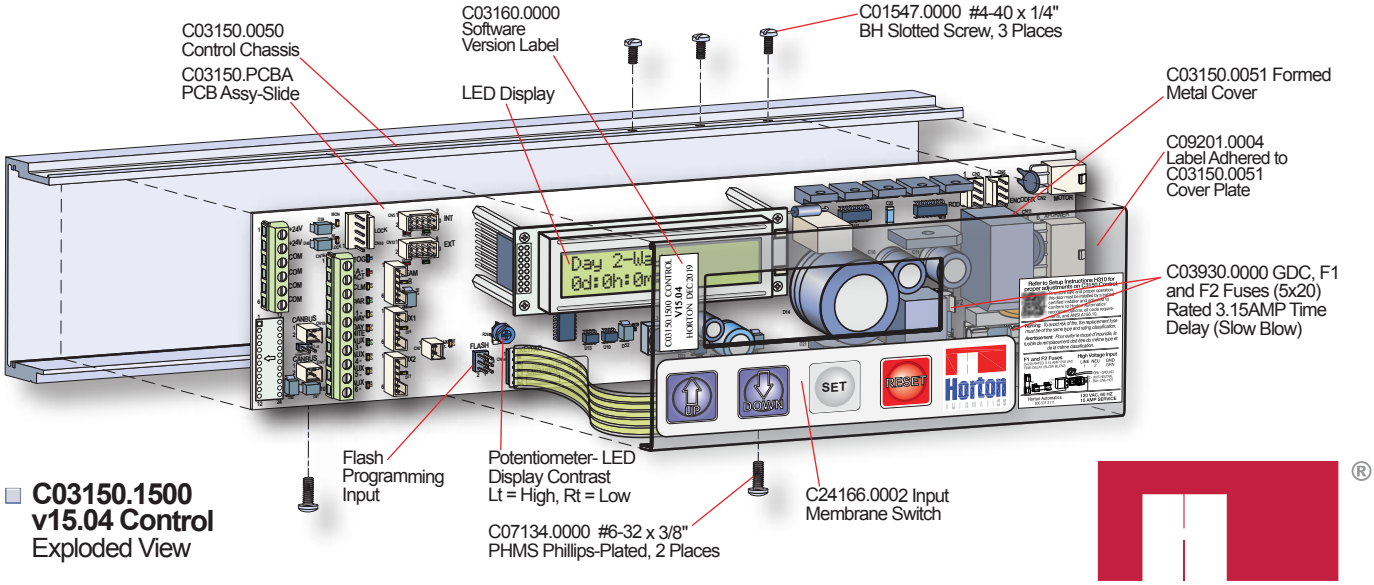
Setup Instructions and Troubleshooting

C3150 Microprocessor Control V15.04

for Electric Slide Door Operators

Series 2000, 2000B, 2001 and 2003

Use with G200, G2001, G230, G230T, G205-C or G20B Installation Instructions.



C03150.1500
v15.04 Control
Exploded View

H310 Setup Manual
REV JAN 2020, **Created NOV 2017**© printed in the U.S.A.
Horton Automatics, A Division of Overhead Door Corporation

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LINEAR DRIVES

BELT DRIVES

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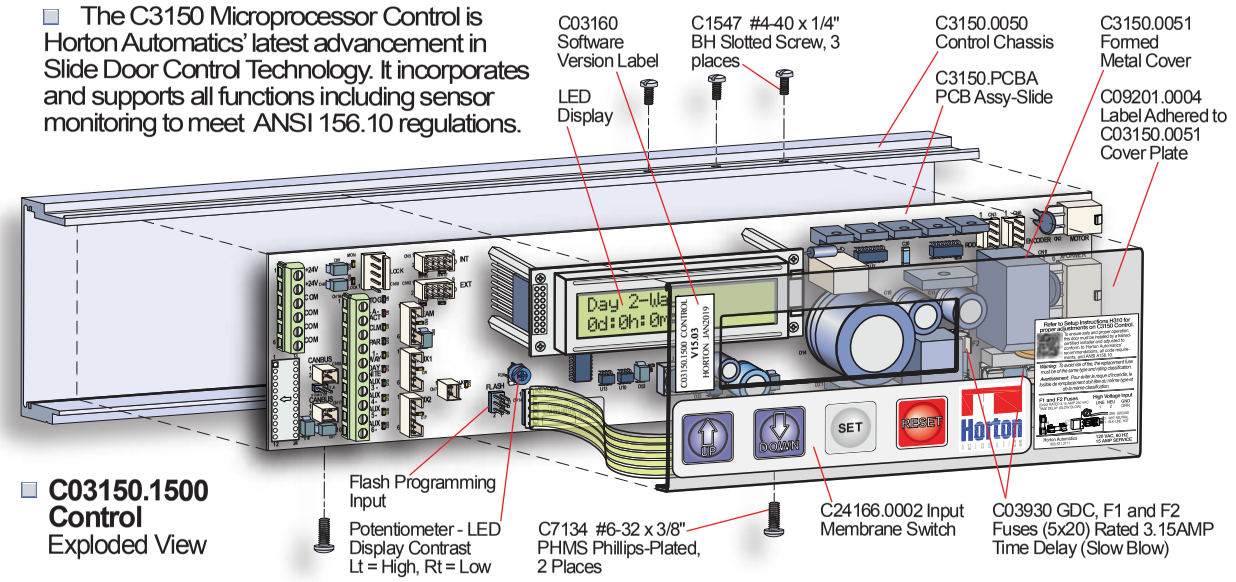
BELT DRIVES
Section continued **Sheet**

LINEAR AND BELT DRIVES
Section

01. SLIDE OPERATOR - CONTROL HARNESS DETAIL

C3150 Control for Series 2000 Linear Drives and S2000B, S20001 and S2003 Belt Drive Operators

The C3150 Microprocessor Control is Horton Automatics' latest advancement in Slide Door Control Technology. It incorporates and supports all functions including sensor monitoring to meet ANSI 156.10 regulations.



C03150.1500 Control
Exploded View

Instructions to Installer

- The Horton C3150 Control Assembly is designed for use only on the Horton Series 2000, 2000B, 2001, 2003, and 2003T slide door systems.
- This Microprocessor Control and Slide Door Unit must be installed by a trained and experienced installer with the knowledge of local codes and ANSI A156.10 'Standards for Power Operated Doors'.
- To ensure safe and proper operation, the door must be installed and adjusted to conform to Horton Automatics recommendations, all code requirements, and ANSI A156.10.
- It is strongly advised by Horton Automatics to terminate a ground from incoming power at the indicated green fastener located on far right side of the Control Chassis (refer to illustration below).
- If there are any questions about these instructions, contact Horton Automatics Technical Assistance Team at the phone numbers listed on the back cover.

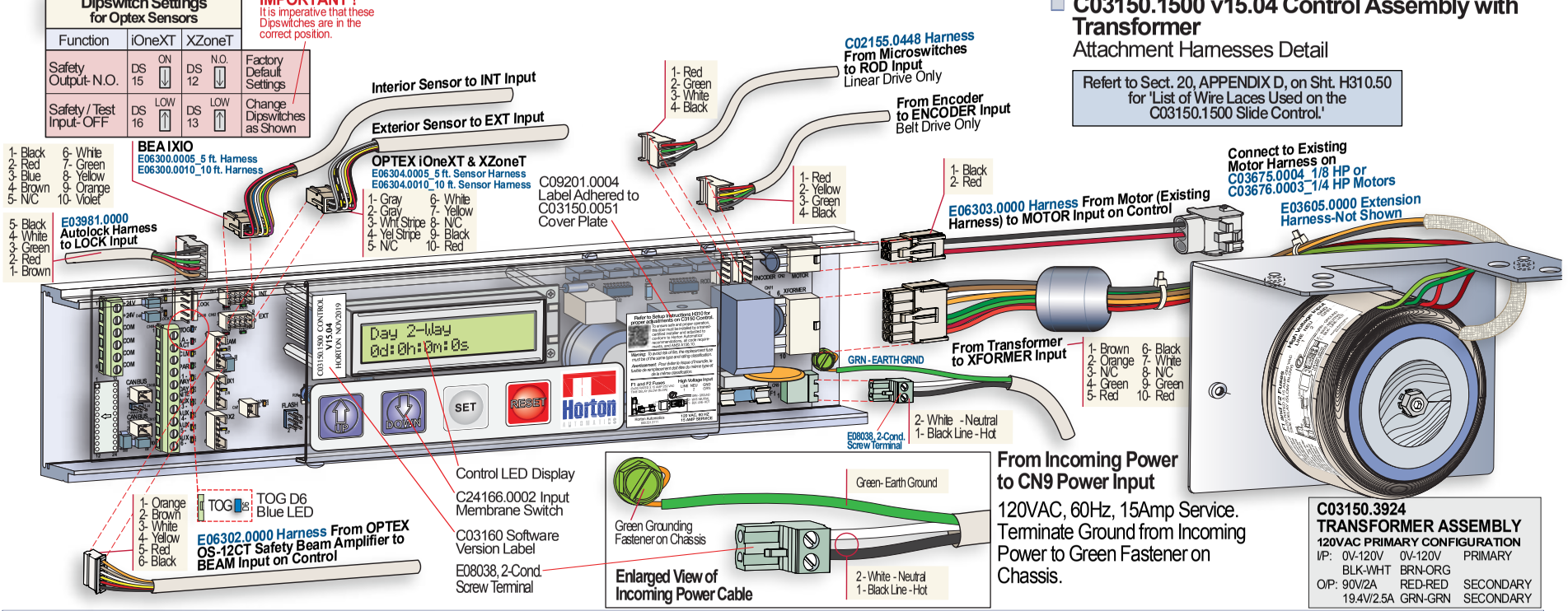
H310.01

Dipswitch Settings for Optex Sensors				
Function	iOneXT		XZoneT	
Safety Output- N.O.	DS 15	ON	DS 12	N.O.	Factory Default Settings
Safety / Test Input- OFF	DS 16	LOW	DS 13	LOW	Change Dipswitches as Shown

IMPORTANT !
It is imperative that these Dipswitches are in the correct position.

C03150.1500 v15.04 Control Assembly with Transformer
Attachment Harnesses Detail

Refert to Sect. 20, APPENDIX D, on Sht. H310.50 for 'List of Wire Laces Used on the C03150.1500 Slide Control.'



C03150.3924 TRANSFORMER ASSEMBLY
120VAC PRIMARY CONFIGURATION

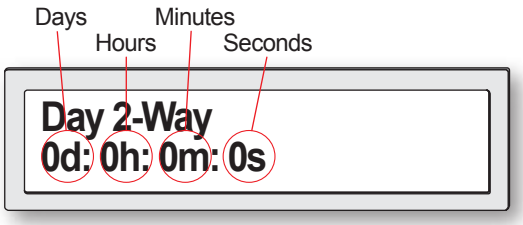
I/P:	0V-120V BLK-WHT	0V-120V BRN-ORG	PRIMARY
O/P:	90V/2A	RED-RED	SECONDARY
	19.4V/2.5A	GRN-GRN	SECONDARY

02. C3150 CONTROL INITIALIZATION - LINEAR DRIVE

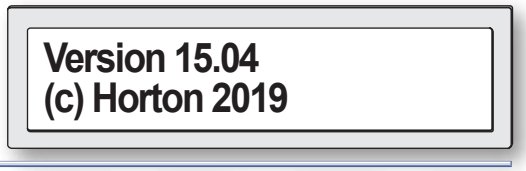
Step 1: Power-Up

Be sure the toggle circuit is complete before applying AC power to the unit.
Caution: The Door will move.

- With power established, Control LED Displays the Door Mode and Type Traffic along with the Elapsed Time since last Reset.



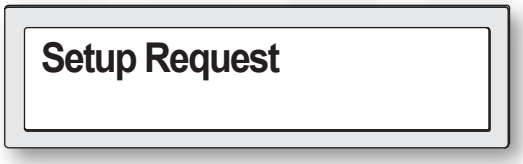
- The Display then shows the Control Version and Date. Time reverts to '0' with each power loss or Reset. Maximum Time range is 180 days.



Step 2: Learn Cycle

Instruct the control to perform a full learn cycle by:

- Holding down the **SET** button and the **RESET** button.
- Release the **RESET** button.
- Hold the **SET** button approximately 5 seconds until *'Setup Request'* appears on the screen.



Select Operator Type

- Display shows Default Operator Type: Current S2000B/S2003 Dunker/Merkle

- Select the required Operator Type. Then press **SET**.
- Press **UP** button to cycle through optional Operator Types.

- Press the **DOWN** button to display '2000 Linear'.

- When the required 2000 Linear Operator is displayed, press the **SET** button.

- Press the **UP** button to confirm Operator Type.

- Press the **DOWN** button for unmonitored Sensors.

  Installation can be simplified by initially pressing DOWN button to eliminate monitoring during basic Set-Up. Turn ON Parameters 61, 62 and 63 while testing sensors.

- Press the **UP** button if Sensors are connected and will be monitored.

Step 2: Learn Cycle cont:

- Press the **DOWN** button to Disable Day/Nite Switch.
- Press the **UP** button to Enable Day/Nite Switch if using a 4 position keyswitch (refer to Wiring Diagrams on Sheet H310.61 and H310.62) or other Nite Modes.

Marker for Section 6 Only.
Return to Section 6, Sht. H310.11.

Enable Day/Nite SW?
UP=Yes, DOWN=No

- **The Learn Cycle begins:**

  The Control then searches for a Lock Device connected to the Operator. The Display will show one of the following codes depending on the Lock type connected. In case of difficulty with the lock, refer to Section 06 - '**Linear Drive - If Failed Autolock Setup**' on Sheet H310.11.

Checking for Lock…

- **Lock Type Codes**:
  No Lock Detected.

Checking for Lock…
No Lock Detected

- Fail Secure Lock Recognized.

Checking for Lock…
Fail Secure Lock

- Fail Safe Lock Recognized.

Checking for Lock…
Fail Safe Lock

- The Control will save the data from the Learn Cycle.

Data Saved

Close Cushion

- The LED display returns to initial read-out.

Day 2-Way
0d: 0h: 0m: 0s

- At this point, it is necessary to activate door to finish the Learning Cycle.

- Learning Open Acceleration current.

Open Accel + Learn
Act (Down)

Step 2: Learn Cycle cont:

• Learning Open Speed current.	**Open Speed + Learn Act (Down)**
• Decelerating from Open Speed.	**Braking Door Act (Down)**
• Driving to Full-Open Position.	**Open Cushion Act (Down)**
• Learning for Obstructions complete.	**Obst Learn Complete**
• Executing Time Delay after Full-Open	**Time Delay 1**
• Learning Reversing Peak Current for Close Accelerate.	**Close Accelerate Learning Rev Peak**
• Learning Reversing Sensitivity for Closing Speed.	**Close Speed Learning Rev Sens**
• Learning Reversing Sensitivity for Braking Door.	**Braking Door Learning Rev Sens**
• Learning Reversing Sensitivity for Close Cushion.	**Close Cushion Learning Rev Sens**

Step 2: Learn Cycle cont:

- Reversing Sensitivity Learning Complete

Rev Learn Complete

Learning Cycle Complete.

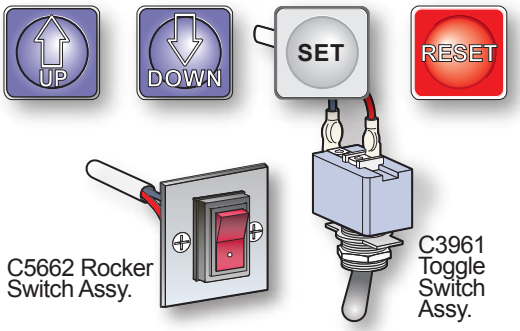
- The LED display returns to Initial read-out.

Day 2-Way
0d: 0h: 0m: 0s

Step 3: Checking Door Cycle

When the toggle switch is on, the **DOWN** button acts as an actuation device. **Caution: The Door will move.** *Version 15.04 Requires the **DOWN** button to be held for approximately 1 second to activate door.* Be sure the safety beam area is clear of obstructions. Activation devices may not yet be installed.

- Start with the door in the closed position.
- Press the **DOWN** button to actuate the door to open at factory selected default settings.
- Inspect the door unit for smooth operation free of binds and noise.



- The LED display's initial Door Cycle read-out.

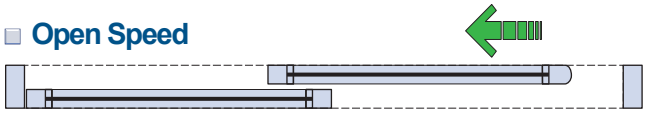
*__Activate Cycle Code__:
DOWN Button

Open Accelerate
Act (Down)*

The following Cycles are performed automatically by the C3150 Microprocessor Control. Illustrations below show the position of the door panels and the Display readout for each position.
**This demonstration assumes door was opened by the down button.*

OPEN CYCLE

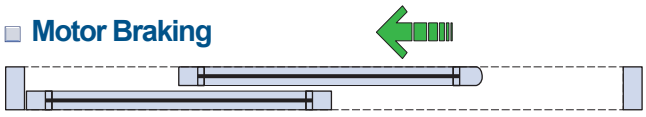
Open Speed



**Door actuated by local (Down) Button.*

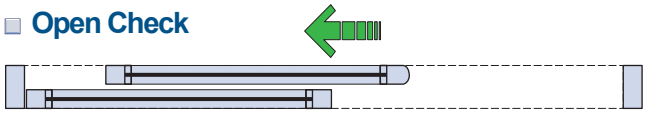
Open Speed
Act (Down)*

Motor Braking



Braking Door

Open Check

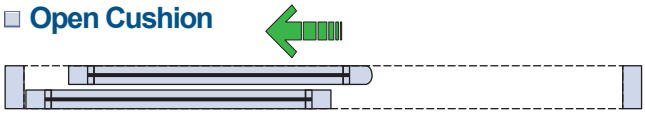


**Braking may override Open Check display.*
**Door actuated by local (Down) Button.*

Open Check
Act (Down)*

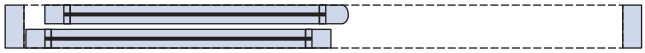
Step 3: Checking Door Cycle cont:

- **Open Cushion**



Open Cushion

- **Time Delay**



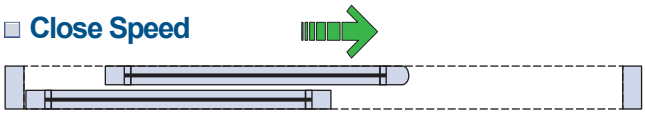
Time Delay 1

CLOSE CYCLE

- The LED display's Initial Close Cycle read-out.

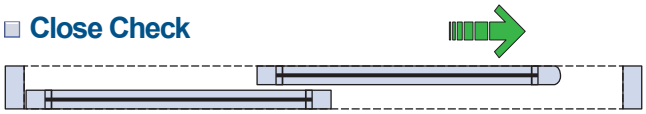
Close Accelerate

- **Close Speed**



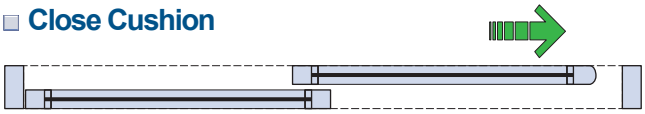
Close Speed

- **Close Check**



Close Check

- **Close Cushion**



Close Cushion

- The LED display returns to Initial read-out.

Day 2-Way
0d: 0h: 0m: 0s

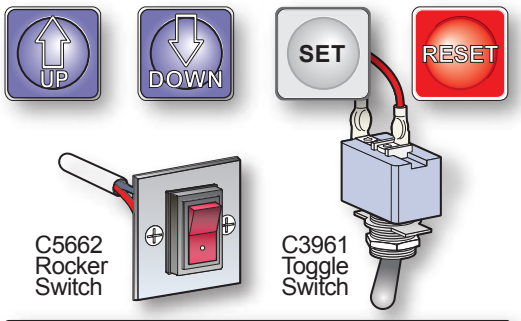
If there were no problems encountered during the Cycle Check procedure, if there are no parameters to be changed, and an Autolock is set-up, this concludes the C3150 Control's Initialization procedure.

If you are experiencing difficulty with the Control, refer to APPENDIX - A, Sheet H310.43.

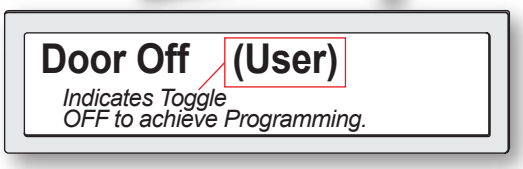
03. LINEAR DRIVE - ADJUSTING PARAMETERS

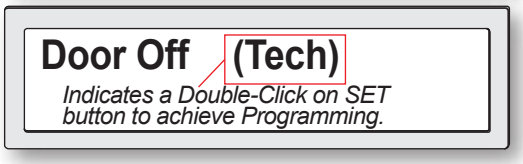
Step 1: Changing Parameter Settings

A chart of preset parameter values is shown on the next page. If any speeds or other settings need to be changed, follow the procedure listed below.



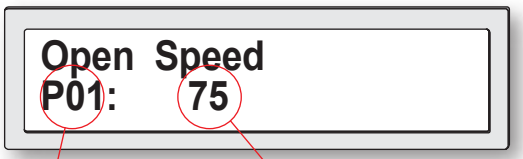
- Turn the toggle (rocker) switch **OFF** (Blue LED on Control turns **OFF**).
- Or, double-click the **SET** button (Blue LED stays ON).
  - *'Door Off'* Message blinks once, then **P01** display window is shown.





- The display switches to the menu of adjustable parameters.
  - Display window for **P01** shown as example for changing the Open Speed.

Current Selected Parameter



Parameter Number

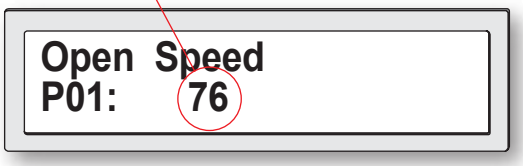
Current, Default or Last Saved Value.
(Refer to Chart for Range-Upper and Lower Limits).

- Refer to Sheet H310.08 for a list of adjustable parameter codes.
- Scroll through the parameter list using the **UP** and **DOWN** buttons until the parameter to be changed is found.

EXAMPLE:

- Hold the **SET** button and simultaneously press the **UP** or **DOWN** button to modify the Speed setting.
  - Pressing the **UP** button changes the Speed Value to 76.

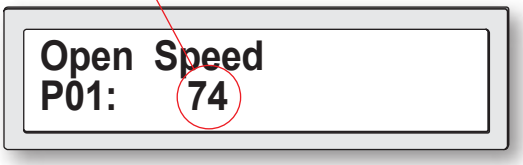
Increased Speed Value to 76



EXAMPLE:

- Hold the **SET** button and simultaneously press the **UP** or **DOWN** button to modify the Speed setting.
  - The **DOWN** button was pressed to change the Speed Value back to 75 (Default).
  - The **DOWN** button was pressed a second time to change the Value to 74 (shown).

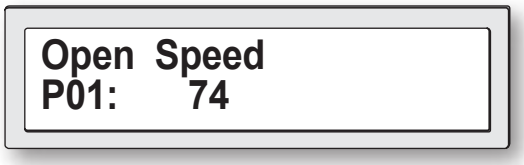
Decreased Speed Value to 74



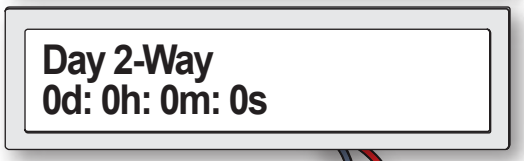
Step 1: Changing Parameter Settings cont:

EXAMPLE:

- When the **SET** button is released, the display then shows the parameter that was changed along with the new value. Other parameters may be changed, or the toggle switch turned on to check the changes made.

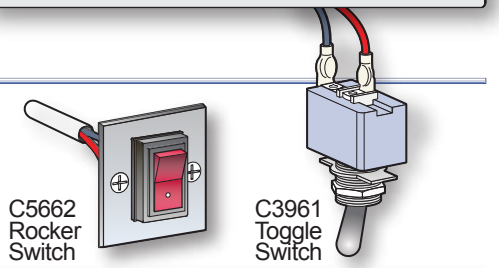


- The **SET** button may be double-clicked to exit the menu (toggle must be on).



Step 2: Saving Parameter Settings

The toggle switch must be on after all adjustments have been made and checked.



- Press and hold the **SET** button until *'Data Saved'* is displayed. All changes are now stored in the control's memory. **This step must be performed** or the control, in the event of a power failure, will revert to the last *'Data Saved'* settings.

04. LINEAR DRIVE - ADJUSTABLE PRESET PARAMETERS

Step 1: List 'Standard and SuperTech' Parameter Settings *Refer to APPENDIX - G Sht. H310.53 for **SuperTech** Masking Instructions.*

The Chart below shows all the adjustable parameters. To make changes, follow the procedure outlined in Step 1 on the previous page. The **SuperTech** Parameters allow access to proprietary features in the Parameter Menu. To access the **SuperTech** Parameters, hold the **UP** button while Double-Clicking the **SET** button.

NO.	PARAMETER	TYPE	RANGE 0 - 1535	FACTORY DEFAULT	NOTES
P01	Open Speed	Standard	10-97%	75%	
P02	Open Check	Standard	8-31%	14%	
P03	Open Cushion	Standard	8-31%	12%	
P05	Close Speed	Standard	8-56%	38%	
P06	Close Check	Standard	8-31%	12	
P07	Close Cushion	Standard	8-31%	12	
P09	Delay 1	Standard	2-255 sec	2 sec	
P10	Delay 2 Partial Open	Standard	2-255 sec	2 sec	
P11	ClSpd Rev Force	Standard	40-1000	***	***200% of learned max close speed current, units 1/10A.
P12	ClChk Rev Force	Standard	20-400	****	****200% of learned max close check current, units 1/10A.
P13	Braking Level	Standard	1-8	6	8 = maximum deceleration.
P15	Network Address (Future Feature)	SuperTech	0-247	0	0 = communications disabled.
P16	Control Password	Standard	0-9999	0	0 = no password required.
P18	Day 2-Way Mask	SuperTech	0-1535	1535	Consult factory before modification.
P19	Day 1-Way Mask	SuperTech	0-1535	511	Consult factory before modification.
P20	Night 2-Way Mask	SuperTech	0-1535	0	Consult factory before modification.
P21	Night 1-Way Mask	SuperTech	0-1535	255	Consult factory before modification.
P22	Latch Timeout	Standard	0-60 min.	0	0 = latch does not time out.
P23	OpSpd Obst Force	Standard	40-1200	†	† 200% of learned max open speed current, units 1/10A.
P24	OpChk Obst Force	Standard	20-600	††	†† 200% of learned max open check current, units 1/10A.
P34	Cycle Test	Standard	On/Off	Off	If on, door self cycles every 2 seconds. Used for testing.

04. LINEAR DRIVE - ADJUSTABLE PRESET PARAMETERS cont:

Step 1: List 'Standard and SuperTech' Parameter Settings cont: *Refer to APPENDIX - G Sht. H310.53 for **SuperTech** Masking Instructions.*

The Chart below shows all the adjustable parameters. To make changes, follow the procedure outlined in Step 1 on page H310.07. The **SuperTech** Parameters allow access to proprietary features in the Parameter Menu. To access the **SuperTech** Parameters, hold the **UP** button while Double-Clicking the **SET** button.

NO.	PARAMETER	TYPE	RANGE 0 - 1535	FACTORY DEFAULT	NOTES
P35	Autoseal	Standard	On/Off	Off	
P36	Day/Night Sw Enable	Standard	On/Off	Off	Eliminates need for jumper wire if day/night input not used.
P37	Reduced Open Accel	Standard	On/Off	**	**ON for Series 2003, OFF for all others.
P41	Increase Lock Dly	Standard	On/Off	Off	
P42	Lock Present	Standard	On/Off	**	**As learned upon control setup.
P43	Lock Type Fail Safe	Standard	On/Off	**	**As learned upon control setup.
P44	Lock Has No Mon Sw	Standard	On/Off	Off	
P45	Lock in Day Modes	Standard	On/Off	**	**OFF for belt drives, ON for linear drives.
P46	Lock in 1-Way Modes	Standard	On/Off	On	
P47	Resume on Aux1/2 Cir	Standard	On/Off	Off	
P48	CANbus Enable (Future Feature)	SuperTech	On/Off	Off	
P49	I/O Expansion Enable (Future Feature)	SuperTech	On/Off	Off	
P50	Extended Logging	SuperTech	On/Off	Off	Leave OFF when not troubleshooting to prolong control life.
P51	Power Fail Mode	Standard	Open/Close	Open	
P52	PFail Active Nights	Standard	On/Off	Off	
P58	Remote Mode Enable (Future Feature)	Standard	On/Off	Off	
P59	Stop Input N.C.	Standard	On/Off	Off	Parameter must be ON to Enable 'Stop Input' Feature.
P60	Fire Input N.C.	Standard	On/Off	Off	
P61	Int Sensor Monitored	Standard	On/Off	***	***Established by technician during control setup.
P62	Ext Sensor Monitored	Standard	On/Off	***	***Established by technician during control setup.
P63	Saf Beam Monitored	Standard	On/Off	***	***Established by technician during control setup.
P64	Aux1 Snsr Monitored	Standard	On/Off	Off	***Established by technician during control setup.
P65	Aux2 Snsr Monitored	Standard	On/Off	Off	***Established by technician during control setup.
P72	High Sec Day 1-Way	SuperTech	On/Off	Off	Turned ON in Day 1-Way Mode, both Interior/Exterior Motion-Presence Inputs Ignored.
P73	Backlight Times Out	Standard	On/Off	On	If ON, Display Backlight Extinguishes when panel buttons are idle for 15 mins.

Step 2: Editing Parameter Settings:

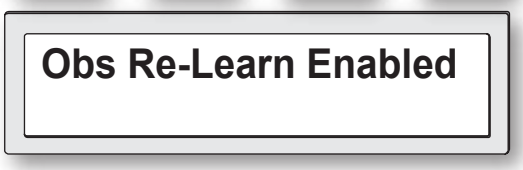
During initial setup, the C3150 Control monitors motor current required to open and close the door by measuring resistance caused by friction and inertia. An algorithm uses data to calculate the current that would be necessary to recycle the door in closing mode or slow the door during opening.

These Closing values are stored in Parameter 11 (Close Speed Reverse Force) and Parameter 12 (Close Check Reverse Force). The Opening values are stored in Parameter 23 (Open Speed Obstruction Force) and Parameter 24 (Open Check Obstruction Force). These Parameters may be edited manually to obtain precise adjustments.

Changing any of the Opening or Closing Speeds after initial setup may necessitate a re-learn of these Force values. This can easily be accomplished using the new **DOWN** button Double-Click feature.

Step 2: Editing Parameter Settings cont:

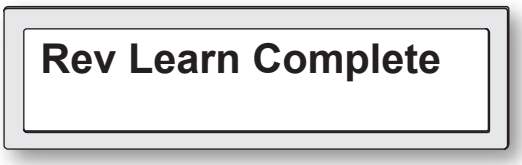
- **Open Obstruction:**
  In the fully closed position, **Double-Click** the **DOWN** button.



- *'OBS Re-Learn Enabled'* message will appear and at the end of the next opening cycle, *'Obst Learn Complete'* message will appear.

- **Closing Force:**
  In the fully open position, **Double-Click** the **DOWN** button. The associated Parameter can be edited if tweaking is required to obtain optimum function.

- *'Rev Re-Learn Enabled'* message will appear and at the end of the next opening cycle, *'Rev Learn Complete'* message will appear.

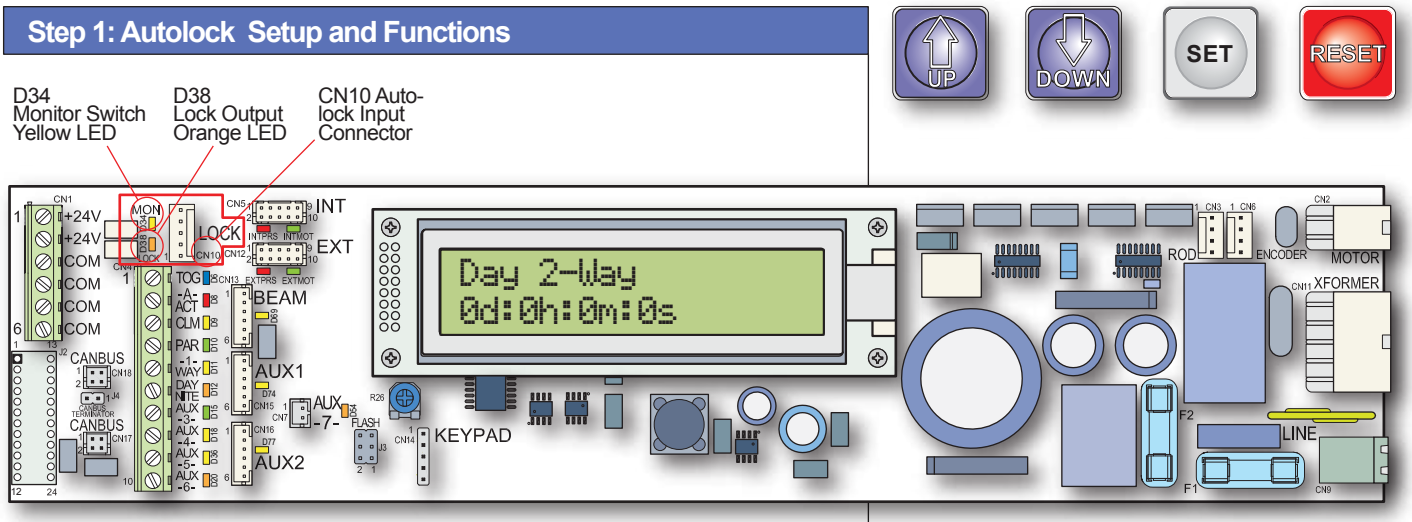


05. LINEAR DRIVE - ACTUATION FEATURES

Refer to **Section 14** - **'BELT DRIVE - ACTUATION FEATURES'** on Sheet H310.22.

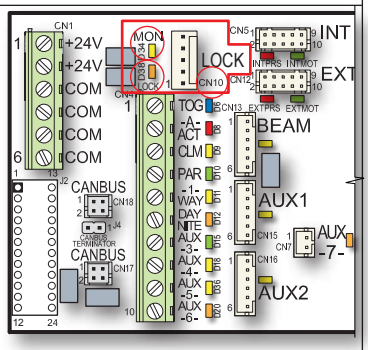
06. LINEAR DRIVE - IF FAILED AUTOLOCK SETUP

Step 1: Autolock Setup and Functions



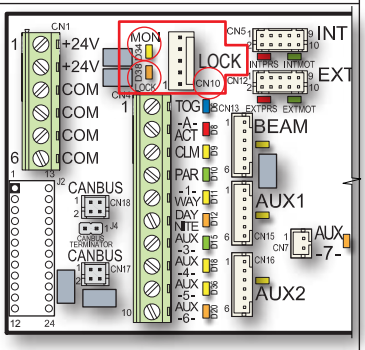
Proceed to **Section 02**: **Step 2 'Learn Cycle'** for Linear Drive Slide Door Operator on sheets H310.02 thru Marker on Sheet H310.03.

- **Fail Secure Lock Installed:**
  D34 Yellow Lock Monitor LED light is **OFF**.
  D38 Orange Lock Monitor light comes **ON** followed immediately by Lock Monitor light which indicates Fail-Secure Lock detected*.



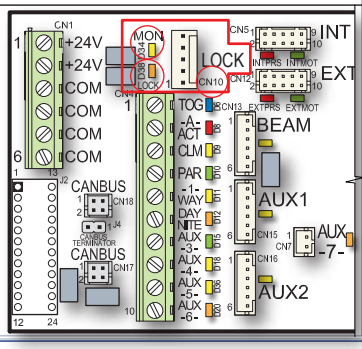
Checking for Lock…
Fail Secure Lock

- **Fail Safe Lock Installed:**
  D34 Yellow Lock Monitor LED light is **ON** which indicates there may be a Fail-Safe Lock connected.
  D38 Orange Lock Monitor light comes **ON** and Yellow Monitor Light immediately goes **OFF** indicating that a functional Fail-Safe Lock is



Checking for Lock…
Fail Safe Lock

- **No Lock Detected:**
  D34 Yellow Lock Monitor LED light is **OFF**. **D38** Orange Lock Monitor light comes **ON** with no change to **D34** Yellow Lock Monitor Light indicates a *'No Lock'* situation or a malfunction of Lock.
  There is a slight delay before the *'No Lock Detected'* message appears.

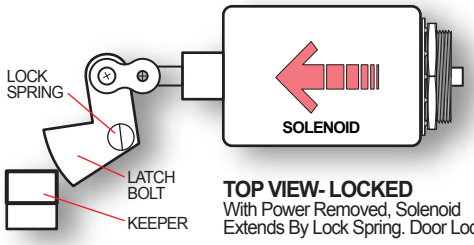


Checking for Lock…

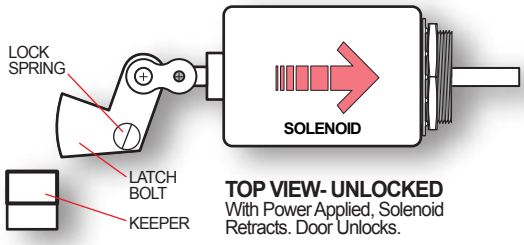
Checking for Lock…
No Lock Detected

Step 1: Autolock Setup and Functions cont:

Fail-Secure Lock The most common type of Autolock.

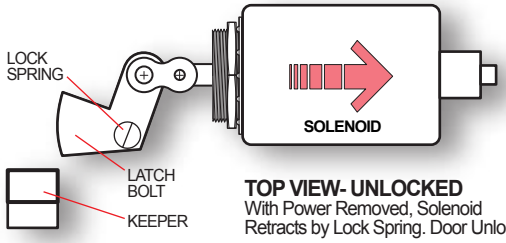


TOP VIEW- LOCKED
With Power Removed, Solenoid Extends By Lock Spring. Door Locks.

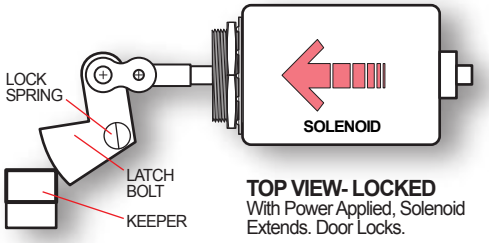


TOP VIEW- UNLOCKED
With Power Applied, Solenoid Retracts. Door Unlocks.

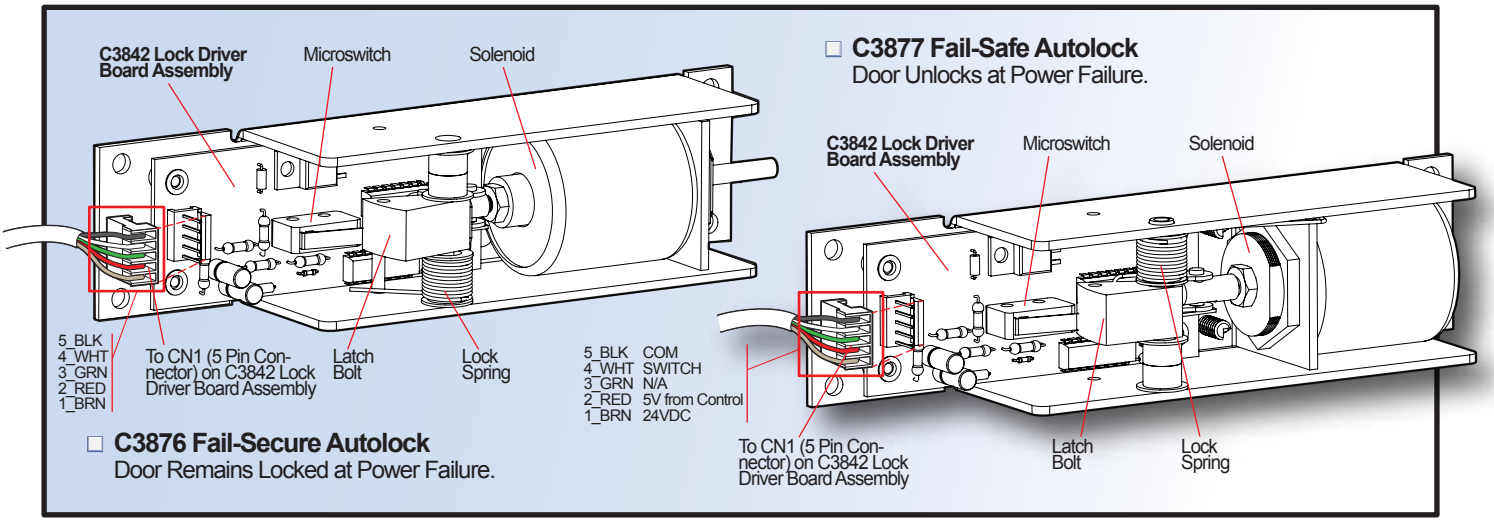
Fail-Safe Lock A less common type of Autolock.



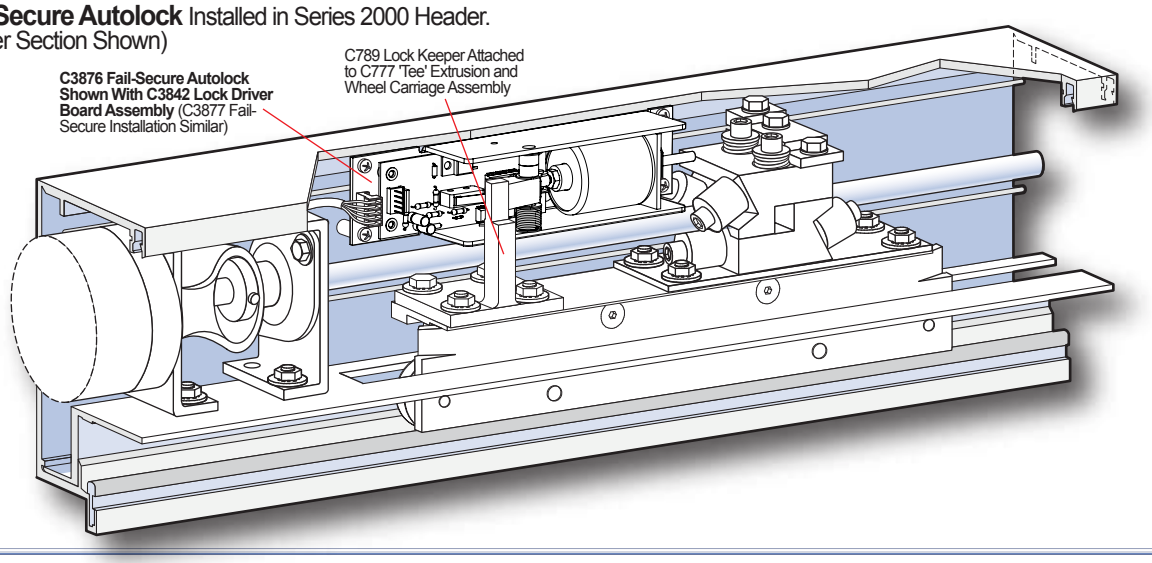
TOP VIEW- UNLOCKED
With Power Removed, Solenoid Retracts by Lock Spring. Door Unlocks.



TOP VIEW- LOCKED
With Power Applied, Solenoid Extends. Door Locks.



C3876 Fail-Secure Autolock Installed in Series 2000 Header.
(Partial Header Section Shown)



07. SETTING LOCK PARAMETERS

Refer to Section 16 - '**STEP 1: Lock Parameter Verification**' on Sheet H310.27.

08. LOCK ERROR CODES

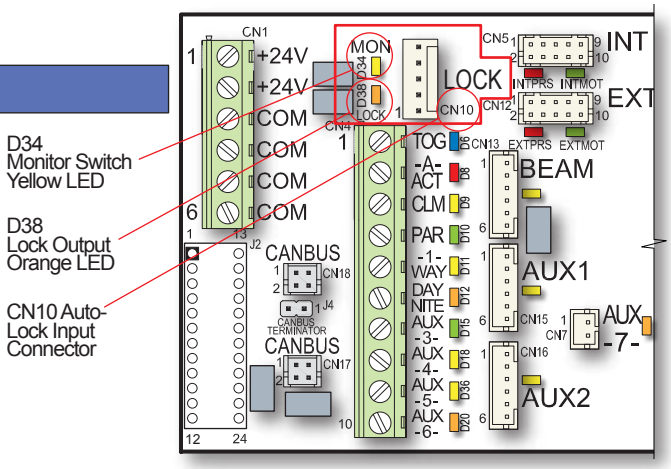
Refer to Section 17 - '**STEP 1: Lock Diagnostics**' on Sheet H310.28.

09. AUTOLOCK TEST POINTS

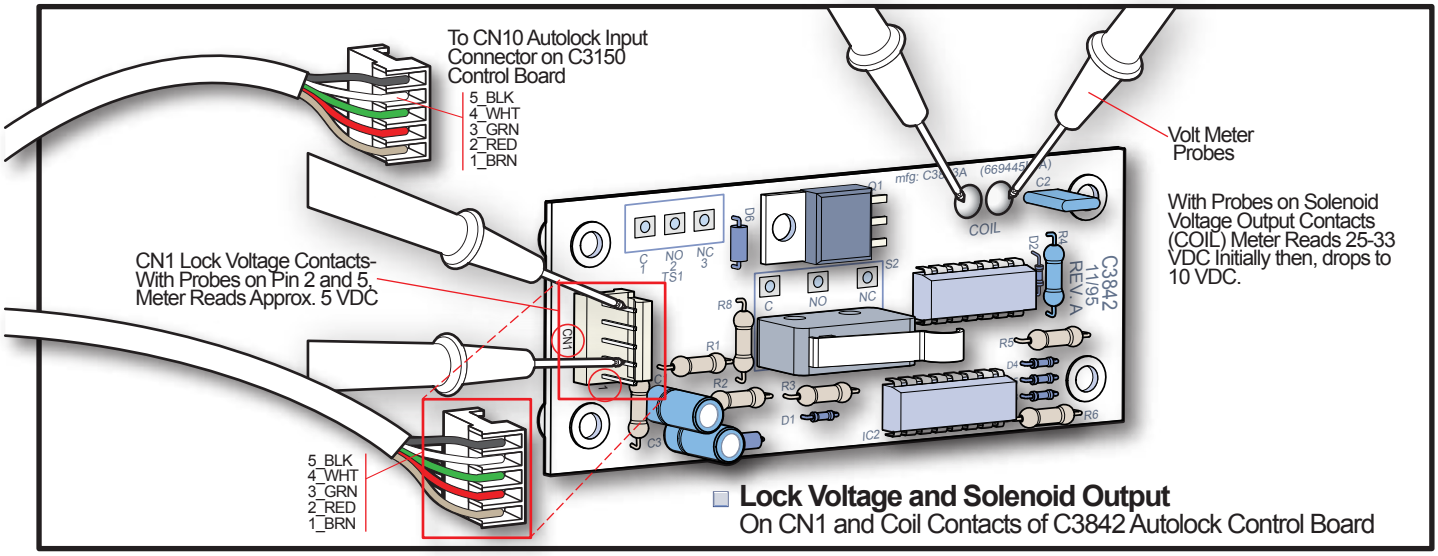
Step 1: Monitored Autolocks

The Horton Monitored Autolocks are controlled by an **output** signal from the C3150 Control referred to as **LOCK**. The status of this output is indicated by an Orange LED (**D38**) that illuminates when the output is active.

- **Lock Voltage Output at CN3 (Autolock Board)**
  Anytime **Lock output** is active, measured voltage between pin **2** and pin **5** on **CN3** of the Autolock Control Board should be approximately 5 Volts DC. For the Fail-Secure and Fail-Safe Lock, the solenoid should be energized.



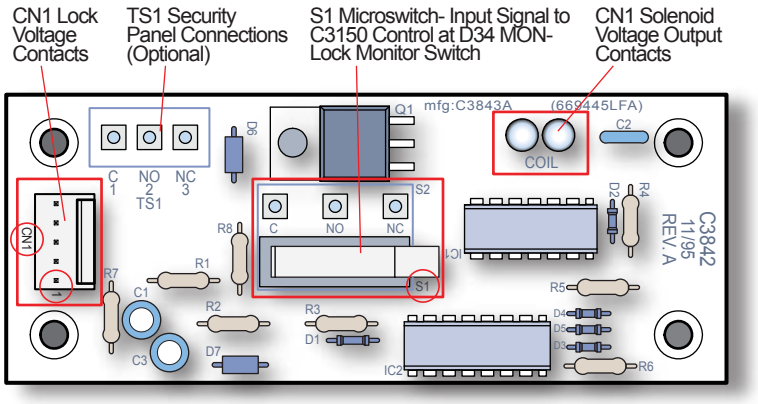
C3150 Control Board- Partial View



Lock Voltage and Solenoid Output
On CN1 and Coil Contacts of C3842 Autolock Control Board

- **Solenoid Voltage Output at CN1**
  Initially, the solenoid will receive 25-33 volts to pull-in, but will quickly drop to approximately 10 volts in order to prevent overheating.

- **Lock Monitor Switch**
  Horton Monitored Autolocks are equipped with a microswitch that provides an **Input** signal to the C3150 referred to as **MON**. The status of this **output** is indicated by a Yellow LED (**D34**).

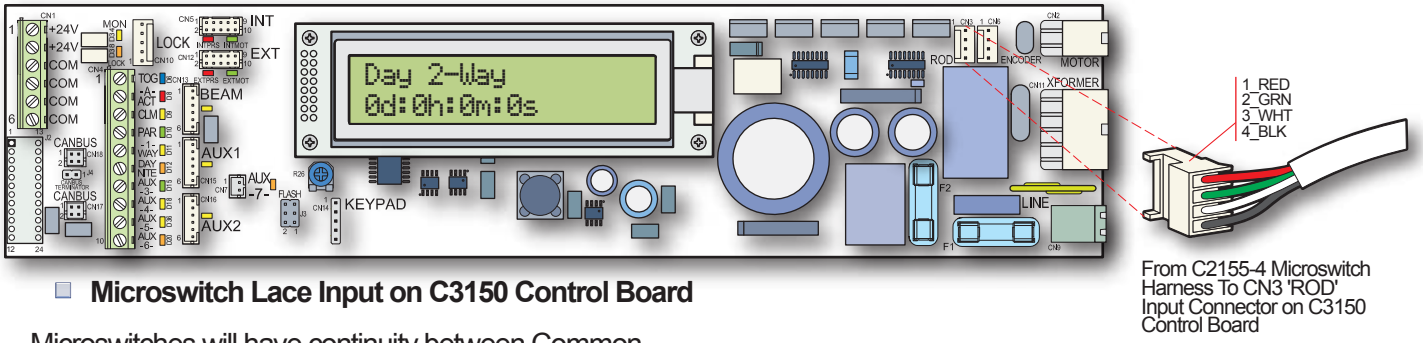


C3842 Control Board
For Fail-Secure and Fail-Safe Autolocks

10. MICROSWITCHES - LINEAR DRIVE

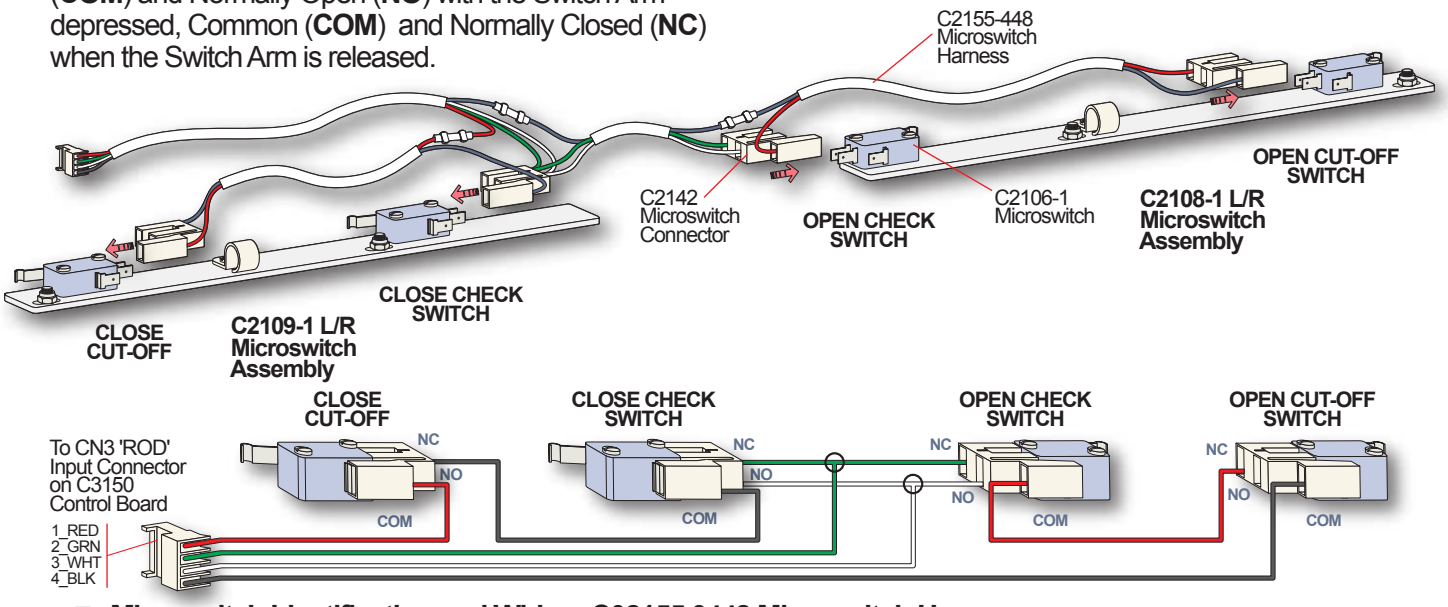
Step 1: Microswitch Wiring

Microswitch harness (C2155-4) connects to **CN3** *'ROD'* Input connector on C3150 Control Board.



Microswitch Lace Input on C3150 Control Board

Microswitches will have continuity between Common (**COM**) and Normally Open (**NO**) with the Switch Arm depressed, Common (**COM**) and Normally Closed (**NC**) when the Switch Arm is released.

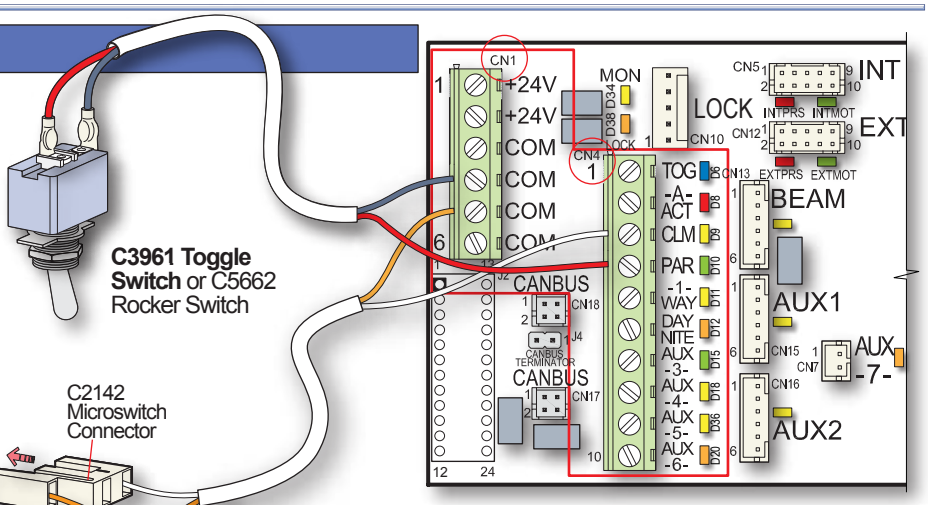


Microswitch Identification and Wiring_C02155.0448 Microswitch Harness

Step 2: Partial Open Switch Wiring

For Installation of Partial Open Switch and Toggle Switch, refer to Installation Instructions provided.

Wire the C2236 Partial Open Switch to **COM** (Common-Orange Wire) and **CLM** (Close Monitor - White Wire) as shown. Wire the C3961 Toggle Switch to **COM** (Common - Black Wire) and **PAR** (Partial Open - White Wire).



C3150 Control Board (Partial View)

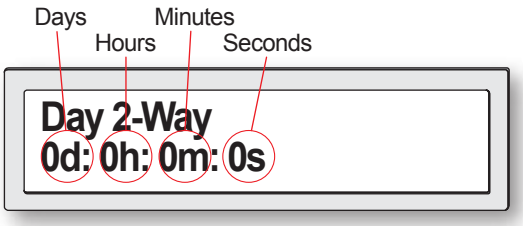
Note that the Microswitch must be secured in-place so that the switch arm trips at the desired Partial Open Position.

11. C3150 CONTROL INITIALIZATION - BELT DRIVE

Step 1: Power-Up

Be sure the toggle circuit is complete before applying AC power to the unit.
Caution: The Door will move.

- With power established, Control LED Displays the Door Mode and Type Traffic along with the Elapsed Time since last Reset.

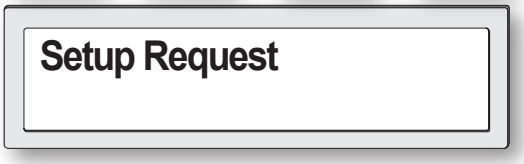


- The Display then shows the Control Version and Date. Time reverts to '0' with each power loss or Reset. Maximum Time range is 180 days.

Step 2: Learn Cycle

Instruct the control to perform a full learn cycle by:

- Holding down the **SET** button and the **RESET** button.
- Release the **RESET** button.
- Hold the **SET** button approximately 5 seconds until *'Setup Request'* appears on the screen.



Select Operator Type

- Display shows Default Operator Type: Current S2000B/S2003 Dunker/Merkle

- Select the required Operator Type. Then press **SET**.
- Press **UP** button to cycle through optional Operator Types.

- If you press the **UP** button, the display shows next Operator Type: Current S2001 Dunker/Merkle

- If you press the **UP** button, the display shows next Operator Type: Early Litton 2003

- If you press the **UP** button, the display shows next Operator Type: Early Litton 2001

- When the required Operator is displayed, press the **SET** button.

- Press the **UP** button to Confirm Operator Type.
- Press the **DOWN** button to recycle through Operator Types.

For Section 15 Only.
Continue to Section 15 Marker
at the top of the following sheet.

Step 2: Learn Cycle cont.

Starting learn Cycle

- Press the **DOWN** button for unmonitored Sensors.
- Press the **UP** button if Sensors are connected and will be monitored. Refer to Section 2 - Step 2, Sht. H310.02.

Monitored Sensors?
UP=Yes, DOWN=No

- Press the **DOWN** button to Disable Day/Nite Switch.
- Press the **UP** button to Enable Day/Nite Switch.

Enable Day/Nite SW?
UP=Yes, DOWN=No

Section 15 Marker
Return to Section 15, Sht. H310.25.

The Control then searches for a Lock Device connected to the Operator. The Display will show one of the following codes depending on the Lock type connected. In case of difficulty with the Lock, refer to Section 15 - **'BELT DRIVE - IF FAILED AUTOLOCK SETUP'** on Sheet H310.25.

Lock Type Codes:

- No Lock Detected.

Checking for Lock…
No Lock Detected

- Fail Secure Lock Recognized.

Checking for Lock…
Fail Secure Lock

- Fail Safe Lock Recognized.

Checking for Lock…
Fail Safe Lock

The Door will fully close at slow speed, looking for the fully closed position.

Close Check + Learn
Learning Stroke

If the Door travels a short distance then stops, the pre-wired Safety Beams or other actuating devices are stopping the door and preventing the 'Learn Cycle' from completing.

First Closed Paused

- To continue the 'Learn Cycle', Press and Hold the **UP** button until the door closes.

The Door will travel slowly in the open direction until it reaches the full open position.

Open Check
Learning Stroke

- The Total Stroke will be displayed in inches and centimeters.

Total Stroke:
00" (00 cm)

Step 2: Learn Cycle cont.

The Control will save the data from the Learn Cycle.

Data Saved

- Time Delay in seconds. Starts when Activation Signal releases and door is fully open.

Time Delay 1

- Learning Reversing Peak Current for Close Accelerate.

Close Accelerate Learning Rev Peak

- Learning Reversing Sensitivity for Closing Speed.

Close Speed Learning Rev Sens

- Learning Reversing Sensitivity for Braking Door.

Braking Door Learning Rev Sens

- Learning Reversing Sensitivity for Close Cushion.

Close Cushion Learning Rev Sens

- Reversing Sensitivity Learning Complete.

Rev Learn Complete

Learning Cycle Complete.

- The LED display returns to Initial read-out.

Day 2-Way 0d: 0h: 0m: 0s

Step 3: Checking Door Cycle

When the toggle switch is on, the **DOWN** button acts as an actuation device. **Caution: The Door will move.** Be sure the safety beam area is clear of obstructions. Activation devices should not yet be installed.

- Start with the door in the closed position.
- Press the **DOWN** button to actuate the door to open at factory selected default settings.
- Inspect the door unit for smooth operation free of binds and noise.

- The LED display's initial Door Cycle read-out.

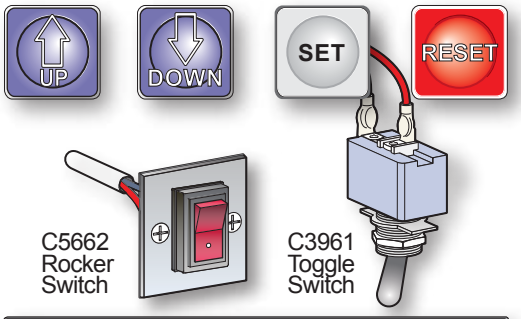
*__Activate Cycle Code__:
__DOWN__ Button

Open Accelerate Act (Down)*

Step 3: Checking Door Cycle cont.

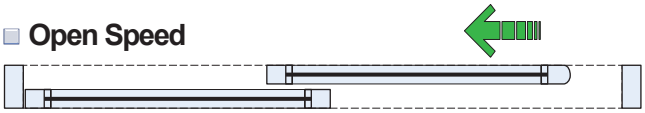
The following Cycles are performed automatically by the C3150 Microprocessor Control. Illustrations below show the position of the door panels and the Display readout for each position.

**This demonstration assumes door was opened by the down button.*



OPEN CYCLE

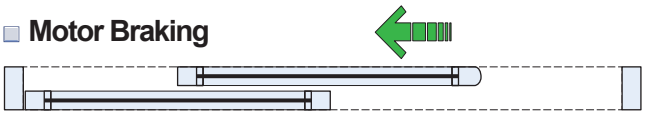
Open Speed



**Door actuated by local (Down) Button.*

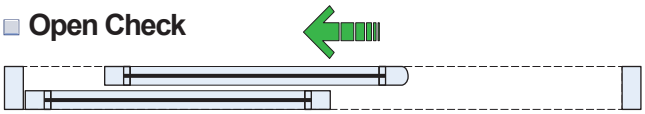
Open Speed Act (Down)*

Motor Braking



Braking Door

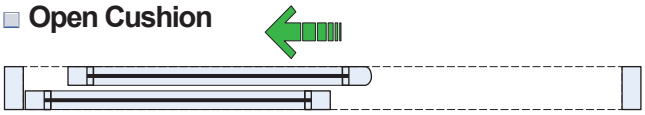
Open Check



**Braking may override Open Check display.*
**Door actuated by local (Down) Button.*

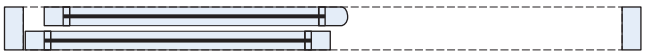
Open Check Act (Down)*

Open Cushion



Open Cushion

Time Delay



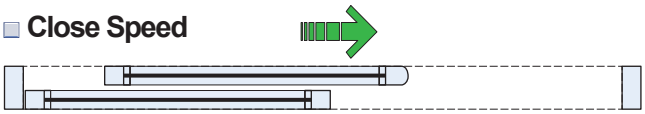
Time Delay 1

CLOSE CYCLE

- The LED display's Initial Close Cycle read-out.

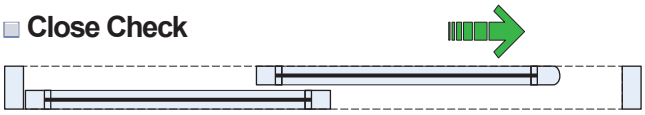
Close Accelerate

Close Speed



Close Speed

Close Check



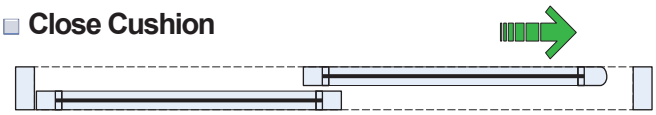
Close Check

Step 3: Checking Door Cycle cont.

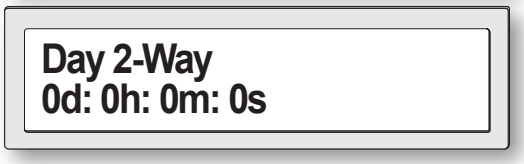
The following graphics show the position of the door panels and the Display readout for each position.

OPEN CYCLE Cont:

- **Close Cushion**



- The LED display returns to Initial read-out.

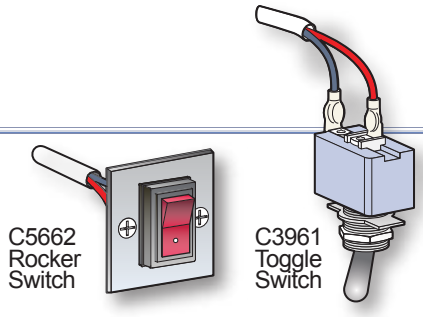


If there were no problems encountered during the Cycle Check procedure, if there are no parameters to be changed, and an Autolock is set-up, this concludes the C3150 Control's Initialization procedure.

If you are experiencing difficulty with the Control, refer to APPENDIX - A, Sheet H310.43.

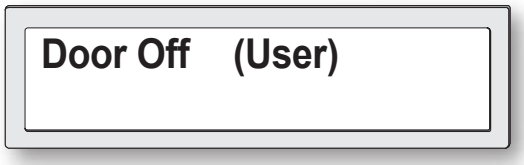
12. BELT DRIVE - ADJUSTING PARAMETERS

Step 1: Changing Parameter Settings



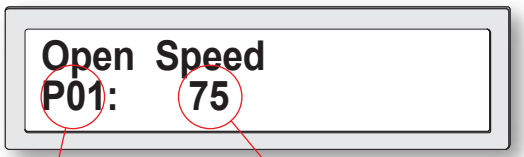
A chart of preset parameter values is shown on the next page. If any speeds or other settings need to be changed, follow the procedure listed below.

- Turn the toggle (rocker) switch **OFF** (Blue LED on Control turns OFF).
- Or, double-click the **SET** button.
  - 'Door Off' Message blinks once, then P01 display window is shown.



- The display switches to the menu of adjustable parameters.
  - Display window for P01 shown as example for changing the Open Speed.

Current Selected Parameter



Parameter Number

Current, Default or Last Saved Value.

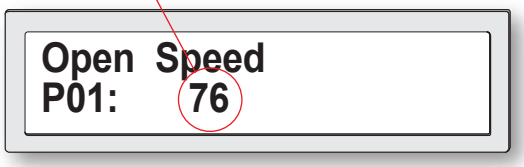
(Refer to Chart for Range-Upper and Lower Limits).

- Refer to attached chart for a list of adjustable parameter codes.
- Scroll through the parameter list using the **UP** and **DOWN** buttons until the parameter to be changed is found.

EXAMPLE:

- Hold the **SET** button and simultaneously press the **UP** or **DOWN** button to modify the Speed setting.
  - Pressing the **UP** button changes the Speed Value to 76.

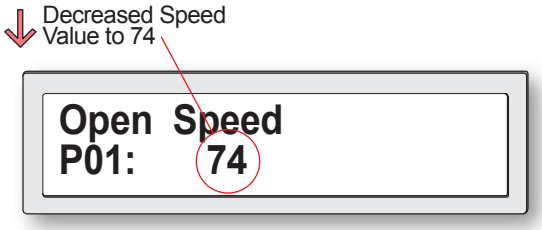
Increased Speed Value to 76



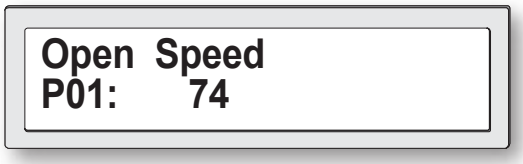
Step 1: Changing Parameter Settings cont.

EXAMPLE Cont:

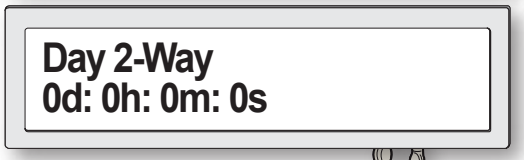
- Hold the **SET** button and simultaneously press the **UP** or **DOWN** button to modify the Speed setting.
  - The **DOWN** button was pressed to change the Speed Value back to 75 (Default).
  - The **DOWN** button was pressed a second time to change the Value to 74 (shown).



- When the **SET** button is released, the display then shows the parameter that was changed along with the new value. Other parameters may be changed, or the toggle switch turned on to check the changes made.



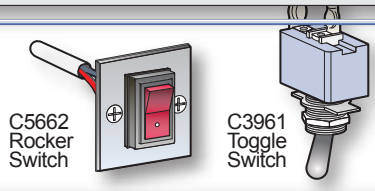
- The **SET** button may be double-clicked to exit the menu (toggle must be on).

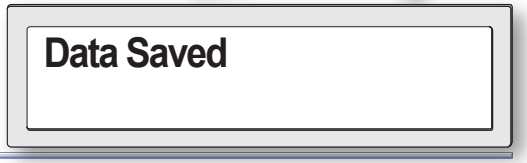


Step 2: Saving Parameter Settings

The toggle switch must be on after all adjustments have been made and checked.

- Press and hold the **SET** button until 'Data Saved' is displayed. All changes are now stored in the control's memory. **This step must be performed** or the control, in the event of a power failure, will revert to the last 'Data Saved' settings.





13. BELT DRIVE - ADJUSTABLE PRESET PARAMETERS

Step 1: List 'Standard and SuperTech' Parameter Settings

*Refer to APPENDIX - G Sht. H310.53 for Masking Parameters in **SuperTech** Menu.*

The Chart below shows all the adjustable parameters. To make changes, follow the procedure outlined in Step 1 on the previous page. The **SuperTech** Parameters allow access to proprietary features in the Parameter Menu. To access the **SuperTech** Parameters, hold the **UP** button while Double-Clicking the **SET** button.

NO.	PARAMETER	TYPE	RANGE 0 - 1535	FACTORY DEFAULT	NOTES
P01	Open Speed	Standard	10-97%	75%	
P02	Open Check	Standard	8-31%	14%	
P03	Open Cushion	Standard	8-31%	12%	
P04	Open Check Point	Standard	*	75%	*Min 50%, *Max 90% of learned stroke (in Inches based on % of Full Stroke).
P05	Close Speed	Standard	8-56%	38%	
P06	Close Check	Standard	8-31%	*	*14% for Series 2001, 12% for all others.
P07	Close Cushion	Standard	8-31%	12	
P08	Close Check Point	Standard	10-50%	17	
P09	Delay 1	Standard	2-255 sec	2 sec	
P10	Delay 2 Partial	Standard	2-255 sec	2 sec	
P11	ClSpd Rev Force	Standard	40-1000	***	***200% of learned max close speed current, units 1/10A.
P12	ClChk Rev Force	Standard	20-400	****	****200% of learned max close check current, units 1/10A.
P13	Braking Level	Standard	1-8	6	8 = maximum deceleration.
P14	Total Stroke	Standard	12"-299"	**	**As learned upon control setup. Read-only Parameter.
P15	Network Address (Future Feature)	SuperTech	0-247	0	0 = communications disabled.
P16	Control Password	Standard	0-9999	0	0 = no password required.
P17	Partial Open Point	Standard	8"-100%	50%	Maximum is 100% of learned stroke.

13. BELT DRIVE - ADJUSTABLE PRESET PARAMETERS cont:

Step 1: List 'Standard and SuperTech' Parameter Settings cont. *Refer to APPENDIX - G Sht. H310.53 for Masking Parameters in SuperTech Menu.*

The Chart below shows all the adjustable parameters. To make changes, follow the procedure outlined in Step 1 on page H310.19. The **SuperTech** Parameters allow access to proprietary features in the Parameter Menu. To access the **SuperTech** Parameters, hold the **UP** button while Double-Clicking the **SET** button.

NO.	PARAMETER	TYPE	RANGE 0 - 1535	FACTORY DEFAULT	NOTES
P18	Day 2-Way Mask	SuperTech	0-4096	1535	*Refer to Appendix - G, Sht. H310.53 for Masking Parameter in SuperTech Menu.*
P19	Day 1-Way Mask	SuperTech	0-4096	511	*Refer to Appendix - G, Sht. H310.53 for Masking Parameter in SuperTech Menu.*
P20	Night 2-Way Mask	SuperTech	0-4096	0	*Refer to Appendix - G, Sht. H310.53 for Masking Parameter in SuperTech Menu.*
P21	Night 1-Way Mask	SuperTech	0-4096	255	*Refer to Appendix - G, Sht. H310.53 for Masking Parameter in SuperTech Menu.*
P22	Latch Timeout	Standard	0-60 min.	0	0 = latch does not time out.
P23	OpSpd Obst Force	Standard	40-1200	†	† 200% of learned max open speed current, units 1/10A.
P24	OpChk Obst Force	Standard	20-600	††	†† 200% of learned max open check current, units 1/10A.
P34	Cycle Test	Standard	On/Off	Off	If on, door self cycles every 2 seconds. Used for testing.
P35	Autoseal	Standard	On/Off	Off	
P36	Day/Night Sw Enable	Standard	On/Off	Off	Eliminates need for jumper wire if day/night input not used.
P37	Reduced Open Accel	Standard	On/Off	**	**ON for Series 2003, OFF for all others.
P39	ANSI Speed Limiting	SuperTech	On/Off	On	
P40	First Run Stop OK	Standard	On/Off	On	
P41	Increase Lock Dly	Standard	On/Off	Off	
P42	Lock Present	Standard	On/Off	**	**As learned upon control setup.
P43	Lock Type Fail Safe	Standard	On/Off	**	**As learned upon control setup.
P44	Lock Has No Mon Sw	Standard	On/Off	Off	
P45	Lock in Day Modes	Standard	On/Off	**	**OFF for belt drives, ON for linear drives.
P46	Lock in 1-Way Modes	Standard	On/Off	On	
P47	Resume on Aux1/2 Cir	Standard	On/Off	Off	
P48	CANbus Enable (Future Feature)	SuperTech	On/Off	Off	
P49	I/O Expansion Enable (Future Feature)	SuperTech	On/Off	Off	
P50	Extended Logging	SuperTech	On/Off	Off	Leave OFF when not troubleshooting to prolong control life.
P51	Power Fail Mode	Standard	Open/Close	Open	
P52	PFail Active Nights	Standard	On/Off	Off	
P58	Remote Mode Enable (Future Feature)	Standard	On/Off	Off	
P59	Stop Input N.C.	Standard	On/Off	Off	
P60	Fire Input N.C.	Standard	On/Off	Off	
P61	Int Sensor Monitored	Standard	On/Off	***	***Established by technician during control setup.
P62	Ext Sensor Monitored	Standard	On/Off	***	***Established by technician during control setup.
P63	Saf Beam Monitored	Standard	On/Off	***	***Established by technician during control setup.
P64	Aux1 Snsr Monitored	Standard	On/Off	Off	***Established by technician during control setup.
P65	Aux2 Snsr Monitored	Standard	On/Off	Off	***Established by technician during control setup.
P69	Sensor Test Before Opening	SuperTech	On/Off	Off	Turned ON for European Standards Compliance.
P70	Aux3-4 = Secondary Activation	Standard	On/Off	Off	Turned ON to facilitate hardwiring 'Knowing Act' switches.
P71	Turned ON to Implement 3 Button Switch	Standard	On/Off	Off	Turned ON to Implement 3 Button Station *(Refer to Append.- H, Sht. H310.55)*
P72	High Sec Day 1-Way	SuperTech	On/Off	Off	Turned ON in Day 1-Way Mode both Interior/Exterior Motion-Presence Inputs Ignored.
P73	Backlight Times Out	Standard	On/Off	On	If ON, Display Backlight Extinguishes when panel buttons are idle for 15 mins.

Step 2: Editing Parameter Settings

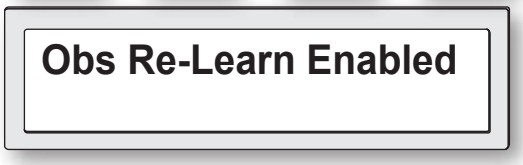
During initial setup, the C3150 Control monitors motor current required to open and close the door by measuring resistance caused by friction and inertia. An algorithm uses data to calculate the current that would be necessary to recycle the door in closing mode or slow the door during opening.

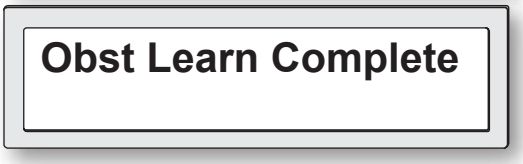
These Closing values are stored in Parameter 11 (Close Speed Reverse Force) and Parameter 12 (Close Check Reverse Force). The Opening values are stored in Parameter 23 (Open Speed Obstruction Force) and Parameter 24 (Open Check Obstruction Force). These Parameters may be edited manually to obtain precise adjustments.

Step 2: Editing Parameter Settings cont.

- **Open Obstruction:**
  In the fully closed position, **Double-Click** the **DOWN** button.

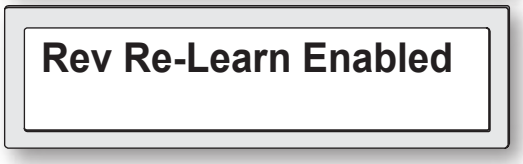
  - *'OBS Re-Learn Enabled'* message will appear and at the end of the next opening cycle, *'Obst Learn Complete'* message will appear.

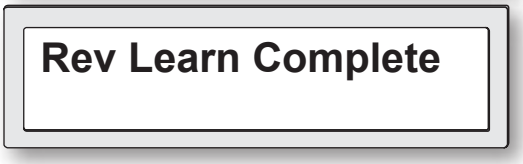




- **Closing Force:**
  In the fully open position, **Double-Click** the **DOWN** button. The associated Parameter can be edited if tweaking is required to obtain optimum function.

  - *'Rev Re-Learn Enabled'* message will appear and at the end of the next opening cycle, *'Rev Learn Complete'* message will appear.

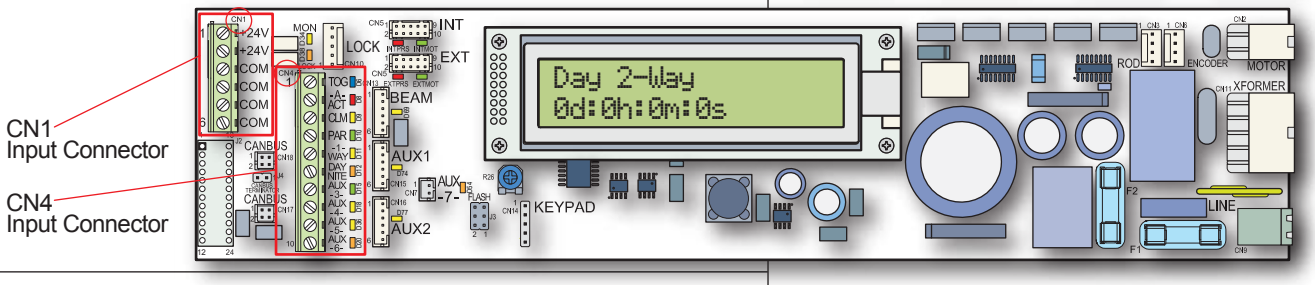




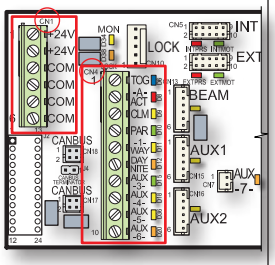
14. BELT DRIVE - ACTUATION FEATURES

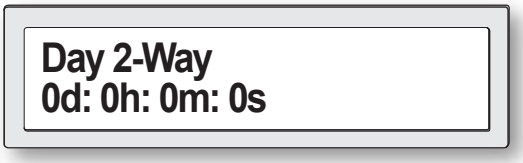
Step 1: Setting Control Operating Modes

Set Jumpers and/or Parameters for the type operation required. Switches may be used in lieu of Jumpers.

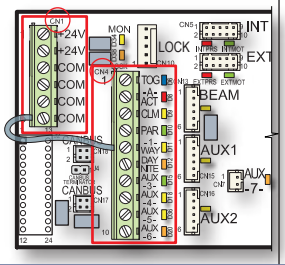


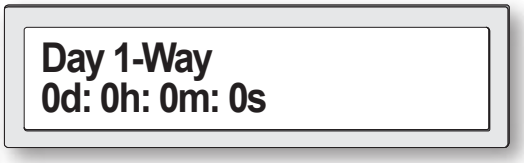
- **2-Way Day Mode:**
  Default setting requires no connections.
  - *Int and Ext Motion Activate.*
  - *All Sensors Hold-Open and Recycle.*





- **1-Way Day Mode:**
  Connect **COM** Input on CN1 to **1-WAY** Input on CN4.
  - *Only Int Motion Activate.*
  - *All Sensors Hold-Open and Recycle.*

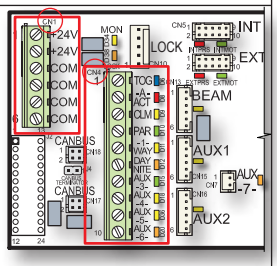


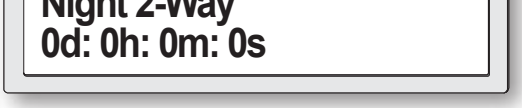


Step 1: Setting Control Operating Modes cont.

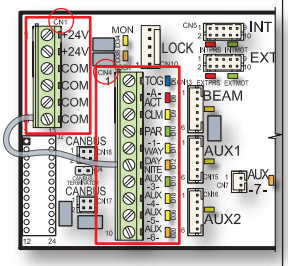
Set Jumpers and/or Parameters for the type operation required. Switches may be used in lieu of Jumpers.

- **2-Way Night Mode**:
  Turn ON **Parameter 36.**
  The Control is in **Night Mode** with no connections made.
  - *No Sensors Activate or Hold-Open.*
  - *Only Beams can trigger a Recycle.*

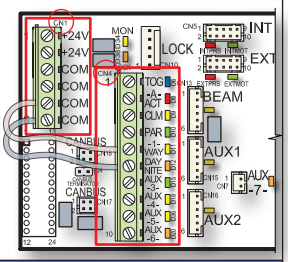


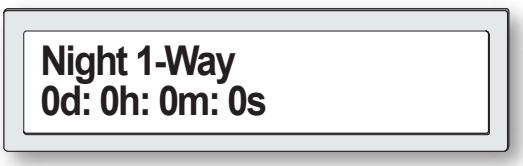


- **2-Way Day Mode:**
  With **Parameter 36** turned ON.
  Connect **COM** Input on CN1 to **DAY-NITE** Input on CN4.



- **1-Way Night Mode:**
  Connect **COM** Input on CN1 to **1 WAY** Input on CN4 and **DAY-NITE** Input on CN4.
  - *No Activation.*
  - *All Sensors Hold-Open and Recycle.*





Step 2: Switch Input Signals to CN4

Various switches wired to **CN4 Inputs** are shown in the Illustration at right and described below.

- **TOG** (Toggle):
  Toggle Switch and Breakout Switches wired in series. An open circuit halts operation.

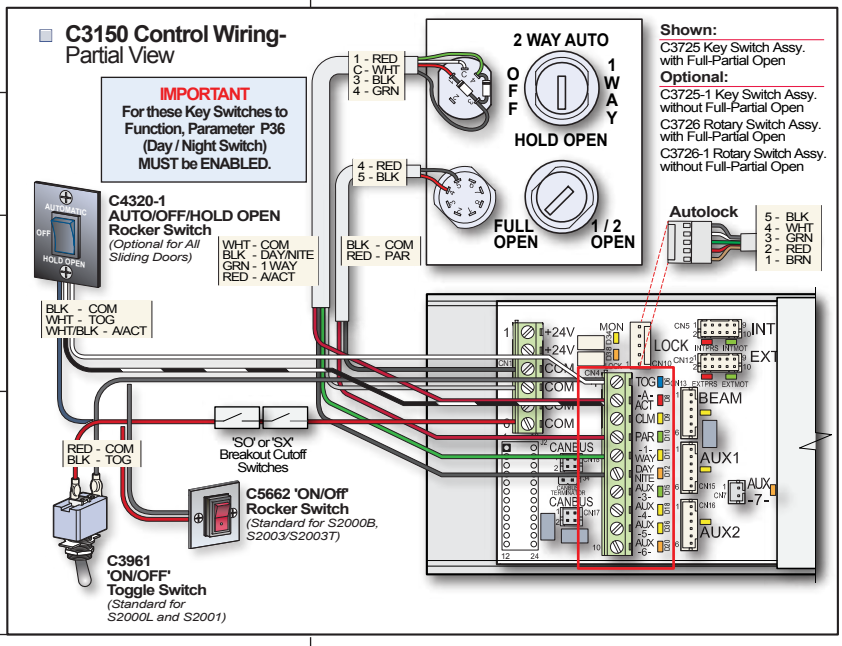
-A-

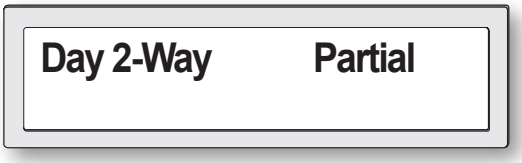
- **ACT** (Actuate):
  A Momentary Contact Switch activates door regardless of Mode. Used by Pushbuttons, Card Readers and Touchless Switches.

- **CLM** (Close Monitor Switch):
  If a Close Monitor Switch is present, the software will recognize it automatically and utilize it in future cycles.
  This eliminates the learn cycle necessary with the standard *'No Close Monitor Switch'* function and can be used in situations with unreliable power.

- **PAR** (Partial):
  Connecting this Input to COM causes the door to open partially as defined in Parameter 17 on Belt Drive. For Linear Drive, refer to H310.14, Step 2 Illustration.

- **C3150 Control Wiring-** Partial View

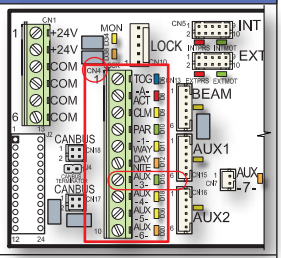




Step 2: Switch Input Signals to CN4 cont:

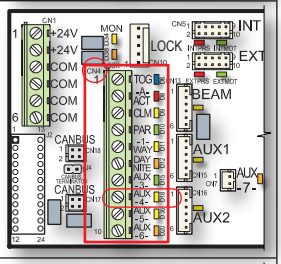
- **AUX-3** (Auxillary):
  'CLOSE' Button on 3-Position Switch.
  No Sensors are Active. Close Input cancels Time Delay and Closes door.

  *Refer to Refer to **APPENDIX - H**, Sht. H310.55 for Installation of 3 - Positon Push Button Switch using Inputs AUX3, AUX4 and AUX5 of CN4.*



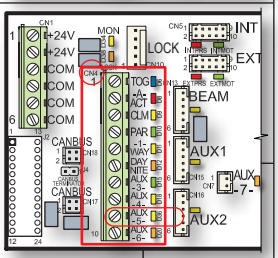
Day 2-Way

- **AUX- 4** (Auxillary):
  'STOP' Button on 3-Position Switch.
  Activating **STOP** halts door operation.



Stop Input N.C.
P59 OFF

- **AUX- 5** (Auxillary):
  'OPEN' Button on 3-Position Switch.
  Latch Switch Activation. Press to **OPEN**, Press to **CLOSE**.



Open Accel (Act) Latch

  - *Momentary contact* **OPENS** *door. Display reads:*

    Open Accel (Act) Latch > **Open Speed Act) Latch** > **Open Check (Act) Latch** > **Open Cushion (Act) Latch**

Hold: Latched

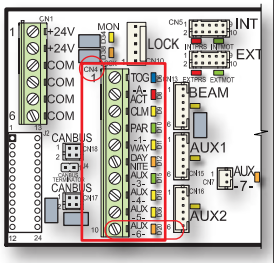
Close Accel > Close Speed > Close Check > Close Cushion >

  - With door at Full Open, display reads:

Day 2-Way
0d: 0h: 0m: 0s

  - Second Momentary contact **CLOSES** door. Parameter - P22 Latch Timeout.

- **AUX- 6** (Auxillary): **Presently Not Used.**
  Fire Alarm Input.
  Set **Parameter 60** to **ON**. Normally Closed Fire Alarm contact connected to **AUX 6** and **COM**.



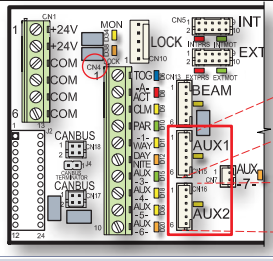
Fire Alarm Input N.C.
P60: OFF

Hold: Fire Input

  - *Fire Alarm is activated opening Circuit. Door then **OPENS.***

Step 3: Switch Input Signals to CN15 and CN16

- **AUX1** and **AUX2** (Auxillary):
  Used for Sidelight Protection from a variety of sensors. Use E06302.0001 wiring harness to connect to 6-pin connector.



1- Orange - 24V
2- Brown - COM
3- White - SIGNAL
4- Yellow - COM
5- Red - TEST+
6- Black - TEST-

E06302.0001 Harness

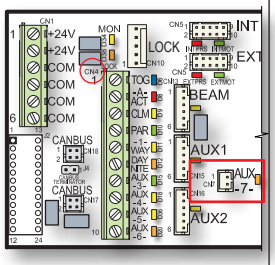
E06302.0001 Harness

  - *If triggered during the opening cycle, door slows to Check Speed.*

Step 4: Switch Input Signals to CN7

- **AUX7** (Auxillary)**:**
  Dedicated Input for E06970 Power-Fail Open Module.

  *Refer to **APPENDIX - K**, Sht. H310.59 and **WIRING DIAGRAM** on Sht. H310.60 for C3809 Power Fail Assembly Instructions.*



15. BELT DRIVE - IF FAILED AUTOLOCK SETUP

Step 1: Autolock Setup and Functions

Proceed to **Section 02**: **Step 2 'Learn Cycle'** for the Belt Drive Slide Door Operator on sheets H310.15 thru Marker 15 on H310.16.

Press the **UP** button when the 'Monitored Sensors?' message appears in the display. The Control then searches for a Lock Device connected to the Operator.

Monitored Sensors?
UP=Yes, DOWN=No

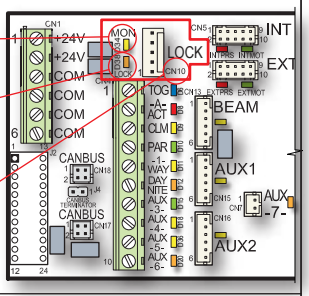
- **Fail Secure Lock Installed:**
  Yellow Lock Monitor LED light is **OFF**.

  Orange Lock Monitor light comes **ON** followed immediately by Lock Monitor light which indicates Fail-Secure Lock detected*.

D34 Monitor Switch Yellow LED

D38 Lock Output Orange LED

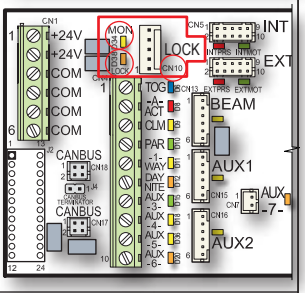
CN10 Auto-Lock Input Connector



Checking for Lock…
Fail Secure Lock

- **Fail Safe Lock Installed:**
  Yellow Lock Monitor LED light is **ON** which indicates there may be a Fail-Safe Lock connected.

  Orange Lock Monitor light comes **ON** and YELLOW Monitor Light immediately goes **OFF** indicating that a functional Fail-Safe Lock is installed*.

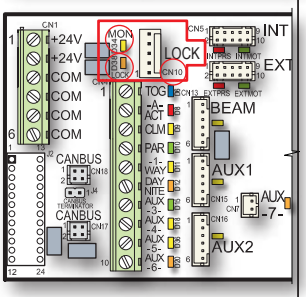


Checking for Lock…
Fail Safe Lock

- **No Lock Detected:**
  Yellow Lock Monitor LED light is **OFF**.

  Orange Lock Monitor light comes **ON** with no change to YELLOW Lock Monitor Light indicates a 'No Lock' situation or a malfunction of Lock.

  There is a slight delay before the 'No Lock Detected' message appears.

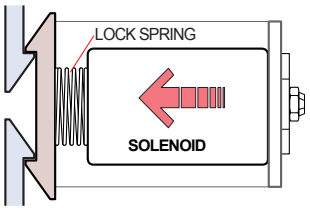


Checking for Lock…

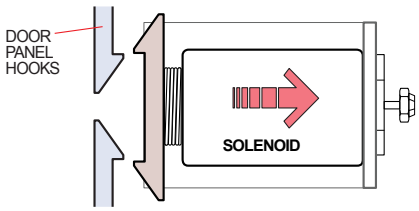
Checking for Lock…
No Lock Detected

Step 1: Autolock Setup and Functions cont:

Fail-Secure Lock
The most common type of Autolock.



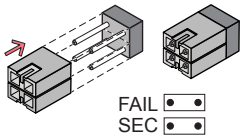
TOP VIEW- LOCKED
With Power Removed, Solenoid Extends By Spring. Door Locks.



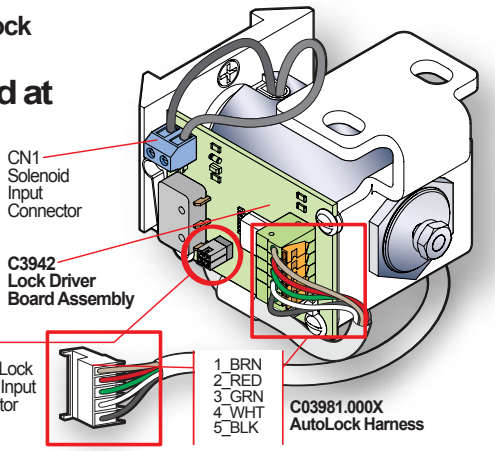
TOP VIEW- UNLOCKED
With Power Applied, Solenoid Retracts By Spring. Door Unlocks.

C5656-2 Fail Secure AutoLock
(2003 Shown- 2001 Similar)

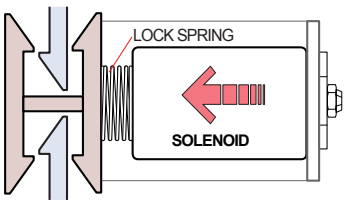
Door remains Locked at Power Failure.



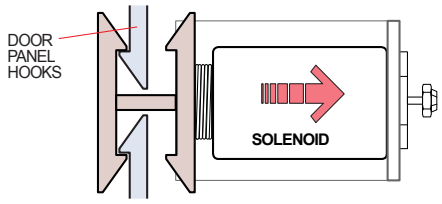
For Fail-Secure, Set both Jumpers on JB1 Pins as shown.



Fail-Safe Lock
A less common type of Autolock.



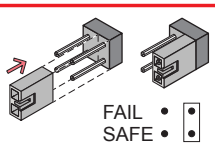
TOP VIEW- UNLOCKED
With Power Removed, Solenoid Extends By Spring. Door Unlocks.



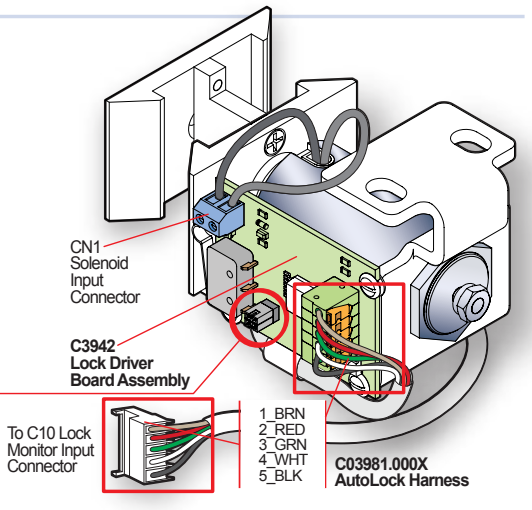
TOP VIEW- LOCKED
With Power Applied, Solenoid Retracts By Spring. Door Locks.

C5657-2 Fail Safe AutoLock
(2003 Shown- 2001 Similar)

Door Unlocks at Power Failure.



For Fail-Safe, Set one Jumper on JB1 Pins as shown.



16. SETTING LOCK PARAMETERS

Step 1: Lock Parameter Verification

The following lock parameters will be set automatically if using a Horton Monitored Lock.

- For a Fail-Secure Lock, turn **ON** Parameter P42 'Lock Present'.
- For a Fail-Safe Lock, turn **ON** parameter P42 'Lock Present' and P43 'Lock Type Fail Safe'.

A Chart of preset lock parameters is shown at right for your reference.

NO.	PARAMETER	FACTORY DEFAULT	RANGE
P42	Lock Present	Off	On/Off
P43	Lock Type Fail Safe	Off	On/Off
P44	Lock Has No Mon Sw	Off	On/Off
P45	Lock in Day Mode	Off	On/Off
P46	Lock in 1-Way Mode	On	On/Off

- The settings below will identify the lock type. Note that by default, the locks will engage only in the **NIGHT MODE**.

  - The control has detected a lock device connected to the Operator.

    Lock Present
    P42: On

  - Control parameter indicates Lock is Fail-Secure.

    Lock Type Fail Safe
    P43: Off

  - Control parameter indicates Lock is Fail-Safe.

    Lock Type Fail Safe
    P43: On

- In order to implement locking of device in a setting other than **NIGHT MODE**, one of the following parameters must be turned **ON**.

  - With parameter P45 **ON**, door will lock in Day Mode (Full Time).

    Lock in Day Mode
    P45: On

  - With parameter P46 **ON**, door will only lock in 1-Way Mode.

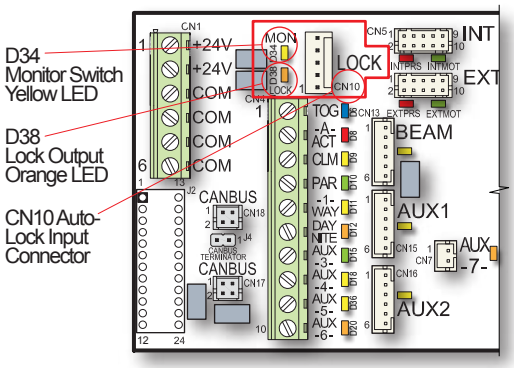
    Lock in 1-Way Mode
    P46: On

  - If using a non-monitored lock such as a magnetic lock, this parameter is used to provide a brief delay to allow the lock time to release before opening door.

    Lock Has No Monitor Sw
    P44: On

17. LOCK ERROR CODES

Step 1: Lock Diagnostics



Fail-Secure Lock - Failed To Unlock Condition

When the C3150 Control equipped with a Fail-Secure Lock is given an **Open** command, the control issues a **Lock** output signal (Orange LED) and waits for the **MON** (Lock Monitor Switch) Yellow LED to illuminate.

If the Control fails to receive the **MON** unlock verification signal, the Yellow LED does not come on.

- 'Failed to Unlock' message displayed. Control then performs a 'Jog' routine to unblock the door.

Failed to Unlock

Fail-Secure Lock - Door Binding

When a door with a C3150 Control and equipped with a Fail-Secure Lock closes, the solenoid releases its spring, engaging a mechanism that locks the door.

Lock Monitor Switch (yellow LED) remains **On** indicating a mechanical bind or displaced Monitor Switch.

- 'Failed to Lock' message displayed for 1 second.

Failed to Lock

- Display then shows default 'Day 2-Way' Mode Setting.

Day 2-Way
0d: 0h: 0m: 0s

Fail-Safe Lock - Failed To Unlock Condition

When a door with a C3150 Control and equipped with a Fail-Safe Lock is given an Open command. Control turns Off **Lock** output signal (Orange LED) and waits for solenoid to de-energize and the **MON** input to illuminate.

If the Control fails to receive the **MON** unlock verification signal, the Yellow LED does not come on.

- 'Failed to Unlock' message displayed.

Failed to Unlock

Fail-Safe Lock - Door Binding

When a door with a C3150 Control and equipped with a Fail-Secure Lock closes, the Lock output (Orange LED) illuminates and the solenoid locks the door.

Lock Monitor Switch (yellow LED) remains **On** indicating a mechanical bind or displaced Monitor Switch.

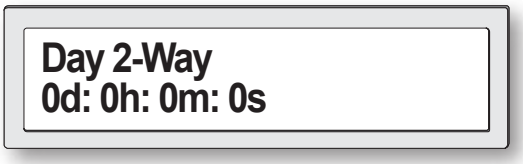
- 'Failed to Lock' message displayed for 1 second.

Failed to Lock

17. LOCK ERROR CODES

Step 1: Lock Diagnostics cont:

- **Fail-Secure Lock - Failed to Lock Condition cont:**
  - Display then shows default 'Day 2-Way' Mode Setting.

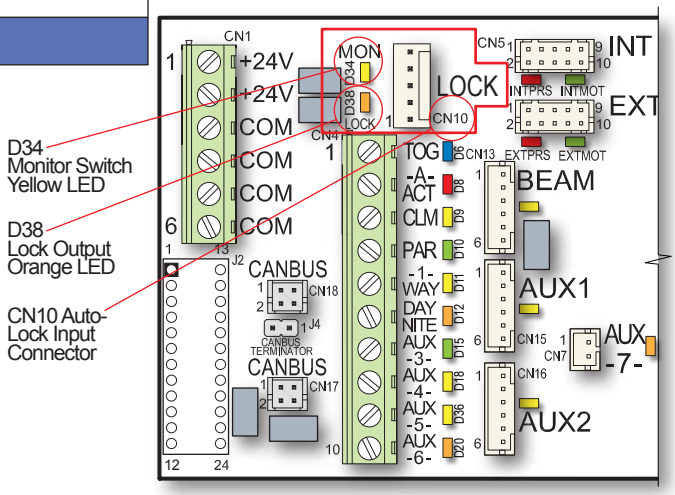


18. AUTOLOCK TEST POINTS

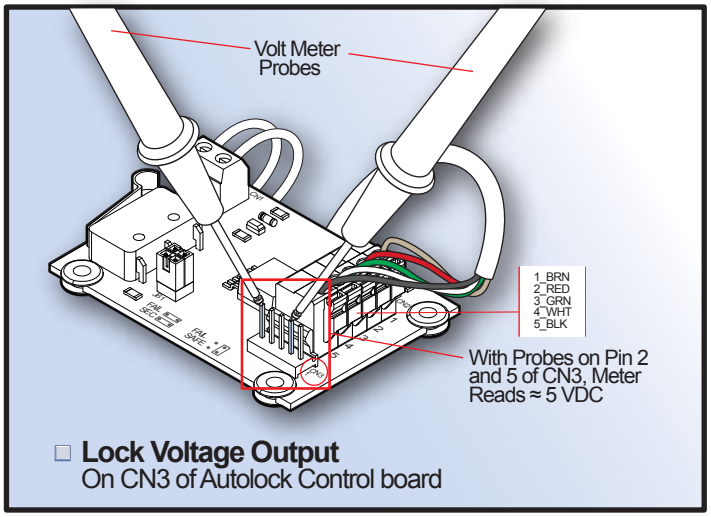
Step 1: Monitored Autolocks

The Horton Monitored Autolocks are controlled by an **output** signal from the C3150 Control referred to as **LOCK**. The status of this output is indicated by an Orange LED (D38) that illuminates when the output is active.

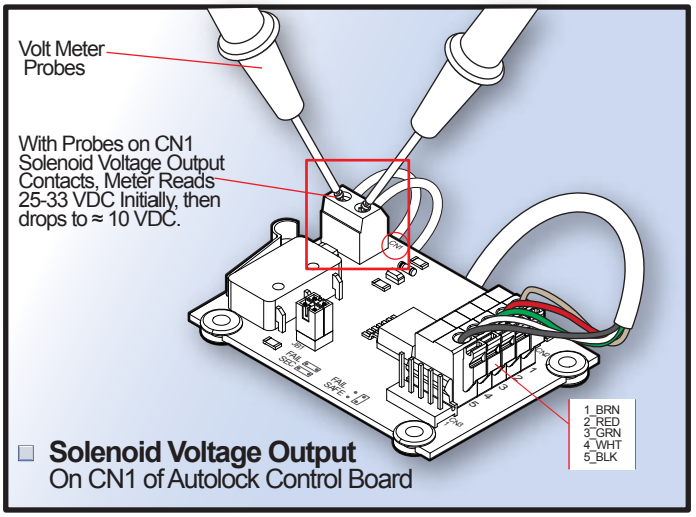
- **Lock Voltage Output at CN3**
  Anytime **Lock** output is active, measured voltage between pins 2 and pin 5 on CN3 of the Autolock Control Board should be approximately 5 Volts DC. For the Fail-Secure and Fail-Safe Lock, the solenoid should be energized.



C3150 Control Board- Partial View



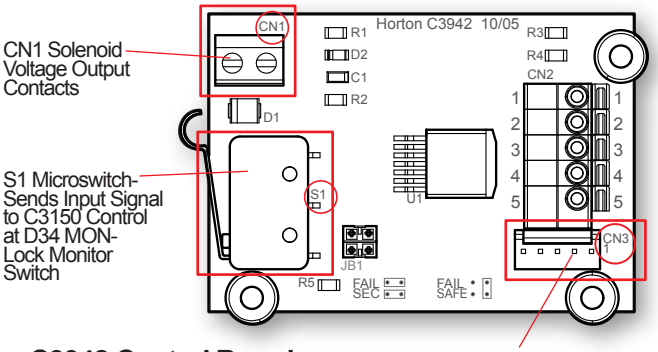
Lock Voltage Output
On CN3 of Autolock Control board



Solenoid Voltage Output
On CN1 of Autolock Control Board

- **Solenoid Voltage Output at CN1**
  Initially, the solenoid will receive 25-33 volts to pull-in, but will quickly drop to approximately 10 volts in order to prevent overheating.

- **Lock Monitor Switch**
  Horton Monitored Autolocks are equipped with a microswitch that provides an **Input** signal to the C3150 referred to as **MON**. The status of this output is indicated by a Yellow LED (D34).



C3942 Control Board
For Fail-Secure and Fail-Safe Autolocks

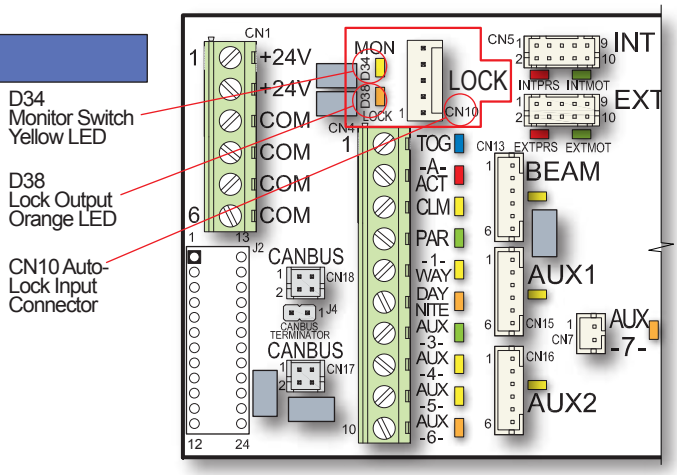
18. AUTOLOCK TEST POINTS

Step 1: Monitored Autolocks Cont:

- **Monitor Switch Input Active**
  If **MON** Input is active (D34 Yellow LED is on), for Fail-Secure or Fail-Safe locks, the door can be opened manually or via the motor.

  This function can be tested by manually cycling the lock and watching **MON** LED for status change.

  - Fail-Secure Locks = **LOCK** and **MON** illuminate simultaneously.
  - Fail-Safe Locks = **LOCK** and **MON** illuminate alternately.

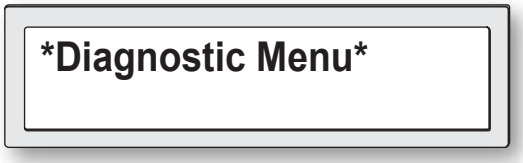


C3150 Control Board- Partial View

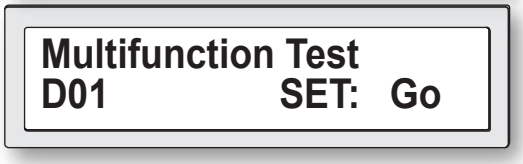
19. DIAGNOSTICS- LINEAR AND BELT DRIVE

Step 1: Entering Diagnostic Menu

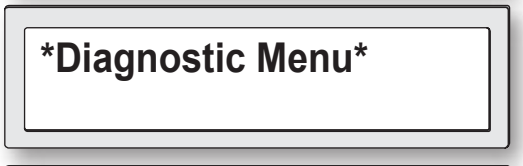
- To enter the Diagnostic Menu, double-click the **UP** button.
  - Display Message blinks:



  - Then Display message shows:



- Or press the **UP** and **RESET** buttons simultaneously, then release the **RESET** button contining to hold the **UP** button.
  - Display Message blinks:



- Then release the **UP** button.
  - Display Message shows:

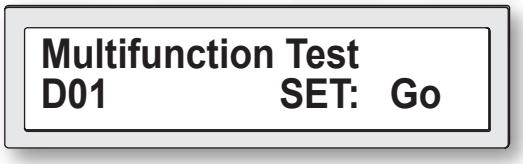
D01- Multifunction Test
A. Navigating Thru Functions

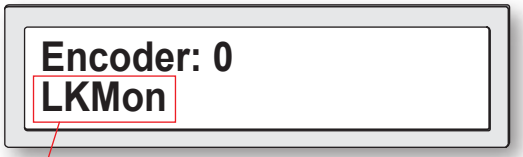
The Multifunction Test is provided to enable the Technician the ability to isolate and verify features of the C3150 Control. This diagnostic tool can be used to verify Inputs from the encoder, microswitches, locks (Lock Monitor), and the Close-Monitor (optional- requires additional hardware). It also displays the Output from the Control that activates the Lock Solenoid.

In addition to these features, the Multifunction Diagnostic can be used to drive the motor forward and in reverse (at Open-Check or Close-Check speed) to verify proper motor function. Likewise, the Autolock can be tested for proper function using the **SET** button.

In the D01 Section, Motor/Encoder Test, the **UP** and **DOWN** buttons drive the door **OPEN** or **CLOSED** respectively. The **SET** button controls the Lock Function. Note that the display messages will vary depending on the door operator type.

- Display viewed with no buttons pushed.



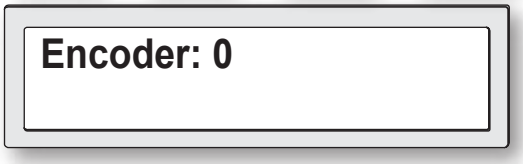


Only if Fail-Safe Lock installed.

19. DIAGNOSTICS- LINEAR AND BELT DRIVE

D01- Multifunction Test
B. Motor and Encoder Test - Belt Drive Units

- To Test the Motor and Encoder, press the **SET** button.
  - Display Message Reads:

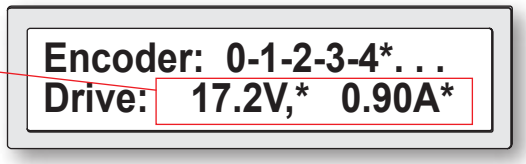


  - Display viewed with no buttons pushed.

Only if Fail-Safe Lock installed.

- Press the **UP** button to drive the door open. Encoder Counts are displayed at the top of the message with the Voltage and Current at the bottom of the message. *The Voltages/Current settings shown are reflected in the Open-Check speed setting.*

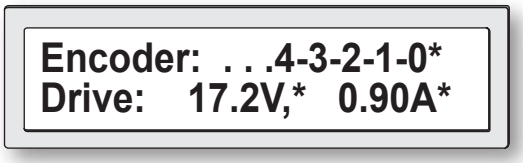
  Changing Open-Check will raise or lower Voltage/Current readings. *Temporarily lowering values will slow the encoder counter making it easier to read.*



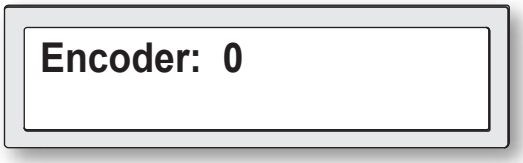
**Settings shown above and below will vary.*

- Press **DOWN** button to drive the door closed. Encoder Counts are displayed at the top of the message with the Voltage and Current at the bottom of the message. The Voltages/Current setting shown are reflected in the Close-Check speed setting.

  Changing Close-Check will raise or lower Voltage/Current readings. Temporarily lowering values will slow the encoder counting to make it easier to read. *It is not unusual for the Count to fail to return completely to 0 due to mechanical tolerances.*

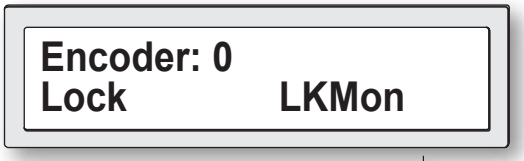


D01- Multifunction Test
C. Fail-Secure Lock Test - Belt Drive Units



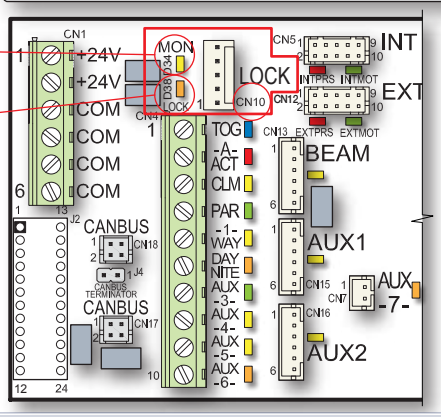
  - Display Initial Message reads:

- To Test the Fail-Secure Lock, press the **SET** button, Solenoid will engage.
  - Display Message shows Lock and Lock Monitor:



D34
Monitor Switch
Yellow LED

D38
Lock Output
Orange LED

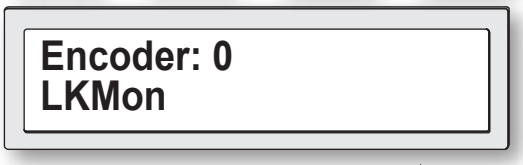


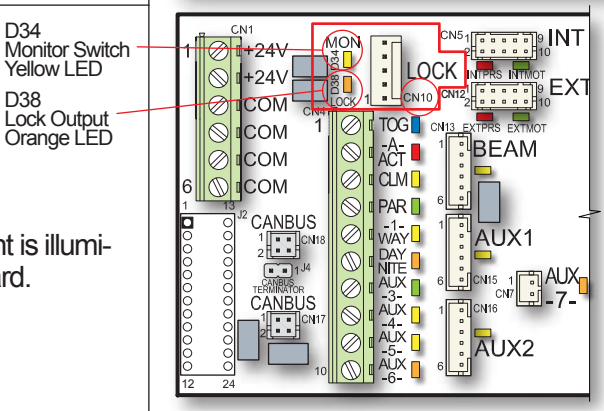
  - Lock (**D38**) and Lock Monitor (**D34**) LED Lights are illuminated on C3150 Control Board.

19. DIAGNOSTICS- LINEAR AND BELT DRIVE

D01- Multifunction Test
D. Fail-Safe Lock Test - Belt Drive Units Cont:

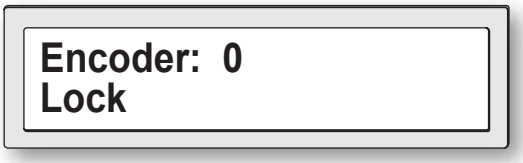
- The Fail-Safe Lock and Lock Monitor are present and connected.
  - Display Initial Message reads:

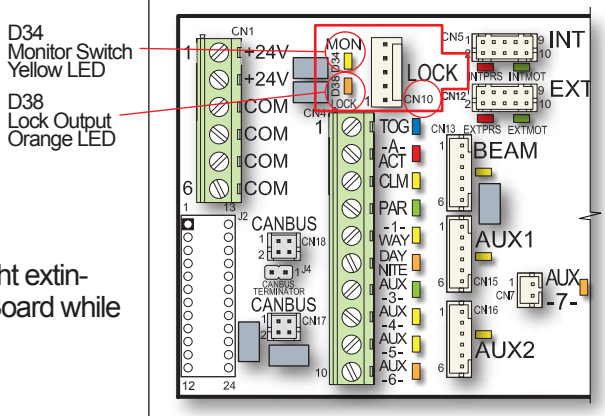




  - Lock Monitor (**D34**) LED Light is illuminated on C3150 Control Board.

- To Test the Fail-Safe Lock, press the **SET** button. The Solenoid then engages.
  - Display Message then changes from **LKMon** to **Lock** as shown:





  - Lock Monitor (**D34**) LED Light extinguishes on C3150 Control Board while Lock (**D38**) LED illuminates.

D01- Multifunction Test
E. Motor and Microswitch Test - Linear Drive Units

- To Test the Motor and Microswitches, press the **SET** button.
  - Display viewed with no buttons pushed.

*Depending on door position, display will read 'Close Cutoff', 'Close-Check', 'Door Mid-Stroke', 'Open-Check' or 'Open-Cutoff'.

Only if Lock installed.

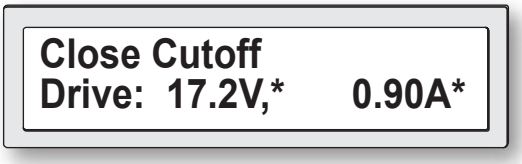
19. DIAGNOSTICS- LINEAR AND BELT DRIVE

D01- Multifunction Test
E. Motor and Microswitch Test - Linear Drive Units Cont:

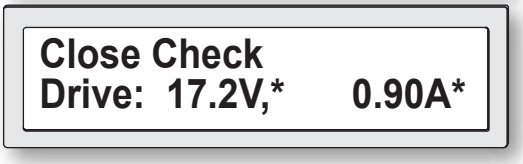
☐ Press the **UP** button to drive the door open. The Voltage/Current setting shown are reflected in the Open-Check speed setting.

Changing Open-Check will raise or lower Voltage/Current readings. *Temporarily lowering values will slow the encoder counter making it easier to read.*

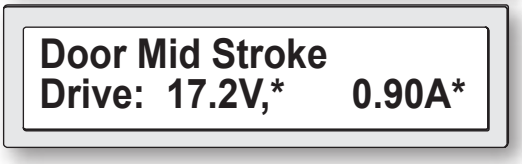
- Display Message at Close-Cutoff Switch reads:



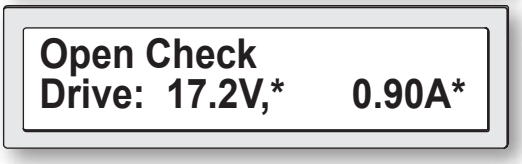
- Display Message in Close-Check Zone reads:



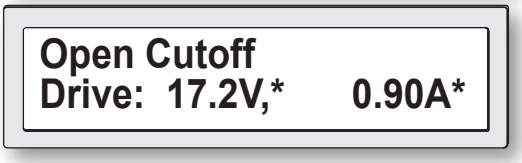
- Display Message at Mid-Stroke (No Switches Tripped) reads:



- Display Message in Open-Check Zone reads:



- Display Message at Open-Cutoff Switch reads:

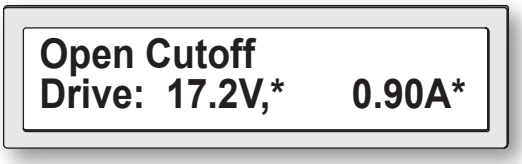


☐ Press the **DOWN** button to drive the door closed. The Voltage/Current setting shown are reflected in the Close-Check speed setting.

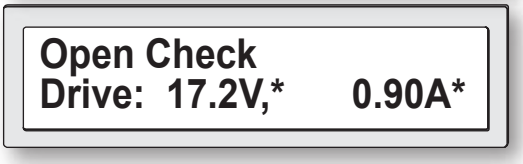
**Display Settings shown above and below will vary.*

Changing Close-Check will raise or lower Voltage/Current readings.

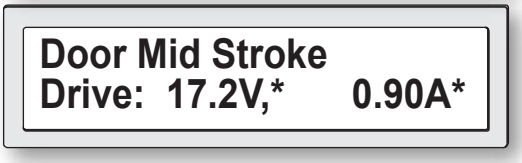
- Display Message at Open-Cutoff Switch reads:



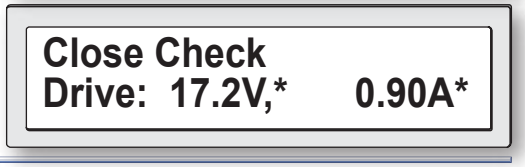
- Display Message in Open-Check Zone reads:



- Display Message at Mid-Stroke (No Switches Tripped) reads:



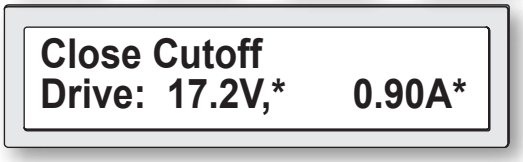
- Display Message in Close-Check Zone reads:



19. DIAGNOSTICS- LINEAR AND BELT DRIVE

D01- Multifunction Test
E. Motor and Microswitch Test - Linear Drive Units Cont:

- Display Message at Close-Cutoff Switch reads:



**Display Settings shown above will vary.*

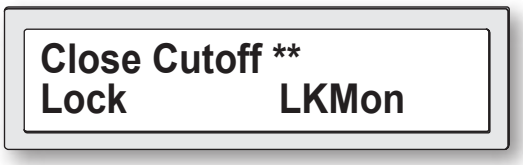
D01- Multifunction Test
F. Fail-Secure Lock Test - Linear Drive Units

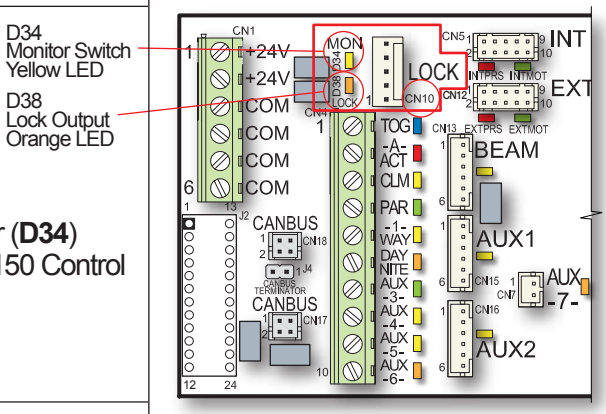
- To Test the Fail-Secure Lock:
  (A) Press the **SET** button.

- Display Message reads:

- Solenoid will engage.

- **Depending on door position, display will read 'Close Cutoff', 'Close-Check', 'Door Mid-Stroke', 'Open-Check' or 'Open-Cutoff'.
  Display Message shows Lock and Lock Monitor.

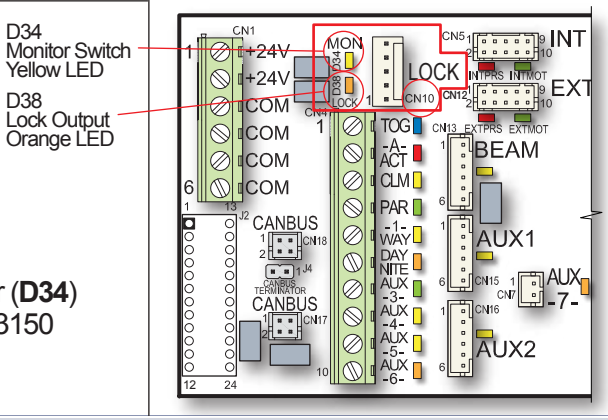




- Lock (**D38**) and Lock Monitor (**D34**) LED's are illuminated on C3150 Control Board.

- (B) Release the **SET** button.

- *Depending on door position, display will read 'Close Cutoff', 'Close-Check', 'Door Mid-Stroke', 'Open-Check' or 'Open-Cutoff'.



- Lock (**D38**) and Lock Monitor (**D34**) LEDs are extinguished on C3150 Control Board.

19. DIAGNOSTICS- LINEAR AND BELT DRIVE

D01- Multifunction Test
G. Fail-Safe Lock Test - Linear Drive Units

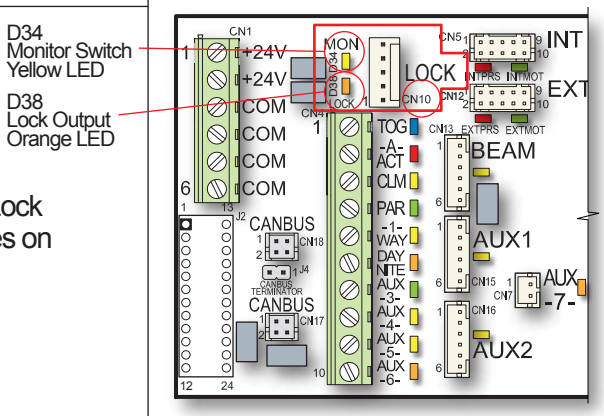
- To Test the Fail-Safe Lock:
  (A) Press the **SET** button.

  - Display Message reads:

- Solenoid will engage.

  - *Depending on door position, display will read 'Close Cutoff', 'Close-Check', 'Door Mid-Stroke', 'Open-Check' or 'Open-Cutoff'.

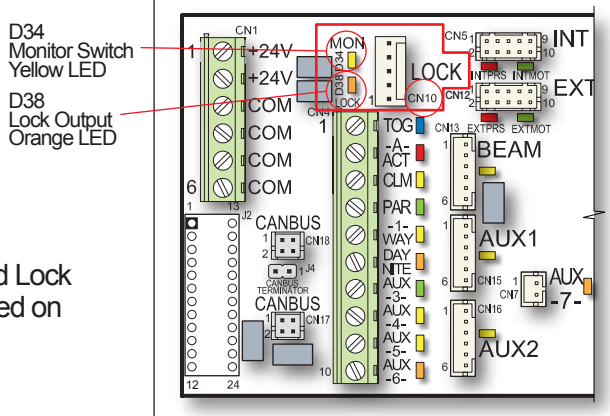
    Display Message shows Lock.



  - Lock (**D38**) is illuminated and Lock Monitor (**D34**) LED extinguishes on C3150 Control Board.

- (B) Release the **SET** button.

  - *Depending on door position, display will read 'Close Cutoff', 'Close-Check', 'Door Mid-Stroke', 'Open-Check' or 'Open-Cutoff'.



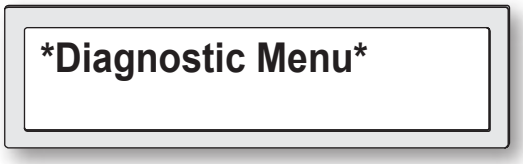
  - Lock (**D38**) is extinguished and Lock Monitor (**D34**) LED is illuminated on C3150 Control Board.

D02- Show Supply Voltages

D02 on the Diagnostics Menu shows supply voltages. Enter the Diagnostics Menu then press the **UP** or **DOWN** button to navigate to the various Sections D01 through D08.

Note that double-clicking the **SET** button returns you to the previously visited Section in Diagnostic Menu. Pressing the **RESET** button exits the Diagnostic Menu.

- To enter the Diagnostic Menu, double-click the **UP** button.
  - Display Message blinks:

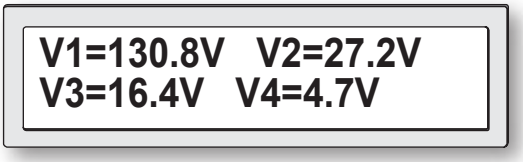


  - Then Display message shows:

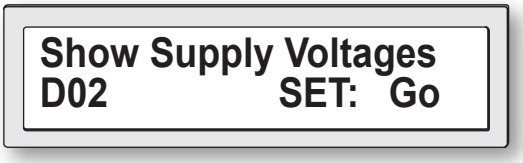
D02 Show Supply Voltages

- To enter the D02 'Show Supply Voltages' Section, press the **UP** button.
  - Display message shows:

- To show the supply voltages, press the **SET** button.
  - Display Message shows:
    V1- High Voltage *V2- Low Voltage*
    V3 - Factory Only *V4 - Factory Only*



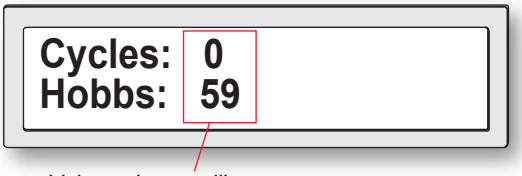
- Double-click the **SET** button to return to the last section visited in the Diagnostic Menu.
  - Display flashes the message,*'Returning to Menu'* or D02 in this case. Message then reads:



D03 - Read Counters *(Counts by Multiples of 10)*

- To enter the D03 *'Read Counters'* Section, press the **UP** or **DOWN** button to navigate to D03.
  - Display message reads:

- To view the counters, press the **SET** button.
  - Display Message reads:



Values shown will vary.

- Double-click the **SET** button to return to the last section visited in the Diagnostic Menu.
  - Display flashes the message,*'Returning to Menu'* or D03 in this case. Message then reads:

19. DIAGNOSTICS- LINEAR AND BELT DRIVE

D04 - Read Log

- To enter the D04 *'Read Log'* Section, press the **UP** or **DOWN** button to navigate to D04.
  - Display message reads:

- To view the log, press the **SET** button.
  - Display Message reads:

*(Use the **UP** or **DOWN** button to scroll through the Log Events.)*

- Double-click the **SET** button to return to the last section visited in the Diagnostic Menu.
  - Display flashes the message,*'Returning to Menu'* or D04 in this case. Message then reads:

- List of possible D04 Event Codes - 'Always Logged' that would be viewed on the *'Read Log'* if applicable.

D04 EVENT CODES ALWAYS LOGGED	
1.	+15V Supply Failure
2.	+24V Supply Failure
3.	+120V Supply Failure
4.	Attempting Restart
5.	Aux Act On > 60s
6.	Aux1 On > 60s
7.	Aux1 Test Fail
8.	Aux2 On > 60s
9.	Aux2 Test Fail
10.	Close Check Timeout
11.	Close Speed Timeout
12.	Cls Accel Pulse Loss
13.	Cls Check Pulse Loss

D04 EVENT CODES ALWAYS LOGGED	
14.	Cls Speed Pulse Loss
15.	EEPROM Failure
16.	Encoder Failure
17.	Ext Motion On > 60s
18.	Ext Presnc On > 60s
19.	Ext Sensor Test Fail
20.	Failed to Lock
21.	Failed to Unlock
22.	Full Open
23.	Illegal Instruction
24.	Int Motion On > 60s
25.	Int Presnc On > 60s
26.	Int Sensor Test Fail

D04 EVENT CODES ALWAYS LOGGED	
27.	Motor Drive Failure
28.	Motor Failure
29.	No Close Spd Harness
30.	No Open Spd Harness
31.	Open Accel Pulse Loss
32.	Open Check Pulse Loss
33.	Open Check Timeout
34.	Open Speed Timeout
35.	Opn Speed Pulse Loss
36.	Saf Beam On > 60s
37.	Saf Beam Test Fail
38.	Watchdog Timeout

D05 Clear Cycle Counter

- To enter the D05 *'Clear Cycle Counter'* Section, press the **UP** or **DOWN** button to navigate to D05.
  - Display message reads:

- To clear the counter, press the **SET** button.
  - Display Message reads:

19. DIAGNOSTICS- LINEAR AND BELT DRIVE

D05 Clear Cycle Counter Cont:

- Press the **UP** button to proceed or press the **DOWN** button to return to D05 *'Clear Cycle Counter'* Section.
  - If the **UP** button is pressed, display reads:

- Double-click the **SET** button to return to the last section visited in the Diagnostic Menu.
  - Display flashes the message,*'Returning to Menu'* or D05 in this case. Message then reads:

D06 Clear Log

- To enter the D06 *'Clear Log'* Section, press the **UP** or **DOWN** button to navigate to D06.
  - Display message reads:

- To clear the log, press the **SET** button.
  - Display Message reads:

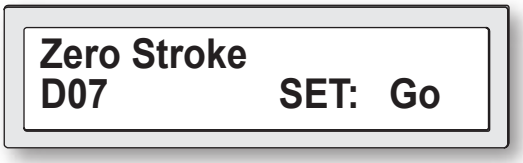
- Press the **UP** button to proceed or press the **DOWN** button to return to D06 *'Clear Log'* Section.
  - If the **UP** button is pressed, display reads:

- Double-click the **SET** button to return to the last section visited in the Diagnostic Menu.
  - Display flashes the message,*'Returning to Menu'* or D06 in this case. Message then reads:

D07 - Zero Stroke

'Zero Stroke' is a rarely used feature that ensures a 'Fresh Start.' The Relearn feature will be required after the Stroke is zeroed.

- To enter the D07 *'Zero Stroke'* Section, press the **UP** or **DOWN** button to navigate to D07.
  - Display message reads:



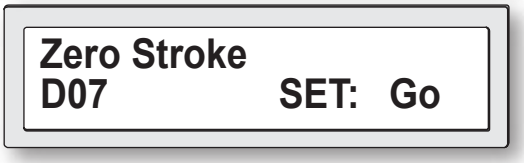
- To Zero the Stroke, press the **SET** button.
  - Display Message reads:

19. DIAGNOSTICS- LINEAR AND BELT DRIVE

D07 - Zero Stroke Cont:

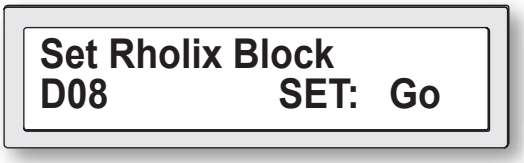
- Press the **UP** button to proceed or press the **DOWN** button to return to D07 *'Zero Stroke'* Section.
  - If the **UP** button is pressed, display reads:

- Double-click the **SET** button to return to the last section visited in the Diagnostic Menu.
  - Display flashes the message,*'Returning to Menu'* or D07 in this case. Message then reads:

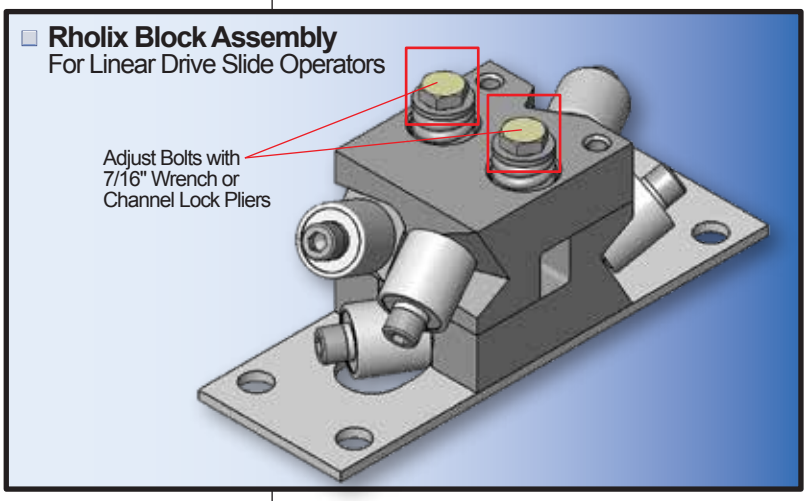


D08 - Rholix Block

- To enter the D08 *'Rholix Block'* Section, press the **UP** or **DOWN** button to navigate to D08.
  - Display message reads:



- When the **SET** button is pressed, the motor will spin the rod in a direction that will close the door ignoring all motion sensors. Place a Force Gauge between the jamb and the strike edge of the door. Adjust to 28 lbs. by tightening or loosening the bolts shown in the illustration below with a wrench or channel lock pliers.



- For Linear Drive Operators only. To proceed, press the **SET** button. Note that the Control knows the Operator is a Belt Drive Unit and will respond accordingly.
  - Display Message reads:

D09 - Show Misc. Information

- Information to Add in Advanced Troubleshooting with Factory Tech's Help.
  - OpAcl Trip Point 0.63A
  - ClAcl Trip Point 0.44A

20. APPENDIX - A

Troubleshooting_Power Supply on C3150 Control v15.04

The C03150.1500 Control has line voltage coming into connector CN9. Pin 1 is line voltage (black) and pin 2 is neutral (white). Refer to Image 1 below.

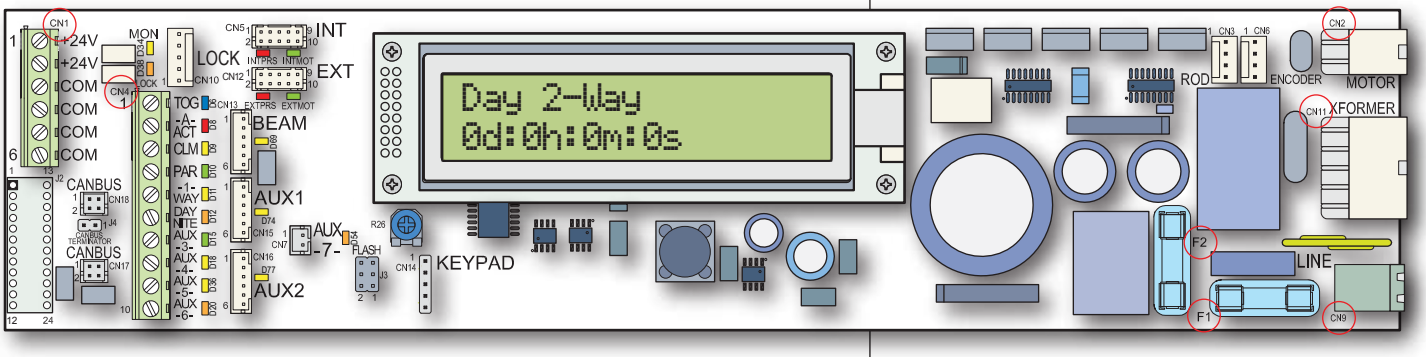


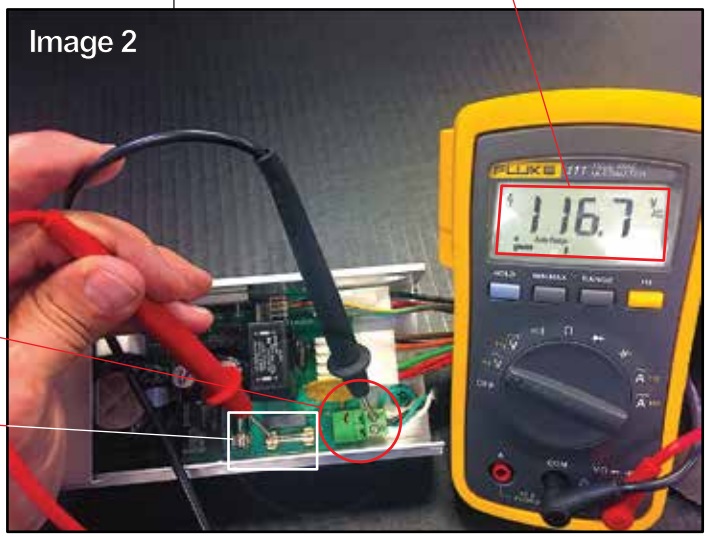
Figure 1, C3150 Slide Door Microprocessor Control Board

1. The 120 Volt AC Line Voltage (pin 1 on CN9) is connected directly to the right side Fuse F1 (3.15 amp slow blow 5x20) via the printed circuit board. The left side of F1 Fuse supplies current to one side of the transformer's primary winding via connector CN11 pin 7 (white wire) and CN11 pin 2 (orange wire). This line is also connected in-parallel to the primary winding of the transformer via connector CN11 pin 6 (black wire) and CN11 pin 1 (brown wire).

   If incoming power AC voltage is detected at CN9 pin 1 and 2 (Image 1), leave multimeter lead on CN9 pin 2 (neutral- white wire) and move the other lead to the far side of F1 fuse (Image 2 below).

Image 1

Image 2



20. APPENDIX - A Cont:

Troubleshooting_Power Supply on C3150 Control v15.04 cont:

2. Return from the transformer to the neutral side of the incoming power is via a parallel connection CN11 pin 7 (white wire) and CN11 pin 2 (orange wire).

3. The Transformer' s 18 volt secondary winding is connected to the C3150 control through the green wires at CN11 pin 4 and CN11 pin 9. It can be tested by connecting multimeter to CN11 pin 4 (green wire) and lead of RT1 that is closest to the fuse (Image 3 at right). If the transformer is good, multimeter should detect 18-20 volts AC. Move red lead to the opposite lead on RT1, voltage should be approximately the same. If RT1 contact has opened because of overcurrent, voltage here will be much less.

4. The 24 Volt DC supply is produced by connecting the 18 Volt AC secondary tap to rectifier D5 through (RT1) which is a PPTC and can be thought of as a resettable fuse. This rectified circuit is filtered by capacitors C110 and C11 to produce an unregulated 24 Volts DC for motion detector and auxiliary use. This circuit can be tested / connected to on connector CN1 between 24V and common. If an overcurrent condition occurs in this circuit, the Polymeric Positive Temperature Coefficient Device (PPTC) will heat up and gradually reduce the current flow to the point that the components fed by this circuit quit working. RT1 will feel warm to the touch.

   Remove all components that can cause an overcurrent condition such as motion detectors, safety beam, autolock and anything connected to the 24V terminals of CN1. It will usually be necessary to kill power for 30 seconds or more to allow the PPTC to cool and resume normal conduction. Faulty circuit can sometimes be identified by reintroducing components one at a time (killing power each time) until the circuit opens again.

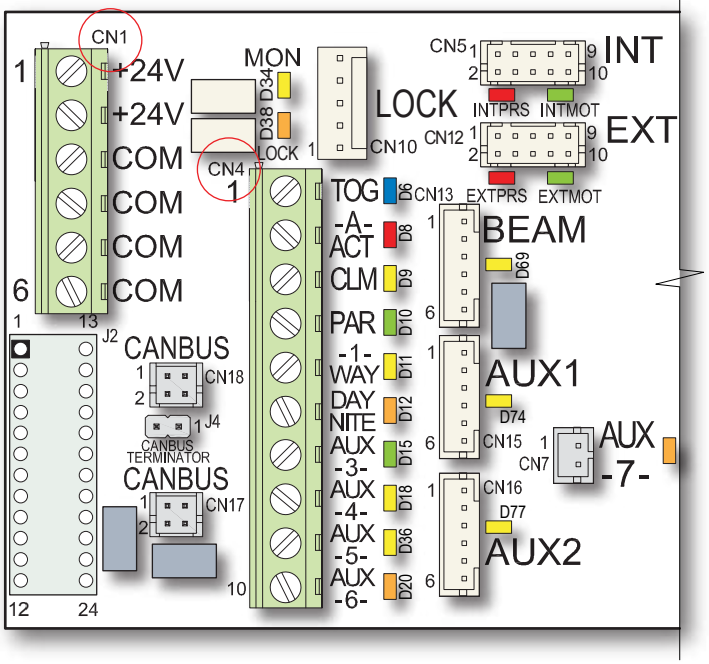


Figure 2, Control Board Partial View_Left Side

20. APPENDIX - A Cont:

Troubleshooting_Power Supply on C3150 Control v15.04 cont:

5. The 5 volt supply is provided by the U8 switching regulator which provides for the microprocessor, all of the LEDs and the input. This circuit can be tested at pins 1 and 4 of CN6 (Encoder) or between common of CN1 and any of the 10 inputs at CN4.

   Most devices connected to the 5 volt supply draw very little current. The overall load is limited to 500ma. If this threshold is exceeded (or shorted), the regulator will shut down to protect itself and other components. Shorted encoder or autolock would be the most likely culprit. Unplug the devices, kill power for 30 seconds and retry. Bridge circuit to drive the motor. The 90 Volt AC circuit can be tested as shown below.

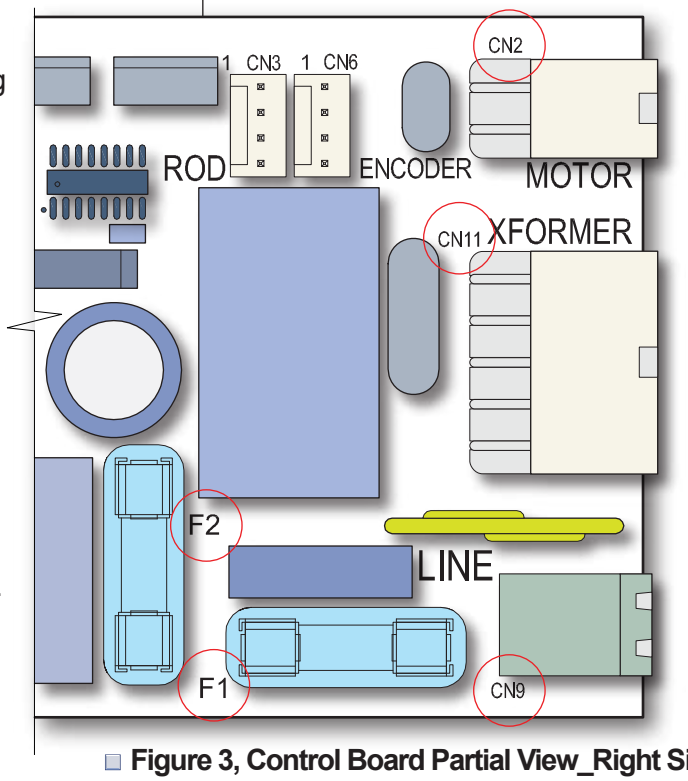


Figure 3, Control Board Partial View_Right Side

6. The 130 Volts DC Motor Voltage: One red wire from the 90 Volts AC transformer tap terminates at CN11 pin 5 red wire of the C3150. The other red wire is terminated at CN11 pin 10 of the C3150 and is connected to one side of Fuse F2 (3.15 amp slow blow 5x20). The other side of the fuse is connected to rectifier D21 with a return to the other transformer red wire which terminates at CN11 pin 5. The rectified output of D21 is filtered by capacitor C14 and provides 130 Volts filtered DC for the H Bridge circuit to drive the motor. The 90 Volt AC circuit can be tested as shown (Image 4 at right).

20. APPENDIX - A Cont:

Troubleshooting_Power Supply on C3150 Control v15.04 cont:

7. Check F2 Fuse with Red Multimeter Lead on farside of F2 Fuse and Black Lead on CN11 pin 5 (Image 4 at right). If voltage is present, fuse is good.

Image 5

20. APPENDIX - B

Status Messsages_C3150 Control v15.04 *Refer to Sheet H310.49 for message Items highlighted in yellow.*

MESSAGE	DOOR TYPE	DESCRIPTION
AC Power Failure	Both	An AC Line failure has been detected via the AUX7 input (battery backup).
Act (Aux Act)	Both	Door was actuated to open by auxiliary input.
Act (Beam)	Both	Door was actuated to open by safety beam.
Act (Com)	Both	Door was actuated to open by communications port.
Act (Cycle Test)	Both	Door was actuated to open by cycle test option.
Act (Down)	Both	Door was actuated to open by local (DOWN) button.
Act (Ext Sensor)	Both	Door was actuated to open by exterior sensor.
Act (Fire Input)	Both	Door was actuated to open by fire alarm contact input.
Act (Int Sensor)	Both	Door was actuated to open by interior sensor.
Act (Latch)	Both	Door was actuated to open by latch contact input.
"Are you sure? UP=Yes, DOWN=No"	Both	Confirmation message before certain critical tasks will be executed.
Attempting Restart	Both	Control is attempting a restart following a fatal error. Restart request was issued by remotely clearing all errors via communications port.
Autoseal	Both	Door is executing periodic Autoseal routine to insure weatherstrip seal. Autoseal runs approximately every twenty (20) seconds if Autoseal parameter is enabled, provided door is closed and idle.
Aux1 ON > 60s	Both	Warning message, Aux1 input has been on continuously for over 60 seconds.
Aux1 Test Fail	Both	Aux1 sensor reported failure when self-test was requested by control.
Aux2 ON > 60s	Both	Warning message, Aux2 input has been on continuously for over 60 seconds.
Aux2 Test Fail	Both	Aux2 sensor reported failure when self-test was requested by control.
Aux5 ON > 60s	Both	Warning message, Aux5 input has been on continuously for over 60 seconds.
Aux Act On > 60s	Both	Warning message, auxiliary actuate input has been on continuously for over 60 seconds.
Braking Door	Both	Control is decelerating door to either Open Check speed (while opening) or Close Check speed (while closing).
Caution - Sensor Recycles Disabled	Both	Warning message, recycling via sensors disabled for technician measurement of reversing forces.
Check Fuse F2	Both	Informative message for possible cause of +120V power supply failure.
Check 24V Wiring	Both	Informative message for possible cause of +24V power supply failure.
Checking for lock…	Both	During setup, control is checking for presence of a monitored lock.
Clear Cycle Counter	Both	Diagnostic menu item, press SET to clear cycle counter. Confirmation is required. Hobbs counter is not cleared.
Clear Log	Both	Diagnostic menu item, press SET to clear data log. Confirmation is required.
Close Accelerate	Both	Door is accelerating from zero velocity to selected close speed setting.
Close Check	Both	In normal operation, door is traveling at the selected close check setting.
Close Check	Linear	In multifunction diagnostic, a linear drive door's switches show it between the close check and close cutoff positions.
Close Check Timeout	Linear	During closing, close cushion condition not encountered when expected.
Close Cushion	Both	Door is almost fully closed and is traveling at the selected close cushion setting.
Close Cutoff	Linear	In multifunction diagnostic, a linear drive door's switches show it at the close cutoff position.
Close Mon Sw Found	Belt	During first close run or close cushion in belt drive doors, a close monitor switch was located.
Close Speed	Both	Door is traveling at the selected close speed setting.
Close Speed *LIMIT*	Belt	Computed door closing speed is in excess of ANSI limit and control is slowing door.
Close Speed Timeout	Linear	During closing, close check condition not encountered when expected.

20. APPENDIX - B Cont:

Status Messsages_C3150 Control v15.04 cont: *Refer to Sheet H310.49 for message Items highlighted in yellow.*

MESSAGE	DOOR TYPE	DESCRIPTION
Cls Check Pulse Loss	Belt	Cessation of encoder pulses unexpectedly encountered during close check portion of close cycle.
Cls Speed Pulse Loss	Belt	Cessation of encoder pulses unexpectedly encountered during close speed portion of close cycle.
Cmon	Both	During multifunction diagnostic, this is displayed if close monitor/partial open switch input contact is present.
Control is Locked!	Both	A set password is preventing an attempt was made to access diagnostics or setup mode following control reset.
Counter Cleared	Both	A Clear Counter request has been successfully processed. The user resettable cycle counter has been set to '0'.
Cycle Test Mode	Both	Displays when Cycle Test parameter has been turned on. Door will self cycle open and closed, with an approximate two (2) second pause at full close before next cycle self-initiates. Used for test purposes only.
Cycles:	Both	Total opening cycles (including recycles) since cycle counter was last reset.
* Diagnostics Menu *	Both	The diagnostic menu has been successfully entered.
Data Saved	Both	Site specific parameters and/or user data have been successfully stored in control's permanent memory.
Day 1-Way, Day 1-Way Partial	Both	Door is idle and is in day 1-way mode. Message is followed by 'Partial' if partial open mode is also enabled.
Day 2-Way, Day 2-Way Partial	Both	Door is idle and is in day 2-way mode. Message is followed by 'Partial' if partial open mode is also enabled.
Day Mode Ready	Both	Logged message only, control is idle in day mode state.
Door Mid Stroke	Linear	During multifunction diagnostic, this is displayed if no microswitches are tripped on a linear drive door type.
Door Off (User)	Both	Door has been placed in the menu (OFF) mode by user interface or remote serial command.
Door Off (Tech)	Both	Door has been placed in the menu (OFF) mode by technician (double click of SET button).
Door Position	Belt	When displayed within a data log entry, this is the position of a belt drive door (in pulses) at which the event occurred.
Door Stopped	Both	Door has been stopped by local or remote stop command and will restart automatically when stop command clears.
Drive:	Both	In multifunction diagnostic, this is followed by the motor voltage and current.
EEPROM Failure	Both	Internal failure, replace control.
Encoder:	Belt	In multifunction diagnostic, this is followed by the current door position (in pulses).
Enter Password:	Both	Control is requesting technician to enter the set password before menu may be accessed.
*** ERROR ***	Both	An error of some type has occurred.
Exiting Diagnostics	Both	Informative message when control is exiting diagnostic mode. Normal operation will resume.
Ext Sensor On > 60s	Both	Warning message, exterior sensor has been on continuously for over 60 seconds.
Ext Sensor Test Fail	Both	Exterior sensor reported failure when self-test was requested by control.
Fail Safe Lock	Both	During setup, a fail safe lock has been detected when a control query was made.
Fail Secure Lock	Both	During setup, a fail secure lock has been detected when a control query was made.
Failed to Lock	Both	The autolock has failed to successfully lock following a request to do so.
Failed To Unlock	Both	The autolock has failed to successfully unlock following a request to do so.
Fire Override	Belt	Fire contact detected with door stopped at partial open position, door moving to full open.
First Close Paused	Belt	Progress of First Close routine has been halted by some type of actuating or safety device input.

20. APPENDIX - B Cont:

Status Messsages_C3150 Control v15.04 cont: *Refer to Sheet H310.49 for message Items highlighted in yellow.*

MESSAGE	DOOR TYPE	DESCRIPTION
First Close Run	Belt	Control is learning fully closed/home position following startup or initiation of 'Learn' cycle.
First Open Run	Belt	Control is learning fully open position during 'Learn' cycle.
Full Open	Both	Logged message only, door is at full open position.
Full Open (Latch)	Both	Logged message only, door is latched open at full open position.
Hobbs:	Both	Total opening cycles (including recycles). Not field resettable.
Hold: Aux Actuate	Both	Door is at full or partial open position and is being held open by the indicated device.
Hold: Com Channel	Both	Door is at full open position and is being held open from a remote location (communications port).
Hold: DOWN Button	Both	Door is at full or partial open position and is being held open by the indicated device.
Hold: Exterior Motion	Both	Door is at full or partial open position and is being held open by the indicated device.
Hold: Exterior Prsnc	Both	Door is at full or partial open position and is being held open by the indicated device.
Hold: Fire Input	Both	Door is at full open position and is being held open by the fire alarm contact input.
Hold: Interior Motion	Both	Door is at full or partial open position and is being held open by the indicated device.
Hold: Interior Prsnc	Both	Door is at full or partial open position and is being held open by the indicated device.
Hold: Latch	Both	Door is at full or partial open position and is being held open indefinitely by the latch condition.
Hold: Safety Beam	Both	Door is at full or partial open position and is being held open by the indicated device.
Hold: Timed Latch	Both	Door is at full or partial open position and is being held by the latch condition. Latch will Time out after P22 delay and door will automatically close.
Home Position Pending	Belt	In a belt drive system with NO close monitor switch, shows that stroke is not yet confirmed. Slow speed operation only.
Illegal Instruction	Both	An internal failure or programming error has issued an illegal instruction to the microcontroller. Consult factory.
Int Sensor On > 60s	Both	Warning message, interior sensor has been on continuously for over 60 seconds.
Int Sensor Test Fail	Both	Interior sensor reported failure when self-test was requested by control.
Latch Released	Both	The latch open condition was manually canceled.
Latch Timeout	Both	The latch open condition was automatically canceled by the Latch Timeout parameter.
Learn Cycle Complete	Belt	Learn cycle successfully completed and data stored. Control is ready for regular operation.
Learning Obst Sens	Bolt	Logged message only, control is learning maximum motor current consumed during open speed and open check portions of open cycle.
Learning Rev Peak	Both	Control is learning maximum motor current consumed during close accelerate portion of close cycle.
Learning Rev Sens	Both	Control is learning maximum motor current consumed during close speed and close check portion of close cycle.
Learning Stroke	Belt	Control is learning encoder count during 'Learn' cycle.
LKMon	Both	In multifunction diagnostic, this is displayed if the lock monitor contact is triggered.
LOCK	Bolt	In multifunction diagnostic, this is displayed if the lock is being triggered (SET button is pushed).

20. APPENDIX - B Cont:

Status Messsages_C3150 Control v15.04 cont: *Refer to Sheet H310.49 for message Items highlighted in yellow.*

MESSAGE	DOOR TYPE	DESCRIPTION
Log Cleared	Both	A Clear Log request has been successfully processed and the data log is purged.
Log is Empty	Both	The data log is empty and there are no items to display.
Motor Drive Failure	Both	An internal failure has occurred and the control is not supplying motor drive energy. Replace control.
Motor Failure	Both	Motor drive energy is being supplied, but the motor is not responding. Check motor and replace if necessary.
Multifunction Test	Both	Diagnostic menu item, press SET to enter Multifunction Test.
Night 1-Way, Night 1-Way Partial	Both	Door is idle and is in night 1-way mode. Message is followed by 'Partial' if partial open mode is also enabled.
Night 2-Way, Night 2-Way Partial	Both	Door is idle and is in night 2-way mode. Message is followed by 'Partial' if partial open mode is also enabled.
Night Mode Ready	Both	Logged message only, control is idle in night mode state.
No Cls Speed Harness	Linear	Close speed microswitch(es) missing or defective, detected and reported when door begins closing.
No Lock Detected	Both	During setup, no lock was detected when a control query was made.
No Opn Speed Harness	Linear	Open speed microswitch(es) missing or defective, detected and reported when door begins opening.
No Switches Found!	Linear	During multifunction diagnostic, this is displayed if no microswitch harness is detected on linear drive doors.
Not For Belt Drives!	Belt	Rholix block setting test cannot be executed if control is currently set for a belt drive door type.
Obst (Beam)	Both	The external safety beam has recycled the door during its closing cycle.
Obst (CAcl I)	Both	Motor current over the predetermined threshold has recycled the door during its closing acceleration routine.
Obst (CChk I)	Both	Motor current over the predetermined threshold while within the close check zone has recycled the door.
Obst (CChk LOP)	Both	An unexpected cessation of encoder pulses within the close check zone has recycled the door.
Obst (CSpd I)	Both	Motor current over the predetermined threshold while within the close speed zone has recycled the door.
Obst (OAcl I)	Both	Obstruction encountered during open acceleration phase, open process canceled. Operation automatically resumes.
Obst Learn Complete	Both	Control has finished learning open obstruction sensitivities for all phases of open cycle.
Obstruction Stop	Both	Obstruction encountered while opening, door temporarily halted. Operation automatically resumes at check speed.
Off	Both	In menu mode, the parameter currently displayed is disabled.
On	Both	In menu mode, the parameter currently displayed is enabled.
Open Accelerate	Both	Door is accelerating from zero velocity to selected open speed setting.
Open Accelerate + Learn	Both	Door is accelerating from zero velocity to selected open speed setting, and is also learning obstruction sensitivity.
Open Check	Both	In normal operation, door is traveling at the selected open check setting.
Open Check + Learn	Both	In normal operation, door is traveling at the selected open check setting and is also learning obstruction sensitivity.
Open Check (Partial)	Belt	In normal operation, door is traveling at the selected open check setting and is proceeding to partial open position.
Open Check	Linear	In multifunctional diagnostic, a linear drive door's switches show it between the open check and open cutoff positions.
Open Check Timeout	Linear	During opening, open cushion condition not encountered when expected.
Open Cushion	Both	Door is almost fully open and is traveling at the selected open cushion setting.
Open Cutoff	Linear	In multifunction diagnostic, a linear drive door's switches show it at the open cutoff position.
Open Resume	Both	Sidelight protection has cleared. Door has resumed normal open speed.
Open Resume (Partial)	Belt	Sidelight protection has cleared. Door has resumed normal open speed and is traveling to partial open position.

20. APPENDIX - B Cont:

Status Messsages_C3150 Control v15.04 cont: *Refer to Sheet H310.49 for message Items highlighted in yellow.*

MESSAGE	DOOR TYPE	DESCRIPTION
Open Speed	Both	Door is traveling to open position at the selected open speed setting.
Open Speed + Learn	Both	Door is traveling to open position at the selected open speed setting and is also learning obstruction sensitivity.
Open Speed (Partial)	Belt	Door is traveling to partial open position at the selected open speed setting.
Open Speed Timeout	Linear	During opening, open check condition not encountered when expected.
Opn Check Pulse Loss	Belt	Cessation of encoder pulses unexpectedly encountered during open check portion of open cycle.
Opn Speed Pulse Loss	Belt	Cessation of encoder pulses unexpectedly encountered during open speed portion of open cycle.
Partial Open	Both	Logged message only, door is at partial open position.
Password Bad: Turn Door On to Restart	Both	Entered password does not match set value. Technician must cycle on/off contact before trying again.
PFC Incomplete	Both	The door was unable to reach the full closed position following a power failure.
PFO / PFC Complete	Both	The door reached the proper final position as set by the PFO/PFC parameter following a power failure.
PFO Incomplete	Both	The door was unable to reach the full open position following a power failure.
Power Fail Close	Both	An AC power failure has been detected by the battery backup and control is proceeding to fully closed position.
Power Fail Open	Both	An AC power failure has been detected by the battery backup and control is proceeding to fully open position.
Press SET to Accept	Both	Press SET to accept the value shown on the screen.
Read Counters	Both	Diagnostic menu item, press SET to read cycle and Hobbs counters.
Read Log	Both	Diagnostic menu item, press SET to read data log.
Recycl (Aux Act)	Both	Door was recycled during closing by auxiliary input.
Recycl (Beam)	Both	Door was recycled during closing by safety beam.
Recycl (Com)	Both	Door was recycled during closing by communications port.
Recycl (Down)	Both	Door was recycled during closing by local (DOWN) button.
Recycl (Ext Sensor)	Both	Door was recycled during closing by exterior sensor.
Recycl (Fire Input)	Both	Door was recycled during closing by fire alarm contact input.
Recycl (Int Sensor)	Both	Door was recycled during closing by interior sensor.
Recycl (Latch)	Both	Door was recycled during closing by latch contact input.
Replace Control	Both	A fatal error has occurred. Replace control.
Returning To Menu	Both	A diagnostic test has been exited and the control is returning to the main diagnostics menu.
Rev Learn Complete	Both	The control has finished learning close obstruction sensitivities for all phases of close cycle.
Rev Re-Learn Enabled	Both	During next closing cycle, control will attempt to re-learn site specific obstruction (motor overcurrent) settings.
S2000 Linear	Both	Selected door type is S2000 linear (Rholix drive) type.
S2003 Belt	Both	Selected door type is S2003 belt type with current operator.
S2001 Belt	Both	Selected door type is S2001 belt type with current operator.
S2003 Belt (Early)	Both	Selected door type is S2003 belt type with earlier operator. Provided for compatibility.
S2001 Belt (Early)	Both	Selected door type is S2001 belt type with earlier operator. Provided for compatibility.
Saf Beam On > 60s	Both	Warning message, safety beam sensor has been on continuously for over 60 seconds.
Saf Beam Test Fail	Both	Safety beam system reported failure when self-test was requested by control.
Select Operator:	Both	Control is requesting operator type during setup routine. Use UP or DOWN to select, then press SET.
Set Rholix Now?	Linear	Control is requestion confirmation that a Rholix block setup is to be performed. Press UP to begin or DOWN to cancel.
Setup Request	Both	A setup (initialization) request has been received.
Setup - Confirm?	Both	Control is requesting confirmation a setup is to be performed. Press UP to begin setup or DOWN to cancel.

20. APPENDIX - B Cont:

Status Messsages_C3150 Control v15.04 cont: *Refer to bottom of this Chart for Message Items Highlighted in yellow.*

MESSAGE	DOOR TYPE	DESCRIPTION
Show Supply Voltages	Both	Diagnostic menu item, press SET to show internal power supply voltages.
Sidelite Prot (Aux1)	Both	An Aux1 sensor input has triggered the sidelight protection mode and door has slowed to open check Speed.
Sidelite Prot (Aux2)	Both	An Aux2 sensor input has triggered the sidelight protection mode and door has slowed to open check Speed.
Starting Learn Cycle	Belt	Control is starting Learn Cycle to determine stroke and other site specific parameters.
Startup Submenu	Both	The startup submenu has been successfully entered.
Stop Command	Both	Door has been stopped by local or remote stop command and will restart automatically when stop command clears.
Stroke Confirmed	Belt	In a belt drive system with NO close monitor switch, shows that stroke is valid and normal speed operation will commence.
Stroke Out of Range	Belt	Stroke measured during 'Learn' cycle is less than 12" (30.5 cm) or greater than 299" (759.5 cm).
Stroke Zeroed	Belt	A Zero Stroke request has been successfully processed. Control will automatically execute a complete Learn Cycle next time it is started.
System Boot	Both	Logged message only, occurs when control initially starts up following a power failure.
Time Delay 1	Both	Door is full open position and all open commands have ceased. Delay 1 is counting down prior to close cycle.
Time Delay 2	Both	Door is in partial open position and all open commands have ceased. Delay 2 is counting down prior to close cycle.
Total Cycles	Both	Total cycles as stored in Hobbs counter, displayed immediately after control reset or startup.
Total Stroke:	Belt	Displays measured stroke of door in both inches and centimeters.
Unlock Delay	Both	When an unmonitored lock is in use, this message displays during the unlock delay.
UP/DOWN: Find SET: Go	Both	In diagnostic menu, use UP or DOWN to find diagnostic to execute, then press SET to run it.
Version xx.xx	Both	Informational message, where xx.xx represents firmware version currently loaded into control.
V1=	Both	Diagnostic item, displays value of +120V power supply.
V2=	Both	Diagnostic item, displays value of +24V power supply.
V3=	Both	Diagnostic item, displays value of +15V power supply.
V4=	Both	Diagnostic item, displays value of +5V power supply.
Watchdog Timeout	Both	An internal failure or programming error has created a watchdog timerout condition. Consult factory.
Zero Stroke	Belt	Diagnostic menu item, press SET to zero stored stroke. Confirmation is required. Control will automatically execute a complete Learn Cycle next time it is started, if belt drive operator type is chosen.
+15V Supply Failure	Both	An Internal failure of the control's +15V supply has occured. Replace control.
+120V Supply Failure	Both	The control's +120V power supply is out of tolerance. Check appropriate fuse.
+24V Supply Failure	Both	The control's +24V power supply is out of tolerance. Check external devices supplied by +24V control output for shorts.

Message Items highlighted in yellow are considered critical events and log a history of prior events (up to 20) when they occur.

20. APPENDIX - C

Shortcuts_C3150 Control v15.04

TASK SHORTCUT	DOOR TYPE	PROCEDURE
1. Initiate Setup	Both	Hold SET button for at least 2 seconds following a reset or power-up.
2. Initiate Diagnostics Menu	Both	Hold UP button for at least 2 seconds following a reset or power-up **or**, double-click the UP button during normal operation.
3. Initiate Startup Submenu	Both	Hold DOWN button for at least 2 seconds following reset or power-up.
4. Standard Parameter Menu	Both	Turn OFF toggle input (if remote mode not enabled) **or**, double-click the SET button during normal operation.
5. SuperTech Parameter Menu	Both	While holding the UP button, double click the SET button during normal operation.
6. Cycle Door	Both	Press DOWN button during normal operation.
7. Begin Cycle Testing	Both	Press and hold UP button while pressing DOWN button during normal operation.
8. Show Encrypted Password	Both	Hold UP, DOWN, and SET buttons for at least 2 seconds following reset or power-up.
9. Set Rholix Block	Linear	Hold UP and DOWN buttons for at least 2 seconds following a reset or power-up (Linear Drive only).
10. Re-Learn Belt Drive	Belt	Hold UP and DOWN buttons for at least 2 seconds following a reset or power-up (Belt Drive only). Does not disturb any other parameter settings.
11. Re-Learn Reversing Sensitivities	Both	Double click the DOWN button during open check or full open portion of door cycle. Display will confirm.
12. Re-Learn Obstruction Sensitivities	Both	Double click the DOWN button while door is at rest in the closed position. Display will confirm.
13. Cancel Latch	Both	Press DOWN button when door is latched open.

20. APPENDIX - D

Harness Assemblies used on C3150 Control v15.04

SENSOR or CONTROL FEATURE	SUPPLIER-VENDOR	SENSOR-HARNESS TYPE	MOUNTING LOCATION / OPERATOR	TYPE HARNESS	HARNESS LENGTH	PART NUMBER
Eagle Sensor	BEA	Motion Sensor	Header-Mounted	Flying Leads	10 ft.	E06300.0110
IXIO Sensor	BEA	Motion / Presence	Header-Mounted	PNP	5 ft.	E06300.0005
IXIO Sensor	BEA	Motion / Presence	Header-Mounted	PNP	10 ft.	E06300.0010
IONE XT / X ZONE T Sensors	Optex	Motion / Presence	Header-Mounted	PNP	5 ft.	E06304.0005
IONE XT / X ZONE T Sensors	Optex	Motion / Presence	Header-Mounted	PNP	10 ft.	E06304.0010
OS12C T Sensor	Optex	Photoelectric Beam	Jamb / Dr / Hdr. Mounted	Flying Leads	1.5 ft.	E06302.0000
Generic Sensor	Horton	Beam / AUX1 / AUX2	Jamb / Dr / Hdr. Mounted	Flying Leads	10 ft.	E06302.0001
Transformer Function	Horton	Transformer Extension	Control / Transformer	PNP	5 ft.	E06305.0000
Transformer Function	Horton	Transformer Extension	Control / Transformer	PNP	1.2 ft.	E06305.0016
Motor Function	Horton	Motor Adapter-Belt Drive	Control / Motor	PNP	8 in.	E06303.0000
Motor Function	Horton	Motor Adapter-Belt Drive	Control / Motor	PNP	2 ft.	E06303.0001
Motor Function	Horton	Motor Adapter-Linear Drive	Control / Motor	PNP	1 ft.	E06319.0000
Microswitch Function - Linear	Horton	Microswitches - Linear Drive	Control / Microswitches	PNP	7 ft.	C02155.0448
Power Fail / Interconnect	Horton	E06970 PF Module to C3150	Control /Power Fail Assy	PNP	1.3 ft.	C03849.0000
Power Fail / AUX 7 Function	Horton	E06970 PF Module to C3150	Control /Power Fail Assy	PNP	3 ft.	C03850.0000
AutoLock Function	Horton	AutoLock Fail-Safe/Fail-Secure	Control /AutoLock	PNP	3 ft.	C03981.0000
AutoLock Function	Horton	AutoLock Fail-Safe/Fail-Secure	Control /AutoLock	PNP	10 ft.	C03981.0001
AutoLock Function	Horton	AutoLock Fail-Safe/Fail-Secure	Control /AutoLock	PNP	7 ft.	C03981.0002
3-Position Rocker Switch	Horton	'Auto-Off-Hold' Rocker Switch	Jamb/Hdr. Mounted	Flying Leads	1 ft.	C04320.0000
3-Position Rocker Switch	Horton	'Auto-Off-Hold' Rocker Switch- Ext.	Jamb/Hdr. Mounted	Flying Leads	3.5 ft.	C04320.0005
2-Position Rocker Switch	Horton	'On-Off' Rocker Switch	Jamb/Hdr. Mounted	Flying Leads	1 ft.	C05662.0000
2-Position Toggle Switch	Horton	'On-Off' Toggle Switch	Jamb/Hdr. Mounted	Flying Leads	1 ft.	C03961.0000

20. APPENDIX - E

Motor Test_C3150 Control v15.04

The Motor Test is conducted to determine the resistance across the motor. A low or zero resistance will cause high current draw and damage to the control.

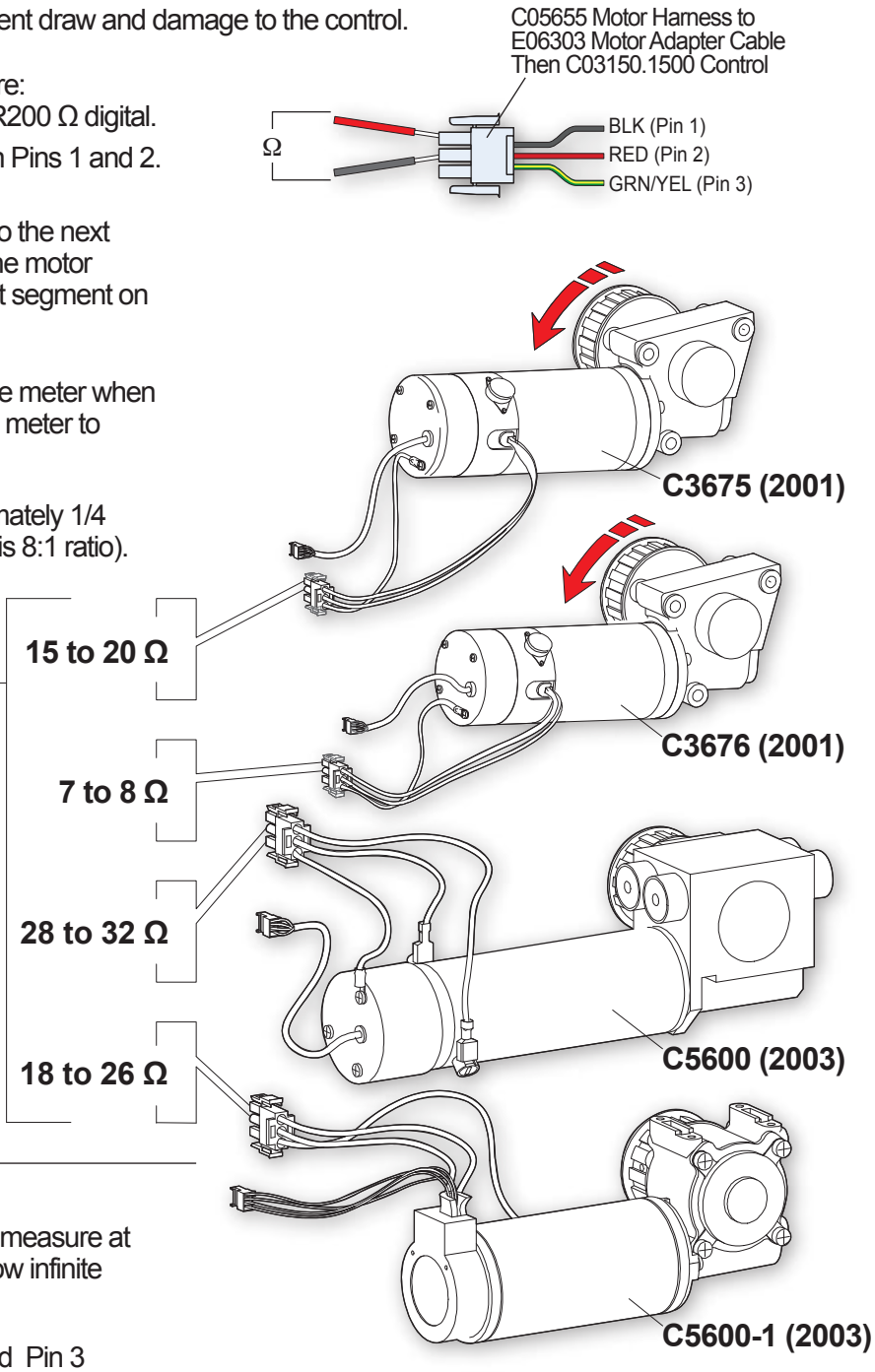
- Place OHM meter in range to measure:
  10 to 50 Ω analog Rx1 range or R200 Ω digital.
- Unplug the motor and place probes in Pins 1 and 2. Read and record the resistance.
- Rotate the motor slightly to advance to the next section of the commutator. (Feel for the motor brushes to make contact with the next segment on the commutator).

NOTICE: A voltage will be induced into the meter when the motor is moved. Therefore wait for the meter to stabilize before taking a reading.

- Continue taking readings for approximately 1/4 revolution of the output pulley (Pulley is 8:1 ratio).

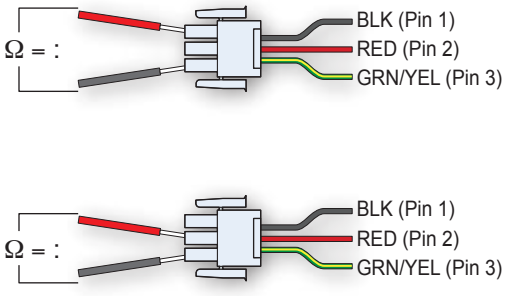
ACCEPTABLE RANGES
Shown for Each Motor Type.

NOTE:
A low reading is critical and will cause damage to the Control.



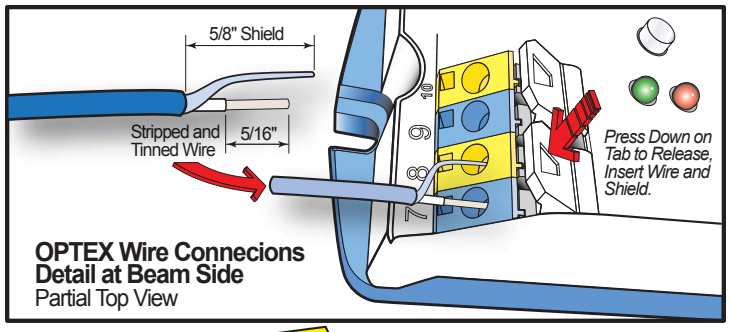
Frame Short Test

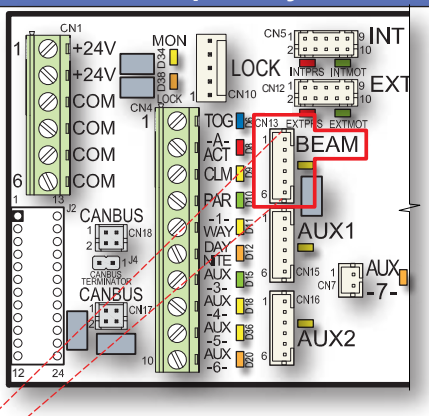
- Place the OHM meter in the range to measure at least 20,000 Ω. The meter should show infinite resistance when connected.
- Place meter probes in Pin 1 (BLK) and Pin 3 (GRN/YEL).
  - *The Meter should not move when the probes are connected.*
- Next, place the meter probes in Pin 2 (RED) and Pin 3 (GRN/YEL).
  - *Again, the Meter should not move when the probes are connected.*



20. APPENDIX - F

Belt or Linear Drives
C07775.0000 Assembly_OPTEX OS12-CT_2 Channel Photoelectric Safety Beam with Amplifier System





C07782 OPTEX OS12C T Amplifier with E06302 (18") Connector/Lace

C03150.1500 Slide Control Partial View

Amplifier Adhered to C1089 Bracket

6 - Black
5 - Red
4 - Yellow
3 - White
2 - Brown
1 - Orange

1 - Orange _CN13-1_ +24V
2 - Brown _CN13-2_ 0V
3 - White _CN13-3_ INPUT
4 - Yellow _CN13-4_ 0V
5 - Red _CN13-5_ +24V
6 - Black _CN13-6_ TEST

14 - Gray Shield
13 - Gray Wire - Emitter

12 - Gray Shield
11 - Gray Wire - Emitter

10 - Blue Shield
09 - Blue Wire - Receiver

08 - Blue Shield
07 - Blue Wire - Receiver

C7781, 15' Blue Receiver Extension Header Lace

C7779, 10' Blue Receiver Extension Door Lace

C7780, 15' Gray Transmitter Extension Header Lace

C7778, 10' Gray Transmitter Extension Door Lace

C7777, 5" Blue Receiver Lace

Receiver

C7776, 5" Gray Transmitter Lace

Emitter

C7781, 15' Blue Receiver Extension Header Lace

C7779, 10' Blue Receiver Extension Door Lace

C7776, 5" Gray Transmitter Lace

Emitter

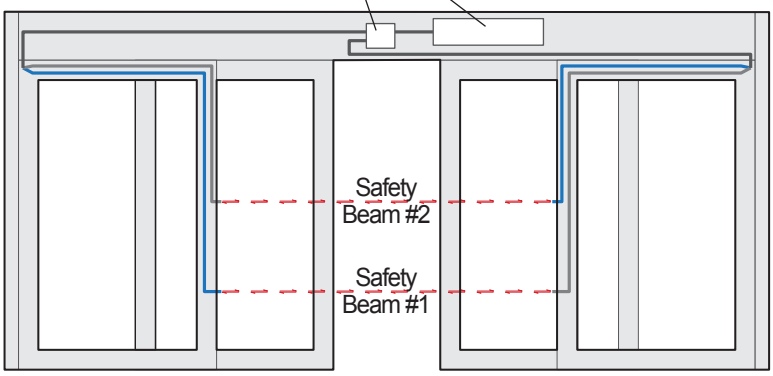
Locate Beam Amplifier as close to the C3150 Control.

C3150 Control

Beam Amplifier

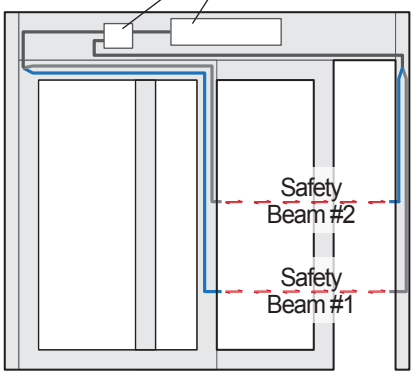
C7777, 5" Blue Receiver Lace

Receiver



Typical Bi-Part Slide Unit Elevation

Beam Amplifier
C3150 Control



Typical Single Slide Unit Elevation

20. APPENDIX - G

Belt or Linear Drives
Masking Parameters in SuperTech Menu

- **Explanation of Masking:**
  Masking refers to assigning a unique number to the various Functions depending on the Sensors chosen. The sum of these assigned numbers are recognized as unique by the processor and the control then functions based on the options chosen.

- There are 4 Masking Parameters in the *SuperTech Menu* and each has a Default Value assigned to it. There are a total of 10 different values depending on the Sensor and Function chosen. There are 4 different Sensor Options and 3 different Function Options to choose from. Note that there could be a separate ON/OFF Parameter for each of the 3 Functions, but the results would require changing 10 different Parameters.

Sensors	Function	Turned ON	Unique Number
Exterior Motion Interior Motion	**Actuates**	Yes / No Yes / No	1024 / 0 256 / 0
Exterior Presence Exterior Motion Interior Presence Interior Motion	**Holds Open**	Yes / No Yes / No Yes / No Yes / No	128 / 0 64 / 0 32 / 0 16 / 0
Exterior Presence Exterior Motion Interior Presence Interior Motion	**Recycles**	Yes / No Yes / No Yes / No Yes / No	8 / 0 4 / 0 2 / 0 1 / 0

MASKING PARAMETERS

Parameter 18, Day 2 - Way
Parameter 19, Day 1 - Way
Parameter 20, Night 2 - Way
Parameter 21, Night 1 - Way

SENSOR OPTIONS

Exterior Motion
Interior Motion
Exterior Presence
Interior Presence

FUNCTION OPTIONS

Actuates
Holds Open
Recycles

- **Entering SuperTech Menu:**
  To enter the *SuperTech Menu*, Hold the **UP** button while Double-Clicking the **SET** button.
  - The Display will read as shown. The *SuperTech Menu* includes the Standard Parameters as well as the *SuperTech Parameters*.

Door Off (Tech)
Super Tech Mode!

- **Masking Example:**
  The Masking Parameter assigns a unique number to each of the Functions listed above. The Sum of any or all of the numbers are recognized as unique by the processor.

- **Example:**
  If you added 1024 (Ext. Motion Activation) + 1 (Int. Motion Recycles), the sum would be 1025 and there is no other combination of these values that can produce 1025.
  - The Processor would know the Exterior Motion Detector will Activate the door and the Interior Motion Detector will Recycle the door and only those Functions will be turned **ON**. Display will read:

Day 2-Way Mask
P18: 1025

- **4 Distinct Modes - Default Values:**
  There are 4 distinct Modes, each with default values (shown above right). Each is available in the C3150 Control and each has a parameter that can be modified using the Masking Parameters.

Day 2-Way Mask
P18: 1535

20. APPENDIX - G cont:

Belt or Linear Drives
Masking Parameters in SuperTech Menu

4 Distinct Modes - Default Values cont:

- Default P19, Day 2-Way Mask display reads:

- Default P20, Night 2-Way Mask displays reads:

- Default P21, Night 1-Way Mask displays reads:

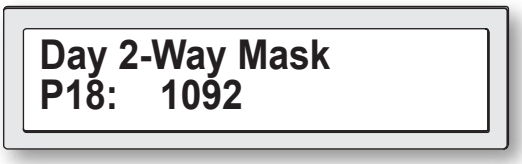
SENSORS	FUNCTION	*Default Day 2-Way PARAMETER 18*	*Default Day 1-Way PARAMETER 19*	*Default Night 2-Way PARAMETER 20*	*Default Night 1-Way PARAMETER 21*
Exterior Motion	**Actuates**	1024	0	0	
Interior Motion		256	256	0	
Exterior Presence	**Holds Open**	128	128	0	128
Exterior Motion		64	64	0	64
Interior Presence		32	32	0	32
Interior Motion		16	16	0	16
Exterior Presence	**Recycles**	8	8	0	8
Exterior Motion		4	4	0	4
Interior Presence		2	2	0	2
Interior Motion		1	1	0	1
Mask Value		***1535***	***511***	***0***	***255***

Changing Masking Parameter:

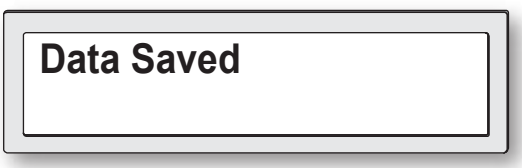
Suppose your customer wanted only the Exterior Motion Detector to open the door, Recycle and Hold Open the door in the 2-Way Day Mode?

Based on the Chart above for 2-Way Day Mode, add the following numbers:
1024 + 64 + 4 = 1092

- Open P18: 1535 (Default Value). Hold **SET** button, then press **DOWN** button and 1535 will begin to count down. When 1092 is reached, release **SET** button, double-click **SET** button to return to normal operation.



- Press and Hold **SET** button until '*Data Saved*' message appears. Exterior Motion should activate, hold open and recycle while all other functions are ignored.



20. APPENDIX - H

Belt or Linear Drives
3 Position Push Button Switch

Installing a 3 - Button *'STOP / OPEN / CLOSE'* Switch

Set the following Parameters as described.

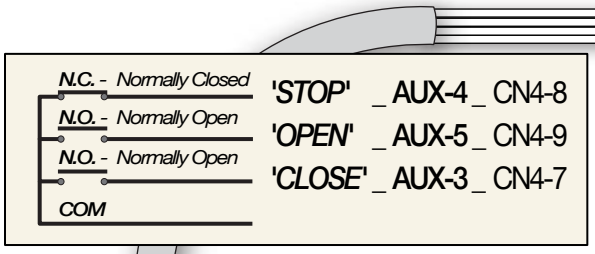
- Turn Parameter 71 '***3-Button Station***' to **ON**.
- Parameter 70 should be **OFF**.
- Turn Parameter 59 '***Stop Input N.C.***' to **ON**.

Wire the switch as described and illustrated below.

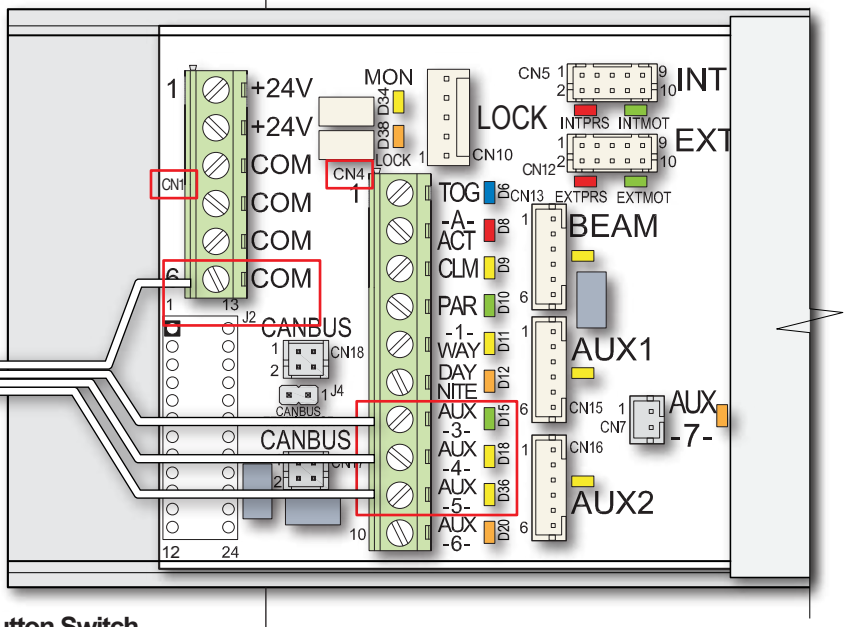
- Connect Normally Closed ***'STOP'*** Button to **AUX4** and **Common**.
- Connect Normally Open ***'OPEN'*** Button to **AUX5** and **Common**.
- Connect Normally Open ***'CLOSE'*** Button to **AUX3** and **Common**.

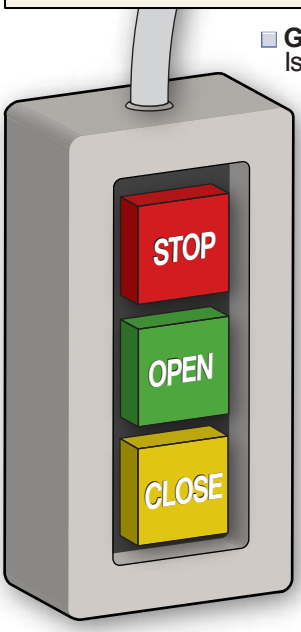
*For **'STOP'**, **'OPEN'** and **'CLOSE'** Button Inputs on a 3-Position Switch, refer to 'Step 2: Switch Input Signals to CN4' on Sht. H310.24, Sections for **AUX-3**, **AUX-4** and **AUX-5**.*

Wiring Diagram
3-Position Push Button Switch



C3150 Control Wiring-
Partial View





Generic 3 - Position Push Button Switch
Isometric View

Version 15.04
(c) Horton 2019

- Press the ***'OPEN'*** button followed immediately by ***'STOP'***, door will start to **OPEN** then **STOP** and display ***'Stop Command.'***

  *Momentary contact **OPENS** door. Display reads the following depending on when **STOP** is pressed:*

  Open Accel > (Act) Latch
  Open Speed > Act) Latch
  Open Check > (Act) Latch
  Open Cushion (Act) Latch

Open Accel
(Act) Latch

Stop Command

- Press the ***'CLOSE'*** button followed immediately by ***'STOP'***, door will start to **CLOSE** then **STOP** and display ***'Stop Command.'***

  *Momentary contact **CLOSES** door. Display reads the following depending on when **STOP** is pressed:*

  Close Accel > (Act) Latch
  Close Speed > (Act) Latch
  Open Check > (Act) Latch
  Open Cushion (Act) Latch

Close Accel
(Act) Latch

Stop Command

20. APPENDIX - I

Belt or Linear Drives
WIRING DIAGRAM_C10891 / C10892 Electric Latch Assembly

- **Positive Electric Latch for Smoke-Rated IDS Single Door Units**
  The ProSlide® Telescoping and Standard S2003 Low-Energy Smoke Rated Automatic IDS- Isolation Door System requires the use of the C10891 / C10892 Electric Latch Assembly for positive latch.
- **Installation Components**
  The Installation of the C10891 (SO-SX-SX) or C10892 (SX-SX-SO) Slide Units requires the C10693 Electric Strike Control Board Assembly along with the C10890 Electric Strike Cable and C03981-X Lock Strike Interface Harness shown below.
  - *Adjust the Parameters listed below for the Electric Latch Assembly.*

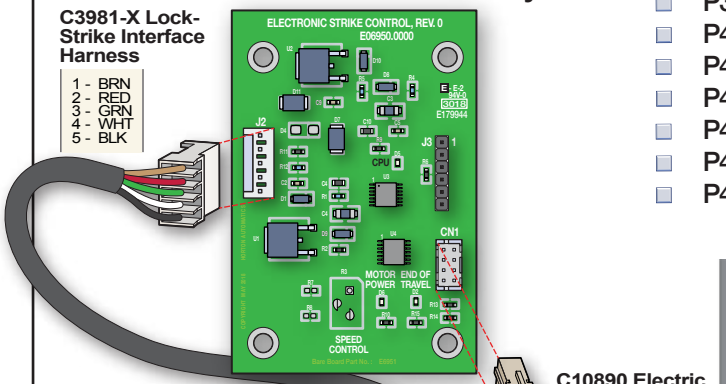
WIRING DIAGRAM

Positive Electric Latch Assembly for the C3150 Sliding Door Control

- **C10693 Electric Strike Control Board Assembly**

C3981-X Lock-Strike Interface Harness

1 - BRN
2 - RED
3 - GRN
4 - WHT
5 - BLK



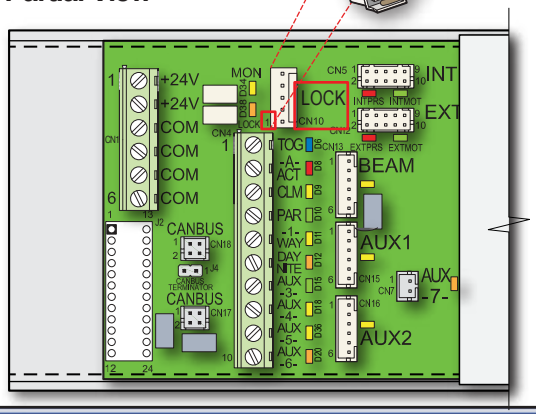
C10890 Electric Strike Cable

1 - GRN
2 - GRN / WHT
3 - ORG
4 - ORG / WHT
5 - BLU
6 - BLU / WHT
7 - BRN
8 - BRN / WHT

C3981-X Lock-Strike Interface Harness

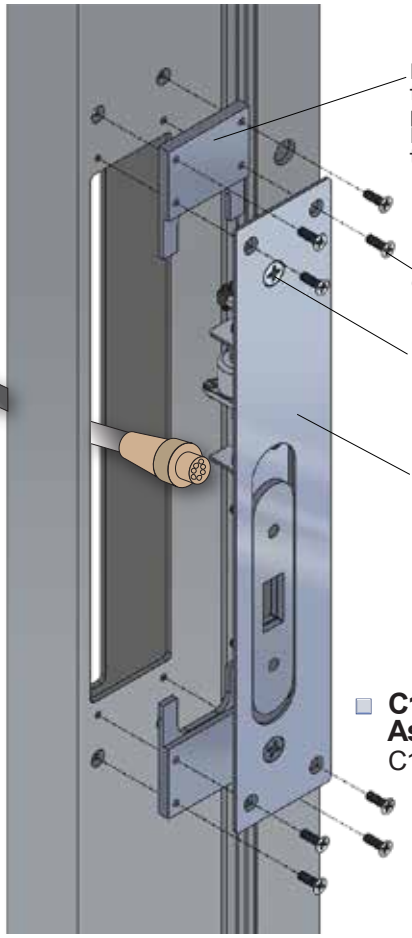
5 - BLK
4 - WHT
3 - GRN
2 - RED
1 - BRN

- **C3150 Control Wiring- Partial View**



Set the following Parameters for the C10891 or C10892 Electric Latch Assembly

P06	(Close Check):	+20 (Will depend on door weight)
P07	(Close Cushion):	+20 (Will depend on door weight)
P35	(Auto Seal):	ON
P41	(Lock Present):	ON (Increase Unlock Delay)
P42	(Lock Present):	ON
P43	(Lock Type- Fail Safe):	OFF
P44	(Lock has no Mon sw):	ON
P45	(Lock in day modes):	ON
P46	(Lock in 1-way Modes):	ON (If door is set for 1-way mode)



Electric Latch Assembly is factory prewired and prepped with the C10708 Mounting Brackets secured to the inside of the Jamb.

C2312-4, #8-32x 1/2" FHMS SS, 8 plcs.

C887-SP, 1/4-20x 3/4" FHMS Undercut, 2 plcs.

C10707-1, Electric Strike Cover Plate - Mounted on Outside Face of Jamb

- **C10892 Electric Latch Assembly for 'SX-SX-S0'**
  C10891 for 'SO-SX-SX'

20. APPENDIX - J

Belt or Linear Drives
Secondary Activation using AUX-3 and AUX-4

Using Secondary Activation

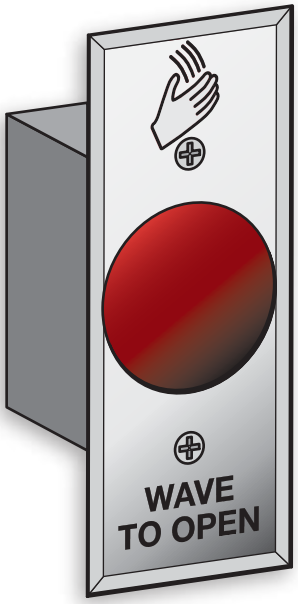
Secondary Activation provides separate 'Knowing Act' Inputs for both the Interior and Exterior Side so that these Inputs can be ignored in the (Security) 1 or 2-Way Night Mode.

Set the following Parameters as described.

- Turn Parameter 70 ***'AUX-3** and **AUX-4** = Secondary Activation'* to **ON**.
- Turn Parameter 59 '***Stop Input N.C.**'* to **OFF**.

C8140 Touchless Switch

'Knowing Act' Activation Sensor
Optional for All Slide Units



C3150 CONTROL WIRING		
WIRE	CONTROL INPUT	ACTIVATION
RED	CN1-1 +24V	
RED	CN1-3 COM	
GRN	CN1-3 COM	
VIOL	NOT USED	
BLU	CN4-7 -3-AUX	INTERIOR ACTIVATION
or		
BLU	CN4-8 -4-AUX	EXTERIOR ACTIVATION

2-Way Day Mode

Activate **AUX-3**: Door will **OPEN** and display, *'Interior Motion'.*

Activate **AUX-4**: Door will **OPEN** and display, *'Exterior Motion'.*

(Int Motion)

(Ext Motion)

1-Way Day Mode

Activate **AUX-3**: Door will **OPEN** and display, *'Interior Motion'.*

Activate **AUX-4**: Door will not **OPEN** and display does not change.

(Int Motion)

Day 1-Way
0d: 0h: 0m: 0s

2-Way Night Mode

Activate **AUX-3**: Door will not **OPEN** and display does not change.

Activate **AUX-4**: Door will not **OPEN** and display does not change.

Night 2-Way
0d: 0h: 0m: 0s

Night 2-Way
0d: 0h: 0m: 0s

1-Way Night Mode

Activate **AUX-3**: Door will not **OPEN** and display does not change.

Activate **AUX-4**: Door will not **OPEN** and display does not change.

Night 1-Way
0d: 0h: 0m: 0s

Night 1-Way
0d: 0h: 0m: 0s

Test Beam Sensor Prior to Opening

Attach monitored Beam Sensor and turn **ON** Parameter 63.

- Activate door and observe **BEAM** Yellow **LED D69**.
- D69 should not blink before opening but it should blink prior to closing (assuming that Parameter 69 is in the default **OFF** position).

SuperTech Menu Version

To enter SuperTech Menu, **HOLD** the **UP** button while double-pressing the **SET** button. Scroll to Parameter 69, *'Snsr test before opening'* and turn it **ON**.

- Activate door and observe **BEAM** Yellow **LED D69**.
- LED D69 should blink before door opens and closes.

20. APPENDIX - J cont:

Belt or Linear Drives
WIRING DIAGRAM_Secondary Activation using AUX-3 and AUX-4

Wiring Diagrams - Using Secondary Activation

Secondary Activation provides separate 'Knowing Act' Inputs for both the Interior and Exterior Side so that these Inputs can be ignored in the (Security) 1 or 2-Way Night Mode.

Set the following Parameters as described.

Turn Parameter 70 *'**AUX-3** and **AUX-4** = **Secondary Activation**'* to **ON**.
Turn Parameter 59 '***Stop Input N.C.***' to **OFF**.

Secondary Activation 'Knowing Act' Devices are wired into **AUX-3** (Interior Device) and **AUX-4** (Exterior Device).

C3150 Partial Control View

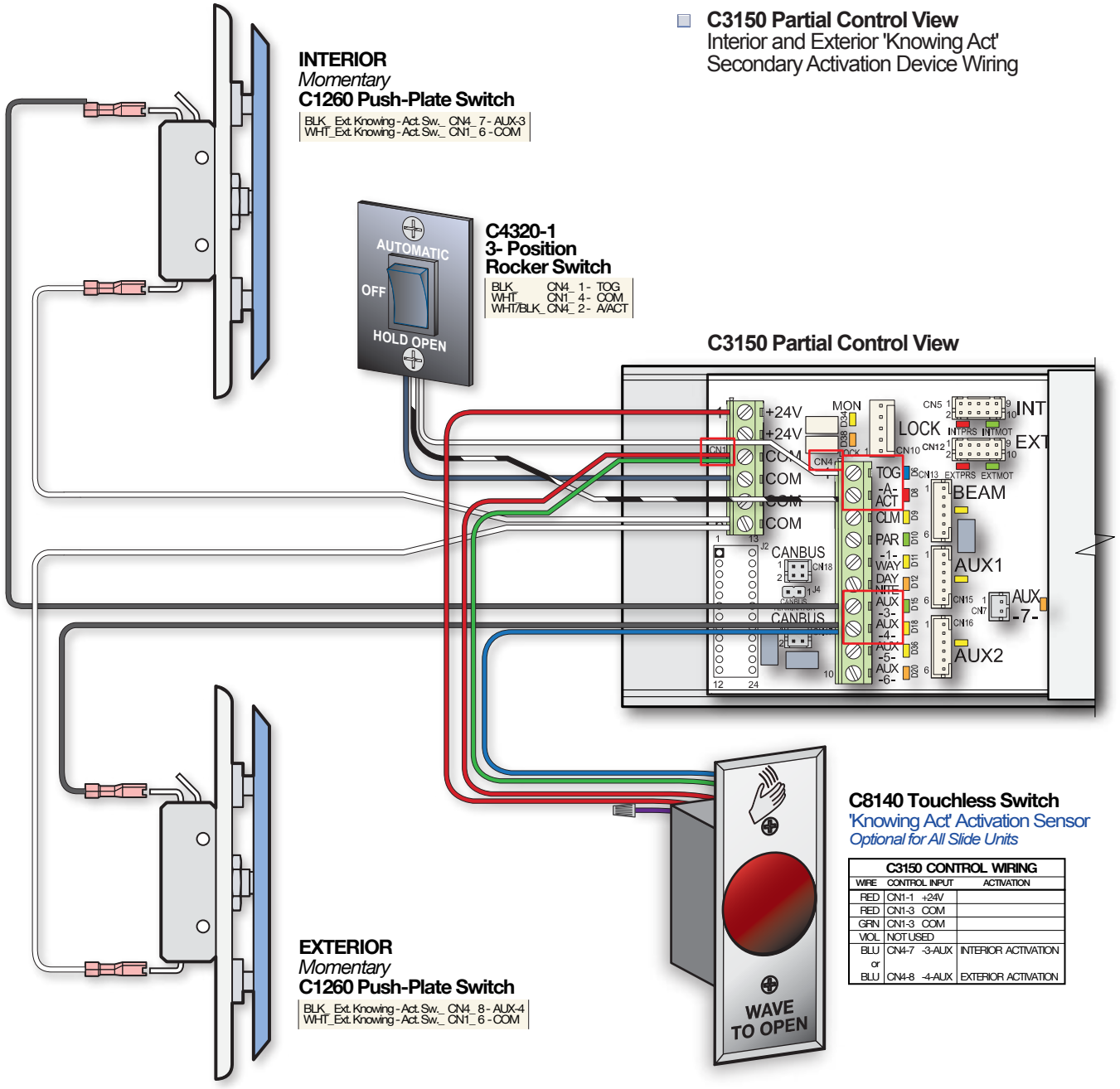
Interior and Exterior 'Knowing Act' Secondary Activation Device Wiring

INTERIOR
Momentary
C1260 Push-Plate Switch

BLK_ Ext. Knowing - Act. Sw._ CN4_ 7 - AUX-3
WHT_Ext. Knowing - Act. Sw._ CN1_ 6 - COM

C4320-1
3- Position
Rocker Switch

BLK_ CN4_ 1 - TOG
WHT_ CN1_ 4 - COM
WHT/BLK_ CN4_ 2 - A/ACT



EXTERIOR
Momentary
C1260 Push-Plate Switch

BLK_ Ext. Knowing - Act. Sw._ CN4_ 8 - AUX-4
WHT_Ext. Knowing - Act. Sw._ CN1_ 6 - COM

C8140 Touchless Switch
'Knowing Act' Activation Sensor
Optional for All Slide Units

C3150 CONTROL WIRING		
WIRE	CONTROL INPUT	ACTIVATION
RED	CN1-1 +24V	
RED	CN1-3 COM	
GRN	CN1-3 COM	
VIOL	NOT USED	
BLU	CN4-7 -3-AUX	INTERIOR ACTIVATION
or		
BLU	CN4-8 -4-AUX	EXTERIOR ACTIVATION

Illustration 2: C3150 Slide Door Control TERMINAL BLOCK I/O CONNECTIONS and LED DESCRIPTIONS

C3150 SLIDE CONTROL
Terminal Block/Connector Descriptions

CN1 Input Terminal Block	
CN1-1	+24V
CN1-2	+24V
CN1-3	COM
CN1-4	COM
CN1-5	COM
CN1-6	COM
Low Voltage / COM Connections	

CN4 Input Terminal Block			
CN4-1	TOG	CN4-6	DAYNITE
CN4-2	A-ACT	CN4-7	AUX-3
CN4-3	CLM	CN4-8	AUX-4
CN4-4	PAR	CN4-9	AUX-5
CN4-5	1-WAY	CN4-10	AUX-6
Operational Inputs			

CN10_ Connector 1x5 LOCK	
CN10-1	+24V
CN10-2	LOCK
CN10-3	N/C
CN10-4	LKM
CN10-5	COM
Automatic Lock Connection - (Optional: Fail-Safe / Fail-Secure)	

CN5_ Connector 2x5 INT - Interior Approach Sensor			
CN5-1	+24V	CN5-6	COM
CN5-2	COM	CN5-7	MOT-IN
CN5-3	PRES-IN	CN5-8	N/C
CN5-4	COM	CN5-9	TEST -
CN5-5	N/C	CN5-10	TEST +
Sensor Monitoring Supported			

CN12_ Connector 2x5 EXT - Exterior Approach Sensor			
CN12-1	+24V	CN12-6	COM
CN12-2	COM	CN12-7	MOT-IN
CN12-3	PRES-IN	CN12-8	N/C
CN12-4	COM	CN12-9	TEST -
CN12-5	N/C	CN12-10	TEST +
Sensor Monitoring Supported			

CN3_ Connector 1x4 Rod - Linear Drive	
CN3-1	CHAN-B
CN3-2	+5V
CN3-3	+5V
CN3-4	COM
Microswitch Harness - Door Position	

CN9_ Connector 1x2 Incoming Power	
CN9-1	120VAC LINE
CN9-2	NEUTRAL
Primary Main Power (120VAC / 220VAC)	

CN11_Connector 2x5 Transformer	
CN11-1	NEUTRAL
CN11-2	120V
CN11-3	EARTH GRND
CN11-4	24V
CN11-5	90V
CN11-6	NEUTRAL
CN11-7	120V
CN11-8	EARTH GRND
CN11-9	24V
CN11-10	90V
External Power Transformer (120VAC / 220VAC)	

CN13_ Connector 1x6 BEAM	
CN13-1	+24V
CN13-2	COM
CN13-3	INPUT
CN13-4	COM
CN13-5	+24V
CN13-6	TEST
Threshold Safety Beam - Sensor Monitoring Supported	

CN15_ Connector 1x6 AUX 1	
CN15-1	+24V
CN15-2	COM
CN15-3	INPUT
CN15-4	COM
CN15-5	+24V
CN15-6	TEST
Side Screen Protection - Sensor Monitoring Supported	

CN16_ Connector 1x6 AUX 2	
CN16-1	+24V
CN16-2	COM
CN16-3	INPUT
CN16-4	COM
CN16-5	+24V
CN16-6	TEST
Side Screen Protection - Sensor Monitoring Supported	

CN7_ Connector 1x2 AUX 7	
CN7-1	+5V
CN7-2	COM
Dedicated Input for E06970 Power-Fail Open Module	

CN17_ Connector 2x2 CANBUS Port			
CN17-1	COM	CN17-2	CANL
CN17-3	CANH	CN17-4	+24V
Not Currently Enabled			

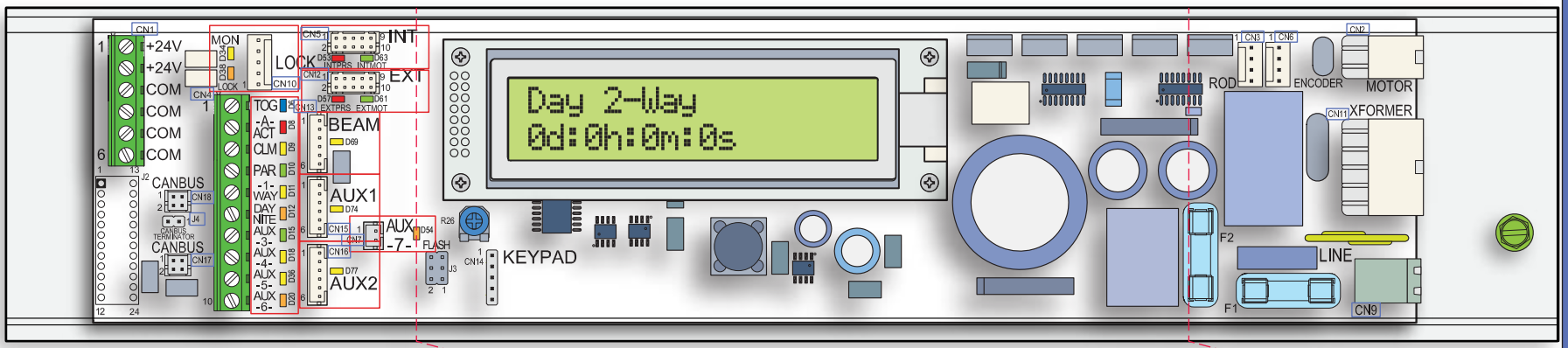
CN18_ Connector 2x2 CANBUS Port			
CN18-1	COM	CN18-2	CANL
CN18-3	CANH	CN18-4	+24V
Not Currently Enabled			

J4_ Jumper CANBUS Terminator			
J4-1	CANH	J4-2	CANL
Not Currently Enabled			

CN6_ Connector 1x4 Encoder	
CN6-1	+5V
CN6-2	CHAN-A
CN6-3	CHAN-B
CN6-4	COM
Door Position	

CN2_ Connector 2x2 Motor Power			
CN2-1	LINE-1	CN2-2	LINE-2
CN2-3	EARTH GRND	CN2-4	EARTH GRND
Motor Power Connections			

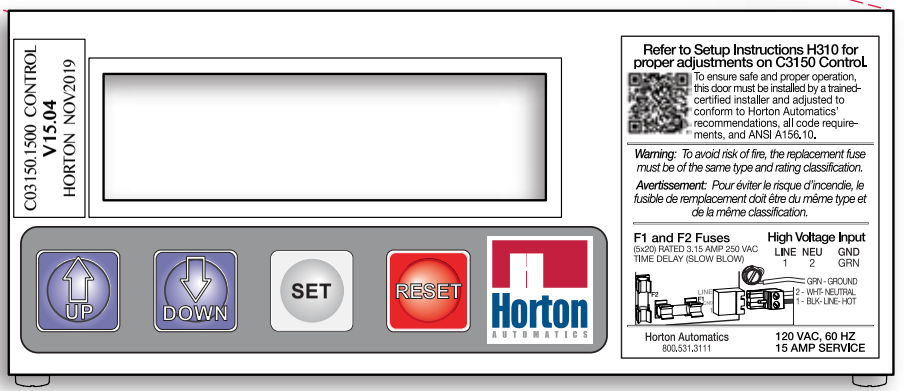
C03150.1500 SLIDE CONTROL
Front Elevation



C3150 SLIDE CONTROL
LED Descriptions

D6	TOG	D6_ Blue LED_	*Toggle (ON-OFF)*
D8	A-ACT	D8_ Red LED_	*Auxiliary Actuate (3 Button)*
D9	CLM	D9_ Yellow LED_	*Close Monitor Switch*
D10	PAR	D10_Green LED_	*Partial Open Enable*
D11	1-Way	D11_Yellow LED_	*1-Way (Exit Only) / 2-Way (Auto) Mode*
D12	DAYNITE	D12_Orange LED_	*Day/Nite Mode Select*
D15	AUX-3	D15_Green LED_	*Aux 3 (Close Button on 3-Position Switch)*
D18	AUX-4	D18_Yellow LED_	*Aux 4 (Stop Button on 3-Position Switch)*
D36	AUX-5	D36_Yellow LED_	*Aux 5 (Latch- Press Open/Press Close)*
D20	AUX-6	D20_Orange LED_	*Aux 6 (Fire Alarm Input - Presently Not Used)*
D34	MON	D34_Yellow_CN10 LED_	*Lock Monitor Switch*
D38	LOCK	D38_Orange_CN10 LED_	*AutoLock (Fail-Safe, Fail-Secure)*
D53	INTPRS	D53_Red_CN5 LED_	*Interior-Presence Sensor*
D63	INTMOT	D63_Green_CN5 LED_	*Interior-Motion Sensor*
D57	EXTPRS	D57_Red_CN12 LED_	*Exterior-Presence Sensor*
D61	EXTMOT	D61_Green_CN12 LED_	*Exterior-Motion Sensor*
D69	BEAM	D69_Yellow_CN13 LED_	*Safety Beam (Threshold)*
D74	AUX1	D74_Yellow_CN15 LED_	*Auxiliary 1 (Side Screen Protect)*
D77	AUX2	D77_Yellow_CN16 LED_	*Auxiliary 2 (Side Screen Protect)*
D54	AUX7	D54_Orange_CN7 LED_	*Auxiliary 7 (Unused)*

C03150.0051 CONTROL METAL COVER
Front Elevation



20. APPENDIX - L

Belt or Linear Drives
C3809 Power Fail Assembly for the C3150 Control

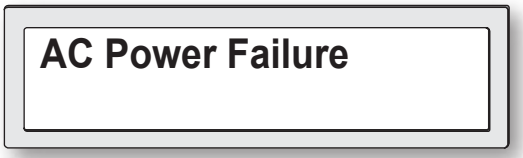
- One-shot C3809 Power Fail Module monitors incoming AC power and automatically switches to 24VDC when power fails.
- While AC power fail is not occurring, the one-shot power fail module maintains battery charge and monitors battery voltage.
  - **LED's**
    Several LED's can be used to understand what the Power Fail Module is doing at anytime. Refer to Table below.

LED		CONTROL / POWER FAIL MODULE EVENT			
Color and Description		Normal Operation	AC Failure	24-Hour Test	Battery Failure
D14-YEL	**CPU LED**	Blinking	Blinking	Blinking	Blinking
D15-GRN	**BATT CHRGD**	On	On	On	Off
D16-RED	**OUTPUT to DCU**	Off	Blinking	Blinking	On
D18-RED	**AC FAIL**	Off	On	Off	Off
D19-RED	**BATT**	Off	On	On	Off
D20-RED	**24 HOUR**	Off	Off	On	Off

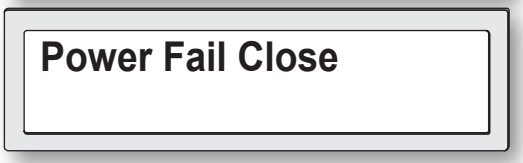
- The Power Fail routine occurs when AC power is lost. LED's are reflected in the Table above. Upon successfully either opening or closing door (via Parameter in DCU) and in Day/Night Mode (again via another Parameter in DCU), DC power is cut to the control and the system turns back ON when AC power returns.
- The 24-Hour Test runs when the 24 hour Jumper is (re)seated, once *approximately* every 24 hours. This is the same exact test as a power fail routine from above, except that the system does not shut off afterwards. The purpose is to test the ability of the batteries to complete a successful door open / close cycle under their own power.
- The battery failure routine is triggered when battery voltage falls below approximately 21.6VDC (nominal is between 24 and 26VDC). Again, LEDs for this test are shown in the Table above. **For Wiring Schematic, refer to Wiring Diagram 1, Sheet H310.60**.

AC Power Fail / 24 Hour Test Screens

- Initial message reads:

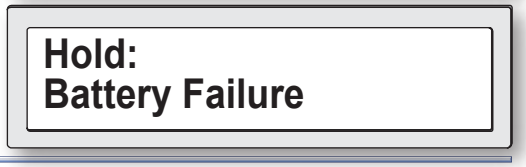


- (*Power Fail Close* or *Power Fail Open*) during cycle.



- Routine complete.

- Battery Fail event.



Linear or Belt Drives
Diagram 1: C3809 Power Fail Assembly for the C3150 Control, 120VAC Configuration

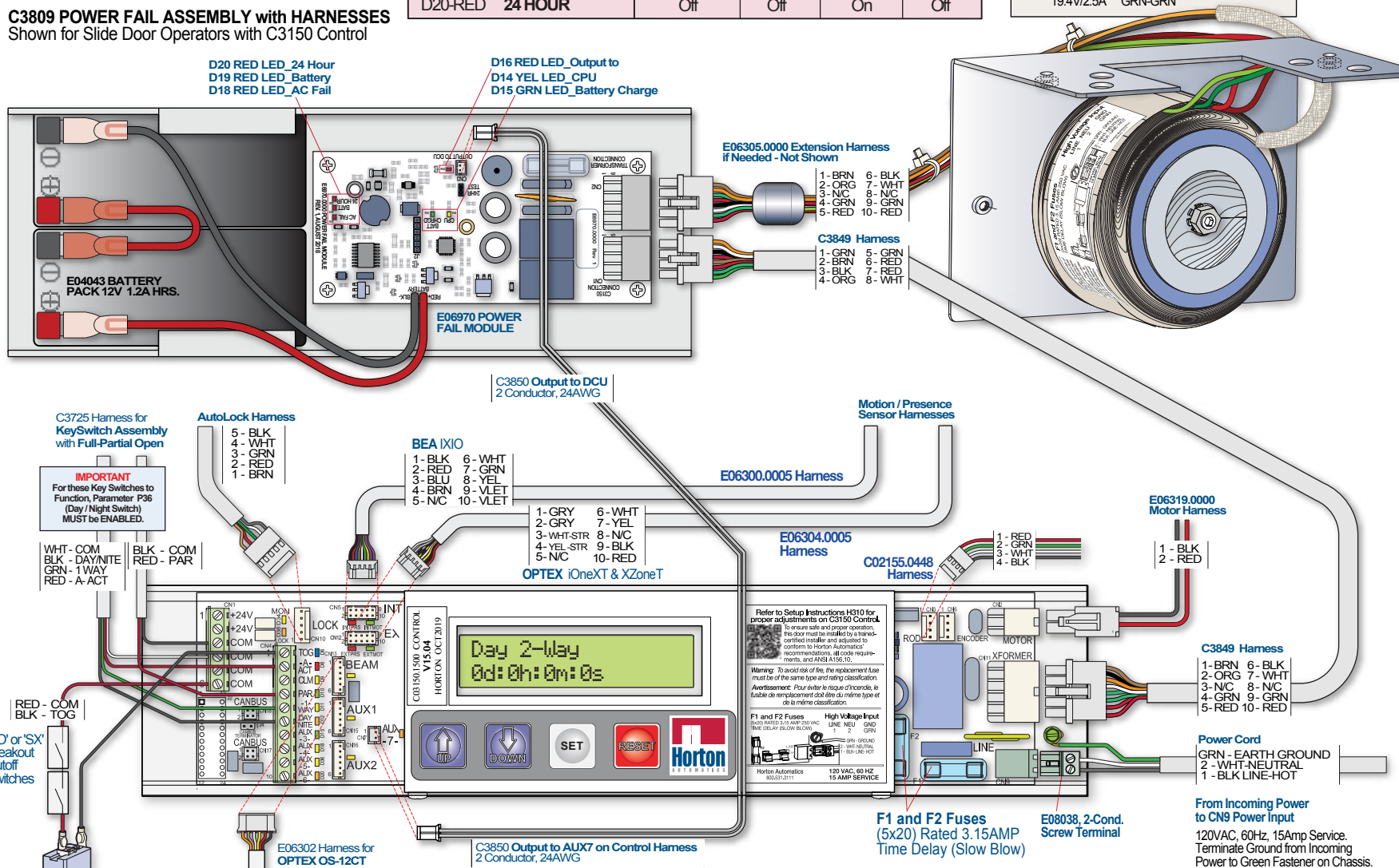
Refert to Sect. 20, APPENDIX D, on Sht. H310.50 for 'List of Wire Laces Used on the C03150.1500 Slide Control.'

LED Color and Description		CONTROL / POWER FAIL MODULE EVENT Normal Operation	AC Failure	24-Hour Test	Battery Failure
D14-YEL	CPU LED	Blinking	Blinking	Blinking	Blinking
D15-GRN	BATT CHRGD	On	On	On	Off
D16-RED	OUTPUT to DCU	Off	Blinking	Blinking	On
D18-RED	AC FAIL	Off	On	Off	Off
D19-RED	BATT	Off	On	On	Off
D20-RED	24 HOUR	Off	Off	On	Off

C3150.3924 TRANSFORMER ASSEMBLY
120VAC CONFIGURATION

I/P:	0V-120V	0V-120V
	BLK-WHT	BRN-ORG
O/P:	90V/2A	RED-RED
	19.4V/2.5A	GRN-GRN

C3809 POWER FAIL ASSEMBLY with HARNESSES
Shown for Slide Door Operators with C3150 Control



C03150.1500 MICROPROCESSOR CONTROL ASSEMBLY
For Slide Door Operators

Horton AUTOMATICS The Automatic Choice

Linear Drives
Diagram 2: C3150 Control with Actuating and Switch Connections

INTERIOR SENSOR

BEA IXIO-DT1
Rad Output - DeEner/NO
AIR Output - DeEner/NO
Redirection - 0
Test - On

OR

OPTEX iOneXT / XZoneT
Activation Output - N.O.
Safety Output - N.O.
Simultaneous Output - OFF
Safety / Test Input - LOW

Dipswitch Settings for Optex Sensors

Function	iOneXT	XZoneT	
Safety Output- N.O.	DS 15 ON	DS 12 N.O.	Factory Default Settings
Safety / Test Input- OFF	DS 16 LOW	DS 13 LOW	Change Dipswitches as Shown

IMPORTANT !
It is imperative that these Dipswitches are in the correct position.

Refert to Sect. 20, APPENDIX D, on Sht. H310.50 for 'List of Wire Laces Used on the C03150.1500 Slide Control.'

EXTERIOR SENSOR

OPTEX iOneXT / XZoneT
Activation Output - N.O.
Safety Output - N.O.
Simultaneous Output - OFF
Safety / Test Input - LOW

OR

BEA IXIO-DT1
Rad Output - DeEner/NO
AIR Output - DeEner/NO
Redirection - 0
Test - On

IMPORTANT
For these Key Switches to Function, Parameter P36 (Day / Night Switch) MUST be ENABLED.

2 WAY AUTO
OFF
1 WAY
HOLD OPEN
FULL OPEN
1 / 2 OPEN

1 - RED
C - WHT
3 - BLK
4 - GRN

5 - BLK
4 - RED

Shown:
C3725 Key Switch Assy. with Full-Partial Open

Optional:
C3725-1 Key Switch Assy. without Full-Partial Open
C3726 Rotary Switch Assy. with Full-Partial Open
C3726-1 Rotary Switch Assy. without Full-Partial Open

C3877 Fail-Safe Autolock Shown,
C3876 Fail-Secure Autolock Available

BEA IXIO
1 - BLK 6 - WHT
2 - RED 7 - GRN
3 - BLU 8 - YEL
4 - BRN 9 - VLET
5 - N/C 10 - VLET

OPTEX iOneXT & XZoneT
1 - GRY 5 - WHT-STR
2 - GRY 6 - YEL -STR
3 - WHT 7 - RED
4 - YEL 8 - BLK

Interior Sensor to INT Input
BEA IXIO
E06304.0005_5 ft. Harness
E06304.0010_10 ft. Harness

Exterior Sensor to EXT Input
OPTEX iOneXT & XZoneT
E06304.0005_5 ft. Sensor Harness
E06304.0010_10 ft. Sensor Harness

C2155-4 MICROSWITCH HARNESS
For Linear Drive Operators
C02155.0448 Harness

CLOSE CUT-OFF SWITCH
CLOSE CHECK SWITCH
OPEN CHECK SWITCH
OPEN CUT-OFF SWITCH
NC
NO
COM
GRN
WHT
BLK
RED

C04011.0001 MOTOR
90 VDC 1/8 HP
1800 RPM

1 - WHT
2 - BLK
3 - GRN
4 - RED

1 - RED
2 - BLK

E06302.0000 Harness
5 - BLK
4 - WHT
3 - GRN
2 - RED
1 - BRN

BEA IXIO
1 - BLK 6 - WHT
2 - RED 7 - GRN
3 - BLU 8 - YEL
4 - BRN 9 - VLET
5 - N/C 10 - VLET

E06300.0005 Harness

1 - GRY 6 - WHT
2 - GRY 7 - YEL
3 - WHT-STR 8 - N/C
4 - YEL -STR 9 - BLK
5 - N/C 10 - RED

E06304.0005 Harness
OPTEX iOneXT & XZoneT

C02155.0448 Harness

1 - RED
2 - GRN
3 - WHT
4 - BLK

1 - BLK
2 - RED

C3150.3924
TRANSFORMER ASSEMBLY
120VAC CONFIGURATION

I/P:	0V-120V	0V-120V
	BLK-WHT	BRN-ORG
O/P:	90V/2A	RED-RED
	19.4V/2.5A	GRN-GRN

E06319.0000 Harness

1 - BLK
2 - RED

E06305.0000 Extension Harness if Needed - Not Shown

1 - BRN 6 - BLK
2 - ORG 7 - WHT
3 - N/C 8 - N/C
4 - GRN 9 - GRN
5 - RED 10 - RED

WHT - COM
BLK - DAY/NITE
GRN - 1 WAY
RED - A- ACT

BLK - COM
RED - PAR

LOCK
INT
EXT
BEAM
AUX1
AUX2
CANBUS
+24V
COM

Day 2-Way
0d:0h:0m:0s

SET
RESET
UP
DOWN
Horton

C03150.1500 CONTROL
V15.04
HORTON OCT2019

Refer to Setup Instructions H310 for proper adjustments on C3150 Control.
To ensure safe and proper operation, this door must be installed by a trained-certified installer and adjusted to conform to Horton Automatics' recommendations, all code requirements, and ANSI A156.10.
Warning: To avoid risk of fire, the replacement fuse must be of the same type and rating classification.
Avertissement: Pour éviter le risque d'incendie, le fusible de remplacement doit être du même type et de la même classification.
F1 and F2 Fuses
High Voltage Input
Horton Automatics
120 VAC, 60 Hz. 15 AMP SERVICE

RODS
ENCODER
MOTOR
XFORMER
LINE
F1
F2
CN9

GRN - EARTH GRND
GRN - EARTH GROUND
2 - WHT-NEUTRAL
1 - BLK LINE-HOT

C03150.1500 MICROPROCESSOR CONTROL ASSEMBLY
For Slide Door Operators

F1 and F2 Fuses
(5x20) Rated 3.15AMP
Time Delay (Slow Blow)

E08038, 2-Cond. Screw Terminal

From Incoming Power to CN9 Power Input
120VAC, 60Hz, 15Amp Service. Terminate Ground from Incoming Power to Green Fastener on Chassis.

120 VAC, 60 Hz, 15 Amp Service

WHT
BLK/WHT
BLK
Rocker Sw. CN4 1 - TOG
Rocker Sw. CN4 2 - ACT
Rocker Sw. CN1 9 - COM

RED - COM
BLK - TOG

E06302.0000 Harness
1 - ORG
2 - BRN
3 - WHT
4 - YEL
5 - RED
6 - BLK

'SO' or 'SX' Breakout Cutoff Switches

OPTEX OS-12C T
C7775 Two-Channel Photoelectric Safety Beam with Amplifier Assembly
REFER TO MANUFACTURER'S INSTRUCTIONS FOR PROGRAMMING

STRIPPED & TINNED WIRES AT 7, 9, 11, & 13

ORG
BRN
WHT
YEL
RED
BLK

USE MODE 4 (ACTIVE LO / N.O.)

SHIELDING CONNECTS TO 8, 10, 12, & 14

SAFETY BEAM 2
SAFETY BEAM 1

HOLD OPEN

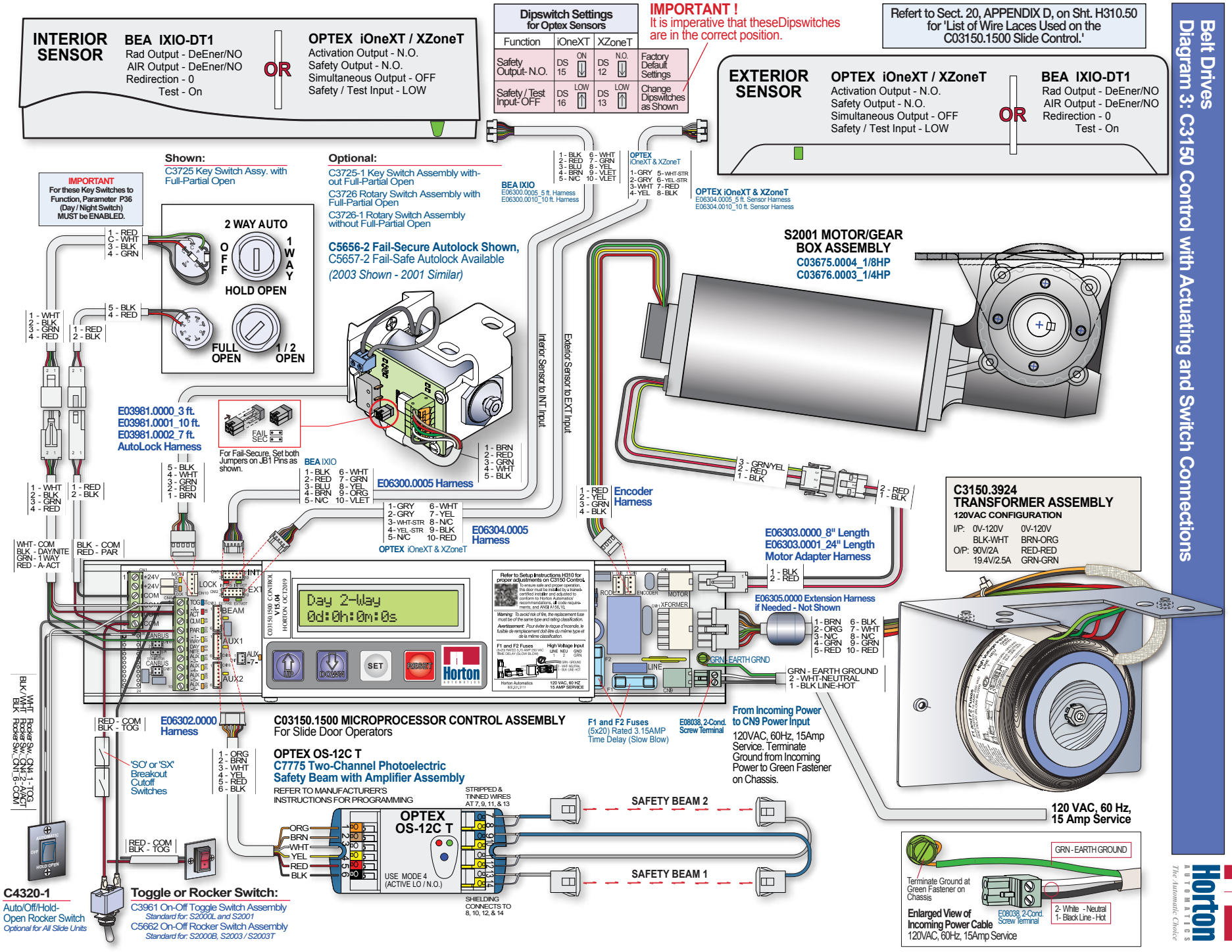
C4320-1
Auto/Off/Hold-Open Rocker Switch
Optional for All Slide Units

Toggle or Rocker Switch:
C3961 On-Off Toggle Switch Assembly
Standard for: S2000L and S2001
C5662 On-Off Rocker Switch Assembly
Standard for: S2000B, S2003 / S2003T

GRN - EARTH GROUND
Terminate Ground at Green Fastener on Chassis
E08038, 2-Cond. Screw Terminal
2- White - Neutral
1- Black Line - Hot

Enlarged View of Incoming Power Cable
120VAC, 60Hz, 15Amp Service

Horton AUTOMATICS The Automatic Choice


INTERIOR SENSOR
BEA IXIO-DT1
Rad Output - DeEner/NO
AIR Output - DeEner/NO
Redirection - 0
Test - On
OR
OPTEX iOneXT / XZoneT
Activation Output - N.O.
Safety Output - N.O.
Simultaneous Output - OFF
Safety / Test Input - LOW
Dipswitch Settings for Optex Sensors
Function | iOneXT | XZoneT
Safety Output- N.O. | DS 15 ON | DS 12 N.O. | Factory Default Settings
Safety / Test Input- OFF | DS 16 LOW | DS 13 LOW | Change Dipswitches as Shown
IMPORTANT !
It is imperative that theseDipswitches are in the correct position.
Refert to Sect. 20, APPENDIX D, on Sht. H310.50 for 'List of Wire Laces Used on the C03150.1500 Slide Control.'
EXTERIOR SENSOR
OPTEX iOneXT / XZoneT
Activation Output - N.O.
Safety Output - N.O.
Simultaneous Output - OFF
Safety / Test Input - LOW
OR
BEA IXIO-DT1
Rad Output - DeEner/NO
AIR Output - DeEner/NO
Redirection - 0
Test - On
Shown:
C3725 Key Switch Assy. with Full-Partial Open
Optional:
C3725-1 Key Switch Assembly without Full-Partial Open
C3726 Rotary Switch Assembly with Full-Partial Open
C3726-1 Rotary Switch Assembly without Full-Partial Open
IMPORTANT
For these Key Switches to Function, Parameter P36 (Day / Night Switch) MUST be ENABLED.
2 WAY AUTO
OFF
1 WAY
HOLD OPEN
FULL OPEN
1 / 2 OPEN
C5656-2 Fail-Secure Autolock Shown,
C5657-2 Fail-Safe Autolock Available
(2003 Shown - 2001 Similar)
BEA IXIO
E06300.0005_5 ft. Harness
E06300.0010_10 ft. Harness
OPTEX iOneXT & XZoneT
E06304.0005_5 ft. Sensor Harness
E06304.0010_10 ft. Sensor Harness
S2001 MOTOR/GEAR BOX ASSEMBLY
C03675.0004_1/8HP
C03676.0003_1/4HP
E03981.0000_3 ft.
E03981.0001_10 ft.
E03981.0002_7 ft.
AutoLock Harness
FAIL SEC
For Fail-Secure, Set both Jumpers on JB1 Pins as shown.
Interior Sensor to INT Input
Exterior Sensor to EXT Input
E06300.0005 Harness
E06304.0005 Harness
OPTEX iOneXT & XZoneT
Encoder Harness
E06303.0000_8" Length
E06303.0001_24" Length
Motor Adapter Harness
E06305.0000 Extension Harness if Needed - Not Shown
C3150.3924
TRANSFORMER ASSEMBLY
120VAC CONFIGURATION
I/P: 0V-120V BLK-WHT 0V-120V BRN-ORG
O/P: 90V/2A 19.4V/2.5A RED-RED GRN-GRN
C03150.1500 CONTROL V15.04 HORTON OCT2019
Day 2-Way
0d:0h:0m:0s
UP
DOWN
SET
RESET
Horton
C03150.1500 MICROPROCESSOR CONTROL ASSEMBLY
For Slide Door Operators
F1 and F2 Fuses
(5x20) Rated 3.15AMP
Time Delay (Slow Blow)
E08038, 2-Cond. Screw Terminal
From Incoming Power to CN9 Power Input
120VAC, 60Hz, 15Amp Service. Terminate Ground from Incoming Power to Green Fastener on Chassis.
120 VAC, 60 Hz, 15 Amp Service
E06302.0000 Harness
'SO' or 'SX' Breakout Cutoff Switches
OPTEX OS-12C T
C7775 Two-Channel Photoelectric Safety Beam with Amplifier Assembly
REFER TO MANUFACTURER'S INSTRUCTIONS FOR PROGRAMMING
STRIPPED & TINNED WIRES AT 7, 9, 11, & 13
ORG
BRN
WHT
YEL
RED
BLK
USE MODE 4 (ACTIVE LO / N.O.)
SHIELDING CONNECTS TO 8, 10, 12, & 14
SAFETY BEAM 2
SAFETY BEAM 1
C4320-1
Auto/Off/Hold-Open Rocker Switch
Optional for All Slide Units
Toggle or Rocker Switch:
C3961 On-Off Toggle Switch Assembly
Standard for: S2000L and S2001
C5662 On-Off Rocker Switch Assembly
Standard for: S2000B, S2003 / S2003T
Enlarged View of Incoming Power Cable
120VAC, 60Hz, 15Amp Service
Terminate Ground at Green Fastener on Chassis
GRN - EARTH GROUND
2- White - Neutral
1- Black Line - Hot

21. WIRING DIAGRAMS cont:

Diagram Notes

21. WIRING DIAGRAMS cont:

Diagram Notes / Horton Automatics Contact Information

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The Automatic Choice

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