

RollUp Door

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Your Comprehensive Equipment Source





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Safety Notice

A thorough familiarity with all operating guidelines is essential to safe operation of the product. Failure to observe safety precautions could result in poor performance, damage to the system or other property, or serious bodily injury or death. The following symbols are intended to call your attention to two levels of hazard involved in operation.



CAUTION

Cautions are used when failure to observe instructions could result in significant damage to equipment.



WARNING

Warnings are used when failure to observe instructions or precautions could result in injury or death.

The information presented here is subject to change without notice.

1.0 Description

This space-saving roll-up door features segmented access doors that roll up and down at the press of a button. The ergonomic design eliminates door clearance requirements, allows transfer of large equipment into and out of the cleanroom, and simplifies operation by gloved personnel.

The Roll-Up Door is operated by a touch-activated control panel adjacent to each door of the pass-through. In addition to the opening/closing buttons, the touch panel includes an emergency stop function and a lock down function. As an additional safety feature, the pass-through also includes an infrared beam sensor located at the bottom of each doorway that stops and reverses the door when the beam is interrupted.



CAUTION

Roll-up doors are rated at a maximum of six (6) open/close cycles per hour, depending on ambient conditions. Continuous overuse and overheating of the doors will lead to damage and premature motor failure.

2.0 Installation

Component Inspection: Unpack all components and check for damaged or missing parts (refer to original order for quantities). Any damage should be reported to the shipping company immediately. Contact Terra Universal if any parts are missing.

Each door is shipped as three components: the motor housing, the control box, and the door frame. The door frame is composed of three sections that are shipped as a single unit: the door frame and two door tracks. After unwrapping the door frame, separate these frame pieces by removing the cap nuts from the welded studs around the immediate door opening.



Figure 1: Break down the door frame by removing the cap nuts shown here



Site Preparation



Do NOT connect the unit to a power source until all installation steps are complete.

The Roll-Up Door is manufactured to fit the wall thickness specified in the original order form.

- A. The wall cut-out should be measured carefully to allow ample clearance for all hardware.
- B. Before beginning assembly, ensure that the floor at the installation site is level. Failure to level the floor may result in the inability to complete the installation of the door.

Required Installation Equipment

- A. Handling shipping crates requires at least one forklift or pallet jack. If crates must be moved through narrow aisles or entrances, two forklifts or pallet jacks are recommended (one to support each end).
- B. Unloading crates from the truck is much easier if you have a truck-high loading dock. Without such a dock, you will need at least one forklift and a support to brace one end while the forklift is positioned beneath the center of each crate. Several people are required to unload individual components from the crates.

Installing the Door Frame

1. Determine which side of the wall will be the “clean side” and which will be the “dirty side”. The “clean side” of the door frame will be flush with the wall and does not have any horizontal surfaces. The “dirty side” is open on the top to accommodate the motorized door housing and is easily identified by the door guides.



Figure 2: The “Clean side” of the door frame features a smooth, tapered edge



Figure 3: The door tracks on the “dirty side” can be identified by the curved door guides



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2. Make the wall cut-out and frame it with suitable support materials. Wall studs on either side of the wall cut-out are required for fastening the door frame and mounting the motorized door housing. Refer to the drawings of your particular unit for wall cut-out dimensions.
3. The photoelectric sensor on the "clean side" will require its wiring to be fed into the wall and routed over to the electrical control box. Before installing the door frame, it is advisable to determine the wiring route ahead of time while the inside of the wall is still accessible. The sensor's wires should emerge from the wall in the same location as the touch panel wiring coils (see Figure 4).

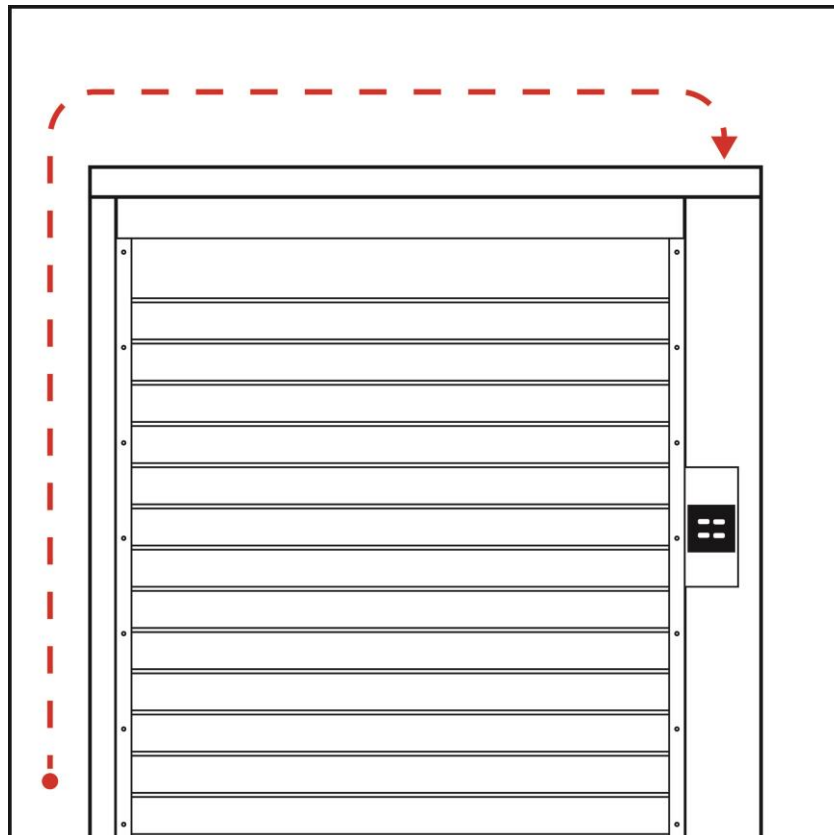


Figure 4: The wiring for the photoelectric sensor will have to enter the wall and follow the path shown above to meet up with the rest of the wiring



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4. Insert the “clean side” of the door frame into the wall cut-out. Be careful not to damage any of the wiring coils that emerge from the corner opening of the door frame.

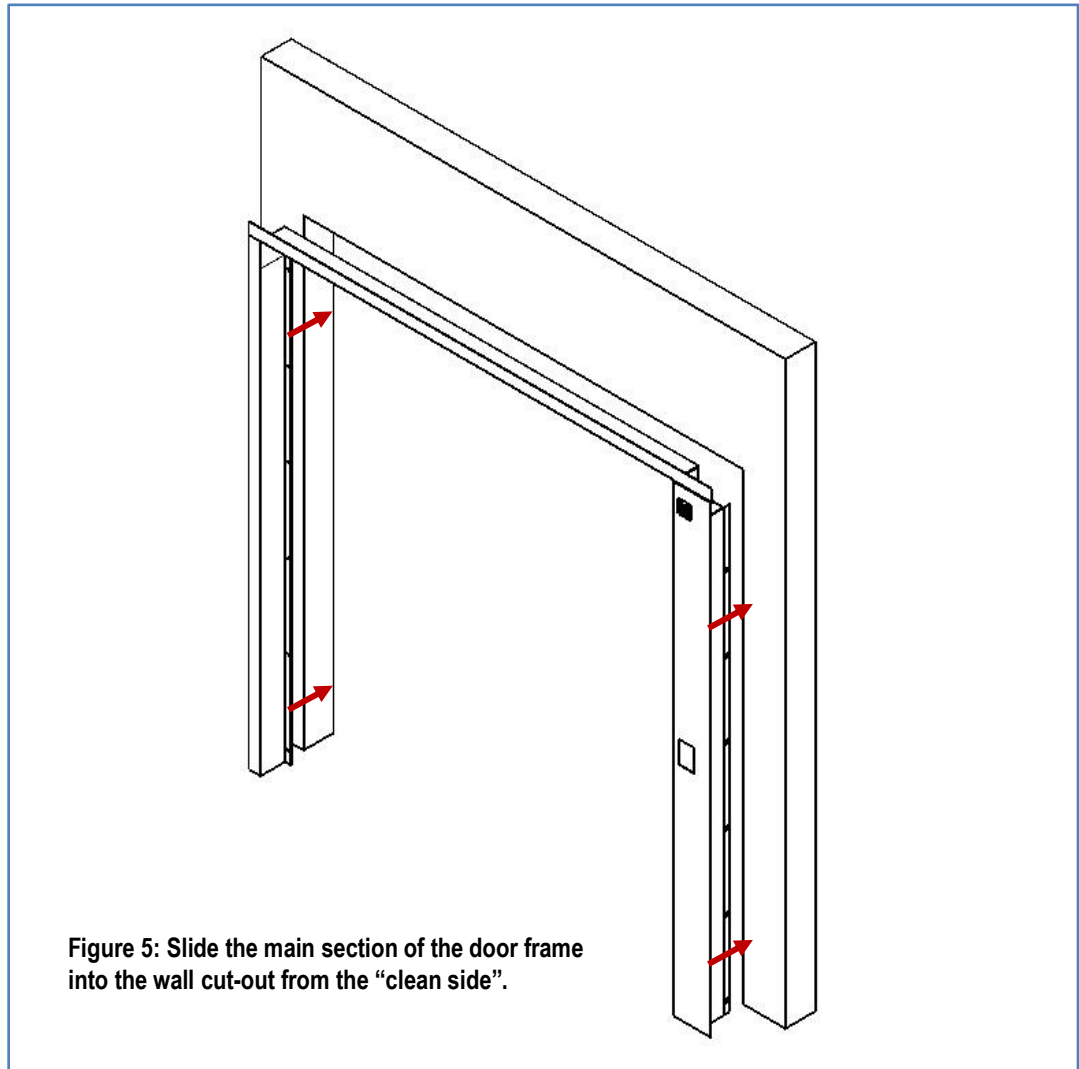


Figure 5: Slide the main section of the door frame into the wall cut-out from the “clean side”.



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5. Attach the two door tracks by aligning the welded studs with the predrilled holes on the “clean side” door frame. Use the cap nuts (removed earlier) to pull the opposing frames together tightly (see Figure 6). Be sure not to pinch any wiring.

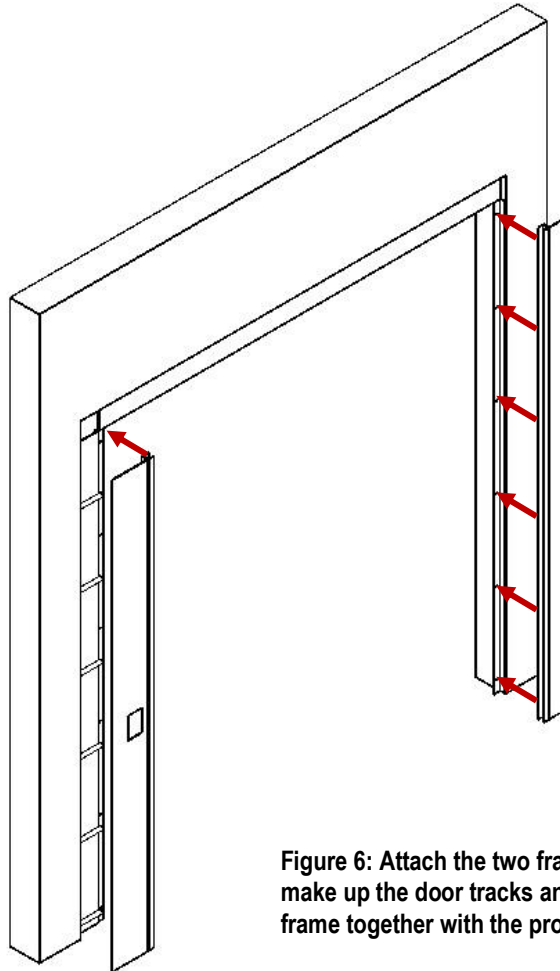


Figure 6: Attach the two frame pieces that make up the door tracks and tighten the frame together with the provided cap nuts



6. After the two frame sections have been tightened together, fasten the frame to the wall studs using the predrilled holes within the door tracks on both sides of the door opening (see Figure 7). The side with the touch panel will require 6" long screws to reach the stud (see Figure 8) and the side without the touch panel will require 1 ½" long screws.



Figure 7: Predrilled holes within the door track for fastening the frame assembly to the wall stud



Figure 8: The touch panel side of the frame has internal guides for the 6" screws

Installing the Motorized Door Housing

The motorized door housing is shipped in a separate crate from the door frame. The electrical control box will be preinstalled on top of the door housing.



NOTE

If multiple doors were ordered, only one door housing will have the electrical control box preinstalled. This assembly will serve as a reference for wiring and should be the last door you install.

1. Remove the 2 screws located on the front of the electrical control box and lift off the top cover. At this point, it is highly recommended that you take pictures of all wiring connections within the control box and familiarize yourself with the labeling. You should also note how the wires are routed into the electrical control box. For additional information, refer to the electrical drawings included with your order.



NOTE

There are 5 bundles of wires that must be routed into the electrical control box: three coils come from within the motorized door housing: one coil for the motor and two coils for the laser sensors within the door housing. Another coil will emerge from the hollow part of the door frame that houses the touch panels, and the final coil is the wiring from the photoelectric sensor that has been routed through the wall.

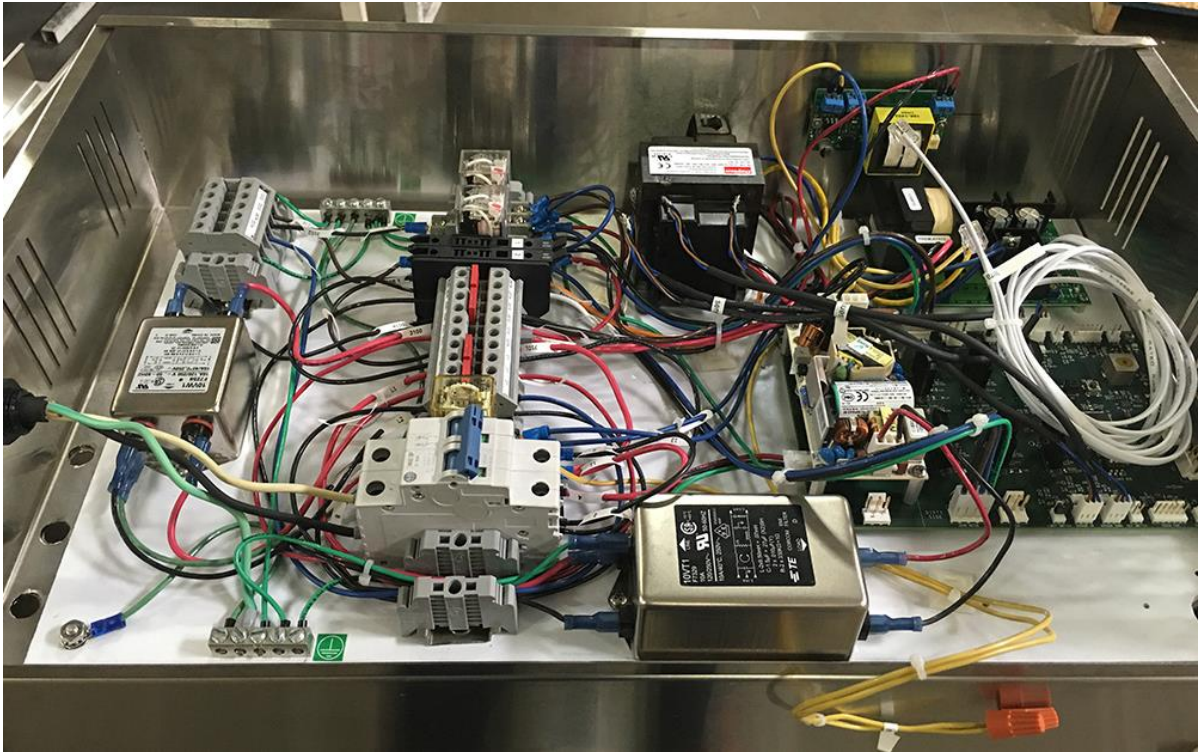


Figure 9: Electrical Control Box interior after removing the cover. Note that the Reset Button (yellow wires w/ orange caps) and Keyswitch (wiring not shown; attached to cover) must be disconnected to fully remove the cover.

2. Before the electrical control box can be detached, you must disconnect the wires that enter the box through any of the four pass-through holes that lead down into the motorized door housing (see Figures 8 and 9).

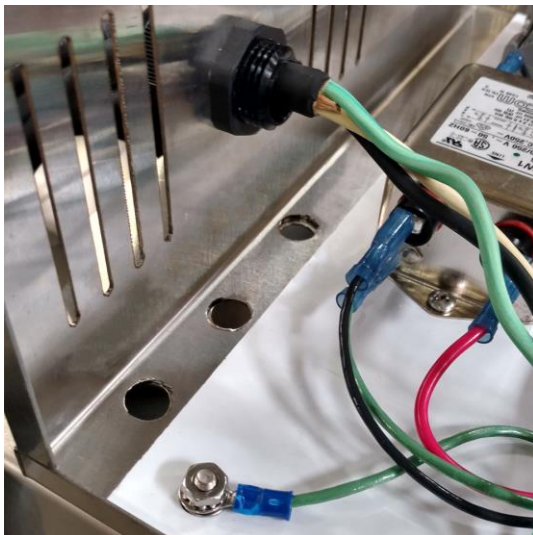


Figure 9: Three pass-through holes for wiring are located near the power supply cord



Figure 10: One pass-through hole is located on the opposite side, near the circuit board



3. Next, remove the 4 hex nuts and lock washers located around the edges of the white polypropylene base (refer back to Figures 9 and 10 for examples). Detach the green grounding wires that are secured by two of these hex nuts. You should now be able to lift the electrical control box off of the motorized door housing and set it aside. Move slowly and gently to prevent snagging any of the wires.
4. Detach the top cover of the motorized door housing by removing the 10 screws along its edges, guiding the wiring through the pass-through holes as you lift the cover off. Set the top cover to the side.
5. Lift the motorized door housing and position it so that the bottom of the housing sits flush against the top edge of the door frame (see Figure 10). Guide the leading edge of the door into the curved door guides that extend out from the top of the frame (see Figure 3); these door guides should be completely enclosed within the housing. Secure the housing to the wall studs using the three predrilled mounting holes on both ends (see Figure 11; total of six screws). We recommend utilizing anchors capable of holding at least 250 lbs. when fastening the housing to the wall.

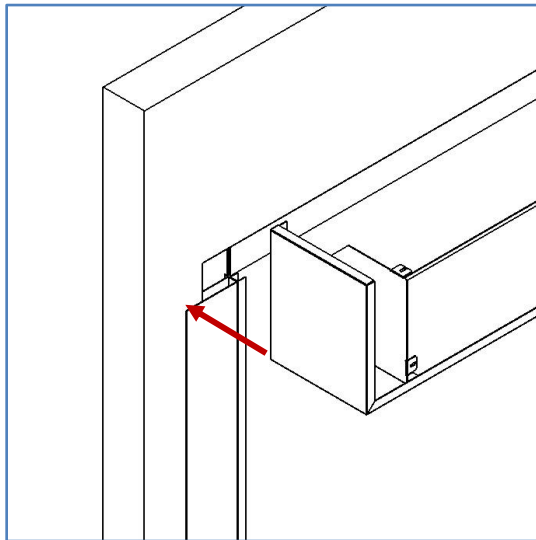


Figure 11: The bottom of the door housing should align with the top of the door frame

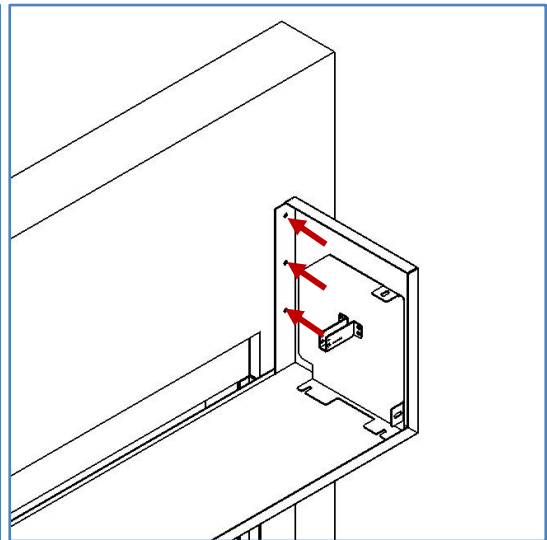


Figure 12: Three predrilled mounting holes are provided on each end of the door housing

6. Reinstall the top cover of the motorized door housing while guiding the wiring back through the pass-through holes drilled between the two housings. At this point, all remaining loose wiring should be ready for routing into the electrical control box.
7. Reinstall the electrical control box, guiding all wiring through the corresponding pass-through holes. Secure the box to the housing using the four hex nuts and lock washers removed in Step 3. Two of these mounting points will have green ground wires that need to be reattached. One grounding point is visible in Figure 8 on the previous page and the other grounding point can be seen next to the terminal block on the following page.

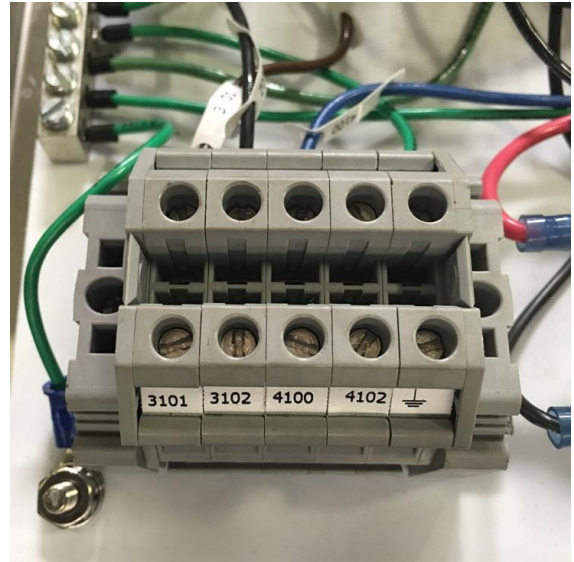


Control Box Wiring

All wiring is labeled to help identify the proper connection points within the control box. A wiring diagram is provided in addition to the instructions in this manual. If you have any questions regarding the wiring procedure, please contact our customer service department, who can connect you to the appropriate party for troubleshooting.



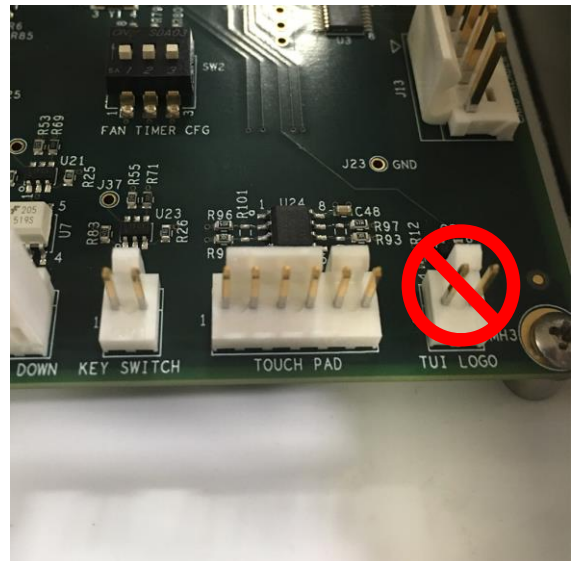
1. Start by locating this coil, which contains all of the wiring for the door motor.



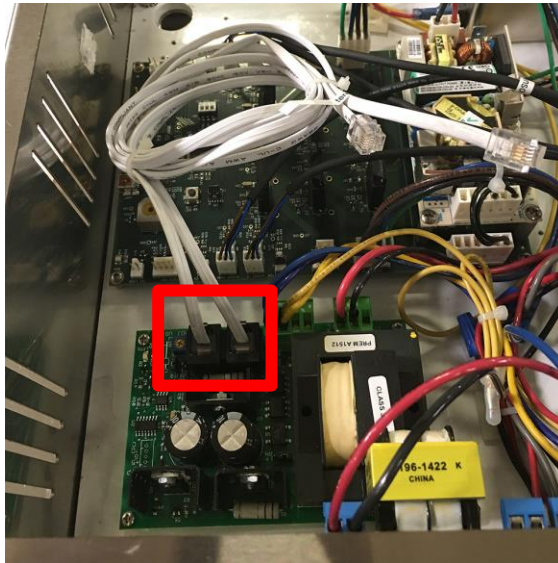
2. The door motor wiring connects to this terminal block according to the labels. The black and yellow wires from the photoelectric sensor will also connect to this terminal block.



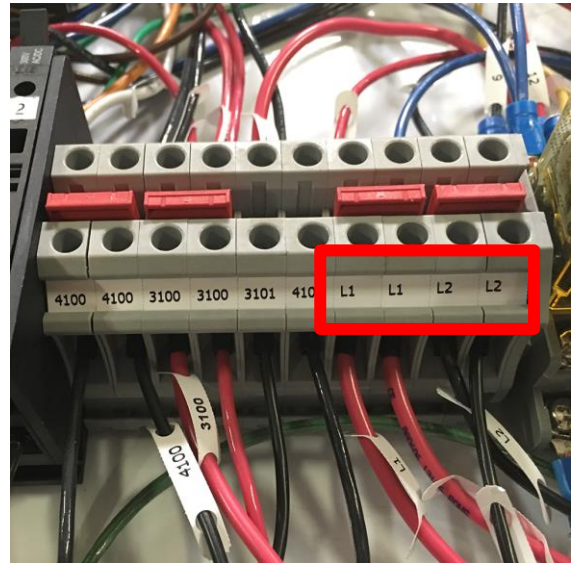
3. This coil emerges from the opening at the top of the door frame and contains two 6-pin wires for the touch panels and two wires from the photoelectric sensor below the touch panels.



4. On the circuit board, there are two 6-pin connection points labeled for the Touch Panels and two 2-pin connection points labeled for the key switches. The 2-pin connectors labeled for with "TUI logo" are not used.



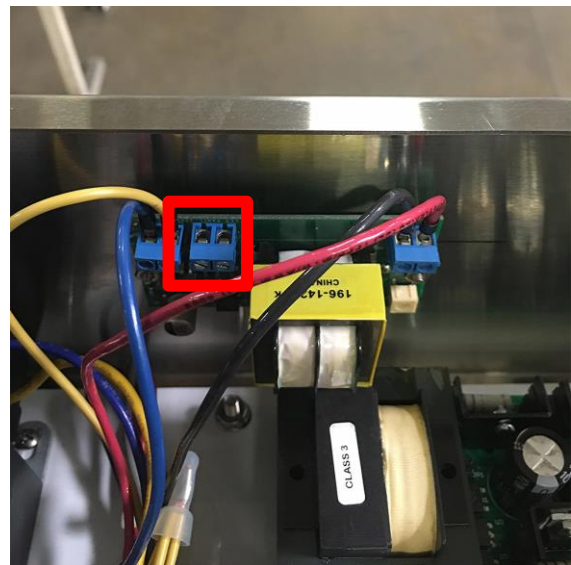
5. The low-voltage white phone cable connects the large TUI Logo to the circuit board as shown above.



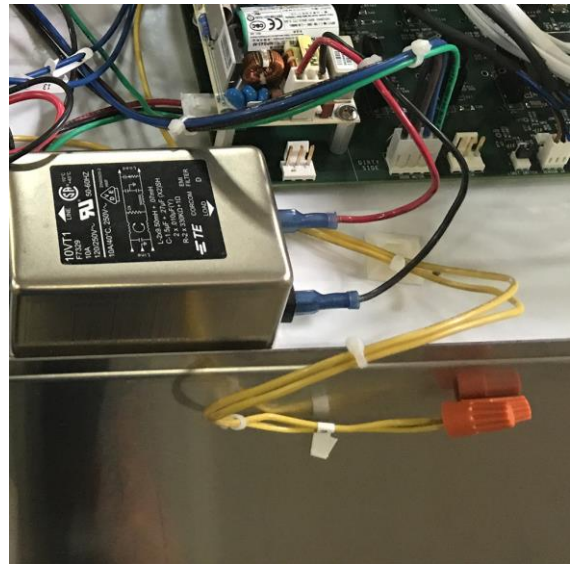
6. The blue and brown wires from both photoelectric sensors (labeled L1 and L2) will connect to the terminal block shown above.



7. The smaller TUI Logo will have a red wire and a black wire that exit the door frame at the same place as the touch panel wires.



8. The red and black wires from the small TUI Logo will be plugged into the blue terminals on the transformer shown above.



9. The wiring for the reset button and the 2-pin connector for the key switch can be found on the back of the electrical control box cover.
10. The corresponding wires in the control box will also have a "Reset" label. Use the provided caps to make the connection. The key switch connection can be found on the circuit board next to the touch panel connection (shown in Step 4).
11. After the wiring is complete and has been checked for accuracy, reattach the top cover of the electrical control box to finish the installation.



3.0 Operation

Initial System Start-Up

- A) Prior to connecting the door to a power source, clear any obstructions from the path of the door.
- B) Connect the power cord to a grounded power supply. The door will immediately roll down and close completely.
- C) Test each of the functions listed on the following pages for proper operation.

User Interface

The Roll-Up Door features a touch panel on each side of the door that controls its operation. Each touch panel has four (4) buttons:



UP	Press once to open the roll-up door.
DOWN	Press once to close the roll-up door.
LOCK	Press once to close the door and lock it in the closed position. Disable the Lock Down function by pressing the LOCK button three times in succession. An internal alarm will beep as long as the Lock Down function is activated.
E-STOP	Press once to open the door and lock it in the open position. Disable the Emergency Stop function by pressing and holding the reset button for at least one second before releasing it.



Make sure that the door is clear of any obstructions before pressing the LOCK button.

WARNING

Reset Button:



NOTE

The reset button **WILL NOT** work if the key switch is in the **BYPASS** position.

The reset button cuts power to the system as long as it is pressed. To fully reset the system, the reset button must be depressed for at least one second before being released. This is most useful if the system encounters an error. Figure 13 shows the reset button next to the Bypass Key Switch.

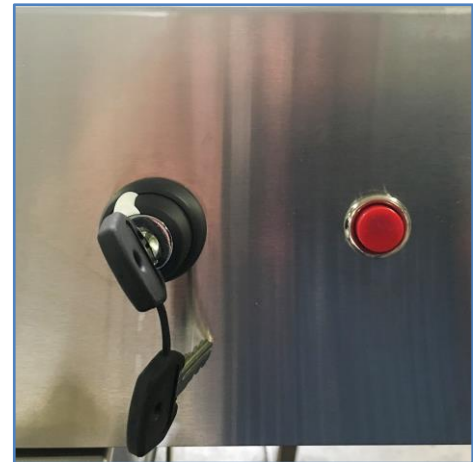
To reset the system:

1. Turn the key switch to the **NORMAL** position.
2. Press and hold the reset button for at least one second before releasing.
3. The door will roll down when the system restarts.

Bypass Key Switch:

The key switch located on top of the motor housing activates the **BYPASS** mode. When in **BYPASS** mode, the door will fully open and lock in place. The touch panel buttons will not work in this mode. When the key switch is turned back to its normal position, the door will close and the touch panel will become operable. The key can be removed and stored securely to prevent tampering with the operation of the door.

Figure 13: Key switch and reset button located on the face of the electrical control box (on top of the motor housing)



Photoelectric Sensors

The door is monitored by two photoelectric sensors located 6" from the bottom of the door (see Figure 2). An infrared light beam passes between the two sensors. When this cross-beam is disrupted, the corresponding door will not close. If the cross-beam is disrupted while the door is closing, the door will stop in place and will not operate until the unit is reset.

Each sensor contains a green and an amber LED to indicate status. A fully functional unit with an uninterrupted beam will have both green and amber lights lit. Green without amber means the unit is functioning, but the infrared beam has been disrupted. No lights indicate the unit is not receiving power.



Figure 14: Photoelectric sensor near bottom of door



5.0 Troubleshooting



Ensure that the unit is disconnected from power before servicing the unit.

Problem: The system has malfunctioned.

Possible Solution(s): Check to make sure that the key switch is not in Bypass mode and then reset the system by pressing reset button to return the door to the closed position.

Problem: The door will not close.

Possible Solution(s): Check to make sure that the key switch is not in Bypass mode. Try disabling the Emergency Stop function by pressing E-STOP three times in succession. If the problem persists, press the reset button.

Problem: The door will not open.

Possible Solution(s): If the Lock Down function has been activated, there will be an audible beep indicating that the door is still in Lock Down mode. Press LOCK three times in succession to disable it. If the problem persists, press the reset button.

Problem: The door does not stop at the proper open and closed positions.

Possible Solution(s): The internal sensors may have become misaligned. Contact Terra Universal for further instruction.

Problem: The touch panel does not respond when any button is pressed.

Possible Solution(s): The system may have crashed. Press the reset button to reboot the system.

Problem: Power to the system has completely shut off. The TUI logos will not light up.

Possible Solution(s): The system's main circuit breaker may have been tripped. The circuit breaker can be found inside the electrical control box on top of the door housing. Check for any blown fuses, any visible damage to the main circuit board, or any visible damage to the other components. If the problem persists, contact Terra Universal for assistance.



6.0 Service and Cleaning



Disconnect the unit from power before attempting any service. Contact Terra for assistance.

For service and cleaning, the Roll-Up Door has a Bypass mode to lock the door in the open position. To activate BYPASS mode, locate the key switch on top of the motor housing and turn it to BYPASS. The key can be removed during maintenance procedures to prevent inadvertent operation of the door.

Stainless steel should always be cleaned with alcohol (or similar cleaning agent) and a damp cloth. Powder-coated aluminum should be cleaned with a mild cleaning solution.



Powder-coated components should never be cleaned with solvents, which degrade the coating over time.

7.0 Specifications



Refer to the original order form for exact specifications applicable to your unit.

Specifications	
Motor	Bi-directional, asynchronous, 45 N·m, 120/240VAC, 50/60Hz, 1 amp
Frame	304 stainless steel
Door	Powder-coated aluminum, insulated articulated slats



8.0 Warranty

Products Manufactured by Terra: Terra Universal, Inc., warrants products that it manufactures to be free from defects for a period of 12 months for parts and 90 days for labor, commencing from the date of shipment. Terra's sole responsibility is to repair or replace, at its option, any part of the product that proves defective or malfunctioning during this time limit. In some cases, components incorporated in Terra Universal products are covered by additional warranties from component manufacturers; obtain specific information from Terra sales representatives. This warranty is void if the equipment is abused or modified by the customer, is operated outside Terra's operating instructions or specifications, or is used in any application other than that for which it is specified. This warranty does not include routine maintenance or service procedures, breakage of quartz baths after 60 days, shipping damage, nor damage from misuse, intentional or unintentional abuse, neglect, natural disasters, or acts of God.

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Freight Shortage or Damage: Upon receipt of any equipment from Terra Universal, Inc., customer shall immediately unpack and inspect for damage or shortage. The customer shall not accept a damaged package or a short shipment until the carrier makes a "damage or shortage" notation on both the carrier's and customer's copy of the freight bill or delivery receipt. Service title passes when the shipment is loaded, so customer is responsible for filing and collecting a freight claim. Any replacement products must be ordered and paid for separately. For Terra's "Policy and Procedures for Returning Goods," see Terra's Internet site: www.TerraUniversal.com.

Generally, customers can improve the chance of collecting on a freight claim by following these procedures: 1) formally requesting that the carrier inspect the shipment immediately upon suspecting damage or shortage to verify condition; 2) notifying the carrier upon discovery of concealed damage and requesting an inspection within 15 days of receipt, both in person or phone and following up via mail; 3) keeping the shipment as intact as possible, including retaining original packaging materials and keeping the product as close to the original receiving location as possible; 4) holding salvage for disposition by the carrier.

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Warranty Returns: All warranty returns must be authorized in advance by Terra Universal and approved under an RMA. Unless approved in advance for good reason, all returns must be in original condition, including all manuals, and must be packaged in original packaging materials. All returned goods are to be shipped to Terra Universal, freight prepaid at customer's expense. See Terra's "Policy and Procedure for Returned Goods."

Thank you for ordering from Terra Universal!!