How to retrofit a Rytec Spiral® door with the SmartSurround™ light curtains, Advanced® light curtains and CAN bus cabling

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Status: Active

IMPORTANT: Read this entire bulletin before proceeding.  

The meaning of signal words

Technical content produced by Rytec includes safety information which must be read, understood and obeyed to reduce the risk of death, personal injury or equipment damage. This information is boxed to set it apart from other text. The boxed text identifies the nature of the hazard and appropriate steps to avoid it. The safety alert symbol identifies a situation that can result in personal injury. The accompanying signal word indicates the likelihood and potential severity of the injury. The meaning of the signal words is as follows:

WARNING  
Warning indicates a hazardous situation that, if not avoided, could result in death or serious injury.

Safety icons used in this bulletin

Shock hazard  
Fall hazard  
Crush hazard  
Cut hazard

Other icons used in this bulletin

Indicates instructions which, if not followed, could result in damage to the door or voiding of the warranty.  
Indicates best practice. This is how Rytec Technical Support does the job.

Printing this manual

If printing this manual, ensure it’s printed on 11’ x 17’ paper at Actual Size and not Shrink to Fit so that the included drilling templates are accurate.

Retrofit safety

- Do not service any Rytec product until you have read and understood the safety information and instructions. Make sure all applicable regulations are observed and obeyed at all times.
- Observe these precautions while installing the door:
  - Only trained, qualified and authorized individuals are to service the door.
  - The service site comprises the physical area required to safely unpack and stage components and service the door.
  - Make sure all personnel at the site have been informed of the date, time and location of the service.
  - Make sure there is no pedestrian or vehicular traffic within the service site for the duration of the service.
  - Make sure you have and use all required Personal Protective Equipment.
  - Make sure you are aware of the location of all power lines, piping and HVAC systems within the installation site.

Requirements – Staffing

- Two service personnel are recommended.
- A licensed electrician is recommended for making all electrical connections

Requirements – Lifts

WARNING
Follow all safety instructions on all lifts and ladders used for this installation.

Scissor lift that meets the following specifications:
- Can hold both service personnel.
- Minimum height ability: door height

Alternatively, two ladders of sufficient height to safely access the door head assembly

Tools and supplies you will need

<table>
<thead>
<tr>
<th>Tools</th>
<th>Supplies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angle grinder or jig saw</td>
<td>Cutting pliers</td>
</tr>
<tr>
<td>Power drill with these drill bits</td>
<td>CHisel</td>
</tr>
<tr>
<td>File</td>
<td>Utility knife</td>
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<tr>
<td>(2) Saw horses</td>
<td>Wire stripper</td>
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<tr>
<td>(2) C-clamps</td>
<td>Precision screwdriver</td>
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<tr>
<td>Laser level</td>
<td>Fish tape</td>
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<tr>
<td>Tape measure</td>
<td>Phillips screwdriver</td>
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<tr>
<td>Cement drill</td>
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<td>Scissor lift</td>
<td>Torx screwdriver</td>
</tr>
<tr>
<td>9.5mm</td>
<td>Socket or open wrench</td>
</tr>
<tr>
<td>8mm</td>
<td>T40 Torx driver</td>
</tr>
<tr>
<td>13mm</td>
<td>3/8&quot; Hex wrench</td>
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<tr>
<td>5/32&quot;</td>
<td>3/8&quot; Hex wrench</td>
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<tr>
<td>5/16&quot;</td>
<td>3/8&quot; Hex wrench</td>
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<td>3/16&quot;</td>
<td>3/8&quot; Hex wrench</td>
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<tr>
<td>7/16&quot;</td>
<td>3/8&quot; Hex wrench</td>
</tr>
</tbody>
</table>

Get this manual on your device:
SmartSurround™ light curtains

The SmartSurround™ light curtains replace the Pathwatch LED strips, and combine the function of a light curtain and an alert system.

- When the retrofit is complete, the door will have three light curtain detection planes.
- You remove the current photo eyes or light curtains and replace them with the Advanced3 light curtains, which you install into the door track.
- In addition, you install two sets of SmartSurround™ light curtains. One set is mounted on the side column covers (cover mounted), the other is installed on the walls of the door opening (jamb mounted).
- The SmartSurround™ light curtains also replace the Pathwatch LED strips, which you remove. The SmartSurround™ LEDs are larger and brighter than the Pathwatch, and can display multiple colors and patterns.

CAN bus cabling

- CAN bus cabling is a single chain (series) of cables that replaces the multiple cables needed for the Pathwatch LED strips and light curtains or photo eyes.
- The cabling starts at the controller and runs through the CAN repeater box in the head assembly, then the CAN repeater box at the base of the drive side side column, then across the rear spreader to terminate at the CAN distribution box at the base of the non-drive side side column.
- It also replaces the X10 junction box in the head assembly.
- CAN-enabled Rytec devices can plug into any available port in any CAN box. During this retrofit, you will plug all six light curtains into the boxes you will install onto the baseplates of the side columns.
- Ports must be jumped if they are not connected to a device so that the signal path remains unbroken until it terminates at the distribution box.

Reversing edge

The SmartSurround™ system, in combination with the Advanced3 light curtains located within the door line, meets the requirements for entrapment protection. SmartSurround™ offers a contactless method of object recognition that is an improvement over the reversing edge system; this makes the reversing edge system redundant. The reversing edge system is disabled as part of this retrofit.

The reversing edge system can be reenabled if a full height sensing system is required. See Page 38.
Before you begin – five (5) steps to make sure the door and kit are ready for the retrofit

1: Open the kit and stage the parts. Match components to hardware to location in the door where they will be installed. **NOTE**: drive side may be LH (left) or RH (right); LH components shown here.

Drive side console of head assembly (may be left side or right side of door)

- CAN repeater box
  - Mounts inside console
  - Mounting hardware: (2) bolts and nuts
  - Access cover
    - Mounts to side column cover
    - Mounting hardware: (2) self-tapping screws

Drive side light curtains (may be left side or right side of door)

- Advanced® light curtain
  - Mounts inside door track
  - Mounting hardware: track clip/wire chase

Non-drive side light curtains (may be left side or right side of door)

- SmartSurround™ light curtain
  - Mounts inside door track
  - Mounting hardware: track clip/wire chase

CAN repeater box

- Mounts inside console
- Mounting hardware: (2) bolts and nuts

**BTA4** user terminal (optional)

- Mounts to side column
- Mounting hardware: (2) self-tapping screws

**MS4** user terminal (optional)

- Mounts to side column
- Mounting hardware: (2) self-tapping screws

Controller

- USB drive
  - Holds updated system software

SmartSurround™/CAN bus retrofit manual for Spiral® doors

Cable raceway

- Mounts to rear of side column
- Mounting hardware: (3 pc) double-sided tape, installed at Rytec

Non-drive side column baseplate (may be left side or right side of door)

- Drive side side column baseplate
  - (may be left side or right side of door)
  - (2) M8 CAN cables
    - PN: 1210800-0A (9M) remote mounted
    - PN: 1210800-0D (2M) side column mounted

- (1) M8 CAN cable with label
  - PN: 1210879-0 (2M)

- M8 CAN cable
  - Mounts inside console
  - Mounting hardware: (3) bolts and nuts

- M12 CAN cables
  - (2) PN: 1210855-0X one long, one short

- (2) CAN port jumpers

- (1) M12 CAN flying lead
  - PN: 1210856-0

- **BTA4** or **MS4** user terminal
  - (optional)

- CAN part jumper

- CAN distribution box
  - Mounts to rear of side column
  - Mounting hardware: (2) screws

- BTA4 or MS4, PN: 1210800-0D (2M)

- M8 CAN cable
  - PN: 1210800-0B (0.3M)
  - PN: 1210800-0E (2.7M)

CAN 120Ω resistor

- Used for troubleshooting

Heat shrink tubing

- Used when wiring comm board

USB drive

- Holds updated system software

**NOTICE**

BEFORE REMOVING THE SIDE COLUMN COVER, remove this access cover and follow the instructions on the other side.
2: Check the cables connected to the junction box

**IMPORTANT**

All steps shown are for an LH door (left-hand drive side). Reverse sides for a door where the motor is on the right side.

1. **If the door has a hood cover, remove panels to access the head assembly.**
   - Remove all top cover panels first, then the drive side and non-drive side front cover panels, and set aside.

   ![Image of hood cover](image)

   The junction box is located here

   ![Image of junction box](image)

2. **Loosen the four screws and remove the front cover of the junction box.**
   - In a standard installation, there are four cables connected to the junction box: the cable from the proximity switch, the X10 cable to the controller, and two-four cables from the light curtains of photo eye.
   - If additional accessories have been wired to the box, they will need to be rerouted directly to the controller.
   - Call Rytec technical support at 800-628-1909 before continuing if you have any questions about how to do this. Make sure you have correct cabling to complete all wiring.

3. **Make sure the standard cables are wired to the box, and that no additional cables are present.**
   - If the cables are as shown below, continue to the next step. If there are additional cables, call technical support.
   - Standard cables and what you do with them: do not make changes until instructed to do so later in this manual.

   - **Proximity sensor**
     - Wire colors: blue, brown, black
     - The proximity sensor is located inside the motor and tracks the position of the manual brake release to keep the brake disengaged when the release lever is in the down position.
     - This cable remains. It will need to be spliced and wired directly to the controller.

   - **Light curtain transmitter cable**
     - Wire colors: brown, blue, black, white
     - On doors with light curtains, this cable should be removed, then spliced to the proximity sensor cable and run to the controller.

   - **Photo eye cables**
     - Wire colors: brown, blue, white, black
     - The photo eye cables are removed. Then splice the longest cable to the proximity sensor cable and run it to the controller.

   - **Light curtain receiver cable**
     - Wire colors: brown, blue, green, yellow, pink, gray, red, white
     - This cable is removed.

   - **X-10 cable**
     - Wire colors: red, black, gray, orange, white, brown, blue, yellow, green, purple
     - Yellow and green may be terminated.
     - Make sure the X-10 cable runs through conduit to the controller.
     - If it is not used, you will need to use a different cable to fish the new cables through the conduit.

   - **This cable should be used to fish the CAN bus cable and spliced proximity sensor cable through existing conduit.**

   - **On doors with photo eyes, the front, rear or both sets may be wired to the junction box. Both sets are shown here.**

   ![Diagram of cable configurations](image)
3: Secure the door in the open position, then switch the controller to parameter mode and record the door profile and (wireless doors only) mobile address

1. Loosen the bolts and remove the side column covers on both side columns.

2. Set the door in the fully open position.
   - Place vice grips in the door track below the bottom roller on both sides of the door to secure it in place.

Do This Result

3. Put the door in parameter mode and enter the passcode for Service level access
   - You are in Parameter mode.
   - The Password parameter P:999 screen displays.

Do This Result

4. Check if the door has an MS4 or BTA4 user terminal already installed, and if it does, prep it to be retrofit
   - Check the kit to see if an optional BTA4 or MS4 user terminal is included in this retrofit.
   - There may also be an updated circuit board for an existing MS4 user terminal.
   - There are additional, optional steps to install or retrofit the BTA4 and MS4 terminal when setting up the side column covers, as well as additional steps when removing old cabling and installing the CAN bus cabling.

5. Then go to parameter P:991 and (wireless doors only) P:F07 and record the values you find there.
   - until you reach parameter P:991
   - This is the profile (door model) of the door

Do This Result

6. Write down the value you find here. You will re-enter it later.

Do This Result

7. This is the mobile address for the mobile unit. It is a hexadecimal number, so it may contain alpha and numeric characters.

Do This Result

8. Write down the value you find here. You will re-enter it later.

Do This Result

9. until you reach parameter P:F07
   - P:FSx-Address S D4A72 #

Do This Result

10. until you reach parameter P:F07
    - P:FSx-Address S D4A72 #

Do This Result
For a BTA4 user terminal:
- Push up, then swing out the user terminal to release it from the frame.
- Unplug the quick connect cable from the connector on the rear of the unit.
  - The user terminal will be connected to the CAN bus later in this procedure.
  - The cable will be removed later in this procedure.

For an M4 user terminal that is being replaced by a BTA4, remove it.

The cable will be removed later at the controller.

Get the BTA4 user terminal and hardware from the small parts box.

For an existing M4 user terminal:
- Loosen the six screws and remove the front cover.
- Check two things: whether the circuit board is input/output capable (terminal blocks on all sides rather than a single block in the upper left corner), and whether there is an ON/OFF switch.
  - The user terminal will be connected to the CAN bus later in this procedure.
  - The cable and connector will be removed later in this procedure.

For an M4 user terminal with terminal blocks (NOT input/output capable) (if present): leave wires from ON/OFF switch to terminals 330-331 in place.

For an M4 user terminal with terminal blocks (input/output capable) (if present): leave wires from ON/OFF switch to terminals 330-331 in place.

In ALL M4 user terminals:
- Disconnect wires at terminals 380-383:
  - 380 = brown
  - 381 = yellow
  - 382 = green
  - 383 = blue

In ALL M4 user terminals:
- The user terminal will be connected to the CAN bus later in this procedure.
- The cable and connector will be removed later in this procedure.

In M4 user terminals with a single terminal block (NOT input/output capable):
- Check the kit for a replacement circuit board (includes terminal blocks for input/output).
- Disconnect the ribbon cable from circuit board.
- Pop out the old circuit board and snap in the replacement board.
- Reconnect the ribbon cable.
- Cut red and white wires near connector and connect ON/OFF switch to terminals 330 and 331 on the new board. Either wire may be used in either terminal.
- CALL RYTEC TECHNICAL SUPPORT at 800-628-1909 if you do not find a replacement circuit board in the kit or if you have any questions.
5: Check the controller to make sure the microcontroller board has room for the CAN bus comm board; if it does, set up the controller for the CAN bus cabling

### WARNING
Set the fused disconnect to the OFF position and perform a lockout/tagout of the high-voltage disconnect before opening the control box. Do not set the disconnect switch to the ON position until told to do so by these instructions. Failure to comply could result in shock, burns or death.

1. **Loosen** the six capture screws and **open** the control box.

2. **Look to see if** there is a comm board or expansion card already installed onto the microcontroller board of the controller.
   - If there is a comm board already installed, loosen the wires and separate the cable. There may also be wires from the cable connected to other terminals; loosen them as well. You will replace the cable with the flying lead from the kit.
   - **IMPORTANT**
     - If there is an expansion card already installed, STOP and call Rytec technical support before continuing.
   - If the microcontroller board is clear, continue to the next step.

3. **If the controller has an older comm board installed, replace it with the comm board from the kit**
   - **If this controller has an older comm board**, **get** the comm board from the kit.
   - **Loosen** the four plastic screws and **remove** the old board, **leaving the legs in place**.
   - **Pull out** the four-wire and eight-wire connectors to free the board.
   - **Discard** the old board.
   - **Remove the legs** from the new board.

4. **Plug in** four-wire and eight-wire connectors on the new board, then reinstall the four plastic screws to secure the new board in place.
5 Get the comm board from the kit. 
   Plug the four-wire and eight-wire connectors into the matching receptacles on the board.

6 Line up the four legs and press down until the board snaps into place.

7 If the door has light curtains: 
   There is an interface board plugged in to terminal block 270-277. 
   The same terminal block is also on the board, and the encoder cable is wired to it. 
   The terminal block on the board must be removed and connected directly to the microcontroller board. 
   - Loosen the P-clip ① that secures the encoder cable. 
   - Loosen the wires from the interface board that connect to terminals 222, 232, 240 and 241. 
   - Remove the interface board ② from terminal slots 270-277. 
   - Remove terminal block 270-277 ③, and the attached encoder cable, from the interface board. 
   - Loosen the wires and remove the X10 cable ④ from the interface board. Leave the cable in place until later in this procedure. 
   - Discard the interface board ⑤. 
   - Plug the terminal block from the interface board, with the encoder cable wired to it ⑥, into slots 270-277. 
   - Secure the cable with the P-clip ⑦.

8 Get the 120Ω resistor from the kit. 
   The resistor should be placed inside the controller so that it can be found if there is a need to troubleshoot the CAN bus system. 
   Tape the resistor to the bottom of the controller.

9 The door is now ready for the retrofit.
This template is used in Step 2 on page 11. Before using the template, verify that the printed dimensions match the shown dimensions.
How to install the SmartSurround™ light curtains

**INSIDER’S TIP** If the side column is blocked so that the access cover would not be accessible, such as by a bollard positioned too close to the door, consult with the owner to see whether or not they want the access cover installed.

1. **If side covers were put back in place after previous steps,** loosen the bolts and remove the side column covers on both side columns. 
   - The left side column cover is shown for these steps.

2. **Remove the cutting templates (#1) from the previous page of this manual.**
   - Separate the templates into left and right sides.
   - Tape the templates to the side columns.

3. **Clamp the cover to saw horses.**
   - Make sure the c-clamps do not scratch the surface of the cover.

**Template #2:** 
holes for side column cover
SmartSurround™
This template is used in Step 7 on page 13

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**Left side side column**

**Right side side column**

<table>
<thead>
<tr>
<th>Side of cover</th>
<th>Left side</th>
<th>Right side</th>
</tr>
</thead>
<tbody>
<tr>
<td>5/8&quot; (16mm)</td>
<td>5/8&quot; (16mm)</td>
<td></td>
</tr>
<tr>
<td>Ø 3/16&quot;</td>
<td>Ø 3/16&quot;</td>
<td></td>
</tr>
<tr>
<td>7/8&quot; (22mm)</td>
<td>7/8&quot; (22mm)</td>
<td></td>
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<tr>
<td>Ø 7/16&quot;</td>
<td>Ø 7/16&quot;</td>
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</tr>
<tr>
<td>5/8&quot; (16mm)</td>
<td>5/8&quot; (16mm)</td>
<td></td>
</tr>
<tr>
<td>3-1/8&quot; (80mm)</td>
<td>3-1/8&quot; (80mm)</td>
<td></td>
</tr>
</tbody>
</table>

**Bottom of cover**

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**Important** Before using template verify printed dimensions match shown dimensions.
4 Drill out the four corners for the side column access port. 
   Drill out the two holes for the tek screws.

5 Cut between the corners with an angle grinder or jigsaw.
   File all edges smooth when you are done.

6 Secure the access cover in place with the two thread cutting screws from the kit.

Back of Template #2
Intentionally left blank
7 Flip and reclamp the side column.  
Remove the drilling templates (#2) from the previous page.  
Separate into drive and non-drive side and tape in place on the side columns.  
Drill out the holes for the bottom bolt and the SmartSurround™ cable.

8 Get the labeled SmartSurround™ transmitter and receiver, as well as the mounting hardware, from the kit.  
Check the labels and make sure the receiver goes on the drive side cover and the transmitter goes on the non-drive side cover.

9 Install the bolt and nut into the bottom hole in the SmartSurround™ mounting channel.  
Leave them loose until you have installed the top bolt/nut combination.

10 Line up the SmartSurround™ mounting channel with the edge of the side column.  
   - There should be 2.5" distance from the edge the full length of the light curtain.  
Drill out the top bolt hole through the top hole in the channel.

11 Install and tighten the top bolt and nut.  
   - Tighten the bottom bolt and nut.  
Remove the protective film from the light curtains once they are installed.

12 Thread the cable through the hole in the side column cover.  
   - Loop the cable and cable tie the loop to minimize loose cabling in the side column.
Drill out the hole in the rear of the side column for the cable from the jamb mounted SmartSurround™.

Make sure there are no cables where you are drilling. If necessary, wait until you have removed the current cabling before doing this step.

Repeat these steps on both sides of the door.

1. First, pull back the bottom of the rear seal to expose the lip of the side column. Drill out the lip.

2. Mark the hole location on the seal, set it firmly back in place, and drill out the seal.

Get the jamb mounted SmartSurround™ transmitter and receiver from the kit.

**IMPORTANT**

Make sure the jamb mounted and cover mounted SmartSurround™ transmitters are both on the non-drive side of the door.

Make sure the jamb mounted and cover mounted SmartSurround™ receivers are both on the drive side of the door.

Check the labels at the bottom of the light curtains to match.

Install the jamb mounted SmartSurround™ light curtains and cables onto the drive side and non-drive side walls of the door opening.

Use supplied anchored or self-tapping screws to secure light curtains and P-clips.

Use two (2) supplied P-clips to secure cable tightly to wall.

Place one clip one to two inches (1-2”) from SmartSurround™

Place the other clip one to two inches (1-2”) from side column

Cable should run parallel to floor.

If the floor is level, use the cover mounted SmartSurround™ and a laser level to set the mounting height of the wall mounted light curtain.

The bottom of the aluminum retaining bracket should be 4” above base plate.
OPTIONAL: How to install the BTA4 user terminal frame

1. Cut out the drilling template on this page for the BTA4 unit.
   Position it on the drive-side side column.
   Make sure there is a flat, unobstructed space on the column that is large enough to fit:
   - the entire frame of the unit (4.5' x 6')
   - a minimum of 3" clearance from the outer edge of the side column.
   Make sure the area where the holes will be drilled is free of all cables, hardware and components inside the column.
   If there is not enough free, unobstructed space, install the frame into the wall next to the door.

2. If the side column can fit the template, use the template to drill the four screw holes in the side column (a).
   If the side column cannot fit the template, use the template to drill the four screw holes in wall near the door (b).
   Match the drill bit to the supplied hardware or your own.
   If mounting to the wall, match the correct depth for the hardware.
   Use a step bit to drill the large hole for the cable.

   NOTE: if the wall mount does not make it possible to run the cable inside the wall, you can run the cable out of the bottom of the frame.

3. If using the wall mount, before using template verify printed dimensions match shown dimensions.

   Recommended height = 54-3/4" 1390mm

   Outer edge of side column

   NOTE: if the unit cannot be securely mounted to the side column using these specifications, the unit should be mounted to the wall.
4. **Install** the BTA4 frame using the supplied hardware for side column ① or wall ② mounting, or your own. If necessary, remove the side column cover to install the frame.

5. For side column mounting, **install** the grommet into the cable access hole.
OPTIONAL: How to install the MS4 user terminal

Check with the door owner whether they want the MS4 installed into the side column or remotely.

1. Locate the MS4 user terminal, mounting brackets and hardware in the small parts box.

2. Anchor the user terminal at an easily accessible height using the included hardware. The user terminal can be mounted onto the wall, flush to the wall using the optional bracket, or onto the side column using the optional z-bracket.

How to remove the Pathwatch, light curtains or photo eyes, and internal cabling

Keep cabling intact when you remove it. At least one cable is needed to route the proximity sensor directly to the controller, and the controller may be some distance from the door. So cut cable ties, but not cable.

It should not be necessary to add conduit. You will remove more cables than you add. You should be able to install the CAN bus flying lead and the spliced cable for the proximity sensor into the same conduit. Call Rytec technical support if you have any questions.

1. Loosen the secondary drive belt until there is considerable slack. This makes it easier to access the back of the side column.
   - You will need to loosen the screws and move the CAN bracket out of the way to access the pulley assembly.
   - It should not be necessary to remove the pulley assembly from the mounting bolt.

2. If necessary to freely access the back of the side column, remove the springs from the baseplate tube.
   - If there are locking collars on the spring tabs, remove them first. You will reinstall them when the springs are reinstalled.
   - Push down on the bottom of the spring to release the tab, slide the spring through the narrow slot, then pull out of the wide slot.
First, remove the Pathwatch LED strips and cables

1. In both side columns, unplug the Pathwatch LED strips at the quick connect ①.
   - Remove the Pathwatch strips from the side columns ②.
   - Replace the screws ③ to maintain the appearance of the side columns.
   - Cut the cable below the jumper ④ and discard the jumper and quick connect.

2. Inside the controller, disconnect the Pathwatch cable from terminal block 140-142.
   - Disconnect the wires from the terminal block, cut the cable or cables where they enter the conduit and remove.
   - Pathwatch cables may be spliced at the door, or inside the controller, so there may be one, or multiple, cables at the controller.

3. Remove the Pathwatch cables from the drive side and non-drive side of the door.
   - Cut cable ties, but leave the cables intact.

4. Follow the cable to its conduit, and fish the cable up and out until it is completely free.
   - Set aside for potential reuse.
Then, on doors with photo eyes, remove the photo eyes and cables

1. Depending on the age of the door, the rear set of photo eyes (transmitter and receiver) on a Spiral may be mounted remotely, on the wall behind the door opening ①, or inside the side column ②.

   Different sets of photo eyes have also been used at different times.

   The front photo eyes have always been mounted inside the side column.

   Each photo eye has a separate cable. The front and rear set of photo eye cables may route to the X-10 junction box, directly to the controller, or both.

2. Remove the photo eyes in both side columns.

   For front photo eyes ①, remove the bracket and cut the cable below the connector. Discard the brackets and photo eyes.

   For rear photo eyes mounted in the side column ②, cut the cable below the connector. You can leave the photo eyes in place.

   For rear photo eyes mounted remotely ③, remove the bracket and cut the cable below the connector. Discard the brackets and photo eyes.


   Disconnect the wires, cut the cables where they enter the conduit and remove.

   If all four cable are not in the controller, the remaining cables are connected to the X-10 junction box.

4. Disconnect the wires from the terminal block, cut the cable or cables where they enter the conduit and remove.

5. Locate any remaining photo eye cables at the X10 junction box and cut the cables.
Remove the photo eye cables from the drive side and non-drive side of the door.
Cut cable ties, but leave the cables intact.

Remove the light curtain transmitter and receiver from the door tracks. Cut the cables below the connectors.
Remove the track clip/wire chase that hold them in place.

Cables may terminate at the X-10 junction box or the controller.

Follow the cables that run to conduit to locate which conduit they run through, and fish them up and out until they are completely free.

Locate the light curtain transmitter and receiver cables at the X10 junction box and cut the cables.

There may be one long track clip or multiple smaller ones.

Some doors have washers, bumpers or brackets added to the bottom of the door track to prevent the clips from slipping.
Theses can remain in place.

If correctly installed, the photo eye cables run up the rear of the side columns and through the small opening at the rear of the consoles.
The non-drive side cables run across the top of the rear spreader, along with the Pathwatch cable.

Make sure the door tracks are not damaged, and fully clean the tracks to remove any adhesive residue.
The new track clips are held in place by friction.

If correctly installed, the photo eye cables run up the rear of the side columns and through the small opening at the rear of the consoles.
The non-drive side cables run across the top of the rear spreader, along with the Pathwatch cable.

Cables may terminate at the X-10 junction box or the controller.

On doors with light curtains, remove the light curtains and cables

1. Remove the light curtain transmitter and receiver from the door tracks. Cut the cables below the connectors.
   Remove the track clip/wire chase that hold them in place.

2. Locate the light curtain transmitter and receiver cables at the X10 junction box and cut the cables.

3. Follow the cables that run to conduit to locate which conduit they run through, and fish them up and out until they are completely free.

4. Compare the photo eye cables. The longest cable will be spliced to the proximity sensor cable.
3 Remove the light curtain cables from the drive side and non-drive side of the door.
   **Cut** cable ties, but leave the cables intact.

   **Both cables** terminate at the X-10 junction box.
   
   If correctly installed, the light curtain cables run up the rear of the side columns and through the small opening at the rear of the consoles.
   The non-drive side cable runs across the top of the rear spreader, along with the Pathwatch cable.

4 Discard the light curtain receiver cable.
   **Keep** the light curtain transmitter cable.
   The white, black and blue wires will be spliced to the proximity sensor cable.

Cut the X-10 and proximity sensor cables, remove the junction box, and splice the proximity sensor cable

1 **Cut** the X-10 and proximity sensor cables at the X-10 junction box.

2 **Remove** the drive side front console cover and, on doors with hood covers, the spacer bracket ①. Set aside.
   Then **remove and discard** the junction box ②.
Splice the proximity sensor cable to the light curtain or photo eye cable.

- Splice the cables just outside the motor mounting plate, where the other cables pass through the edge protector.
- Trim the proximity cable to minimize slack within the console and to keep the cable clear of the primary drive belt.
- Run the light curtain or photo eye cable with the other cables to the conduit.

(Tip) If the door has a BTA4 or MS4 user terminal, remove the cable

Follow the cable from the user terminal to its conduit, cut all cable ties, and fish the cable up and out.

Cable routing will vary based on location of the user terminal.

You may need to use the cable to fish the replacement cable to the user terminal for wall mounted terminals.

How to install the Advanced® light curtain and side column CAN bus cabling

1. Get the two Advanced® light curtains, track clips and 9-foot (1210800-E) M8 cable from the kit.

   a. Install the track clips into the door track. They are held in place by friction.
      - Line up the bottom of the clip with the bottom of the door track.
      - The fit is tight. Run a flathead screwdriver down the length of the clip to ensure it is fully seated in the track.
   b. Install the Advanced® light curtains into the clips. They are held in place by friction.
      - Make sure the transmitter is installed into the drive side, and the receiver is installed into the non-drive side.
      - Line up the bottom of the light curtain with the bottom of the track.
   c. Connect the 1210800-E M8 cables to the light curtains and run the cables inside the length of the clip.

Check labels!

Transmitter goes inside the drive side column

Receiver goes inside the non-drive side column

Line up arrows on connectors to ensure proper connection

Run a screwdriver down the length of the clip track to make sure this tab is in the notch for the full length of the clip.

Make sure the light curtain and clip line up with the bottom of the door track.
2 Get all parts from the kit for the drive side and non-drive side baseplates.

Drive side side column baseplate

Non-drive side side column baseplate

- (2) M8 CAN cables
  PN: 1210800-0B (0.3M)
  PN: 1210800-0E (2.7M)
- (1) M12 CAN cables
  PN: 1210855-0
- (1) M12 CAN cable
  PN: 1210879-0

- (2) M12 CAN cables
  PN: 1210855-0
- (2) M8 CAN cables
  PN: 1210800-0B

3 Repeat all steps on the drive and non-drive side of the door.

Do the next three steps BEFORE you install the brackets into the side column baseplates.

Install the labeled 1-foot M8 cable into port 3 of the boxes on both brackets and through the top and bottom slots on the holders.

4 Install the other 1-foot M8 cables into port 2 of the boxes on both brackets and through the second and fourth slots in the holders.

- This cable connects to the cable from the jamb mounted SmartSurround™ light curtain.
- Push the connector through the opening in the bracket.

5 Install the jumper into port 1 of the boxes on both brackets.

6 Place the brackets into the baseplates of the side columns.

**IMPORTANT**

DO NOT bolt them in place.
You will secure them in place later.
**7 Route** the cable from the Advanced® light curtains in both side columns through both openings in the brackets.  
**Plug** the connector into port 4.  
**Remove** the protective film from the Advanced® light curtains once they are installed.

**8 Route** the cable from the jamb mounted SmartSurround™ light curtain down the back channel of the vertical track BEHIND and separate from the door track to the floor of the baseplate.  
**IMPORTANT**  
This routing keeps the cable clear of the door panel rollers when the door opens and closes.  
**Line up** the embossed arrows on the connectors to align the guide notch and contacts correctly, and **plug** the cable into the cable that connects to port 2.  
**Route** the cables through both openings in the gasket.

**9 Place cable ties in the holes** of the two flanges near the side of the baseplates in both side columns to route the cables running up the side columns.  
**Also place** a cable tie and anchor against the rear wall of each side column, near the outer wall and 4 inches above the base plate  
**IMPORTANT**  
Wipe area down with supplied alcohol wipes before placing cable tie anchors.  
**IMPORTANT**  
This routing keeps the cables clear of the spring assemblies.

**10 Space** cable ties and anchors every two feet up the rear wall of each side column.  
**Make sure** to wipe down the surface with supplied alcohol wipes before securing anchor.  
**If the side column** has built-in cable tie anchors (lance bridges), use them and skip this step.  
**IMPORTANT**  
This routing keeps the cables tight to the rear wall.
11. **Plug in the two M12 cables, run them through the opening at the bottom front of the bracket, and through the cable ties to the top of the side column.**

**Important**

There are two cables on the drive side and one cable on the non-drive side.
- In the drive side, the cable that terminates in a **male connector** connects via the short M12 cable to the CAN repeater in the console.
- The cable that terminates in a **female connector** connects to the M12 cable across the rear spreader.

12. **Peel** the backing from the three strips of tape on the cable raceway, and **install** it against the rear of the side column just above the bottom anchor and touching the outer wall of the side column.

If there is extra length in the cables, **fold** it over and slide it behind the raceway.

**Set** all cable anchors tight.
How to install the head assembly CAN components and connect the side column CAN bus cables across the rear spreader

1. Cut out and line up template #3 from the previous page with the top of the drive side console and the rectangular access port.
   - Larger doors (-S and -US size) use the larger template.
   - Drill holes for the bolts that secure the CAN repeater box.

2. Get all parts from the kit for the drive side console.
   - **NOTE:** The kit includes an extra bolt and nut for the CAN repeater box in the console. Discard them if they are not needed.
   - The flying lead is the only M12 cable with a connector on one end and bare wires on the other.

3. Install the CAN repeater into the drive side console.
4. Plug the jumpers into port 1 and port 2.

5. Get the short 1210855-0X M12 cable. Inside the drive side console, connect the female M12 connector for the cable to the male M12 connector for the cable running up the side column. Line up the embossed arrows on the connectors to align the guide notch and contacts correctly. The connectors will only fully connect if they are aligned correctly.

6. Connect the male M12 connector for the short cable to the CAN repeater in the head assembly. Run the cable through the raceway from the side column to the head assembly. Use existing cable ties or place new cable ties to keep the cable close to the side of the console.

7. Get the longer 1210855-0X M12 cable. This cable connects the CAN bus cabling across the rear spreader. Secure cable with cable ties around cable and spreader at both ends and at middle of spreader. Fold over and cable tie extra length of cable to minimize slack. On the drive side, connect to remaining cable from repeater box and run through raceway and across spreader. On the non-drive side, run cable through raceway and connect to cable to distribution box.
Get the flying lead cable to the controller.
Plug the cable into the CAN port in the repeater.
Run the cable through the access port, cable tie it against the side of the console, then run it inside the motor mounting plate and out the edge protector with the other cables.

OPTIONAL: connect the BTA4 user terminal to the CAN bus system

Connect the BTA4 to the CAN bus system.

Remote mounting:
Remove jumper from Port 1 in the head assembly repeater box and plug in BTA4 cable here.

Side column mounting:
Place anchors 6" below BTA4 access hole, 6" above CAN bracket, and half-way in between. Wipe surface with supplied alcohol wipes before applying anchors. Route cable through anchors and upper notch in bracket.

Plug in cable, then BTA4 terminal snaps into frame.

Side column mounting:
Place anchors 6" below BTA4 access hole, 6" above CAN bracket, and half-way in between. Wipe surface with supplied alcohol wipes before applying anchors. Route cable through anchors and upper notch in bracket.

Plug in cable, then BTA4 terminal snaps into frame.

Tape the flying lead cable and proximity sensor cable securely to the X-10 cable.
Use the X-10 cable to fish the other two cables through the conduit and into the controller.
If necessary, loosen the conduit at curve points or connections so that the cables move freely.
If necessary, use a fish tape instead of the X-10 cable.
Discard the X-10 cable when done.
OPTIONAL: connect the MS4 user terminal to the CAN bus system

1. Connect the M8 flying lead cable to the head assembly repeater box and route it to the MS4 user terminal.

2. Loosen the six screws and remove the cover plate. Loosen the cord grip and thread the M8 flying lead into the user terminal.

3. Trim jacket on M8 flying lead to expose wires, and connect wires to terminals 380-383.

4. Tighten the cord grip, replace the cover and reinstall the six screws.
How to finish the installation

1. Reset the tension on the secondary drive belt and, if necessary, reinstall the spring.
   1. Tighten the top front nut to increase the tension a.
   2. Press the front and rear legs of the belt together to test tension. Adjust the height of the top nut as needed until it requires considerable effort to manually bring the two legs of the belt together b.
   3. Push down on the bottom of the spring, slide the spring tab into the wide slot c and through the narrow slot d, then push up to set it into the retaining slot e. If door has tab collars f, reinstall.

2. Secure CAN brackets in place
   - FROM KIT Hardware shown actual size
   - 17mm
   - 13mm
   - 2 per bracket

3. Reinstall the side column covers.
   - Use one screw each to hold them in place; it may be necessary to open them to make adjustments during testing.
   - Do not secure them fully until all testing is complete.
   - Reconnect the two cables labeled "01".
   - Line up the embossed arrows on the connectors to align the guide notch and contacts correctly.
   - The connectors will only fully connect if they are aligned correctly.
   - If necessary, open the panel in the side column to access the connectors.

4. Replace all panels when the testing of the door is complete.
How to wire the CAN bus and proximity sensor cables to the controller

**WARNING**

All electrical work must meet all applicable local, state and national codes. It is recommended that all electrical work be done by a certified electrician. Failure to wire the door correctly could result in shock, burns or death to the people who install, use or service the door.

**Tools you will need**

- Precision screwdriver
- Wire tool
- Cutting pliers
- Utility knife

1. **Connect the wires from the proximity sensor.**
   - **Shielding:** unshielded

2. **Connect the CAN bus wiring.**
   - **Shielding:** wire mesh

The shielding (braided wire mesh) is used as a fifth "wire" and plugs into terminal SH.

**To ensure a tight contact:**

1. Trim CAN bus cable so it reaches com board, plus six inches (6") additional length.
2. Trim jacket to expose wire mesh shielding.
   - **IMPORTANT** **DO NOT** cut through shielding.
3. Twist shielding into fifth wire to terminal block.
   - **IMPORTANT** Make sure shielding is twisted tight enough to fit into terminal.
4. Use heat shrink tubing from kit to insulate the shielding so only one quarter inch (1/4") is exposed.
5. Trim other wires to expose one quarter inch (1/4") of clean copper.
3 Disable the reversing edge.
Remove the pink wire from terminal 272
Trim the pink wire
Terminate the pink wire with at a wire nut.

4 Get the USB drive with the updated system software from the kit.
Plug in the drive to the USB port in the controller. If there is a drive already in place, remove it.
Close and secure the front cover of the control box.

5 Make sure the protective film has been removed from ALL light curtains on both sides of the door before turning on power to the door.

Inform the door owner that Rain-X® 620036 Plastic Treatment applied to the light curtains reduces static and helps keep them clear of dirt and dust. Available at most hardware stores.

6 Restore power to the door.

How to update the system software, sync the SmartSurround™ system to the controller and set limits

First: set the controller to Parameter mode and access Service level parameters

<table>
<thead>
<tr>
<th>Do This</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Turn on power to controller</td>
</tr>
<tr>
<td>2</td>
<td>until the parameter screen displays</td>
</tr>
<tr>
<td>3</td>
<td>2x to reach parameter P:999</td>
</tr>
<tr>
<td>4</td>
<td>1x to move cursor to the right (edit value)</td>
</tr>
<tr>
<td>5</td>
<td>16x to set value to hexadecimal 10</td>
</tr>
<tr>
<td>6</td>
<td>until question mark changes to checkmark (value saved)</td>
</tr>
<tr>
<td>7</td>
<td>1x to move cursor to left (parameters)</td>
</tr>
</tbody>
</table>

Do This | Result
--- | ---
| 1 | The door starts in run mode. |
| 2 | You are in Parameter mode. Go to parameter 999. |
| 3 | You can now change the value of parameter P:999. |
| 4 | You can now change the value of parameter P:999. |
| 5 | Set the value to 10 (Service level password). |
| 6 | The Service level password is saved. |
| 7 | You can now go to parameter P:989 to update the system software. |
Next: update the system software

1. until you reach parameter P:989

   ![Icon](icon1.png)

   Do This: P: Prog, update S 989=select 
   Result: Blinking dot indicates software is downloading, then
   Software update file name scrolls
   Example: TST FUR3-RY V02-03.XX.bin

2. 1x to go to the value side

   ![Icon](icon2.png)

   Do This: P: Prog, update S 989=select 
   Result: NOTE: the cursor may not respond immediately when you press the
   RESET button. It can take up to several minutes for the USB drive to be recognized
   by the controller.

3. until the software version displays

   ![Icon](icon3.png)

   Do This: P: Prog, update S 989=1ST FUR3-RY
   Result: The software update file name scrolls
   Example: TST FUR3-RY V02-03.XX.bin

4. until download begins

   ![Icon](icon4.png)

   Do This: P: Prog, update S 989=select
   Result: You are in Parameter mode.

Next: go back parameter mode and re-enter the passcode for Service level access

1. until the parameter screen displays

   ![Icon](icon1.png)

   Do This: P: Password 0
   Result: You are in Parameter mode.

2. 2x to reach parameter P:999

   ![Icon](icon2.png)

   Do This: P: Password 0
   Result: The Password parameter P:999 screen displays.

3. 1x to move cursor to the right (edit value)

   ![Icon](icon3.png)

   Do This: P: Password 0
   Result: You can now change the value of parameter P:999.

Next: reset defaults and parameter for the new system software

1. 1x to move cursor to the right (edit value)

   ![Icon](icon1.png)

   Do This: P: Defaults 990= 0 
   Result: The controller resets the factory defaults.

2. 1x to set the value to 1

   ![Icon](icon2.png)

   Do This: P: Defaults 991= - 
   Result: This is the value to reset the system defaults.

3. until question mark changes to checkmark (value saved)

   ![Icon](icon3.png)

   Do This: P: Defaults 998= 1/
   Result: This is the profile (door model) number you recorded earlier.

4. 16x to set value to hexadecimal 10

   ![Icon](icon4.png)

   Do This: P: Defaults 999= 00102#
   Result: The controller automatically moves to parameter P:990.

5. until question mark changes to checkmark (value saved)

   ![Icon](icon5.png)

   Do This: P: Defaults 999= 00127#
   Result: The Service level password is saved.

6. The controller automatically moves to parameter P:999.
SmartSurround™/CAN bus retrofit manual for Spiral® doors

**Do This** | **Result**
---|---
6 | until you set the value back to the original value
   | P: Defaults 991= 44?

7 | until question mark changes to checkmark (value saved)
   | P: Defaults 991= 44#

8 | The controller resets the factory defaults.
   | Factory Default
   | when reset is complete, the controller goes to parameter P:000 or P:001
   | P: Door Cycles 000# [xxx] Cycles

---

**Do This** | **Result**
---|---
11 | 3X to go to the first file
   | P: Para.< USB 944= 0001?
   | ▪ You pass by values 1 and 2 before you reach the first file. These values are not involved in this process.
   | ▪ If there are no parameter files, you won’t be able to scroll pass the value of 2. Go to step 19.

12 | until blinking dot displays
   | P: Para.< USB 944= .
   | blinking dot indicates software is downloading, then
   | P: Para.< USB 944= 0002?
   | checkmark indicates download is complete

13 | 1X to go to the next file
   | P: Para.< USB 944= 0001?
   | ▪ If there are more files, repeat the process until all files have been downloaded.
   | ▪ If there are no more parameter files, the download is complete. Exit the parameter.

14 | 1X to move cursor to left (parameters)
   | P: Para.< USB 944= 0001 #

---

**Next: activate the SmartSurround™ system synchronization**

**IMPORTANT** If you assign the wrong light curtains to parameters L:201, L:401 or L:501, return to parameter A:060, set the value to 0, save that value, then start again at Step 2.

**Do This** | **Result**
---|---
1 | until you reach parameter A:060
   | A: AppD3 060= 0 #
   | the controller resets the defaults
   | then returns to parameter A:060

2 | 1X to move cursor to the right (edit value)
   | A: AppD3 060= 4 #

3 | 4X to set the value to 4
   | A: AppD3 060= 4 #
   | ▪ This value activates the SmartSurround® and Advanced® light curtains

4 | to save the value
   | A: AppD3 060= 4 #
   | then returns to parameter A:060

5 | 1X to move cursor to left (parameters)
   | L: SA1 Slot2 201= - #
   | the controller automatically goes to parameter L:201

---

**The next steps vary based on the configuration of the door:**

- Most doors have additional custom parameter settings that must be reset.
- One or more files to update these parameters are included on the disk. You do this at parameter P:944.
- They are numbered 0001, 0002, etc. Each file must be downloaded separately.
Next: assign the two Advanced® light curtains to parameter L:201

NOTE: the values you will see at parameters L:201, L:401 and L:501 will be the IDs for the light curtains included in the kit, and will not match the values shown here.

1. 1x to show the first set of light curtains
   -  
   - L: SAI Slot2 201= 0932-9156?

2. Check the Advanced® light curtains mounted in the door tracks of both side columns.
   - If all four LEDs are flashing (transmitter: green and yellow, receiver: blue and red), the door track light curtains are synced correctly.
   - If other light curtains light up, go to the next value.

3. If the current selection does NOT light the LEDs:
   - 1x to show the next set of light curtains
   - L: SAI Slot2 201= 0948-9142?
   - Re-check the light curtains.

4. If the current selection DOES light the LEDs:
   - until the setting is saved
   - L: SAI Slot2 201= 0948-9142

5. If the current selection DOES light the LEDs:
   - until the setting is saved
   - L: SAI Slot2 201= 0948-9142

6. The controller moves to parameter L:401.
   - L: SAI Slot4 401= 0932-9156?

Next: assign the two inside SmartSurround™ light curtains to parameter L:401

On doors that are mounted to interior walls, the cover mounted SmartSurrounds™ are considered to be the inside light curtains and are assigned to parameter L:401.

On doors that are mounted to exterior walls, the jamb mounted SmartSurrounds™ are considered to be the inside light curtains and are assigned to parameter L:401.

1. 1x to show the first set of light curtains
   -  
   - L: SAI Slot4 401= 0932-9156?

2. Check the SmartSurround™ inside light curtains on both side columns.
   - If all LEDs are flashing, the cover mounted light curtains are synced correctly.
   - If other light curtains light up, go to the next value.

3. If the current selection does NOT light the LEDs:
   - 1x to show the next set of light curtains
   - L: SAI Slot4 401= 0992-9187?
   - Re-check the light curtains.

4. If the current selection DOES light the LEDs:
   - until the setting is saved
   - L: SAI Slot4 401= 0992-9187

5. The controller moves to parameter L:501.
   - L: SAI Slot5 501= - #
Next: assign the two outside SmartSurround™ light curtains to parameter L:501

1. On doors that are mounted to interior walls, the jamb mounted SmartSurrounds™ are considered to be the outside light curtains and are assigned to parameter L:501.
2. On doors that are mounted to exterior walls, the cover mounted SmartSurrounds™ are considered to be the outside light curtains and are assigned to parameter L:501.

Do This Result

1. 1x to show the first set of light curtains

   ![Diagram](image1.png)

2. Check the SmartSurround™ outside light curtains on both side columns.
   - If all LEDs are flashing, the cover mounted light curtains are synced correctly.
   - If other light curtains light up, go to the next value.

3. If the current selection does NOT light the LEDs:
   - 1x to show the next set of light curtains

   ![Diagram](image2.png)

4. If the current selection DOES light the LEDs:
   - until the setting is saved

   ![Diagram](image3.png)

5. The controller ends at parameter P:000.

   ![Diagram](image4.png)

To finish: set limits

1. until the “Syncron.” screen displays

   ![Diagram](image5.png)

2. 1x to start sequence

   ![Diagram](image6.png)

3. Set the open position.

   - until open height is correct

   ![Diagram](image7.png)

4. until “Open Limit Set” screen displays

   ![Diagram](image8.png)

Do This Result

4. Open Limit Set

   ![Diagram](image9.png)

5. 1x to start. The door panel closes.

   ![Diagram](image10.png)

6. 1x to start auto-calibration

   ![Diagram](image11.png)

   - The door opens and closes automatically up to 12 times.
   - The controller automatically sets the close limit position while the door calibrates.
   - When calibration is complete, the door switches to Run mode.

   **IMPORTANT**
   - The door may not open or close completely during automatic calibration. This is normal.
   - When calibration is complete, the door will open and close correctly.
   - You can manually adjust the close limit after calibration is complete by changing parameter P:275. See next page.
If necessary, manually adjust the close limit

1. **Do This**: until the parameter screen displays
   - **Result**: You are in Parameter mode.

2. **Do This**: until parameter displays
   - **Result**: The default value at P:275 is -12.

3. **Do This**: 1x to move cursor to the right (edit value)
   - **Result**: You can now change the value.
     - The UP arrow increases the value and raises the close limit position for the door.
     - The Down arrow decreases the value and lowers the close limit for the door.
     - Each press of an arrow changes the limit by a fraction of an inch, which gives you precise control of the value.

4. **Do This**: until new value displays
   - **Result**: Do not change the value by more than 5 increments. Then test the door.

5. **Do This**: until question mark changes to checkmark (value saved)
   - **Result**: The new value is saved.

6. **Do This**: 1x to move cursor to left (parameters)
   - **Result**: If the red LED is on, run a laser level on the vertical guide track to make sure the light curtains are at the same height. Adjust if necessary.

7. **Do This**: until door returns to run mode
   - **Result**: Spiral [xxx] Cycles

How to test the door

1. **Make sure** the blue LED (receiver) and green LED (transmitter) on the Advanced light curtains are flashing once every two seconds, and that the red LED (receiver) and yellow LED (transmitter) are OFF.

2. **Make sure** the SmartSurround™ operates correctly as the door opens and closes:
   - An upward cascade of red lights while the door opens.
   - A sequence of blinking yellow lights matching the delay to close timer before the door starts to close.
   - A downward cascade of red lights while the door closes.

3. **Test the SmartSurround™ system**:
   - **Note**: If one plane is broken but the other is not, the light curtains should reverse/hold the door, then the door should count down and descend at creep speed.
   - If all planes are broken, the light curtains should reverse/hold the door, then the door should count down and descend at normal speed.

4. **LEDs on the CAN repeaters and distributor** indicate if the system is working correctly
   - **LEDs next to the ports (blue)** should be ON steadily (no flashing).
   - **The CAN status LED (yellow)** should be flashing one to four times per second.
   - **The power status LED (green)** should be ON steadily (no flashing).

5. **Any time a CAN bus cable is disconnected while the power is on**, you **MUST** do a soft reboot of the controller to re-sync the CAN bus system when all cables have been reconnected.
   - **Press and hold** all three buttons until the display goes blank.
   - **Release the buttons**. You see Self-Check or the system software versions number.

Contact technical support if you do not see this.
OPTIONAL: How to enable the reversing edge on Spiral doors

The SmartSurround™ system, in combination with the Advanced light curtains located within the door line, meets the requirements for entrapment protection. SmartSurround™ offers a contactless method of object recognition that is an improvement over the reversing edge system; this makes the reversing edge system redundant. The reversing edge system is disabled as part of the retrofit.

The reversing edge system can be reenabled if a full height sensing system is required.

- This procedure requires Rytec Level access to change the parameters.
- The passcode changes if the cycle count changes, so make sure the door does not open or close until you have used the passcode and gained access.

First: Connect the pink wire to terminal 272 in the controller

WARNING
Set the fused disconnect to the OFF position and perform a lockout/tagout of the high-voltage disconnect before opening the control box. Do not set the disconnect switch to the ON position until told to do so by these instructions.
Failure to comply could result in shock, burns or death.

1 Open the controller, remove the wire nut from the pink wire, and connect it to terminal 272.

2 Restore power to the door.

Next: set the controller to Parameter mode and lock the cycle count

Do This | Result
---|---
1 Turn on power to controller | The door starts in run mode.

2 until the parameter screen displays | 
P: Door Cycles 0 000= 32321 Cyc

if you don't start at parameter P:001
1X to reach parameter P:001
P: Password 0 001= 21073 Cyc

The cycle count at parameter P:001 is from the last time it was locked, so it may not match the current count for the door.

3 1X to move cursor to the right (edit value) | 
P: Password 0 001= 21073 Cyc

4 until the cycle count updates and the check mark appears | 
P: Password 0 001= 32321 Cyc

Next: get and enter the passcode

1 Contact Rytec technical support by phone or e-mail: 800-628-1909
   support@rytectdoors.com
   Be prepared to tell them the cycle count and the reason you need Rytec level access.
   Reference the approval you have already submitted.

2 The Rytec level passcode is a hexadecimal number.
   This means it uses the ten numeric characters (0-9), plus six letters (A-F), which represent the values from 10 through 15.
   It also means the passcode is a large number. For example a passcode of A6C3 equates to a value of 42,691.
SmartSurround™/CAN bus retrofit manual for Spiral® doors

Do This Result

3 2x to reach parameter P:999
P: Password 999= 0000 #

4 1x to move cursor to the right (edit value)
P: Password 999= 0000 #

5 until you reach the value of the Rytec passcode
P: Password 999= A6C3 #

Next: go to parameters P:F00, P:F07, and P:460 and set the values

NOTE: if the door has an energy chain instead of a wireless system, skip to step 11.

Do This Result

1 until you reach parameter P:F00
P:FSx-Address S F00= C3E64 #

2 1x to move cursor to the right (edit value)
P:FSx-Address S F00= D4A72 #

3 1x to move cursor to left (parameters)
P:FSx-Address S F00= 0 #

until question mark changes to checkmark (value saved)
P:FSx-Activate R F00= 1 #

The speed of the change increases the longer you hold down the UP arrow.

until question mark changes to checkmark (value saved)
P:FSx-Activate R F00= 1 #

until you reach parameter P:F07
P:FSx-Address S F07= D4A72 #

- This is the mobile unit address that you recorded earlier.
- The software update restored the ORIGINAL address from when the door was purchased. This may or may not match the address for the CURRENT mobile unit.
- If the value displayed matches the value you recorded, go to step 11. Otherwise, change the value to the one you recorded using the following steps.

until question mark changes to checkmark (value saved)
P:FSx-Activate R F07= 1 #

until you reset the value to the original value
P:FSx-Address S F07= D4A72 #

- The mobile address is a large number; for example, this value is 87,1026. So it will take a while to reach it.
- The speed of the change increases the longer you hold down the UP arrow.

until question mark changes to checkmark (value saved)
P:FSx-Activate R F07= 1 #

until question mark changes to checkmark (value saved)
P:FSx-Activate R F07= 1 #

until you reach parameter P:460
P: Rev Edge 460= 0 #

1x to move cursor to the right (edit value)
P: Rev Edge 460= 1 #

1x to move cursor to the right (edit value)
P: Rev Edge 460= 1 #

1x to move cursor to left (parameters)
P: Rev Edge 460= 0 #

1x to move cursor to left (parameters)
P: Rev Edge 460= 0 #

1x to change the value to 1
P: Rev Edge 460= 0 #

until door returns to run mode
Spiral
Edge3 Cycles