



Load Master®

Portable Power Distribution Box

User Manual



CONTENTS

3	SHIPMENT: UNPACKING AND INSPECTION
4	INTRODUCTION
4	LOAD MASTER® COMPONENTS
5	SETTING UP THE LOAD MASTER® POWER DISTRIBUTION UNIT (PDU)
5	Step 1: Placement and Inspection of the Load Master® PDU
5	Step 2: Making the Input Connections
7	Step 3: Adjusting the Circuit Breakers
9	160-400 Amp Circuit Breaker - DIP Switch Settings
10	100-250 Amp Circuit Breaker - DIP Switch Settings
11	60-150 Amp Circuit Breaker - DIP Switch Settings
12	Step 4: Making the Output Connections
13	Step 5: Powering Up
14	TROUBLESHOOTING GUIDE
14	Circuit Breaker Tripping During Normal Operation
15	Circuit Breaker Tripping When powering Up
15	How to Check a Load Master® for a Short Circuits
15	TECHNICAL SUPPORT

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.

LOAD MASTER® COMPONENTS

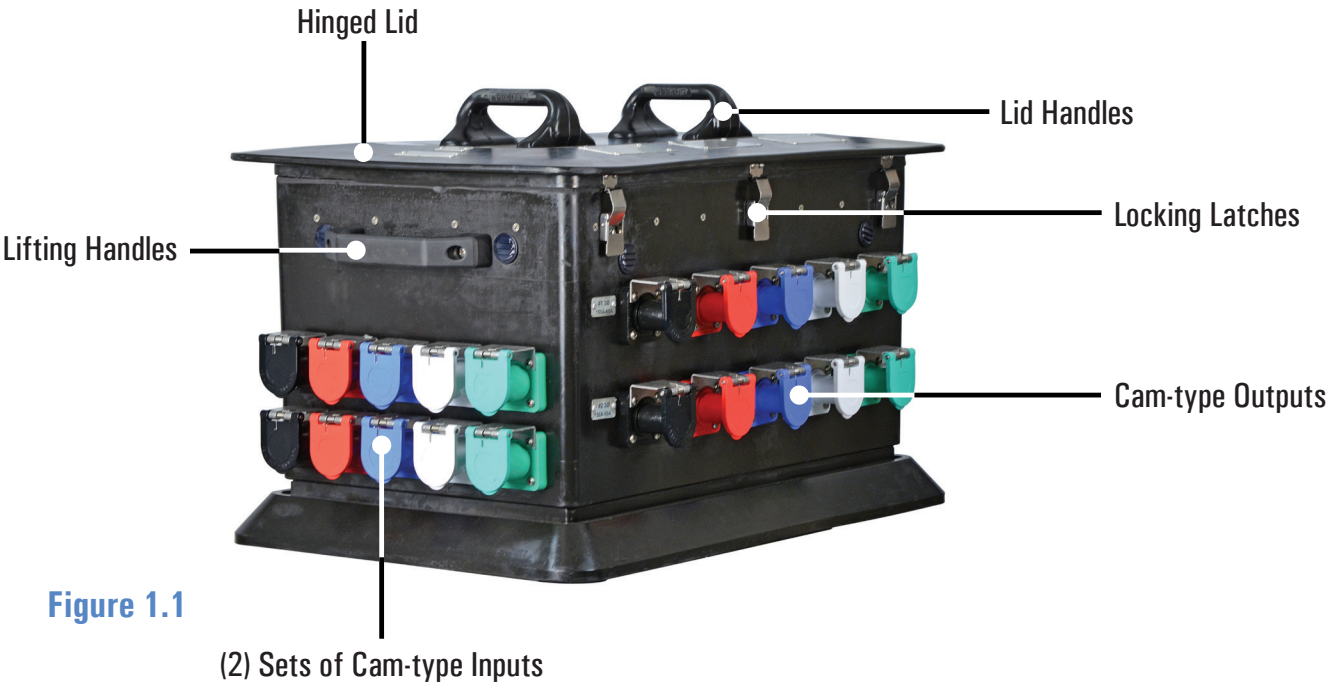


Figure 1.1



Figure 1.2

SETTING UP THE LOAD MASTER® POWER DISTRIBUTION UNIT (PDU)

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

Step 1: Placement and Inspection of the Load Master® PDU

- The Load Master® PDU 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
 - a. When moving the Load Master box, use the lifting handles on the sides of the box (Figure 1.2)
 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® PDU, 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® PDU
 - a. 4/0 cable must be used to connect the Load Master® PDU 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 inline connector (female) into the Cam inlet (male) 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



Align the inline Ground connector with the corresponding color-coded receptacle



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

5. Connect the neutral (White) Cam cable second
6. Push the inline connector (female) into the Cam inlet (male) 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



Align the inline Neutral connector with the corresponding color-coded receptacle



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.

NOTE: 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

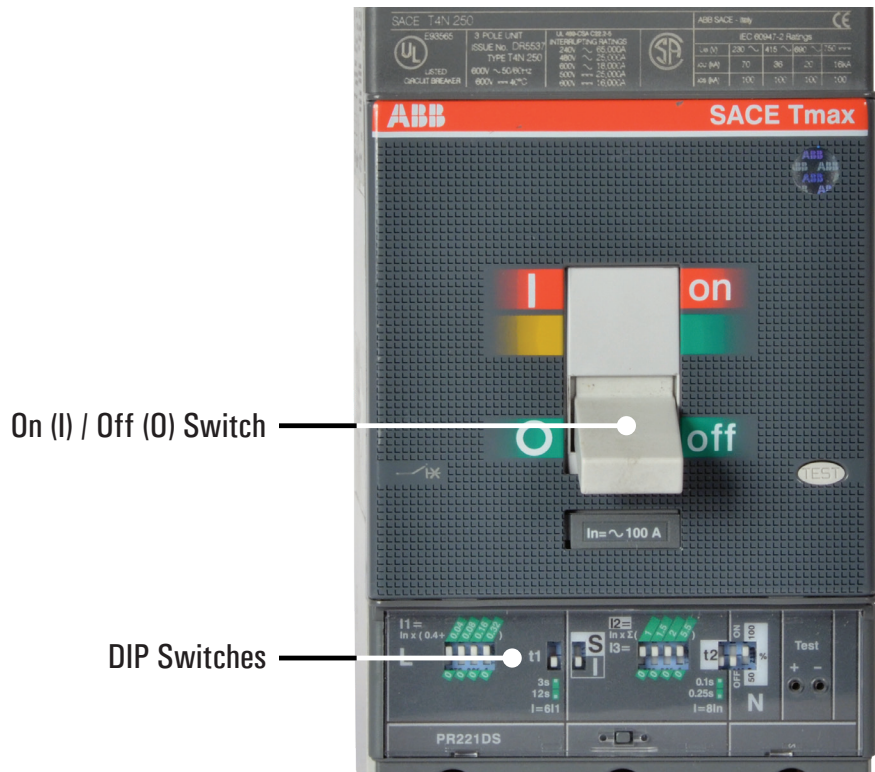
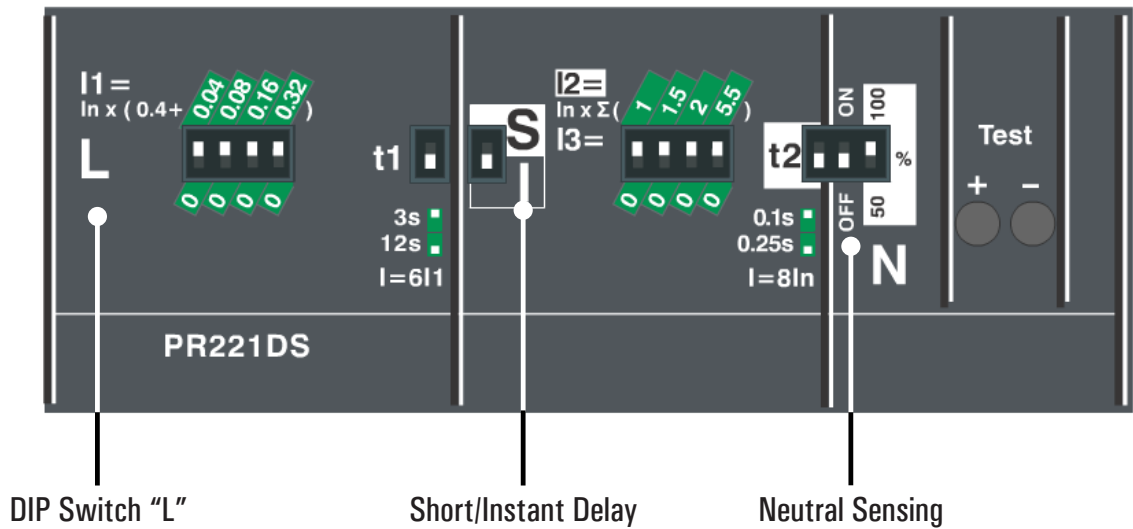


Figure 3.2: DIP Switches



Step 3: Adjusting the Circuit Breakers (continued)

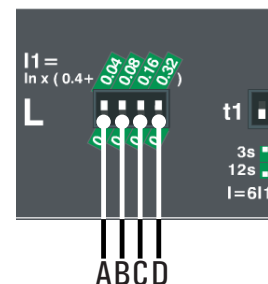
1. Determine the load that will be placed on each set of output receptacles
 - a. This is the value that will need to be matched with the circuit breaker settings
2. Each circuit is labeled with a number that corresponds to a specific output for easy circuit identification
3. Determine which load will be matched with each set of receptacles and circuit breakers based on the available range of the Load Master box model
 - a. 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



Step 3: Adjusting the Circuit Breakers (continued)

160-400 Amp Circuit Breaker - DIP Switch Settings

1. Set the DIP switches 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 flathead 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

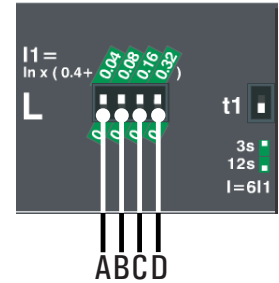


160-400 Amp Circuit Breaker Adjustment Settings			
Amps	Dipswitch Configuration	Amps	Dipswitch Configuration
160 Amps	UP DOWN	288 Amps	UP DOWN
176 Amps	UP DOWN	304 Amps	UP DOWN
192 Amps	UP DOWN	320 Amps	UP DOWN
208 Amps	UP DOWN	336 Amps	UP DOWN
224 Amps	UP DOWN	352 Amps	UP DOWN
240 Amps	UP DOWN	368 Amps	UP DOWN
256 Amps	UP DOWN	384 Amps	UP DOWN
272 Amps	UP DOWN	400 Amps	UP DOWN

Step 3: Adjusting the Circuit Breakers (continued)

100-250 Amp Circuit Breaker - DIP Switch Settings

1. Set the DIP switches 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 flathead 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

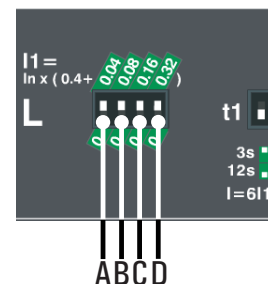


100-250 Amp Circuit Breaker Adjustment Settings			
Amps	Dipswitch Configuration	Amps	Dipswitch Configuration
100 Amps	UP DOWN	180 Amps	UP DOWN
110 Amps	UP DOWN	190 Amps	UP DOWN
120 Amps	UP DOWN	200 Amps	UP DOWN
130 Amps	UP DOWN	210 Amps	UP DOWN
140 Amps	UP DOWN	220 Amps	UP DOWN
150 Amps	UP DOWN	230 Amps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

Step 3: Adjusting the Circuit Breakers (continued)

60-150 Amp Circuit Breaker - DIP Switch Settings

1. Set the DIP switches 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 flathead 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



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



Align the inline Ground connector with the corresponding color-coded receptacle



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



Align the inline Neutral connector with the corresponding color-coded receptacle



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



Step 4: Making the Output Connections (continued)

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.

NOTE: 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

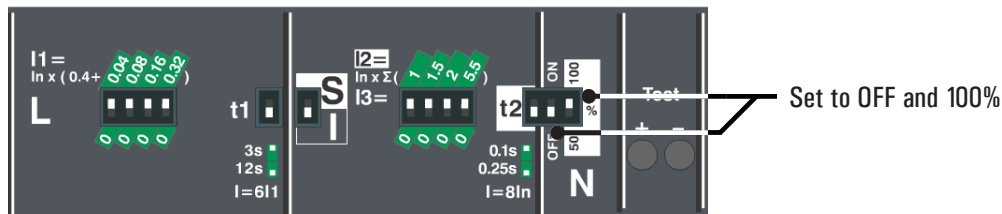
- Best practices dictate that loads are applied gradually and systematically the first time the system is set up
 - If a circuit breaker cannot be energized or trips, check the system for continuity and short circuits, and make the necessary corrections before proceeding
1. Turn on the power source
 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. Ensure the devices fed by that circuit are ON, tracing the electrical path to the final device fed by that circuit
 5. Repeat steps 2 thru 4 for each additional circuit breaker that will be in use on the Load Master power distribution box

TROUBLESHOOTING GUIDE

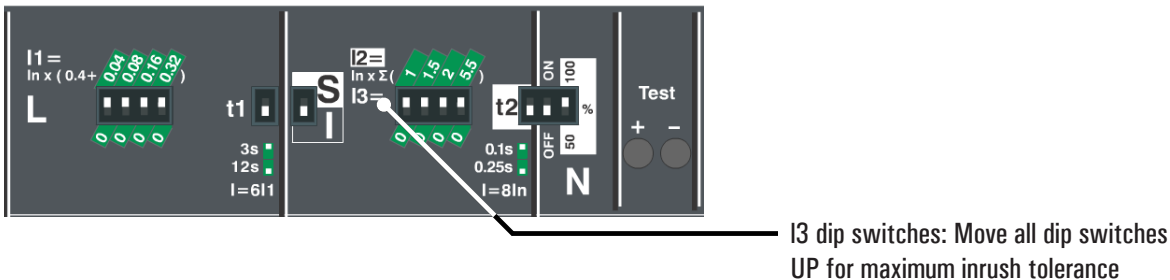
To help determine what has caused a circuit breaker to trip, it is important to configure the simplest possible power distribution system set-up under which the problem still occurs. The loads connected to the system might exceed the circuit breaker rating, in which case a larger power distribution unit 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
 - a. Ensure the N setting is at 100% and the ON/OFF functionality next to the N is set to OFF
 - b. 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
 - a. The inrush settings can be adjusted by turning on the dip switches for I3.
 - b. All dip switches up will result in the maximum inrush tolerance of ten times the circuit breaker rating



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
 - a. If the circuit breaker trips, contact Lex Products for technical assistance
 - b. If the circuit breaker does not trip proceed to the next step
3. Connect the cable to the corresponding circuit breaker outlets and turn off all attached loads
4. 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 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
 - a. 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
7. If continuity is detected, there is a short circuit present
 - a. 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 800.643.4460 or email INFO@lexproducts.com.

PowerGATE™ Load Master® Portable Power Distribution Box Operator's Manual



Lex Products
11 Forest Parkway
Shelton CT 06484
203.363.3738
203.363.3742 Fax

Lex South
15751 SW 41 Street
Davie, FL 33331
954.888.1024
954.888.1026 Fax

Lex West
12701 Van Nuys Blvd.
Suite Q
Pacoima, CA 91331
818.768.4474
818.768.4040 Fax

www.lexproducts.com
info@lexproducts.com
800.643.4460

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