Owner's Manual

For

GenReady™ Multi-breaker Load Center and Transfer Switch

Model Number

0054482
GenReady Basic Panelboard NEMA 1
0054492
GenReady Advanced Panelboard with Operator NEMA 1
0054532
GenReady Basic Panelboard NEMA 3R
0054542
GenReady Advanced Panelboard with Operator NEMA 3R

MODEL NUMBER: _____

SERIAL NUMBER: _____

DATE PURCHASED:_____

Register your Generac product at:
WWW.GENERAC.COM
1-888-GENERAC
(888-436-3722)

SAVE THIS MANUAL FOR FUTURE REFERENCE

⚠WARNING

CANCER AND REPRODUCTIVE HARM

www.P65Warnings.ca.gov.

(000393a)

Table of Contents

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Section 1: Safety

Introduction

Thank you for purchasing a Generac Power Systems Inc. product. This unit has been designed to provide high performance, efficient operation, and years of use when maintained properly.

Read This Manual Thoroughly

⚠WARNING

Consult Manual. Read and understand manual completely before using product. Failure to completely understand manual and product could result in death or serious injury. (000100a)

If any section of this manual is not understood, contact the nearest Independent Authorized Service Dealer (IASD) or Generac Customer Service at 1-888-436-3722 (1-888-GENERAC), or visit ***www.generac.com*** for starting, operating, and servicing procedures. The owner is responsible for proper maintenance and safe use of the unit.

SAVE THESE INSTRUCTIONS for future reference. This manual contains important instructions that must be followed during placement, operation, and maintenance of the unit and its components. Always supply this manual to any individual that will use this unit, and instruct them on how to correctly start, operate, and stop the unit in case of emergency.

Safety Rules

The manufacturer cannot anticipate every possible circumstance that might involve a hazard. The alerts in this manual, and on tags and decals affixed to the unit, are not all inclusive. If using a procedure, work method, or operating technique that the manufacturer does not specifically recommend, verify that it is safe for others and does not render the equipment unsafe.

Throughout this publication, and on tags and decals affixed to the unit, DANGER, WARNING, CAUTION, and NOTE blocks are used to alert personnel to special instructions about a particular operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully. Alert definitions are as follows:

⚠DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

(000001)

⚠WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

(000002)

⚠CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

(000003)

NOTE: Notes contain additional information important to a procedure and will be found within the regular text of this manual.

These safety alerts cannot eliminate the hazards that they indicate. Common sense and strict compliance with the special instructions while performing the action or service are essential to preventing accidents.

Electrical Hazards

⚠DANGER

Electrocution. High voltage is present at transfer switch and terminals. Contact with live terminals will result in death or serious injury.

(000129)

⚠DANGER

Electrocution. Water contact with a power source, if not avoided, will result in death or serious injury.

(000104)

⚠DANGER

Electrocution. In the event of electrical accident, immediately shut power OFF. Use non-conductive implements to free victim from live conductor. Apply first aid and get medical help. Failure to do so will result in death or serious injury. (000145)

⚠DANGER

Electrical backfeed. Use only approved switchgear to isolate generator from the normal power source. Failure to do so will result in death, serious injury, and equipment damage.

(000237)

⚠DANGER

Electrocution, equipment and property damage. Handle transfer switches carefully when installing. Never install a damaged transfer switch. Doing so could result in death or serious injury, equipment and property damage. (000195)

⚠DANGER

Electrocution. Turn utility supply OFF before working on utility connections of the transfer switch. Failure to do so will result in death or serious injury.

(000123)

⚠DANGER

Electrocution. Do not disable or modify the connection box door safety switch. Doing so will result in death or serious injury.

(000157)

⚠DANGER

Automatic start-up. Disconnect utility power and render unit inoperable before working on unit. Failure to do so will result in death or serious injury.

(000191)

⚠DANGER

Equipment malfunction. Installing a dirty or damaged transfer switch will cause equipment malfunction and will result in death or serious injury.

(000119)

⚠WARNING

Electric shock. Only a trained and licensed electrician should perform wiring and connections to unit. Failure to follow proper installation requirements could result in death, serious injury, and equipment or property damage.

(000155a)

⚠CAUTION

Equipment damage. Verify all conductors are tightened to the factory specified torque value. Failure to do so could result in damage to the switch base.

(000120)

⚠CAUTION

Equipment damage. Perform functional tests in the exact order they are presented in the manual. Failure to do so could result in equipment damage.

(000121)

⚠CAUTION

Equipment damage. Exceeding rated voltage and current will damage the auxiliary contacts. Verify that voltage and current are within specification before energizing this equipment. (000134a)

General Hazards

⚠ DANGER

Electrical backfeed. Use only approved switchgear to isolate generator from the normal power source. Failure to do so will result in death, serious injury, and equipment damage.

(000237)

⚠ DANGER

Electrocution. High voltage is present at transfer switch and terminals. Contact with live terminals will result in death or serious injury.

(000129)

⚠ DANGER

Electrocution. Turn utility supply OFF before working on utility connections of the transfer switch. Failure to do so will result in death or serious injury.

(000123)

⚠ DANGER

Electrocution. Water contact with a power source, if not avoided, will result in death or serious injury.

(000104)

⚠ DANGER

Electrocution. Do not wear jewelry while working on this equipment. Doing so will result in death or serious injury.

(000188)

⚠ DANGER

Electrocution. Only authorized personnel should access transfer switch interior. Transfer switch doors should be kept closed and locked. Failure to do so will result in death or serious injury.

(000213)

⚠ DANGER

Automatic start-up. Disconnect utility power and render unit inoperable before working on unit. Failure to do so will result in death or serious injury.

(000191)

⚠ DANGER

Electrocution. In the event of electrical accident, immediately shut power OFF. Use non-conductive implements to free victim from live conductor. Apply first aid and get medical help. Failure to do so will result in death or serious injury.

(000145)

⚠ WARNING

Loss of life. This product is not intended to be used in a critical life support application. Failure to adhere to this warning could result in death or serious injury.

(000209b)

⚠ WARNING

Equipment damage. This unit is not intended for use as a prime power source. It is intended for use as an intermediate power supply in the event of temporary power outage only. Doing so could result in death, serious injury, and equipment damage.

(000247a)

- Competent, qualified personnel should install, operate and service this equipment. Adhere strictly to local, state and national electrical and building codes. When using this equipment, comply with regulations established by the National Electrical Code (NEC), CSA Standard; the Occupational Safety and Health Administration (OSHA), or the local agency for workplace health and safety.
- If working on this equipment while standing on metal or concrete, place insulative mats over a dry wood platform. Work on this equipment only while standing on such insulative mats.
- Never work on this equipment while physically or mentally fatigued.
- Any voltage measurements should be performed with a meter that meets UL3111 safety standards, and meets or exceeds overvoltage class CAT III.

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Section 2: General Information

Introduction

This manual has been prepared for the purpose of familiarizing personnel with the design, application, installation, operation and servicing of the applicable equipment. Read the manual carefully and comply with all instructions. This will help to prevent accidents or damage to equipment that might otherwise be caused by carelessness, incorrect application, or improper procedures.

Every effort has been expended to make sure that the contents of this manual are both accurate and current. The manufacturer, however, reserves the right to change, alter or otherwise improve the product at any time without prior notice.

Contents in Loose Parts Bag

- Owner's manual
- Warranty statement
- Fault current label
- Clear decal for fault current label

Equipment Description

This panelboard is suitable for use as service equipment, supply of 40-branch circuits and for engine generator backup of selected branch circuits with the use of the GenReady operator.

The automatic transfer switch is used for transferring electrical load from a UTILITY (NORMAL) power source to a GENERATOR (STANDBY) power source. Such a transfer of electrical loads occurs automatically when the UTILITY power source has failed or is substantially reduced and the GENERATOR source voltage and frequency have reached an acceptable level. The transfer switch prevents electrical feedback between two different power sources (such as the UTILITY and GENERATOR sources) and, for that reason, codes require it in all standby electric system installations.

The GenReady transfer switch is designed to operate in conjunction with an air-cooled, R-panel or Nexus series (liquid cooled) control panel used on Generac generators. Utility voltage, automatic transfer switch operation and sequence delays are controlled by the control panel on the generator. The AUTO/OFF/MANUAL switch must be in the AUTO position for automatic operation of the transfer switch mechanism.

Utility voltage is monitored by the control panel. When the Utility voltage drops below a preset value the generator will start and run. After a warm up period, the transfer switch mechanism will turn off the Utility supply and turn on the Generator switch connecting the customer load to the Generator supply.

The Utility voltage is continuously monitored by the control panel. When the voltage is above a preset value, the Return to Utility timer is initiated. When this timer expires, the transfer mechanism will turn off the Generator switch and turn on the Utility switch connecting the customer load to the Utility supply.

Product Options

GENREADY™ Basic Load Center

- 200A Main Circuit Breaker
- 125A Circuit Breaker (Lower panel Utility feed)
- 125A Lower Panel Circuit Switch

To make this Load center into a transfer switch mechanism will require the installation of an EZ Transfer operator. This can be installed in the field at the time of installation or at a later date.

GENREADY™ Advanced Load Center

- 200A Main Circuit Breaker
- 125A Circuit Breaker (Lower panel Utility feed).
- (2) 125A Lower Panel Circuit Switch
- 15A, 2-pole circuit breaker for Utility sensing
- EZ Transfer™ Operator plus field installation kit components.

EZ Transfer Operator Field Installation Kit (Generac Model No. 05447)

- Transfer Operator
- 15A, 2-pole circuit breaker for Utility sensing
- 125A Lower Panel Generator Circuit Switch
- Hold down bracket
- Interlock Bar
- Mounting Hardware
- Decals
- Installation Guide

GENREADY™ Load Center Features

- 200 amp main circuit breaker
- 40 circuit capacity with the use of tandem breakers
- Dimensions are the same as a standard 42-space main load center
- Suitable for use with the following circuit breakers (single or double pole): Siemens type Q, QAF, QAFH, QE, QEH, QP, QPH, QPHF, QPF, QPFH or QT. Square D type HOM215-2125, HOM115AFI, HOM120AFI, HOM115GFI, HOM120GFI, HOM215GIF-250GFI or HOM250EPD. General

Electric type THQL1115-1150, THQL2115-2125, THQL1115GF-1130GF, THQL2115GF1-2150GF1, THQL1115AF or THQL1120AF.

- Split interior design allows for standby back-up power to user defined critical circuits.
  - Lower, engine generator protected section has 18 one-inch spaces for up to 30 circuits with the use of tandem circuit breakers.
  - Upper, utility only section has 10 one-inch spaces for 10 circuits.
  - An additional two spaces and two circuits are reserved for generator installation (utility voltage sensing).
- Circuits can easily be shifted from protected to non-protected and vice versa
- ETL listed to the requirements of UL1008 transfer switches and UL67 panelboards. Suitable for use as service equipment
- Models available with or without EZ Transfer operator factory installed
- Single panels are compatible with generators rated up to 125 Amps/30 kW
- Multiple GenReady load centers can be supported with a single generator (limit two panels per generator)
- Flush Mount NEMA 1 or NEMA 3R enclosure depending on the model
- Designed for use with Siemens, Generac, Centurion, and Guardian standby generators
- Neutral and ground bars have multiple 1/0 conductor terminals
- The neutrals and grounds in the generator ready load center are NEC and UL Listed to accept multiple ground terminations in one terminal*

* See the wiring diagram on the panel door for the latest product information.

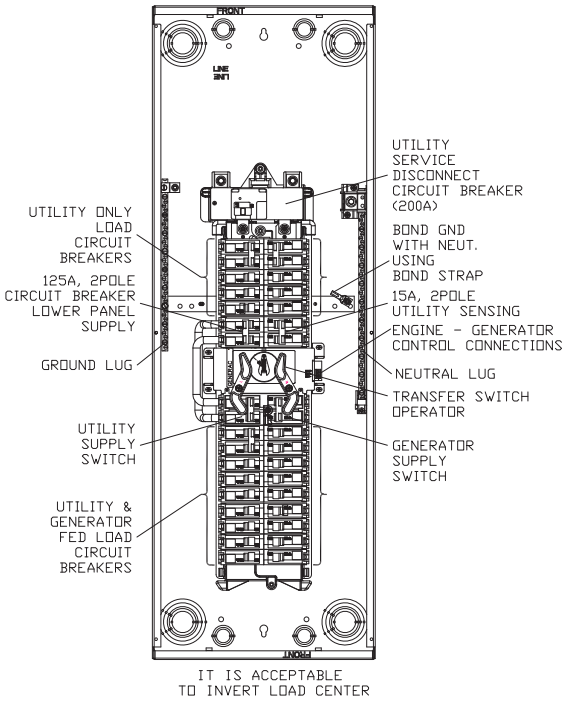


Figure 2-1. GenReady Advanced Panelboard with Operator

Load Center Specifications

Enclosure	NEMA Type 1 or NEMA Type 3R, general purpose, painted metal
Main Breaker	200 Amp
Generator Switch	125 Amp
Main Breaker Wire Size	# 1 to 300 mcm Cu-Al
Generator Switch Wire Size	# 2 to 1/0 Cu, 1/0-2/0 Al
Neutral Lug	# 6 to 300 mcm
Ground Lug	# 14- 2/0
Maximum Number of Circuits (standard 1” breakers / tandem 1” breakers	
Protected Circuits	18/30
Non-protected circuits	10/NA
Total Circuits	28/40
Withstand Rating Main Bus (Amps)	10,000
Meets NEC Wire Bending Space	Yes
ETL Listed	Yes
Seismically Qualified to Meet UBC Code	Yes
Weight – GenReady Basic w/o EZ Transfer Operator (GenReady Advanced with EZ Transfer Operator)	45.5 lbs. (49 lbs.)
Operating Temperature Range	-20º F to 140º F

Transfer Switch Mechanism

This transfer switch consists of a Utility and a Generator supply 2-pole switch which feeds a common bus (the lower half of the panelboard). The switches look similar to a circuit breaker but does not have internal current sensing components. The two switches are mechanically interlocked so that both sources cannot feed the common bus at the same time. The operator is a rotary device that actuates the arms that push on the 2-pole switch handles transferring the customer load from one source to the other. The operator returns to a neutral position so the arms move freely and the switches can be operated by hand for a manual transfer.

This transfer switch is used with a single-phase system, when the single-phase NEUTRAL line is to be connected to a Neutral Lug and is not to be switched (***Figure 2-1***).

Solderless, screw-type terminal lugs are standard.

This transfer switch is suitable for control of motors, electric discharge lamps, tungsten filament and electric heating equipment where the sum of motor full load ampere ratings and the ampere ratings of other loads do not exceed the ampere rating of the switch and the tungsten load does not exceed 30 percent of the switch rating.

This transfer switch is for use in optional standby systems only (NEC article 702).

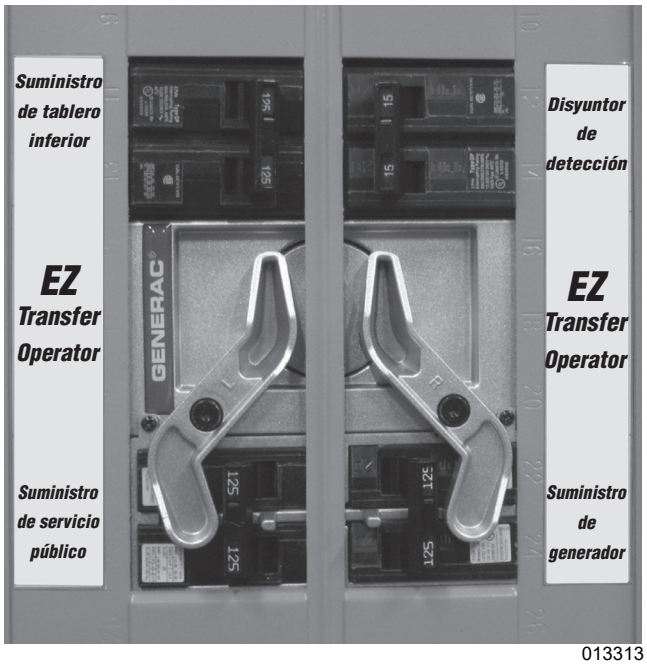


Figure 2-2. Transfer Mechanism

Transfer Switch Data Decal

A data decal is permanently affixed to the transfer switch enclosure (***Figure 2-3***). Use this transfer switch only with the specific limits shown on the data decal and on other decals and labels that may be affixed to the switch. This will prevent damage to equipment and property.

When requesting information or ordering parts for this equipment, make sure to include all information from the data decal.

Record the Model and Serial numbers in the space below for future reference.

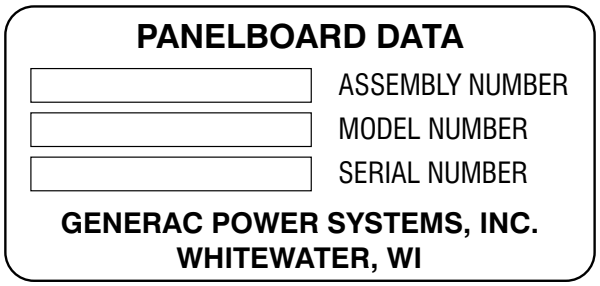


Figure 2-3. Data Decal

Panelboard Enclosure

The standard switch enclosure is a National Electrical Manufacturer's Association (NEMA) type 1 or type 3R depending on the model.

Safe Use of Transfer Switch

⚠WARNING

Consult Manual. Read and understand manual completely before using product. Failure to completely understand manual and product could result in death or serious injury. (000100a)

Before installing, operating or servicing this equipment, read the ***Safety Rules*** carefully. Comply strictly with all ***Safety Rules*** to prevent accidents and/or damage to the equipment. The manufacturer recommends that a copy of the ***Safety Rules*** be posted near the transfer switch. Also, be sure to read all instructions and information found on tags, labels and decals affixed to the equipment.

Two publications that outline the safe use of transfer switches are the following:

- NFPA 70; National Electrical Code
- NFPA 70E; Standard for Electrical Safety in the Workplace

NOTE: It is essential to use the latest version of any standard to guarantee correct and current information.

Section 3: Installation

Introduction to Installation

This equipment has been wired and tested at the factory. Installing the switch includes the following procedures:

- Mounting the enclosure.
- Connecting power source and load leads.
- Connecting the generator start and sensing circuit.
- Testing functions; manual and electrical operations.

Unpacking

Carefully unpack the transfer switch. Inspect closely for any damage that might have occurred during shipment. The purchaser must file with the carrier any claims for loss or damage incurred while in transit.

Check that all packing material is completely removed from the switch prior to installation.

Mounting

Mounting dimensions for the transfer switch enclosure are in this manual. Enclosures are typically wall-mounted. See ***Table 3-1: Installation Options*** and ***Drawings and Diagrams***.

⚠DANGER

Equipment malfunction. Installing a dirty or damaged transfer switch will cause equipment malfunction and will result in death or serious injury.

(000119)

This load center is mounted in a NEMA 1 or NEMA 3R enclosure. It can be mounted outside (NEMA 3R) or inside (NEMA 1 or 3R) and should be based on the layout of installation, convenience, and proximity to the utility supply and electrical loads.

Install the transfer switch as close as possible to the electrical loads that are to be connected to it. Mount the switch vertically to a rigid supporting structure. To prevent switch distortion, level all mounting points. If necessary, use washers behind mounting holes to level the unit.

NOTE: It is acceptable to mount the load center with the 200A Service Disconnect circuit breaker at the bottom of the load center. It will be necessary to reverse all reference positional callouts in this manual (left-right and top-bottom).

NOTE: When installed downstream of the metering enclosure, a service rated ATS must be installed as the service equipment to meet the requirements of NEC Section 110.3(B).

Connecting Power Source and Load Lines

⚠DANGER

Electrocution. Turn utility and emergency power supplies to OFF before connecting power source and load lines. Failure to do so will result in death or serious injury. (000116)

Wiring diagrams and electrical schematics are provided in this manual.

NOTE: All installations must comply with national, state and local codes. It is the responsibility of the installer to perform an installation that will pass the final electrical inspection.

The utility supply connection is made at the utility service disconnect circuit breaker terminals. The generator supply connection is made at the GENERATOR DISCONNECT switch terminals. The customer load connections are made at the individual 1 or 2-pole circuit breakers, inside the switch enclosure.

Conductor sizes must be adequate to handle the maximum current to which they will be subjected to, based on the 75°C column of tables, charts, etc. used to size conductors. The installation must comply fully with all applicable codes, standards and regulations.

Before connecting wiring cables to terminals, remove any surface oxides from the cable ends with a wire brush. All power cables must enter the enclosure through the knockouts. If not using the knockouts, entry must be at or below knockouts. If ALUMINUM conductors are used, apply corrosion inhibitor to conductors. Tighten terminal lugs to the torque values as noted on the decal located on the inside of the door. After tightening terminal lugs, carefully wipe away any excess corrosion inhibitor.

⚠CAUTION

Equipment damage. Verify all conductors are tightened to the factory specified torque value. Failure to do so could result in damage to the switch base.

(000120)

Connect power source load conductors to clearly marked transfer mechanism terminal lugs as follows:

1. Connect utility (NORMAL) power source cables to UTILITY SERVICE DISCONNECT circuit breaker.
2. Connect GENERATOR (STANDBY) source power cables to GENERATOR DISCONNECT switch.
3. Connect customer LOAD leads to 1 or 2-pole circuit breakers.

Conductors must be properly supported, of approved insulative qualities, protected by approved conduit, and of the correct wire gauge size in accordance with applicable codes.

Be sure to maintain proper electrical clearance between live metal parts and grounded metal. Allow at least 1/2 inch for 100-400 amp circuits.

Connecting Control Circuit Wires

Control system interconnections between the load center ATS and the generator consist of Utility voltage sensing (wire numbers N1 and N2) and ATS operating control wires (numbers 23, 15B or 194 and 0). Connect wire nos. N1 and N2 to the 15A, 2-pole circuit breaker provided and mounted in the top load center. Connect wire nos. 23, 15B or 194 and 0 to transfer switch operator. The transfer switch operator requires a 5A maximum fused 12 Vdc supply for operation. When used with non-2008 and later model generators, it will be necessary install a 5A fuse (supplied) in the +12 VDC supply line before it leaves the generator control panel.

Control circuit wires must be run in a separate conduit. The exception to this requirement is if the length is 30 feet or less, then the control and power wires can be run in the same conduit.

All control wiring to be a minimum 300 VAC rating and #14 AWG size. Type THHN wire is recommended.

Consult the ***Interconnection Diagrams*** in ***Drawings and Diagrams*** for further details.

Functional Tests and Adjustments

Following transfer switch installation and interconnection, inspect the entire installation carefully. A competent, qualified electrician should inspect it. The installation should comply strictly with all applicable codes, standards, and regulations. When absolutely certain the installation is proper and correct, complete a functional test of the system.

⚠CAUTION

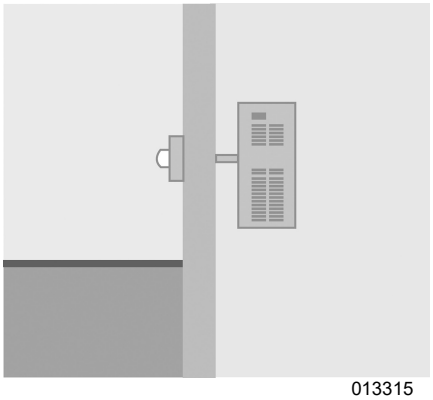
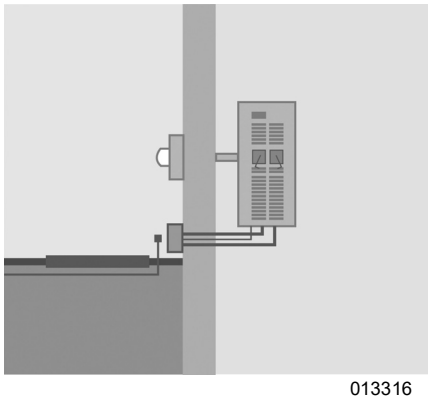
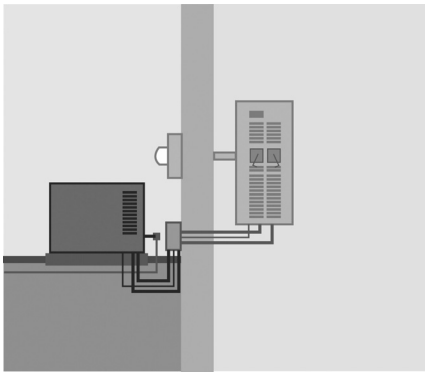
Equipment damage. Perform functional tests in the exact order they are presented in the manual. Failure to do so could result in equipment damage.

(000121)

Perform functional tests in the exact order presented in this manual, or damage could be done to the switch.

IMPORTANT NOTE: Before proceeding with functional tests, read and make sure all instructions and information in this section are understood. Also read the information and instructions of labels and decals affixed to the switch. Note any options or accessories that might be installed and review their operation.

Table 3-1. Installation Options

GenReady Basic	GenReady Advanced	GenReady Complete
 013315	 013316	 013317
The GenReady load center is installed without the EZ Transfer operator. It replaces the home's main load center. This option will save the homeowner thousands in upgrade costs when a generator is installed.	The GenReady load center is installed with the EZ Transfer operator. All fuel and electrical lines (contractor supplied) are installed to the planned generator site along with the generator pad (if required). The home is completely wired and ready for the addition of a generator in the future.	Everything included in the GenReady Advanced level is installed along with an automatic standby generator. The home's selected circuits will be backed up by generator power whenever the utility is lost.

Section 4: Operation

Functional Tests and Adjustments

Following transfer switch installation and interconnection, inspect the entire installation carefully. A competent, qualified electrician should inspect it. The installation should comply strictly with all applicable codes, standards, and regulations. When absolutely certain the installation is proper and correct, complete a functional test of the system.

⚠CAUTION

Equipment damage. Perform functional tests in the exact order they are presented in the manual. Failure to do so could result in equipment damage.

(000121)

IMPORTANT NOTE: Before proceeding with functional tests, read and make sure all instructions and information in this section is understood. Also read the information and instructions of labels and decals affixed to the switch. Note any options or accessories that might be installed and review their operation.

Manual Operation

⚠DANGER

Electrocution. Do not manually transfer under load. Disconnect transfer switch from all power sources prior to manual transfer. Failure to do so will result in death or serious injury, and equipment damage.

(000132)

This transfer switch is suitable for manual transfer under load providing the dead front cover is in place.

Manual operation must be checked BEFORE the transfer switch is operated electrically. To check manual operation, proceed as follows:

1. Turn the generator's AUTO/OFF/MANUAL switch to OFF.
2. Turn OFF both UTILITY (service disconnect breaker) and the main line circuit breaker on the generator.
3. Note position of the two switches below the transfer switch operator.
   - Utility supply switch (left side) ON and Generator supply switch (right side) OFF – LOAD terminals are connected to the Utility.
   - Utility supply switch (left side) OFF and Generator supply switch (right side) ON – LOAD terminals are connected to the Generator.

⚠CAUTION

Equipment damage. Do not use excessive force while manually operating the transfer switch. Doing so could result in equipment damage.

(000122)

Close to Utility Source Side

Before proceeding, verify the position of the transfer mechanism by observing the position of 125A, 2-pole switches.

If the Utility Supply switch (left side) is ON, no further action is required.

If not, move the Utility Supply switch handle to the ON position.

NOTE: The Generator Supply switch handle should move to the OFF position.

The customer load is now connected to the Utility supply.

Close to Generator Source Side

Before proceeding, verify the position of the transfer mechanism by observing the position of 125A, 2-pole switches.

If the Generator Supply switch (right side) is ON, no further action is required.

If not, move the Generator Supply switch handle to the ON position.

NOTE: The Utility Supply switch handle should move to the OFF position.

The customer load is now connected to the Generator supply.

Return to Utility Source Side

Move the Utility Supply switch handle to the ON position.

NOTE: The Generator Supply switch handle should move to the OFF position.

The customer load is now connected to the Utility supply.

Voltage Checks

⚠DANGER

Electrocution. High voltage is present at transfer switch and terminals. Contact with live terminals will result in death or serious injury.

(000129)

NOTE: Use the Digital Multimeter (DMM) LowZ low input impedance setting to collect accurate voltage measurements. LowZ eliminates the possibility of inaccurate ghost voltage readings, also known as phantom voltage or stray voltage readings. See DMM manufacturer's literature for additional information.

1. Turn ON the UTILITY power supply to the transfer switch using the UTILITY service disconnect and 125A, 2-pole circuit breaker for lower panel feed circuit breaker.
2. With an accurate AC voltmeter, check for correct voltage. Measure across the terminals of the Utility voltage sensing circuit breaker. Also check Utility voltage sensing terminals to NEUTRAL.
3. When certain that UTILITY supply voltage is correct and compatible with transfer switch ratings, turn OFF the UTILITY supply to the transfer switch.
4. On the generator panel, set the Auto/Off/Manual switch to MANUAL position. The generator should crank and start.
5. Let the generator stabilize and warm up at no-load for at least five minutes.
6. Set the generator's main circuit breaker (CB1) to its ON or CLOSED position.
7. With an accurate AC voltmeter and frequency meter, check the no-load, voltage and frequency. Measure across GENERATOR SUPPLY SWITCH terminals. Also check each switch terminal to NEUTRAL.
   a. Frequency 60-62 Hertz.
   b. Generator Supply Switch Terminals 2 40-246 VAC.
   c. Generator Supply Switch Terminals to Neutral 120-123 VAC.
8. Set the generator's main circuit breaker (CB1) to its OFF or OPEN position.
9. Set the AUTO/OFF/MANUAL switch to the OFF position to shut down the generator.

NOTE: Do NOT proceed until generator AC output voltage and frequency are correct and within stated limits. If the no-load voltage is correct but no-load frequency is incorrect, the engine governed speed may require adjustment. If no-load frequency is correct but voltage is not, the voltage regulator may require adjustment.

Generator Tests Under Load

⚠WARNING

Electric shock. The load center dead front must be installed before proceeding with Generator Tests Under Load. This is necessary for proper operation of the mechanical interlock. Failure do to so could lead to death or serious injury.

(000749)

1. Set the generator's main circuit breaker to its OFF or OPEN position.
2. Set the 125A Lower Panel feed circuit breaker to the OFF position.
3. Manually actuate the transfer mechanism main contacts to their GENERATOR (Standby) position. Refer to the Manual Operation section.
4. To start the generator, set the AUTO/OFF/MANUAL switch to MANUAL. When engine starts, let it stabilize for a few minutes.
5. Turn the generator SUPPLY SWITCH to the ON position.
6. Turn the generator's main circuit breaker to its ON or CLOSED position. The generator now powers all LOAD circuits. Check generator operation under load as follows:
   - Turn ON electrical loads to the full rated wattage and amperage capacity of the generator. DO NOT OVERLOAD.
   - With maximum rated load applied, check voltage and frequency at a 120 VAC outlet. Voltage should be greater than 115 VAC and frequency should be greater than 59 Hertz.
   - Let the generator run under rated load for at least 30 minutes. With unit running, listen for unusual noises, vibration, overheating, etc., that might indicate a problem.
7. When generator test under load is complete, set main circuit breaker of the generator to its OFF or OPEN position.
8. Let the generator run at no-load for several minutes. Then, shut down by setting the Auto/Off/Manual switch to its OFF position.
9. Turn the GENERATOR DISCONNECT circuit breaker to the ON position.
10. Move the transfer mechanism main contacts back to their utility position. Refer to the ***Manual Operation*** section.
11. Turn on the utility power supply to transfer mechanism, using the 125A Lower Panel feed circuit breaker. The utility power source now powers the loads.
12. Set the generator's AUTO/OFF/MANUAL switch to its AUTO position. The system is now set for fully automatic operation.

Electrical Automatic Operation Test

Test transfer mechanism electrical operation as follows:

1. Verify the Utility Service Disconnect (200A) and the 125A Utility lower panel feed circuit breakers are in the ON position.
2. Verify the transfer mechanism is in the Utility position. If not, refer to the Manual operation section and move it to the Utility position.
3. Refer to the appropriate owner's manual for the generator. Be sure the standby generator is prepared for automatic operation and the AUTO/ OFF/MANUAL switch is in AUTO.
4. Turn the Utility Service Disconnect circuit breaker to the OFF position. Verify generator starts after the line interrupt delay and runs.
5. Verify the transfer mechanism rotates and turns the Utility Supply switch to the OFF position and the Generator Supply switch to the ON position.
6. Turn the Utility Service Disconnect circuit breaker to the ON position. After the Return to Utility time delay, verify the transfer mechanism rotates and turns the Generator Supply switch to the OFF position and the Utility Supply switch to the ON position. Generator will run during the Engine Cool down timer and turn OFF.

If the mechanism functioned as indicated above the system is operating properly and is ready for automatic operation.

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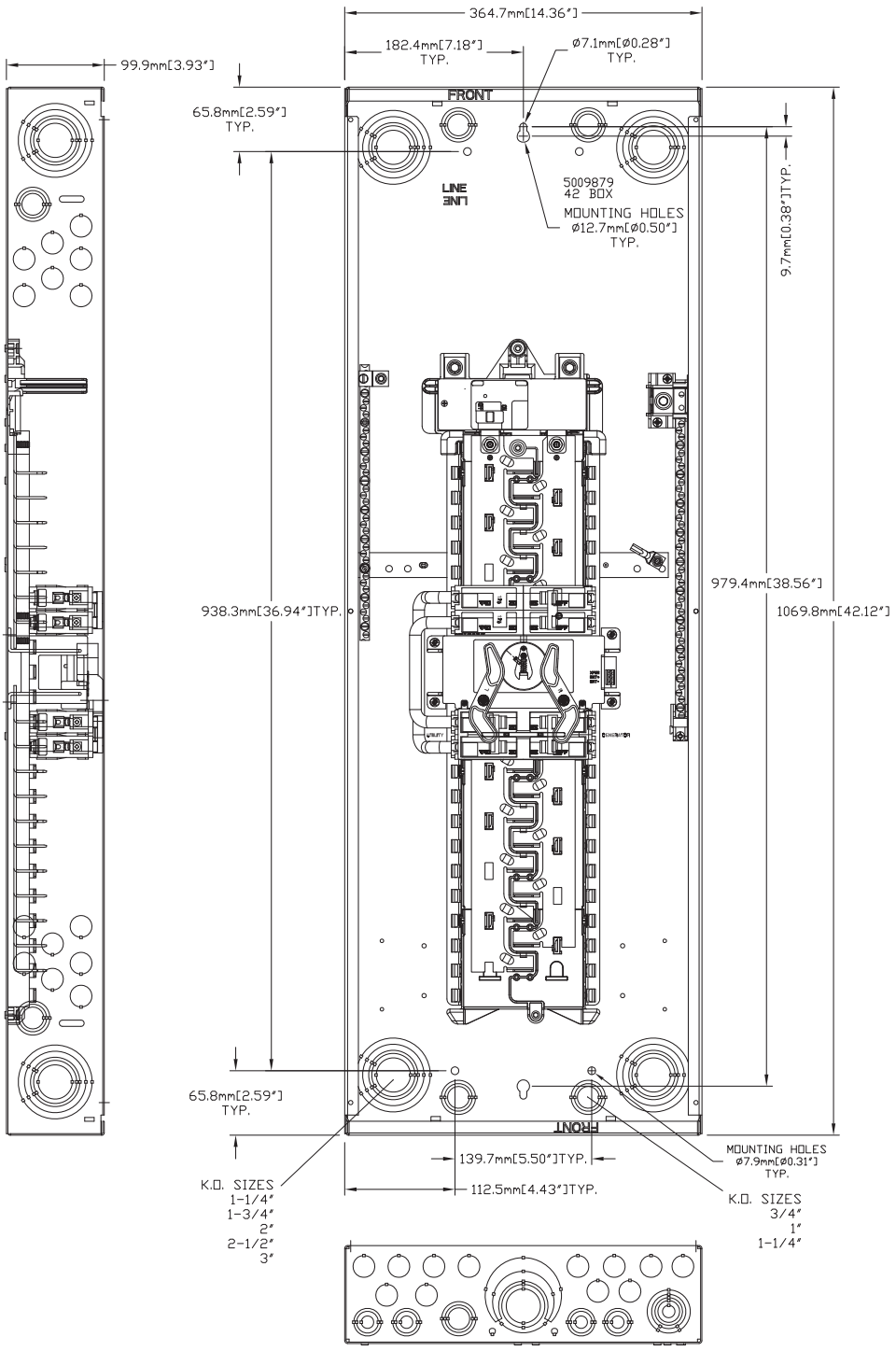
Section 5: Drawings and Diagrams

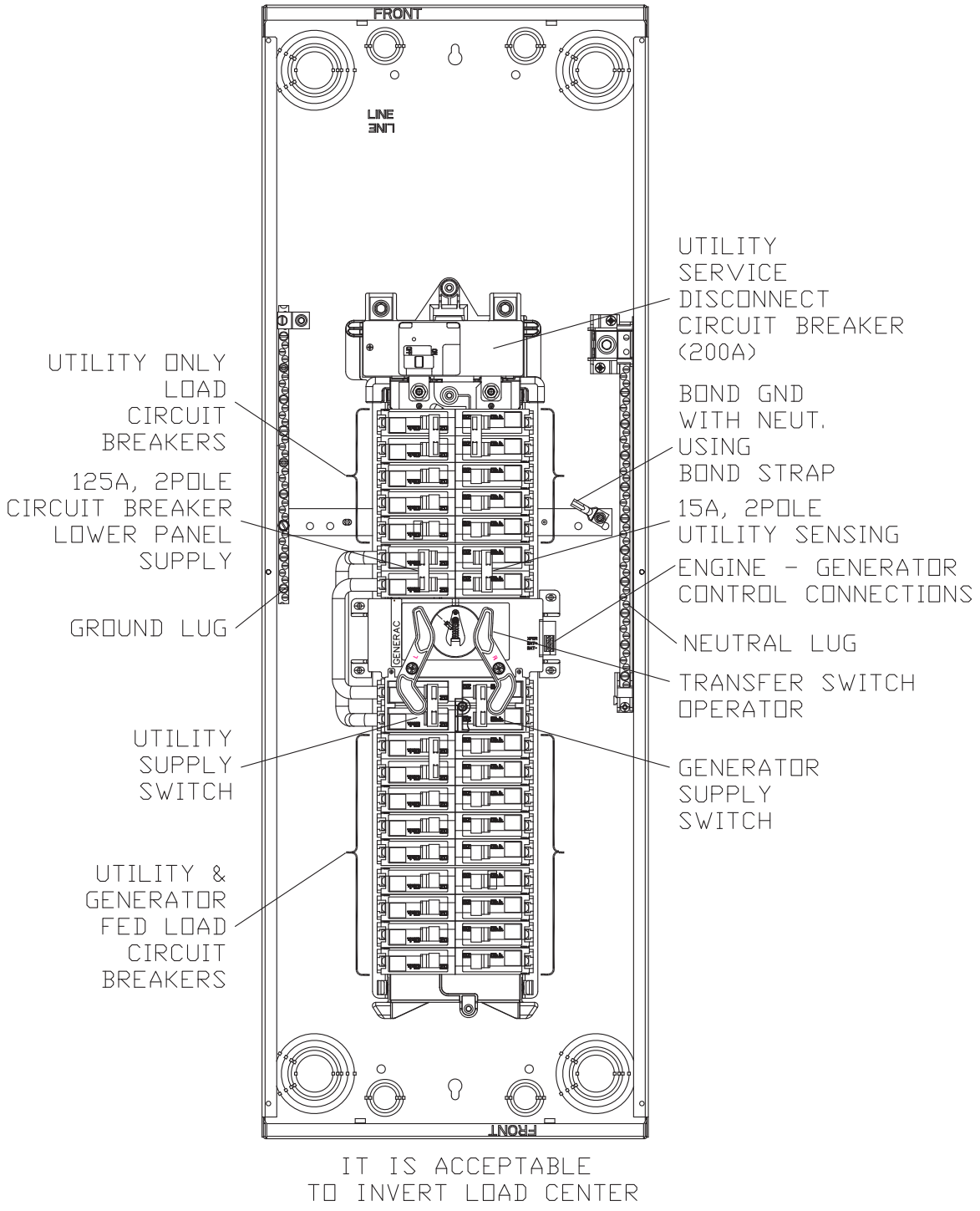
Enclosure Mounting Dimensions—NEMA 1

No. 0J0874-A (Part 1 of 2)



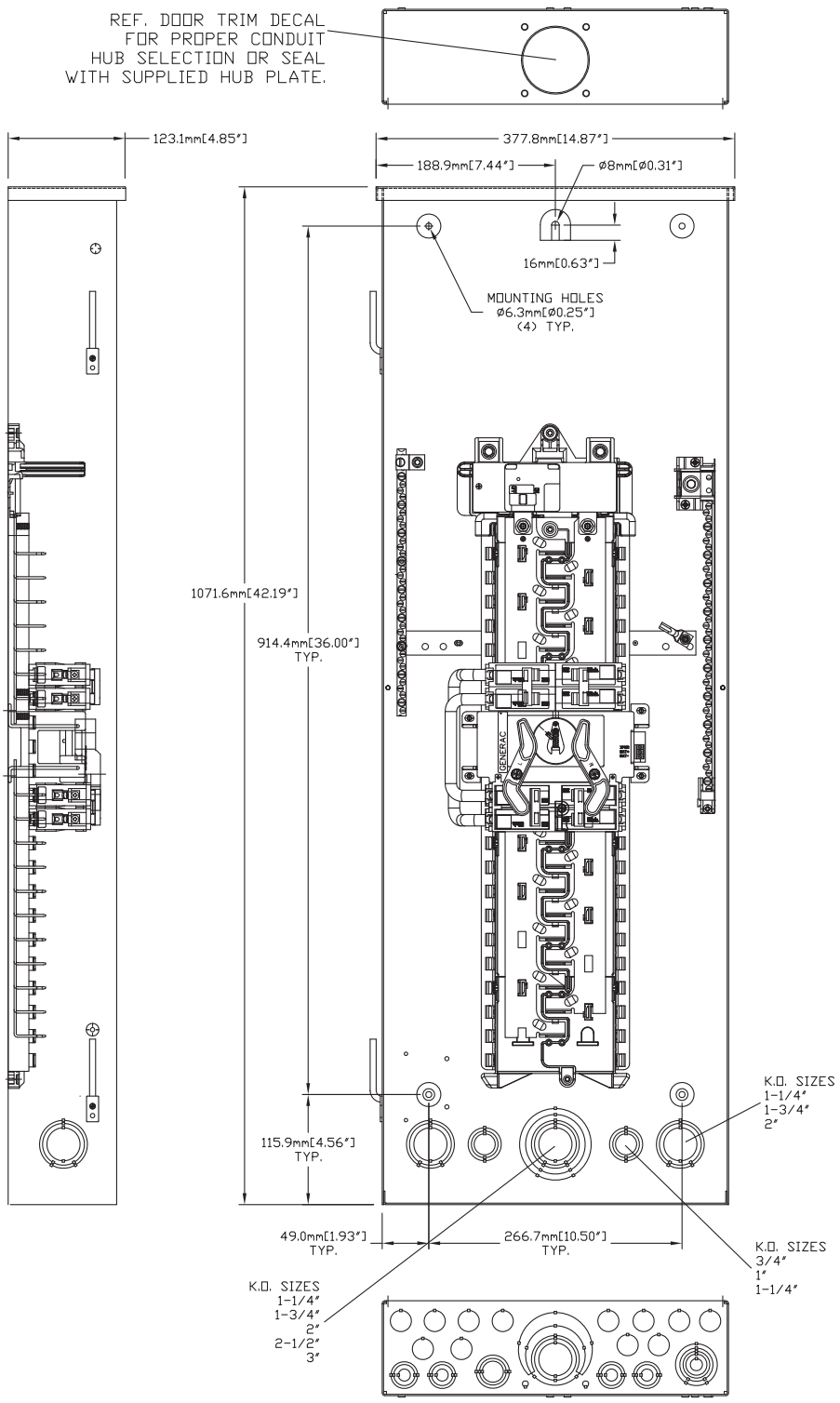
Enclosure Mounting Dimensions—NEMA 1

No. 0J0874-A (Part 2 of 2)



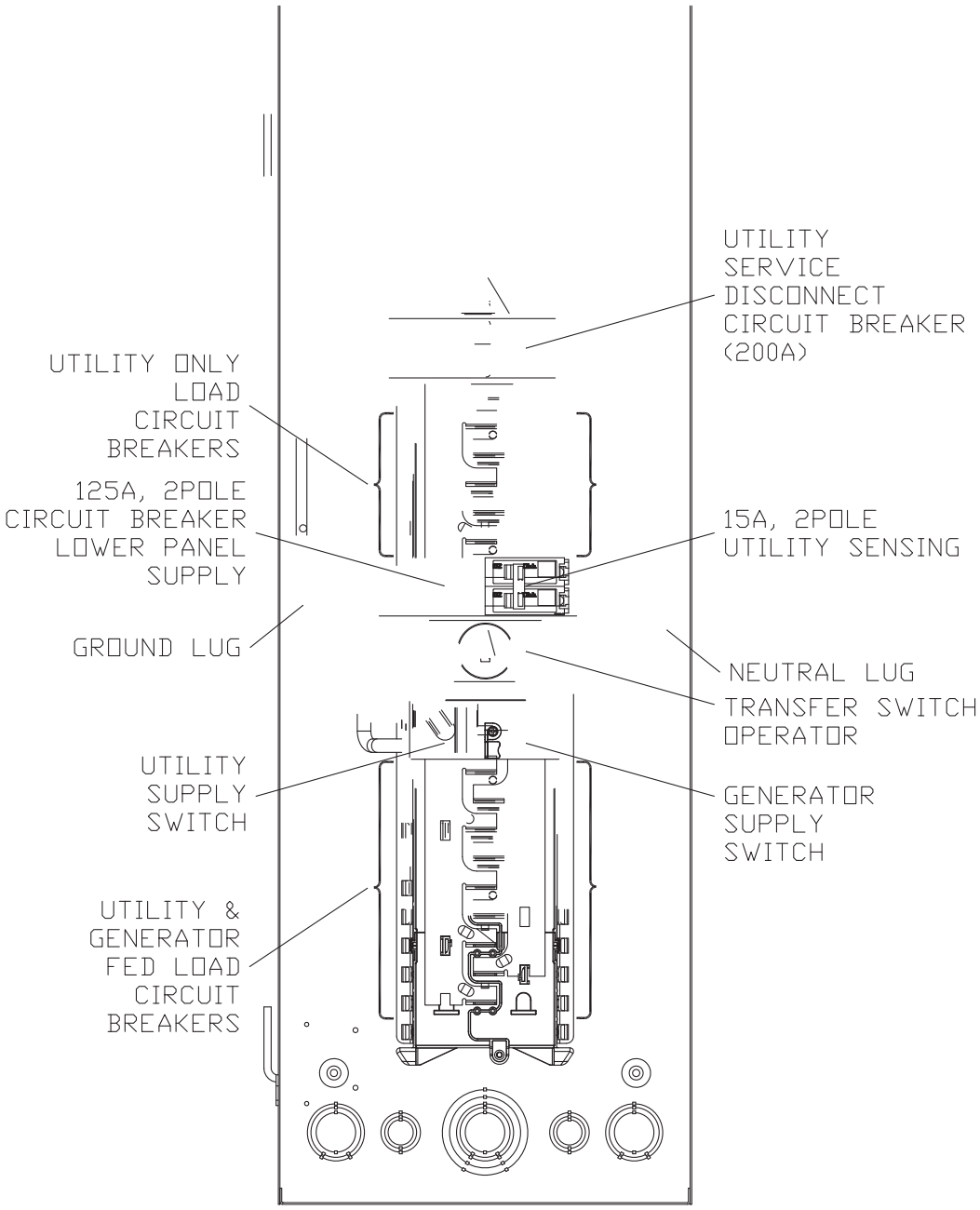
Enclosure Mounting Dimensions—NEMA 3R

No. 0J0875-A (Part 1 of 2)



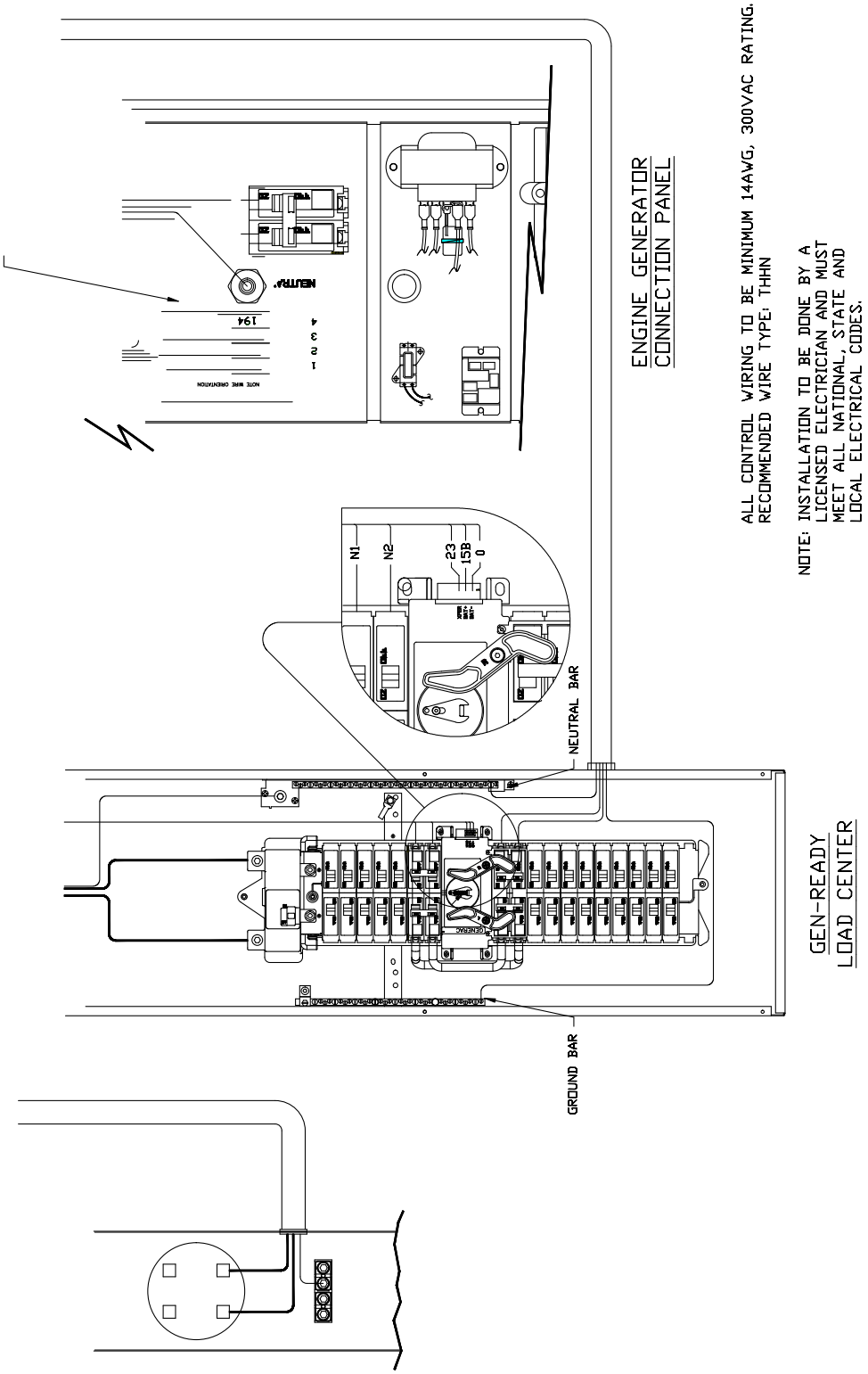
Enclosure Mounting Dimensions—NEMA 3R

No. 0J0875-A (Part 2 of 2)



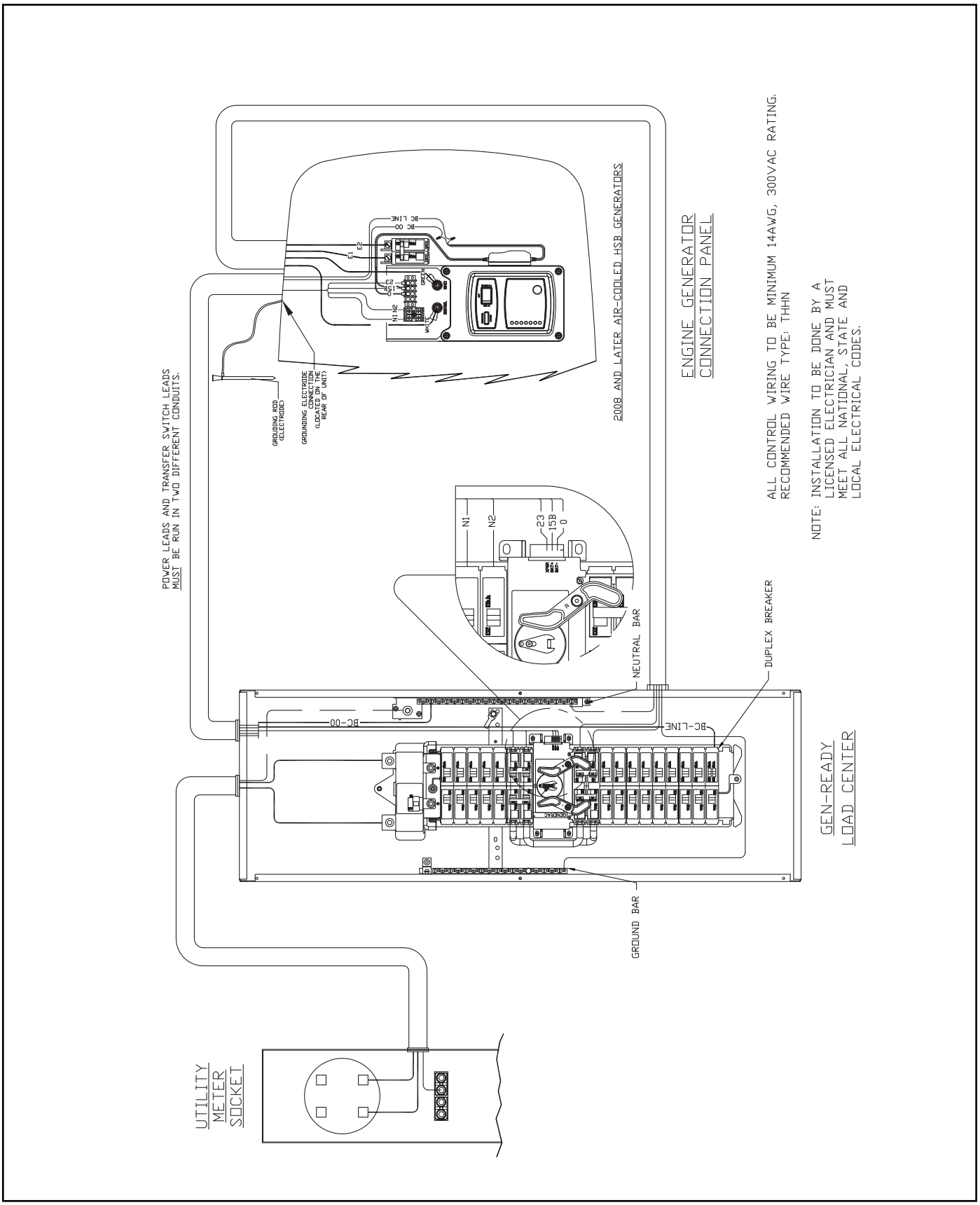
Interconnection Diagrams

No. 0G4744-G (Part 1 of 6)



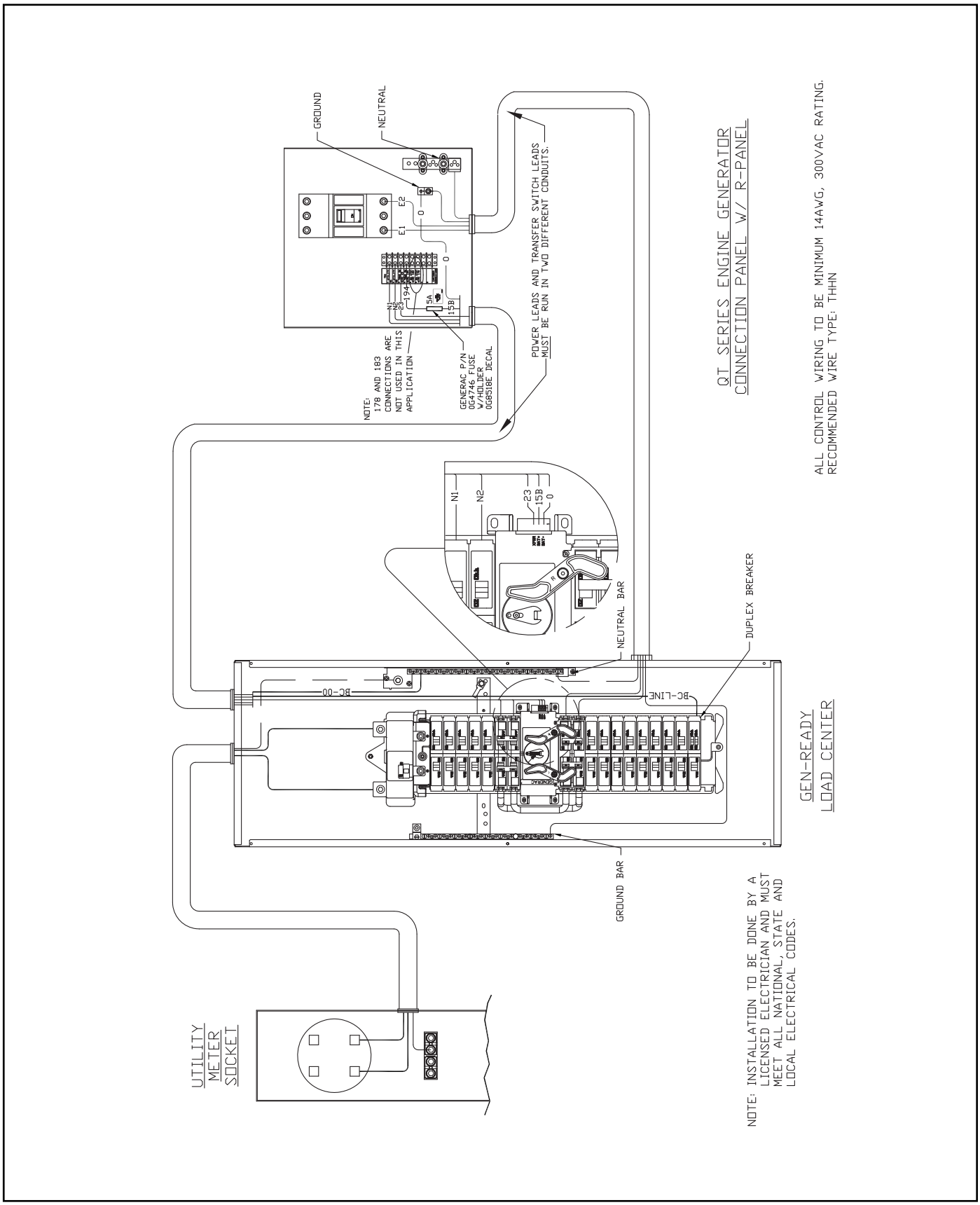
Interconnection Diagrams

No. 0G4744-G (Part 2 of 6)



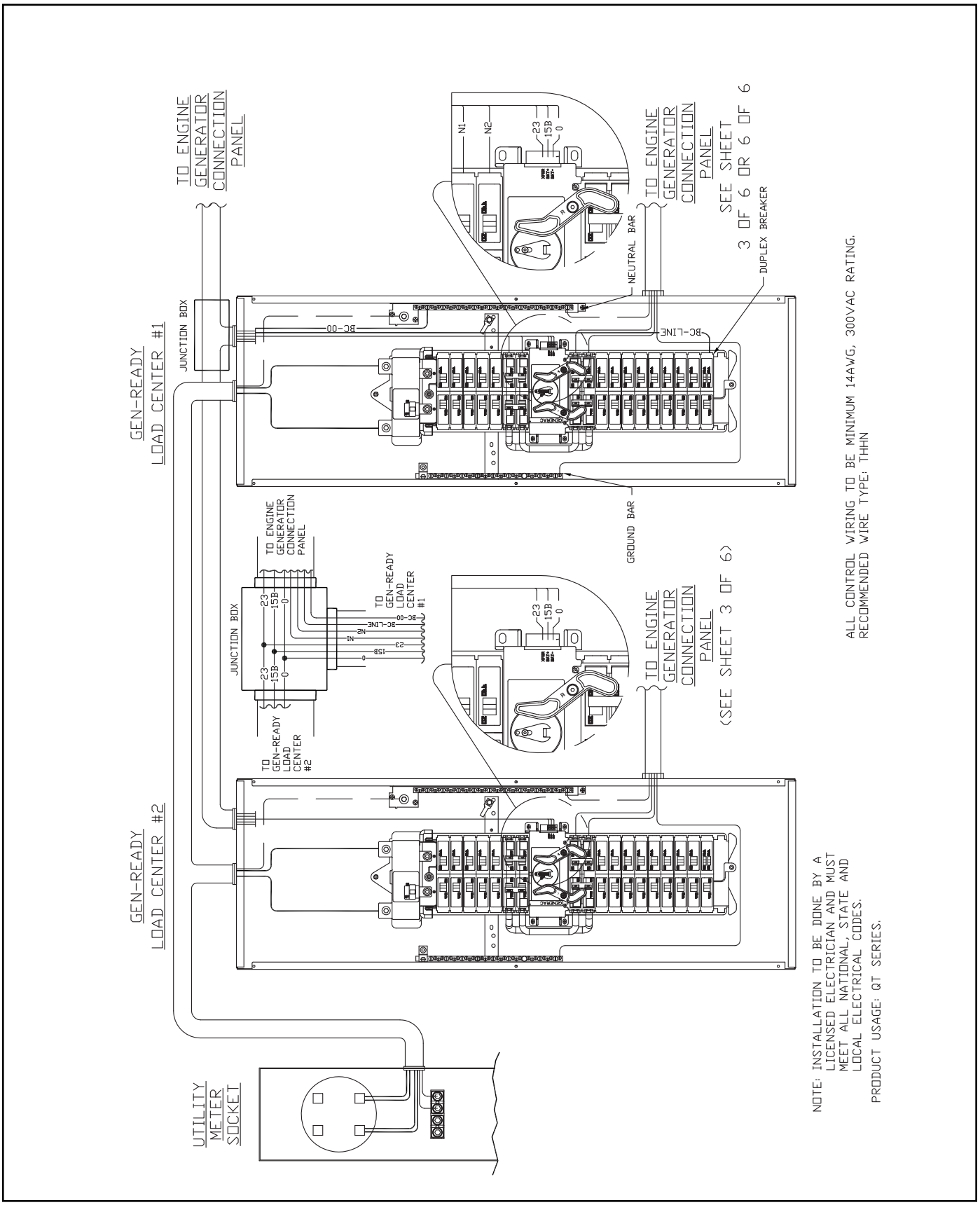
Interconnection Diagrams

No. 0G4744-G (Part 3 of 6)



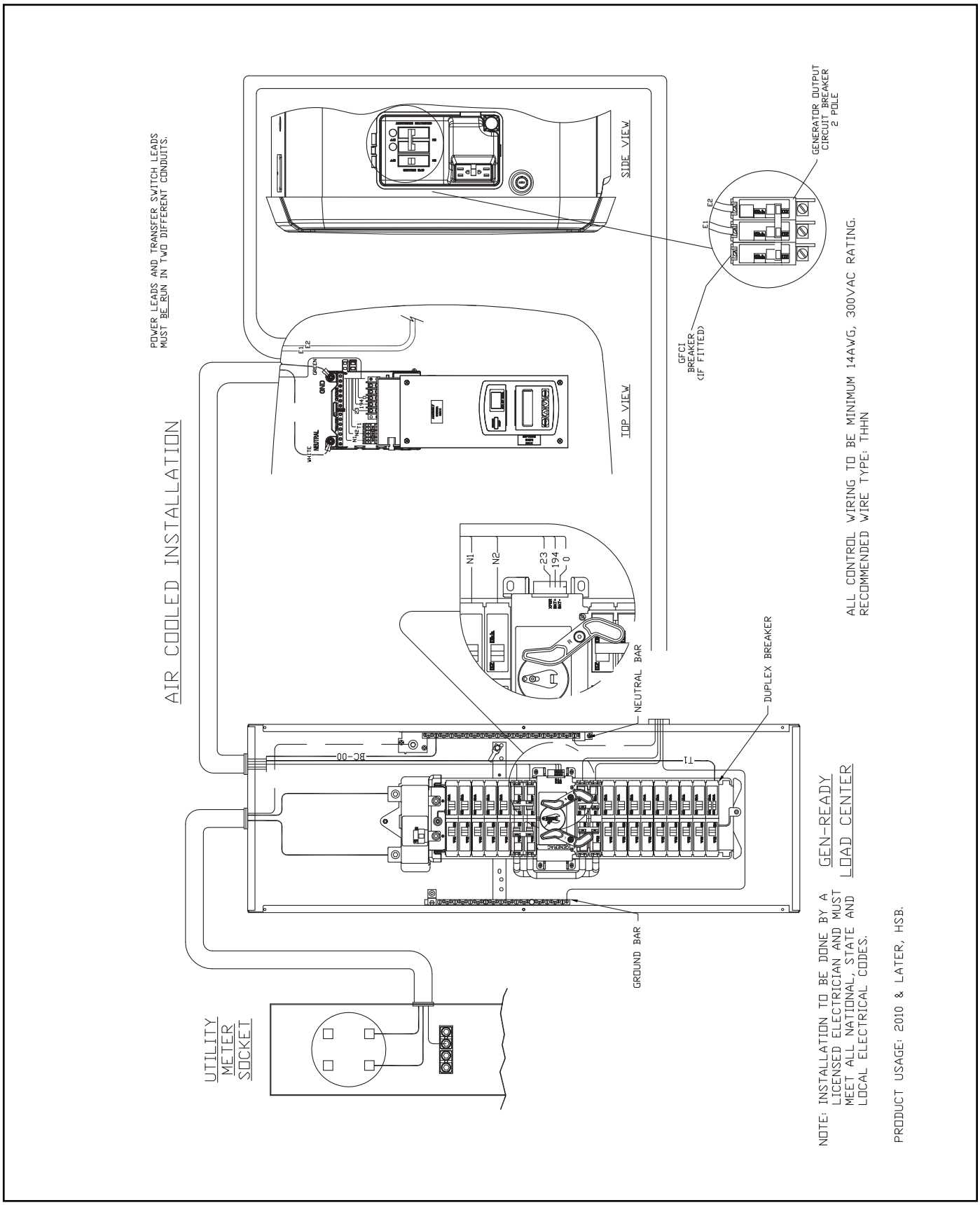
Interconnection Diagrams

No. 0G4744-G (Part 4 of 6)



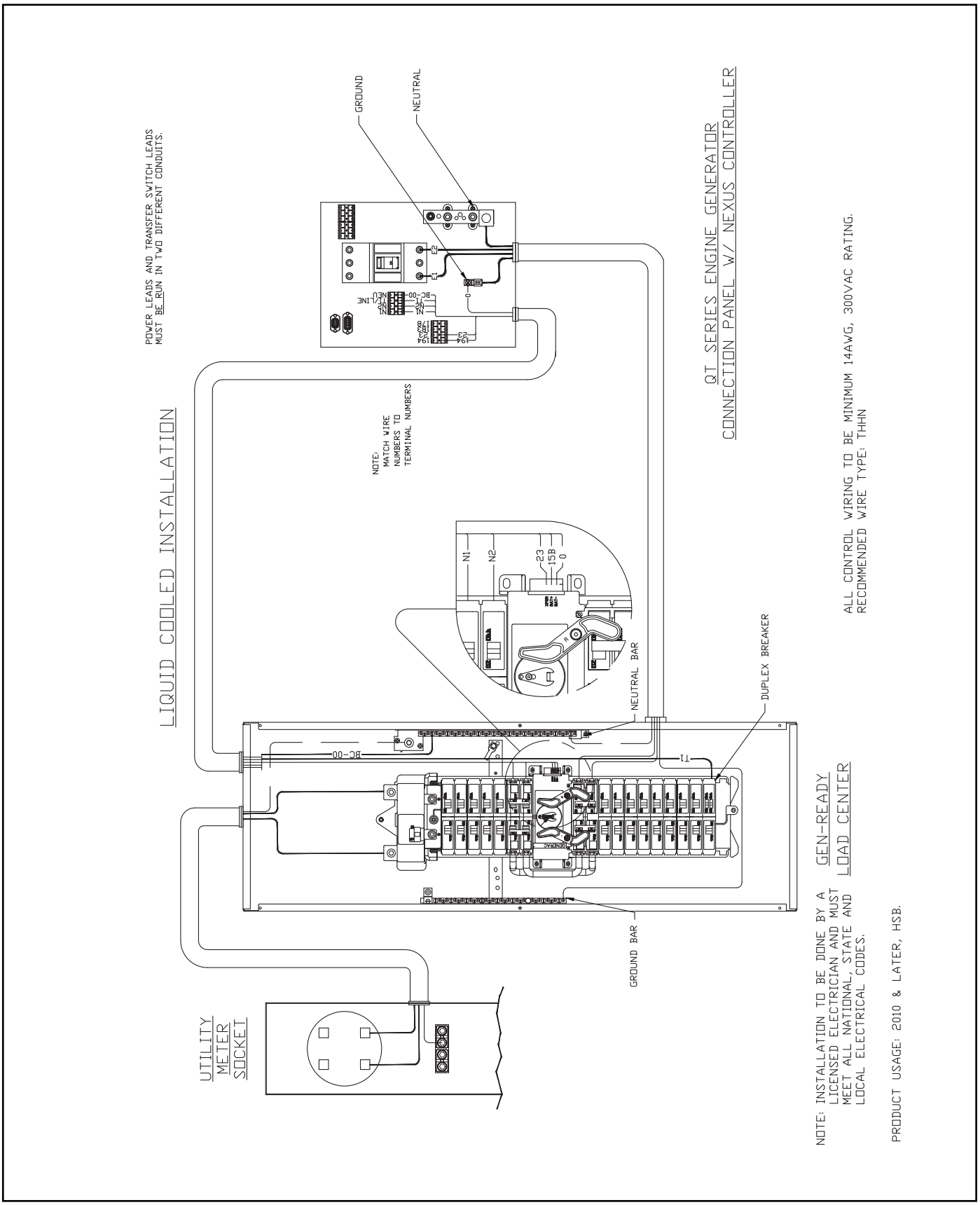
Interconnection Diagrams

No. 0G4744-G (Part 5 of 6)



Interconnection Diagrams

No. 0G4744-G (Part 6 of 6)



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Part No. 0J1504 Rev. D 08/02/2023

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