.	Internal firmware/hardware error. Report any instance of this error to HySecurity Technical Support.	**1.** Set power switch to OFF and then to ON. **2.** Update to latest firmware version. **3.** Replace SmartTouch 720/725 Controller.
ERROR 6 DRIVE BOARD COMM	Indicates communication failure between VFD and SmartTouch 720/725 Controller.	Communication with the VFD has failed (OT7 only).	Ensure VFD wiring is attached and VFD/ SmartTouch 720/725 boards are programmed correctly.
ERROR 7 MENU CHECKSUM	Firmware issue exists that may require factory reset.	Corrupt firmware or data.	Call HySecurity Technical Support for assistance.
ERROR 8 DISCONNECT ERROR	Position sensor disconnected or not functional	• The pressure transducer could be bad. • Loose sensor wires. • Verify the version of the firmware by pressing the Reset button. The firmware version appears on the display. Make a note of it. The firmware version should be h6.06 (or later).	Check to see that the Positions Sensor is connected properly.
ERROR 10 SLOWDOWN SWITCH (SlideDriver II 50F only)	Slowdown limit failed	The operator tripped the fully Open or Close limit before the Slowdown limit tripped.	Check slow down limit flag alignment with limit sensor.
ERROR 13 HYINVERTER COMMUNICATION	3 chirps per second once per minute	Communication does not exist between the AC power supply with HyInverter AC and the SmartTouch 720/725 Controller in the gate operator.	**1.** Check communication wires are connected and working properly. **2.** Verify that your operator has the current firmware. **3.** If communication is not desired between HyInverter AC and SmartTouch 720/725 Controller, then set Power Type setting to 1 instead of 3.

Table 17. SmartTouch 720/725 Controller - Errors

Display Condition	Description Alert, Error or Fault	Possible Causes	Solutions
ERROR 15 I/O Expansion Module	2 chirps every 15 seconds	Communication is not present between the SmartTouch 720/725 Controller and the I/O Expansion Module. The I/O Expansion Module is standard in the SD15 and SD40, so it should always be present and communicating with the SmartTouch 720/725 Controller. For the SD50F, SD80V, and SD200V, check that the programmable inputs and user relays are not set for the I/O Expansion Module inputs and outputs if an I/O Expansion Module is not used.	**1.** Check wiring between SmartTouch 720/725 Controller and I/O Expansion Module. **2.** Verify that the firmware is up to date on both boards. **3.** Check that the user relays and programmable inputs are programmed correctly and that an I/O Expansion Module is present.

HydraSupply II Installer Checklist

This checklist is provided by HySecurity and is to be used after installing the HydraSupply II.

1. Read, understand, and follow the Safety Requirements section (**page 4** - **page 10**) of this document throughout the commissioning and installation process.
2. Before checking the items in this list, make sure power is turned OFF at the main power disconnect and the operator's control box power switch is also in the OFF position.
3. Lower the toggle handle to unclamp the drive wheels from the drive rail and check the following:

- ❑ Gate moves smoothly and freely by hand.
- ❑ WARNING placards mounted on both sides of the gate within sight of vehicle and pedestrian traffic per UL 325 requirements.
- ❑ Electric motor wired properly.
- ❑ Incoming power supply voltage matches the label on the motor and control box.
- ❑ Gate operator is level.
- ❑ Operator is labeled as appropriate for both the type and UL usage class of the gate.

Make sure Ø, hertz, and power match the operator and its labeling:

❑ 1 Ø ❑ 3 Ø ❑ 50 Hz ❑ 60 Hz

❑ DC-24V ❑ 115 VAC ❑ 208 VAC ❑ 230 VAC ❑ 480 VAC ❑ ____V

- ❑ Power cable run to the operator is of sufficient wire size to handle starting current.
- ❑ NEC/NFPA ground rod is installed.
- ❑ All wires and cables are clear of moving parts (limits, valves, power, etc.).
- ❑ Breather cap has been installed, replacing the Vent Plug in the pump.
- ❑ Oil level checked.
- ❑ All chassis and base riser bolts are tight.
- ❑ Gate wheels & rollers have covers.
- ❑ Pinch points protected.
- ❑ Permanently mounted controls intended for user activation must be located at least 6 ft (1.83 m) away from any moving part of the gate and where the user is prevented from reaching over, under, around or through the gate to operate the controls.
- ❑ Pedestrian gate exists.
- ❑ Physical gate stops are present.
- ❑ On gate, protective mesh complies with ASTM F2200 and UL 325 standards.
- ❑ Gate is not on a slope.

4. For the remaining checks, you want to cycle test the gate operator. To do so:

Temporarily, disconnect any peripheral devices except external entrapment sensors.
Re-engage the wheels by lifting the toggle handle and clamping the drive wheels onto the drive rail.
Turn the main power ON, and then turn ON the power switch located on the operator's control box.

HydraSupply II Installer Checklist

5. Prior to moving the gate, make sure the wheel clamp spring is compressed to 2 in (50 mm).

6. Cycle test the gate by pressing the CLOSE and OPEN buttons. Allow the gate to continue traveling throughout its entire range while you or your assistant checks the following:

Gate handing is set correctly. See product literature for information on gate handing.

7. External entrapment protection sensors, accessories, and options have been installed tested and comply with UL 325 Standard of Safety.

8. Check all those that apply:

❑ Free exit	❑ Inside Obstruction Loop	❑ Outside Obstruction Loop	
❑ Open edge	❑ Close edge	❑ Open photo eye	❑ Close photo eye
❑ Stop input (1)	❑ Local Open (2)	❑ Close timer set (3)	❑ Radio open (4)
❑ IES sensor	❑ Fire Dept. Open	❑ Emergency Close	❑ Solenoid lock

Other accessories and important settings: _____

9. Safety sensors and other I/O programmed properly.

Date: _____

Operator Serial Number: _____

Installer Name and contact (please print): _____

End user's name and contact (please print): _____

Site address: _____

_____

_____

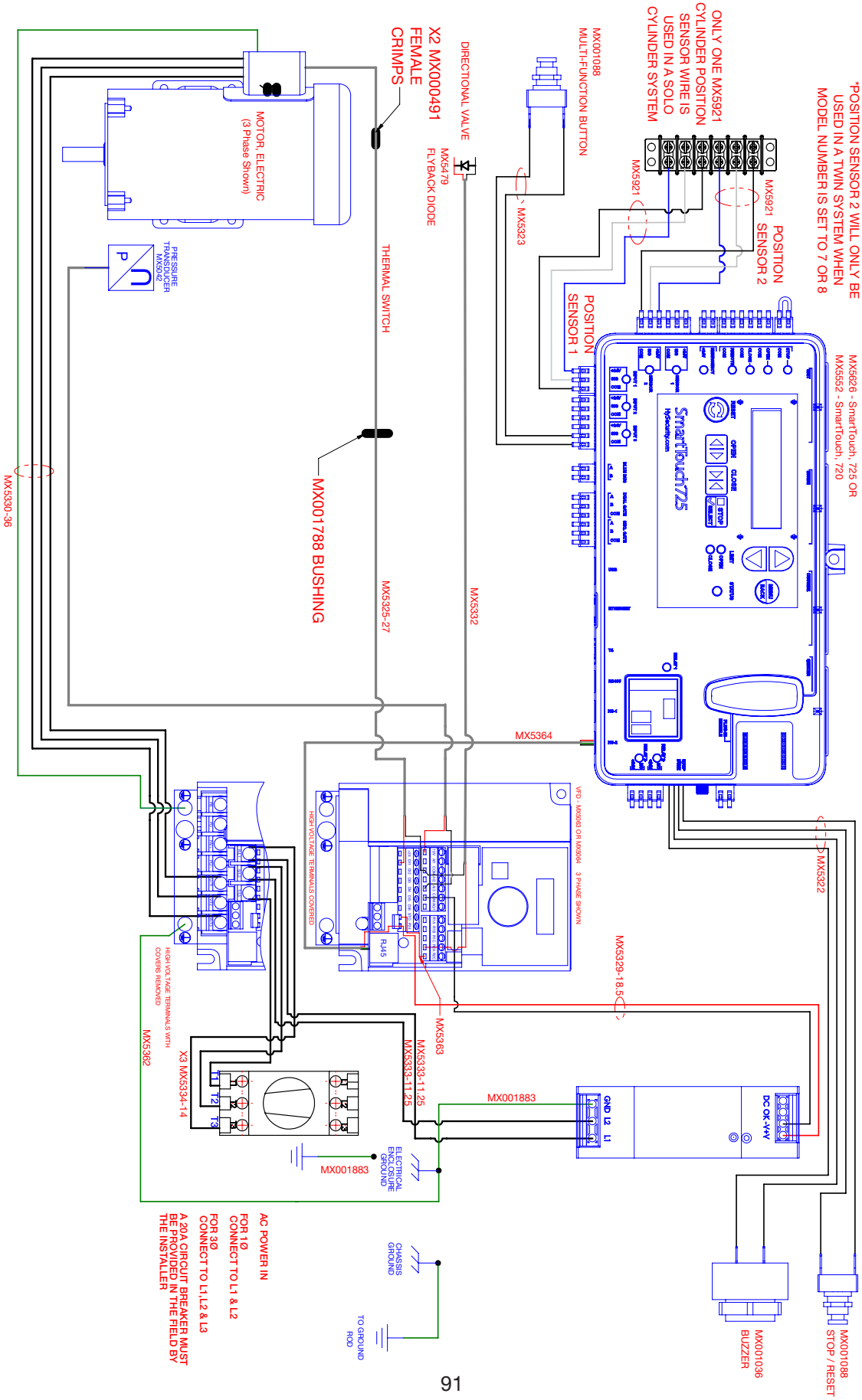
_____

Notes: _____

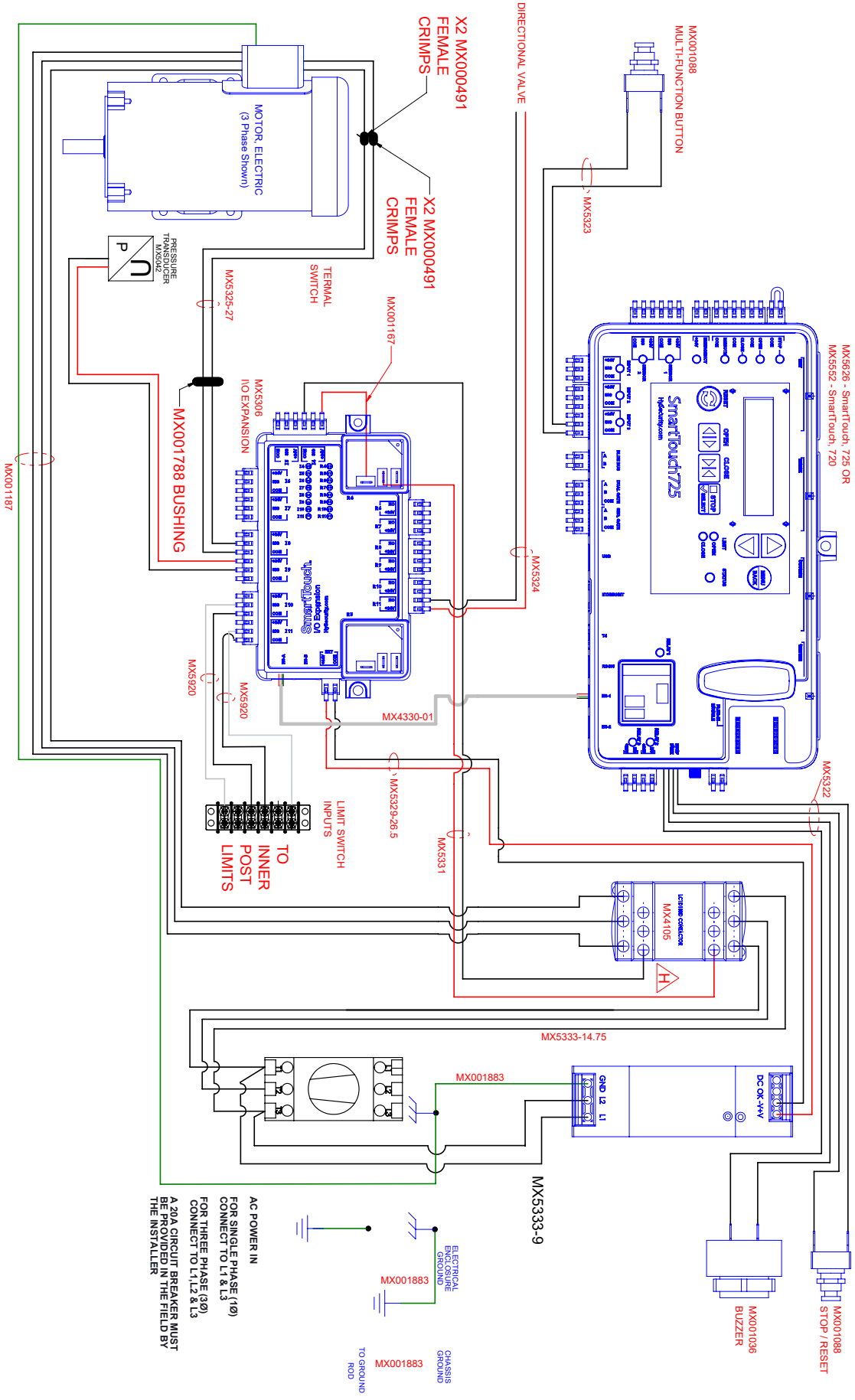
_____

Appendix A - HSII Wiring Diagrams

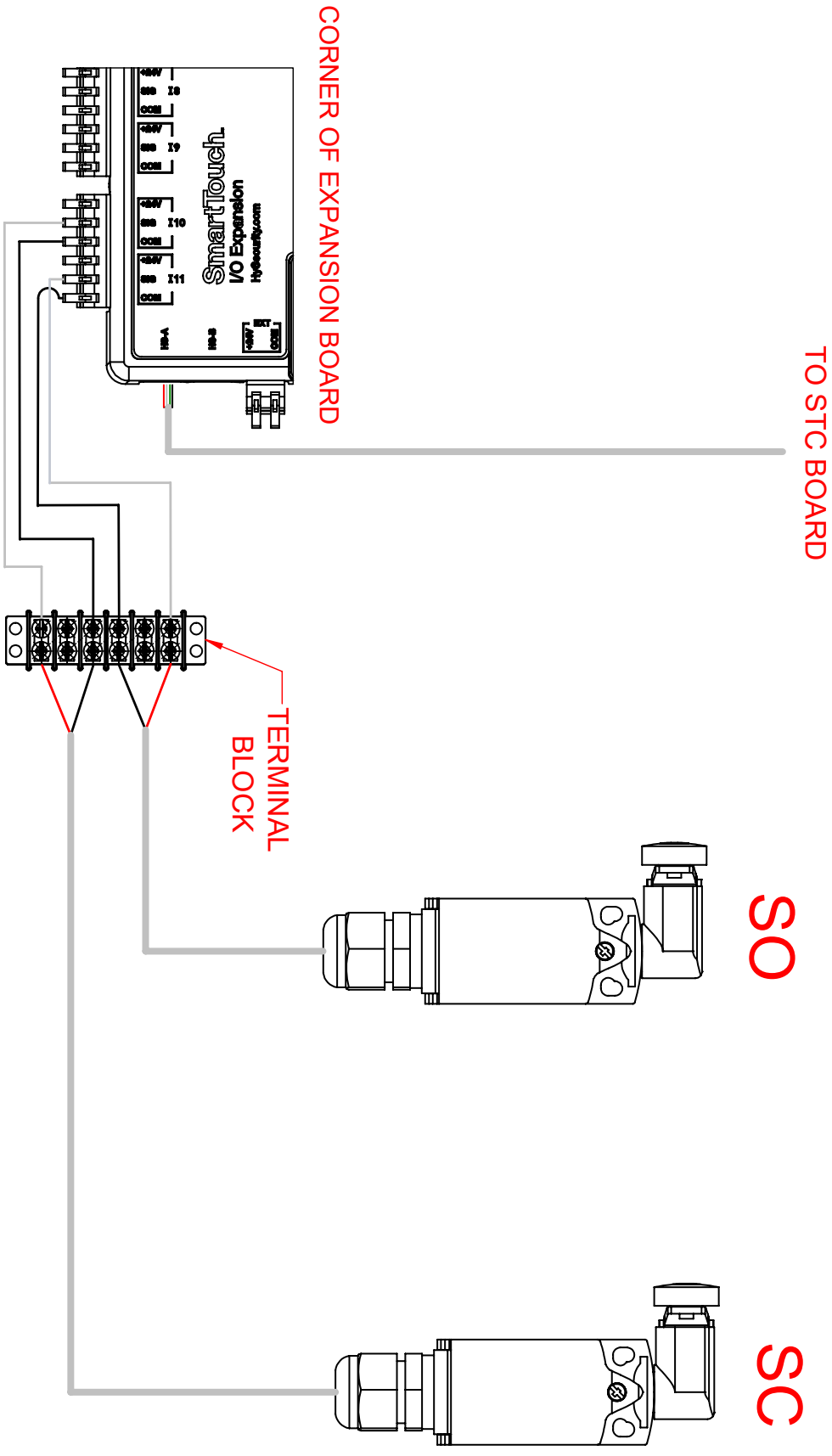
D1226 HydraSwing VFD



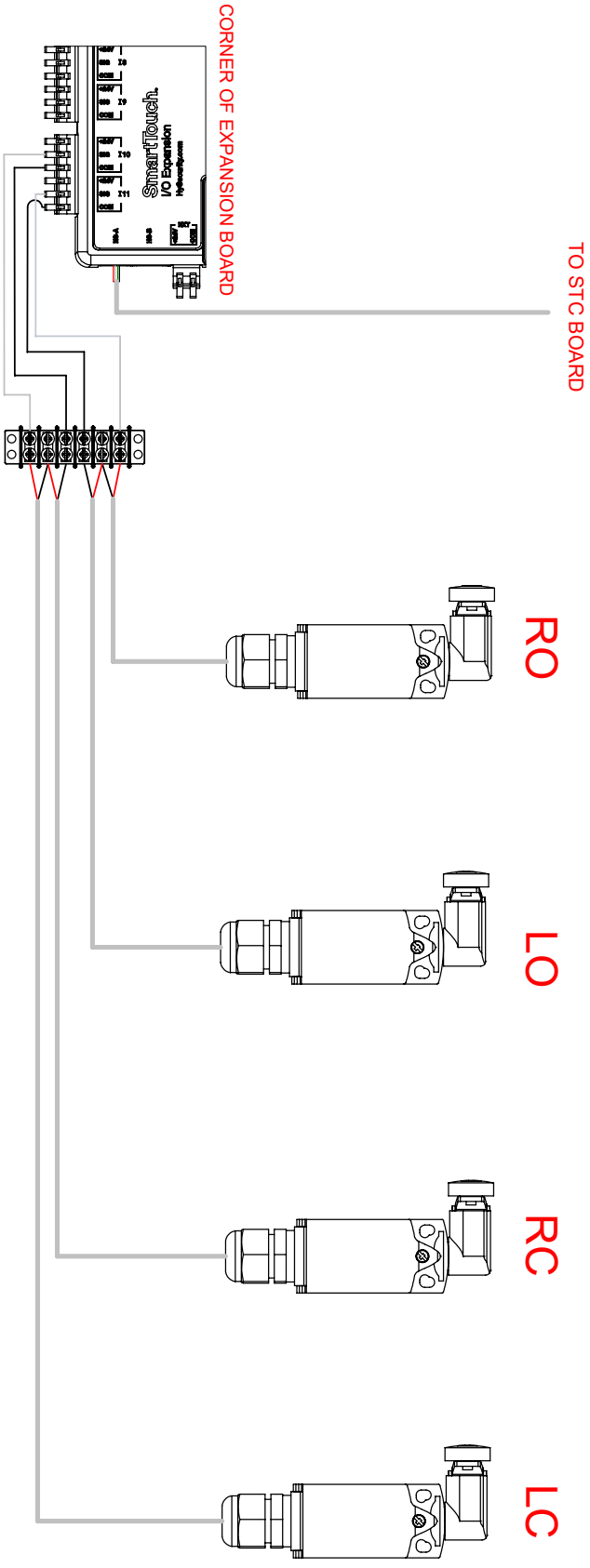
D1227 SwingRiser AC



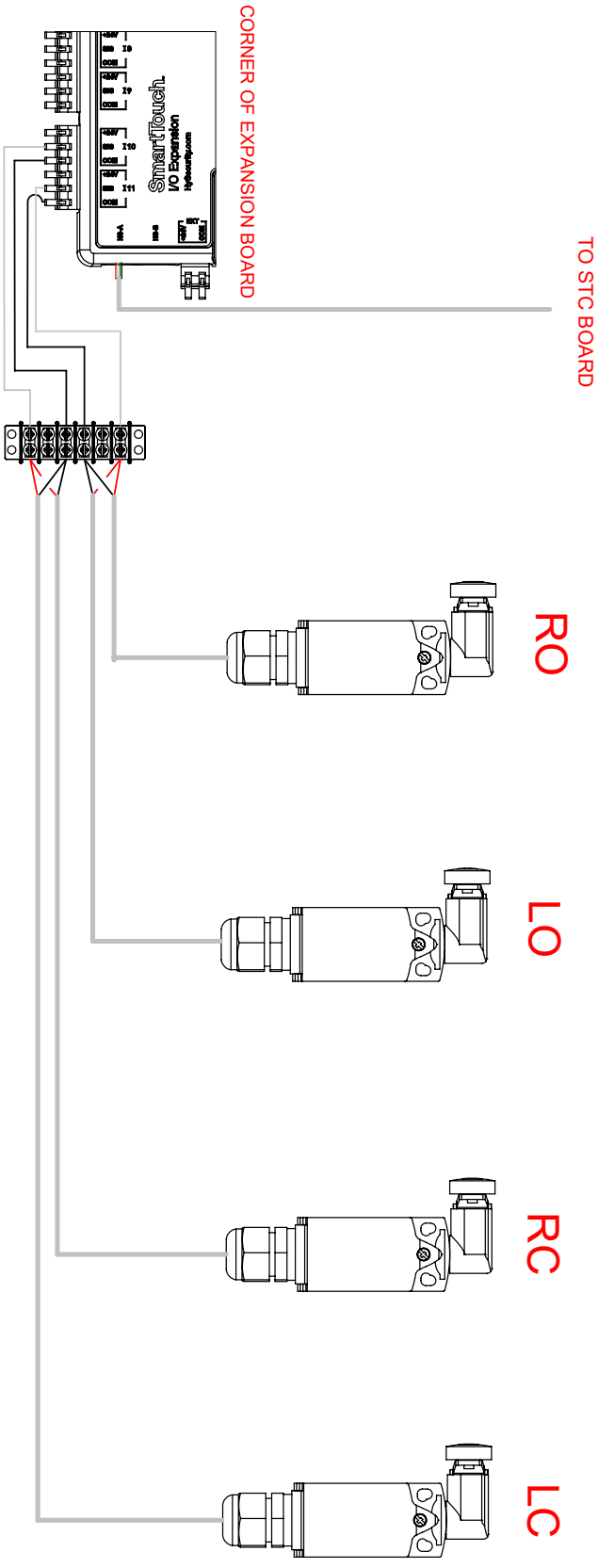
D1227 Installer Single-Post Limit Wiring

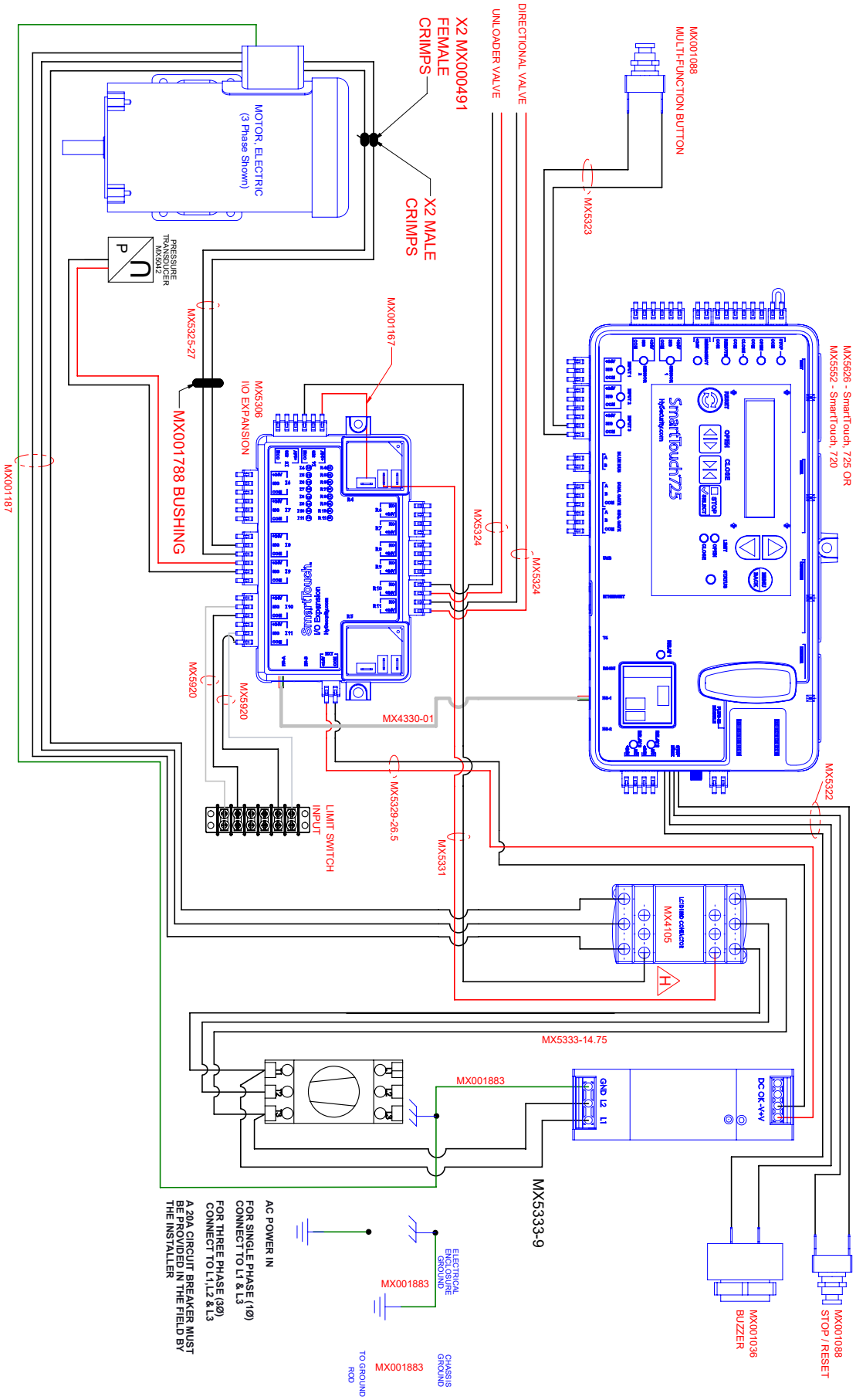


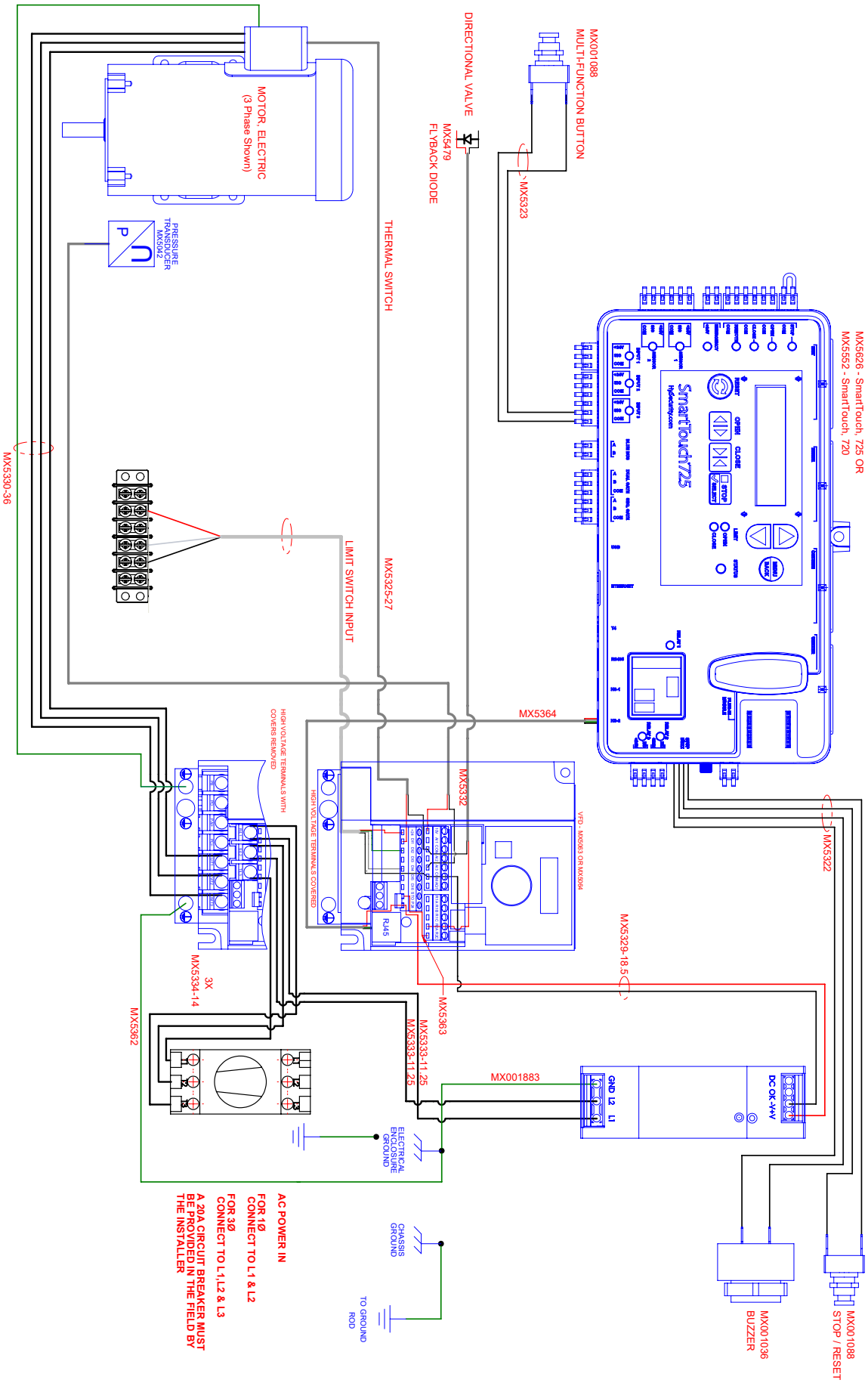
D1227 Installer Twin-Post Limit Wiring

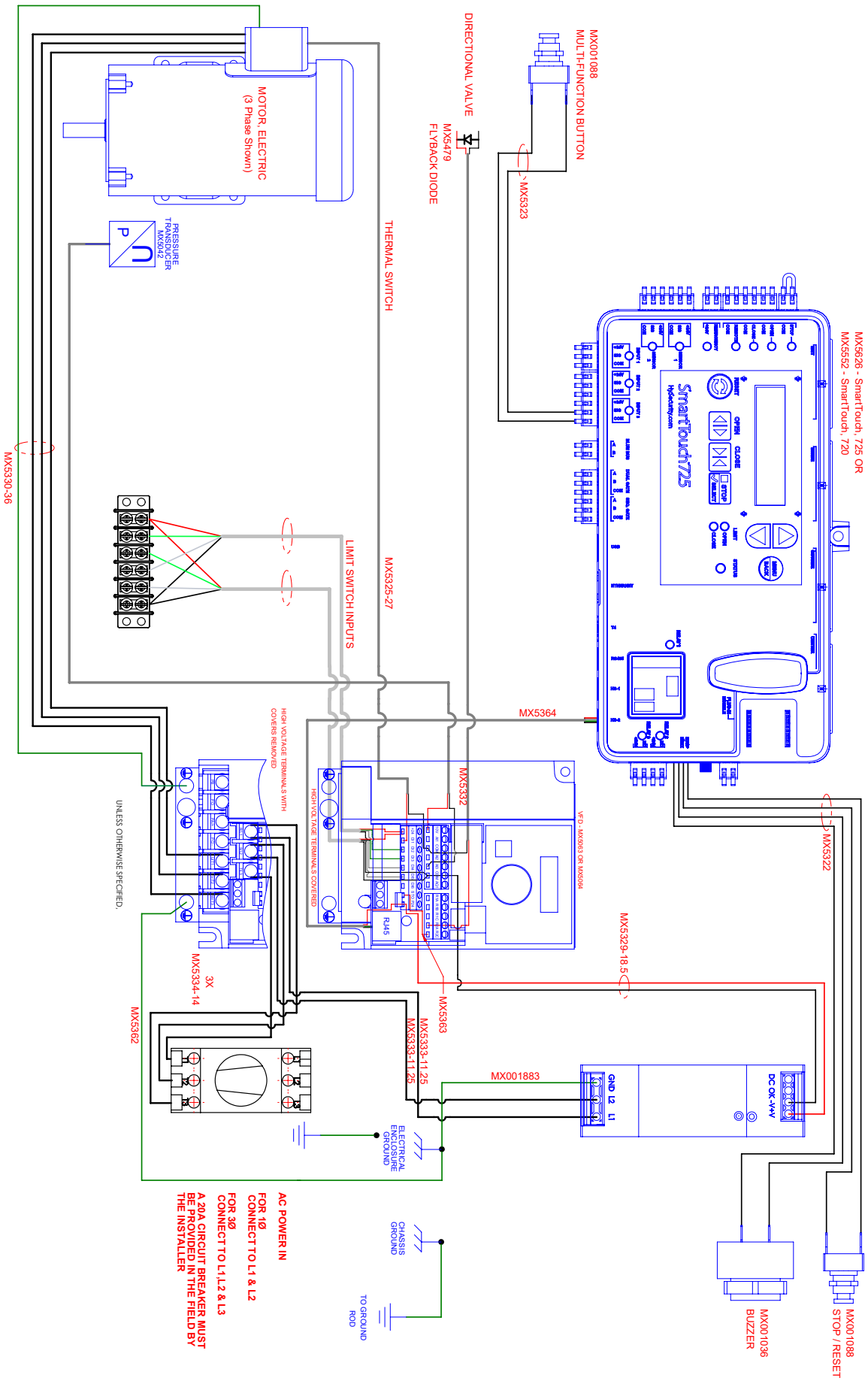


D1227 Installer Twin-Post Parallel Limit Wiring

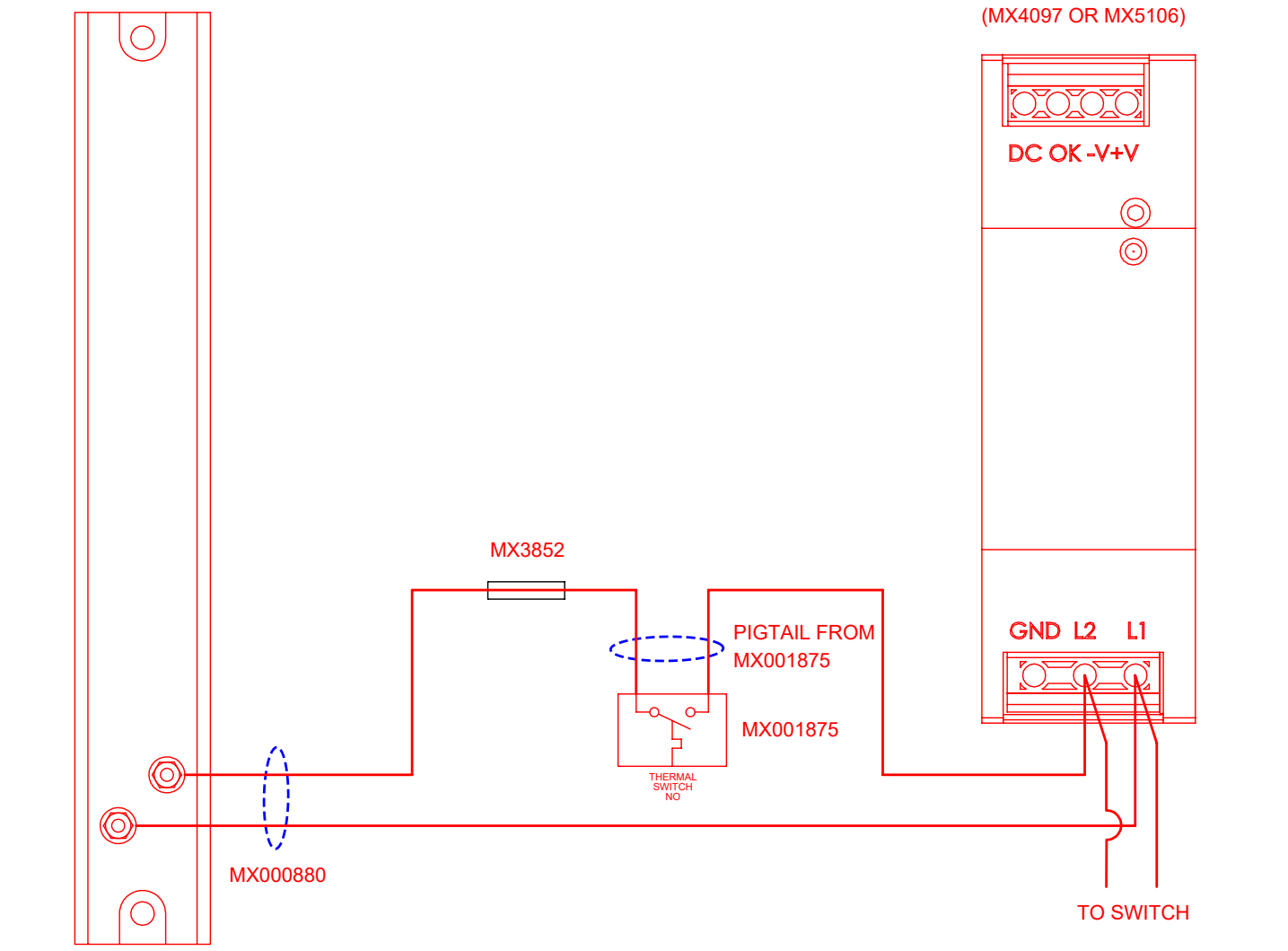


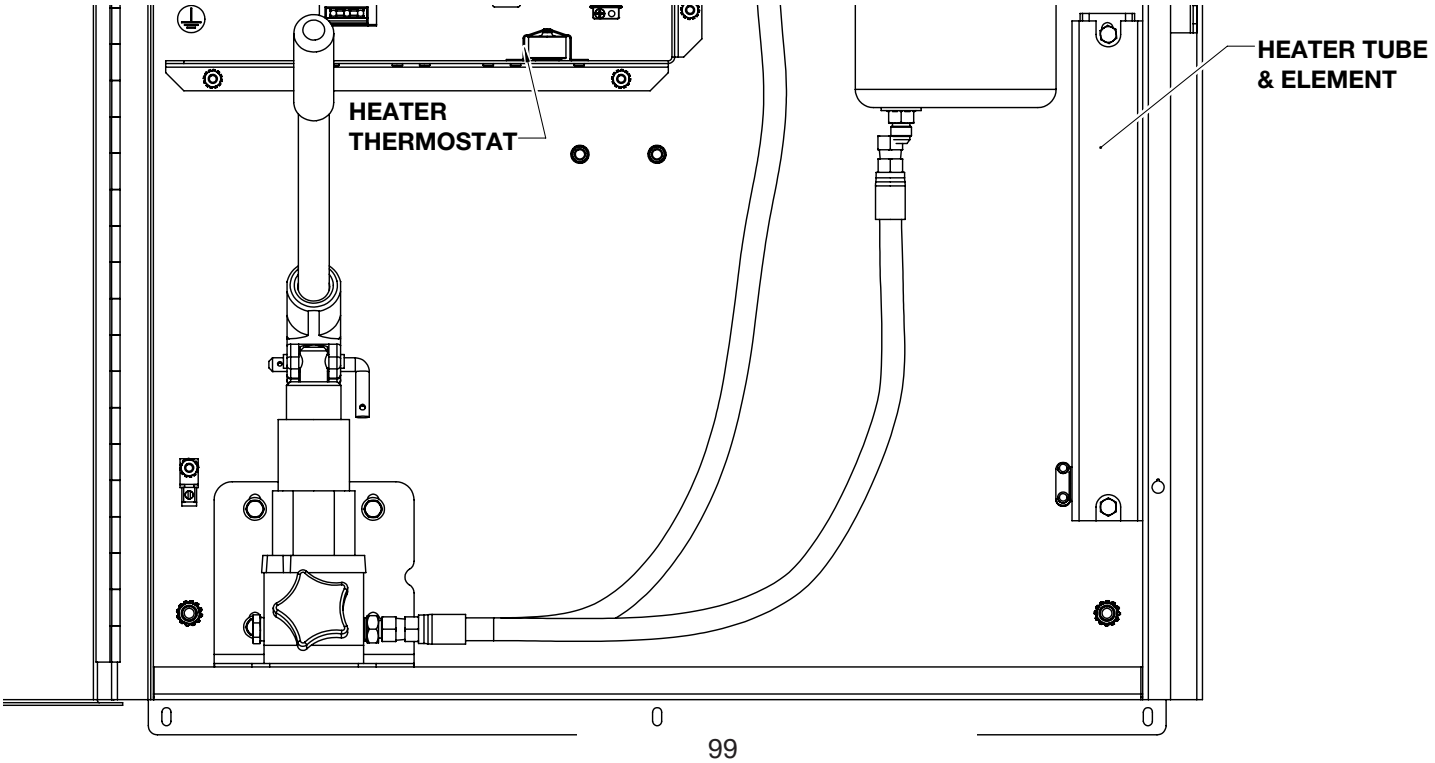

MOTOR, ELECTRIC
(3 Phase Shown)
PRESSURE TRANSDUCER MX504-2
X2 MX000491 FEMALE CRIMPS
X2 MALE CRIMPS
DIRECTIONAL VALVE
UNLOADER VALVE
MX001088 MULTI-FUNCTION BUTTON
MX5323
MX5626 - SmartTouch 725 OR MX5562 - SmartTouch 720
MX5325-27
MX001788 BUSHING
MX001187
MX001167
MX5306 I/O EXPANSION
MX5324
MX5920
MX4330-01
MX5329-26.5
LIMIT SWITCH INPUT
MX5331
MX5322
MX4105
MX5333-14.75
MX001883
MX5333-9
AC POWER IN
FOR SINGLE PHASE (1Ø) CONNECT TO L1 & L3
FOR THREE PHASE (3Ø) CONNECT TO L1,L2 &L3
A 20A CIRCUIT BREAKER MUST BE PROVIDED IN THE FIELD BY THE INSTALLER
ELECTRICAL ENCLOSURE GROUND
CHASSIS GROUND
TO GROUND ROD
MX001036 BUZZER
MX001088 STOP / RESET


MOTOR, ELECTRIC
(3 Phase Shown)
PRESSURE TRANSDUCER MX5042
DIRECTIONAL VALVE
MX5479
FLYBACK DIODE
MX001088
MULTI-FUNCTION BUTTON
MX5323
THERMAL SWITCH
MX5330-36
LIMIT SWITCH INPUT
MX5325-27
MX5626 - SmartTouch, 725 OR
MX5552 - SmartTouch, 720
SmartTouch725
MX5364
MX5332
MX5322
MX5329-18.5
MX5363
MX5333-11.25
MX5333-11.25
MX001883
3X
MX5334-14
MX5362
HIGH VOLTAGE TERMINALS WITH COVERS REMOVED
HIGH VOLTAGE TERMINALS COVERED
VFD - MX5383 OR MX5384
RJ45
GND L2 L1
DC OK +V+V
ELECTRICAL ENCLOSURE GROUND
CHASSIS GROUND
TO GROUND ROD
AC POWER IN
FOR 1Ø
CONNECT TO L1 & L2
FOR 3Ø
CONNECT TO L1,L2 & L3
A 20A CIRCUIT BREAKER MUST BE PROVIDED IN THE FIELD BY THE INSTALLER
MX001036
BUZZER
MX001088
STOP / RESET

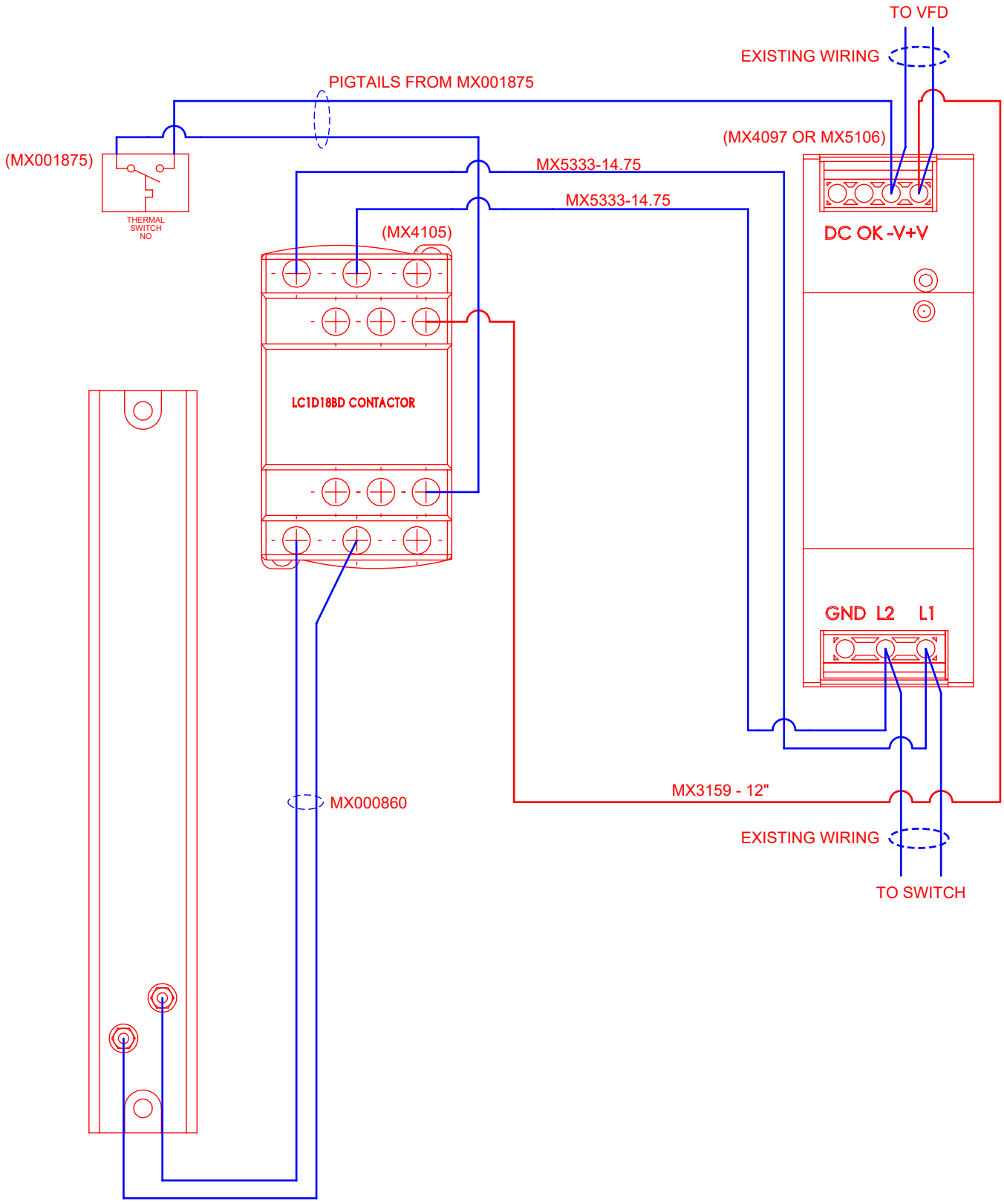

MOTOR, ELECTRIC
(3 Phase Shown)
PRESSURE TRANSDUCER MX5042
DIRECTIONAL VALVE
MX5479
FLYBACK DIODE
MX001088
MULTI-FUNCTION BUTTON
MX5323
THERMAL SWITCH
MX5325-27
LIMIT SWITCH INPUTS
MX5330-36
MX5626 - SmartTouch, 725 OR
MX5552 - SmartTouch, 720
SmartTouch725
MX5364
MX5322
MX5332
VFD - MX5983 OR MX5984
HIGH VOLTAGE TERMINALS WITH COVERS REMOVED
HIGH VOLTAGE TERMINALS COVERED
RJ45
MX5329-18.5
MX5363
MX5333-11.25
MX001883
GND L2 L1
DC OK -V+V
3X
MX5334-14
MX5362
UNLESS OTHERWISE SPECIFIED.
ELECTRICAL ENCLOSURE GROUND
CHASSIS GROUND
TO GROUND ROD
AC POWER IN
FOR 1Ø
CONNECT TO L1 & L2
FOR 3Ø
CONNECT TO L1,L2 & L3
A 20A CIRCUIT BREAKER MUST
BE PROVIDED IN THE FIELD BY
THE INSTALLER
MX001036
BUZZER
MX001088
STOP / RESET

Heater Wiring 115-230V





Heater Wiring 380-460V



Specifications: SlideDriver™ Models

Technical Specifications

powered by SmartTouch 725

Model	SlideDriver II SD15	SlideDriver II SD40	SlideDriver II SD50F	SlideDriver II SD80V	SlideDriver II SD200V
Duty Cycle	Continuous				
Horsepower	1 hp	1 hp; DC Option 2 hp	2 hp		5 hp; DC Option 4 hp
Drive	Hydraulic		Hydraulic with VFD motor control		
Drive Wheels	Two 6 inch (15 cm) AdvanceDrive wheels		Two 8 inch (20 cm) AdvanceDrive wheels	One 8 inch (20 cm) AdvanceDrive wheel, One 8 inch XtremeDrive wheel and 27 ft (8 m) of rack	Two 8 inch (20 cm) AdvanceDrive wheels, Two 8 inch XtremeDrive wheels and 52 ft (16 m) of rack
Rate of Travel	1 ft/s (30 cm/s)		Field adjustable, 2.2 ft/s (70 cm/s) or 3 ft/s (91 cm/s). Emergency Fast Operate 3 ft/s (91 cm/s)	Field adjustable, .75 ft/s (23 cm/s) or 1 ft/s (30 cm/s).	
Gate Length Max.	Limited only by weight				
Gate Weight Max.	Up to 1,500 lb (680 kg)	Up to 4,000 lb (1,814 kg)	Up to 5,000 lb (2,268 kg)	Up to 8,000 lb (3,629 kg)	Up to 20,000 lb (9,072 kg)
Pull Force	300 lb (136 kg)			600 lb (272 kg)	1,200 lb (544 kg)
UPS Battery Backup Cycles*	Optional 230V AC Power Supply w/HyInverter AC™	Select option SB-2-2J for DC configuration. Requires DC Power Supply DCPS-60, purchased separately.	Optional 230V AC Power Supply w/HyInverter AC™		Select option SB-2-2T for DC configuration. Requires DC Power Supply DCPS-150 ordered separately.**
Temperature Rating	-40° to 158° F (-40° to 70° C)				
Single Phase Voltages	115/208-230V 60 Hz, 110/220V 50 Hz***		208-230V 60Hz,220V 50Hz***		N/A
Three Phase Voltages	208-230/460V 60Hz,220/380/440V 50Hz***				
Included Accessories	One premium EMX IRB-MON photo eye, one 5-foot premium ASO edge sensor				N/A
Communication	BlueBUS, USB, Ethernet, RS-485, Bluetooth, OXI receiver				
User Controls	SmartTouch 725 Controller with 70+ configurable settings. 32 character OLED display and 7 tactile buttons, or Bluetooth smartphone interface, for programming. SmartTouch 720 Available without Bluetooth or Ethernet.				
Relays	8 Configurable relays: Two 250V 20A electromechanical relays and six 30VDC 2A solid state relays		Three configurable user relays: Two 30VDC 2A solid state, one 240VAC, 20A electromechanical. Optional I/O Expansion module for 8 additional relay outputs.		
Enclosure	N/A				
Finish	Zinc plated with powder coating				
ETL Listed (UL 325)	Usage Class I, II, III, IV		Usage Class III, IV		
Warranty	5 year w/product registration				

*The actual number of gate cycles available from battery power depends upon gate resistance to travel, cycle length, battery size, state of charge and health, ambient temperature, accessory power draw and frequency of gate cycles during power outage.

**SlideDriver II SD200 UPS has a 2,000 ft/hr (610 m/hr) expected duty cycle. Actual duty cycle depends on site specific conditions and gate configuration.

***Refer to Installed Options on pricing for all 50Hz voltages, which are special order.

MADE IN THE USA WITH GLOBAL MATERIALS

Specifications: SwingRiser™ Models

Model	SwingRiser 14	SwingRiser 14-Twin	SwingRiser 19	SwingRiser 19-Twin	SwingRiser 30	SwingRiser 30-Twin
Part #	SWR14	SWR14T	SWR19	SWR19T	SWR30	SWR30T
Duty Cycle	Continuous					
Horsepower	1 hp	2 hp	1 hp	2 hp	1 hp	2 hp
Drive	Hydraulic					
Gate Weight Max.	1,000 lb (453 kg)	1,000 lb (453 kg) / leaf	1,600 lb (726 kg)	1,600 lb (726 kg) / leaf	3,000 lb (1,361 kg)	3,000 lb (1,361 kg) / leaf
Gate Length Max.	Up to 9 ft (3 m)	Up to 9 ft (3 m) each leaf	Up to 16 ft (5 m)	Up to 16 ft (5 m) each leaf	Up to 16 ft (5 m)	Up to 16 ft (5 m) each leaf
Open/Close Time	14 seconds		19 seconds		30 seconds	
Temperature Rating	-40º to 158º F (-40º to 70º C)					
1 Phase Power	115/208-230V 60Hz 110/220V 50Hz **	208-230V 60Hz 220V 50Hz **	115/208-230V 60Hz 110/220V 50Hz **	208-230V 60Hz 220V 50Hz **	115/208-230V 60Hz 110/220V 50Hz **	208-230V 60Hz 220V 50Hz **
3 Phase Power	208-230/460V 60Hz, 220/380/440V 50Hz					
Communication	BlueBUS, USB, Ethernet, RS-485, Bluetooth, OXI receiver					
User Controls	SmartTouch 725 Controller with 70+ configurable settings. 32 character OLED display and 7 tactile buttons, or Bluetooth smartphone interface, for programming. SmartTouch 720 Available without Bluetooth or Ethernet.					
Relay	**8 Configurable relays:** Two 250V 20A electromechanical relays and six 30VDC 2A solid state relays					
Operator Finish	Zinc flame sprayed					
HydraSupply II Enclosure	HydraSupply: Type 3R, 30w x 42h x 12d inch (76w x 107h x 30.5d cm)					
ETL Listed (UL 325)	Usage Class I, II, III, IV					
Warranty	5 year with product registration					
UPS Battery Backup Power and Additional Models						
DC Power Supply with HyCharger DC †*	SwingRiser 14 UPS	SwingRiser 14-Twin UPS	SwingRiser 19 UPS	SwingRiser 19-Twin UPS	SwingRiser 30 UPS	SwingRiser 30-Twin UPS
AC Power Supply with HyInverter AC*	SwingRiser 14 with HyInverter AC	–	SwingRiser 19 with HyInverter AC	–	SwingRiser 30 with HyInverter AC	–

† 115V requires a 30A branch circuit. Choose voltage with care as chargers are not field convertible.

To enable fully automatic operation, all SWING gate operators require a minimum of ONE monitored external entrapment protection sensor to protect entrapment zones in either the open or close direction of travel. However, an additional monitored sensor is required if there is a risk of entrapment in both directions of gate travel. Visit hysecurity.com/gatesafety for more information on UL 325 standards and gate safety.

* The operator's normal duty cycle and the actual number of gate cycles available from battery depends upon gate resistance to travel, cycle length, battery size, state of charge and health, ambient temperature, accessory power draw and frequency of gate cycles during power outage.

**Refer to Installed Options on pricing for all 50Hz voltages, which are special order.

Specifications: HydraSwing™ Models

Model	HydraSwing 40 (HSW40)	HydraSwing 40 Twin (HSW40T)	HydraSwing 40F (HSW40F)	HydraSwing 40F Twin (HSW40FT)	HydraSwing 80F (HSW80F)	HydraSwing 150 (HSW150)
Single or Twin	Single leaf	Twin (2 leaves)	Single leaf	Twin (2 leaves)	Single leaf	
Duty Cycle	Continuous					
Drive	VFD controlled Hydraulics					
Gate Weight Max.	4,000 lb (1,814 kg)*	4,000 lb (1,814 kg) / leaf*	4,000 lb (1,814 kg)*	4,000 lb (1,814 kg) / leaf*	8,000 lb (3,629 kg)*	15,000 lb (6,804 kg)*
Gate Length Max.	up to 24 ft (7.3 m)*	up to 16 ft (5 m) wide each leaf*	up to 16 ft (5 m) wide*	up to 16 ft (5 m) wide each leaf*	up to 30 ft (9 m) wide*	up to 40 ft (12 m) wide*
Open/Close Time	15-20 seconds, field adjustable**		10-15 seconds, field adjustable**		15-25 seconds, field adjustable**	20-30 seconds, field adjustable**
UPS Battery Backup Cycles	Optional 230V AC Power Supply w/HyInverter AC™***					
Temperature Rating	-40º to 158º F (-40º to 70º C)					
Single Phase Voltages	208-230V 50/60Hz					
Three Phase Voltages	208-230V 50/60Hz or 380-460V 50/60Hz					
Communication	BlueBUS, USB, Ethernet, RS-485, Bluetooth, OXI receiver					
User Controls	SmartTouch 725 Controller with 70+ configurable settings. 32 character OLED display and 7 tactile buttons, or Bluetooth smartphone interface, for programming. SmartTouch 720 Available without Bluetooth or Ethernet.					
Relay	**Three configurable user relays:** Two 30VDC 2A solid state, one 240VAC, 20A electromechanical. Optional I/O Expansion module for 8 additional relay outputs.					
Operator Finish	Zinc plated steel chassis with stainless steel cover				3/4 inch zinc plated steel chassis with black powder coated steel cover	
HydraSupply II Enclosure	Type 3R, 30w x 42h x 12d inch (76w x 107h x 30.5d cm)					
ETL Listed (UL 325)	Usage Class I, II, III, IV				Usage Class III, IV	
Warranty	5 year with product registration					

* Gate length/weight specifications are dependent on height, percentage of open area on panel and anticipated wind speed.

** Actual open/close time dependent on gate weight/length, percentage of open area on panel and anticipated wind speed.

*** The operator's normal duty cycle and the actual number of gate cycles available from battery depends upon gate resistance to travel, cycle length, battery size, state of charge and health, ambient temperature, accessory power draw and frequency of gate cycles during power outage.

Warranty

1. Warranty.

Hy-Security Gate, Inc. ("HySecurity") warrants that at the time of sale each HySecurity-branded product that it sells will, in all material respects, conform to its then applicable specification and will be free from defects in material and manufacture.

The following additional durational warranties apply to HySecurity products, depending on whether (1) the product is purchased through an authorized HySecurity distributor and (2) whether a timely and complete product registration is submitted to HySecurity.

It is therefore important that you register your product with HySecurity, online at **www.hysecurity.com/warranty**, within the 60-day period described below.

1(a) HySecurity Products Purchased Through Authorized Distributors and Properly Registered

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 product registration is completed by the Dealer/Installer or End User within 60 days of the date of purchase, the following warranty terms will apply. HySecurity warrants that the product will remain serviceable for the following periods:

- **a)** Hydraulic industrial gate operator hydraulics, controls, and mechanical components: Five Years or 500,000 gate cycles (whichever occurs first) after the date of installation,
- **b)** Hydraulic wedge operator hydraulics and controls: Five Years or 500,000 cycles (whichever occurs first) after the date of installation. Wedge mechanical components: Two Years after the date of installation,
- **c)** Electromechanical pad-mounted Slide and Swing operators: Five Years or 500,000 cycles (whichever occurs first) after the date of installation, except single family residential usage, where the warranty term shall be Seven Years after the date the product was shipped from HySecurity,
- **d)** Electromechanical linear actuator Swing operators: Two Years after the date of installation,
- **e)** Electromechanical surface mount wedge operator electronics: Two Years or 500,000 gate cycles (whichever occurs first), after the date of installation,
- **f)** Electromechanical Barrier Arm Operators: Two years or 1,000,000 gate cycles (whichever occurs first) after the date of installation, provided that the preceding Five Year warranty period in (a), (b), and (c) will not extend beyond seven years from the date that the product was shipped from HySecurity, and the Two Year warranty period in (b), (d), (e), and (f) will not extend beyond four years from the date that the product was shipped from HySecurity.

The preceding warranty durations do not apply to the products or components described below (g-j), which have a shorter warranty period:

- **g)** Hydraulic gate operator drive wheels, including XtremeDrive™ wheels and rack: Two Years from date of installation.
- **h)** AC and DC power supplies, chargers, and inverters and HyNet™ Gateway: Two Years from date of installation, except batteries.
- **i)** Batteries: One Year from date of shipment from HySecurity.
- **j)** Components subject to normal wear including, but not limited to, chains, belts, idler wheels, sprockets and fuses: One Year from date of installation.

1(b) HySecurity Products Not Purchased Through an Authorized Distributor or Not Properly Registered within 60 Days

For any product that is not purchased from an authorized HySecurity distributor or for which the product registration was not completed by the Dealer/Installer/End User within sixty (60) days of the date of purchase, the following warranty will apply: 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)** AC and DC power supplies, chargers, or inverters: One Year.
- **c)** HyNet™ Gateway: One Year.
- **d)** 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 part was shipped from HySecurity or the remaining period of the Gate Operator warranty, whichever is longer.

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, maintained, or used improperly or contrary to instructions; (2) subjected to negligence, accident, vandalism, or damaged by severe weather, wind, flood, fire, terrorism 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). It is the responsibility of the Distributor, Dealer/Installer, or End User to ensure that the software version in the product is maintained to the latest revision level.

The preceding warranties do not extend to accessories 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.

These warranties extend to HySecurity's Distributors, to the Dealer/Installer, and to the first End User of the product following installation. They do not extend to subsequent purchasers.

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, ANY LIABILITY FOR INFRINGEMENT, AND ANY 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. HySecurity reserves the right to supply used or reconditioned material for all warranty claims. HySecurity will not be considered to be in breach of or default under this Warranty because of any failure to perform due to conditions beyond its reasonable control, including any force majeure. This warranty does not cover any incidental expenses, including fines or penalties, temporary security, 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 procedures described on the HySecurity form, "RMA Procedures".

THE REMEDY SELECTED BY HYSECURITY IN ACCORDANCE WITH THIS PARAGRAPH SHALL BE THE EXCLUSIVE AND SOLE REMEDY OF BUYER FOR ANY BREACH OF WARRANTY.

4. Exclusion of Consequential and Incidental Damages.

HYSECURITY SHALL NOT BE LIABLE FOR ANY INCIDENTAL, SPECIAL, 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. This exclusion applies regardless of whether such damages are sought for breach of warranty, breach of contract, negligence, or strict liability. 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.

6. Proprietary Rights.

HySecurity retains and reserves all right, title, and interest in the intellectual property rights of its products, including any accompanying proprietary software. No ownership of any intellectual property rights in the products or accompanying software is transferred to Distributor, Dealer/Installer, or End User.

7. 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.

Appendix: French Translations

English	Français
IMPORTANT SAFETY INSTRUCTIONS WARNING – To reduce the risk of injury or death:	INSTRUCTIONS DE SÉCURITÉ IMPORTANTES AVERTISSEMENT – Pour réduire les risques de blessures et de mort :
1. READ AND FOLLOW ALL INSTRUCTIONS.	1. LISEZ CETTE NOTICE ET CONFORMEZ-VOUS AUX MISES EN GARDE
2. Never let children operate or play with gate controls. Keep the remote control away from children.	2. Ne laissez jamais les enfants manoeuvrer les commandes de la barrière ou jouer avec celles-ci. Laissez la télécommande hors de la portée des enfants.
3. Always keep people and objects away from the gate. NO ONE SHOULD CROSS THE PATH OF THE MOVING GATE.	3. Tenez toujours à l'écart de la barrière toute personne ou tout objet avoisinant. IL NE FAUT JAMAIS PASSER DANS LA TRAJECTOIRE D'UNE BARRIÈRE EN MOUVEMENT.
4. Test the gate operator monthly. The gate MUST reverse on contact with a rigid object or stop when an object activates the non-contact sensors. After adjusting the force or the limit of travel, retest the gate operator. Failure to adjust and retest the gate operator properly can increase the risk of injury or death.	4. Vérifiez le fonctionnement de l'ouvre-barrière une fois par mois. Le sens de la course DOIT s'inverser lorsque la barrière entre en contact avec un objet dur ou la barrière DOIT s'arrêter lorsqu'un objet active les capteurs sans contact. Vérifiez à nouveau l'ouvre-barrière après tout réglage de la force de déclenchement ou du seuil de fin de course. Un réglage incorrect de l'ouvre-barrière ou l'omission de vérifier à nouveau le fonctionnement de l'ouvre-barrière peut causer des blessures, voire la mort.
5. Use the emergency release only when the gate is not moving.	5. Ne déclenchez le dispositif de désaccouplement d'urgence que lorsque la barrière ne bouge pas.
6. KEEP GATES PROPERLY MAINTAINED. Read the user's manual. Have a qualified service person make repairs to gate hardware.	6. ASSUREZ-VOUS QUE LA BARRIÈRE EST CORRECTEMENT ENTRETENUE. Lisez le manuel de l'utilisateur. Confiez la réparation du matériel de la barrière à un technicien qualifié.
7. The entrance is for vehicles only. Pedestrians must use separate entrance.	7. La voie d'accès est réservée aux véhicules seulement. Les piétons doivent utiliser une voie d'accès différente.
8. SAVE THESE INSTRUCTIONS.	8. CONSERVEZ CES INSTRUCTIONS.
2.3 Install the gate operator only when:	2.3 N'installez l'ouvre-barrière que si :
a. The operator is appropriate for the construction of the gate and the usage Class of the gate,	a. l'ouvre-barrière est approprié pour la structure et la classe d'utilisation de la barrière;

Appendix: French Translations

English	Français
b. All openings of a horizontal slide gate are guarded or screened from the bottom of the gate to a minimum of 1.83 m (6 ft) above the ground to prevent a 57.2 mm (2-1/4 inch) diameter sphere from passing through the openings anywhere in the gate, and in that portion of the adjacent fence that the gate covers in the open position,	toutes les ouvertures de la barrière coulissante sont protégées ou grillagées du bas de la porte jusqu'à un minimum de 1,83 m (6 pi) du sol si bien qu'une sphère de 57,2 mm (2 1/4 po) de diamètre ne peut passer par une ouverture au niveau de la barrière et de la portion de la clôture adjacente que la barrière couvre en position ouverte;
c. All exposed pinch points are eliminated or guarded, and	c. tous les points de pincement sont éliminés ou protégés;
d. Guarding is supplied for exposed rollers.	d. des protections sont fournies pour les galets exposés.
2.4 The operator is intended for installation only on gates used for vehicles. Pedestrians must be supplied with a separate access opening. The pedestrian access opening shall be designed to promote pedestrian usage. Locate the gate such that persons will not come in contact with the vehicular gate during the entire path of travel of the vehicular gate.	2.4 L'ouvre-barrière est destiné à n'être installé que sur des barrières utilisées pour les véhicules. Il faut fournir une autre voie d'accès aux piétons. La voie d'accès pour les piétons doit être conçue pour favoriser le passage des piétons. Placez la barrière de sorte que personne ne puisse entrer en contact avec la barrière pour les véhicules sur l'ensemble de sa trajectoire
2.5 The gate must be installed in a location so that enough clearance is supplied between the gate and adjacent structures when opening and closing to reduce the risk of entrapment. Swinging gates shall not open into public access areas.	c) Pour réduire les risques de coincement lors de l'ouverture et de la fermeture, la barrière doit être installée dans un endroit où la barrière et les structures avoisinantes sont suffisamment éloignées l'une de l'autre. Les barrières battantes ne doivent pas ouvrir dans une zone d'accès public.
2.6 The gate must be properly installed and work freely in both directions prior to the installation of the gate operator. Do not over-tighten the operator clutch or pressure relief valve to compensate for a damaged gate.	2.6 La barrière doit être bien installée et fonctionner librement dans les deux directions avant d'entreprendre l'installation de l'ouvre-barrière. Ne serrez pas trop l'embrayage ou la soupape de surpression de l'ouvre-barrière pour compenser une barrière endommagée.
2.7 Controls intended for user activation must be located at least 1.83 m (6 ft) away from any moving part of the gate and where the user is prevented from reaching over, under, around or through the gate to operate the controls. Exception: Emergency access controls only accessible by authorized personnel (e.g. fire, police, EMS) may be placed at any location in the line-of-sight of the gate.	2.7 Les commandes destinées à l'activation par l'utilisateur doivent être situées à au moins 1,83 m (6 pi) des pièces mobiles de la barrière et à un endroit où l'utilisateur ne peut pas atteindre les commandes par le dessus, par le dessous, par les côtés et au travers de la barrière. Exception : Les commandes d'accès d'urgence accessibles au personnel autorisé seulement (p. ex. pompier, policier, SMU) peuvent être placées à tout endroit dans le champ de visibilité de la barrière.

Appendix: French Translations

English	Français
2.8 The Stop and/or Reset button must be located in the line of-sight of the gate. Activation of the reset control shall not cause the operator to start.	2.8 Le bouton d'arrêt, le bouton de réenclenchement ou ces deux boutons doivent être situés dans le champ de visibilité de la barrière. L'activation des commandes de réenclenchement ne doit pas mettre en marche l'ouvrebarrière.
2.9 A minimum of two (2) WARNING SIGNS shall be installed, in the area of the gate. Each placard is to be visible by persons located on the side of the gate on which the placard is installed.	2.9 Au moins deux panneaux de mise en garde doivent être installés dans la zone de la barrière. Chaque étiquette doit être visible des personnes situées de chaque côté de la barrière sur laquelle l'étiquette est installée.
2.10 For gate operators utilizing a non-contact sensor	2.10 Pour les ouvre-barrières qui fonctionnent avec des capteurs
a. See instructions on the placement of non-contact sensors for each Type of application,	a. Voir les instructions sur le positionnement des capteurs sans contact pour chaque type d'utilisation.
b. Care shall be exercised to reduce the risk of nuisance tripping, such as when a vehicle, trips the sensor while the gate is still moving, and	b. Des précautions doivent être prises pour réduire les risques de déclenchement inutile, comme lorsqu'un véhicule déclenche le capteur alors que la barrière est encore en mouvement.
c. One or more non-contact sensors shall be located where the risk of entrapment or obstruction exists, such as the perimeter reachable by a moving gate or barrier.	c. Un capteur sans contact ou plus doit être situé où il existe un risque de coincement ou d'obstruction, comme dans l'espace que peut occuper la barrière lorsqu'elle est en mouvement.
2.11 For a gate operator utilizing a contact sensor	2.11 Pour les ouvre-barrières qui fonctionnent avec des capteurs
a. One or more contact sensors shall be located where the risk of entrapment or obstruction exists, such as at the leading edge, trailing edge, and postmounted both inside and outside of a vehicular horizontal slide gate.	a. Au moins un capteur de contact doit être situé où il existe un risque de coincement ou d'obstruction, comme sur le bord d'ouverture, sur le bord de fermeture et sur les poteaux montés sur l'intérieur ou l'extérieur d'une barrière coulissante pour véhicules.
b. A hardwired contact sensor shall be located and its wiring arranged so that the communication between the sensor and the gate operator is not subjected to mechanical damage.	b. Un capteur de contact doit être installé et câblé de sorte à éviter que la communication entre le capteur et l'ouvrebarrière soit gênée par des dommages mécaniques.

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c. A wireless device such as one that transmits radio frequency (RF) signals to the gate operator for entrapment protection functions shall be located where the transmission of the signals are not obstructed or impeded by building structures, natural landscaping or similar obstruction. A wireless device shall function under the intended end-use conditions.	c. Un dispositif sans fil, comme un appareil qui transmet des signaux de radiofréquence (RF) à l'ouvre-barrière pour prévenir le coincement, doit être situé à un endroit où la transmission des signaux ne sera pas obstruée ou gênée par des structures, des arbres ou d'autres obstacles similaires. Un dispositif sans fil doit fonctionner selon les conditions d'utilisation finale prévues.
d. One or more contact sensors shall be located on the inside and outside leading edge of a swing gate. Additionally, if the bottom edge of a swing gate is greater than 152 mm (6 inches) but less than 406 mm (16 inches) above the ground at any point in its arc of travel, one or more contact sensors shall be located on the bottom edge.	d. Au moins un capteur de contact doit être situé sur les bords d'ouverture intérieur et extérieur d'une barrière battante. De plus, si le dessous d'une barrière battante est situé à plus de 152 mm (6 po) mais à moins de 406 mm (16 po) du sol à l'un des points de sa trajectoire, au moins un capteur de contact doit être situé sur le bord inférieur.

Technical Support

Contact Information:

Visit **support.hysecurity.com** for Installation manuals, replacement part instructions, part diagrams and more.

Qualified Nice | HySecurity distributors are experienced and trained to assist in resolving installation problems. For the name of a qualified distributor near you, call HySecurity at 800-321-9947. *Before contacting your distributor or HySecurity Technical Support, obtain the serial number of your operator.

Part	Version
System firmware	h6.08
SmartTouch 720/725 Controller	Rev-C

NOTE: If the versions above do not match your operator, visit the website in Contact Information below for a manual that matches your operator.

Scan the QR code above to go to the warranty registration page.

Notes

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