The manufacturer's specification's for this product require the installation to be approved by an AADM certified inspector.

Record-usa

4324 Phil Hargett Court
Monroe, NC USA 28110
Http://www.recorddoors.com

Toll Free: 844-366-7526
Support 844-DOO-RJAM
Fax: 704-289-2024

1

6/15

4500 Series Folding Door
Installation Instructions

record

The Record-USA 4500 slide/fold has been carefully designed, built, and tested to provide years of service.   The life of the door package is directly related to how carefully the installation is accomplished and how accurately the instructions are followed.   Installation of this door package is to be performed by properly trained and experienced installers knowledgeable with local code requirements and all requirements of ANSI A156.10 Standards for Power Operated Pedestrian Doors. The authorized service / installation dealer must perform all measurements for forces, speeds, and times to insure proper and safe operation. Verify that the door may be opened without power applied to the unit.

Verify that the force required to open the door with the power disconnected shall not be greater than 50 pounds.

Verify the door does not develop kinetic energy in excess of 7 foot-pounds.

Verify the door does not require a force greater than 30 pounds applied in either direction to prevent the door from closing.

Record-USA is not responsible for improperly adjusted or maintained automatic doors or activation / safety systems and assumes no responsibility for damages caused by automatic door systems that have not been properly installed, tested, and adjusted.

NOTE: GLASS AND GLAZING ARE NOT INCLUDED IN THE PACKAGE.
THE GLAZING MATERIALS IN BOTH THE DOORS AND SIDELITES SHALL COMPLY WITH THE REQUIREMENTS IN THE AMERICAN NATIONAL STANDARD PERFORMANCE SPECIFICATIONS AND METHODS OF TEST FOR SAFETY GLAZING MATERIALS USED IN BUILDINGS, Z97.1.1975

OWNERS INFORMATION TO BE PROVIDED BY THE DISTRIBUTOR/INSTALLER TO THE OWNER

* After the installation instruct the owner/supervisor on the safe operation of the door.
* Location and proper use of the power switches.
* Location of the main cutoff breaker.
* Necessary warnings not covered in general instructions.
* Owners Manual and Daily Safety Checklist.
* Phone number(s) for the local servicing dealer.
* What to do in the event that a dangerous situation should occur, and how to shut the doors down and call for service.

TABLE OF CONTENTS

TOOL LIST

· Knife	· Hammer Drill	· Shim Materials
· 4' Level	· Tape Measure	· Flat & Rat tail files
· Hammer	· Electrical Tape	· Combination wrench set (standard & metric)
· Chalk Line	· Extension Cord	· Screwdrivers (#2 Small & #3 Medium Phillips)
· Wire Ties	· 3/8" Cordless Drill	· Allen Hex wrench set (standard & metric)
· Wire Cutter	· Vise Grip Pliers	· Ratchet & Socket set (standard & metric)
· Multi-Meter	· Channel Lock Pliers	· Drill bit set up to 3/8" & 1/4"& 5/16"masonry bits
· 4'or 6' Ladder	· Caulking & Gun	• 7/16" Fine tooth Ratchet Wrench
		• 25mm Open End Wrench

GENERAL REQUIREMENTS

- Power: 120VAC. 60Hz., 15 Amp Service to terminal block in aluminum head section of door. Wiring to be in conformance with local codes and routed away from moving parts.

- Non-North American voltages can be 230VAC, if so be sure the operator has a 230VAC power supply.

- Power may be brought in through the top of the jamb on perimeter mount units or in through the back of surface mount units.

- For remote switch locations, routing of low voltage wiring to the operator controls will be required and there locations should be predetermined and wired before installation begins.

- Door Panels may be glazed before or after installation.

POWER INPUT LOCATIONS

115VAC 15 Amp 4601   **115VAC 15 Amp 4501**

4501 O/H CONCEALED
4601 SURFACE APPLIED
OUT FOLD/ BREAKOUT
EXTERIOR

4500 O/H CONCEALED
4600 SURFACE APPLIED
IN FOLD/ BREAKOUT

115VAC 15 Amp 4600   **115VAC 15 Amp 4500**

EXTERIOR

Record-usa

4324 Phil Hargett Court
Monroe, NC USA 28110
Http://www.recorddoors.com

Toll Free: 844-366-7526
844-DOO-RJAM
Fax: 704-289-2024

3

6/15
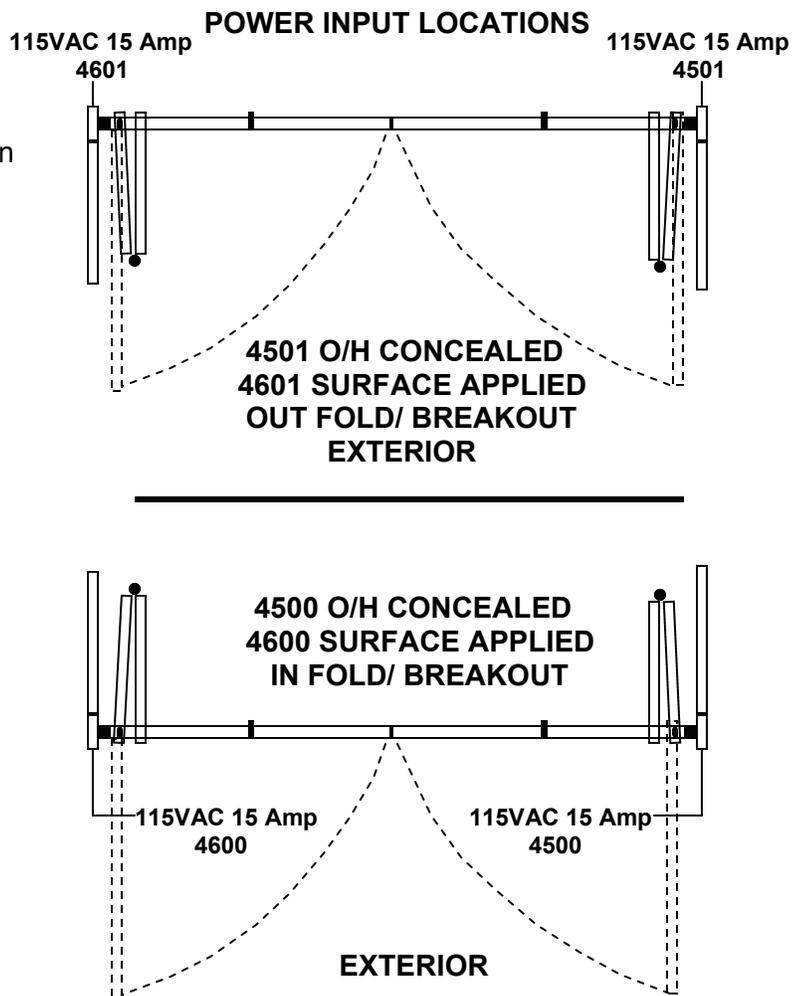
1. Verify rough opening dimensions are correct and square and floor is flat without high spots.

2. Attach jambs to Header with the 1/4-20 hex head bolts, lockwashers, and flat washers provided In the hardware pack using suggested 7/16" Ratchett wrench.. Attach safety beam harnesses and display control panel cable from jambs to Operator.

3. Install Header and jamb package in opening; shim as required to obtain level, plumb and square. See next 2 pages.

4. Use provided pivot template to locate and install floor mounted bottom pivots as seen to the right.

5. Snap jamb filler / fingerguard extrusion into jambs with offset towards exterior of unit.

EXT.

NOTE: BE SURE THE WEATHERPILE, CENTER OF FILLER/FINGERGUARD EXTRUSION LINES UP WITH CENTERLINE OF FLOOR PORTION, BOTTOM PIVOT.
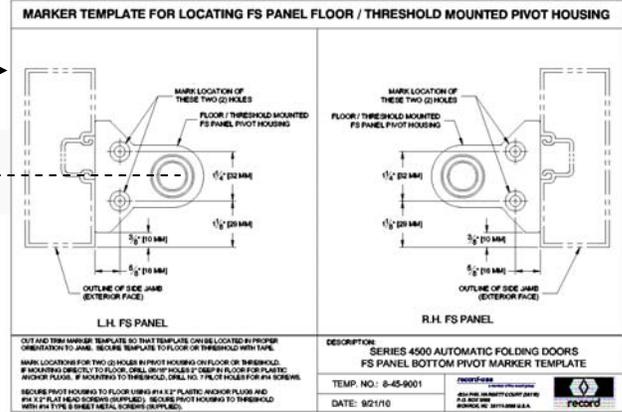
PIVOT TEMPLATE

6. Use operator belt to rotate top door arms to the door open position.

7. Remove nuts and bolts (2 each) from top door arm and panel endcap.

8. With Panel stood up in the open position, set onto floor pivot, then raise panel under door arm and reinstall hex head bolts into tapping plate. Loosen 3 bolts attaching door arms in top of door panel. Find correct set in the door closed position achieving the hard stop in the header and then retighten.

9. The Door panel should be tight up against the breakout member when it was fastened to the top arm. Use the operator belt to close panels and insure proper clearances. Loosen thin hex nut to lower door panel that it opens and closes without excessive drag against breakout member. (25mm)

10. After proper setting is achieved tighten hex locknut to the thin nut to maintain setting.

11. Proceed by insuring that bottom door pivot is seated to floor portion, then tighten the 2 Allen cap bolts in pivot stile.

12. Please see in picture at right, the adjustable hard stop indicated for the door open position. Only one hard stop is required per Unit.

HARD STOP
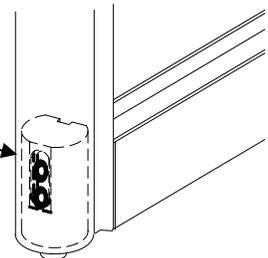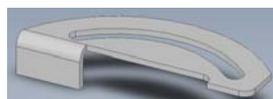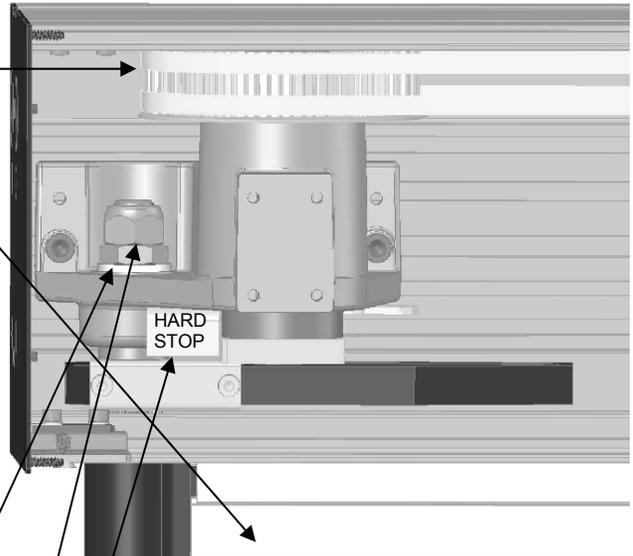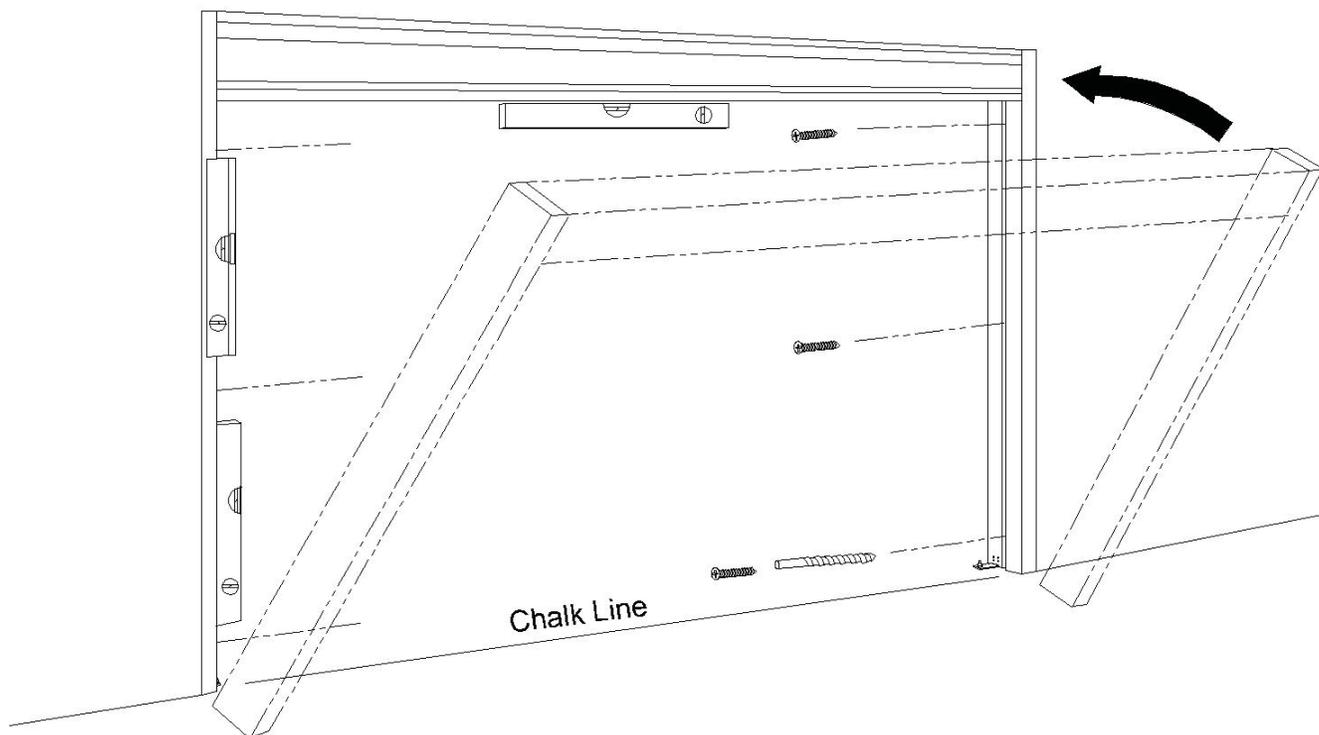
Chalk Line

SETTING FRAME

Once the door frame has been assembled, place the frame in front of the opening on the floor so that the bottom of the jambs are at the base of the opening. Snap a chalk line across the opening where the jamb line is going to be. This line will also locate the threshold.

Before lifting the frame into place, check to make sure the cover side of the header will end up on the correct side of the opening. Typically, the unit(4500)will have breakout, and the cover will be interior; if the unit is surface mounted to the exterior(4600), the cover will be exterior.

Lift door frame into the opening and set the frame plumb and square to the highest spot on the floor and position the frame within the 4-1/2" dimension as needed. If the high spot or swell in the floor forces the frame to go higher than the rough opening will allow, <u>do not install the frame</u>. Door fit will be reduced if the frame is installed with this condition present. Have the contractor rework the floor so the doors can be properly installed.

If there is room to raise the frame up even with the high spot in the floor, shim the bottom of the jambs to the high spot.

FRAME ATTACHMENT

Shim as required for the header and jambs to be plumb and square in the opening. Fasten the door frame in the rough opening with the appropriate type and number of fasteners for the size of the door package being installed. Fasten the header overhead every 24" or less.

There are fasteners provided with the package unless a longer reach is required.

Chalk Line
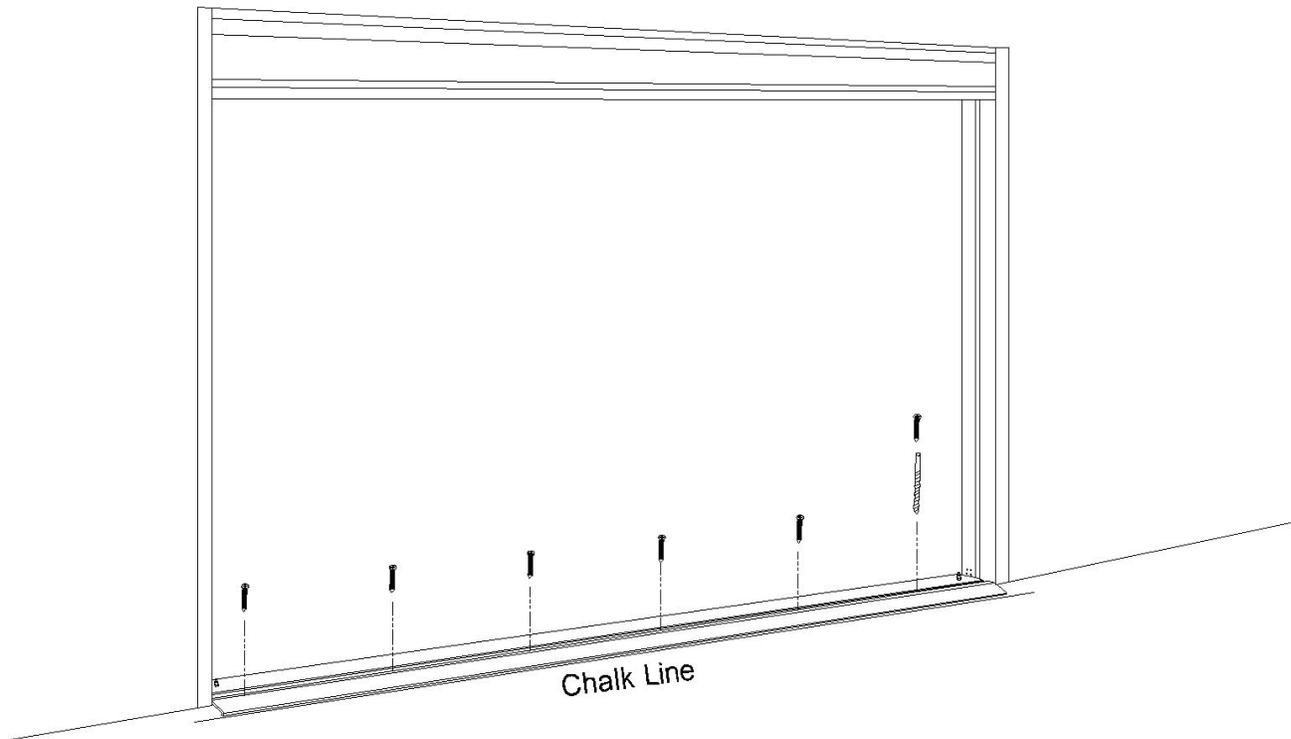
THRESHOLD INSTALLATION

The threshold must be installed level and in line with the frame for the door package
to properly function. If the high spots referred to on page 6 were not corrected as indicated,
door clearance at the bottom could be an issue. Correct high spots and continue.

Shim as required for threshold to be level and square in the opening. Fasten the threshold
in the opening with the appropriate type and number of fasteners for the size of the door
package being installed. Fasten the threshold every 24" or less.

There are fasteners and anchors provided with the package unless a longer reach
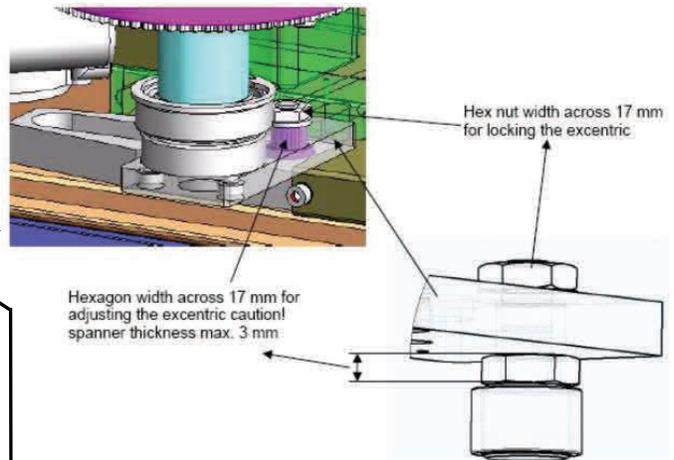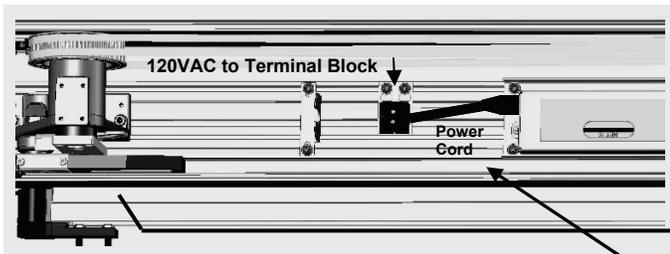is required.

120VAC to Terminal Block

Power Cord

Hex nut width across 17 mm for locking the excentric

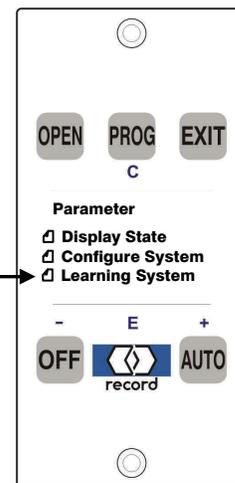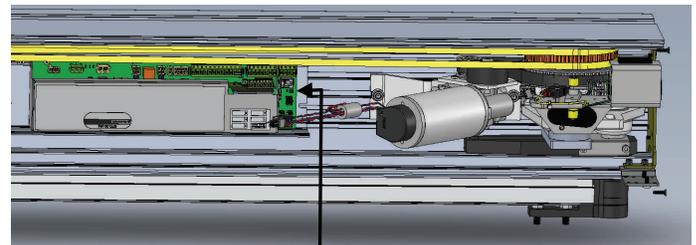Hexagon width across 17 mm for adjusting the excentric caution! spanner thickness max. 3 mm

13. Please proceed with finding thin nut on top of silver arm that must be checked for being tight or loosened if an adjustment is required for fine tuning to achieve arm position. It is a bearing on an eccentric that can be turned for adjustment. The nut portion of the stud has a low point indicator as a flat spot instead of a point and will be marked with a white or yellow dot of paint. There will be a 17 mm spanner wrench (part# 202-102117704) available from the factory to help accomplish this adjustment. This adjustment can aid in achieving the proper door stroke for a good calibration.

|17mm| Spanner

14.Remove 120VAC power cord from left hand end of power supply (refer to one of the attached wire diagrams in this booklet). Connect 120VAC Main Power to terminal block.

15.If onboard, connect standby battery to operator (disconnected for shipping). With doors in the full open position, plug 120VAC power cord back into power supply. Unit should power up and close.

16. Proceed with the required Calibration run by holding down solid, the blue "multi-function button" on the circuit board for four flashes, and proceed to the Display panel to "Configure System" to confirm proper settings. Follow that with going to "Learning System" and select "yes" which will start the process by driving the door to the open position, then follow the prompts and hold the "OFF" button till door reaches full closed. When released, the doors will reopen which will re-quire holding the "OFF" button one more time to close the door to complete the process. Process can also be achieved with FPC902 Flashprogrammer by selecting "Learning System" and follow the prompts to complete the process.

17. As a good operation has been achieved, proceed with the connections of push button actuators, sensors, etc., to either terminals 13,14,15 or 15,16,17. Note: When unit is placed in EXIT mode, terminal 16 Exterior activation input is deactivated when door is closed.

OPEN | PROG | EXIT

C

Parameter

⊿ **Display State**
⊿ **Configure System**
⊿ **Learning System**

−   E   +

OFF | record | AUTO

Locking:

The 4500 Slide/Fold has the options of obviously no electric lock, or 2 panel locks to lock the fold, or 3 locks, 2 to lock the fold and 1 to lock the breakout ("Lock Type": Double). Please see to the right in the illustrations, first, the panel locks which are mounted in the stile of the right and left hand FS Panels at the fold location for infold and outfold units. If the panel locks are provided alone, they would be connected to the main control board. Please see in the second picture where an armored loop is provided for a wire/power transfer from side jamb to top rail of FS Panel.
Note: "Lock Type" - Fail Safe.
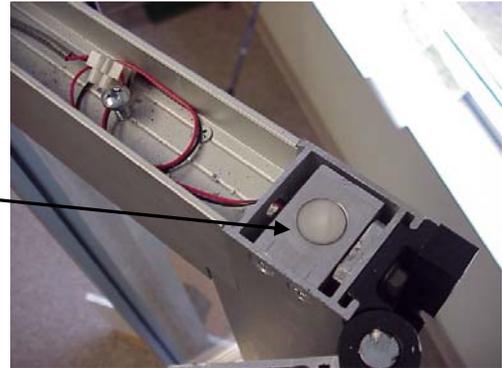
In panel lock assembly
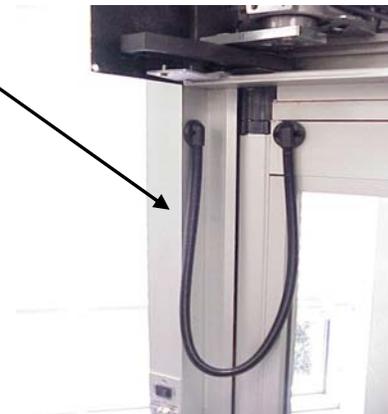
Armored Loop/Wire Transfer

Please see in the third illustration, the lock for breakout which lands centered in the header to lock the breakout of both door panels. In the case of both lock types being used, there should also be an onboard battery back-up system. The header should contain the documents for this application.
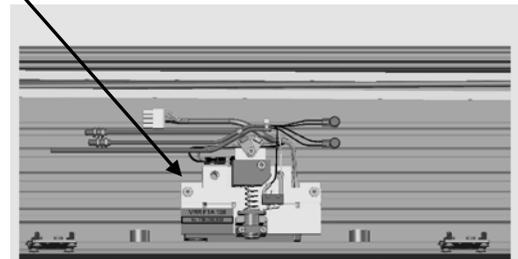
Breakout Lock Assembly

In the fourth and final illustration, please find the sequencing control (VRR20) if both lock types are on board. Typically will be located between the breakout lock and main control board, with a harness connecting the two. The center connection will be the breakout lock, and the remaining or right connector will be the panel locks. There are corresponding LEDs; 2 Green to the left showing power from the control.

Main Control Connection

Sequencing Control
VRR20

Breakout Lock Connection

Panel Lock Connection
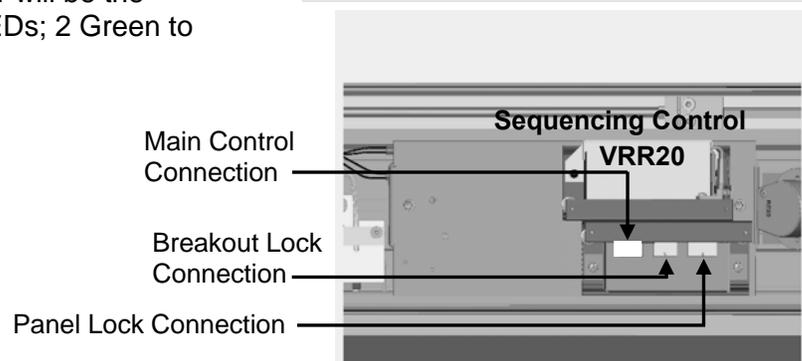
The following module shown (Part # 102-020808482) is an added component to the 4500 unit to isolate the safety beams from a direct connection to the control and connected via CANBus as described below.
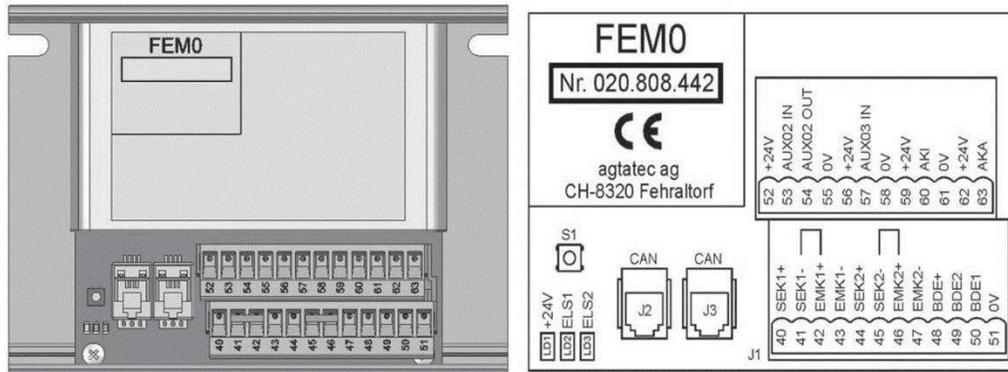
FEM0 Extended Functions Module	Function / Connections
S1 - Blue Function Key	2 pulses calibrating ELS
LED 1— Green	+ 24v
LED 2— Red	Interruption ELS 1
LED 3— Red	Interruption ELS 2
Connector J1	Connections of conventional sensors
Connectors J2 and J3	CAN-Bus connections Both connectors must always be connected
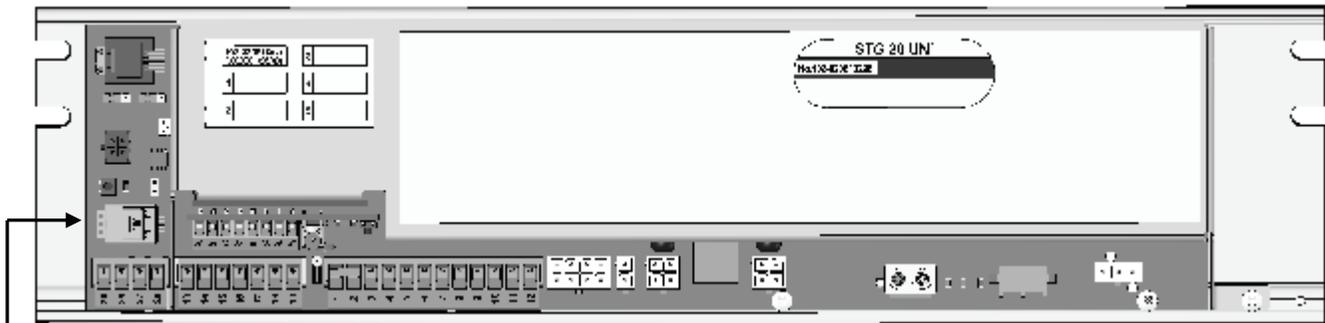
Please see the instructions with the module to realize the safety beam connections; they will be wired to 40– 47 connections on the module from the factory.
The CAN Connection harness provided will connect from J2 of the module and into the CAN-Sensor connection of the Control as seen above.
The termination plug from the control should be in place in the J3 port of the module.
The final step would be pressing and holding the S1 blue function button on the module for 2 Pulses calibrating ELS.
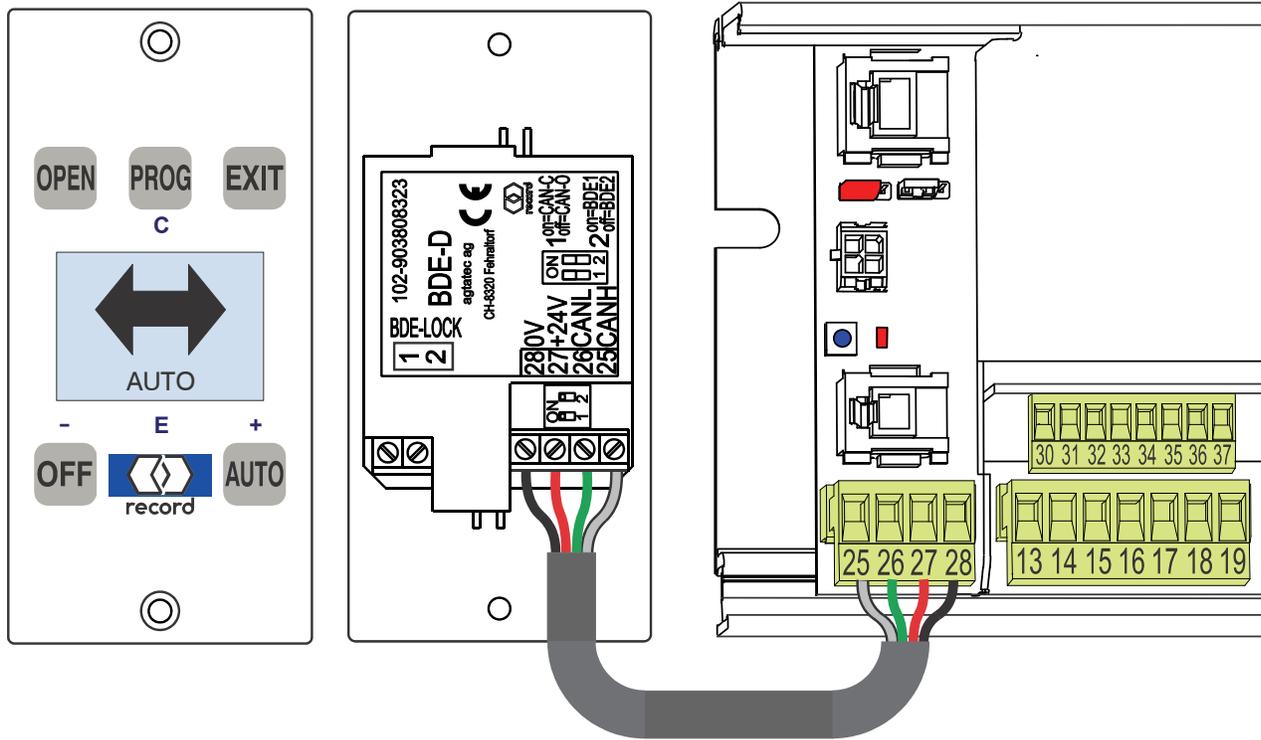
The Display Control Panel is connected to the Series 4500 Operator Control as shown and is typically mounted in or on the door jamb adjacent to the sidelite. The unit may be remotely mounted as desired, and should always be in a location where the user can view the door. An optional enclosure is available for remote mounting (see image below right).I

The keypad on the display can be disabled by removing the jumper located between screw terminals 1 and 2 on the back of the display (see above). A switch (SPST) can be wired in place of the jumper and provide remote enable/disable of the keypad.

When the keypad is disabled, a small key is displayed on the left of the screen. The unit will continue to display the current operating mode of the door and will exhibit any alarm condition as it occurs, but the keypad will not function.
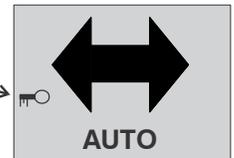
Two Display Control Panels can be connected to a Series 4500 for mode control from two separate locations. The panels are wired in parallel, and Dipswitch #2 (above wire terminals 26 & 27) on one panel should be set to "OFF". In addition to the Display Control Panel, two mechanical switch assemblies (shown at right) are available for connection to a Series 4500. The mounting template is identical to the display panel. One of these panels can be used in place of the display on the door. Note: With both connected, the mechanical panel will have priority over the display panel when selecting operating modes. The display will indicate the mode selected by the mechanical panel.

4-51-0105   4-51-0106
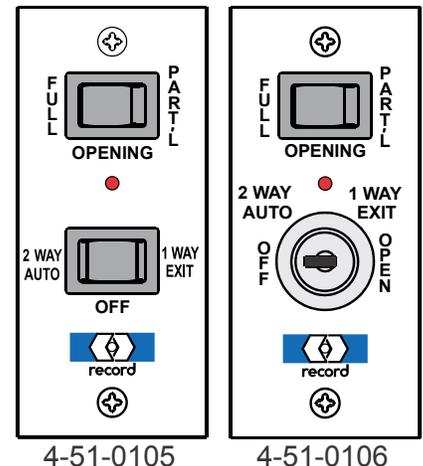
The Display Control Panel is a convenient input and output unit for the door system and programming of control units in Record door openers. Logically arranged pushbuttons permit an intuitive operation of the door and navigation through the drive-specific menu structure. The backlit LCD display provides data and information regarding the status of the door using symbols and plain text messages.
The connection to the door control is via the CAN bus built into the Record products.

The technical specifications of the control panel are:
Supply voltage: 24 VDC from CAN bus
Connected load: < 2 W
Dimensions: 1.74" X 3.63"
Temperature range: 0°C to +50°C
LCD display: 112 x 64 pixels (0.84" X 1.18"), with white backlight
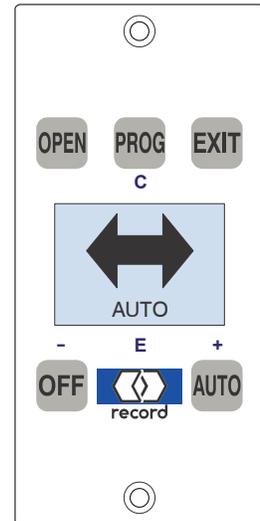
In addition to providing the owner a method for selecting the door operating modes, the control panel can be used to access and adjust the door parameters. To enable this feature, first gain access to the door operator in the header, and locate the microprocessor control. On the right side of the control is a small blue pushbutton (Control Switch Button), and a red LED. The pushbutton performs multiple functions depending upon how long it is pressed, as indicated by the adjacent red LED.

CONTROL LED

CONTROL SWITCH BUTTON

DIRECTION SELECT JUMPER
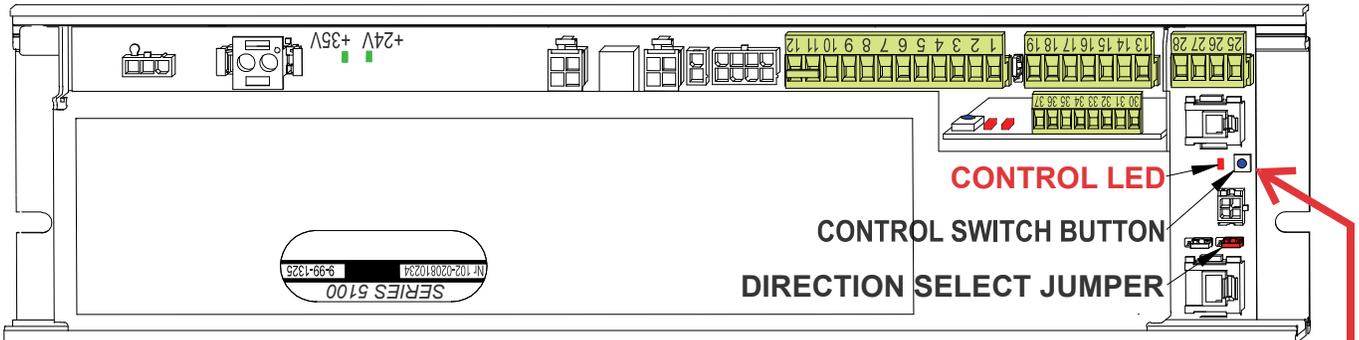
Pressing and holding the button causes the adjacent red Control LED to pulse "on" approximately once per second. The number of pulses determines the resulting effect:

- 1   pulse simulates the actuation of the interior sensor and initiates a door cycle.
- 2   pulses initiates an automatic acquisition of safety beam characteristics.
- 3   pulses initiates a door learn mode where the door weight and friction are learned.
- 4   pulses initiates a configuration mode where the Display Control Panel has access to the microprocessor control parameters.
- 8   pulses resets the parameters to the default parameters for door type selected.
- 9   pulses, combined with actuation of the breakout stop, will reset to factory settings.
- 14+ pulses performs a hardware reset (no parameter values are changed).

Typically, during a new installation, the microprocessor will have already been set at the factory for the door opening, **but the completed installation will require a calibration mode initiated by holding the Control Switch Button down for three pulses of the Control LED. Calibration will occur during the next two door cycles, which should be initiated immediately.**

ALTERNATIVE CALIBRATION METHOD:

A convenient second method for calibration has been implemented using either the Display Control Panel or the FPC 902 Programmer. If using the FPC 902, select Service STG, select Yes to accept all parameters, press OK to Continue, then select Learning system. The next screens closely follow the screens described below.
If using the Display Panel, press and hold the blue Control Switch Button for four flashes of the red Control LED, the release the button. The Display Control Panel should appear as shown at right. Use the AUTO button to scroll down and highlight "Learning system", then press the blue "Record" logo.
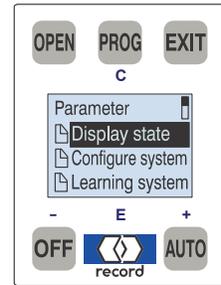
The screen at right will appear, press the "Record" logo again, the door will open, with a screen indicating to wait until the door is completely open.
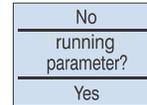
After the door fully opens, the screen will then display - Press and hold the "OFF" button until the door fully closes. Once closed, the door will re-open and this screen will appear again.
Press the "OFF" button until the door closes, and the screen at right will appear. Press the "Record" logo to continue.
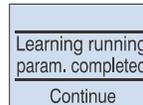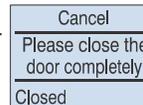
In response to the screen displaying "Learning sensors?", press the "PROG" button to decline.
In response to the screen displaying "Learning suppression SIO?", press the "PROG" button to decline.
The calibration cycle will then be completed.

PARAMETER ADJUSTMENTS:

The parameters that define the door performance can be accessed using either the FPC 902 Hand-Held Programmer or the Display Control Panel.

For access to all of the parameters with the FPC 902, Version 2.70 or later software is required

To access the control parameters using the Display Control Panel, on the door control press and hold the Control Switch for 4 flashes of the adjacent red Control LED.

In this mode, the top center "PROG" switch and bottom three switches are used to select and modify the door parameters.
Note the small blue legends next to each switch indicates its use in the configuration mode -
   Use the "+" (AUTO) switch to scroll down menus, or increase individual parameter values.
   Use the "-" (OFF) switch to scroll up menus, or decrease parameter values.
   Use the "E" (Record) switch to select the currently selected parameter or parameter value.
  Use the "C" (PROG) switch to revert to the previous screen.

Included in the header should be a two-sided sheet identifying the Control Parameters and the factory settings for that header. Any field changes should be noted as they are implements.

A complete listing of the parameters with descriptions is included with the Installation Instructions.

To exit the parameter adjust mode, press the "C" (PROG) multiple times until the "Exit Program Mode - Yes/No" screen appears; press the "E" Record switch to return to Door Operating Mode screens. Note: If no button os pressed for 3 minutes, the parameter adjust mode is automatically exited.

Entering a custom telephone number to be displayed when alarm screens occur can be performed only with the FPC 902 Programmer. Refer to the instructions included with it for further details.

REMOTE CONTROL OF DOOR OPERATING MODE

The Record drive provides several methods of remotely controlling the door operating mode.

1. For complete remote control, install a second Display Control Panel at the a remote control station. Changes to the operating mode will be displayed on each Display Control Panel. Locking the keypad on the panel at the door can be accomplished by 2 methods;

A. On the panel to be locked, press the keypad sequence [record] then PROG then OFF A small square with an X will appear on the left of the screen, and the keypad will no longer change the door operating mode. The display will update as changes are made remotely. To unlock the keypad, repeat the above button sequence. (Soft lockout)
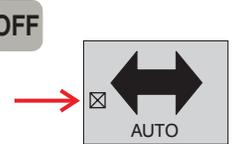
B. On the back of the Display Control Panel is a 2 conductor terminal block with a jumper installed. If the jumper is removed, the keypad will be locked and will be indicated by a small key figure on the left side of the screen. The jumper can be replaced by a remote mounted switch (toggle, key, etc.) (Hard lockout)
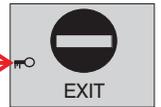
2. To remotely lock the door, please see the following choices:

Terminal 4; AUX00_IN Terminal 6; AUX01_IN Terminal 18; AUX04_IN	Select whichever programmable Input is available and use to achieve the **Locked** mode with the **SURV** parameter enabled. In Parameters go to Inputs/Outputs, open STG and find the Input chosen and set to **SURV.** Removing the 24VDC supplied from Terminals 5 or 19 will change the mode to **Locked**. If the door is open, it will close and lock. **Note: Unit must be in Auto before enabling this setting.**

3. To remotely change the door to "1 way" or Exit mode, please see the following choices:

Terminal 4; AUX00_IN Terminal 6; AUX01_IN Terminal 18; AUX04_IN	Select whichever programmable Input is available and use to achieve the **EXIT** mode with the **SURA** parameter enabled. In Parameters go to Inputs/Outputs, open STG and find the Input chosen and set to **SURA.** Removing the 24VDC supplied from Terminals 5 or 19 will change the mode to **EXIT**. **Note: Unit must be in Auto before enabling this setting.**

The programmable inputs can also be used to enable other functions as described in the Parameter Explanation Section. For example, one of the programmable inputs can be set to override the Display Control Panel and the Pedestrian sensors, and either open or close the door. This is accomplished by enabling the "SOK_NSK" parameter (Emergency Override), and setting the "Emergency Open/Close Function" to either open or close the door. If closing is selected, additional options are available to lock the door, and select what inputs are active.

Note: Priority between the above inputs and the Display Control Panel is set by safety / security rules. If either the remote control or the Display Panel is set to "OFF" (Locked), the door will be Off (or locked, depending upon the "Keyboard" parameter for the Display Control Panel), and the mode cannot be changed. If the remote control has set the operating mode to "AUTO", the Display Panel will have full functionality. If the remote control has set the operating mode to "EXIT, only the Display's OFF key will function. If the remote control has set the operating mode to(Continous) OPEN, only the Display's OFF and EXIT buttons will function.

Daily Safety Check Decal
Adjacent to Control Panel

AUTOMATIC DOOR
KEEP MOVING

AUTOMATIC DOOR
KEEP MOVING

IN EMERGENCY PUSH TO OPEN

IN EMERGENCY PUSH TO OPEN

FOLD

FOLD

58" ±5" Above Floor

36" to 60" Above Floor – Interior Only
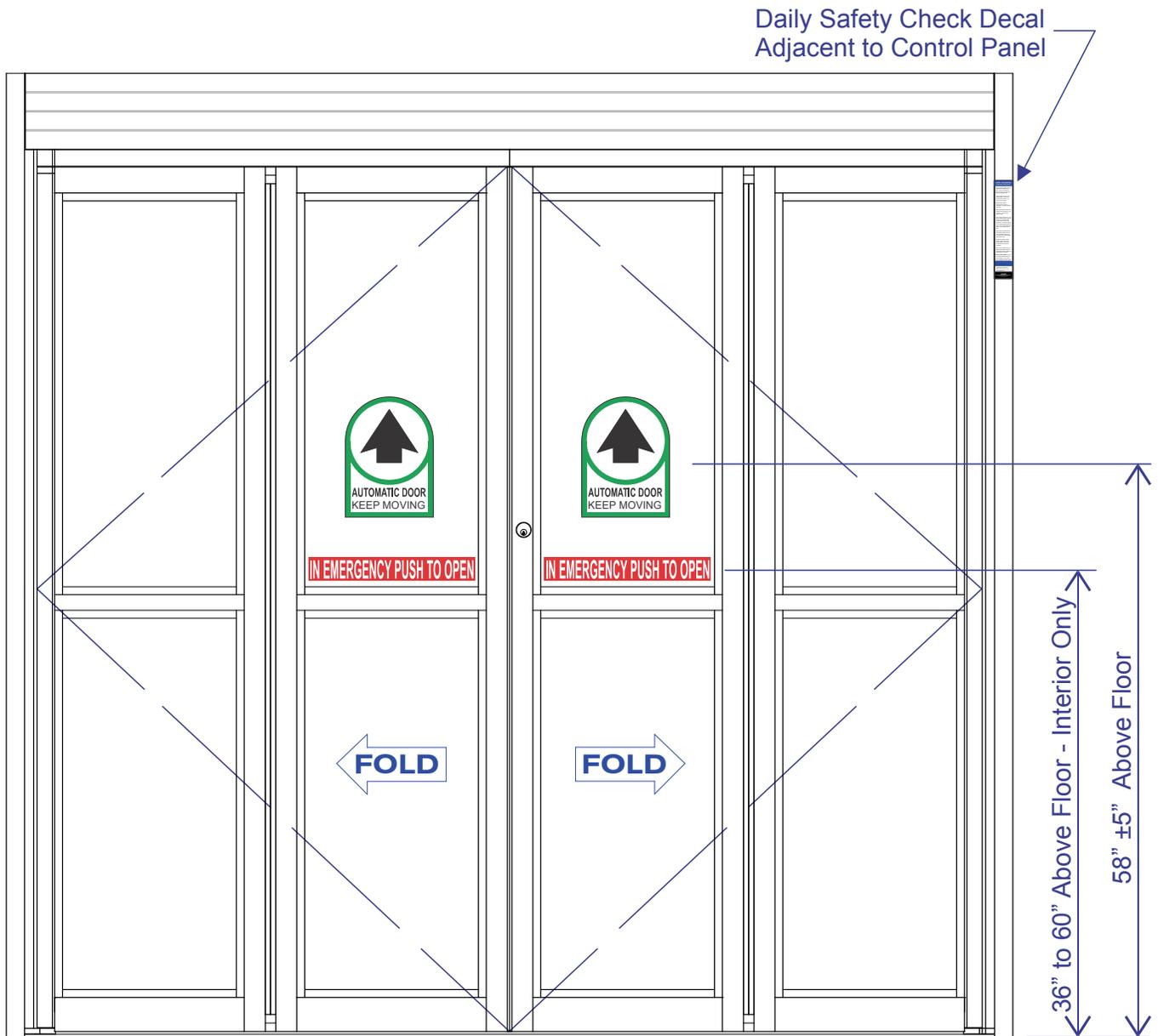
Decals shown above are for Non-Fold, Approach Side of Door

For Two-Way Traffic Doors, on the Fold Side, use [AUTOMATIC CAUTION DOOR TWO-WAY TRAFFIC] in place of [AUTOMATIC DOOR KEEP MOVING]

For One-Way Traffic Units, on the Non-Approach Side, use [DO NOT ENTER — STAND CLEAR AUTOMATIC DOOR CAN SWING OPEN AT ANY TIME] in place of [AUTOMATIC DOOR KEEP MOVING]

For Knowing-Act Traffic, use [AUTOMATIC CAUTION DOOR ACTIVATE SWITCH TO OPERATE]

4500 Series Folding Door
Installation Instructions

record

Header
5-45-4001

Cover
5-45-4002
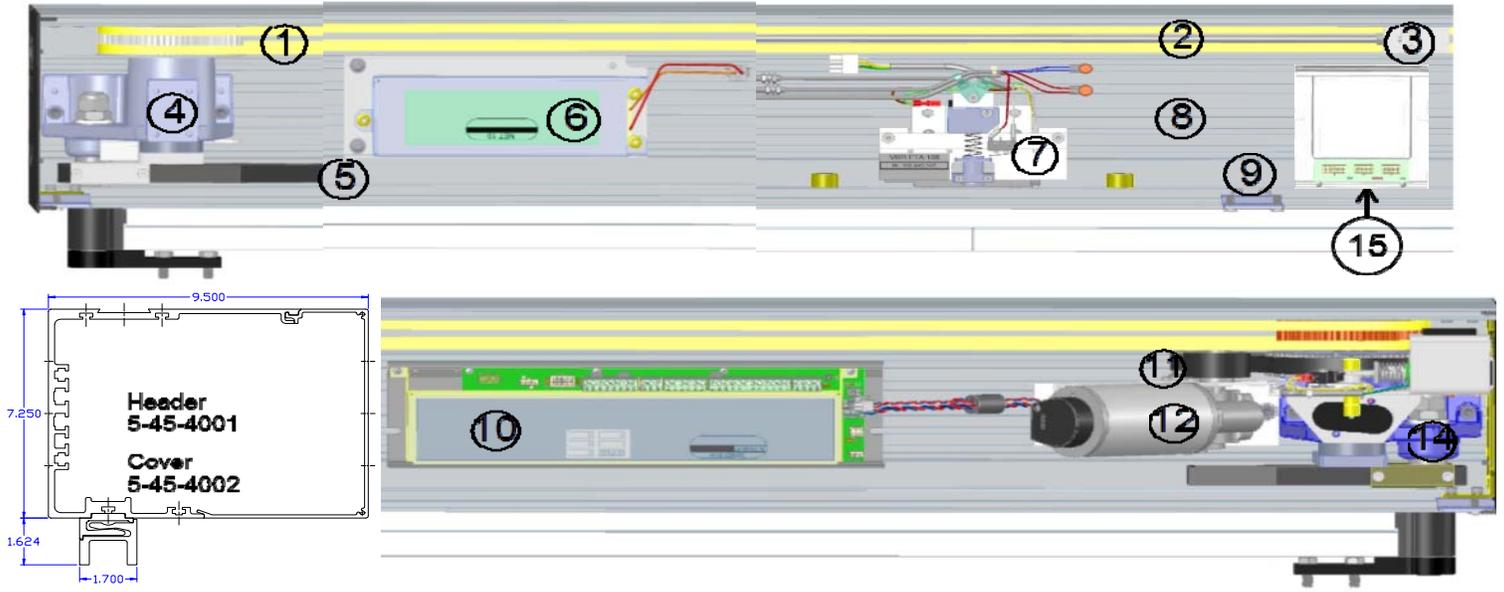
ITEM	PART NUMBER	DESCRIPTION	U of M
1	9-09-0015	BELT, MAIN DRIVE	ft.
2a	9-45-0011	TIE ROD, BELT CLAMP, SHORT 14"	ea
2b	9-45-0013	TIE ROD, BELT CLAMP, LONG 23.25"	ea
3a	9-45-0010	BELT CLAMP, RIGHT	ea
3b	9-45-0012	BELT CLAMP, LEFT	ea
4	9-45-0101	DRIVE PEDESTAL, SLAVE	ea
5	9-45-0103	INNER ARM ASSY.	ea
6	4-51-0142	POWER SUPPLY ASSY., NET20	ea
6a	102-019808221	TRANSFORMER,110V PRIMARY, 35-38 SEC.	ea
7	9-45-0106	* ELECTRIC LOCK, ANTI-BREAKOUT	ea
7a	4-45-1009	SPACER, ELECTRIC LOCK	ea
8	5-45-4001-CL	HEADER , FOLDER, CL-DB **See Above**	ft.
	5-45-4002-CL	COVER, FOLDER,CL-DB **See Above**	ft.
	4-45-1001	BRACKET, HEADER TO JAMB	ea
	4-45-1002	END CAP, HEADER	ea
9	4-45-1003	BRACKET, COVER ATTACHMENT	ea
10	9-99-1325	CONTROL, STG 20	ea
10a	9-99-1326	ZLP-ELS, SAFETY BEAM PCB, SYSTEM 20	ea
11	9-09-0016	BELT, S4500 MOTORDRIVE ASSY.	ea
12	9-45-0110	MOTORDRIVE ASSY., ATE FTA 20	ea
14	9-45-0102	DRIVE PEDESTAL, MASTER	ea
15a	9-45-0109	* SEQUENCER, ELECTRIC LOCKS, SYSTEM 20	ea
~	4-45-0805	**KIT**, ELECTRIC LOCK, ANTI-FOLD	ea
~	4-45-0806	**KIT**, ELECTRIC LOCKS, FOLD & BREAKOUT	ea
~	9-73-0080	PANIC SWITCH, MAGNETIC	ea
~	9-73-0079	MAGNET, PANIC SWITCH	ea
~	9-45-0107	**KIT**, DOOR OPEN STOP, IN HEADER	ea
~	4-51-0812	**KIT,** UNINTERRUPTABLE POWER SUPPLY	ea
~	4-45-9003	BUMPER, DOOR OPEN STOP	ea
*	9-99-1823	BREAKOUT ARM BOLTS, M8X1.25X16 HHCS,8.8 ZINC	ea
~	4-45-0808	**KIT**, PANEL LOCK, SERIES 4500 FOLDING DOOR	ea
~	4-45-0100	IN PANEL, FOLD LOCK ASSY.	ea
~	202-102117704	WRENCH, SPANNER, 17MM	ea

4500 SLIDE / FOLD
FX/FS DOOR PANELS

FX PANEL

FS PANEL
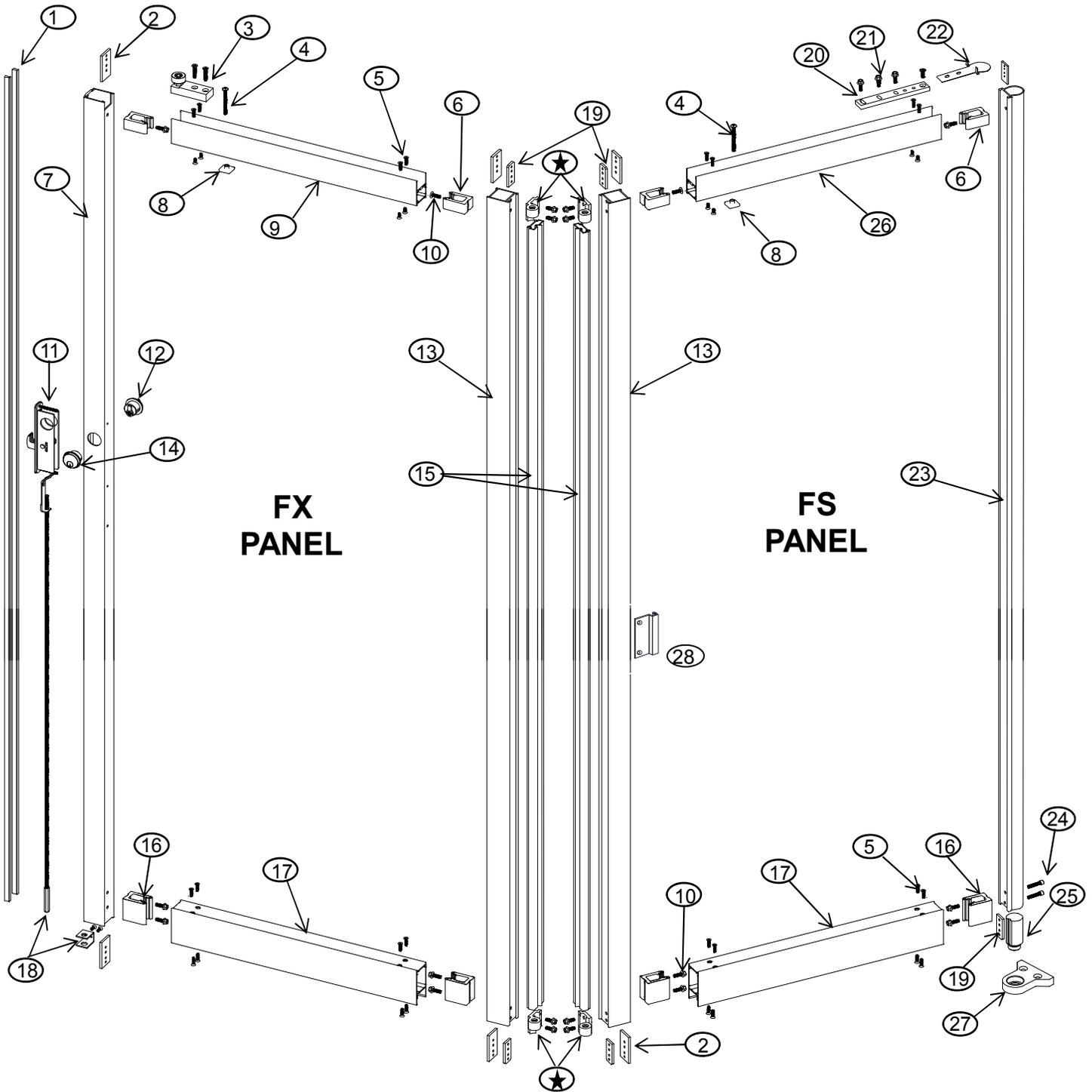
4500 SLIDE/FOLD DOOR PANEL PRICE LIST			
FX PANEL			
ITEM	**PART NUMBER**	**DESCRIPTION**	**QTY.**
~~	REPL-45-PANEL	FX PANEL ASSY.	1
1	9-99-7316	Weatherpile, Mohair, BL	~
2	4-11-1082	Plate, Backer	4typ
3	4-45-0016	Guide Roller Assy., Top	1
4	81-0014-0680	Screw, 1/4-20x2" PPH	1
5	81-4411-0516	Screw, 10-24x3/4"PFH	20typ
6	4-11-4096	Block, Shear, 2 1/2"	2
7	5-11-4021-CL	Stile, Tandem, Narrow, CL-DB	1
8	6-51-9006	Block, Glass Jacking	1
9	5-11-4032-CL	Rail, 2 1/2" , CL-DB	1
10	81-0017-3666	Screw,1/4-20x3/4" HWHMS Gr8	6typ
11	9-99-0071-CL	Deadlock, Hookbolt	1
12	9-99-0069-CL	Cylinder,Thumbturn,CL-DB	1
13	5-45-4008-CL	Stile, Hinge, CL-DB	1
14	9-99-0064-CL	Cylinder,Key,CL-DB	1
15	4-45-9001	Seal, Hinge Stile	1
16	4-11-4097	Block, Shear,3-31/2"	1
17	4-51-4190-CL	Rail, Bottom, FX & FS Panel	1ea.
18	9-99-0074	Threshold Bolt & Guide	1
19	4-45-1004	Plate, Backer, Pivot Stile & Hinge Pivots	6
★	See Next Page for Hinge Pivot Info		
FS PANEL			
~~	REPL-45-PANEL	FS PANEL ASSY.	1
20	4-45-4012	Spacer, Top Pivot Arm	1
21	81-0017-3666	Screw,1/4-20x3/4" HWHMS Gr8	3
22	4-45-1006	Cap, Pivot Stile	1
23	5-45-4009-CL	Stile, Pivot, CL-DB, (FS Panel)	1
24	81-0016-2674	Screw, 1/4-20x1 1/4"	2
25	4-45-0015	Bottom Pivot Assy.	1
26	5-11-4032-CL	Rail, 2 1/2", CL-DB	1
27	4-45-4011-BL	Base, Pivot Bearing, Floor Portion	2
28	4-40-0310-CL	Pull Handle Assy. CL-DB	2

4500 SLIDE/FOLD
HINGE PIVOT ASSEMBLIES
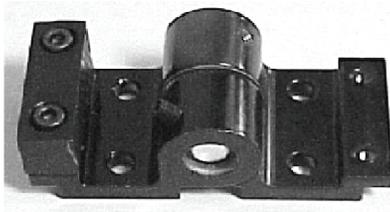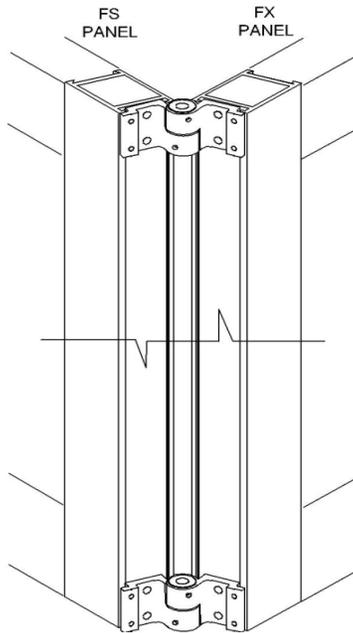
CONFIGURATION "A"
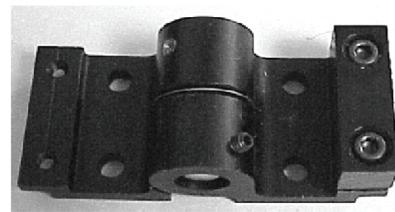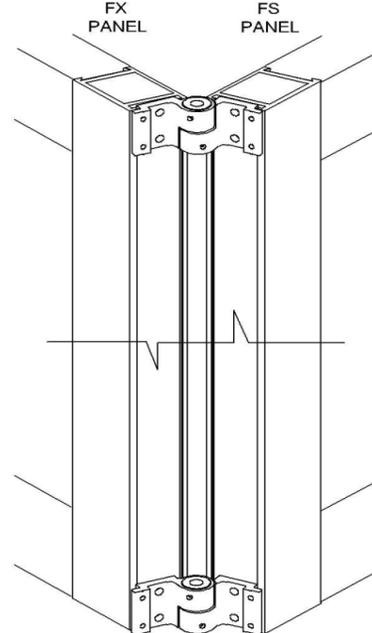
CONFIGURATION "B"

ITEM	PART NUMBER	DESCRIPTION	QTY.
1	4-45-0022-BL	**FOLDER HINGE PIVOT ASSY.**	1
		CONFIGURATION "A"	
		DUAL OUTFOLD - LH LEAF	
		DUAL INFOLD - RH LEAF	
2	4-45-0023-BL	**FOLDER HINGE PIVOT ASSY.**	1
		CONFIGURATION "B"	
		DUAL OUTFOLD - RH LEAF	
		DUAL INFOLD - LH LEAF	

PARAMETER	Default Setting(X)	Description
DRIVING CYCLE		
Closing speed	0...**20**...40	Speed: 0 = slow (Creep speed), 40 = fast Note: Small doors may not reach the set speed, depending upon acceleration rate.
Opening speed	0...**36**...40	Same as closing speed
Open		
Acceleration	0...**30**...40	Acceleration: 0 = slow, 40 = rapid acceleration
Deceleration	0...**30**...40	Braking momentum during opening cycle Deceleration: 0 = slow, 40 = rapid braking force

Creep section	**0**...40	Adjustable creep section at the end of the opening motion.
		Note: 0 = no creeping
		            1 = 2.5% of Door Opening Width (DOW)
		            40 = 100% of DOW

Close		
Acceleration	0...**30**...40	Acceleration: 0 = slow, 40 = rapid acceleration
Deceleration	0...**30**...40	Braking momentum during closing cycle Deceleration: 0 = slow, 40 = rapid braking force

Creep section	**0**...40	Adjustable creep section at the end of the opening motion.
		Note: 0 = no creeping
		            1 = 2.5% of Door Opening Width (DOW)
		            40 = 100% of DOW

Holding force	0...**20**...40	Holding force in closed position Note: In case of high holding force the motor temperature will increase, and may reduce power available.
Ramp		For doors that drop at full closed (type OP-door 2), a ramp can be configured at the full closed position. The ramp function is only enabled in the opening direction. Before the learning cycle, the door briefly stops after the ramp. Note: In the area of the ramp the obstruction monitoring is reduced!

Section	0...40	Length of the ramp (at horizontal) i.e. with a bipart the total opening of the door leaves is twice as big.
		Note: 0 = ramp function disabled
		            1 = 4 cm horizontal length of ramp (increments = 0.2 cm)
		            40 = 12 cm horizontal length of the ramp

Force	0...40	Applied force in the area of the ramp Note: 0 = light force, produces a minor acceleration 40 = heavy force, produces a major acceleration

Seal	0...40	Width of the seal in the closing area. In the adjusted area the obstruction monitoring is reduced during the closing phase.
		During a learning cycle, increased force is used to attain the closed position.
		Note: 0 = no seal
		            1 = 10 mm seal width (in driving direction)
		            40 = 30 mm seal width (in driving direction)

TIME DELAY OPEN		

Time delay open	**0**...40
	
	(Plant - 3)
		Hold-open time when actuated by Interior / Exterior Sensors.
		Delay starts when actuating signal is removed
		    0 to 20 = increment 1 second (0 – 20 seconds)
		    21 to 40 = increment 2 seconds (22 – 60 seconds)

**Time delay -
  Remote switch**
	0...**4**...40	Hold-open time when actuated by Remote Switch or SSK.
		Delay starts when actuating signal is removed
		    0 to 20 = increment 1 second (0 – 20 seconds)
		    21 to 40 = increment 2 seconds (22 – 60 seconds)

SSK delay	**0**...40	Delay <u>before</u> opening when actuated by Remote Switch or SSK 0 to 40 = increment in 0.2 sec. (0 = 0 sec.; 40 = 8 sec.)

PARAMETER	Default Setting(X)	Description
Reset with button		
Disabled	X	
Enabled		
DRIVE		

Partial Opening	0...**26**...40	Reduced opening as energy-saving measure
		  0 = minimum opening = 4 inches per door leaf
		  40 = full Door Opening Width (DOW)

Close Obstruction	0...**20**...40	Threshold sensitivity to an obstruction during closing. The kinetic energy of the moving door is partially absorbed by the obstacle, until the control detects the increased force. 0 = gentle; 40 = significant
Open Obstruction	0...**20**...40	Threshold sensitivity to an obstruction during opening. The kinetic energy of the moving door is partially absorbed by the obstacle, until the control detects the increased force. 0 = gentle; 40 = significant
Brake		Controls optional internal brake installed in encoder housing
Without	X	Either motor is without brake or brake is not used.
Closed position		Brake energized in closed position, including mode "Locked".
Open position		Is braked in open position in operating mode "Continuously open" as well as with "Reduced opening" and actuation by SSK.
Closed/One-Way/Locked		Brake energized in closed position when in modes "One-Way / Exit Only" and "Locked".
Closed, Locked		Brake energized in closed position when in mode "Locked".
Motor		Based on the control used, not all motor drives are supported.
Without	X	
ATE 20		Motor is automatically identified Designation: ATE STA 20 (size 63x55)
ATE 21		Motor is automatically identified Designation: ATE STA 21 (size 63x25)
ATE 19 small		Designation: ATE STA 19 (size 63x25) NOTE: ATE 19 is not detected automatically.
ATE 19 large		Designation: ATE 19 (size 63x55) NOTE: ATE 19 is not detected automatically
ATE 16 normal		Designation: ATE 16 (102-016029001) NOTE: ATE 16 is not detected automatically
ATE 16 heavy		Designation: ATE 16 (102-016025001) NOTE: ATE 16 is not detected automatically
ATE 17		Designation ATE 17 (size 63x25) NOTE: ATE 17 is not detected automatically
ATE 20 Folding door	(Plant - ✓)	ATE 20 with special pulley for folder (ATE 20 will be detected automatically and set for door type Folder)
ATE 16 Folding door		ATE 16 with special pulley for folder NOTE: ATE 16 is not detected automatically
ATE 16 30V		NOTE: ATE 16 is not detected automatically
ATE 20 / 200		Motor is automatically identified
Two motors		
Disabled	X	
Enabled		

Emergency operating BAT		Configured action is carried out with lead-acid battery when either -
		  the unit experiences loss of incoming power; or
		  the battery voltage is low.
		Note: Once action is completed, the control powers down
		    In the powered down state, the control will respond to a
		    SSK actuation, and the door will open with battery power.

Close, do not lock		Door closes, but does not lock
Unlock and open		Door unlocks and opens
Close and lock		Door closes and locks
Open if not locked	X	Door opens, as long as it is not in mode "Locked"

PARAMETER	Default Setting(X)	Description
Power failure		
Battery operation		Door continues normal functioning until battery capacity is low, then the configured Emergency operating BAT function is executed.
Emergency operation	X	After a power failure, the door immediately performs the operation specified by "Emergency operating BAT".
Battery		
Without battery	X	
Lead-acid battery		Battery is automatically identified on application of incoming power.
ENTRANCE SYSTEM		
A-dimension	650 … **2000**	Door Opening Width (DOW) - measured in mm: 0 to 59,999
G-dimension		Door Opening Height (DOH) - measured in mm: 0 to 59,999
Door leaf		Supports calculation of door parameters
DST		Bi-parting door D-STA, D-TSA
EST-L/R		Single-leaf door left / right: E-STA, E-TSA
Interlock(with FEM-1)		Requires a FEM-1. Direction detecting sensors are recommended to avoid nuisance open cycles (depending on the operating mode). A SIS-signal during the closing cycle affects only the open door. The reduced opening width is supported.
Disabled	X	
All operating modes		Interlock is active during operating modes: Automatic, One-way, & Locked. The interlock function is ignored if both doors are in the operating mode "Continuously Open". This operating mode is to be used for the passage of bulky goods. Manual control of the door is not recommended, because it's only possible to open the opposite door, if the door is pushed closed completely in manual mode. A locked outer door will be unlocked and opened by an interlocked control unit receiving a SSK actuation.
One-way & Locked		Interlock is active during operating modes: One-way and Locked. During the automatic mode both doors open at the same time, as soon as activation has taken place on one side. The operating modes Manual and Continuously open are described under the above "All operating modes".
Door type		NOTICE: A modification of door type causes a reset of the running parameters and sets certain parameters, such as AUX0-IN, to a predefined function. Some drives only support certain door types.
Basic operator	X	European standard operating mode
CO48 Ventouse		Mechanical power storage, with separate carriage, which is maintained in closed position by a magnet.
TOS		Surveillance of manual locking devices on the door leaves. Inputs must be programmed on FEM-0: TOS_DV1, TOS_DV2. Operating mode "Automatic" or "One-Way": manual locking device(s) must be open (0V/open on AUX2_IN and AUX3_IN), otherwise door fails to open Operating mode "Locked": manual locking devices must be closed, otherwise anti-burglar protection is not guaranteed. error 29 on Display Control Panel. SSK function is enabled.
FlipFlow		The bi-parting swing door (DDF) has been successfully integrated. For the FlipFlow the adjustable speed for the safety signals (Emergency Open or Close) has been created. Note: In case of Emergency Open or Close operation, safety inputs are ignored An increase in speed reduces the personal safety, but increases the building security.
CO48 Sandow Direct		Mechanical power storage for door motion during a power failure, or emergency condition.

PARAMETER	Default Setting(X)	Description
Basic escape route		Standard requirement for the UK, always with lead - acid battery Power failure response: Reaction according to "Emergency operating BAT". After return of mains voltage, the previous operating mode is restored. Battery problem response: In case of a defective or insufficiently charged battery, the door opens approximately 12 inches and stops; This can be reset - by momentarily removing power, or using the FPC 902, or momentarily interrupting the Emergency Stop input.
Folding Door, Austria		Operation compliant with regulations in Austria

Breakout USA		When enabled, the following parameters are modified:
		   Emergency stop with reset cannot be enabled;
		   Sidescreen sensing (SIO) is set to creep.

Ratchet		Function for pulse control (Safety active)
		AUX00_IN (Terminal 4) is actuated by application of +24VDC
		   Door closed: when actuated, door opens and remains open
		   If actuated when door is closed, door will open and remain open
		   If actuated when door is open, door will close and remain closed
		   If actuated when door is opening, door will stop; a 2nd actuation
		     will cause the door to open
		   If actuated when door is closing, door will return to open and stop
		   A door in Locked Mode will not respond to AUX00_IN
		   To unlock and open the door, the SSK input has to be actuated
		     and remain actuated (dead man OPEN). After reaching the
		     closed position, (AUX00_IN) will lock the door again.
		   The operation mode Continuously open will open the door
		   Emergency Override (Open or Close) cannot be enabled.

Dead man		Dead man - doors actuated by "Knowing Act" devices, and require continuous actuation during door motion. Door will stop if signal is removed, and will resume when signal resumes.
		   AUX00_IN (Term. 4) = Opening Input; +24V will initiate opening
		   AUX01_IN (Term. 6) = Closing Input; +24V will initiate closing
		   If both inputs are actuated simultaneously, door will stop, and
		     both signals must be removed before door will respond to a
		     subsequent signal.
		   A door in Locked Mode will not respond to AUX00_IN
		   To unlock and open the door, the SSK input has to be actuated
		     and remain actuated (dead man OPEN). After reaching the
		     closed position, (AUX01_IN) will re-lock the door.

OP door 1		Preset Parameters:
		   Open and Closed Creep sections are set to 4
		   Time Delay Open and Time Delay Remote Sw. are increased
		   AUX00_IN = AKA pushbutton
		   AUX01_IN = Continuously open
		   Push to actuate is enabled

OP door 2		Same configuration / pre-settings as OP door 1. In addition, the ramp (value = 20) and the seal (value = 20) are enabled.
Folding door USA	(Plant - ✓)	Door size cannot be determined by standard methodology (rotary motion of the drive does not vary with door size). For optimal door operation (including Obstruction detection), the Door Opening Width (DOW) should be keyed into the "A-dimension" above, using either the FPC 902 or the Display Control Panel
Smoke-protection	Not Available	

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PARAMETER	Default Setting(X)	Description

3 button		Requires FEM 0 Expansion Module
		Functions: OPEN – CLOSE – STOP
		   AUX00_IN (Term. 4) = Open Input; +24V will initiate opening
		   AUX01_IN (Term. 6) = Close Input; +24V will initiate closing,
		     signal must be maintained during closing or door will stop.
		   AUX02_IN (FEM 0) = Stop Switch (SIO), both opening & closing
		   A door in Locked Mode will not respond to AUX00_IN
		   To unlock and open the door, the SSK input has to be actuated
		     and remain actuated (dead man OPEN). After reaching the
		     closed position, (AUX01_IN) will lock the door again.
		   The operation mode Continuously open will open the door.

Default		
Folding door, basic		Similar to "Folding door" above; optimized for Europe.
Industry 1		
CONTROL PANEL		
Mechanical Panel		Connect to AUX00_IN and AUX01_IN or with FEM-0
Disabled	X	
3 Pos. (AUTO)		Will require programming of parameters in Input/Output / STG: AUX00_IN = BDEM2 and AUX01_IN = BDEM1
One-way (EXIT)		Will require programming of parameters in Input/Output / STG: AUX00_IN = BDEM2 and AUX01_IN = BDEM1
Rocker & KeySw		Will require programming of parameters in Input/Output / STG: AUX00_IN = BDEM2 and AUX01_IN = BDEM1
Partial Opening		Will require programming of parameters in Input/Output / STG: AUX00_IN = BDEM2 and AUX01_IN = BDEM1
Display Panel		Note: After changing Display Panel settings, it is recommended to initiate a soft reset of the control to insure new settings are saved.
Language	(Plant - Eng. US)	Language is selected when first starting the Display Control Panel (and after resetting factory settings): Deutsch/Francais/English/**English US**, Italiano, Espanol, Nederlands, Danish, Slovenscina, Polski, Magyar, Czech
Keyboard	Locked (Plant - OFF)	Locked-mode: If not closed, when selected, the door will close. If unit has electric lock, it will be engaged; if no lock, the motor will power the door closed when a manual open motion is attempted. OFF-mode: Unit will stop automatic operation and will not resist manual motion of the door.
Contrast BDE 1	0...**20**...40	Display contrast for Primary Display Control Panel Note: 0 = lower contrast (hardly noticeable) 40 = higher contrast (possible streaking on display)
Contrast BDE 2	0...**20**...40	Contrast for Second Display Panel (Similar to Contrast BDE 1)

Brightness BDE1	0...**20**...40	Display brightness (backlight) for BDE 1
		Note: 0 = pale backlight for applications with weak ambient light
		     20 = medium backlight for normal ambient light conditions
		     40 = intense backlight for applications with bright ambient light

Brightness BDE2	0...**20**...40	Display brightness (backlight) for BDE 2 (similar to BDE 1)

Light time delay	0...**10**...40	Period of time for backlight illumination of display
		   0 = no lighting
		   1 - 39 = lighting period in seconds
		   40 = backlight illumnation constantly on

Default operating mode		This designates the operating mode if no BDE-D or FEM-0 is con-nected or are interrupted, and if no BDE-M outputs are configured.
Off		
Locked	X	

PARAMETER	Default Setting(X)	Description
Automatic	(Plant-x)	Note: A locked door may change to "Automatic" operating mode if the Display Control Panel is disconnected or damaged. If this mode is requested by the owner, this should be discussed.
Continuous open		
LOCKING		
Locking function		Door is locked through selection of operating modes
Night locked	X	Electric lock is engaged when "Locked" operating mode is selected.
1-Way locked		Electric lock is engaged in 1-Way (EXIT) operating mode.
Always locked		Electric lock is engaged in all operating modes when door is closed.
Locking type		Locking types are not automatically identified & must be programmed
Without	X	No electric lock present
Motor-powered		VRR 20 (motorised, bi-stable)
Bi-stable		VRR 16 (magnetic, bi-stable)
MPV 20		Multipoint locking device, system 20 (motorised)
MPV 16		Multipoint locking device, system 16 (motorised)
Magnet (stand alone panel locks)		Magnet locking device (without VAK) unlocked with no voltage
Fail secure		Monostable locking device, locks with no voltage applied
Fail safe		Monostable locking device, unlocks with no voltage applied
Double		Triggering of the additional unit for 2 locks Is used on FBO & PST
Start delay	**0**...40	Delay: max. 8 seconds between unlocking and door to begin opening
Closed VRR error		If enabled, a lock failure at closed will not cause the door to open 6".
Push force	0...40	Increases the closing force for a short time while locking and unlocking, in order to relieve mechanically the locking bolt.
CAN BUS		
Optional Units on CAN bus		Any unit connected is automatically identified & displayed with a "1". Disconnected units are displayed with "?" and must be removed manually with FPC902. Not available units are displayed with a "0".

FEM-0	0	Extended function module 0
		   - 2 configurable inputs
		   - 1 configurable relay output (contact . 24V)
		   - 2 ELS (Safety Beam) connections (pre-configured)
		   - each 1 AKI-/AKA-connection (pre-configured)
		   - BDE-M connection (pre-configured)

FEM-1	0	Extended function module 1
		   - 4 configurable inputs
		   - 14 configurable relay outputs potential-free closed-circuit
		     contact or break contact to be chosen
		     Basic setting: closed-circuit contact - selection with jumper
		All FEM1 outputs can be activated with the available configurations
		Availability depends on control unit.

AKI 1	0	RAD: motion sensor 1 – interior
SI 1	0	RIC: safety sensor 1 – interior
AKA 1	0	RAD: motion sensor 1 – exterior
SA 1	0	RIC: safety sensor 1 – exterior
SL	0	AIR: safety "sidescreen" – left
SR	0	AIR: safety "sidescreen" – right
AKI 2	0	RAD: motion sensor 2 – interior
SI 2	0	RIC: safety sensor 2 – interior
AKA 2	0	RAD: motion sensor 2 – exterior
SA 2	0	RIC: safety sensor 2 – exterior

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PARAMETER	Default Setting(X)	Description
INPUT/OUTPUT		
STG		
AUX00_IN AUX01_IN AUX04_IN		Terminals 4, 6, & 18 on control module STG 20 UNI Note: With parameters identified as "<u>Safety</u>" require a closed circuit for normal door operation, and when the circuit is opened the signal is enabled. Not all functions are available on each AUX input.
Disabled	X	
SÖK or NSK (Emergency Open or Close)		<u>Safety</u> opening or closing has priority over Actuating and Safety Inputs, and Obstruction Detection is ignored. Connection to +24V enables standard door operation. Interruption of the +24V to the input will initiate the programmed Emergency Open or Close.
SURV (Remote en- gagement of Locked mode)		System response to Input: 0V/open = "Locked" operating mode 24V = Operating mode set by Display Control Panel When used to "Lock", Display Control Panel cannot override Remote Sw (SSK) and safety beams remain functional.

BDE-M
(Mechanical
 Control Panel)
		AUX00_IN = BDEM_2 and AUX01_IN = BDEM_1,
		or connect to FEM-0 (preconfigured connections)
		Note: Mech. Panel must be enabled in Control Panel parameters
		         Only one Mech. Panel can be connected
		         When set to "Continuous Open", door opens, then changes
		            to Manual mode.
		         If Display Control Panel is also connected, the Mech. Panel
		            has priority, except for "Off/Locked" mode, and Display
		            Panel will indicate mode set by Mech. Panel.

Continuously Open		<u>Safety</u> input (+24V for normal door operation), Momentary signal: 1st pulse = Continuous open, 2nd pulse = previous operating mode Note: A locked door can be unlocked, safety sensors are active
SIS		<u>Safety</u> during closing cycle (Not active when door closed). Door will reopen and remain open when signal is open. 0V = actuated.
SIO		<u>Safety</u> during opening cycle, including inhibiting motion at beginning of open cycle. Not active during closing cycle. Will stop door or continue opening slowly (creep), based on parameter Input/Output / SIO below. Functional on all open actuatons. 0V = actuated.
AKI Button reduced		Momentary actuation for reduced opening. Opening signal from other inputs will override and door will fully open. 24V = actuated. Will not open a door in "Locked" operating mode. Note: A maintained actuation of this input will not hold door open.
Broken rubber cord		
Opening Deadman		Maintained contact. When signal is present, door will open, if signal is removed, door will stop. Functional with Door Type: Dead Man.
Closing Deadman		Maintained contact. When signal is present, door will close, if signal is removed, door will stop. Functional with Door Type: Dead Man.
AKI Button		Momentary actuation for full door opening. 24V = actuated. Note: A maintained actuation of this input will not hold door open.
Closing Button		Momentary contact. When actuated, door will close. SIS is active. If door stopped or re-opened during closing (SIS), a 2nd contact closure will be required. 24V = actuated.
Ratchet		Sequential control (momentary actuation). See Door Type / Ratchet
Emergency Opening		<u>Safety</u> input. Door will open if not on "Locked" operating mode. Door will then revert to current operating mode. 0V = actuated.
SURA (Remote en- gagement of 1-Way mode)		System response to Input: 0V/open = "1-Way"(EXIT) operating mode 24V = Operating mode set by Display Control Panel When used to enable "1-Way / EXIT" mode, Display Control Panel can override only to "Locked / Off" operating mode. Remote Sw (SSK) and safety beams remain functional.

25

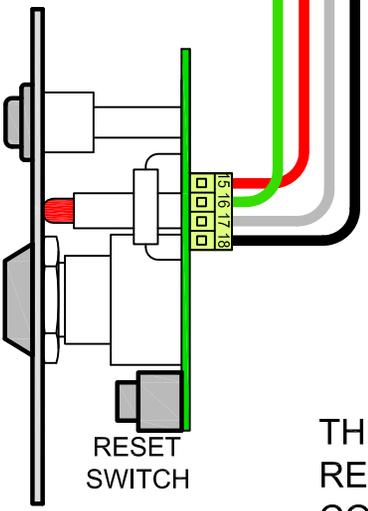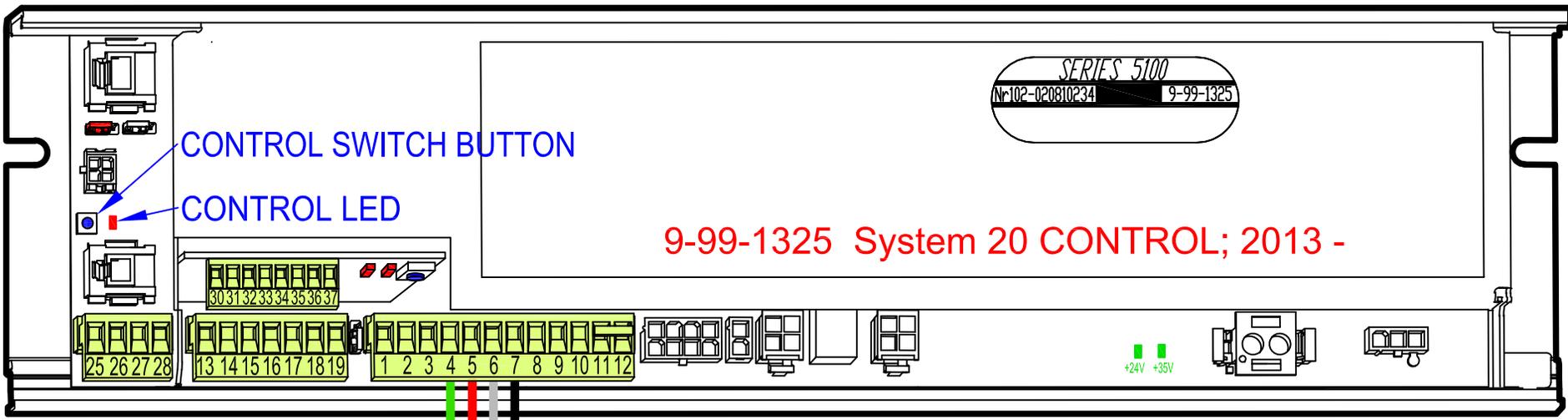| PARAMETER	Default Setting(X)	Description
AKA Button		Momentary actuation for full door opening. 24V = actuated. Not active when door in "1-Way / EXIT" operating mode. Note: A maintained actuation of this input will not hold door open.
AKA Button Reduced		Momentary actuation for reduced opening. Opening signal from other inputs will override and door will fully open. 24V = actuated. Will not open a door in "1-Way/EXIT" or "Locked" operating modes. Note: A maintained actuation of this input will not hold door open.
VRR manual		Safety input - used with lock monitor switch on mechanical lock not controlled by door controller. When actuated, Display Control Panel will alternately indicate "Manually Locked" and current operating mode. 4 second delay before return to set mode. 0V = actuated.
Reset SÖK_NSK		Reset Emergency Open / Close (Not available on AUX4_IN)
SIA	AUX04_IN: (Plant - ✓)	Safety input - typically used on folding door systems. If actuated when door is closed, door will either not open (stop) or open slowly (creep) based on Input/Output / SIA parameter below. If actuated when door open, door remains open until signal removed. SIA is ignored when door is in motion (open & close). 0V = actuated.
AUX0_OUT		Dry Contacts on STG: Terminals 8 (NO), 9 (COM), & 10 (NC) Rated 1 Amp at 30VDC
Disabled	X	
Test Sensors	Available only on CanBus Sensors	Is needed as functional test for safety sensors, and triggers prior to each "dangerous" door motion (e.g. closing motion)
Alarm output		After the configured time (parameter Miscellaneous / Alarm display) has expired, the error is displayed on the BDE-D and relay is de-energized. In normal mode, relay energized, COM & NO connected.
Gong		No ELS signal (Safety during closing/SIS): Relay is de-energized. Reacts to ELS or presence surveillance signal, when door is open/ activated. In case of a constant signal, every 10 seconds a pulse will be activated for approx. 1 sec. This is applicable as well during the learning phase of a RIC 290.
Locked		When not locked: Relay is de-energized, COM & NC connected.
Closed		Output triggers slightly delayed, as soon as the door is closed (static opening D-STA < 20mm). Functional in Manual mode.
Warning		Pre-warning before the door opens/closes and while the door is in motion
Open	(Plant - ✓)	Relay energized when door is at full open (COM & NO connected), and remains energized until door begins closing.
AKI		Output triggers when Interior sensor is actuated.
AKA		Output triggers when Exterior sensor is actuated.
ZLP		
ZLP1		Additional printed circuit board to connect conventional threshold safety beams. Once the ZLP-ELS beams are recognized (automatic recognition), parameter can only be changed with the FPC 902.
Without	X	No additional printed circuit board connected
ELS	(Plant - ✓)	Additional printed circuit board connected for 2 ELS
FEM 0		See additional instructions provided with FEM 0 expansion module
FEM 1		See additional instructions provided with FEM 1 expansion module
Ext. Sw IN		Function of Exterior Sensor (AKA)
Ext. Sw IN		Exterior sensor is active during closing cycle when in operating modes "One-Way" and "Locked" for safety.
Inactive by 1way and locked		Exterior sensor is not active during closing cycle when in operating modes "One-Way" and "Locked".
Disabled		Exterior sensor is not active as a motion sensor; signals from it are ignored by the control unit. Presence detection with RIC 290 is possible.

PARAMETER	Default Setting(X)	Description
Emerg. Opn / Cls		Set functions of Emergency Signal Input

Function		Function Options:
		   Disabled
		   Emergency Open
		   Emergency Close; Manual & Remote Switch active
		   Emergency Close & Lock
		   Emergency Close & Lock; Remote Switch active
		   Emergency Close; Manual Override

Speed (Flip-Flow)	**0**…40	Set response time: 0 to 40. Applicable to Door Type Flip Flow only.
Emerg. Stop Reset		Disabled or Enabled
SIO		Function of Sensor covering Side Approach
Function SIO		**Stop** or Creep
Activate SIO	**0**…40	Adjustable 0 to 40
Suppression SIO	0…**40**	Adjustable 0 to 40

SIS		Function of Sensor covering door path: **Stop**
		     Reversing direction
		     Creep (Slow speed)

SIA		Function of Sensor for Folding Door Safety: **Stop** Creep (Slow speed)
MISCELLANEOUS		
TOWA		
Disabled or Enabled	X	If both Interior and Exterior Sensors are simultaneously actuated, or one actuated longer than 20 seconds, a door in "Partial Open" will fully open for that cycle, then revert back to "Partial Open" mode.
Push to act. Open		Note: Adjustment of holding force when closing is ignored
Disabled	X	
Normal		Opening width per current operating mode (Full or Partial Opening)
Reduced		Partial opening width
Push to act. Close		
Disabled Enabled		Note: Open time delay will be ignored if enabled and door is pushed.
Push Holding force	**0**...40	Force required to initiate function: 0 = light; 40 = heavy

Lead Time Open	0...**1**...40	Pre-warning time after the open signal, before the door actually moves, and
		 warning continues while the door is in motion.
		 Note: 0 = No pre-warning and no warning while in motion
		     1 = 0.2 seconds pre-warning + warning
		    40 = 8 seconds pre-warning + warning (opening delayed 8 sec.)
		     The push to open function will interrupt the pre-warning delay.

Lead Time Close	0...**1**...40	Pre-warning after the open time expires, before the door begins
		 closing, and warning continues during the door is in motion.
		 Note: 0 = No pre-warning and no warning while in motion
		     1 = 0.2 seconds pre-warning + warning
		    40 = 8 seconds pre-warning + warning (closing delayed 8 sec.)
		     The push to close function will interrupt the pre-warning delay.

Alarm display		Display for AKI/AKA/SSK or SIO/SIS/ELS If the alarm output is configured, it will be disabled after the preset time.
Time release	0...**18**...40	Delay time during a permanently "on" signal, until an error message is displayed - 0 = No Alarm Screens will be displayed; 1 to 40 = Delay before Display in 5 sec. increments (5s. min/200s. max)
Time safety	0...**16**...40	Similar to Time release above
Obstruction Alarm		
Disabled	X	The Display Control Panel will not indicate an Obstruction alarm.
Enabled		The Display Control Panel will indicate an Obstruction alarm. If the Alarm Output is configured (Input/Output / STG / AUX0_OUT / Alarm Display), it will also change state to indicate the alarm.

ALARM CODES AND ERROR MESSAGES

No.	Display text	Type	Res	Comments and possible troubleshooting
3	AKI > 60 sec. active			Inside radar longer than 60 sec. active and door remains open. Check that no moving objects are activating the radar.
5	AKA > 60 sec. active			Outside radar longer than 60 sec. active and door remains open. Check that no moving objects are activating the radar.
6	Unlocking error		X	Unlocking error: it is impossible to unlock the door. Repeat unlocking attempt after changing the BDE operating mode.
7	No redundancy test	RED	X	When no „redundancy" test could happen within the last 24 h or the „redundancy" test was not correctly performed on a door not locked. Reset. Control settings.
9	Battery fuse open		X	Battery fuse is disconnected or battery is not plugged in.
9	Open. unsuccessful			Door does not open or only slowly. SIO might possibly be active or motion be mechanically hindered (e.g. dirt in floor track).
10	Locking error			Locking error and door remains approx. 10 cm open → depending on parameterising door remains closed. Door might possibly be hindered or locking device might need to be adjusted.
11	Difference AKI	RED	X	Error in the interpretation of the inside radar signal. Check inside radar.
12	Low BAT voltage		X	Battery is missing or is not plugged in. Door works if mains voltage is provided.
12	BAT capacity		X	Battery no longer meets minimum power requirements. Replace Battery.
14	VAK defective		X	Locking device hampered. Adjust door leaves and locking device.
15	EMERG. OPEN.	RED		On RED installations emergency opening switch has been actuated.
17	Timeout open. time	RED	X	80% of escape route opening not reached within 3 sec. Control with FPC, adjust opening speed. Under „Status", opening time + 400 ms.
18	VAK closed automatic		X	Adjust locking device. Make contact (NOC) of locking device is active with Automatic. Locking is set on „wrong" position. Change operating mode on BDE-D to Locked and again to Automatic. Actuate manual unlocking, or rather completely reset it.
29	TOS not locked	TOS with DV		TOS not locked (rotary switches) on Locked. Turn rotary switches onto Locked position (above).
30	TOS locked	TOS with DV		Automatic mode, TOS locked, but door stays in manual mode.
31	EMERGENCY STOP			Emergency stop key has been pressed or manual unlocking has been actuated.
33	Error ELS1		X	Light barrier signal is not identified. Inform after-sales service. Calibrate ELS with 2 light pulses.
36	VOK closed l.		X	Locking device does not work properly. On BDE-D change operating mode to Automatic and again to Locked. Wrong locked position or VRR faulty.
37	Motor current		X	Possibly wrong motor type parameterised or motor is overloaded.
38	Motor 1 overheat		X	Motor 1 is too warm. Door works sluggishly.
39	Overload 24V		X	24 volts supply for peripheral units is overloaded. Check wiring.
41	Temp. sensor 1		X	With motor 1: temperature sensor is faulty or motor cable is disconnected.
42	Temp. sensor 2		X	With motor 2: temperature sensor is faulty or motor cable is disconnected.
43	Encoder fault		X	Encoder or cable is faulty or not plugged in. Reset.
44 W	T. motor high			Warning message; Time Delays will be extended. Door might work sluggishly. Check for presence of mechanical hindrance.
46	STG defective		X	Control unit is defective. Reset. If no success, then replace control unit.
47	SIO > 60 sec active		X	Door does not open or slides at reduced speed. Check Safety Sensor SIO.
48	NSK or SOK activated			Remote Alarm has just received. Control safety alarm. Control external signal.
50	Watchdog fault			Replace control unit.
51	VOK op n unl.		X	Repeat locking and unlocking procedures. Connection cable might be missing or is not properly plugged in. Check locking settings.
52	No run param.		X	Door must be calibrated (perform teach-in run).
53	Interrupt. mot. 1		X	Motor is not plugged in. Motor is faulty.
54 W	Calibrating run		X	Warning message: Calibration run is perforned.
55	Power failure			No mains supply. Door works in battery service provided that there is a battery and not "Basic escape route" has been configured.
57	Interrupt. mot. 2		X	2nd motor is not plugged in. Motor is faulty.
59	ELS > 60 sec. active			Light barriers interrupted or disconnected and door remains open. Check that safety barriers are not covered or extremely dirty.
59	SIS > 60 sec. active		X	Door does not close. Check Safety Sensor SIS.
60	EEPROM defective		X	Load factory settings. 9 light pulses with MFT and reset within 10 seconds. Afterwards language selection has to be displayed on BDE-D. Attention! All programmings are reset. Reconfigure door. Replace control unit if door still fails to function.
61	SSK > 60 sec. active			Key-operated contact stays active. Door remains open. Check Remote Switch (SSK) wiring, connections, and switch.
62	BDE no priority			BDE is locked e.g. by a clock timer on input SURV/SURA accordingly configured.
92	STG relay defect.		X	Change control unit.
93	Overvoltage 24V		X	Wiring error. Check connections.
96	EEPROM void		X	Load factory settings. See error 60.
97 W	Maintenance time exceeded		X	Warning message: Acknowledge message. Alarm is reset for 13 days. Actual value = 105% of target value of cycles or operating hours. Inform after-sales service and have installation serviced. Set Targets to 0 to avoid alert.
98 W	Maintenance due		X	Warning message: Acknowledge message. Alarm is reset for a short time. Repeats at 100% Actual value = 95% of target value of cycles or operating hours. Inform after-sales service and have installation serviced. Set Targets to 0 to avoid alert
112	Batt. not charged complet.			Battery is not fully charged. Message disappears from display in case of full charge.
2132	FPC Can blocked ************* BDE Can blocked ************* ERROR by saving in the STG			On a locked door the CAN-Bus will be blocked for devices like the BDE-D(Display) or FPC if they were not connected BEFORE the door was locked. When reading either of the 3 messages from the left column, to unblock, the door needs to be unlocked or the emergency switch has to be activated or the multi-function switch on the control has to be pressed for 1 flash.

11 Abbreviations

A   A   Width of passage
    AKA   Actuating contact „outside"
    AKI   Actuating contact „inside"
    AMP   Lamp
    APA   actuating switch for
                pharmacies
    APD   Pushbutton for pharmacies
    APR   locking bar for pharmacies
    APS   safety device for pharmacies
    AS   Connection or general
                schematic diagram
    ATE   Drive unit
    ATM   Drive module

B   BAT   Battery-pack
    BDE   Control unit
    BDE-E   Control unit electronic
    BDE-M   Control unit mechanical
    BDE-R   Control unit redundant
    BS   BDE with lock

C   CAN-H   Serial interface
    CAN-L   Serial interface
    CO48   special standard in France
    CPU   microprocessor

D   D-STA   Double sliding door drive
    DUO   heavy door operator

E   EEPROM   parameter storage
    ELS   Light barrier
    EMK   Receiver head
    EPROM   program storage
    ES   Electrical connection
    diagram
    E-STA   Single sliding door drive
    E-STA-L   Single sliding door drive left
    E-STA-R   Single sliding door drive right

F   F   Length of header
    FEM   Extended functions module
    FIRST   redundant operator

G   G   Height of passage
    GTR   Gearbox

H   HEA   Manual unlocking „from
    outside"
    HEI   Manual unlocking „from
    inside"
    HES   Manual unlocking switch

K   KA   Cable exit

L   LED   Light-emitting diode
    LS   Wiring diagram

M   MOT   Motor
    MP   General installation plan

N   NET   Power supply
    NSK   Emergency fail close contact

O   OUT   Output
    OVA   Optical lock indicator

R   RAD-A   Radar „outside"
    RAD-I   Radar „inside"
    RED   Redundant module

S   SAA   interlock control "exit
                actuation blocked"
    SAG   Control unit
    S-AUS   Interlock control
    SEA   Interlock control "entrance
                actuation blocked"
    SEK   Transmitter head
    SHE   Safety element, external
    SÖK   Emergency opening contact
    SPS   Stored program control SPC
    SSA   Slidebar operator
    SSK   Key-operated contact
    STA   Sliding door drive
    STD   Socket
    STG   Control unit
    STM   Control module
    STP   Control p.c.b.
    SUR-A   Time switch contact "exit
                mode"
    SUR-V   Time switch contact "locking
                mode"

T   THS   Thermostatic switch
    TOS   Break-out system
    TOZ   Door hold-open time
    TSA   Telescopic sliding door
                operator
    TÜV   Industrial inspectorate

U   UMR   Guide pulley
    µP   Microprocessor

V   VAK   Lock indicating contact
    VAL   Locking alarm
    VL   Wiring list
    VRR   Locking device

Z   ZLP   Supplementary printed circuit
                board

CONTROL SWITCH BUTTON

CONTROL LED

SERIES 5100

Nr102-020810234   9-99-1325

9-99-1325 System 20 CONTROL; 2013 -

30 31 32 33 34 35 36 37

25 26 27 28   13 14 15 16 17 18 19   1 2 3 4 5 6 7 8 9 10 11 12

+24V +35V

FULL / PART'L
OPENING

2 WAY AUTO   1 WAY EXIT

OFF   OPEN

record

RESET SWITCH

15 16 17 18

TO CONNECT EITHER THE 4-51-0105 DUAL ROCKER SWITCH OR THE 4-51-0106 ROCKER / KEY SWITCH CONTROL PANEL TO THE 9-99-1325 SYSTEM 20 DOOR CONTROL ASSEMBLY, CONNECT THE TERMINAL AS SHOWN:

ROCKER CONTROL PANEL	DOOR CONTROL
15	5
16	4
17	6
18	7

THE 9-99-1325 DOOR CONTROL ASSEMBLY MUST BE CONFIGURED TO RESPOND TO THE CONTROL PANEL. USING EITHER THE DISPLAY CONTROL PANEL OR THE FPC-902 FLASH PROGRAMMER, CHANGE THE FOLLOWING THREE PARAMETERS AS INDICATED:

PARAMETER: *CONTROL PANEL / MECHANICAL PANEL* - CHANGE FROM "DISABLED" TO "ROCKER & KEYSW"
PARAMETER: *INPUT/OUTPUT / STG / AUX00_IN* - CHANGE FROM "DISABLED" TO "BDEM_2"
PARAMETER: *INPUT/OUTPUT / STG / AUX01_IN* - CHANGE FROM "DISABLED" TO "BDEM_1"

NOTE: WHEN USING BOTH A ROCKER SWITCH PANEL AND A DISPLAY CONTROL PANEL, THE ROCKER SWITH PANEL WILL HAVE PRIORITY OVER THE DISPLAY PANEL IN ALL MODES EXCEPT "OFF".
TO RESET THE DOOR WITH A ROCKER SWITCH PANEL, INSERT A PAPERCLIP IN THE SMALL HOLE IN THE CENTER OF THE LOGO, PRESS UNTIL A CLICK IS FELT AND HOLD FOR 15 SECONDS, THEN RELEASE.
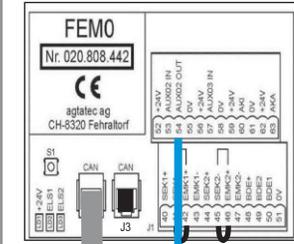
INSTALLING A 4-51-0105 / 4-51-0106 ROCKER SWITCH CONTROL PANEL WITH A 9-99-1325 SYSTEM 20 DOOR CONTROL

FEB2013

CONTROL TERMINAL CONNECTIONS

1 EMERGENCY STOP
2 EMERGENCY STOP (+24V)
3 +24V POWER OUT
4 AUX00_IN
5 +24V POWER OUT
6 AUX01_IN
7 0V POWER OUT
8 AUX0_OUT - NO
9 AUX0_OUT - COM
10 AUX0_OUT - NC
11 SPECIAL ACTIVATION (+24V)
12 SPECIAL ACTIVATION

13 +24V POWER OUT
14 INTERIOR SENSOR
15 0V POWER OUT
16 EXTERIOR SENSOR
17 +24V POWER OUT
18 AUX04_IN
19 +24V

25 CANBUS - DATAH
26 CANBUS - DATAL
27 +24V
28 0V

30 SAFETY BEAM - XMTR1+
31 SAFETY BEAM - XMTR1-
32 SAFETY BEAM - RCVR1+
33 SAFETY BEAM - RCVR1-
34 SAFETY BEAM - XMTR2+
35 SAFETY BEAM - XMTR2-
36 SAFETY BEAM - RCVR2+
37 SAFETY BEAM - RCVR2-

BEA EAGLE or SIMILAR SENSOR

1-J2#17
2-J2#15
3-J2#17
4-J2#16

54321

EXTERIOR SENSOR

BE SURE TO MOUNT ACTIVATION SENSOR ON FOLD SIDE OF UNIT ON 2 SPACERS

1-J2#13
2-J2#15
3-J2#13
4-J2#14

BEA EAGLE or SIMILAR SENSOR

54321

INTERIOR SENSOR

NOTE: FOR PROPER OPERATION, USE HARNESS PROVIDED WITH SENSORS TO BE INSTALLED. ALL WIRING SHOULD BE ROUTED AWAY FROM MOVING PARTS. POWER AVAILABLE FOR SENSORS: 24V, 1A.

BEA   BODYGUARD

FOLD SIDE   SAFETY SENSOR

SET IMMUNITY TO 3 HIGH

FEM0
Nr. 020.808.442
agtatec ag
CH-8320 Fehraltorf

STG SETTING:
FEM0> AUX2 OUT
18 - OPEN

NOTE: WITH NO RAIL BEAMS JUMPER 41 & 42 AND 45 & 46 ON FEM0 MODULE
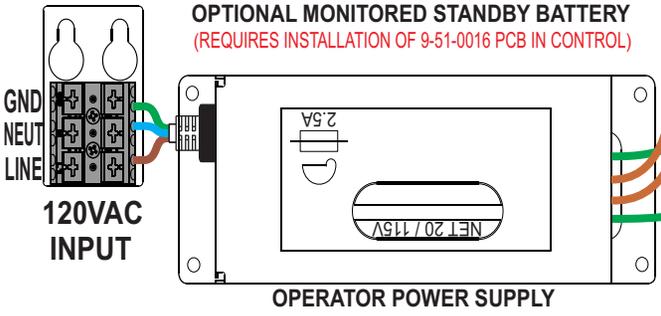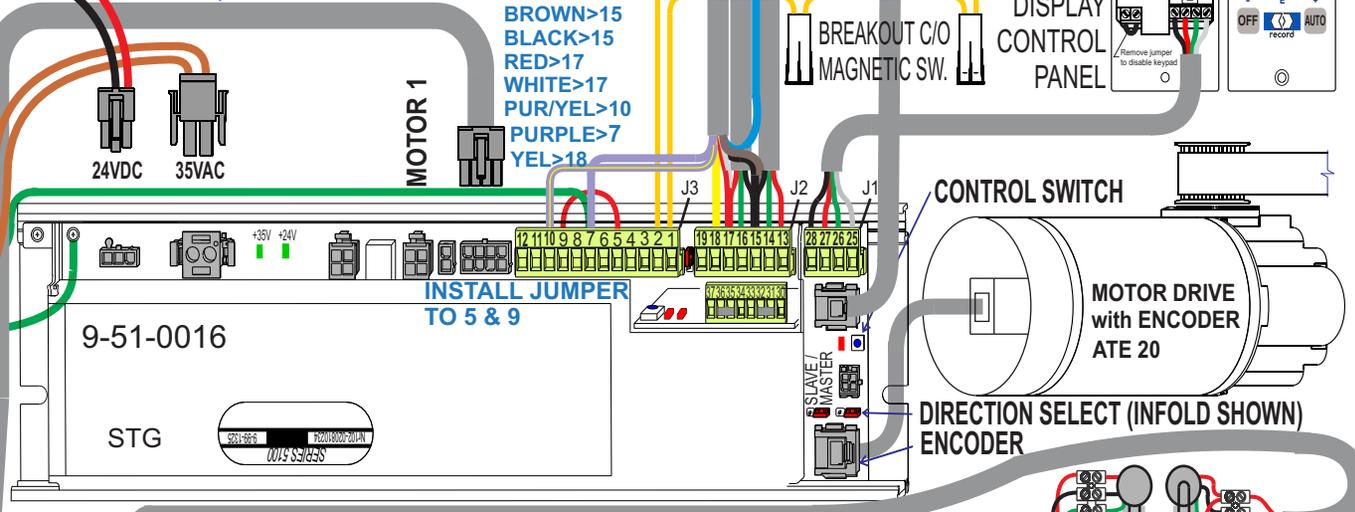
BLUE>54

NOTE: FOR PROPER SAFETY SENSOR FUNCTION, PARAMETER "AUX04_IN" SHOULD BE SET TO "(35) SIA". FOR BODYGUARD DATALINE OPERATION, PARAMETER "AUX0_OUT" SHOULD BE SET TO "TEST SENSORS". IF PRESENT, REMOVE JUMPER BETWEEN TERM. 18 & 19.

BROWN>15
BLACK>15
RED>17
WHITE>17
PUR/YEL>10
PURPLE>7
YEL>18

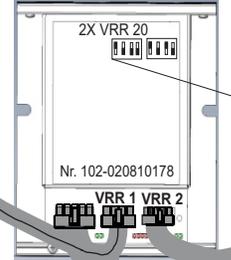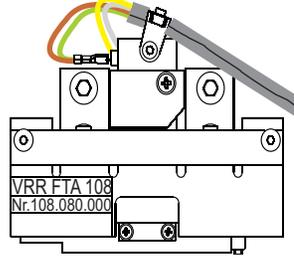BREAKOUT C/O MAGNETIC SW.

STANDARD DISPLAY CONTROL PANEL

OPEN PROG EXIT
AUTO
OFF record AUTO

Remove jumper to disable keypad

THIS PRODUCT IS INTENDED FOR PERMANENT CONNECTION TO THE ELECTRICAL SUPPLY SYSTEM

BAT19
Nr.019.808.036
4A

OPTIONAL MONITORED STANDBY BATTERY
(REQUIRES INSTALLATION OF 9-51-0016 PCB IN CONTROL)

24VDC   35VAC

MOTOR 1

GND
NEUT
LINE

120VAC INPUT

2.5A
NET 20 / 115V

OPERATOR POWER SUPPLY

+35V +24V

9-51-0016

STG

SERIES 5100

INSTALL JUMPER TO 5 & 9

J3   J2   J1

12 11 10 9 8 7 6 5 4 3 2 1   19 18 17 16 15 14 13   28 27 26 25

CONTROL SWITCH

MOTOR DRIVE with ENCODER ATE 20

SLAVE / MASTER

DIRECTION SELECT (INFOLD SHOWN)

ENCODER

OPTIONAL BREAKOUT LOCK
GRN & BRN-SOLENOID
YEL & WHT-MON. SW.

2X VRR 20

Nr. 102-020810178

VRR 1 VRR 2

VRR FTA 108
Nr.108.080.000

NOTE: FOR UNITS WITH BOTH FOLD & BREAKOUT ELECTRIC LOCKS, THE PARAMETER "LOCKING/ LOCK TYPE" SHOULD BE SET TO "DOUBLE". DIPSWITCHES; BANK 1, #1 ON, #2,3,4 OFF FOR "BISTABLE". BANK 2, # 1 ON, #2 OFF, #3 ON, #4 OFF FOR "FAIL SAFE"

DOOR CORDS

OPTIONAL PANEL LOCKS
RED-SOLENOID
WHT-SOLENOID
GRN-Monitor (1 Lock)
BLK -Monitor (1 Lock)
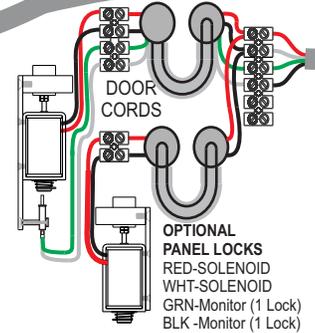
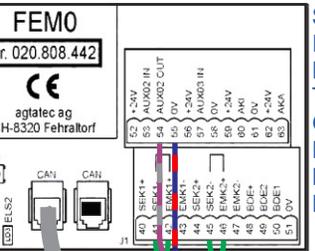**SERIES 4500 WIRING DIAGRAM with Sys20 CONTROL BEA BODYGUARD T, FEM0 MODULE & PANEL LOCKS**
APRIL2018   BG

◇ record

CONTROL TERMINAL CONNECTIONS
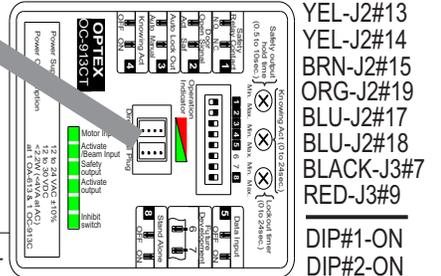
1 EMERGENCY STOP
2 EMERGENCY STOP (+24V)
3 +24V POWER OUT
4 AUX00_IN
5 +24V POWER OUT
6 AUX01_IN
7 0V POWER OUT
8 AUX0_OUT - NO
9 AUX0_OUT - COM
10 AUX0_OUT - NC
11 SPECIAL ACTIVATION (+24V)
12 SPECIAL ACTIVATION

13 +24V POWER OUT
14 INTERIOR SENSOR
15 0V POWER OUT
16 EXTERIOR SENSOR
17 +24V POWER OUT
18 AUX04_IN
19 +24V

25 CANBUS - DATAH
26 CANBUS - DATAL
27 +24V
28 0V

30 SAFETY BEAM - XMTR1+
31 SAFETY BEAM - XMTR1-
32 SAFETY BEAM - RCVR1+
33 SAFETY BEAM - RCVR1-
34 SAFETY BEAM - XMTR2+
35 SAFETY BEAM - XMTR2-
36 SAFETY BEAM - RCVR2+
37 SAFETY BEAM - RCVR2-

1-J2#15
2-J2#17
3-J2#17
4-J2#16

NOTE: FOR PROPER SAFETY SENSOR FUNCTION, SET PARAMETER "AUX4_IN" TO "35-SIA", AND "AUX0_OUT" TO "OPEN" REMOVE JUMPER TERM. 18 & 19
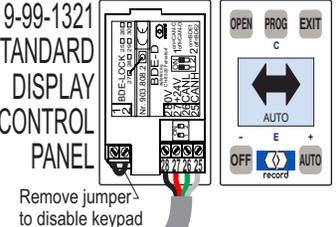
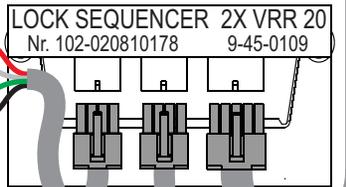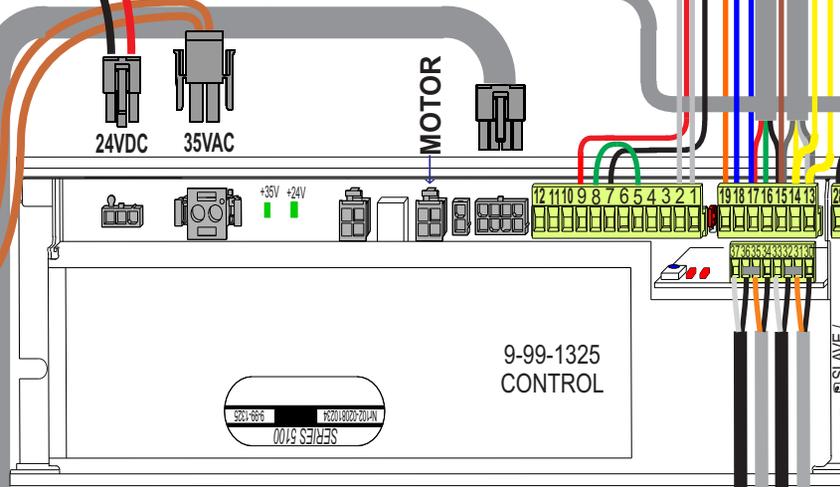**NOTE: FEMO MODULE NEEDS JUMPERS PLACED BETWEEN 41 & 42, AND 45 & 46.**

9-61-0028
Motion Sensor
Optex Reaction II
EXTERIOR ACTIVATION SENSOR

9-61-0028
Motion Sensor
Optex Reaction II
INTERIOR ACTIVATION SENSOR

2- J2#13
3- J2#13
4- J2#14
1- J2#15
MOUNT FOLD SIDE ON 2 SPACERS

MODE SW:
DIP#1-ON
DIP#6-ON
DIP#7-ON
9-61-0037
Presence Sensor
Optex Pro-Swing Premier OA613T
FOLD SIDE SAFETY SENSOR

OPTEX OC-913CT
YEL-J2#13
YEL-J2#14
BRN-J2#15
ORG-J2#19
BLU-J2#17
BLU-J2#18
BLACK-J3#7
RED-J3#9

DIP#1-ON
DIP#2-ON
DIP#3-ON

FEMO
Nr. 020.808.442
CE
agtatec ag
CH-8320 Fehraltorf
S1
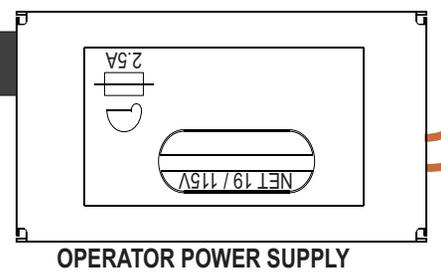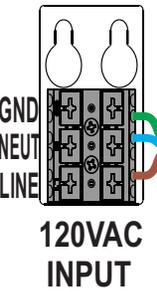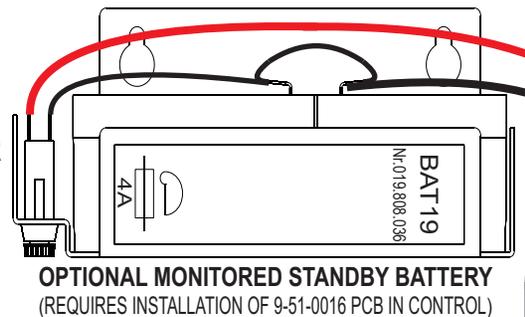
STG>FEM0 SET
INPUT/OUTPUT
FEM0 AUX2 OUT>
TEST SENSORS
GREY/VIOLET>
FEM0- #54
RED/BLUE>
FEM0- #55

ADJUST LOC-OUT TIMER ACCORDINGLY

9-99-1321
STANDARD DISPLAY CONTROL PANEL

OPEN   PROG   EXIT
C
AUTO
OFF   AUTO
record
- E +

Remove jumper to disable keypad

THIS PRODUCT IS INTENDED FOR PERMANENT CONNECTION TO THE ELECTRICAL SUPPLY SYSTEM

4A
BAT19
Nr.019.808.036

OPTIONAL MONITORED STANDBY BATTERY
(REQUIRES INSTALLATION OF 9-51-0016 PCB IN CONTROL)

24VDC   35VAC   MOTOR

BREAKOUT C/O MAGNETIC SW.

CONTROL SWITCH

GND
NEUT
LINE

2.5A
NET 19 / 115V

120VAC INPUT

OPERATOR POWER SUPPLY

+35V +24V

12 11 10 9 8 7 6 5 4 3 2 1   19 18 17 16 15 14 13   28 27 26 25

9-99-1325
CONTROL

SERIES 5100

MOTOR DRIVE with ENCODER

SLAVE / MASTER

DIRECTION SELECT (OUTFOLD SHOWN)

ENCODER

LOCK SEQUENCER 2X VRR 20
Nr. 102-020810178   9-45-0109

DOOR CORDS

NOTE: SAFETY BEAMS CAN BE DISABLED WITH JUMPERS BETWEEN 31 & 32, AND 35 & 36.

XMTR B
RCVR A

RCVR B
XMTR A

THRESHOLD SAFETY BEAMS

OPTIONAL BREAKOUT LOCK
GRN & BRN-SOLENOID
YEL & WHT-MON. SW.
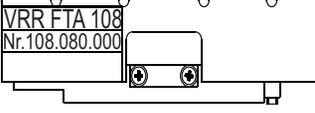
VRR FTA 108
Nr.108.080.000

OPTIONAL PANEL LOCKS
RED-SOLENOID
WHT-SOLENOID
GRN-Monitor Switch
BLK -Monitor Switch

NOTE: DIP SWITCH SETTINGS: S1-ON,OFF,OFF,OFF; S2-OFF,OFF,ON,OFF FOR UNITS WITH BOTH PANEL AND BREAKOUT ELECTRIC LOCKS, THE PARAMETER "LOCKING / LOCK TYPE" SHOULD BE SET TO "DOUBLE".

Mar2018 BG

SERIES 4500 Sys20 WIRING DIAGRAM with Optex
SENSOR PACKAGE I with MONITORING
InPanel Locks w/Monitor Switch

record