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# Load Master

## Portable Power Distribution Box

### OPERATOR'S MANUAL



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## Shipment: Unpacking and Inspection

Check the shipment carefully to confirm it arrived complete and undamaged.

1. Unpack the shipment and check the contents against the packing list to ensure the order is complete.
2. Check the unit for loose or broken components, which might have resulted from shipping.
  - a. Inspect for signs of damage to wiring devices, device covers or circuit breakers.
  - b. Open and close the lid on the Load Master Box to determine whether it closes and latches properly.
3. If there is any damage to the Load Master Box, contact **Lex Products Technical Services** toll free at **(800) 643-4460** or email **info@lexproducts.com**.

## Introduction

This manual details the installation and use of the Lex Products Load Master line of power distribution boxes. This power distribution box provides a convenient way to adjust the overcurrent protection of the output receptacles. Please review this manual prior to operating the Load Master box. Store this manual in a safe location for future reference.

**Figure 1.1: Lex Products Load Master Components**



**Figure 1.2: Top view with lid open**



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## SETTING UP THE LOAD MASTER DISTRIBUTION BOX

Set up of the Lex Products Load Master power distribution box is to be performed by qualified personnel only.

### Step 1: Placement of the Load Master Box

The Load Master distribution box is designed for indoor and outdoor use. The base of the unit is designed to elevate live electrical components above ground level. The Lex Products Load Master is UL Listed for use in wet locations, but is not to be operated near standing water or in wet weather.

1. The Load Master box is a two man portable unit. When moving the Load Master box, use the lifting handles on the sides of the box (Figure 1).
2. Place the Load Master Box in a level location with a dry and firm foundation within proximity of the power source and the location requiring power.
3. Open the lid for the unit to confirm that the adjustable circuit breakers are in the **OFF** position.

### Step 2: Making the Input Connections



**WARNING**

Before making connections to the Load Master box, make sure the power source feeding the box is **OFF**.



**WARNING**

Do not exceed the voltage rating (600 VAC Max.).

1. Locate the (2) sets of feeder cable that will be used to bring power to the Load Master box.
  - a. 4/0 cable must be used to connect the Load Master distribution box to the power source.
  - b. Note: if using the feed thru feature on model PH800-N2J-31AV1AX1AZ, connect the feed thru before the input, making the Cam-type connections in the same manner and order as indicated for the input connection on page 6.



**WARNING**

Both sets of Cam extensions feeding the input must come from the same power source.

## Step 2: Making the Input Connections Continued

2. Connect the bottom input row of Cam cables first, beginning with the ground cable (Green).
3. Push the connector into the male (Green) Cam panel mount receptacle with the screw on the connector facing up.
4. Rotate the connector clockwise at least 90 degrees until it stops to make sure it is secured in the locked position



1. Align the connector with the corresponding color-coded receptacle



2. Insert the Cam connector into the receptacle and rotate Cam connector at least 90 clockwise degrees to lock

5. Connect neutral (White) Cam cable second.
6. Push the connector into the male (White) Cam panel mount receptacle with the screw on the connector facing up.
7. Rotate the connector clockwise at least 90 degrees until it stops to make sure it is secured in the locked position



1. Align the connector with the corresponding color-coded receptacle



2. Insert the Cam connector into the receptacle and rotate Cam connector at least 90 clockwise degrees to lock

8. Repeat steps 3-4 to connect the Blue, Red and then Black phases in the same manner.



9. Connect the second (Top) row of the Cam input in the same manner and color order as detailed above.

When disconnecting, do so in reverse order starting with the phases (Black, Red and Blue), followed by the neutral (White) and finally ground (Green).

### Step 3: Adjusting the Circuit Breakers

The current level of the circuit breakers is adjustable to match the load of the output receptacles. The circuit breakers are adjusted with dip switches located under a clear cover on each circuit breaker.

Figure 3.1: Circuit Breaker

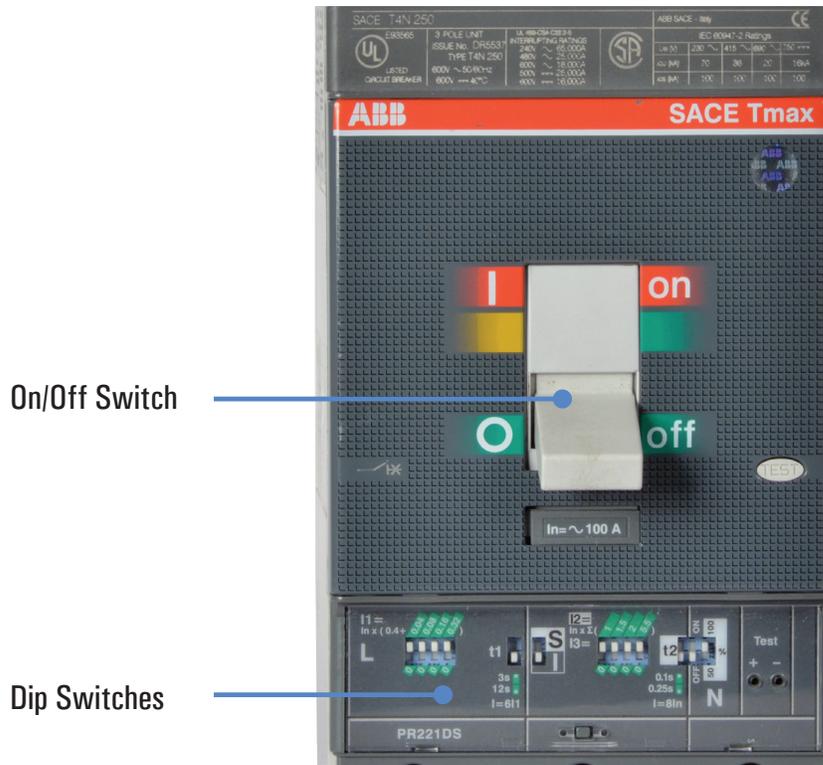
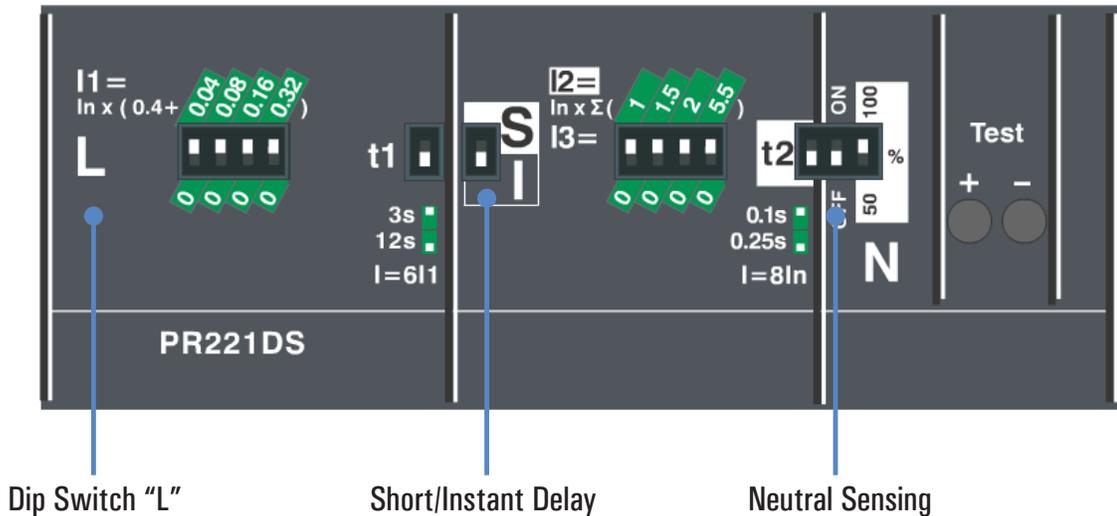
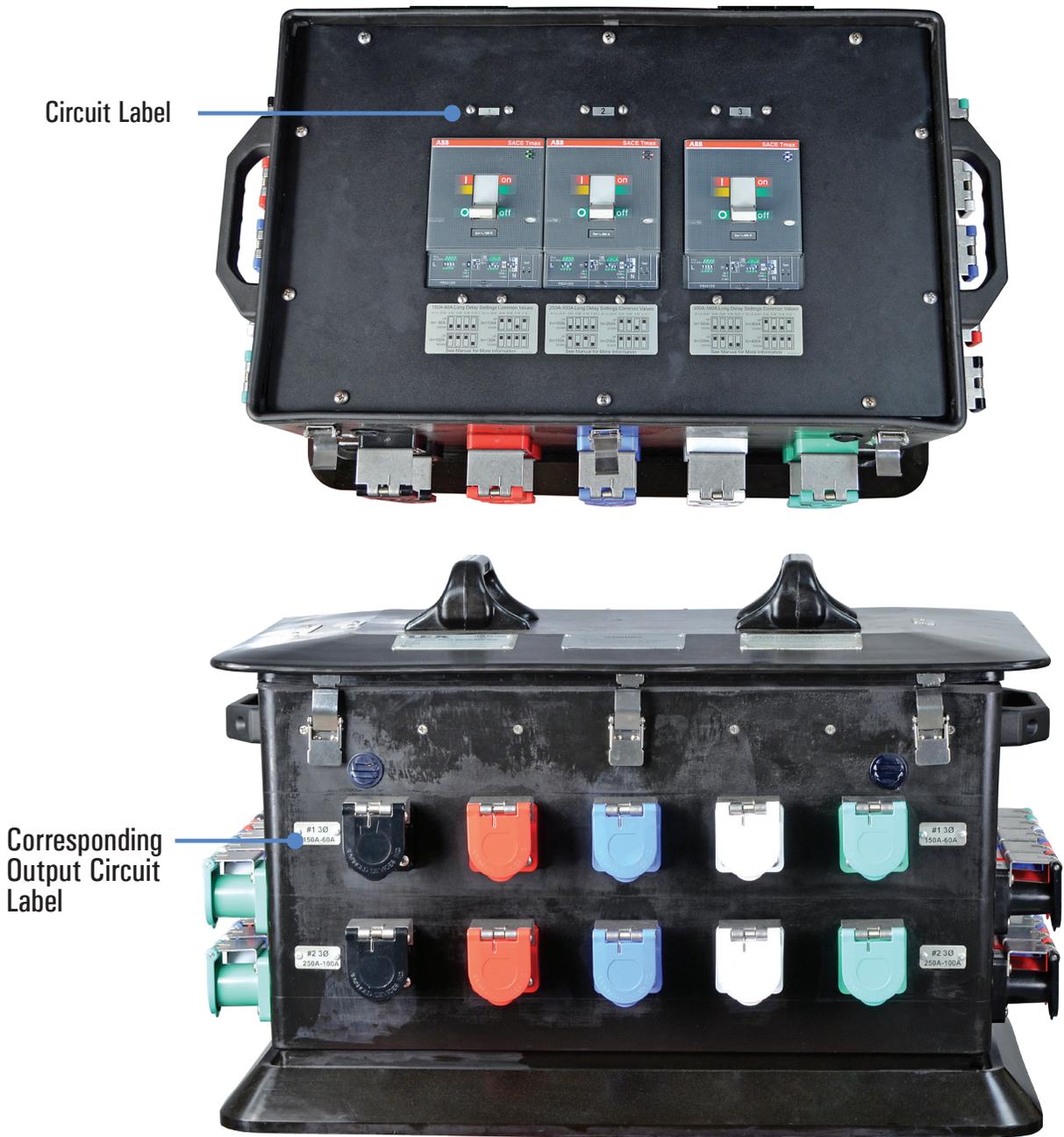


Figure 3.2: Dip Switches Diagram



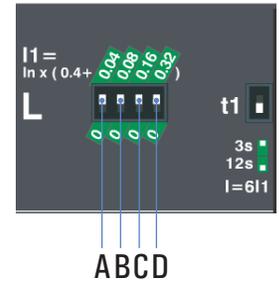
1. Determine the load that will be placed on each set of output receptacles. This is the value that will need to be matched with the circuit breaker settings.
2. Each circuit is labeled with a number that corresponds to a specific output for easy circuit identification. Determine which load will be matched with each set of receptacles and circuit breakers based on the available range of the Load Master box model. For example, a 400 Amp load must be paired with a 160-400 Amp receptacle and circuit breaker; a 60 Amp load must be paired with a 60-150 Amp receptacle and circuit breaker.



## Circuit Breaker Adjustment Settings

3. For a load to be paired with the **160-400 Amp circuit breaker** and receptacle, set the dipswitches on the circuit breaker to the closest level indicated in the table below with the set level greater than the actual load.

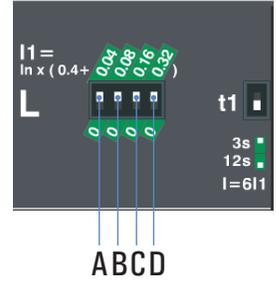
- Only adjust the dip switch labeled "L"
- To adjust the circuit breaker, open the clear cover over the dip switch using a small flat-head screw driver.
- Move each switch (A, B, C, D) into the up or down position based on the table below to achieve the desired output current rating
- Close the clear cover over the dip switch.



160-400 Amp Circuit Breaker Adjustment Settings			
Amps	Dipswitch Configuration	Amps	Dipswitch Configuration
160 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]	288 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]
176 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]	304 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]
192 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]	320 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]
208 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]	336 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]
224 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]	352 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]
240 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]	368 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]
256 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]	384 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]
272 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]	400 Amps	UP: [A] [B] [C] [D] DOWN: [A] [B] [C] [D]

4. For a load to be paired with the **100-250 Amp circuit breaker** and receptacle, set the dipswitches on the circuit breaker to the closest level indicated in the table below with the set level greater than the actual load.

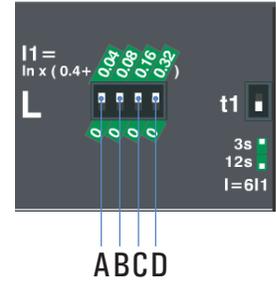
- a. Only adjust the dip switch labeled "L"
- b. To adjust the circuit breaker, open the clear cover over the dip switch using a small flat-head screw driver.
- c. Move each switch (A, B, C, D) into the up or down position based on the table below to achieve the desired output current rating
- d. Close the clear cover over the dip switch.



100-250 Amp Circuit Breaker Adjustment Settings			
Amps	Dipswitch Configuration	Amps	Dipswitch Configuration
100 Amps	UP DOWN	180 Amps	UP DOWN
110 Amps	UP DOWN	190 Amps	UP DOWN
120 Amps	UP DOWN	200 Amps	UP DOWN
130 Amps	UP DOWN	210 Amps	UP DOWN
140 Amps	UP DOWN	220 Amps	UP DOWN
150 Amps	UP DOWN	230 Amps	UP DOWN
160 Amps	UP DOWN	240 Amps	UP DOWN
170 Amps	UP DOWN	250 Amps	UP DOWN

5. For a load to be paired with the 60-150 Amp circuit breaker and receptacle, set the dipswitches on the circuit breaker to the closest level indicated in the table below with the set level greater than the actual load.

- Only adjust the dip switch labeled "L"
- To adjust the circuit breaker, open the clear cover over the dip switch using a small flathead screw driver.
- Move each switch (A, B, C, D) into the up or down position based on the table below to achieve the desired output current rating
- Close the clear cover over the dip switch.



60-150 Amp Circuit Breaker Adjustment Settings			
Amps	Dipswitch Configuration	Amps	Dipswitch Configuration
60 Amps	UP DOWN	108 Amps	UP DOWN
66 Amps	UP DOWN	114 Amps	UP DOWN
72 Amps	UP DOWN	120 Amps	UP DOWN
78 Amps	UP DOWN	126 Amps	UP DOWN
84 Amps	UP DOWN	132 Amps	UP DOWN
90 Amps	UP DOWN	138 Amps	UP DOWN
86 Amps	UP DOWN	144 Amps	UP DOWN
102 Amps	UP DOWN	150 Amps	UP DOWN

## Step 4: Making the Output Connections

1. Select the appropriate gauge feeder cable to match the load requirements of each circuit that will be in use.
2. Locate the sets of feeder cable that will be used to bring power from the Load Master box further downstream.
3. Connect the Cam cables to the output that corresponds to circuit (1) first, beginning with the ground cable (Green).
4. Push the connector into the male (Green) Cam panel mount receptacle with the screw on the connector facing up.
5. Rotate the connector clockwise at least 90 degrees until it stops to make sure it is secured in the locked position



1. Align the connector with the corresponding color-coded receptacle



2. Insert the Cam connector into the receptacle and rotate Cam connector at least 90 clockwise degrees to lock

6. Connect neutral (White) Cam cable second.
7. Push the connector into the male (White) Cam panel mount receptacle with the screw on the connector facing up.
8. Rotate the connector clockwise at least 90 degrees until it stops to make sure it is secured in the locked position



1. Align the connector with the corresponding color-coded receptacle



2. Insert the Cam connector into the receptacle and rotate Cam connector at least 90 clockwise degrees to lock

9. Repeat steps 3-4 to connect the Blue, Red and then Black phases in the same manner.



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10. Connect the Cam set that is connected to circuit (1) to the input of the downstream power distribution box that matches the load requirements of circuit (1). Connect the Cam set in the same manner and color order as detailed previously.
  11. Repeat steps 3-10 for each additional circuit that will be in use on the Load Master Box, connecting the Cam cables in the same manner and color order as detailed above.

When disconnecting the cables, do so in reverse order starting with the phases (Black, Red and Blue), followed by the neutral (White) and finally ground (Green).

### Step 5: Powering Up

Best practices dictate that loads are applied gradually (systematically) the first time the system is set up. If a circuit breaker cannot be energized or trips, check the system for continuity and short circuits, and make the necessary corrections before proceeding.

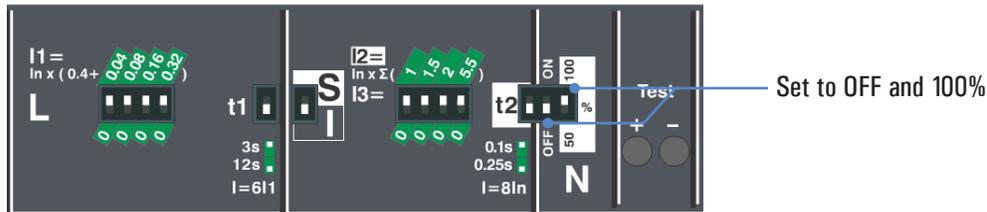
1. Turn on the power source.
2. Turn the first circuit breaker required on the Load Master box to the **ON** position.
3. After switching on the first circuit on the Load Master box, turn corresponding circuits for the downstream power distribution box to the **ON** position.
4. Repeat these steps for each additional circuit breaker that will be in use on the Load Master power distribution box.

## Troubleshooting Guide

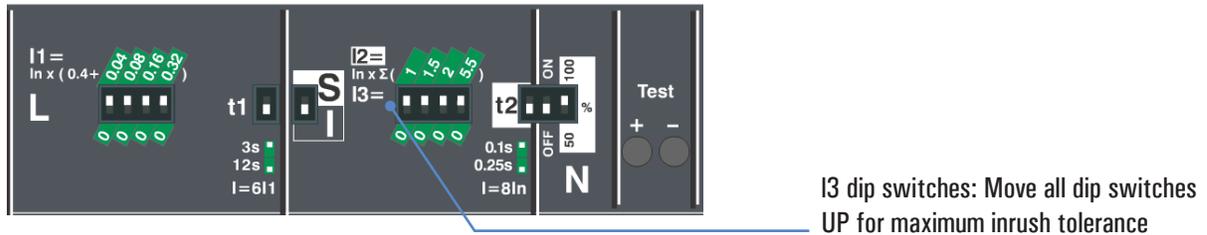
To help determine what has caused a circuit breaker to trip, it is important to configure the simplest possible power distribution system set up under which the problem still occurs. The loads connected to the system might exceed the circuit breaker rating, in which case a larger power distribution unit would be needed. If a larger power distribution unit is needed, contact Lex Products with the load information and requirements of the specific application to determine the appropriate power distribution system.

### Circuit Breaker Tripping During Normal Operation

1. Verify whether circuit breaker long delay settings are set as needed: Ensure the N setting is at 100% and the ON/OFF functionality next to the N is set to OFF. These dip switches are intended for specialized single phase applications and do not apply to the Load Master series under normal operation.
2. Retry turning on the circuit after adjustments are made.



3. If a large inductive load such as an air conditioner was turned on when the circuit breaker tripped, raise inrush settings or increase the trip time delay. The inrush settings can be adjusted by turning on the dip switches for I3. All dip switches up will result in the maximum inrush tolerance of ten times the circuit breaker rating.



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## Troubleshooting Guide Continued

### Circuit Breaker Tripping When Powering Up

1. Follow the steps outlined for circuit breakers tripping during normal operation.
2. If the issue persists, disconnect the output connections from the circuit breaker that is tripping.
3. Turn on all circuit breakers. If the circuit breaker trips, contact Lex Products for technical assistance. If the circuit breaker does not trip proceed to the next step.
4. Connect the cable to the corresponding circuit breaker outlets and turn off all attached loads.
5. Turn on the circuit breaker.
  - a. If the circuit breaker trips, disconnect cabling used and check for short circuits.
  - b. Turn off all circuit breakers, check the cabling connected to the Load Master, and check connected loads for shorts circuits.

#### How to check for a Load Master for short circuits

1. Disconnect incoming power from the Load Master box.
2. Turn on circuit breaker(s) for the circuit(s) to be tested.
3. Using a continuity meter or a multimeter, set to continuity/resistance mode and connect one probe to the input ground (green) Cam-type connector brass.
4. Take the other probe of the meter and check if there is continuity between each Cam-type connector and ground.
5. If there is continuity ( $R < 1\text{ k}\Omega$ , or the meter lights up or beeps), there is short circuit present. Contact Lex Products Technical Services department.
6. If there is no continuity, repeat step 3 and 4 checking if there is continuity between the neutral (white) Cam-type connector and the other Cam-type connectors. If continuity is detected, there is a short circuit present. Contact Lex Products if a short circuit is detected.

### Technical Support

Lex Products is available to help answer any installation or operation inquiries. For any questions or technical advice, please call Technical Services 24 hours per day, 7 days per week at 855.LEX.1002 or email [support@lexproducts.com](mailto:support@lexproducts.com).



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