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MX000585, MX000585R

Smart Touch Controller (STC) Installation Instructions

The following instructions are intended to assist the user in replacing the Smart Touch Controller (STC) in HySecurity hydraulic gate operators. Please read all assembly instructions before installing the kit.

REQUIRED TOOLS

- Phillips head screwdriver
- Needle nose pliers

Always ensure operator firmware is updated to latest available version. The latest available version is at **www.hysecurity.com/contact-us/technical-support/operator-software/** or by naviagting the HySecurity website by clicking:

TechSupport Resources → Operator Software → Current Operator Software Versions

UL 325 - 2018 requires that gate operators monitor external entrapment protection sensors. Affects all HySecurity gate operators manufactured beginning in 2016.

⚠ CAUTION

Remember the operator may have unique user & installer menu settings on the existing board. Prior to replacing the STC board, compare the programmed settings that appear in the existing board's display to the default settings shown in the "Smart Touch Controller Worksheet" on page 2 and note any changes. If you have a bi-parting gate system, be sure the software version in both operators is identical.

TECHNICAL SUPPORT

For technical support, call your installer or authorized HySecurity distributor. Obtain the serial number of your operator before calling. For the name of a distributor near you, contact HySecurity at 800-321-9947.

For more information regarding how HySecurity is handling monitoring of external entrapment protection sensors, go online to:

www.hysecurity.com/gatesafety

COPY USER & INSTALLER MENU SETTINGS

Examples of the settings that need to be reprogrammed when you replace an SDC board include: Build Year, Operator Type, Usage Class, Gate Handing and Learn Limits. Other settings may include Gate Weight, Close Timer, and accessory configurations. The operator can be reprogrammed on site by entering the User or Installer Menu via the Menu buttons or using S.T.A.R.T. software and a laptop PC to save/load existing settings. If you need more information, see page 8.

Create a backup copy of the gate operator configurations, using one of two methods:

- Use a PC laptop and S.T.A.R.T. with a USB cable (MX000667).
- Use the "Smart Touch Controller Worksheet" on page 2. Go through each menu item and write the number that appears in the display into the chart's column titled, "Display Setting."

TWO METHODS TO RECORD USER & INSTALLER MENU SETTINGS

Figure 1. S.T.A.R.T. Display

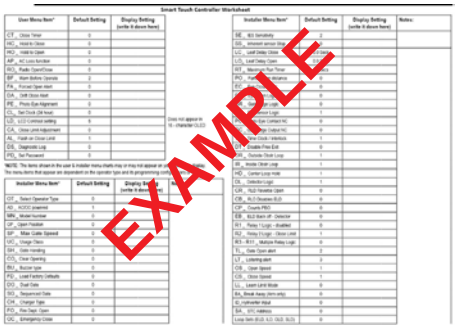

Figure 2. STC Programmable Menu Items Settings

SMART TOUCH CONTROLLER WORKSHEET

Table 1. User Menu		
User Menu Item*	**Default Setting**	**Display Setting**
CT _ Close Timer	0	
HC _ Hold to Close	0	
HO _ Hold to Open	0	
AP _ AC Loss function	0	
RO_ Radio Open/Close	0	
BF _ Warn Before Operate	2	
FA _ Forced Open Alert	0	
DA _ Drift Close Alert	0	
PE _ Photo Eye Alignment	0	
CL_ Set Clock (24 hour)	0	
LD_ LCD Contrast setting†	5	
US_ Clear count	0	
CA_ Close Limit Adjustment	0	
AL_ Flash on Close Limit	1	
DS_ Diagnostic Log	0	
PD_ Set password	0	

† Does not appear in 32 - character OLED

NOTE: Available menu items are dependent on operator type and programming configurations or options.

Table 2. Installer Menu		
Installer Menu Item*	**Default Setting**	**Display Setting**
BY _ Build Year[1]	0	
OT _ Select Operator Type	0	
AD _ AC/DC powered	1	
MN _ Model Number	0	
S1_ Sensor 1 Type[1]	0	
S2_ Sensor 2 Type[1]	0	
S3_ Sensor 3 Type[1]	0	
OP _ Open Position	0	
SP _ Max Gate Speed	0	
UC _ Usage Class	0	
SH _ Gate Handing	0	
CO_ Clear Opening	0	
BU _ Buzzer type	0	
FD _ Load Factory Defaults	5	

[1]See "Setting the Operator Type" on page 4.

[2]Setting dependent on BY. S1, S2, S3 appear if BY is set to 2 or higher.

NOTE: Available menu items are dependent on operator type and programming configurations or options.

Table 2. Installer Menu		
Installer Menu Item*	**Default Setting**	**Display Setting**
DG _ Dual Gate	0	
SG _ Sequenced Gate	0	
CH _ Charger Type	0	
OC_Emergency Close	0	
FO _ Fire Dept. Open	0	
SE _ IES Sensitivity	2	
SS _ Inherent sensor Stop	0	
LC _ Leaf Delay Close	0.0 Secs	
LO_ Leaf Delay Open	0.0 Secs	
RT _ Maximum Run Time	30 Secs	
PO _ Partial Open distance	0	
EC _ Eye Close Logic	0	
EO _ Eye Open Logic	0	
GR _ Gate Edge Logic	0	
SR _ IES Sensor Logic	1	
PC _ Photo Eye Contact NC[2]	0	
GC _ Gate Edge Output NC[2]	0	
DT _ Disable Free Exit	0	
OR _ Outside Obstr Loop	1	
IR _ Inside Obstr Loop	1	
HD _ Center Loop Hold	1	
DL _ Detector Logic	1	
CR _ RLD Reverse Open	0	
CB _ RLD Disables ELD	0	
CP _ Counts PBO	0	
EB _ ELD Back off - Detector	0	
R1 _ Relay 1 Logic - disabled	0	
R2 _ Relay 2 Logic - Close Limit	1	
R3 -R11 Multiple Relay Logic	0	
TL _ Gate Open alert	2	
LT _ Loitering alert	3	
OS_ Open Speed	1	
CS_ Close Speed	1	
LL _ Learn Limit Mode	0	
BA_ Break Away (Arm only)	0	
ID_HyInverter Input	0	
SA _ STC Address	0	
NE_ Network Address	0	
Loop Sets (ELD, ILD, OLD, SLD)	0	

[1]See "Setting the Operator Type" on page 4.

[2]Setting dependent on BY. S1, S2, S3 appear if BY is set to 2 or higher.

NOTE: Available menu items are dependent on operator type and programming configurations or options.

REPLACING THE STC CONTROLLER

To replace a STC board, take the following steps:

1. Back up (make a copy) of the existing board's menu settings. See "www.hysecurity.com/gatesafety" on page 1.
2. Turn OFF power to the Control Box. See Figure 3.
3. Use tape to identify the various accessory connections and then disconnect all accessory cables attached to the board.
4. Disconnect the ribbon cable, wire harness connectors, and any HY-5A or HY-5B vehicle loop detectors.
5. Use needle nose pliers to crimp the HY-5A or HY-5B standoffs and then push the standoff through the mounting hole.
6. Using a Phillips-head screwdriver, remove the six screws that secure the STC Board to the Control Box. Set the six screws aside. See Figure 1 and Figure 2.
7. Note the orientation of the board and align the holes in the replacement STC Board with the mounting standoffs. Secure the board using the screws removed in Step 4.
8. Reattach ribbon cable, wire harnesses, and HY-5A or HY-5B vehicle detectors to the new STC board. Make sure all jumpers and accessories are attached to their proper location. If you are using Relay #3, call Technical Support.

NOTICE

Make sure there are no twists in the ribbon cable. Do not force a ribbon cable's connection. The connectors are keyed so if it is difficult to connect, reassess the alignment as it will only go in one way.

9. Close the Control Box lid.
10. Turn ON power to the Control Box and set the operator type and power source using the instructions below.

DANGER

Failure to select the correct operator type (OT) can result in gate operator malfunction which has the potential to cause serious injury or death due to the improper operation of the gate.

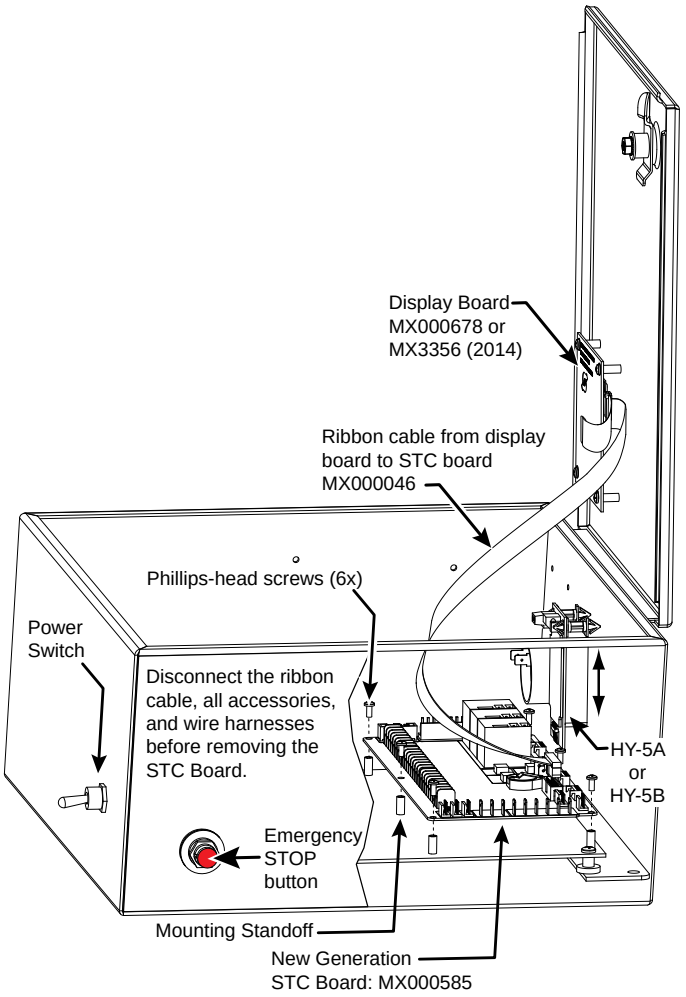

Figure 3. Control Box - Cut-away view of the SDC Board in a SwingSmart DC Operator

SETTING THE OPERATOR TYPE

After replacing an STC board and supplying power, the display prompts you to address the operator type. Depending on what operator type you have, several other prompts need to be addressed before the operator will enter Run Mode.

1. Press SELECT. Display characters blink which indicates that the menu item can be addressed.
2. Use NEXT and PREV buttons to scroll through options and display appropriate data for entry before pressing Select again to lock-in the selection.

Figure 4. STC Board Compatible Operator Keypads

NOTICE

Make sure you designate the correct operator type! Refer to Table 7 and Table 8.

3. Display prompts you to complete standard setup. A sequence of menus (i.e. Build Year, Usage Class, Gate Handing, Model Number) need to be addressed before the operator will work properly. Pressing NEXT allows you to flow through the setup. If necessary, review the operator's product manual.
4. When last menu item in series is addressed, operator enters Run Mode and a gate status appears on display.

NOTICE

If you make a mistake and need to redefine the operator type, use a PC and S.T.A.R.T. software version 3.00 or higher to reset the operator type. If necessary, contact HySecurity Technical Support at 800-321-9947.

Load operator's custom settings that you saved in the S.T.A.R.T. backup copy or wrote on the worksheet on "Smart Touch Controller Worksheet" on page 2. This reprograms the replacement SDC board with the same settings and operator functionality as the old board.

1 ASSESS YOUR GATE SITE. UL 325-2016 COMPLIANCE

Review your gate installation. Entrapment zones should be kept to a minimum. Three inputs are available on the Controller for monitoring external entrapment protection sensors. Set Build Year according to your gate manufacturing date. See "Setting the Operator Type" on page 4.

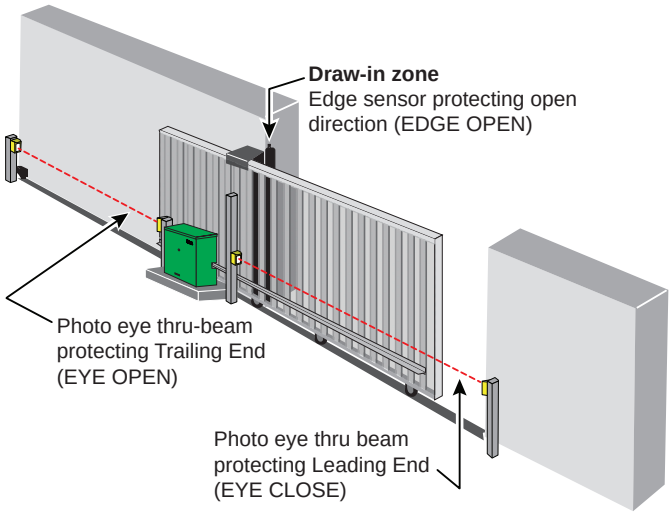

Figure 5. Site Overview

2 WHEN BY ≥ 2, INSTALL NC SENSORS.

Install contact and/or non-contact sensors (edge sensors and photo eyes) for all entrapment zones. HySecurity gates monitor normally closed (NC) sensors. Wire your NC sensors to SENSOR input terminals (SENSOR 1, SENSOR 2, or SENSOR 3) on Smart DC Controllers.

⚠ CAUTION

All external entrapment protection sensors must be wired to the SENSOR COM terminal for power and monitoring purposes. The three SENSOR inputs are interchangeable and configurable. For example, it doesn't matter whether you wire a normally closed photo eye sensor or edge sensor to the SENSOR 1, 2, or 3 input. However, due to monitoring requirements, each SENSOR input (1, 2, and 3) can only accept one NC sensor output connection.

Table 3. Menu Mode Navigation

Change Displayed Data	Navigate Selections	Choose Displayed Data	Navigate Menu Items
Press **Select**. Two left characters blink.	Press **Next** or **Previous**. Continue pressing Next to view all selections.	Press **Select**. Blinking characters become static.	Press **Next** to Advance Press **Previous** to Previous.

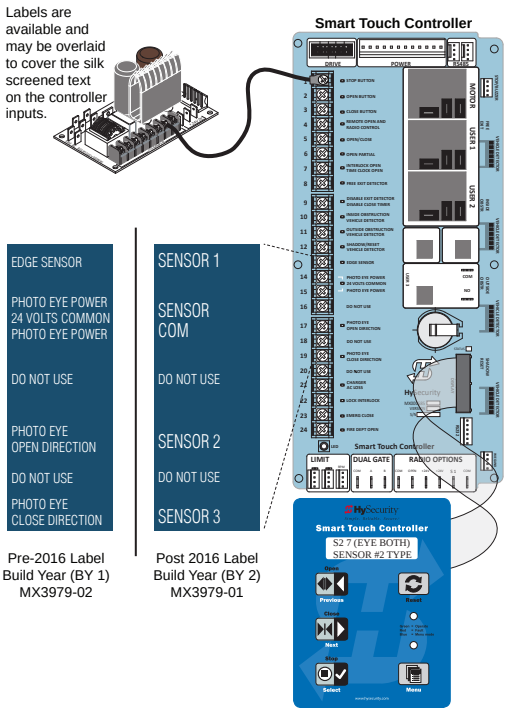

Figure 6. STC Board BY-Lable Changes

3 TURN POWER ON.

See Figure 3.

4 ANSWER INITIAL SETUP PROMPTS.

Answer the prompts. When you enter Operator Type, access the next prompt by pressing Next. Enter the Build Year based on the date the gate was manufactured. **Each SENSOR input whether or not it has a sensor wired to it, must be programmed before the gate will move.**

SETTING THE BUILD YEAR

Set the Build Year to 1 for HySecurity gate operator's manufactured prior to 2016. Set the Build Year to 2 for gate operators manufacutured in between 1/1/2016 and 7/31/2018. Set the Build Year to 3 for gate operators manufactured after 7/31/2018.

⚠ CAUTION

When Build Year is set to 2 or 3, the gate operator will not automatically cycle unless an indication is received that the appropriate number of external entrapment protection sensors are connected and operational. See Table 4 for SENSOR settings. At minimum, external entrapment protection sensors must be used to protect both open and close directions of gate travel. If you choose not to use the monitoring capabilities of the gate operator, your site may not be in compliance with UL 325-2018 Standard of Safety.

Table 4. Installer Menu Settings for SENSOR Inputs

UL 325 HySecurity Gate Operator	Build Year 2016 (BY set)	Installer Menu Settings for Smart DC Sensors 1, 2, or 3							
		#0 DISABLED	#1 NOT USED	#2 EYE CLOSE	#3 EDGE CLOSE	#4 EYE OPEN	#5 EDGE OPEN	#6 EDGE BOTH DIRECTIONS	#7 EYE BOTH DIRECTIONS
SlideDriver (fixed speed)	2 or 3	•	•	•	•	•	•		•
SlideDriver VFD	2 or 3	•	•	•	•	•	•		•
SlideSmart DC 15	2 or 3	•	•	•	•	•	•		•
SlideSmart DC 10	2 or 3	•	•	•	•	•	•		•
SlideSmartDC HD 15F	2 or 3	•	•	•	•	•	•		•
SlideSmartDC HD25	2 or 3	•	•	•	•	•	•		•
SlideSmartDC HD30	2 or 3	•	•	•	•	•	•		•
SwingRiser	2 or 3	•	•	•	•	•	•	•	
SwingSmart DC	2 or 3	•	•	•	•	•	•	•	
HydraSwing	2 or 3	•	•	•	•	•	•	•	
HydraLift	2 or 3	•	•	•	•				

NOTE: HySecurity does not update software for SlideWinder models.

Table 5. HySecurity Gate Operators requiring External Monitored Entrapment Protection Sensors		
HySecurity Gate Operator (includes Modular, Correctional, and UPS models)	**Build Year post-2016** (set at the factory)	**UL 325 Entrapment Protection Device Monitoring Required** Normally Closed (NC) sensors tested & approved.* Three SENSOR Inputs On Controller. Installer Menu configurable.* Build Year (BY) factory-set to post-2016.
SlideDriver 15, 40, 30F, 80, 200	2 or 3	•
SlideDriver 50VF series	2 or 3	•
SlideSmart DC 15 & DCS 15	2 or 3	•
SlideSmart DC 10F & DCS 10F	2 or 3	•
SlideSmartDC HD15F, HD 25, & HD 30	2 or 3	•
SwingRiser 14, 14-Twin, 19, 19-Twin, 30, 30-Twin	2 or 3	•
SwingSmart DC 20 & DCS 20	2 or 3	•
HydraSwing	2 or 3	•
HydraLift 10, 10F, 20, 20F	2 or 3	•

Table 6 indicates those HySecurity gate operators that may be within the exception parameters of UL 325 or comply with standards other than UL 325, but continue to maintain object detection capabilities. HySecurity strongly recommends that you assess every site for entrapment zones and provide the necessary protection to guard against entrapment.

Table 6. HySecurity Gate Operators maintaining Object Detection		
HySecurity Gate Operator with Obstruction Protection (Object Detection)	**Build Year post-2016**	Sensor Inputs automatically set to "NOT USED" Installer has option to change settings as site design dictates.
StrongArm (HTG)	2 or 3	•
StrongArmCRASH (M30/M50)	2 or 3	•
StrongArmPark DC 10 & DCS 10 StrongArmPark DC 14 & DCS 14	2 or 3	•
WedgeSmart DC 10 & 10 DCS WedgeSmart DC 14 & 14 DCS	2 or 3	•
NOTE: For more information, refer to the Quick Start Supplement describing changes to HySecurity software due to UL 325 - 2018 Standard of Safety updates. Review the information regarding monitoring of external entrapment protection sensors online at www.hysecurity.com/gatesafety		

Table 6. HySecurity Gate Operators maintaining Object Detection		
HydraWedge SM50	2 or 3	● DC use only—DO NOT use this relay to control any AC-powered device regardless of voltage. ● A minimum of 48VDC ● A maximum of 4 amps.

NOTE: For more information, refer to the Quick Start Supplement describing changes to HySecurity software due to UL 325 - 2018 Standard of Safety updates. Review the information regarding monitoring of external entrapment protection sensors online at www.hysecurity.com/gatesafety

USER RELAY #3

User Relay #3 is an electronic relay instead of a mechanical relay. An electronic relay provides higher lifetime cycles and is designed to operate continuous duty flashers and similar devices.

However, there are significant differences to be aware of if you are replacing a Classic STC board and its associated connections to User Relay #3.

NOTICE

The relay maintains only a single NO contact. If a NC contact is required, use a different User Relay or operate User Relay #3 as an intermediate relay with NC contacts.

⚠ CAUTION

Improper wiring voids the Limited Warranty. Be sure to rewire the operator properly and reprogrammed the STC board to its original custom site settings.

Verify that any and all wiring being connected to User Relay #3 conforms to the requirements stated above.

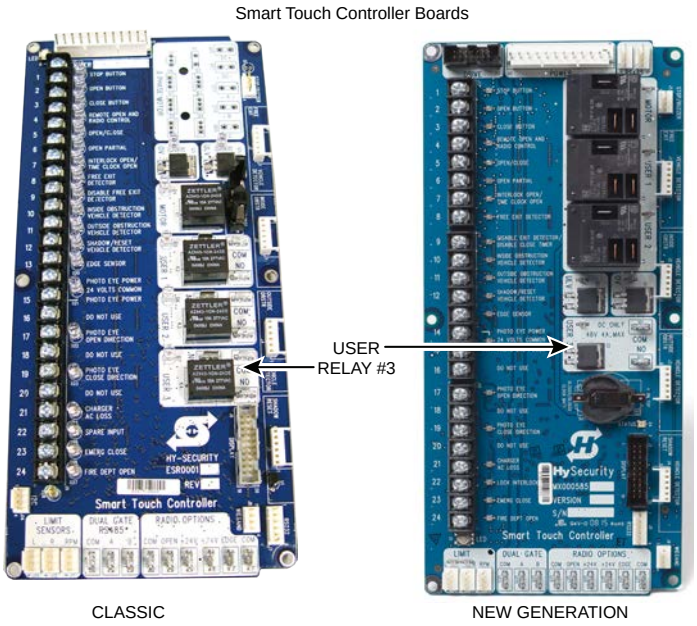

Figure 7. Smart Touch Controller Boards

COMPATIBILITY ISSUES

If you are replacing an STC board in a Primary-Secondary situation, both STC boards must be

the same, current software version and type.

If you are replacing a Classic STC board with a New Generation STC board, you must be sure the Display Board's part number is MX000678. Otherwise, the display board must be replaced.

Table 7. Reprogramming the SDC Replacement Board (OT_1 — OT_4)

Operator Model	SlideDriver (222, 444)	SwingRiser (HRG)	HydraLift (HVG)	StrongArm (HTG)
Operator Type (OT)	OT_1	OT_2	OT_3	OT_4
AC/DC (AD)	AD_1 = AC AD_2 = DC AD_3 = HyInverter AC	AD_1 AD_2 AD_3	AD_1 AD_2 AD_3	AD_1 AD_2 AD_3
Build Year (BY)[3]	BY_3 [3] (post-2016 monitored)	BY_3	BY_3	BY_3
Clear Opening (CO)				
Model Number (MN)				
Speed (SP)				
User Class (UC)	UC_1 = family dwelling UC_2 = multi-family UC_3 = industrial[1] UC_4 = guarded location[1]	UC_1 UC_2 UC_3 UC_4	UC_1 UC_2 UC_3 UC_4	UC_1 UC_2 UC_3 UC_4
Gate Handing (SH)	SH_R = Face Smart Touch Controller display. Gate slides right to open SH_L = Face Smart Touch Controller display. Gate slides left to open			
Open Position (OP) Cylinder position when gate is open				

[1] Not servicing general public

[2] A setting of SP_1 indicates no ModBus communication or wiring is present and the VFD uses its factory settings to control speed

[3] Build Year is an Installer Menu item added in 2016 and defines HySecurity gate operators as having monitoring capabilities for external entrapment protection sensors per UL 325 Standard of Safety. See page 4 and page 6.

Table 7. Reprogramming the SDC Replacement Board (OT_1 — OT_4)				
Operator Model	**SlideDriver (222, 444)**	**SwingRiser (HRG)**	**HydraLift (HVG)**	**StrongArm (HTG)**
Buzzer (BU)	BU_1 BU_2 Select loudest buzzer	BU_1 BU_2 Select loudest buzzer	BU_1 BU_2 Select loudest buzzer	BU_1 BU_2 Select loudest buzzer
SENSOR Type	S1, S2, S3	S1, S2, S3	S1, S2, S3	S1, S2, S3

[1] Not servicing general public

[2] A setting of SP_1 indicates no ModBus communication or wiring is present and the VFD uses its factory settings to control speed

[3]Build Year is an Installer Menu item added in 2016 and defines HySecurity gate operators as having monitoring capabilities for external entrapment protection sensors per UL 325 Standard of Safety. See page 4 and page 6.

Table 8. Reprogramming the SDC Replacement Board (OT_7 — OT_10)				
Operator Model	**SlideDriver 50VF type**	**StrongArm M30**	**HydraSwing**	**HydraSupply XL**
Operator Type (OT)	OT_7	OT_8	OT_9	OT_10
AC/DC (AD)	AD_1 = AC AD_2 = DC AD_3 = HyInverter AC	AD_1 AD_2 AD_3	AD_1 AD_2 AD_3	AD_1 AD_2 AD_3
Build Year (BY)[3]	BY_2	BY_2	BY_2	BY_2
Clear Opening (CO)		CO_1 = 12 to 14 ft CO_2 = 15 to 18 ft CO_3 = 19 to 24 ft		
Model Number (MN)			0 = Gate Disabled 1 = 150 model 2 = 80F model 3 = 40 or 40 Twin 4 = 40F model	
Speed (SP)	SP_1 = No ModBus* SP_2 = 2 ft/sec SP_3 = 3 ft/sec			
User Class (UC)	UC_1 UC_2 UC_3 UC_4	UC_1 UC_2 UC_3 UC_4	UC_1 UC_2 UC_3 UC_4	UC_1 UC_2 UC_3 UC_4

[1] Not servicing general public

[2] A setting of SP_1 indicates no ModBus communication or wiring is present and the VFD uses its factory settings to control speed

[3]Build Year is an Installer Menu item added in 2016 and defines HySecurity gate operators as having monitoring capabilities for external entrapment protection sensors per UL 325 Standard of Safety. See page 4 and page 6.