



# RollSeal SC-325 & SC-650 Controllers Owners Manual

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## 1 Warnings (Advertisements)

### **Warning!**

Disconnect All Power Sources Before Installing This Equipment. Failure To Disconnect Power Source Can Result In Property Damage, Serious Injury Or Death!

### **Warning!**

Dangerous Rotating Machinery!  
Keep Hands, Clothing, Etc. Clear When Operating!  
Do Not Operate Without All Guards And Covers In Place!

### **Warning!**

All Wiring Should Be In Accordance with National Electrical Codes Or Other Local Codes.

### **Warning!**

The Installer Is Responsible For Complying With All Relevant Regulations, Such As National Wiring Regulations And Accident Prevention Regulations. Particular Attention Must Be Given To The Cross-sectional Areas Of Conductors, The Selection Of Fuses Or Other Protection, And Protective Earth/Ground Connections!

### **Warning!**

Drives Are Intended As Components For Incorporation Into Electrical Control Systems Or Machines. It Is The Responsibility Of The Installer To Ensure That The Drive Is Installed Safely And In Accordance With Any Regulations Which Apply To The End Product At The Place Of Use, For Example, Regarding Safety Or Electromagnetic Compatibility. To Ensure Mechanical Safety, Additional Safety Devices Such As Electro-Mechanical Interlocks May Be Required!

## **Warning!**

The Voltages In The Power Cables And Certain Parts Of The Drive Can Result In Death. Whenever The Drive Has Been Used, It Must Be Isolated And Disconnected For 5 Minutes Before Any Work Commences.

## **Danger!**

Only Qualified Electrical Personnel Familiar With The Construction And Operation Of This Equipment And The Hazards Involved Should Install, Adjust, And/Or Service This Equipment. Read And Understand This Manual In Its Entirety Before Proceeding.

Failure To Observe This Precaution Could Result In Severe Bodily Injury Or Death!

## **Warning!**



Item 4501-6312  
(Warning Moving Door Label)  
Supplied With Door,  
MUST Be Installed  
On Inside Of Cooler/Freezer  
Beside Door Opening.

## **Proposition 65 Warning!**

California Proposition 65 Warning: This product can expose you to chemicals, including Lead, which is known to the state of California to cause cancer or birth defects or other reproductive harm. For more information, go to [www.p65Warnings.ca.gov/furniture](http://www.p65Warnings.ca.gov/furniture).

# IMPORTANT INSTALLATION INSTRUCTIONS



## To Reduce The Risk Of Severe Injury Or Death:

1. READ AND FOLLOW ALL INSTALLATION INSTRUCTIONS.
2. Do not connect the door operator to the source of power until instructed to do so.
3. Locate the control station: (a) within sight of the door, (b) at a minimum height of 5 feet so small children cannot reach it, and (c) away from all moving parts of the door. Remove all ropes and remove or make inoperative all locks connected to the garage door before installing opener.
4. For products having a manual release, instruct the end user on the operation of the manual release. Where possible, install the door opener 8 feet or more above the floor. For products having an emergency release, mount the emergency release within reach, but at least 6 feet above the floor and avoiding contact with vehicles to avoid accidental release.

# IMPORTANT SAFETY INSTRUCTIONS



## To Reduce The Risk Of Severe Injury Or Death:

1. READ AND FOLLOW ALL INSTRUCTIONS!
2. Never let children operate or play with door controls. Keep the remote control (where provided) away from children.
3. Personnel should keep away from a door in motion and keep the moving door in sight until it is completely closed or opened. **NO ONE SHOULD CROSS THE PATH OF A MOVING DOOR.**
4. Test the door's safety features at least once a month. After adjusting either the speed or the limit of travel, retest the door operator's safety features. Failure to adjust the operator properly may cause severe injury or death. **NEVER GO UNDER A STOPPED, PARTIALLY OPEN DOOR.**
5. For products having a manual release, if possible, use the manual release only when the door is closed. Use caution when using this release when the door is open.
6. **KEEP DOORS PROPERLY OPERATING AND BALANCED.** See Door Manufacturer's Owner's Manual. An improperly operating or balanced door can cause severe injury or death. Have trained door systems technician make repairs to cables, spring assemblies, and other hardware.
7. Install the Entrapment Warning label next to the control button in a prominent location. Install the Emergency Release Marking. Attach the marking on or next to the emergency release.
8. After installing the opener, the door must reverse when it contacts a 1-1/2 inch high object (or a 2 x 4 board laid flat) on the floor.

9. SAVE THESE INSTRUCTIONS.

## French Translated Warnings

### **Avertissement!**

Disjoindre fournissent de l'énergie tout les sources avant qu'installer cet équipement.  
F|ailure| à disjoindre la source de pouvoir peut résulter dans dommage de propriété,  
blessure sérieuse ou mort !

### **Avertissement!**

Mécanisme tournant dangereux !  
Garder les mains, vêtissant, etcC|lear| quand fonctionner !  
Ne fonctionnez pas sans toutes gardes et couvertures dans lieu !

### **Avertissement!**

Tout montage sur fil de fer doit être selon codes électriques nationaux ou autres  
indicatifs régionaux.

### **Avertissement!**

L'Installer est responsable pour conformer avec tout règlement pertinent, telles que  
règlement et règlement de prévention d'accident de montage sur fil de fer nationaux.  
Pl'attention articulaire doit être donnée pour les aires sectionnelles transversales de  
conducteurs, le choix d'elles fusées ou autre protection, et terre / prises de terre  
protecteur !

### **Avertissement!**

Les promenades en voiture sont projetées comme composants pour l'incorporation  
dans les systèmes ou machines d'autorité électriques. Il est la responsabilité de  
l'installer pour assurer que la promenade en voiture est installé sans risque et selon  
tout règlement qui appliquer pour le produit fini au lieu d'utilisation, par exemple  
concernant sécurité ou la compatibilité électromagnétique. Pour assurer que sécurité

mécanique, les dispositifs de sécurité supplémentaires tels que de [electro] mécanique enclenche peuvent être exigés!

## **Avertissement!**

Les tensions dans le pouvoir câblé et certaines parties de la promenade en voiture peuvent résulter dans la mort. Lorsque [henever] la promenade en voiture a été utilisée il doit être isolé et détaché pendant 5 procès avant que tout travail commence.

## **Danger !**

Seulement le personnel électrique qualifié avec la construction et l'opération de cet équipement et les dangers ont enveloppé de devoir installer, arranger, et/ou - la révision cet équipement. Lire [et] comprendre ce manuel en entier avant que procéder. L'échec à observer cette précaution peut résulter dans un dommage corporel sévère ou mort !

## **Avertissement!**



Point 4501-6312  
(Avertissement Moving étiquette de porte)  
Livré avec porte,  
doit être installé à  
l'intérieur du réfrigérateur / congélateur  
côté Ouverture de la porte.

# LES INSTRUCTIONS D'INSTALLATION IMPORTANTES

## **AVERTISSEMENT!**

### À réduire le risque de blessure sévère ou mort:

1. LU ET SUIVENT TOUTES INSTRUCTIONS D'INSTALLATION.
2. Ne liez pas l'opérateur de porte per la source de pouvoir jusqu'à instruit faire ainsi.
3. Localisez la station de commande: (a) en vue de la porte, (b) à un minimum la hauteur de 5 pieds ainsi petit enfants ne peuvent pas l'atteindre, et (c) loin de tous parties en mouvement de la porte.
4. Pour produits ayant un délivrance manuelle, instruire l'utilisateur final sur l'opération de la délivrance manuelle.

# RÈGLEMENTS DE SÉCURITÉ IMPORTANTS

## **AVERTISSEMENT!**

### À réduire le risque de blessure sévère ou mort:

1. LU ET SUIVENT TOUTES INSTRUCTIONS!
2. Jamais laisser fonctionner enfants ou mouvoir vivement avec les autorités de porte. Gardez la télécommande (où a fourni) loin des enfants.
3. Le personnel devrait garder loin une porte dans mouvement et subsistance la porte en mouvement dans vue jusqu'à est complètement fermé ou avoir ouvert. **CES AUCUNS DOIVENT CROISER LE CHEMIN D'UNE PORTE EN MOUVEMENT.**
4. Éprouvez les traits de sécurité de la porte au moins une fois par mois. Après qu'arrangeant la vitesse ou la fin de course, retest les traits de sécurité de l'opérateur de porte. Manque à arranger l'opérateur correctement peut causer blessure sévère ou mort.
5. Pour produits ai manuel la délivrance, si possible, utiliser la délivrance manuelle seulement quand la porte est fermée. Précaution d'utilisation à utiliser cette délivrance quand la porte est ouverte.
6. **GARDER LES PORTES CORRECTEMENT QUI OPÈRE ET ÉQUILIBRÉ.** Voir la porte fabricant propriétaire manuel. Un improprement qui opère ou balancé porte peut causer blessure sévère ou mort. Formez les technicien de systèmes de porte faites les réparations per les câbles, réunions de source, et autre quincaillerie.
7. **SAUVEZ CES INSTRUCTIONS.**

## 2 Limited Warranty

All products are warranted to be free from defects in material and workmanship for a period of one (1) year or 100,000 cycles, whichever occurs first, from the date of purchase if installed and used in strict accordance with the installation instructions. Liability is limited to the sale price of any products proved to be defective or, at manufacturers' option, to the replacement of such products upon their return. No products are to be returned to the manufacturer, until there is an inspection and/or a return-goods authorization (RGA) number is issued.

All complaints should be directed first to the authorized distributor who sold the product. If satisfaction is not obtained or the name of the distributor is not known, write the manufacturer that appears below, directed to the attention of Customer Service Manager.

This limited warranty is expressly in lieu of any and all representations and warranties expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose. The remedy set forth in this limited warranty shall be the exclusive remedy available to any person. No person has authority to bind the manufacturer to any representation or warranty other than this limited warranty. The manufacturer shall not be liable for any consequential damages resulting from the use of our products or caused by any defect, failure or malfunction of our products. (Some areas do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.)

This warranty gives you specific legal rights and you may also have other rights that vary from area to area.

**Warrantor:**  
RollSeal  
1733 County Road 68  
Bremen, Al 35055  
256-287-7000



### 3 Ratings and Specifications

<b>RS-500 Doors</b>					
Part Number	6607-8057	6607-8056	6607-8058	6607-8060	6607-8061
Model Number	SC-325-V01-115	SC-325-V02-0	SC-325-V01-115-W01	SC-325-V01-115-PLUS	SC-325-V01-230-PLUS
Power Supply	115 VAC 50/60 Hz Single Phase is <u>Factory Pre-Set</u> 230 VAC 50/60 Hz Single Phase see <u>Section 12-12.1, Diagram 12A</u>			115 VAC or 230 VAC 50/60 Hz Single Phase	230 VAC 50/60 Hz Single Phase
Temperature Range	32°F - 115°F (0°C – 46°C)				
Inputs	10 Amps @ 115 VAC Single Phase or 6 Amps @ 230 VAC Single Phase			10 Amps @ 115 VAC Single Phase	6 Amps @ 230 VAC Single Phase
Operational Power	3 Amps @ 115 VAC Single Phase or 1.5 Amps @ 230 VAC Single Phase				
Standby Power	0.2 Amps @ 115 VAC Single Phase or 0.1 Amps @ 230 VAC Single Phase				
Outputs	230 VAC Three Phase 1/4 H.P.				
Drive Setting	Version 01	Version 02	Version 01	Version 01	Version 01
Factory Preset Voltage Switch & Jumper	115 VAC				230 VAC
Switch & Warning Wires with Conduit	N/A		Switch Wiring Option		

<b>RS-600 Doors</b>				
Part Number	6607-8100	6607-8101	6607-8102	6607-8103
Model Number	SC-650-V01-0	SC-650-V02-0	SC-650-V01-W01-PLUS	SC-650-V02-W01-PLUS
Power Supply	230 VAC 50/60 Hz Single Phase			
Temperature Range	32°F - 115°F (0°C – 46°C)			
Inputs	8 Amps @ 230 VAC Single Phase			
Operational Power	3 Amps @ 230 VAC Single Phase			
Standby Power	0.1 Amps @ 230 VAC Single Phase			
Outputs	230 VAC Three Phase 1/2 H.P.			
Drive Setting	Version 01	Version 02	Version 01	Version 02
Factory Preset Voltage Switch & Jumper	230 VAC			
Switch & Warning Wires with Conduit	N/A		Switch Wiring Option	

### Optional Freezer Kit

DOOR MOTOR: 230 VAC Three Phase, ¼ hp

CONDENSATION MANAGEMENT SYSTEM (CMS): Voltage Rating 230 VAC ± 10% 50/60 Hz  
 Blower 135 Watt  
 Heater 1200 Watt  
 Total Current: 6.0 A @ 230 VAC (Typical)  
 9.0 A @ 230 VAC (Max.)

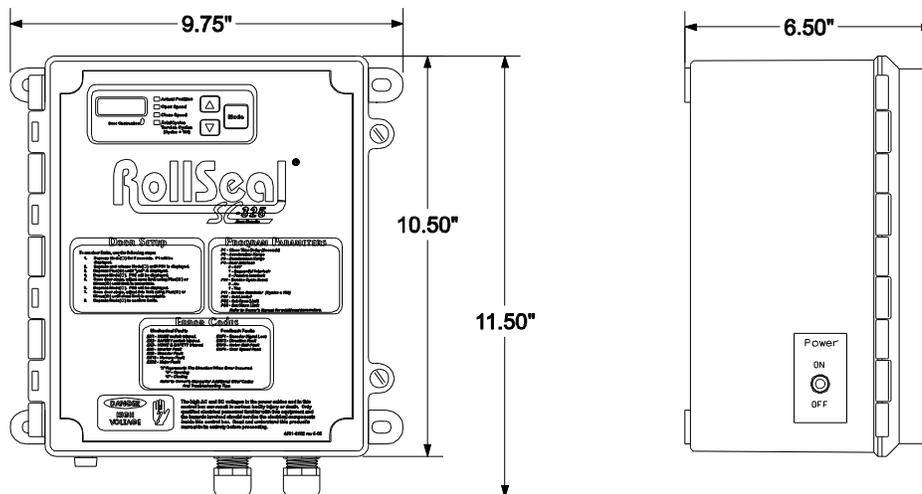
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## 4 Introduction

The RollSeal SC-325 & SC-650 Smart Controllers are intelligent controllers manufactured specifically for the RollSeal RS-500 and RS-600 Automatic Doors. The Smart Controllers will provide safe opening and closing of the door by using a number of internal safety devices plus those features provided in the components of the automatic doors. The Smart Controllers can control the opening and closing speeds of the door, count the number of door operations, and provide status information for remote monitoring of the door position.

In addition, the Smart Controllers can combine a number of auxiliary devices to improve the operability of the automatic doors such as:

- Remote radio controlled inputs for operating the door.
- Infrared sensors to detect the presence of personnel or machinery requiring passage through the door.
- Auxiliary lights or alarms that operate in conjunction with door opening or closing.
- The Smart Controllers are very versatile and simple to operate. The controls are easily operated from the front panel.



#### **4.1 How the Smart Controllers Communicate with the RollSeal Automatic Doors.**

Inside the upper right housing of the RollSeal Automatic Door is an encoder that sends electrical pulses to the Smart Controller when the door is moving and the controller is in the normal operating mode. (See **Section 0** for wiring diagram of the encoder). The controllers refer to the position of the door in units of “Counts”, which is based upon the number of encoded pulses that the encoder sends to the controller.

**NOTE: The term Position Units is used throughout this document and refers to the position of the door in units of Counts.**

A Count of zero is assigned to the full open position where the Home Switch operates, and the highest count is assigned to the full closed position. The maximum number of counts that the controller will read will depend upon the particular installation. In general, a count is approximately equal to 1/8 inch of door movement. Several of the parameters of the controller are displayed in units of Counts, such as the Actual Position, Open and Closed Limit Positions and the Acceleration and Deceleration Ranges.

## 5 Smart Controller User Interface

### 5.1 The Power Switch

The Power Switch of the Smart Controller is located on the left side of the controller box as illustrated on the previous page. The switch controls power to the Smart Controllers and to the automatic doors. The Main Fuse is located on the outside, bottom-left of the enclosure.

## Warning!

DO NOT Turn The Power ON Until All Of The Following Items Are Completed:

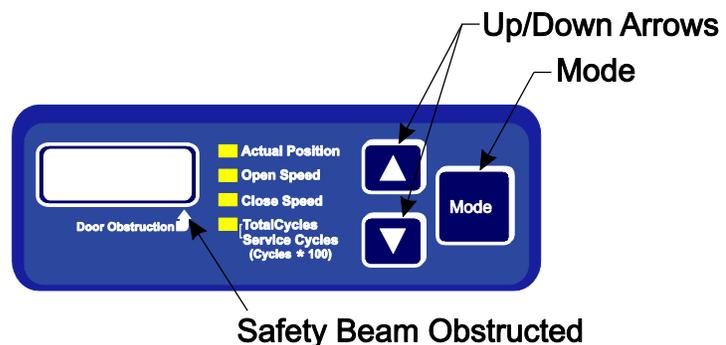
- All Wire And Cable Connections Are Completed.
- The Voltage Selection Switch And Jumper Are Set To Match The Required Supply Voltage.
- The Motor Brake Rectifier Is Wired Accordingly To Match The Required Supply Voltage.

Refer to **Section 6.3** for Switch Settings information. Refer to **Section 11.1** (for V1) or **11.3** (for V2) and **0** for the location of SWX2 on PCB 154 and J1 on the Motor Drive board assembly. Refer to **Section 12.2** for specific RS-500/600 Motor Brake Rectifier wiring diagrams.

### 5.2 The Display Indicator

The Display Indicator can show four different types of readings that can be selected by pressing the **Mode** button on the Display. Each time the **Mode** button is depressed the display steps to the next parameter as indicated by the green LED next to the display.

The four readings on the Display Indicator selected by using the **Mode** button are:



- Actual Position** – The position of the door curtain in relative position units called Counts. See **Section 4.1** for a description of Counts. A low Count reading indicates that the door is at the top or open position. The highest Count reading is when the door is at the bottom or closed position.
- Open Speed** – The percentage of full speed that the door will open. The full speed will depend on the type of drive motor installed. This can be changed from a low of 20 percent to a high of 100 percent.
- Close Speed** – The percentage of full speed that the door will close. The full speed will depend on the type of drive motor installed. This can be changed from a low of 20 percent to a high of 75 percent.
- Total Cycles** – The total number of times (cycles) that the door has been opened and closed. The value displayed is in units of 100 cycles. For example a reading of 20 means that the door has been operated between 2000 and 2099 times.
- Service Cycles** – The number of times (cycles) that the door has been opened and closed since the last service reset. The value displayed is in units of 100 cycles. For example, a reading of 20 represents between 2000-2999 cycles. This cycle count is used for service purposes. Refer to **Section 6.1** for information on how to reset this count and how to set Service Reminders.

To view each of the four parameters, press the **Mode** button repeatedly until the green LED on the Display Indicator shows the desired parameter to be read or changed. Use the **Up/Down** arrows to adjust the Speed percentage to the desired setting. To read the number of times the door has been cycled, press the **Mode** button until the green LED beside Cycles (x100) is lighted. To return to the Actual Position, press the **Mode** button again, or wait a few seconds and the controller will automatically return to displaying Actual Position.

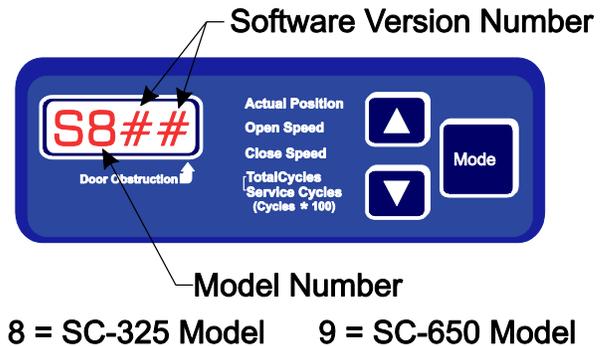
There is an LED on the Display Indicator that will light when the Safety beam is interrupted. See **Section 5.3.7** for more discussion on the function of the Safety Beam.

## 5.3 Interpreting the Display Indicator

In addition to the readings that can be selected by using the *Mode* button, the Smart Controller will occasionally display other readings on the Display Indicator that can show the operating status of the controller. This section describes some other types of displays that will occur in the normal operation of the controllers.

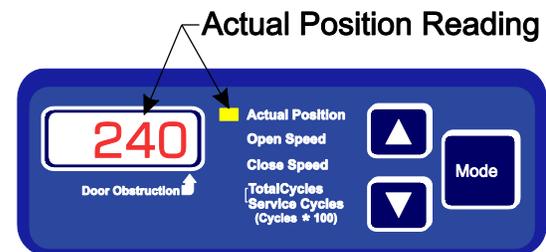
### 5.3.1 Software Version And Model Number

When the Smart Controller is turned off and subsequently on again, the Display Indicator will flash the current software version and model number in the display. This will remain on the display about two seconds. Then the display will show the Actual Position of the door.



### 5.3.2 Actual Position Reading

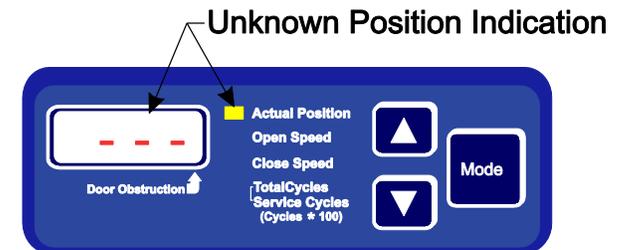
When displaying the actual position of the door, the Display Indicator will appear similar to the diagram on the right. In the example shown, the door is in a position of 240 counts.



### 5.3.3 Unknown Position Indication

There are occasions when the controller may not know the exact position of the door, for example, when returning from the Jog Mode. In these cases the Display Indicator will display a series of three bars as shown at the right. This is known as the Unknown Position Indication.

When the door is actuated, the door will proceed to the full open position, however the speed of the door will be reduced. When the door has returned from the home switch position to the open limit position, the display will show the actual position of the door. This indicates that the door has reset its position and is ready for normal operation.

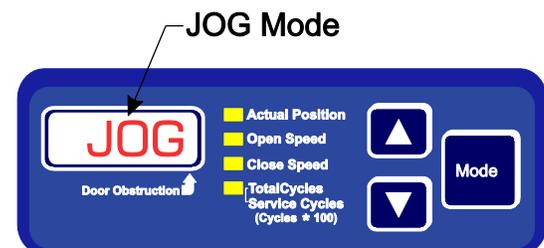


### 5.3.4 Assumed Position Indication

When the controller is first turned on, the display will flash between a numerical actual position reading and the unknown position indication. This flashing indicates the controller has assumed the current position of the door. When the control button is pressed, the controller will open at full speed to the open limit of the door. Then the door will proceed to the Home switch to verify the position reading and return to the open limit position. This operation takes place to verify that the door was not manually adjusted during the time that power was removed from the controller.

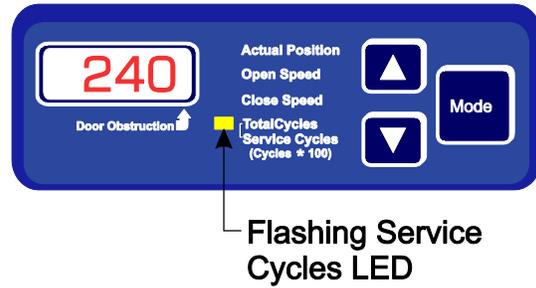
### 5.3.5 Jog Mode Indication

When the Smart Controller is in the Jog Mode, the display will indicate "J O G" as shown at the right. See **Section 7** for a description of the Jog Mode.



### 5.3.6 Service Reminder Indication

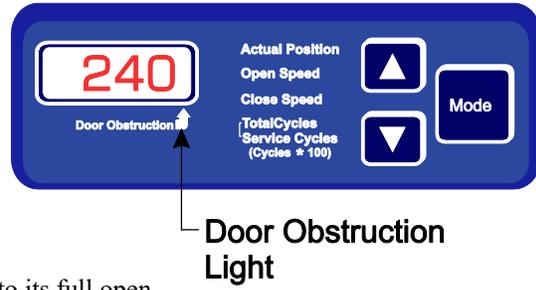
When the Smart Controller has exceeded the selected Service Cycle Limit, the Service Cycles LED will begin flashing to indicate that service is needed. See **Section 6.1 P10 and P11** for a description of the Service Cycle Reset and Service Reminder.



### 5.3.7 Safety Beam

The Smart Controller uses an invisible safety beam near the bottom of the automatic doors to prevent the door from closing on an object that has moved into position under the door. If an object interrupts this beam of invisible light, the door will stop and the Door Obstruction Light in the controller display will light. The door may then proceed to open depending on the setting of switch SWX1.

If SWX1:1 is “On”, the door will proceed to open to its full open position. If SWX1:1 is “Off”, the door will stop and await a command to either continue opening or to close. See **Section 11.1** for the location of SWX1 on the controller PCB 154 circuit board.



### 5.3.8 Leading Edge Switch

The door is equipped with a Leading Edge Switch. This switch works in conjunction with the safety beam. Its function is to provide a back-up for the safety beam. If anything comes in contact with the leading edge of the panel, the door will react in the same manner as the safety beam.

### 5.3.9 Home Switch

The RollSeal automatic doors contains a Home limit switch for determining the “Home” or full open position of the door. When the door is fully opened the Home limit switch is triggered to stop the door. At this position the actual reading on the Display indicator will be zero (0). The Smart Controllers also use the operation of the Home switch to verify the position of the door.

### 5.3.10 Safety Switch

An additional safety feature of the automatic doors is a Safety switch which will stop the door if the Home limit switch does not stop the door at its full open position. The Safety switch is an emergency override. Once the door has made contact with the Safety switch, the motor’s drive unit is completely disabled. At this point the door must be manually reset to return to normal operation. In most cases this can be done by manually releasing the brake on the motor. This will allow the door to drift below the Safety switch.

## 6 SC-325 and SC-650 Initial Setup

PROGRAM PARAMETERS	
<b>P1</b> - Close Time Delay (Seconds) <b>P2</b> - Acceleration Range <b>P3</b> - Deceleration Range <b>P4</b> - Door Interlock 0 - Off or Optional Door Motion Light(s)/Buzzer(s) 1 - Sequential Interlock 2 - Passive Interlock 3 - Freezer Mode – No Passive Interlock	<b>P7</b> - Refresh Door Limits <b>P10</b> - Service Cycle Reset 0 - No 1 - Yes <b>P11</b> - Service Reminder (Cycles x 100) <b>P12</b> - Input Status <b>PS1</b> - Set Limits <b>PS2</b> - Set Open Limit <b>PS3</b> - Set Close Limit

### 6.1 Program Mode

Settings that are usually set up when the Smart Controller is installed or adjusted are referred to as Program Parameters. To get to the Program Mode, press and hold the Mode button for at least five seconds. When the controller has entered the Program Mode, the display will flash between P1 and the current value of the program parameter. All the program parameters have a program number assigned to them. When in the Program Mode, the current displayed parameter can be changed by pressing the Up ( $\Delta$ ) or Down ( $\nabla$ ) arrows. When the current parameter has been set, press the Mode button to move to the next parameter. The Program parameters are:

#### **P1 – Close Time Delay – Default set to 45 (May be adjusted. See Below)**

This is the time that the controller waits before automatically closing the door. Close Time Delay only applies when the door has been opened using the Timed Input. All safety sensors must be cleared before the controller begins counting the Close Time Delay. To change the value of P1, Press the *Up* ( $\Delta$ ) arrow to increase the delay and the *Down* ( $\nabla$ ) arrow to decrease the delay. The Close Time Delay can be adjusted between 5 and 240 seconds.

#### **P2 – Acceleration Range – Default set to 20.**

This is the range in counts over which the door will accelerate from a stopped position to the maximum opening or closing speed. Refer to **Section 5.2** for details of how to change the actual door speed and **Section 6.2** for a detailed explanation of acceleration and deceleration.

#### **P3 – Deceleration Range - Default set to 80**

This is the range in counts over which the door will decelerate from full speed to a stopped position in either the closed or open position. Refer to **Section 5.2** for details of how to change the actual door speed and **Section 6.2** for a detailed explanation of acceleration and deceleration.

#### **P4- Two Door Interlock or Freezer Modes**

The P4 setting is used to enable the Door Motion Light(s)/Buzzer(s), Interlock two doors together when wired properly (See Wiring Diagram **Section 12.5**), or to operate freezer equipment such as blowers or heaters. There is one Light/Buzzer mode (mode 0) and two Interlock modes (modes 1 or 2) which are explained below.

The interlock mode 1 or 2 features only apply when the doors are actuated through the “Timed” input signal. Operation using the “Directional” switch inputs will override any interlock functions. It is important to note that setting this parameter to 1 or 2 will reconfigure the “Manual” input and the “Warning” output for interlock operation. Therefore using Interlock Modes 1 or 2, the switches will not be able to be used for their normal purposes as described in **Section 8**.

*0 = Off or Optional Door Motion Light/Buzzer – No Interlock*

Interlock is disabled in this mode and no Interlock features can be used. The “Manual” input and “Warning” output operate as explained in **Section 8**

**NOTE: P4 must be set to “0” for Warning Light operation.**

**NOTE: When p4 is not used for warning light operation blue and blue/white stripe wires must be removed from auxiliary relay.**

**1 = Sequential Interlock**

The two interlock doors will work in sequence with one another. i.e. The “Timed” signal is received by Door One. Door One opens and ensures that Door Two remains closed. Once Door One’s timer expires, Door 1 closes. Once fully closed, Door Two opens and insures that Door one remains closed. Once Door Two’s timer expires, Door Two closes and the cycle is complete.

**NOTE: Either door can initiate the cycle allowing for two-way traffic.**

**2 = Passive Interlock**

Only one of the two doors will be allowed to be open at once.

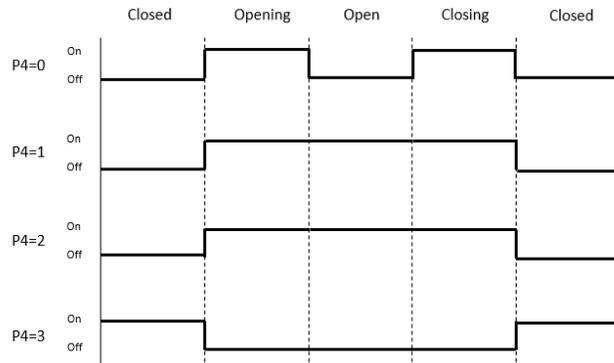
In this mode, the Auxiliary Relay can be used to indicate if the Door is Open

**3 = Freezer Mode – No Interlock**

When the Door and Smart Controller are used in freezer applications and P4 is set to 3, the Auxiliary Output Relay is used to operate equipment such as blowers or heaters. \*Available on Software versions V0.21 and later.

If Freezer Mode is not needed, the Auxiliary Relay can be used to indicate if the Door is Closed.

**P4 Auxiliary Relay Status  
(Door Status)**



**IF P4 = 3 (Freezer Mode):**

**P5- “Freezer Mode” Auxiliary ON Time – Default Set to 15**

If P4 = 3, this setting, along with P6, allows the user to cycle the fan & heater On & Off. Since not all applications are the same, some will not require as much help eliminating condensation while others may require more. This setting, along with P6, allows the user to operate the unit as efficient as possible.

**P6- “Freezer Mode” Auxiliary OFF Time – Default Set to 10**

This setting works in conjunction with P5 to complete the On/Off cycle of the condensation removal system.

**\*\*15 On and 10 Off are the default settings for the duty cycle. The cycles may be increased or decreased according to specific environment conditions.\*\***

**! Warning!**

**When P4 Is Set To 1 or 2, The Functions Of The “Manual” Input Or The “Warning” Output Are Reconfigured For Interlock Operation And Can Not Be Used For Their Normal Functions.**

**When P4 Is Set To 3, The Functions Of The “Warning” Output Are Reconfigured For Freezer Operation And Can Not Be Used For Their Normal Functions.**

### P7 – Refresh Door Limits – Default Set to 25

This parameter is associated with the Open and Close Limits programmed into the door. These limits are determined using an encoder and they are referenced off of the “Home Switch” located in the door header. From time to time, the Open and/or Close Limits may drift due to the nature of the encoder. This setting allows the user to set a number of Open & Close cycles before the door refreshes its limits by going back to its Home reference. This value can be set from 1 to 25. One means it will refresh every time it opens; Twenty-five means it will refresh every 25<sup>th</sup> time it opens.

### P10 – Service Cycle Reset

This parameter provides a means for a service technician to reset the Service Cycle Count. This provides a means to track cycles in an effort to properly maintain the door system. If you desire to reset the Service Cycle Count, you must change P10 from “NO” to “YES” by pressing the *Up* ( $\Delta$ ) arrow button. To complete the reset, you must then depress the “*MODE*” button.

### P11 – Service Reminder – Default Set to 240

This parameter works in conjunction with P10 to provide a means for the controller to visually remind the service technician when it is time for service. The user can set a Service Cycle Limit in this parameter. The limit (displayed number from 10 to 240) shown is “Cycles x 100” just as the cycle counts are displayed. This parameter is constantly compared to the value in “Service Cycles”. Once the “Service Cycles” is greater than or equal to “Service Reminder”, the “Cycle LED” on the controller interface will begin blinking indicating that service is needed. EXAMPLE: If the P11 displayed value is 10, the “Cycle LED” on the controller interface will begin blinking after the door has operated 1000 cycles.

### P12 – Input Status

This parameter is used only to service or troubleshoot the door. The various inputs are represented by LED segments on the display. \*Available on Software versions V0.21 and later.

Refer to **Section 9**.

### PS1 – Change Program Limits

This parameter can be either “Yes” or “No”. To change the Open Limit (PS2) or the Closed Limit (PS3) set this parameter to “Yes” and then proceed by pressing the *Mode* button. To leave the programming mode at this time, set PS1 to “No” and press the *Mode* button. The controller will exit the programming mode and return to displaying the actual position.

### PS2 – Set Open Limit – Default set to 25

When the *Mode* button is pressed after setting PS1, the door will open to the position of the Home switch then proceed toward the current setting of the Open Limit. Use the Up and Down arrows to set the door to a new Open Limit position. Then press Mode to proceed to the next parameter.

### PS3 – Set Closed Limit - Default set to 400 (Must Be Lower To Seal At The Bottom)

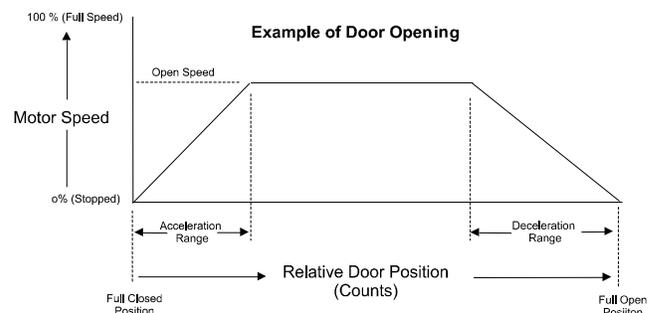
When the *Mode* button is pressed after setting the Open Limit, the door will close to the current setting of the Closed Limit. Use the *Up* ( $\Delta$ ) and *Down* ( $\nabla$ ) arrows to set the door to a new Closed Limit position. Then press *Mode* to exit the programming mode and return to displaying the actual position.

## 6.2 Acceleration and Deceleration Range

The Smart Controllers measure the position of the door in Relative Position Units called counts. (See **Section 4.1**.) Counts are read from the door encoder and transmitted to the controller as electrical pulses. Counts begin at zero when the door is open and get higher as the door is closed. Acceleration and Deceleration ranges are also measured in Counts.

The Smart Controllers have programmable adjustments for the Acceleration and for the Deceleration Ranges. These are adjusted by setting the program parameters P2 and P3. See **Section 6.1** for the procedure to set these parameters.

The acceleration range is measured in units of counts and is the range over which the door will accelerate from a



stopped position to the open or close speed. The Deceleration Range is measured in units of counts and is the range over which the door will decelerate from the open or close speed to a stopped position. Typical values for the Acceleration Range are 40 counts and for the Deceleration Range is 80 counts.

These ranges are illustrated in the shown graph for the case of opening the door. From the full closed position, the door accelerates to the open speed during the Acceleration Range then slows during the Deceleration Range to the open position.

### P2 AND P3 SETTINGS THAT PRODUCE A “SMOOTH” DOOR OPERATION

The Smart Controller Acceleration and Deceleration ranges (P2 and P3) should be adjusted to produce a smooth acceleration and minimize the use of the motor brake when stopping. The following table shows approximate values for parameters P2 and P3 that will produce a smooth and efficient door operation based upon the speed of the door.

Values of P2 & P3 for Smooth Door Operation		
SPEED (inches/sec.)	P2 Acceleration (Counts)	P3 Deceleration (Counts)
14	20	40
20	25	50
28	30	60
42	40	80

## 6.3 Switch Settings

SWX1 contains two separate switches. The first switch (SWX1:1) controls the Safety Action and the second switch (SWX1:2) determines the Encoder Selection as follows:

### PCB 154 SWX1:1 – SAFETY ACTION

Selects the operation of the door when the Safety Beam is interrupted during closing. If at any time while the door is closing, the Safety Beam is interrupted, the door will stop. Then if SWX1:1 is “On” the door will proceed to open to its full open position. If SWX1:1 is “Off” the door will stop and await a command to either continue opening or to close. See **Section 11.1** for the location of SWX1 on the printed circuit board.

### PCB 154 SWX1:2 – ENCODER SELECTION

Selects between the use of one encoder (SWX1:2=Off) or two encoders (SWX1:2=On) when determining the door position. Some doors will be equipped with two encoders. See **Section 11.1** for the location of SWX1:2 on the printed circuit board.

### PCB 154 SWX2 Switch and MOTOR DRIVE J1 Jumper– VOLTAGE SELECTION

The Smart Controller contains one switch and one jumper which must be set prior to initial use and application of power. Ensure that SWX2 and J1 are both set according to the specific required voltage. Refer to **Section 11.1** (for V1) or **11.3** (for V2) and **0** for the location of SWX2 on PCB 154 and J1 on the Motor Drive board assembly.

The SC-325 Controllers are factory preset to 115 VAC and the RS-500 doors factory prewired to require a 115 VAC power supply. The SC-650 controllers are factory preset to 230 VAC and the RS-600 doors factory prewired to require a 230 VAC power supply.

The SC-325 Controller can be field upgraded to accommodate either 115 VAC or 230 VAC power supply. If the desired power supply voltage is different from the factory preset/prewired voltage, the appropriate version Brake Rectifier must be ordered separately, field-installed on the RS Door, and the SC controller switch & jumper settings changed accordingly. Refer to **Section 12.2** for specific RS-500/600 Motor Brake Rectifier wiring diagrams.

## **Warning!**

**DO NOT Turn The Power ON Until All Of The Following Items Are Completed:**

- **All Wire And Cable Connections Are Completed.**
- **The Voltage Selection Switch And Jumper Are Set To Match The Required Supply Voltage.**
- **The Motor Brake Rectifier Is Wired Accordingly To Match The Required Supply Voltage.**

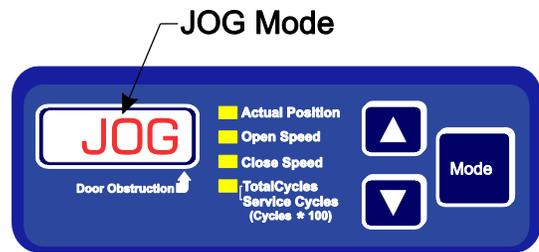
### 6.4 Door Setup

The door limits are used to adjust the door position in the full open and closed positions. To set the door limits, use the following steps:

1. Depress the **Mode** button (●) for at least 5 seconds. P1 (Close Time Delay) will be then be displayed in the Display Indicator.
2. Depress and release the **Mode** button until PS1 (Change Program Limits) is displayed.
3. Depress **Up** (△) until “yes” is displayed.
4. Depress the **Mode** button again (●). PS2 (Set Open Limit) will be displayed.
5. The door will proceed to the open limit and then stop. Once the door stops, adjust open limit using the **Up** (△) or **Down** (▽) buttons until open limit is satisfactory.
6. Depress the **Mode** button (●) again. PS3 (Set Closed Limit) will be displayed.
7. The door will proceed to the closed limit and then stop. Once door stops, adjust this limit using the **Up** (△) or **Down** (▽) buttons until the close limit is satisfactory.
8. Depress the **Mode** button (●) again and the controller will exit the programming mode and return to displaying the actual position.
9. The setup is now complete.

## 7 Jog Mode

The Jog Mode will permit an operator to manually control the position of the door with the **Up** (△) and **Down** (▽) arrow buttons. To enter the Jog Mode, press both the **Up** (△) and **Down** (▽) arrows at the same time for at least 5 seconds. The Smart Controller will indicate the Jog Mode in the display as shown below.



In the Jog Mode the door can be opened and closed and is not affected by the Home limit switch or the Safety beam. Therefore, the operator must carefully watch the door movement when nearing the full open and full closed positions. To exit the Jog Mode, press and hold the **Up** (△) and **Down** (▽) arrow buttons for at least 5 seconds. The controller will return to the normal operating mode with the Actual Position shown in the display.

When returning to the normal operating mode, the controller will not know the exact position that the operator has left the door when exiting the Jog mode. Therefore, the controller will display a series of three horizontal bars. Upon the next command the door will slowly proceed to the full open position to reset its memory. The door will always follow this procedure after exiting the Jog Mode.

## 8 Door Activation Methods

There are three types of operator switches that can be connected to the Smart Controllers for opening and closing the automatic doors. These include a directional switch, a sequential switch and a timed switch. These switches can all be connected simultaneously to the controller.

	<u>Manual Activated</u>	<u>Timed Activated</u>	<u>Open Activated</u>	<u>Close Activated</u>	<u>Stop Activated</u>	<u>Notes</u>
During the specific operation below.....						
<b><u>TIMED Opening</u></b>	N/A	N/A	N/A	N/A	Stops Door after 1-2 Seconds	
<b><u>TIMED Closing</u></b>	N/A	Reopens Door & Starts Delay	N/A	N/A	Stops Door (Immediately)	
<b><u>During TIMED Countdown</u></b>	Closes Immediately	Restarts Time Delay	Exits Time Delay	Closes Door	Should Terminate Timed Cycle	
<b><u>MANUAL Opening</u></b>	N/A	N/A	N/A	N/A	① Stops Door after 1-2 Seconds	① When Stop is pressed & door stops, pressing the Manual button again will cause the door to reverse direction at that point.
<b><u>MANUAL Closing</u></b>	N/A	Opens then starts Time Delay	N/A	N/A	① Stops Door (Immediately)	
<b><u>While Completely Open (after MANUAL)</u></b>	Closes	N/A	N/A	Closes Door	N/A	
<b><u>While OPENing</u></b>	N/A	N/A	N/A	N/A	Stops Door after 1-2 Seconds	
<b><u>While CLOSing</u></b>	N/A	Reopens door & starts Time Delay	N/A	N/A	Stops Door (Immediately)	

## 8.1 Directional Switch Input

The directional switch input is primarily for use with a three position direction switch similar to the one illustrated below. Operation is simple. Momentarily push “OPEN” to open the door, momentarily push “CLOSE” to close the door and momentarily push “STOP” to stop the door. However, the SC-325 and SC-650 controller can be programmed to perform special events with these directional switches.

For example, if the ‘STOP’ button is pressed and held, the door will remain in the stopped position. None of the other control switches will operate as long as the “STOP” connection to the controller is completed. Similarly, if the “OPEN” button is pressed and held, the door will remain in the open position. And, if the “CLOSE” button is pressed and held, the door will remain in the closed position. These features would be useful if an operator wanted to “lock” the door in a particular position with the use of external switches connected in parallel with the directional switch.

For safety reasons, these directional buttons have a priority built into the controller in case one or more of the buttons are closed at the same time. The “STOP” switch has first priority, the “OPEN” has second priority and the “CLOSE” has third priority.

**Section 12.6 and 12.7** shows the connections for the directional, manual and timed switch inputs to the controller.

## 8.2 Manual (Single) Switch Input

This switch provides a conventional means of connecting a single button that responds to each momentary press sequentially. For example, if the last movement of the door was in the open direction and the manual input is made, the door will attempt to close. Conversely, if the last movement of the door was in the close direction and the manual input is made, the door will attempt to open. If this single position manual switch is used with the three position directional switch as discussed above, the manual switch has fourth priority.

**Section 12.6 and 12.7** shows the connections for the directional, manual and timed switch inputs to the controller.

**NOTE: This input will be reconfigured for use with the Interlock circuit if the P4 setting is programmed to anything other than zero. See Setting P4 under Section 6.1 for more information.**



**Three Position Operator Switch**



**Single Position Operator Switch**

### **8.3 Timed Switch Input**

The timed switch is intended for auto closure of the door and is typically used with motion detectors, floor loops, or pull cord switches. The timed feature would be used when, for example, a vehicle (i.e. forklift) would open the door by means of a floor loop. Then, after the door is opened and all safety sensors are clear, a timer would count down and close the door automatically. In order for the timed feature to work, the door must have initially been in a closed or stopped position. If the door was already opened by some other means, the timer would not operate and the door would remain open.

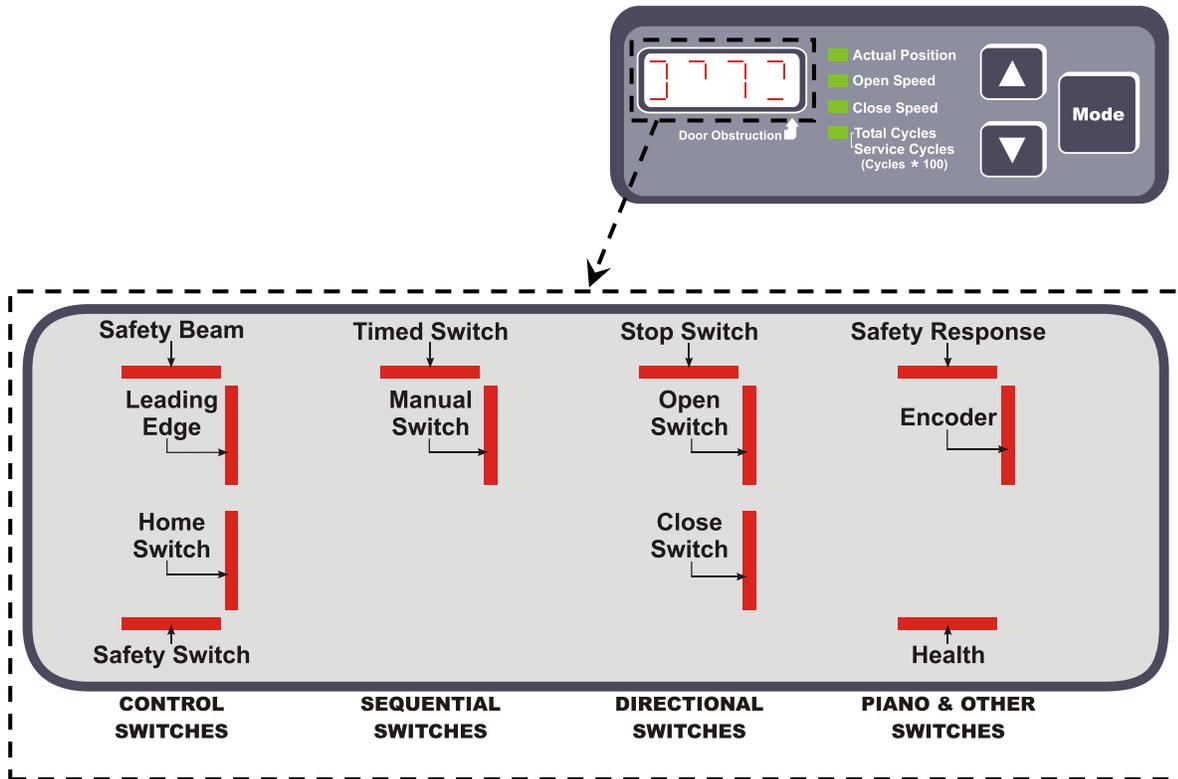
The timed switch has priority five when the door is in the idle mode. However, if the door is in the process of closing, the timed input will act as a safety feature and that will stop and reverse the door until the door is fully opened.

**Section 12.6 and 12.7** shows the connections for the directional, manual and timed switch inputs to the controller.

## 9 Troubleshooting Controller and/or Door

### 9.1 P12 – Input Status Indicators

This parameter is used to service or troubleshoot the door. The various inputs are represented by LED segments on the display as shown below.



If a display segment is “ON”, the switch is Made; Segment is “OFF”, switch is Not Made.

For Example, when the Safety Beam is obstructed, the Safety Beam display segment will turn ON and remain ON until the obstruction is removed.

\*Available on Software versions V0.21 and later.

#### Important Indicators:

- For the door to operate, the “Safety Switch” and “Health” display segments must be “ON”.
- For the door to close, the “Safety Beam” & “Leading Edge” display segments must be “OFF”.
- If the “Stop Switch” display segment is “ON”, the door will not operate.
- If the “Open Switch” display segment is “ON”, the door will not close.
- “Safety Response” display segment “ON” indicates that the piano switch selector is ON and the door will Stop and Reverse upon contact with Safety Beam or Leading Edge; “OFF” means it will Stop only.
- “Encoder” display segment “ON” indicates that the door is operating off of two encoders; “OFF” indicates one encoder.
- “Health” indicates that the AC Drive is OK and that the controller is allowed to initiate door movement.

## 9.2 Error Codes and Recommended Action

Error Codes and Recommend Action		
Error Code	Description	Recommended Action
E1	HOME switch is tripped	Check the wiring and that the HOME switch arm is completely depressed.
E2	SAFETY switch is tripped	Check the wiring and that the SAFETY switch arm is completely depressed.
E3	SAFETY and HOME switches are tripped	Check the wiring and that the HOME & SAFETY switch arm is completely depressed
E4	Inverter Fault	Check backboard and motor.
E8	Encoder Count Fault	Check encoders in junction box on door.
E16	Memory Malfunction	Reset controller
E32	Controller Malfunction	Reset controller

Code	Condition	Panel Movement	Problem Area	Recommended Action
EO1	Opening, Home Switch tripped		Home Switch	Check the wiring and that the HOME switch arm is completely depressed.
EC1	Closing, Home Switch tripped			
EO2	Opening, Safety Switch tripped		Safety Switch	Check the wiring, connections, and that the SAFETY switch arm is completely depressed.
EC2	Closing, Safety Switch tripped			
EO3	Opening, Home & Safety Switch tripped		Home & Safety	Manually release brake and pull panel below Home switch.
EC3	Closing, Home & Safety Switch tripped			
EO4	Opening, Inverter Fault		Inverter Fault	Check backboard and motor.
EC4	Closing, Inverter Fault			
EO8	Opening, Encoder Fault		Encoder Count Fault	Check encoders in Junction Box on door.
EC8	Closing, Encoder Fault			
EO16	Opening, Memory Fault		Memory Fault	Reset Controller
EC16	Closing, Memory Fault			
EO32	Opening, Major Fault		Major Fault	Reset Controller
EC32	Closing, Major Fault			
EOF1	Opening, Encoder Fault	Up	Encoder	Check DC harness; Make sure optics are clean.
		None	Drive or Brake	Make sure brake is releasing and Drive not overloaded.
		Down	Encoder	Panel has reversed on pipe.
		None	Egress Strap	Reset the (white patch) limit mark on the yellow strap up to the gold buckle located on the back side/center of the door.
ECF1	Closing, Encoder Fault	Up	Encoder	Panel has reversed on pipe.
		None	Drive or Brake	Make sure brake is releasing and Drive not overloaded.
		Down	Encoder	Check DC harness; Make sure optics are clean.
EOF2	Opening, Direction Fault	Up	Encoder	Signal Wires reversed.
		None	Drive or Brake	Make sure brake is releasing and Drive not overloaded.
		Down	Drive	Reverse two phases to the motor.
ECF2	Closing, Direction Fault	Up	Drive	Reverse two phases to the motor.
		None	Brake	Brake is not releasing.
		Down	Encoder	Signal Wires reversed.
EOF3	Opening, Motor Stall Fault		Motor Stall Fault	
ECF3	Closing, Motor Stall Fault			
EOF4	Opening, Over Speed Fault		Over Speed Fault	
ECF4	Closing, Over Speed Fault			

# 10 Controller Installation and Setup

## 10.1 Tools Required

Small Screwdriver	Standard Screwdriver	Wire Strippers
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## 10.2 Installation Instructions

1. Unpack system, and check that all components are present.
  - 1 RollSeal Smart Controller
  - 1 Installation Kit
  - 1 Manual
2. Hang the controller with four screws at the desired location.
3. Make sure all power supplies are disconnected before breaking any wires, or reaching into the controller enclosure.
4. Determine the required Powering Voltage whether 115 VAC (SC-325 only) or 230 VAC.
5. If the desired power supply voltage is different from the factory preset/prewired voltage, the appropriate version Brake Rectifier must be ordered separately, field-installed on the RS Door, and the SC controller switch & jumper settings changed accordingly. The SC-325 Controllers are factory preset to 115 VAC and the RS-500 doors factory prewired to require a 115 VAC power supply. The SC-650 controllers are factory preset to 230 VAC and the RS-600 doors factory prewired to require a 230 VAC power supply. The SC-325 Controller can be field upgraded to accommodate either 115 VAC or 230 VAC power supply. Refer to **Section 12** for the SC controller power wiring, switch setting, and jumper setting and **Section 12.2** for the Motor Brake Rectifier part numbers and wiring information.

### **Warning!**

Only Qualified Electrical Personnel Familiar With The Construction And Operation Of This Equipment And The Hazards Involved Should Install, Adjust, And/Or Service This Equipment. Read And Understand This Manual In Its Entirety Before Proceeding. Failure To Observe This Precaution Could Result In Severe Bodily Injury Or Death!

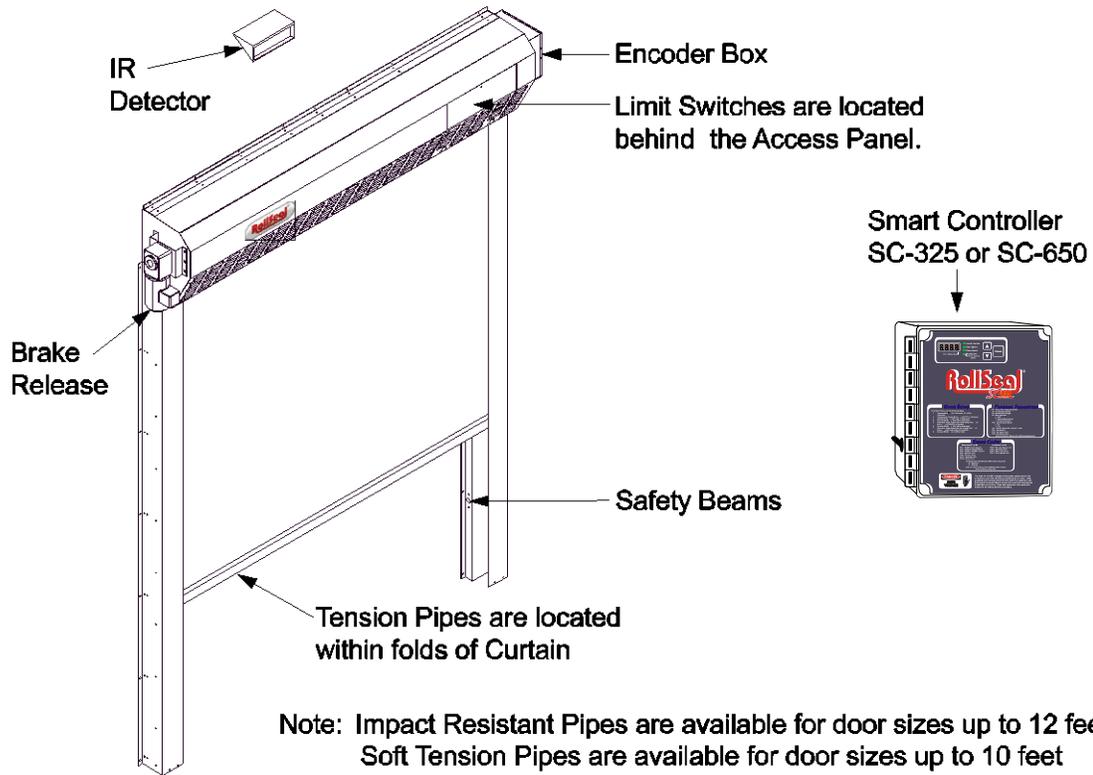
### **Warning!**

Dangerous High Voltages!  
Allow Approximately 5 Minutes For The Controller To Power-Down Before Changing Switch Setting, Jumper Placement, Or Wiring.

6. Connect power.
7. Turn the Controller on.
8. Set the Open and Closed Speed and Limits, the Acceleration and Deceleration Ranges, Close Time Delay and Switch positions as discussed in **Section 6** of this manual.

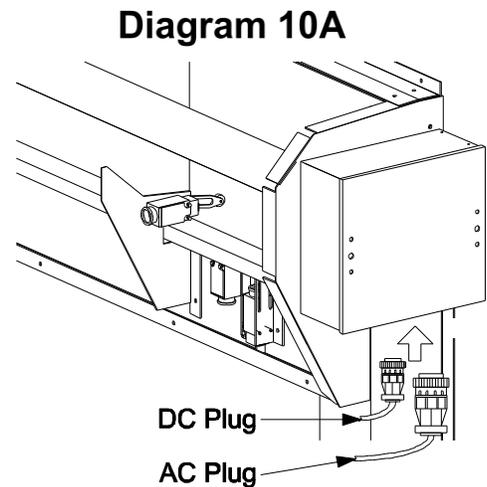
### 10.3 Typical Smart Controller Installation

A typical installation of the Smart Controller involves, at a minimum, connections to AC Power, the door motor, the Up/Down button, and the Safety beam. Other accessories can be added such as a disconnect switch, remote IR sensor, a remote radio link, and door movement indicators such as lights and bells.



### 10.4 Connection of Controller to Head Unit.

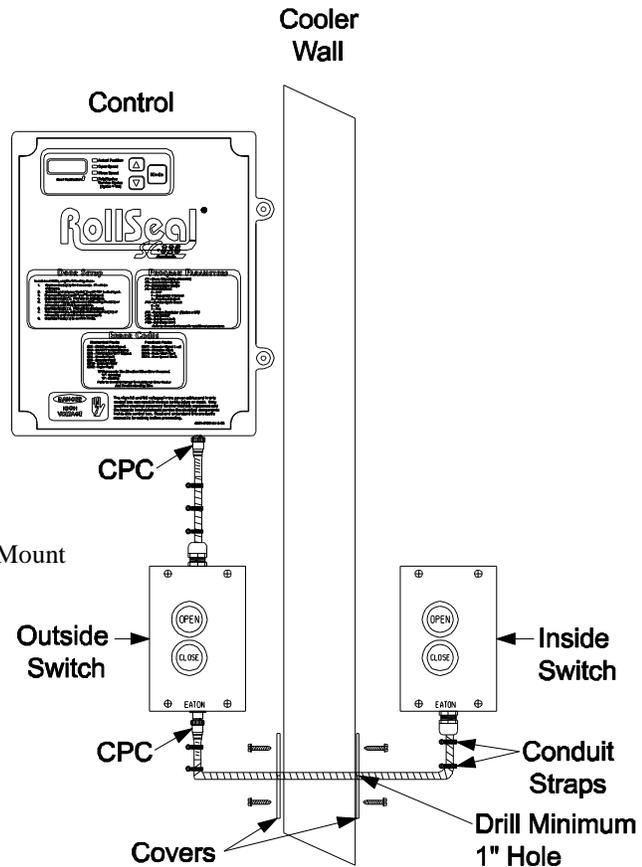
1. Mount controller at desired location within 3' of junction box on Head Unit.
2. Controller has an AC and DC harness prewired that connects to head unit as shown in **Diagram 10A**.



## 10.5 Installation of Prewired Switches

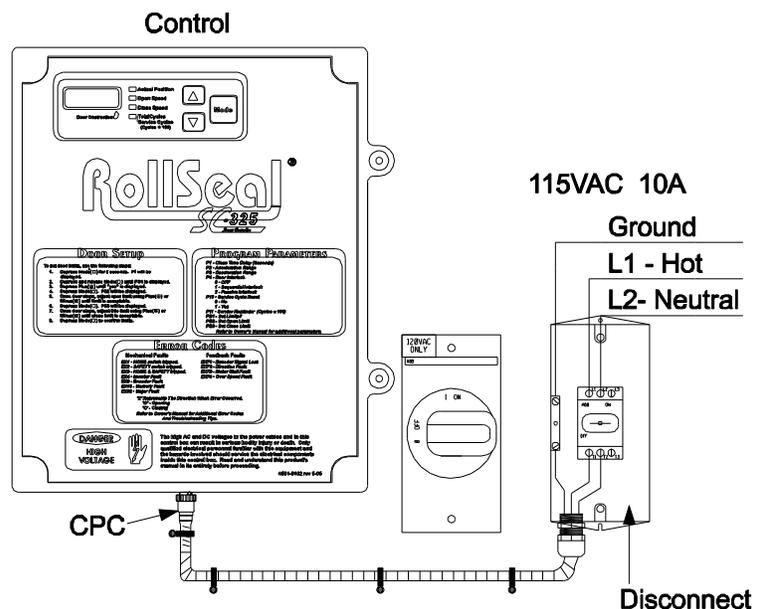
Prewired switches are available with Controllers 6607-8060, 6607-8061, 6607-8102, and 6607-8103. Cooler Switches are prewired with a CPC quick connect. Prewire Switches have two switch assemblies: an Outside Cooler Switch with a 6 foot harness and an Inside Cooler Switch with a 1.5 foot harness. Switch assemblies are available in horizontal and vertical orientations. Shown below is vertical orientation.

1. Connect Outside switch to Controller with CPC connection. Push and turn CPC connector until it's completely locked in place.
2. Mount Outside Switch in desired location on cooler wall.  
**Note: Cover removed for mounting.**
3. Drill 1" hole through Cooler Wall to run Inside Switch out to connect to Outside Switch.
4. Route Inside Switch Harness through hole and connect to bottom of Outside Switch with CPC.
5. Mount Inside Switch in desired location.  
**Note: Cover removed for mounting.**
6. Install Conduit Straps on conduit as required. Mount a strap close to CPC connection to prevent tampering. Insure conduit is run in a way to prevent moisture from running into electrical units.
7. Seal hole



## 10.6 Power Connection with Disconnect

1. Mount Disconnect in desired location.
2. Connect harness from Disconnect to Control with CPC. Push and turn to lock in place.
3. Remove Disconnect cover. Switch must be in off position to remove cover.
4. Connect conduit and electrical supply to Disconnect.
5. Connect 115V power supply to Disconnect as shown in Diagram.
6. Place cover back on Disconnect.
7. Add conduit straps to conduit



## 10.7 Preparation for Operation

**Note: If you detect any problems, STOP. Disconnect electrical power. Contact your distributor for assistance.**

1. Insert fuse in Control.
2. Apply 115VAC power to Control and turn Control toggle switch on.
3. See **Section 6.4** Door Setup to set Open and Close Limits then proceed with the following steps.

**Note: If door does not Open and Close to the proper position, see Section 6.4 for Open and Close Limit setup procedure.**

4. Press “Open” button on Outside Switch.  
If the Door is set to automatically close, door will time out and automatically close if safety beams are clear.  
If the Door is set to manually close, press “Close” button on Outside Switch and door should close.
5. Press “Open” (and “Close” if required) a couple times to insure proper operation.
6. Press “Open” (and “Close” if required) with the Inside Switch a couple times to insure proper operation.
7. Verify Safety Beams reverse door when blocked during closing.
8. Verify Leading Edge Switch is operational.
9. Verify that Warning Light and Egress Buzzer (if applicable) are functioning properly.
10. Ensure Safety Pull Hook and Hook Tether is mounted inside cooler and Manual Crank Handle for motor is mounted outside.

The door is now ready for operation.

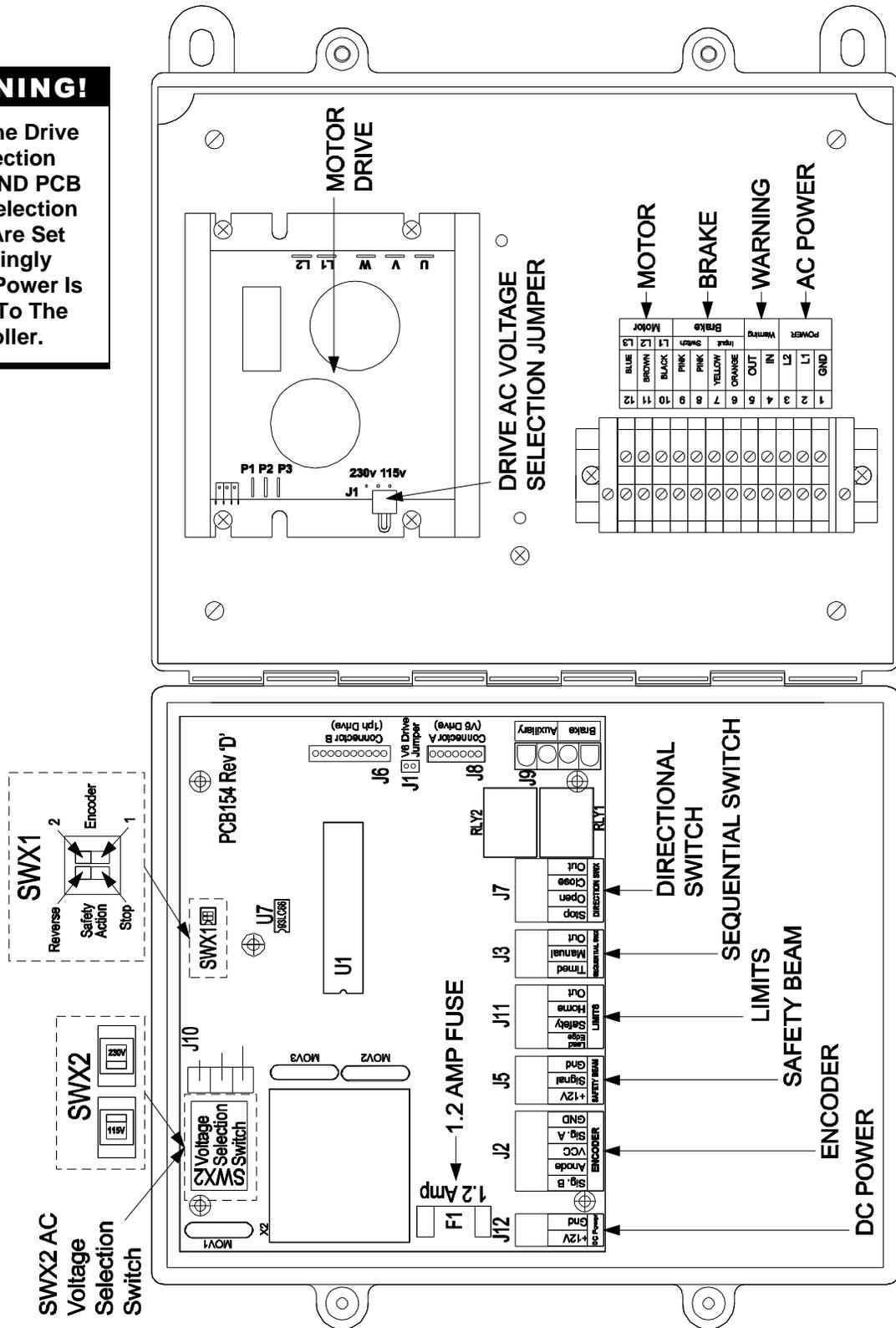
**NOTE: See 4801-5154 RS500-600 Series Doors Installation Manual for more information on proper Egress System installation.**

# 11 Smart Controller Internal Diagrams, Schematics, etc.

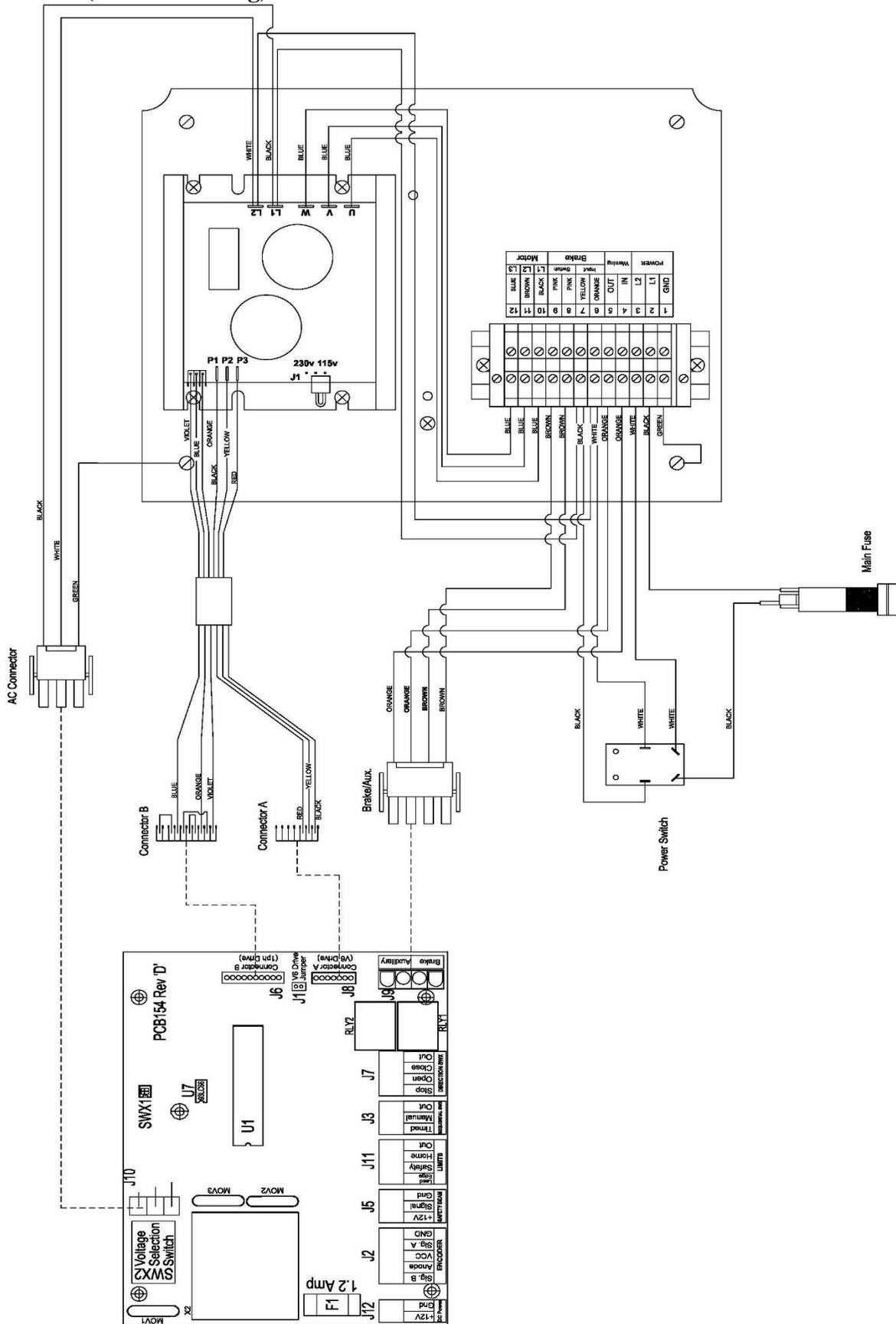
This section contains the internal wiring diagrams for the Smart Controllers.

## 11.1 Smart Controller SC-325 V1 Layout

**⚠ WARNING!**  
 Ensure The Drive  
 AC Selection  
 Jumper AND PCB  
 154 AC Selection  
 Switch Are Set  
 Accordingly  
 BEFORE Power Is  
 Applied To The  
 Controller.

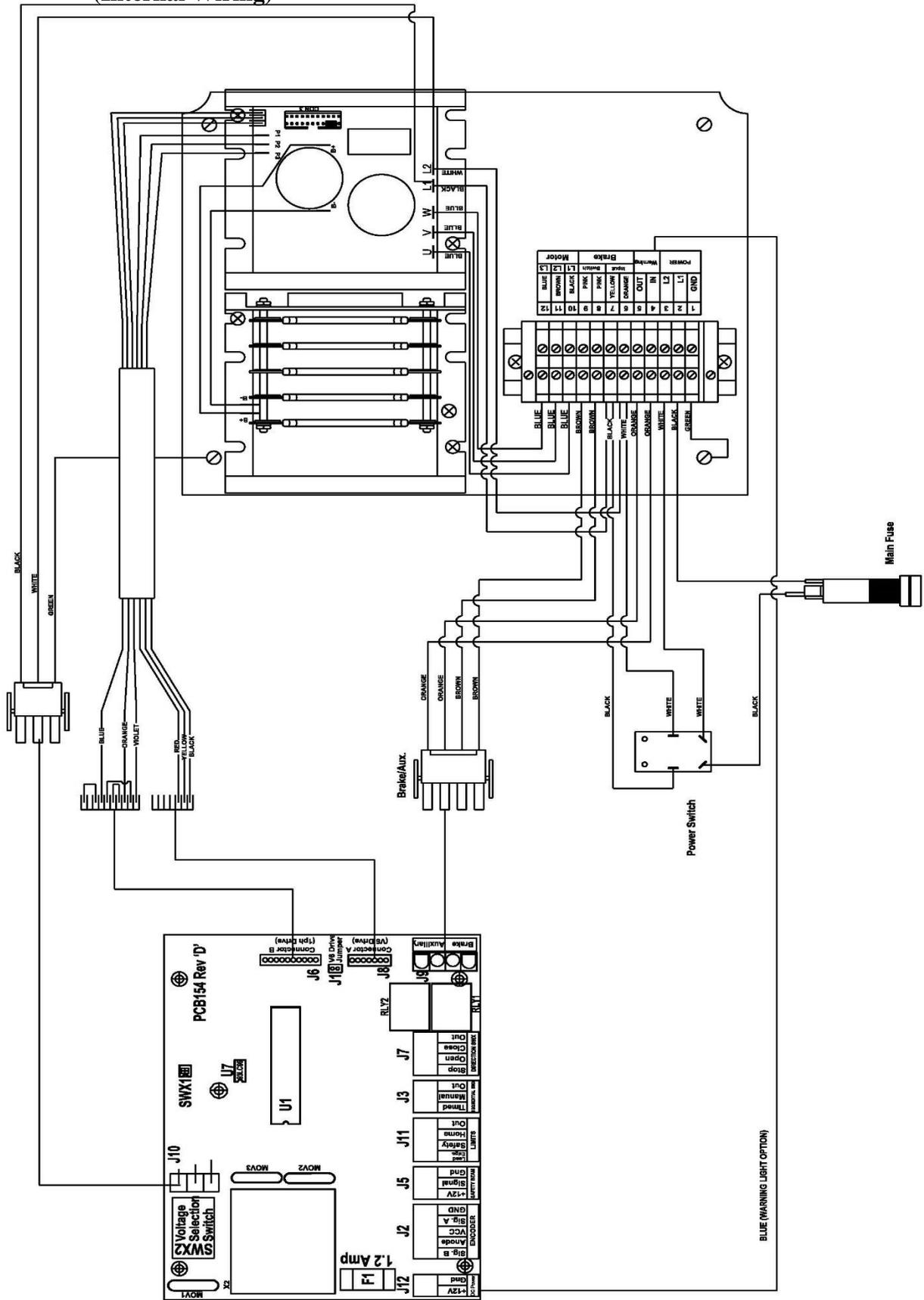


## 11.2 Smart Controller SC-325 V1 Connection Diagram (Internal Wiring)

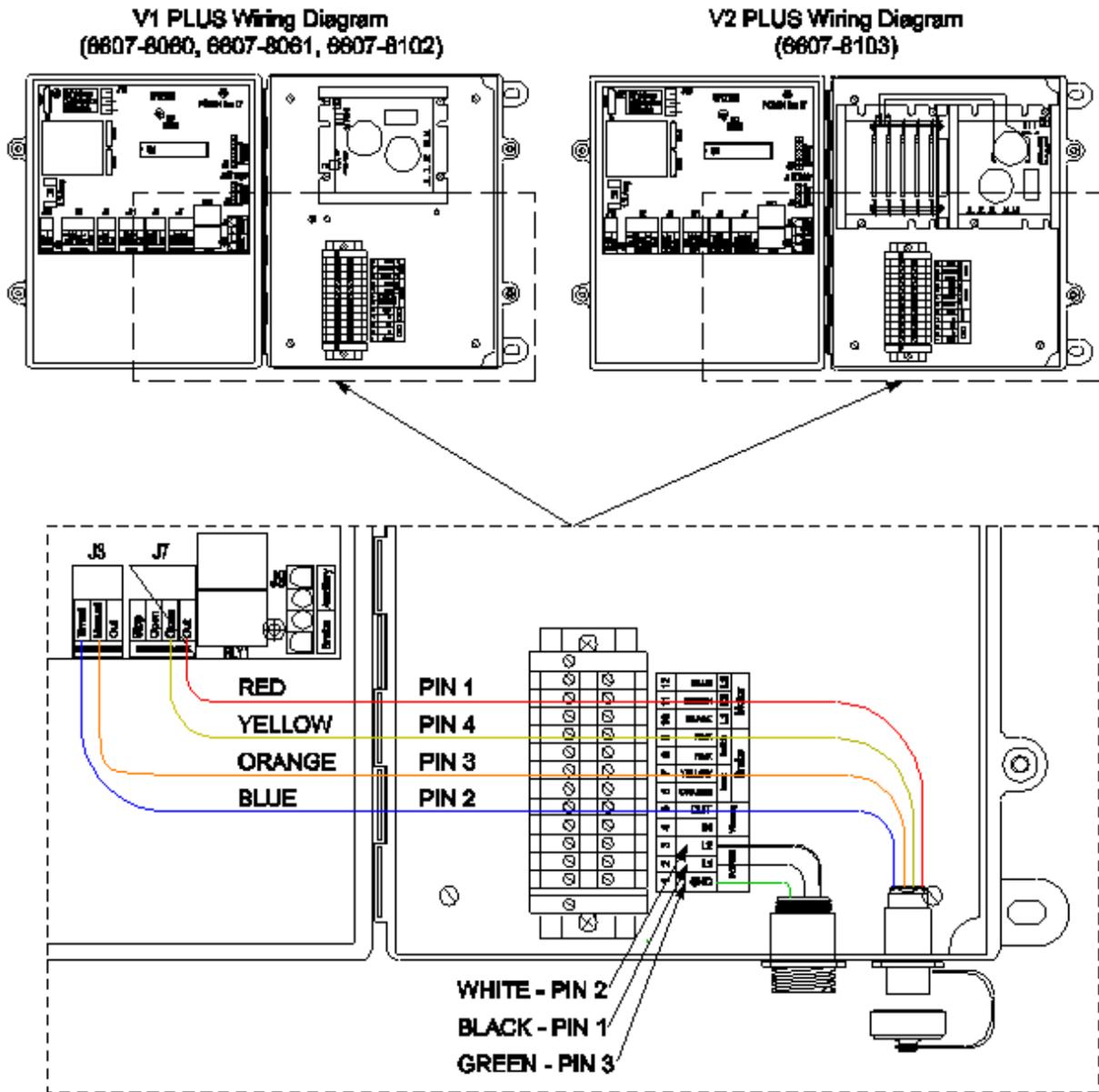




# 11.4 Smart Controller SC-325 V2, SC-650 V1 & V2 Connection Diagram (Internal Wiring)



## 11.5 SC-325 and SC-650 PLUS Additional Internal Wiring



# 12 Smart Controller External Wiring Diagrams, Schematics, etc.

This section contains the external wiring diagrams for the Smart Controllers and where applicable the RollSeal Automatic Doors.

## 12.1 Connecting AC Power to the Smart Controller

The SC-325 Controllers are factory preset to **115 VAC** and the RS-500 Doors are factory prewired to require a **115 VAC** power supply.

The SC-650 Controllers are factory preset to **230 VAC** and the RS-600 Doors are factory prewired to require a **230 VAC** power supply.

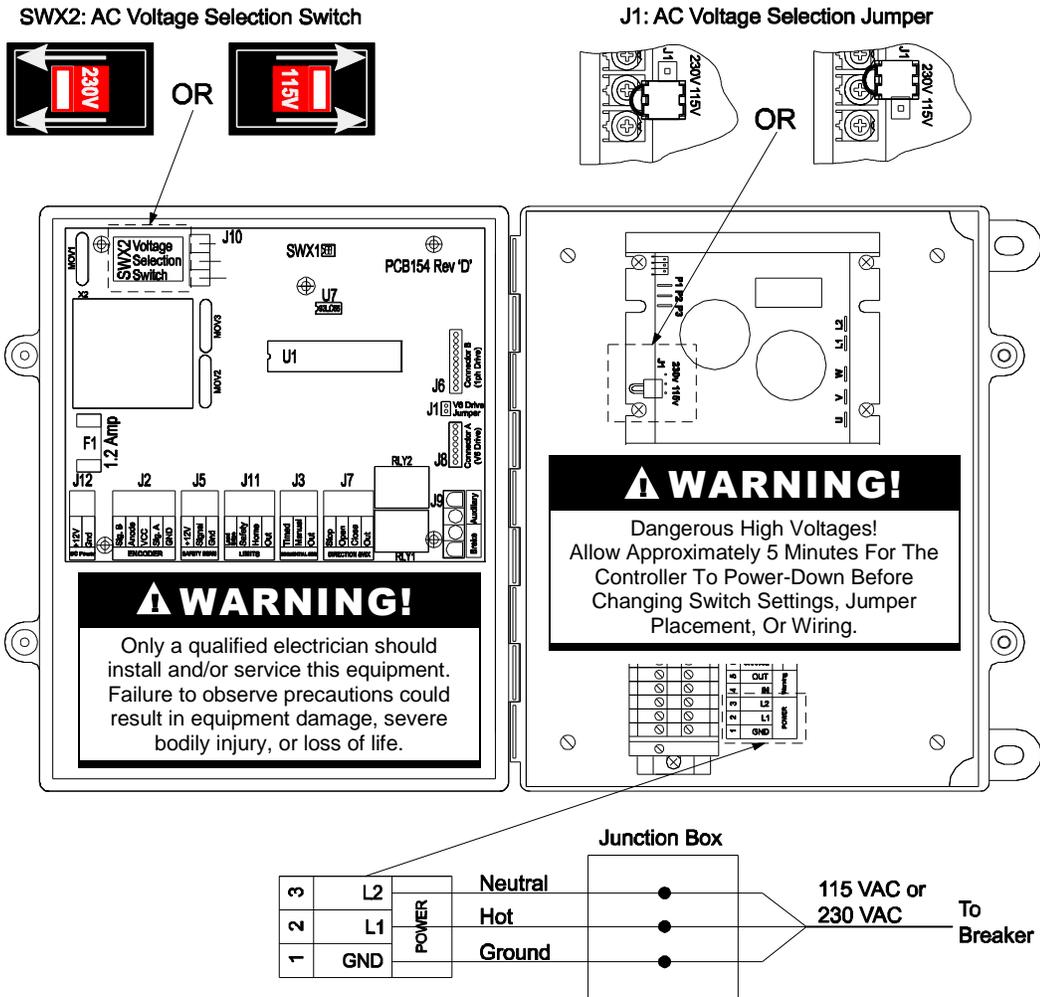
The SC-325 Controller and RS-500 Door can be field upgraded to accommodate either 115 VAC or 230 VAC power supply. If the desired power supply voltage is different from the factory preset/prewired voltage, the appropriate version Brake Rectifier must be ordered separately, field-installed on the RS Door, and the SC Controller switch & jumper settings changed accordingly.

**⚠ WARNING!**

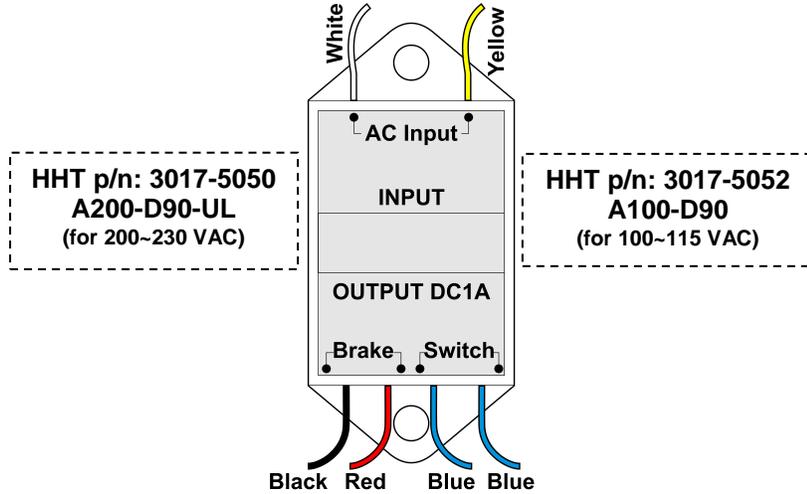
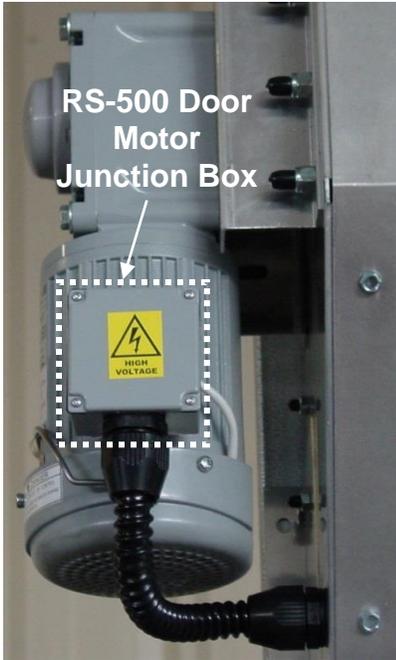
Ensure the Drive AC Selection Jumper and PCB 154 AC Selection Switch Are Set Accordingly BEFORE Power Is Applied To The Controller.

### Diagram 12A

#### Smart Controller – Right & Left Side Compartments



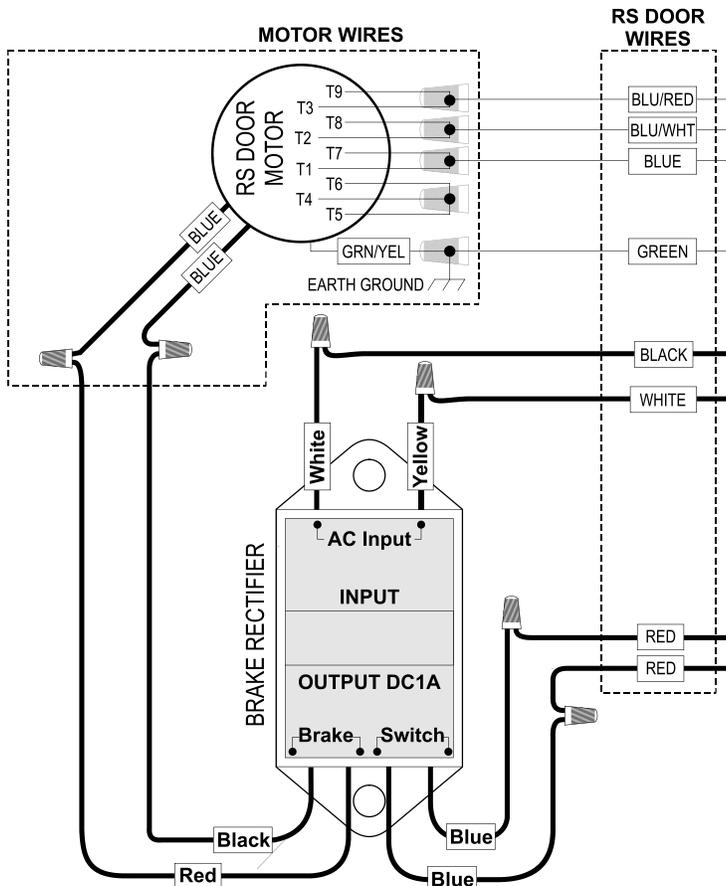
## 12.2 RS-500/600 Motor Brake Rectifier Wiring Diagram



The **SC-325 Controllers** are factory preset to 115 VAC and the **RS-500 Doors** factory prewired to require a 115 VAC power supply.  
 The **SC-650 Controllers** are factory preset to 230 VAC and the **RS-600 Doors** factory prewired to require a 230 VAC power supply.

### NOTE!

If your serial # comes after '0010156', then the wiring in the diagram below changes from: Blue w/White Stripe changes from T8 & T2 to now use T9 & T3 instead. The Blue w/Red Stripe now uses T8 and T2.



The **SC-325/SC-650 Controllers** and **RS 500/600 Doors** can be field upgraded to accommodate either 115 VAC or 230 VAC power supply. If the desired power supply voltage is different from the factory preset/prewired voltage, the appropriate version Brake Rectifier must be ordered separately, field-installed on the RS Door, and the SC Controller switch & jumper settings changed accordingly.

### ⚠ WARNING!

Dangerous High Voltages!  
 Allow Approximately 5 Minutes For The Controller To Power-Down Before Changing Switch Settings, Jumper Placement, Or Wiring.

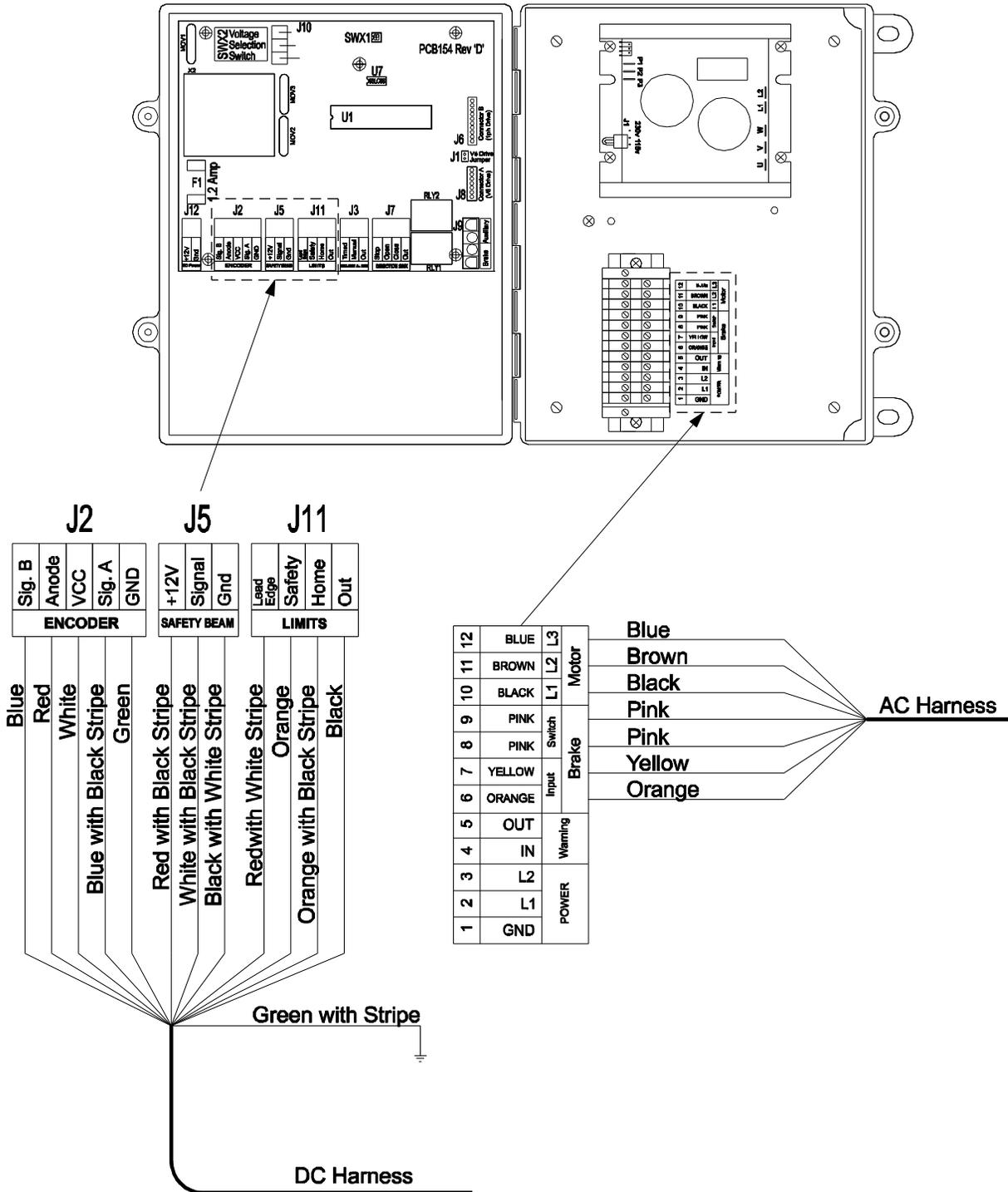
### ⚠ WARNING!

Use The Correct RS Door Brake Rectifier For The Specific Required Voltage!

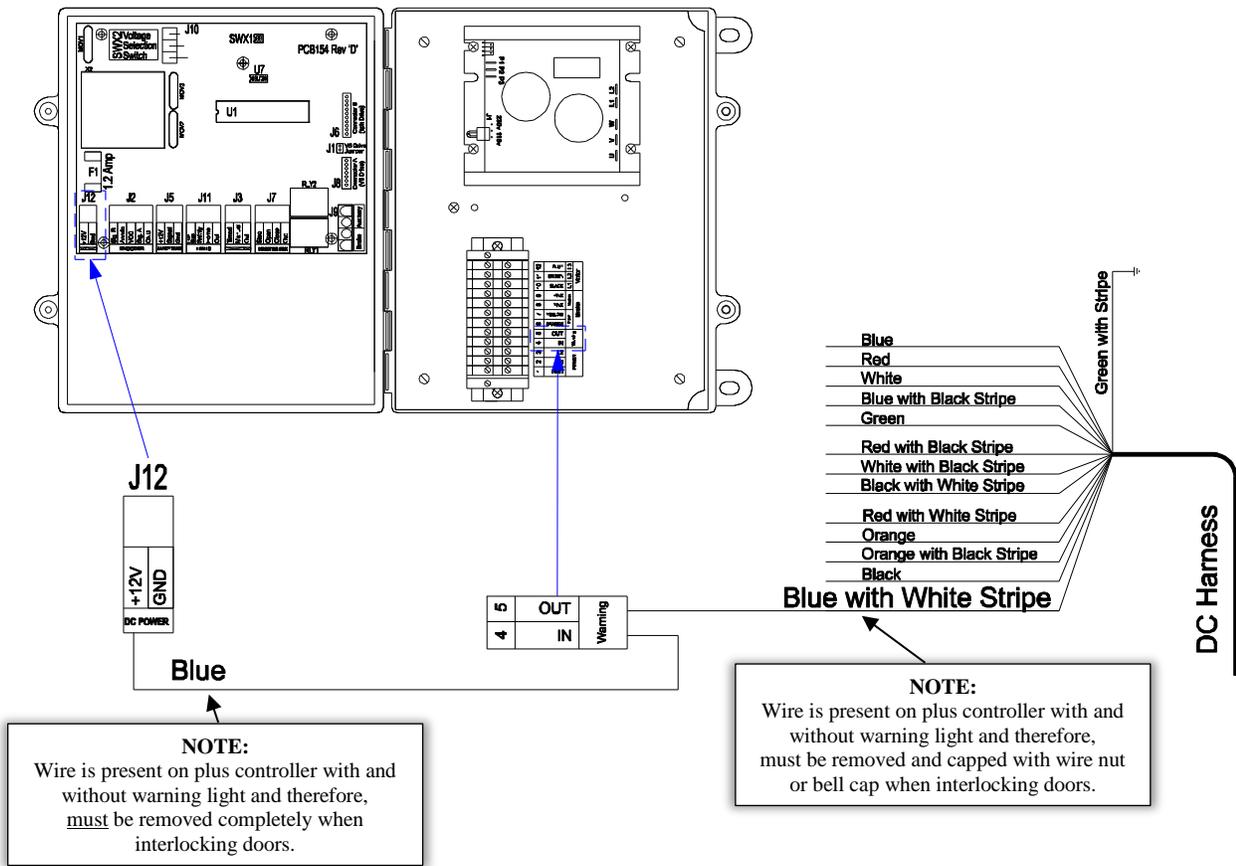
Using a 230 VAC brake rectifier with a 115 VAC power supply can result in improper door operation due to the mechanical brake not releasing properly. Using a 115 VAC brake rectifier with a 230 VAC power supply can result in damage to the mechanical brake and/or brake rectifier resulting in door failure.

### 12.3 Connecting to the Automatic Doors

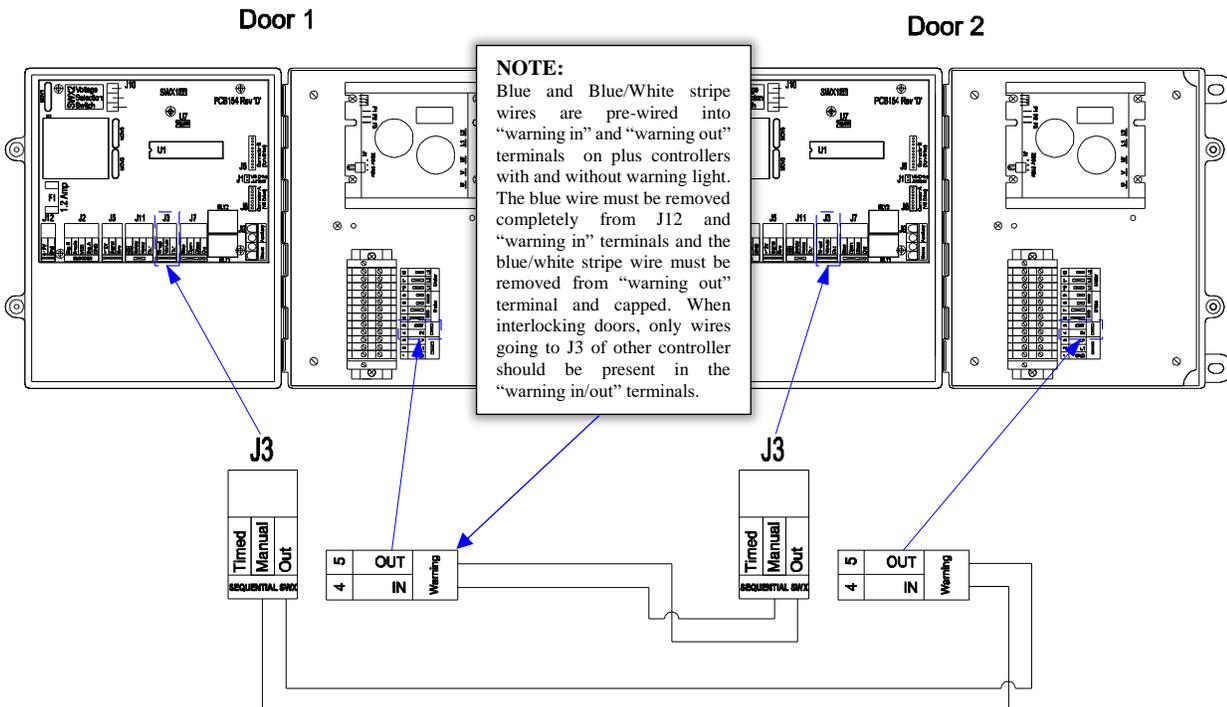
## Smart Controller – Right & Left Side Compartments



## 12.4 Warning Light Control Wiring



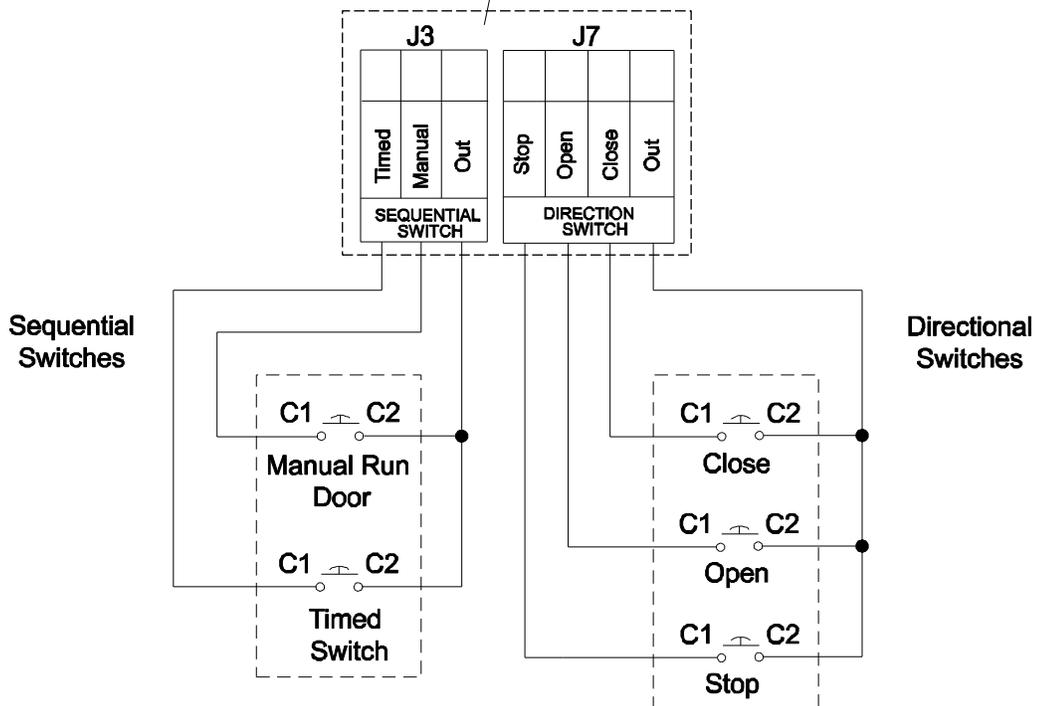
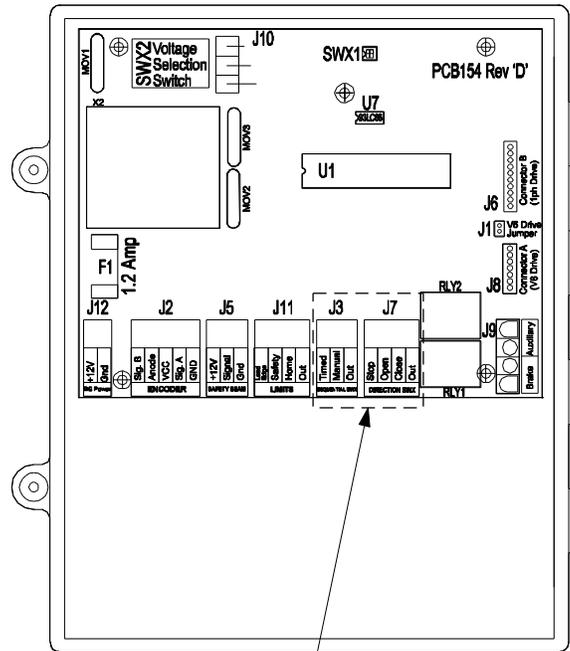
## 12.5 Interlocking Two Automatic Doors



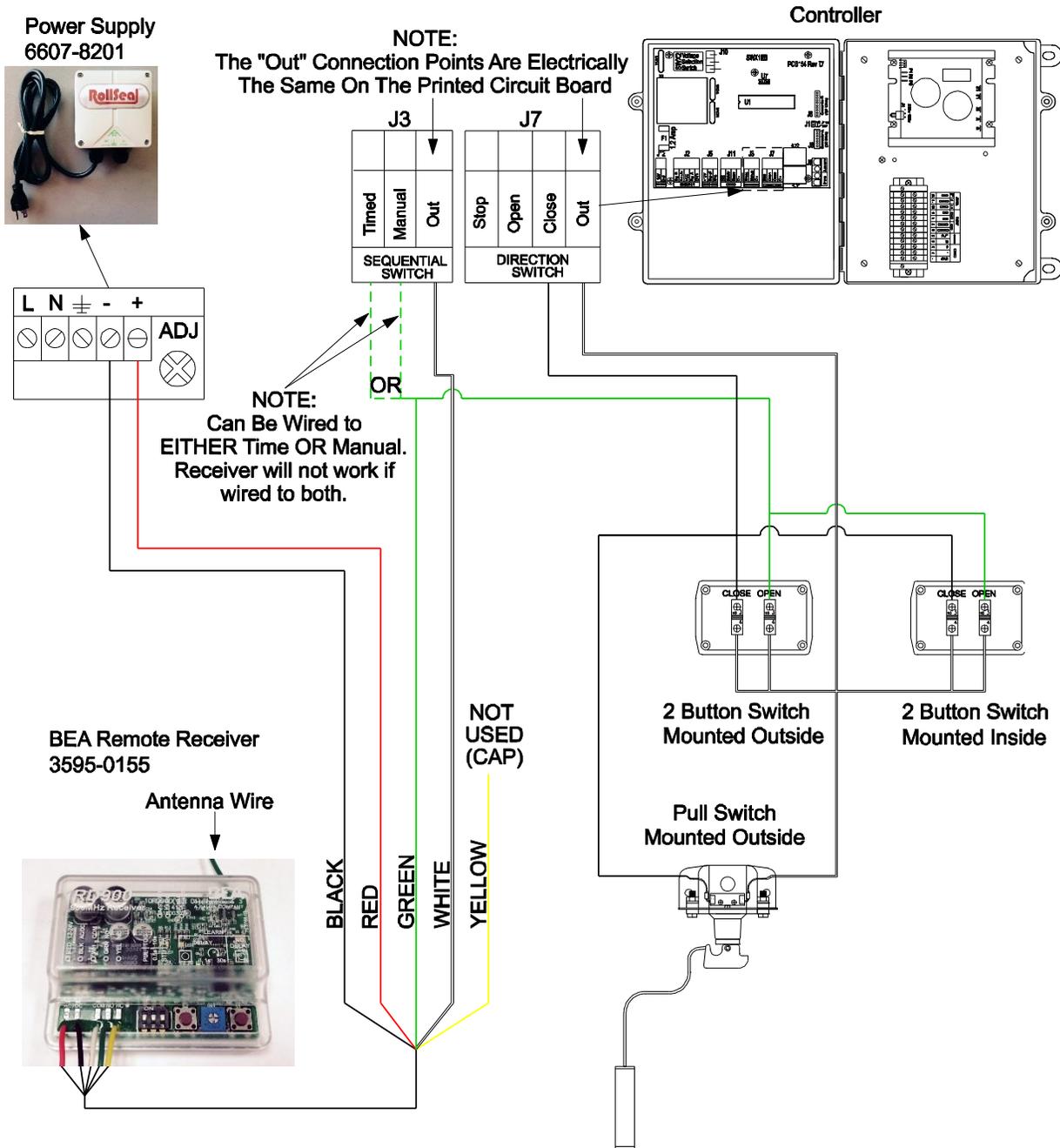
## 12.6 Connecting Operator Switches for Directional and Sequential Switch Input

### **⚠ WARNING!**

When P4 Is Set To Anything Other Than Zero, The Functions Of The “Manual” Input Or The “Warning” Output Are Reconfigured For Interlock Operation And Can Not Be Used For Their Normal Functions.



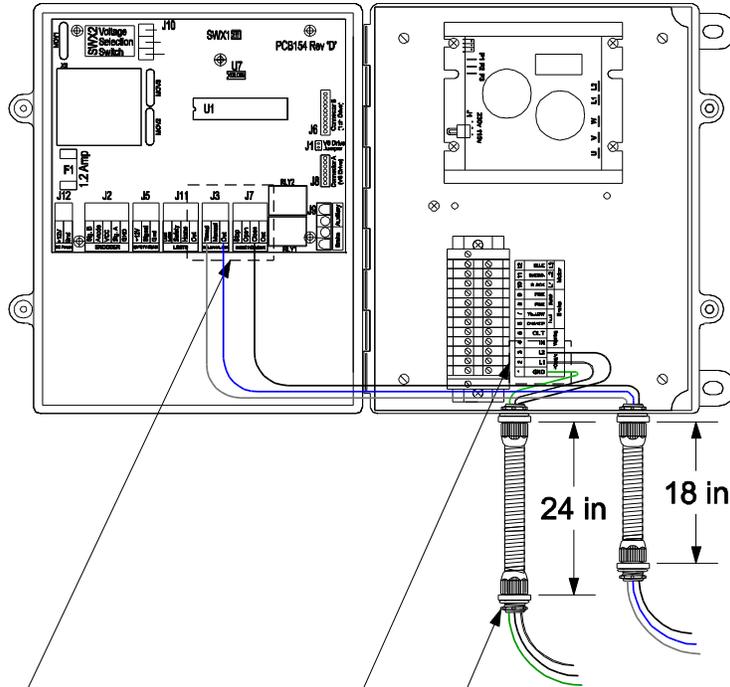
## 12.7 Connecting Switches and BEA Remote Receiver to the Smart Controller



**NOTE:** Use 18 Gauge Wire for Switches and Seal All Open Areas With Silicone

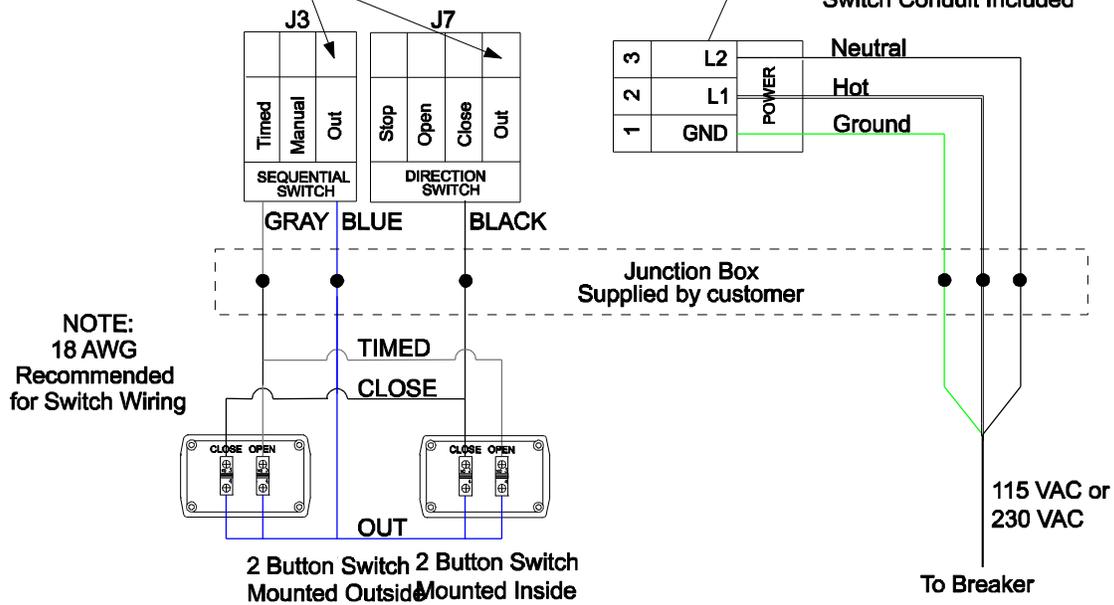
# 13 Connecting Switches to the SC-325 Wiring Option “-W01” Controller 6607-8058

**NOTE:**  
All Conduit And/Or Air  
Spaces Where Wire Is  
Routed Must Be Airtight.  
Use Sealant If Necessary.



**NOTE:**  
The "Out" Connection Points  
Are Electrically The Same  
On The Printed Circuit Board

Conduit Fitting Included  
Required Clearance Hole Size = 0.85"  
Switch Conduit Included

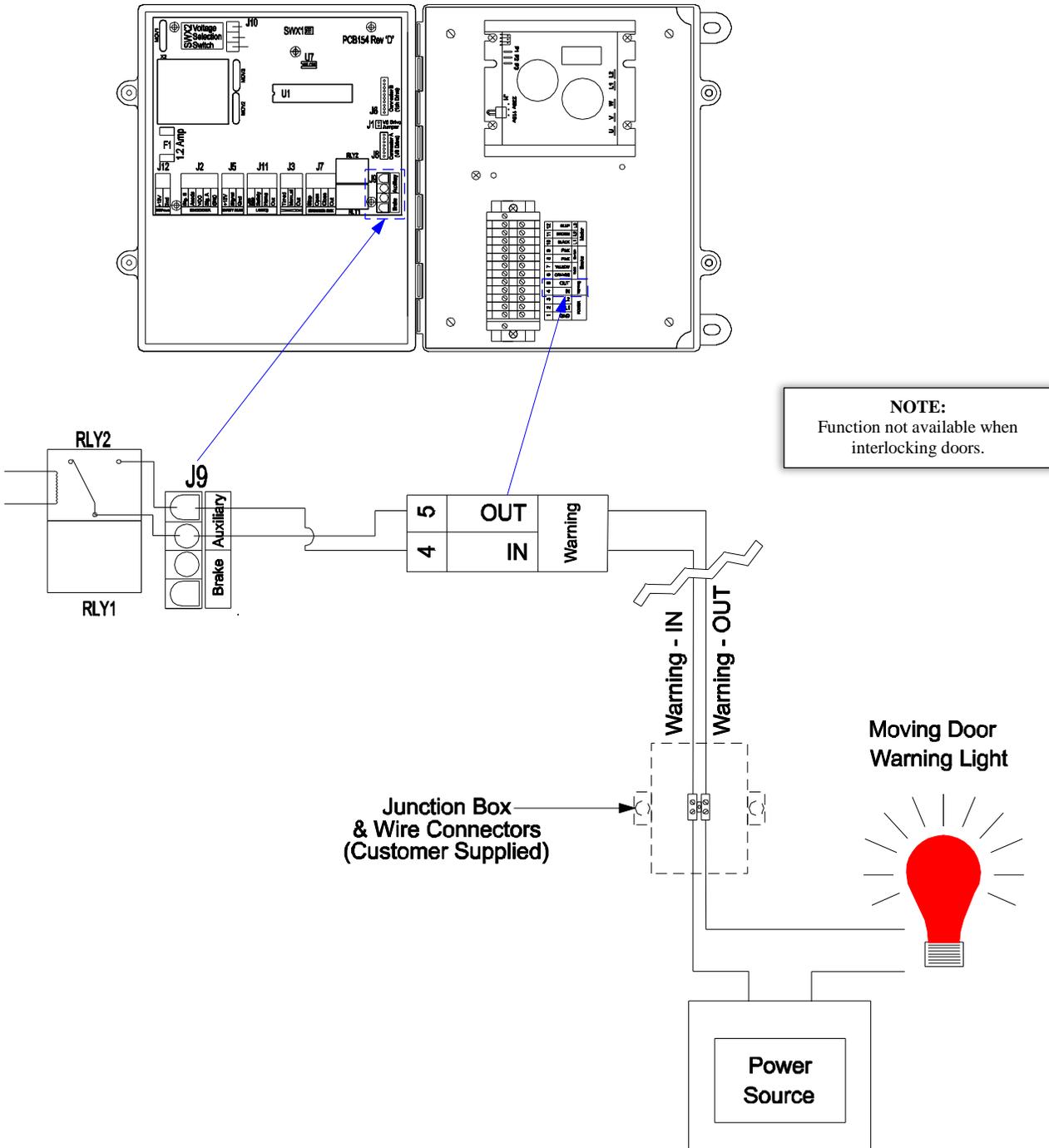


### 13.1 Connecting Moving Door Warning Light to the Smart Controller

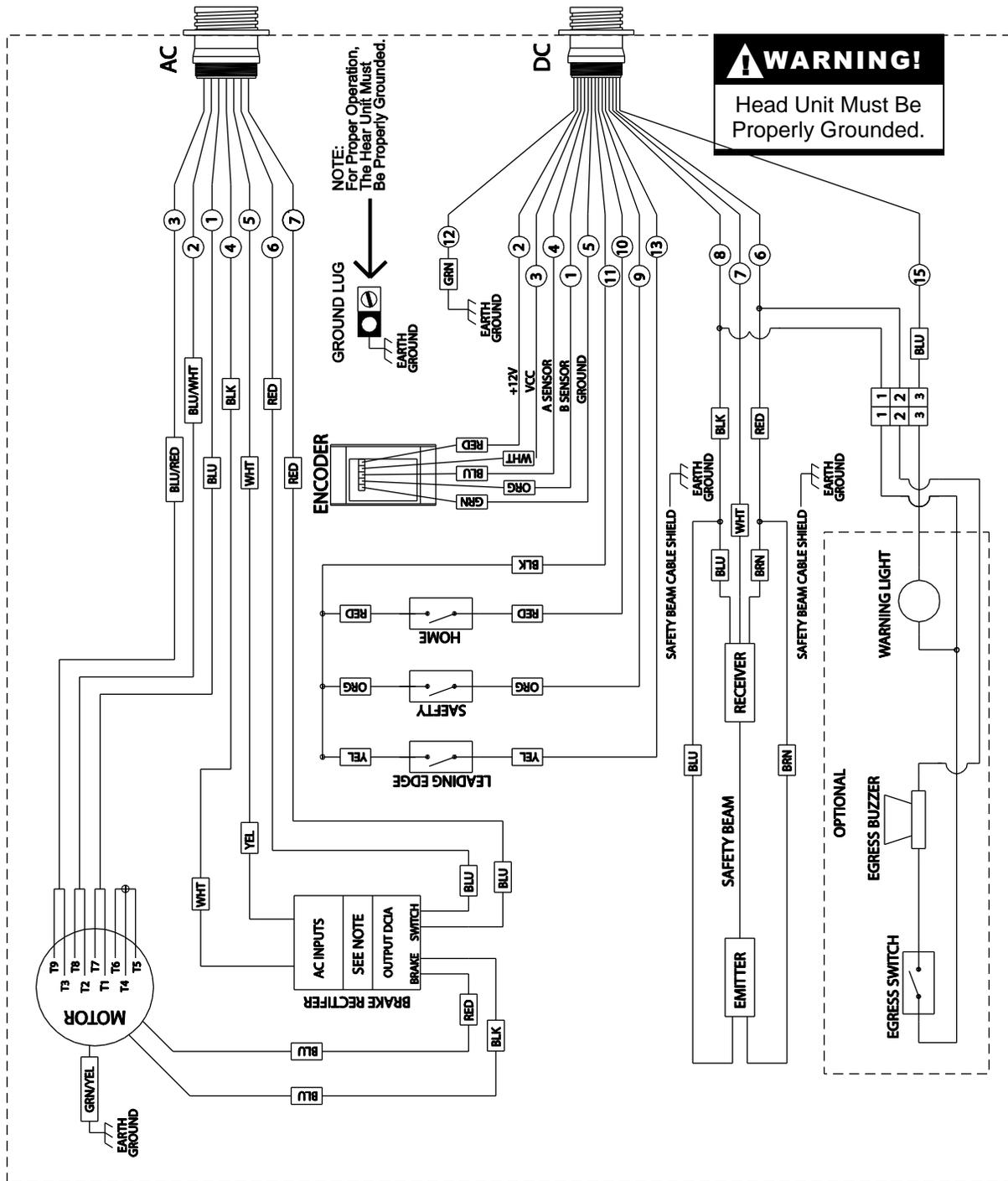
**NOTE:** This diagram is not applicable when the Warning Connections are used for Freezer Mode applications or when interlocking doors.

**WARNING!**  
Prewired Lights **MUST** Be Disconnected!

### Smart Controller – Right & Left Side Compartments



## 13.2 RollSeal Automatic Door Wiring Diagram



### NOTE

If your serial # comes after '0010156', the wiring diagram changes from:  
Blue w/White Stripe changes from T8 & T2 to now use T9 & T3.  
The Blue w/White Stripe now uses T8 & T2.



## 14 Accessories

### 14.1 Remote Transmitter and Receiver (Ordered Separately)

Depending on how the RS-500/600 is equipped, an Accessory Power Supply may be necessary for the addition of optional equipment. Accessory Power Supplies are available in 1 Amp and 4.5 Amp.

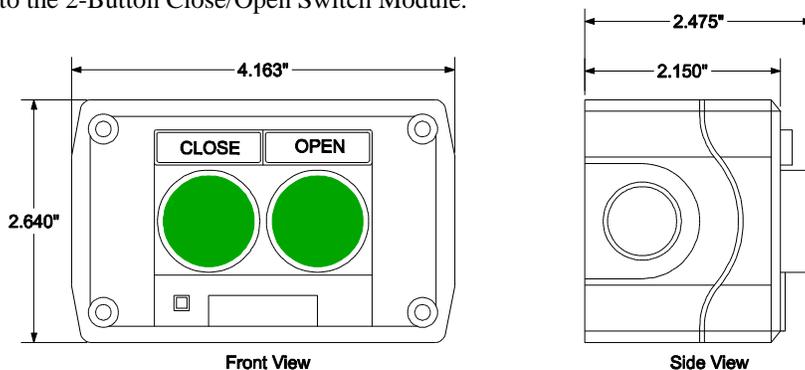
The BEA Remote Receiver has four (4) types of transmitters that are available. This allows for custom activation and/or sequencing of doors.

See **Section 12, Page 12.7** for wiring details.

### 14.2 2-Button Close/Open Switch Module (Ordered Separately)

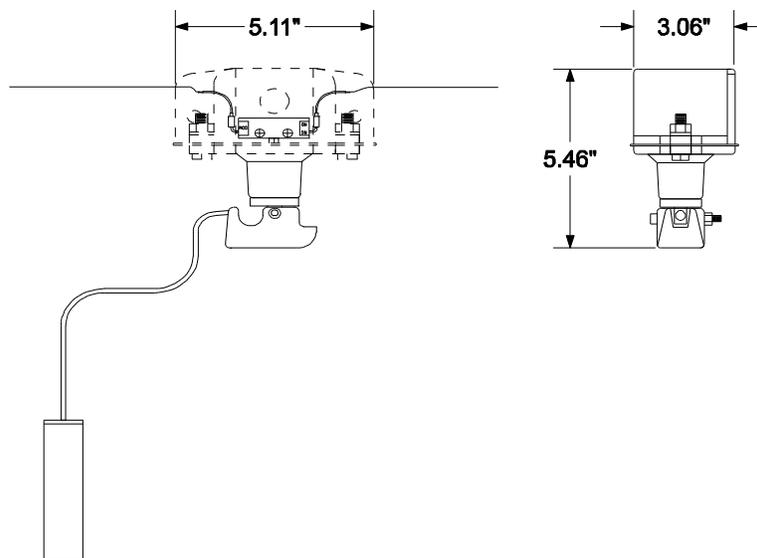
The Close/Open Switch Module contains two normally-open momentary dry contact switches.

The OPEN switch may be connected to any one of the following three connections to PCB 154: Sequential Timed, Sequential Manual, or Directional Open depending on the specific application requirements. The CLOSE switch should be wired to the Directional CLOSE connection. Refer to **Section 12.7** for connections to the 2-Button Close/Open Switch Module.



### 14.3 Ceiling/Wall Mount Pull Switch Assembly (Ordered Separately)

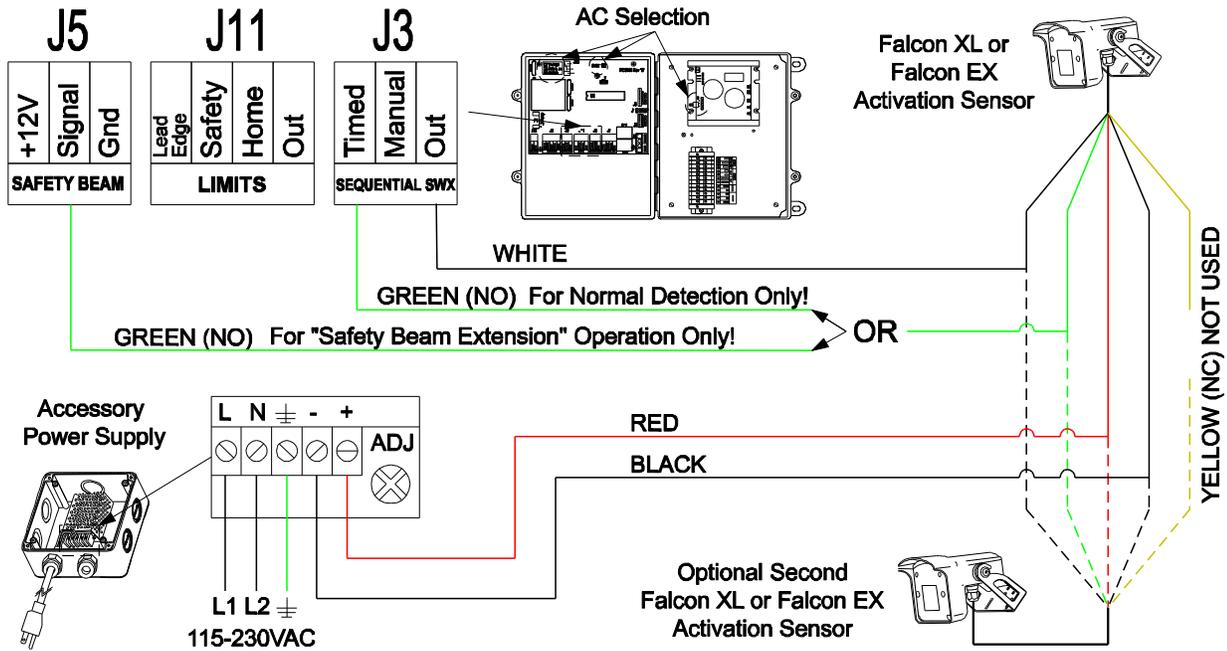
The Ceiling/Wall Mount Pull Switch is normally mounted to the ceiling or near a wall to provide easy access door operation. The Ceiling Pull switch is normally wired to the PCB 154 Sequential Timed connection but may also be used for other switch operations when required. Refer to **Section 12.7** for connections to the Ceiling/Wall Mount Pull Switch Assembly.



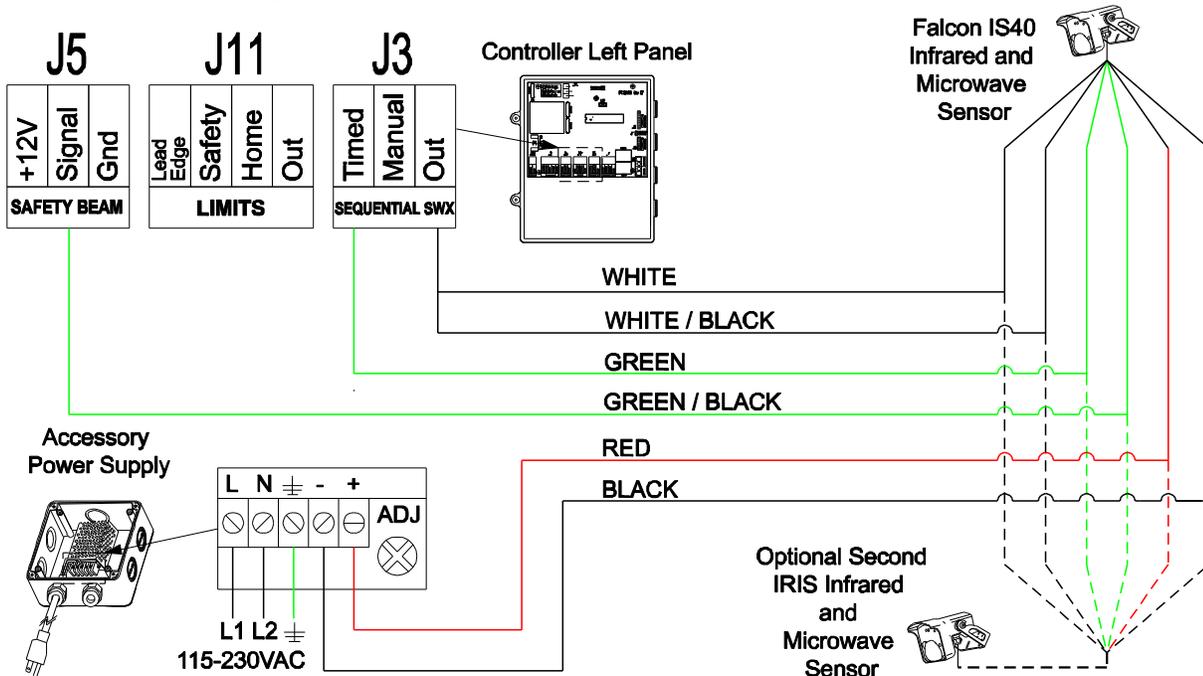
## 14.4 Motion Detectors, Infrared Sensors and Loop Sensors (Ordered Separately)

Motion Detectors, Infrared Sensors and Loop Sensors are optional accessories that can improve the efficiency and performance of your RollSeal Door. Sensors can also help prevent damage to the RollSeal Door by preventing the door from closing while lifts or objects are present in the vicinity.

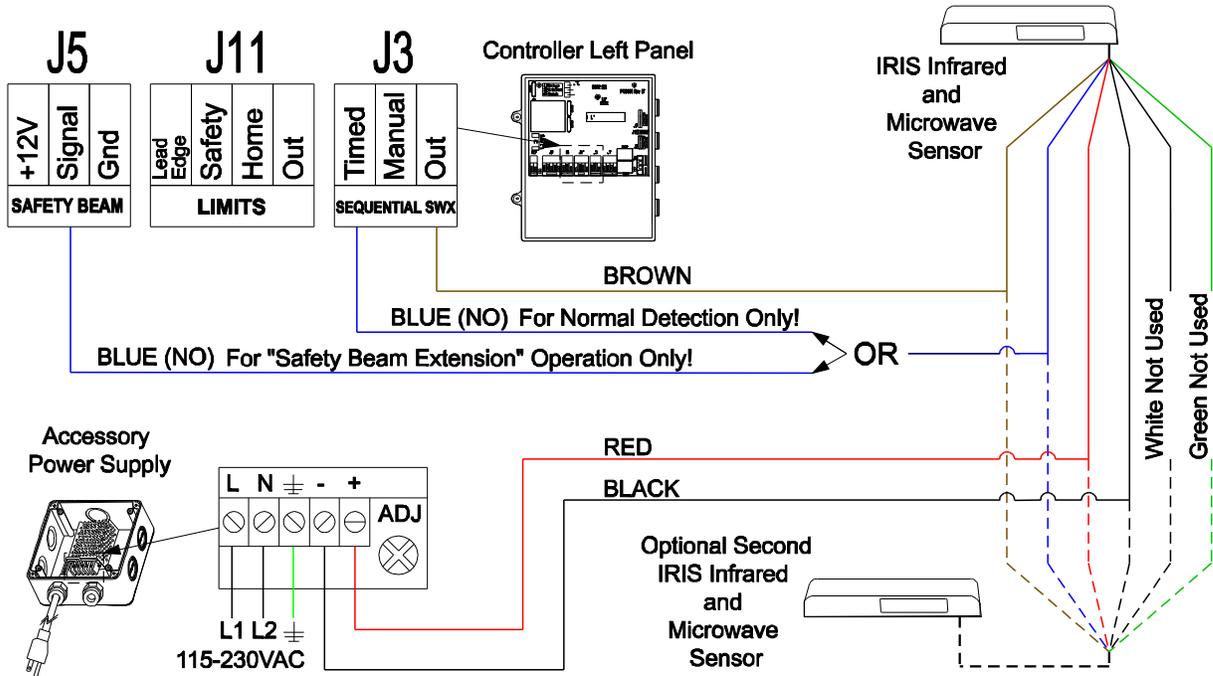
### 14.4.1 Wiring Falcon XL and EX Motion Detectors



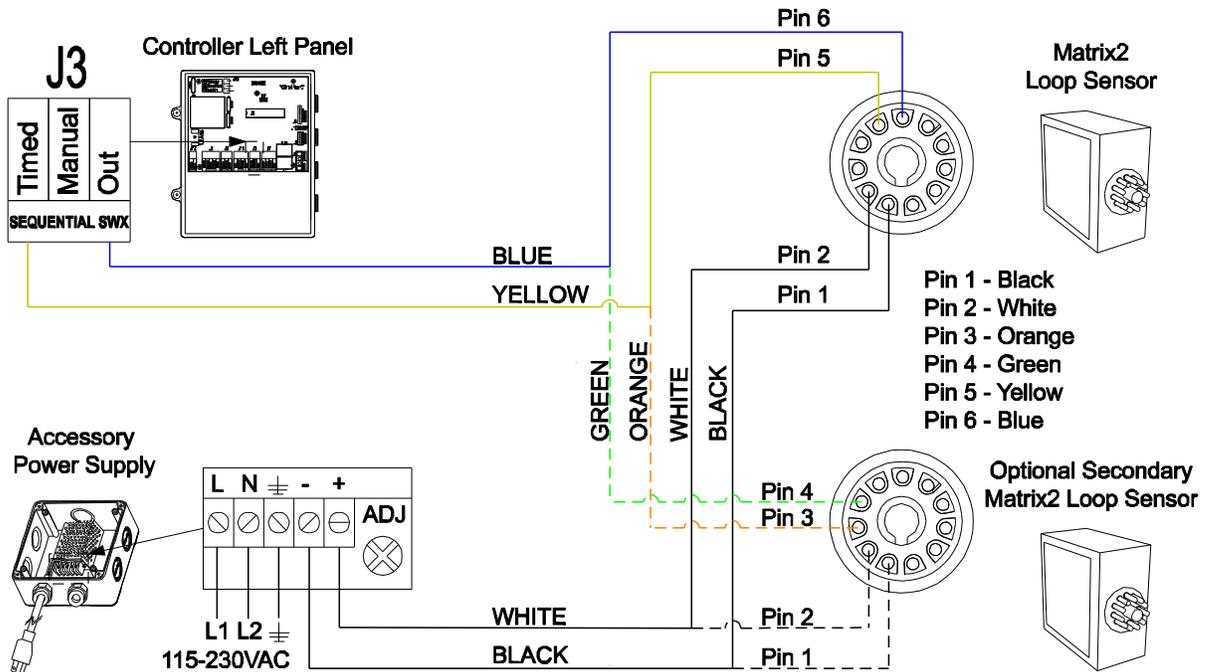
### 14.4.2 Wiring Falcon IS40 Infrared and Microwave Sensors



### 14.4.3 Wiring IRIS Infrared and Microwave Sensor



### 14.4.4 Wiring Matrix2 Loop Sensor



# 15 Replacement Parts and Optional Accessories

## 15.1 SC-325 Controller

### SC-325 Controls, Parts, and Accessories

Part Number	Description	Notes
<b>Controller</b>		
6607-8057	SC-325-V01-115	Use with RS-500 Doors ONLY
6607-8056	SC-325-V02-0 (Includes V2 Drive & Brake Module)	Use with RS-500 Doors ONLY
6607-8058	SC-325-V01-000-W01 (Includes W01 Switch Wiring Option with Conduit)	Use with RS-500 Doors ONLY
6607-8060	SC-325-V01-115-PLUS (Includes Prewired Controller)	Use with RS-500 Doors ONLY
6607-8061	SC-325-V01-230-PLUS (Includes Prewired Controller)	Use with RS-500 Doors ONLY

<b>Drive Board Assemblies</b>		
6407-6082	Use with SC-325 Controller 6607-8057, 6607-8058, 6607-8060, and 6607-8061 /PCB AC DriveKBVF-22D w/QA V1 (V1 Drive)	Use with SC-325 Controllers ONLY.
6407-6083	Use with SC-325 Controller 6607-8056 /PCB AC DriveKBVF-22D w/QA V2 (V2 Drive)	Use with SC-325 Controllers ONLY.
1902-4701	Drive Cable Assembly	

<b>Chips</b>		
3701-6069	PIC SC-325 RS Door Control V0.xx (Processor)	Use with SC-325 Controllers ONLY.
3540-0143	Double 'E' Chip	

<b>Fuses</b>		
3010-3001	FUSE 1.2 AMP 5mmX20mm slow blow (F1)	Located on PCB 154
3010-2140	FUSE 10 AMP 1/4X1-1/4 TD Main Fuse (Black Holder)	Use with SC-325 Controllers ONLY.

<b>Brake Module &amp; Rectifier</b>		
6407-6088	Brake Module (Use with SC-325 Controller 6607-8056)	
3017-3052	Brake Rectifier (Use with 115 VAC Doors)	
3017-3050	Brake Rectifier (Use with 230 VAC Doors)	

<b>Switches</b>		
3001-2865	Main Power Switch w/toggle tabs	

<b>Door Assembly</b>		
6407-0618	/DOOR ASSY SC-325	Use with SC-325 Controllers ONLY.

## 15.2 SC-650 Controller

### SC-650 Controls and Parts

Control	Description	Notes
<b>Controller</b>		
6607-8100	SC-650-V01-0	Use with RS-600 Doors ONLY
6607-8101	SC-650-V02-0 (Includes V2 Drive)	Use with RS-600 Doors ONLY
6607-8102	SC-650-V01-115-PLUS	Use with RS-600 Doors ONLY
6607-8103	SC-650-V01-230-PLUS	Use with RS-600 Doors ONLY

<b>Drive Board</b>		
6407-6086	/PCB AC DriveKBVF-23D w/QA V1 (V1 Drive)	Use with SC-650 Controllers ONLY
6407-6087	/PCB AC DriveKBVF-23D w/QA V2 (V2 Drive)	Use with SC-650 Controllers ONLY
1902-4701	Drive Cable Assembly	

<b>Chips</b>		
3701-6071	PIC SC-650 RS Door Control V0.xx (Processor)	Use with SC-650 Controllers ONLY

<b>Fuses</b>		
3010-3001	FUSE 1.2 AMP 5mmX20mm slow blow (F1)	Located on PCB 154
3010-2994	FUSE 15 AMP 1/4X1-1/4 TD Main Fuse (Black Holder)	Use with SC-650 Controllers ONLY.

<b>Brake Module &amp; Rectifier</b>		
6407-6088	/PCB Brake Module DBVF vr.9598	Use with SC-650 V1 & V2 Controllers
3017-3050	/A200 Brake Rectifier	Use with 230 volt AC Doors

<b>Switches</b>		
3001-2865	Main Power Switch w/toggle tabs	

<b>Door Assembly</b>		
6407-0620	/DOOR ASSY SC-650	Use with SC-650 Controllers ONLY

## 15.3 Replacement Parts and Accessories

### RollSeal Parts, and Accessories

Part Number	Description	Notes
<b>Cable and Harness Assemblies</b>		
1903-3053	HRNS RS-500 and RS-600 DC	
1903-3016	HRNS RS-500 and RS-600 AC	
1903-3064	HRNS RS-500 DC (Short)	
1903-3063	HRNS RS-500 and RS-600 AC (Short)	
1902-4701	Drive Cable Assembly	

<b>Encoder</b>		
6407-1565	Encoder Board	
6421-1404	Encoder Assembly	
6450-2008	Encoder Bracket Kit	

<b>Safety Beam</b>		
6421-9040	Emitter (motor side)	
6421-9041	Receiver	

<b>Door Switches</b>		
1903-3050	Safety Switch	
1903-3051	Leading Edge Switch	
1903-3052	Home Switch	

<b>Door Replacement Parts</b>		
0401-7728	Leading Edge Switch Bracket	
Call Customer Service	Soft Tension Pipes	Doors up to 10'
Call Customer Service	Impact Resistant Tension Pipes	Doors up to 12'

<b>Power Supply and BackUp Units</b>		
3595-0109	Power BackUp 115 VAC	
6607-8200	Accessory Power Unit 12VDC 4.5A	
6607-8201	Accessory Power Unit 12VDC 1A	
6607-8202	Battery BackUp 230VAC 850VA	
6607-8203	Battery BackUp 115VAC	

<b>Motion Detectors and Sensors</b>		
3595-0104	Falcon Narrow	
3595-0108	Falcon XL	
3595-0006	Falcon EX	
3595-0127	Falcon IS40	
3595-0125	IRIS	
3595-0110	Matrix2	
3595-0103	Remote for Programming Falcon	

Part Number	Description	Notes
<b>Terminal Blocks</b>		
3006-5076	2 Position Terminal Block	
3006-5077	3 Position Terminal Block	
3006-5078	4 Position Terminal Block	
3006-5079	5 Position Terminal Block	
3006-2984	2 Pin Mini Jumper	
<b>Accessory Switches</b>		
3001-7006	2-Button Close/Open Switch	
3001-7000	3- Button Close/Open/Stop Switch	
3001-6000	Ceiling Pull Switch CP1 SPST	
3001-6012	Ceiling/Wall Pull Switch	
<b>Manuals</b>		
4801-5156	RollSeal SC-325 & SC-650 Door Controllers	



