

# Input / Output Panels 1200A / 1600A Installation Instructions & User Manual



A safe, convenient and reliable  
way to connect and access  
temporary power



## Contents

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2	Contents / Important
3	Prior to Installation: Site Preparation
3	Shipment: Unpacking and Inspection
4	Product Features (Input / Output)
5	Installation (Input / Output)
6	Installation Continued (Input)
7	Set-up (Input)
8	Disconnecting Circuits (Input)
9	Installation (Output)
9	Set-up (Output)
10	Disconnecting Circuits (Output)
11	Kirk Key Installation
12	Product Feature Instructions (Input)
12	Limited Warranty
12	Maintenance
12	Technical Support

## Appendices

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12	Appendix A - Pre-Operation and Maintenance Checklist
13	Appendix B - Parts Dimensions
14	Appendix C - Labels for Replacement
16	Represented Model Numbers and Ratings

## Important:

This manual contains information critical to the proper installation and operation of the Lex Products PowerGATE™ Input and Output Panels. Be certain to read and understand all instructions prior to installation and operation.

Lex Products PowerGATE™ Panels must be installed in conjunction with transfer switch.

Lex Products PowerGATE™ Input Panels are Listed to UL 1008.

Lex Products PowerGATE™ Output Panels are Listed to UL 891 for Switchboards.

### Prior to Installation: Site Preparation

Prepare installation site according to local codes.

The PowerGATE™ Panels are to be set on an exterior pad and secured to a building or secured to a pad using 3/8" fasteners (See Figure 1).

The surface where the PowerGATE™ Panels are to be secured must be capable of supporting the weight of the cabinet as well as the cable attached to it.

The following should be taken into consideration when locating the PowerGATE™ Panel:

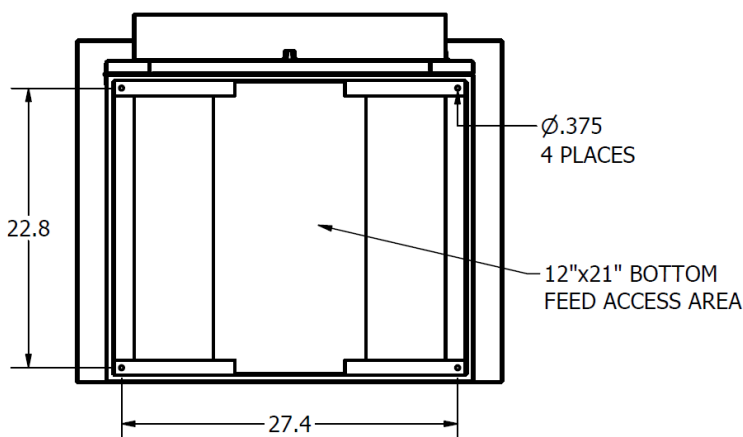
- The PowerGATE™ Panels are designed for exterior operation ONLY
- Identify and meet local codes and local Authority Having Jurisdiction (AHJ) requirements
- To prevent carbon monoxide poisoning from improperly ventilated generator emissions, the PowerGATE™ Panel must be mounted outdoors only. The mounting location is to be carefully selected to allow convenient connection to a generator or load bank, and located a suitable distance away from any building openings or HVAC inlets.
- Proper clearance must be allowed in front of the PowerGATE™ Panel to allow for opening of access doors and attachment of externally connected cables. This distance should be no less than six (6) feet from the face of the panel
- While key lock protection is provided, potential access by unauthorized personnel and vandals should be taken into consideration when locating this device.

### Shipment: Unpacking and Inspection

**NOTE:** Be careful in the use of sharp objects when cutting packaging as scratching of outer coating may result in rusting.

Perform a visual inspection to ensure all key locks and doors are in functioning condition and that the panel integrity is intact.

Figure 1



Product Features (Input Panel Pictured)

Figure 2



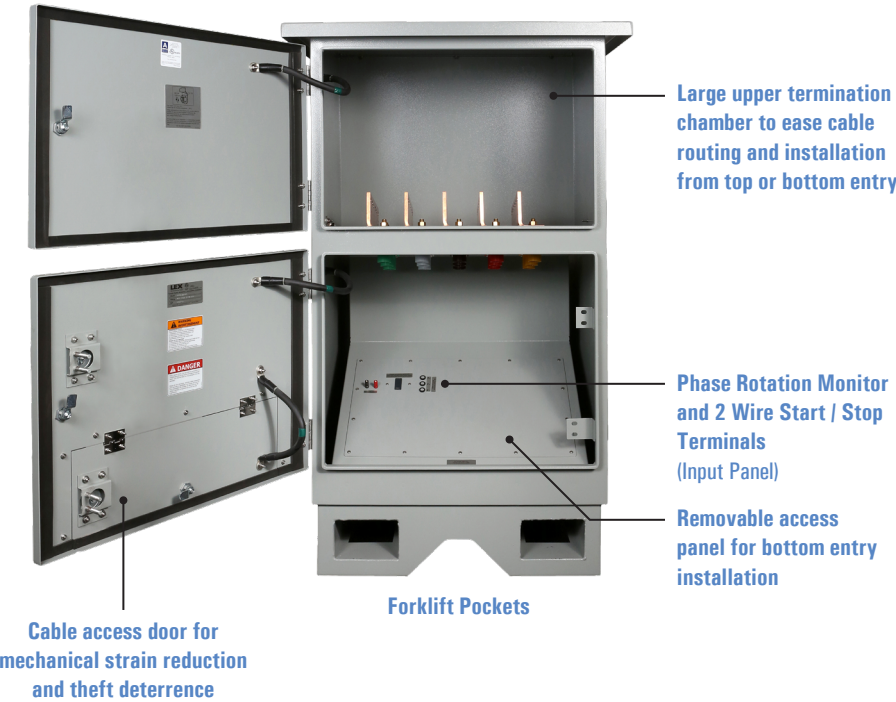
Figure 3



Figure 4



Figure 5



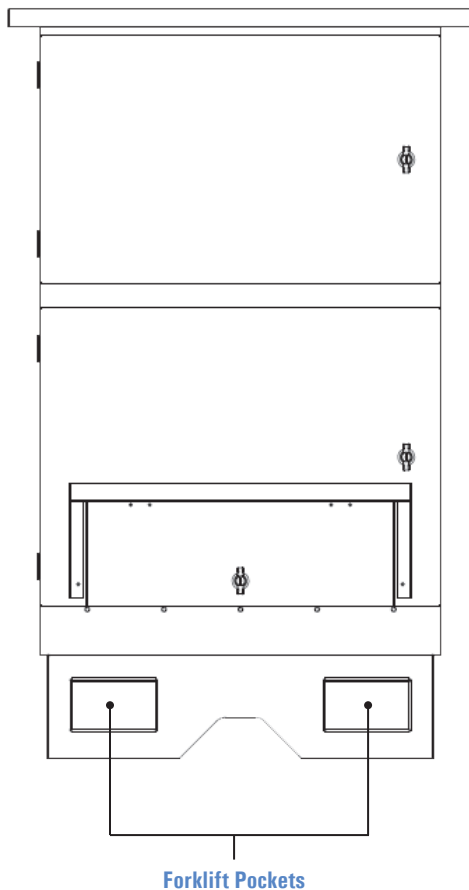
## Installation - Input / Output Panels

### WARNING

The PowerGATE™ Panel is top heavy and therefore the center of gravity is well above the forklift slots (See Figure 6). Care must be taken to secure the device when it is lifted and moved.

- Please note that the 1200 Amp versions weigh approximately 495 pounds and the 1600 Amp versions weigh approximately 505 pounds

Figure 6



The installation of the PowerGATE™ Panel should be carried out by qualified personnel in accordance with local electrical codes.

### Step 1: Fasten the PowerGATE™ Power Panel to secure base

1. Base must be level and plumb to allow for proper drainage from the PowerGATE™ Panel weep holes
2. Fastening onto an external pad using 3/8" fasteners must be completed prior to proceeding with any terminations (See Figure 1 for hole spacing)

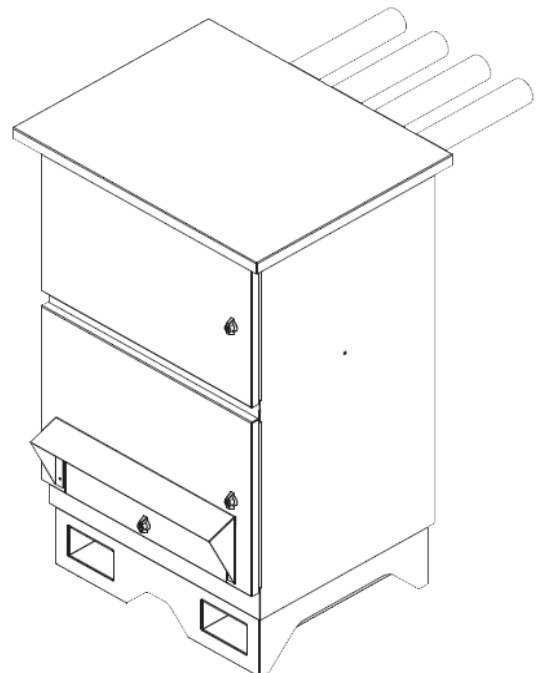
### Step 2: Installing the Conduit

**NOTE:** Conduit to enter through the top, top rear or bottom of the device (See Figure 1 and 7).

**NOTE:** To maintain TYPE 3R Rating compliance for the enclosure, proper sealing procedures must be followed. This is to include, but not limited to, the use of proper gaskets.

1. Open upper to door to expose termination chamber
2. Conduit to be sized according to cabinet and cabling rating
3. It is recommended that a knockout punch be used to cut hole for conduit. Place the punch on the inside of the enclosure and draw the punch through to the die on the outside
4. Vacuum entire upper chamber to ensure no metal shavings are left behind

Figure 7



## Installation - Input / Output Panels (continued)

(For Output Panels continue to page 9)

### Step 3: Wiring the Bus Bars

#### **WARNING**

Ensure circuit breakers are OFF and the transfer switch is locked out from utility power prior to connection. Failure to install transfer switch will create the potential for the generator to energize utility lines and endanger utility personnel. Conversely, utility lines may energize the PowerGATE™ Input Panel and endanger generator personnel.

**The PowerGATE™ Input Panel is for use only for connection of a generator to the source terminals of a transfer switch, such that the inlets are only energized from the generator.**

1. Secure ring terminals on ends of cable
  - The recommended input (contractor direct wire) wire gauge for this unit is 350 MCM
  - Terminal crimp rings to have 1/2" opening
2. Secure ring terminals to bus bar
  - Use 1/2" bolts tightened to ninety-eight (98) foot pounds of torque
3. Secure a solid and permanent electrical ground between the building ground point and the PowerGATE Power Input Panel

**NOTE:** Conduit shall NOT be relied upon to provide grounding protection to tap box

4. Vacuum entire upper chamber to ensure no metal shavings are left behind

#### **WARNING**

Three phase power systems consist of three phase or hot conductors that are shifted by 120 degrees. Three phase loads such as motors may only work properly if the phases are connected in the correct order. Some motors may work with connected improperly, but will operate backwards. Utility power and electrical generators may be wired either in a clockwise or counter-clockwise order. It is important that any generator connected to the PowerGATE™ Input Panel is connected in the same rotation (clockwise or counter-clockwise) as the utility power.

### Step 4: Determine Phase Rotation

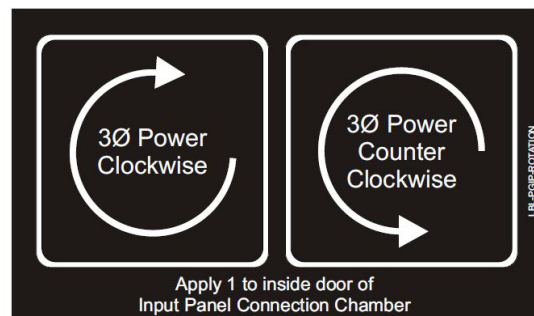
This information will be needed when connecting a generator.

#### A: Determine phase rotation of the utility power

- Connect a phase rotation meter to a three phase power source in the building and record whether the building is wired clockwise or counter-clockwise

#### B: Apply the provided label (Figure 8) to the inside of the PowerGATE™ Input Panel on the inside of the cam connection chamber door (Figure 9).

Figure 8



Lex Products Part Number – LBL-PGIP-ROTATION

Figure 9



Place rotation label here

### Step 5: Conduct a safety test to ensure proper installation

Do not attempt to use the PowerGATE™ Input Panel prior to installation and completing the Pre-Operation and Maintenance Checklist under Appendix A.

## Set-up - Input Panels

### Step 6: Review Pre-Operation Checklist under Appendices A prior to operation (page 13)



#### WARNING

DO NOT ATTEMPT CONNECTION WHILE CIRCUITS ARE LIVE

- Do not use cables if they appear frayed
- Do not use cable if connectors or plug do not seat properly
- Do not use cables if any copper cabling is exposed
- To limit risk of shock, disable generator automatic start to prevent unintended starting

### Step 7: Determining phase rotation of generator

1. Disconnect generator from all loads if needed
2. Connect a phase rotation meter to the output phases of the generator
3. Record generator phase rotation (clockwise or counter-clockwise)

### Step 8: Making Cam Connections

1. Open lower chamber door
2. Complete the Ground (green) connections, beginning with the furthest from the front door to the left

Proper connection (See Figure 10)

- A. Grasp connector jacket and firmly insert cam connector into cam plug
- B. Push on cam connector jacket until connector fully seats in cam plug
- C. Rotate cam connector jacket counterclockwise until it stops

Figure 10



3. Continue with connections, beginning with the rear of the cabinet and working forward
4. Complete ALL Ground connections working from back to front prior to proceeding
5. Complete the Neutral (white) connections, beginning with the furthest from the front door

Proper connection (See Figure 10)

- A. Grasp connector jacket and firmly Insert cam connector into cam plug
  - B. Push on cam connector jacket until connector fully seats in cam plug
  - C. Rotate cam connector jacket counterclockwise until it stops
6. Continue with connections, beginning with the rear of the cabinet and working forward
  7. Complete the Phase (hot) connection
    - A. Should the phase rotation of the generator (as determined in Step 7.3) and utility power (label found on the inside of the door for the Cam connection chamber) match, connect the Hots as follows:

Generator Hot	PowerGATE™ Power Input Panel Hot
A	A
B	B
C	C

- B. Should the phase rotation of the generator (as determined in Step 7.3) and utility power (label found on the inside of the door for the Cam connection chamber) NOT match, connect the Hots as follows:

Generator Hot	PowerGATE™ Power Input Panel Hot
A	B
B	A
C	C

Proper connection (See Figure 8):

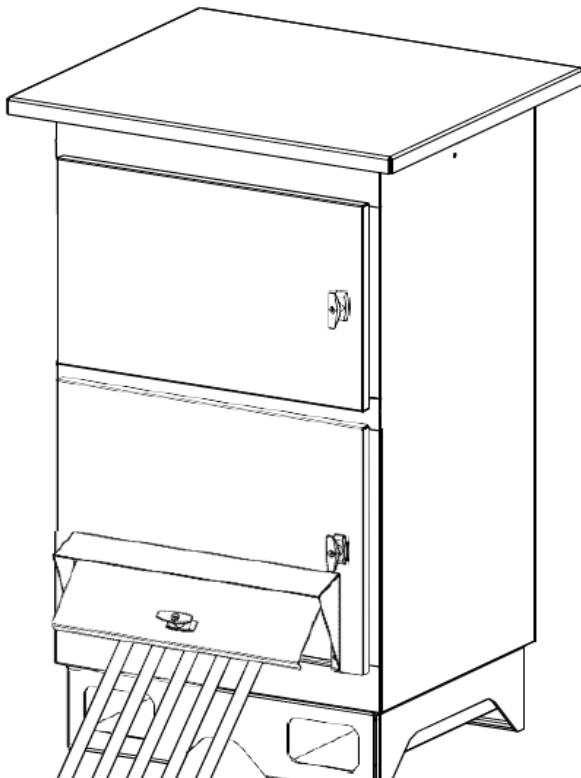
- A. Grasp connector jacket and firmly Insert cam connector into cam plug
- B. Push on cam connector jacket until connector fully seats in cam plug
- C. Rotate cam connector jacket counterclockwise until it stops

## Set-up – Input Panels (continued)

- Continue with connections, beginning with the rear of the cabinet and working forward
- Complete ALL Phase connections working from back to front prior to proceeding
- Make sure all connections are correct and secure

**Step 9: Close and lock lower chamber door, allowing cables to exit through smaller cable door**

Figure 11



## Step 10: Powering Up

### **WARNING**

Power **MUST BE** supplied from a single generator

- Start generator per manufacturer instructions
- Toggle the transfer switch, diverting power from utility to generator feed

## Disconnecting Circuits - Input Panels

### Step 11: Disconnecting Circuits



#### **WARNING**

DO NOT ATTEMPT DISCONNECTING WHILE CIRCUITS ARE LIVE

- To limit risk of shock, disable generator automatic start to prevent unintended starting
  - Open lower chamber door
  - Order of disconnect
- Disconnect the Phase (hot) connections, beginning with the closest to the front door to the right

Proper disconnection (See Figure 12):

- Grasp connector jacket firmly and rotate cam connector clockwise until it stop
  - Firmly pull on connector until it separates from the plug
  - Set aside
- Continue with ALL Phase (hot) connections, beginning with the front of the cabinet and working from front to back
  - Complete disconnect of ALL Hot connections prior to proceeding

Figure 12



- Disconnect the Neutral (white) connections, beginning with the closest to the front door

Proper disconnection (See Figure 12):

- Grasp connector jacket firmly and rotate cam connector clockwise until it stop
- Firmly pull on connector until it separates from the plug
- Set aside

## Disconnecting Circuits - Input Panels (continued)

6. Continue with ALL Neutral (white) connections, beginning with the front of the cabinet and working from front to back
7. Complete disconnect of ALL Neutral connections prior to proceeding
8. Disconnect the Ground (green) connections, beginning with the closest to the front door

Proper disconnection (See Figure 12):

- A. Grasp connector jacket firmly and rotate cam connector clockwise until it stop
  - B. Firmly pull on connector until it separates from the plug
  - C. Set aside
9. Continue with ALL Ground (green) connections, beginning with the front of the cabinet and working rearward
  10. Complete disconnect of ALL Neutral connections prior to proceeding

**Step 12: Secure the three (3) key locks to complete procedure**

## Installation – Output Panels (continued)

(Output Panels continued from page 6)

### **WARNING**

Ensure circuit breakers are OFF and the transfer switch is locked out from Source power prior to connection. Failure to install transfer switch will create the potential for the source to energize the Lex Products PowerGATE™ Power Output Panel and endanger installation personnel

**The Lex Products PowerGATE™ Output Panel is for the connection of a Load Bank to the Output terminals of a transfer switch.**

1. Secure wiring to the power feeds as appropriate
2. Secure a solid and permanent electrical ground between the building ground point and the PowerGATE™ Input Panel

**NOTE:** Conduit shall NOT be relied upon to provide grounding protection to tap box

3. Vacuum entire upper chamber to ensure no metal shavings are left behind

## Step 4: Conduct a safety test to ensure proper installation

Do not attempt to use the PowerGATE™ Output Panel prior to installation and completing the Pre-Operation and Maintenance Checklist under Appendix A.

## Step 5: Review Pre-Operation Checklist under Appendices A prior to operation (page 13)

### **WARNING**

**DO NOT ATTEMPT CONNECTION WHILE CIRCUITS ARE LIVE**

- Do not use cables if they appear frayed
- Do not use cable if connectors or plug do not seat properly
- Do not use cables if any copper cabling is exposed
- To limit risk of shock, disable generator automatic start to prevent unintended starting

## Step 6: Making Cam Connections

1. Open lower chamber door
2. Complete the Ground (green) connections, beginning with the furthest from the front door to the left

Proper connection (See Figure 10):

- A. Grasp connector jacket and firmly insert cam connector into cam plug
  - B. Push on cam connector jacket until connector fully seats in cam plug
  - C. Rotate cam connector jacket counterclockwise until it stops
3. Continue with connections, beginning with the rear of the cabinet and working forward
  4. Complete ALL Ground connections working from back to front prior to proceeding
  5. Complete the Neutral (white) connections, beginning with the furthest from the front door

Proper connection (See Figure 10):

- A. Grasp connector jacket and firmly Insert cam connector into cam plug
- B. Push on cam connector jacket until connector fully seats in cam plug
- C. Rotate cam connector jacket counterclockwise until it stops

## Installation – Output Panels (continued)

6. Continue with connections, beginning with the rear of the cabinet and working forward
7. Complete the Phase (hot) connections

Proper connection (See Figure 10):

- A. Grasp connector jacket and firmly Insert cam connector into cam plug
- B. Push on cam connector jacket until connector fully seats in cam plug
- C. Rotate cam connector jacket counterclockwise until it stops

**Step 7: Close and lock lower chamber door, allowing cables to exit through smaller cable door (See Figure 11)**

### Step 8: Powering Up



#### WARNING

Power **MUST BE** supplied from a source wired to a Transfer Switch

1. Toggle the transfer switch, diverting power from building loads to load bank

## Disconnecting Circuits - Output Panels (continued)

### Step 9: Disconnecting Circuits



#### WARNING

**DO NOT ATTEMPT DISCONNECTING WHILE CIRCUITS ARE LIVE**

- Open lower chamber door
- Order of disconnect

1. Disconnect the Phase (hot) connections, beginning with the closest to the front door to the right.

Proper disconnection (See Figure 12):

- A. Grasp connector jacket firmly and rotate cam connector counter clockwise until it stops
  - B. Firmly pull on connector until it separates from the plug
  - C. Set aside
3. Continue with ALL Phase (hot) connections, beginning with the front of the cabinet and working from front to back
  4. Complete disconnect of ALL Hot connections prior to proceeding
  5. Disconnect the Neutral (white) connections, beginning with the closest to the front door

Proper disconnection (See Figure 12):

- A. Grasp connector jacket firmly and rotate cam connector counter clockwise until it stops
  - B. Firmly pull on connector until it separates from the plug
  - C. Set aside
6. Continue with ALL Neutral (white) connections, beginning with the front of the cabinet and working from front to back
  7. Complete disconnect of ALL Neutral connections prior to proceeding

Proper disconnection (See Figure 12):

- A. Grasp connector jacket firmly and rotate cam connector counter clockwise until it stops
  - B. Firmly pull on connector until it separates from the plug
  - C. Set aside
8. Continue with ALL Ground (green) connections, beginning with the front of the cabinet and working rearward
  9. Complete disconnect of ALL Neutral connections prior to proceeding

Proper disconnection (See Figure 10):

- A. Grasp connector jacket firmly and rotate cam connector counter clockwise until it stops
- B. Firmly pull on connector until it separates from the plug
- C. Set aside

**Step 10: Secure the three (3) key locks to complete procedure**

## Kirk Key Installation

### Kirk Key Installation

#### Parts Kit

- Lex Products Power Input / Output Panel
- Lex Products Kirk Key Install Kit (comes with unit)
  - Seeloc washer
  - Silicone Sealant
- HD Series Kirk Key (Type D of DM) (not provided by Lex Products)

#### Equipment Needed

- Torque wrench
- Nut driver or wrench

### Installation Instructions

- Install catch to bracket provided on the inside of the enclosure



- Install kirk key lock/housing to the inside of the door panel
- Remove bracket from door panel



- Attached Kirk Key lock/housing to the bracket
- Torque 30 in-lb

Apply provided (UL50/50E 3R Rated) sealant to the junction where the Kirk Key lock will meet the door panel and the aperture of the door panel intended for the lock.

Form a complete circular ring around the shoulder in order to provide a 360 ° seal.



Attach the Kirk Key to the door panel using the Seeloc washers provided.

- Place the Kirk Key cylinder head through the aperture provided in the front door of the enclosure
- Secure the Kirk Key to the panel by inserting the 3/8" bolts using the following order:
  1. Seeloc
  2. Front Panel
  3. Kirk Key Housing
  4. Spring Washer
  5. 3/8" Nut



**NOTE:** Seeloc washers provided may vary in color from the ones shown above.

- Ensure that the Kirk Key lock properly engages with the catch when the unit is closed.

## Product Feature Instructions



### Phase Rotation Monitor

Visually Monitor the correct sequence of phases L1, L2 and L3 by the presence of a yellow LED light. If connected to a generator and the yellow light is not present, reverse any two phases. The LED light will then illuminate.

## Limited Warranty

When this PowerGATE™ Input / Output Panel is installed and operated according to the manual's instructions Lex Products will repair or replace any of its mechanical or electrical parts if they are found to be defective in material or workmanship within one year of the purchase date.

## Maintenance

The PowerGATE™ Input / Output Panel will require periodic maintenance. Lex Products recommends annual inspections to keep the panel in safe operating condition. Lex Products recommends that the Pre-Operation and Maintenance Checklist under Appendix A serve as a basis for annual inspection.

## Technical Support

Lex Products technical services are available to assist in resolving issues by calling 800.643.4460 or email [info@lexproducts.com](mailto:info@lexproducts.com).

For any other information, please call Lex Products at 800.643.4460 or e-mail [info@LexProducts.com](mailto:info@LexProducts.com).

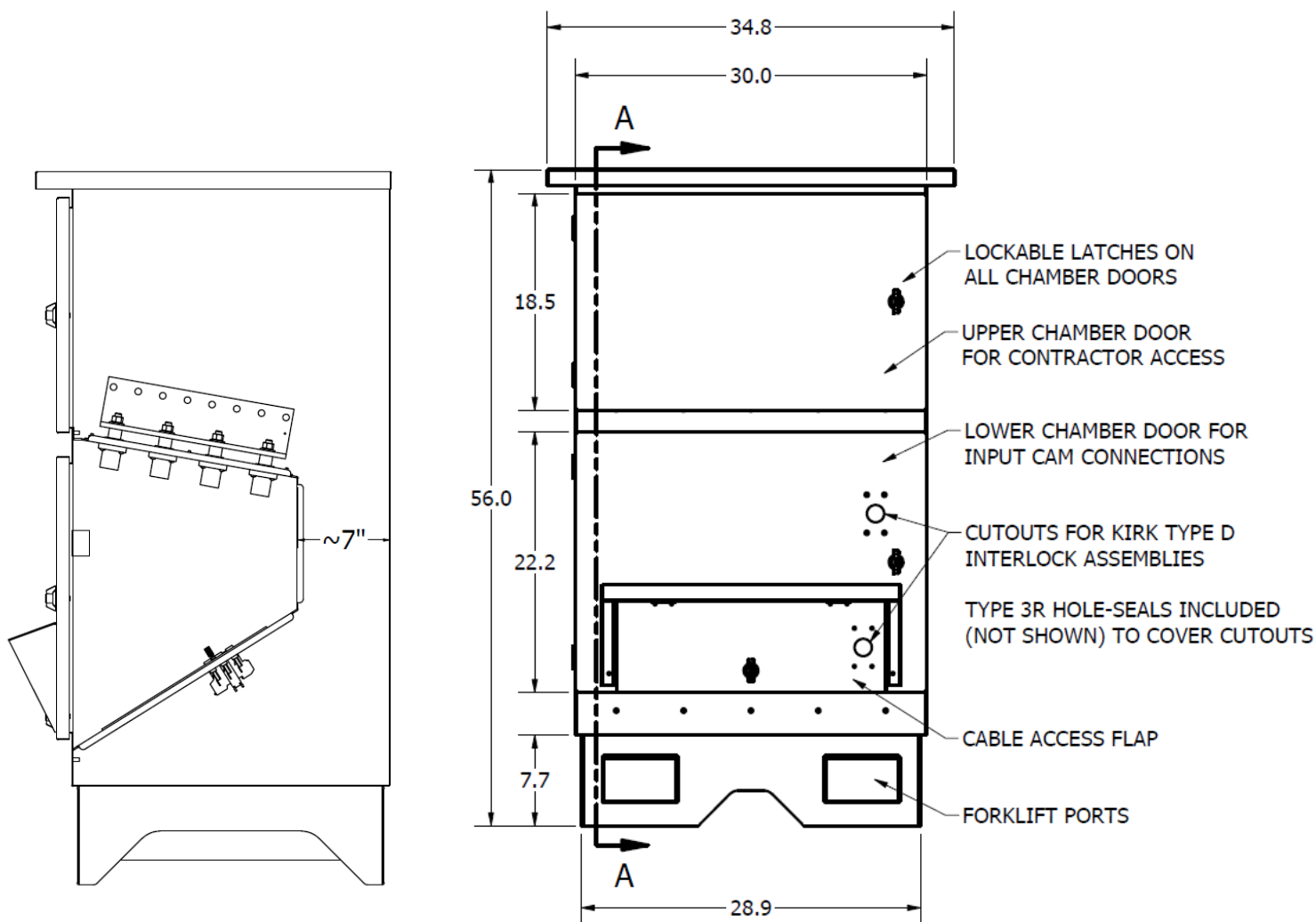
## Appendix A

### Pre-Operation Checklist

1. Visual inspection of enclosure
  - Ensure the PowerGATE™ Panel is firmly secured to its base and/or building
  - Review conduit connection for signs of leakage
  - Ensure paint is intact with no signs of rust or corrosion
2. Open all chamber doors
  - Ensure chambers are dry and free of debris
  - Ensure that gaskets are pliable and no cracking exists
  - Ensure that door hinges are secure and lubricated
  - Ensure that keylocks are intact and operational
  - Ensure that all load terminals are securely fastened and that the bolts are set at ninety-eight (98) foot pounds of torque
  - Ensure paint is intact with no signs of rusting or corrosion
  - Ensure electrical connections are intact with no signs of corrosion or cracking
3. Review all safety labels and ensure that they are present and legible
  - See Appendix D for label nomenclature and location
  - Replace as needed
4. Inspect all portable cables
  - Do not use cables if they appear frayed
  - Do not use cable if connectors or plug do not seat properly
  - Do not use cables if any copper wiring is exposed
5. Lex Products Technical Service department is available 24/7 to assist in resolving issues. If you have any questions or need technical advice or suggestions regarding this product, please contact Lex Products at 800.643.4460 or e-mail [info@lexproducts.com](mailto:info@lexproducts.com).

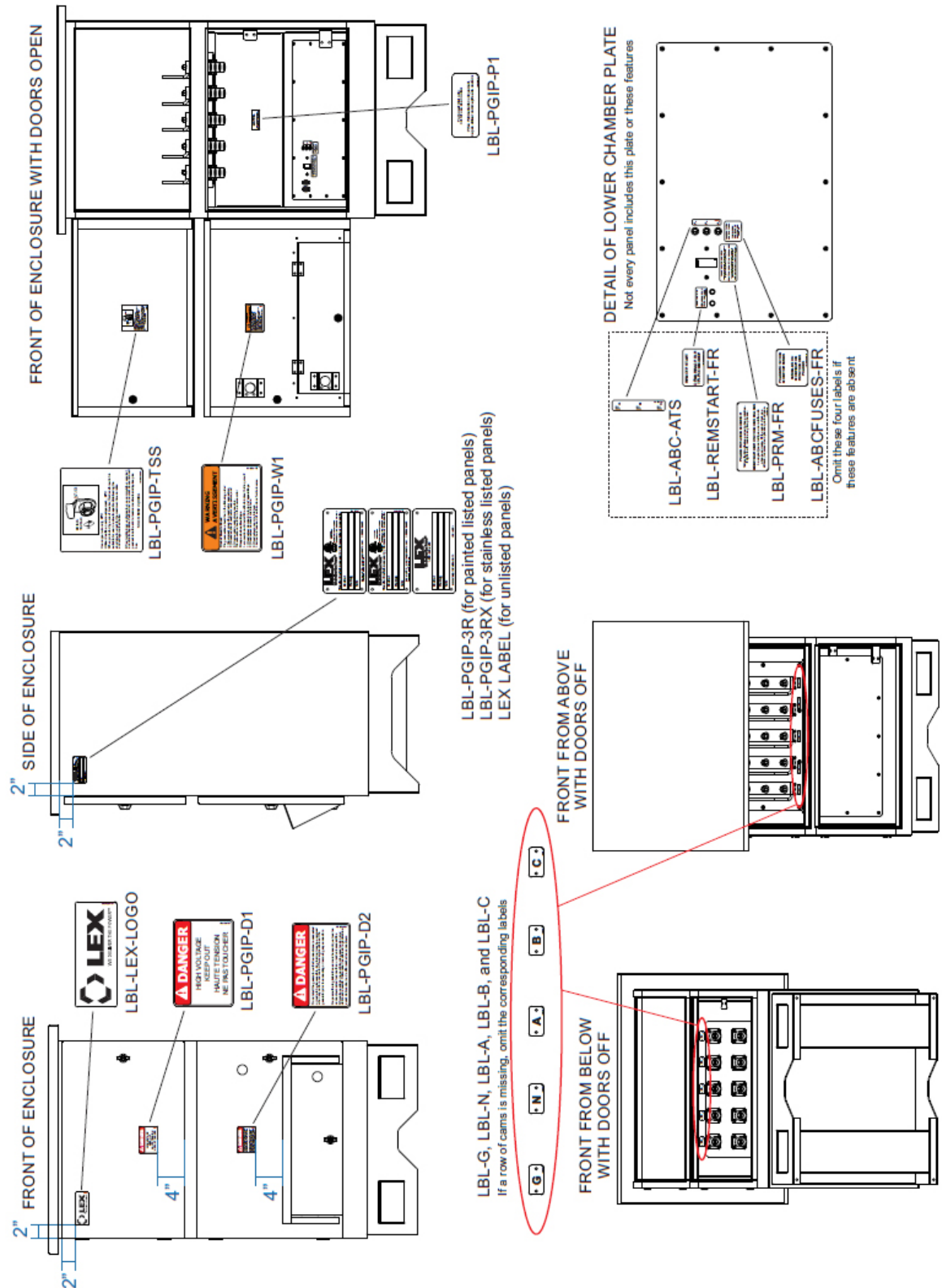
## Appendix B

### Parts Dimensions



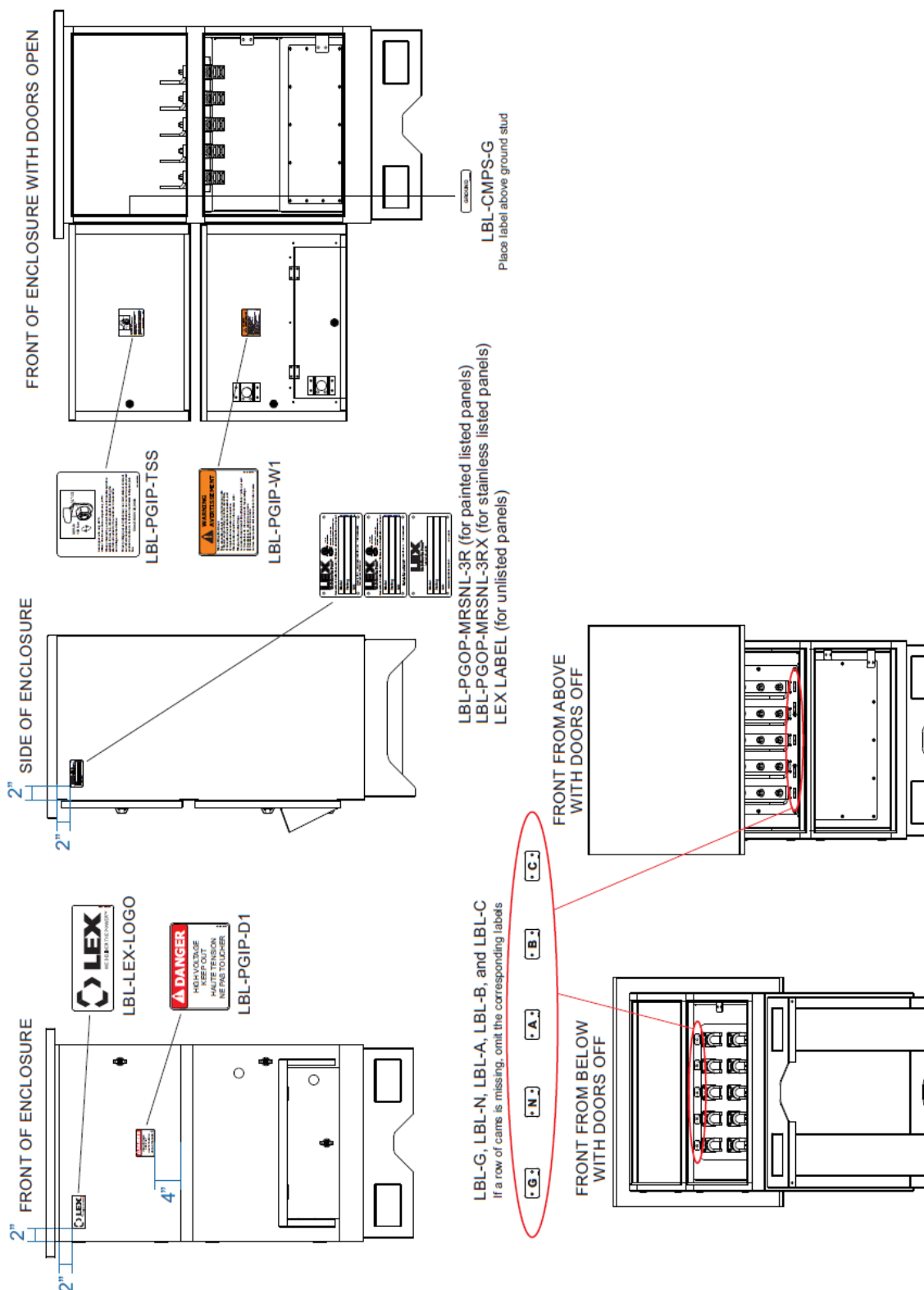
Appendix C

Labels for Replacement - Input Panel



## Appendix C - Continued

### Labels for Replacement - Output Panel



# PowerGATE™ 1200 / 1600 Amp Power Input / Output Panels Installation Instructions and User Manual



## Ordering Information

	Input Panels		Output Panels	
1200 Amp Part Numbers	PGIP12G-GWBRB-GKS	PGIP12G-GWBOY-GKS	PGOP12G-GWBRB-KS	PGOP12G-GWBOY-KS
Rating	1200A, 3 Phase (H,H,H,N,G), 4 Pole, 5 Wire, 60 Hz 480 VAC Maximum		400A, 3 Phase (H,H,H,N,G), 4 Pole, 5 Wire, 60 Hz 600 VAC Maximum	
Environmental Rating	TYPE 3R Rainproof			
Input	(3) Sets of (5) Panel Mount 16 Series Cam-type Inlets, Color-coded		Copper Bus Bars with 1/2" Holes	
Output	Copper Bus Bars with 1/2" Holes		(3) Sets of (5) Panel Mount 16 Series Cam-type Receptacles, Color-coded	
Enclosure	Galvanized Steel - Textured Powder Coat ANSI 61 Gray			
Dimensions	56" H x 35"W x 30"D			
Approximate Weight	495 lbs.			
1600 Amp Part Numbers	PGIP08A-BRBWG-GKL	PGIP08A-BOYWG-GKL	PGOP08A-BRBWG-KL	PGOP08A-BOYWG-K
Rating	1600A, 3 Phase (H,H,H,N,G), 4 Pole, 5 Wire, 60 Hz 480 VAC Maximum		1600A, 3 Phase (H,H,H,N,G), 4 Pole, 5 Wire, 60 Hz 600 VAC Maximum	
Environmental Rating	TYPE 3R Rainproof			
Input	(4) Sets of (5) Panel Mount 16 Series Cam-type Inlets, Color-coded		Copper Bus Bars with 1/2" Holes	
Output	Copper Bus Bars with 1/2" Holes		(4) Sets of (5) Panel Mount 16 Series Cam-type Receptacles, Color-coded	
Enclosure	Galvanized Steel- Textured Powder Coated ANSI 61 Gray			
Dimensions	56" H x 35"W x 30"D			
Approximate Weight	505 lbs.			

Additional Cam options and enclosure materials available.  
Contact a Lex Products Sales Representative for more information.



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