SUBMITTAL

Job Title: [redacted] AZ Service 1

Technology: Basic Power TruWatts® Unit

Model: 480-3 (x1)

Date: August 17th 2021

Submitted By: Basic Power

XXX values highlighted in this submittal represent Power Quality Issues of particular concern. A full copy of the Dranetz PQ Report is available to Electrical Engineering staff for review if requested.

Because the period of analysis is less than 7 days this report should be viewed as a snapshot. Additional PQ issues may be present, such as transient sags and surges. This anomaly did not occur during the sampling period but are common occurrences in industrial settings.

[redacted] **(1) - POWER QUALITY REPORTS**

On August 12th, 2021, Basic Power conducted a Power Quality Analysis of the utility electric supply and consumer electrical load at the [redacted] facility located in [redacted] AZ.

Basic Power's technician, Glenn Plencner, a Master Electrician of the RLP Group, installed a utility grade Dranetz power meter on the building's electrical service at Meter [redacted] to diagnose the following elements.

Voltage & Current RMS, AVG, Deviation and Waveforms of each phase.
Apparent, Active, Reactive Energy and Demand power of each phase.
Time Variation of Voltage, Current and Frequency.
Voltage and Current Harmonics (DC-11th) and Time Variation of THD

Data was gathered over a 60 minute period and analyzed to look for PQ issues that could impact equipment performance, maintenance, component failure and overall power consumption.

Voltage Unbalance

The Voltage Unbalance on this service showed an average unbalance of 0.21 with a maximum unbalance of 0.25.

The Management Standard (ANSI C84.1-2020) for Voltage Unbalance is a maximum of 2% (NEMA MG1 recommends 1%) which would cause an 8% increase in heat in the windings of a 3 Phase electric motor. Excessive heat can melt the insulation of motor windings. The Voltage Unbalance of this service, at this location, was within acceptable limits for the duration of this analysis.

Current Unbalance

Voltage Unbalance causes Current Unbalance. Current Unbalance can also occur (without Voltage Unbalance) in older equipment where there is a build-up of dirt or carbon on contacts or other defects that increase resistance on one or more phases. More current will flow on the phases that have lower resistance and this will cause increased heat in motor windings.

The Current Unbalance analysis of this service showed an average unbalance of 1.36% with a maximum unbalance of 1.71%.

The Management Standard for Current Unbalance is 30% on a 3 Phase system with higher unbalance causing significant power losses and heat. For energy efficiency purposes, the desired Current Unbalance is a maximum of 10% because at 33% the power losses in a 3 Phase System are 16%.

Basic Power's technology, TruWatts® will balance both Voltage and Currents within the cycle of its Reactor/Capacitor (LC) circuit and star-point configured circuitry of the output capacitor storage. By creating a more balanced voltage and current load across three phases our technology will reduce motor heat and power losses. Typical energy savings benefits from phase balancing are <3%.

Voltage Sags, Surges and Transient Spikes.

The assessment of the data related to the utility supplied voltage reveals some small voltage deficiencies which are within the 10% variable ranges. These deficiencies are transient and do not represent serious under or over voltage issues. For a 480V system the Utility Voltage should be 277V (+/- 10%) per phase.

	Average Volts	Min Volts	Max Volts
Phase A	275.89 (-0.40%)	272.76 (-1.53%)	277.60 (+0.21%)
Phase B	275.83 (-0.42%)	272.72 (-1.54%)	277.59 (+0.21%)
Phase C	276.73 (-0.09%)	273.68 (-1.19%)	278.46 (+0.52%)

Due to the short sampling period of 60 minutes no transient sags or surges were recorded but these incidences

are to be expected during under normal circumstances and should be anticipated.

Deviations to the desirable voltage values in the form of sags, surges and spikes can originate from the utility or from the switching of equipment and loads within a facility.

Basic Power's technology, TruWatts® absorbs electrical spikes and surges within its tuned reactor, diverts some of that power to its capacitor storage and throws the excess to ground before it can harm sensitive components such as frequency drives, battery back-up and lighting ballasts, or disrupt the operation of equipment. In situations where there is a transient voltage sag, that can cause unwanted shutdowns of electrical equipment, TruWatts® supplies the missing voltage to the load from its stored energy. Though eliminating voltage sags does not reduce energy bills it does prevent interruptions to plant processes that occur due to unplanned shutdowns. Shutdowns can be particularly troublesome where maintaining a predetermined pressure or temperature of a process or piece of equipment or location is required.

In addition to the reactor's clamping action, each TruWatts® contains a Transient Voltage Surge Suppressor PCB comprising of an Arc Suppressor/Snubber Network containing multiple snubbers and varistors to provide whole building surge protection and clamping of nuisance power spikes. Though the TVSS will not reduce your energy bill it can prevent costly replacement of components and equipment that would be damaged by surges larger than 600V such as nearby lightning events.

KW Demand

Average kWh/h	Min kWh/h	Max kWh/h (Peak)
941.8	898.7	990.0

Because TruWatts® can "snub" (or clip/shave) demand spikes that are generated from the operation of electrical equipment within a facility, by providing a source of stored electrical energy, it is able to reduce the kW and kVA value used by the utility company to calculate demand charges. KW demand charges are calculated by the highest average demand in a 15 minute cycle so by reducing the demand spikes in this cycle the utility demand calculation is lowered. We estimate that demand spikes will be reduced on this service by 8% because of the energy serves within the TruWatts® that is available to the motor load before the motor seeks more energy from the utility supply.

Power Factor

Power Factor is the ratio of Active Power KW (working power) to Apparent Power kVA (demand). Power Factor is a measure of the efficiency of the available power within an electrical system where the maximum value is 1.0 (or Unity). The main reason for the low power factor is because of an inductive load. The current in the inductive load lags behind the voltage. Three-phase induction motors (which operate at a 0.8 lagging power factor), transformer, lamps and welding equipment all operate at low lagging power factors.

PHASE A	PHASE B	PHASE C
0.850%	0.860%	0.847%

The average Power Factor is 0.853 which falls below the Management Standard of 0.95.

A low power factor can result in higher utility bills due to power factor penalties and demand charges.

Electric utilities charge for demand based on the highest demand in kilowatts (KW) or a percentage of the highest demand in KVA, whichever is greater. If the power factor is low, the percentage of the measured KVA will be significantly greater than the KW demand.

Some utility companies do not impose penalties but then, in fact, socialize the penalty by raising the kWh and/or kW demand rates for all customers because the utility must then install large PF correction banks in substations or on feeders to support the low PF of some customers.

Sometimes a power factor penalty is indirect. For example, in a straight kVA demand rate there is nothing that explicitly mentions a power factor penalty. But a poor power factor will result in a higher kVA for a given kW of load, so there is an implicit power factor penalty built into that rate.

Basic Power's technology, TruWatts® improves Power Factor by creating capacitance within its LC circuit to reduce Reactive Power (KVAR) created by inductive loads. Given the low Power Factor seen at this location we estimate improvements in Power Factor to .95 for each service based upon the millihenries supplied by a 480-3 unit to correct the PF.

Power Factor Correction provides multiple benefits including increased system capacity, improved voltage, and reduced system losses in addition to reducing KVA and KW demand charges where these are applied to the facility's utility bill.

A low Power Factor will result in reduced efficiency of the power purchased from the utility in addition to additional heat in motors and components because of higher currents. Higher currents in turn reduce the voltage at the equipment. By optimizing the Power Factor, TruWatts® creates efficiencies within the electrical service though these may only result in an additional 1% kWh savings in overall power consumption.

Harmonics

The utility supplied power is generated at the Fundamental Frequency of 60Hz. This power arrives to your facility in the shape of a smooth waveform which is typical of an Alternating Current (AC) supply. Harmonic distortions to the Fundamental are the results of non-linear (square or step waveforms) generated by Direct Current (DC) equipment connected to the electrical outlets, large DC motors connected to the main distribution panel, variable speed and variable frequency drives installed on equipment, rectifiers, switching power supplies, inverter based heat pumps and LED lighting.

Harmonic distortions reduce the efficiency of the electrical power, as they increase in value, as this proportion of the energy cannot be utilized by electrical equipment designed to work on the 60HZ Fundamental Frequency. It is considered unproductive electrical "noise". Worse still, the lower order of harmonics i.e., 3,5,7,9 and 11 create heat in components and wiring and impact the smooth and efficient running of inductive motors.

Analysis of the Power Quality Report indicates that the THD Voltage Harmonics on each service is high, but within limits (5%), but that the individual Harmonics exceed the IEEE 519 standard OF 3%.

TOTAL HARMONIC DISTORTION (THD) VOLTAGE

PHASE A	PHASE B	PHASE C
3.69%	3.77%	3.64%

INDIVIDUAL VOLTAGE HARMONIC VALUES

	3RD (180Hz)	5th (300Hz)	7th (420Hz)
A	0.07%	3.96%	0.26%
B	0.11%	4.06%	0.28%
C	0.18%	3.87%	0.22%

IEEE Standard 519 recommends a maximum of 5% THD per phase and 4% individual Current Harmonics for orders up to the 11th harmonic. The highest harmonics for the three services are highlighted below.

TOTAL HARMONIC DISTORTION (THD) CURRENT

PHASE A	PHASE B	PHASE C
5.40%	5.30%	5.20%

INDIVIDUAL CURRENT HARMONIC VALUES

	3RD (180Hz)	5th (300Hz)	7th (420Hz)
A	0.6%	5.6%	1.3%
B	0.6%	5.5%	1.4%
C	0.4%	5.4%	1.4%

The 3rd Harmonic is a Zero Sequence harmonic of the Fundamental Frequency (60Hz). These harmonics circulate between the phase, neutral and ground and are additive in nature. As the 3rd Harmonic increases in value it causes a sharp increase in the current in the neutral conductor. Harmonics cause malfunctioning of electronic parts, transformer heating, and malfunctioning of power factor correction capacitors.

The 5th Harmonic is a Negative Sequence Harmonic of the Fundamental Frequency (60Hz). These harmonics create rotating magnetic fields in the opposite direction of the Fundamental Frequency, opposing the torque of inductive motors and cause overheating and energy and power losses.

Generally, positive sequence harmonics like the 7th Harmonic are undesirable because they are responsible for overheating of conductors, power lines and transformers due to the addition of the waveforms.

Basic Power's technology, TruWatts® is a harmonic filter with a tuned reactor within an LC circuit that acts as a Passive Harmonic Filter. With the addition of EMI filtering within the TVSS components TruWatts® is a Third Order Filter, also known as a Pi Filter. TruWatts® is tuned to allow the Fundamental Frequency (60Hz) to pass through but intercepts all the harmonic distortions and using a novel, patented system, moves the harmonics from the lower orders, where they cause power quality issues, to much higher orders where they can be cancelled.

By blocking the 3rd Harmonic, it is possible to achieve as much as 8% kWh savings on the impacted phases, but typical reductions are 4%. Removing the 5th Harmonic will result in a typical kWh saving of 2% as motor efficiency is improved. Mitigating the 7th Harmonic also results in small kWh savings.

TruWatts® is designed to mitigate harmonics up to and including the 15th Harmonic which will also add some nominal kWh savings as well as removing heat from electronic circuits.

SUMMARY

TruWatts® will provide the following power quality improvements that directly affect energy usage within a facility.

Harmonic Mitigation - Power Factor Correction - Sag & Surge Mitigation - Demand Clipping - Voltage Optimization - Phase Balancing

Based upon the data collected and analyzed in the period of our assessment and the kWh and kW data provided, Basic Power predicts 8% energy savings from the installation of one 480-3 TruWatts® model on this service.

An International Performance Measurement & Verification Protocol (IPMVP) compliant Measurement and Verification (M&V) assessment will be conducted by the RLP Group at installation of our equipment to provide confirmation of the projected savings.

In addition to the energy savings, TruWatts® also provides additional benefits for the facility. These include less maintenance on electrical equipment because of lower operational heat, reduced harmonic distortions, transient current spike mitigation and voltage sag and surge mitigation together with improved power factor.

TECHNICAL OVERVIEW

General Safety

The diagrams in this manual may be indicated without covers or safety shields to show details. Replace the covers or shields before operating the Basic Power TruWatts® unit and run the unit according to the instructions described in this manual.

Read and understand this manual before installing, operating, or servicing this unit. TheBasic Power Unit must be installed according to this manual and local codes.

Electrical Shock Hazard

Do not connect or disconnect wiring while the power is on.

Failure to comply will result in death or serious injury.

Before servicing, disconnect all power to the Basic Power TruWatts® unit. The internal capacitor remains charged even after the power supply is turned off. After shutting off the power,wait for at least 60 seconds for the electrical energy in the capacitors to bleed out before removing the acrylic safety covers.

Do not attempt to modify or alter the Basic Power TruWatts® unit in any way.

Failure to comply could result in death or serious injury.
Basic Power Inc. is not responsible for any modification of the product made by the user. This product must not be modified.

Do not allow unqualified personnel to install the Basic Power Unit.

Failure to comply could result in death or serious injury.
Maintenance, inspection, and replacement of parts must be performed only by authorized personnel familiar with installation, adjustment and maintenance of the Basic Power Unit.

Do not remove covers or touch components or wires while the power is on.
Failure to comply could result in death or serious injury.

Fire Hazard

Do not use an improper voltage source.

Failure to comply could result in death or serious injury by fire.
Verify that the rated voltage of the drive matches the voltage of the incoming powersupply before applying power.

Crush Hazard

The Basic Power TruWatts® unit models weigh up to 300lbs and should be raised above ground level using appropriate mechanical lifting equipment and supervised at alltimes until permanently installed on wall or rack.

Failure to comply could result in death or serious injury from falling loads.

Mechanical Installation

The Basic Power TruWatts® unit is provided within a Hammond electrical panel enclosure designed for installation on the interior of a building. For installation on the exterior of a building, please request a custom enclosure from Basic Power Inc.

The Basic Power TruWatts® unit should be installed in a vertical orientation so that the internalcircuit breaker is positioned at the top right of the device and all enclosure warning labels are orientated correctly for normal reading.

The Basic Power TruWatts® unit can be rack mounted or mounted directly to a wall using the appropriate hardware for the specified weight of the unit.

Enclosure details are as follows:

Product Specifications

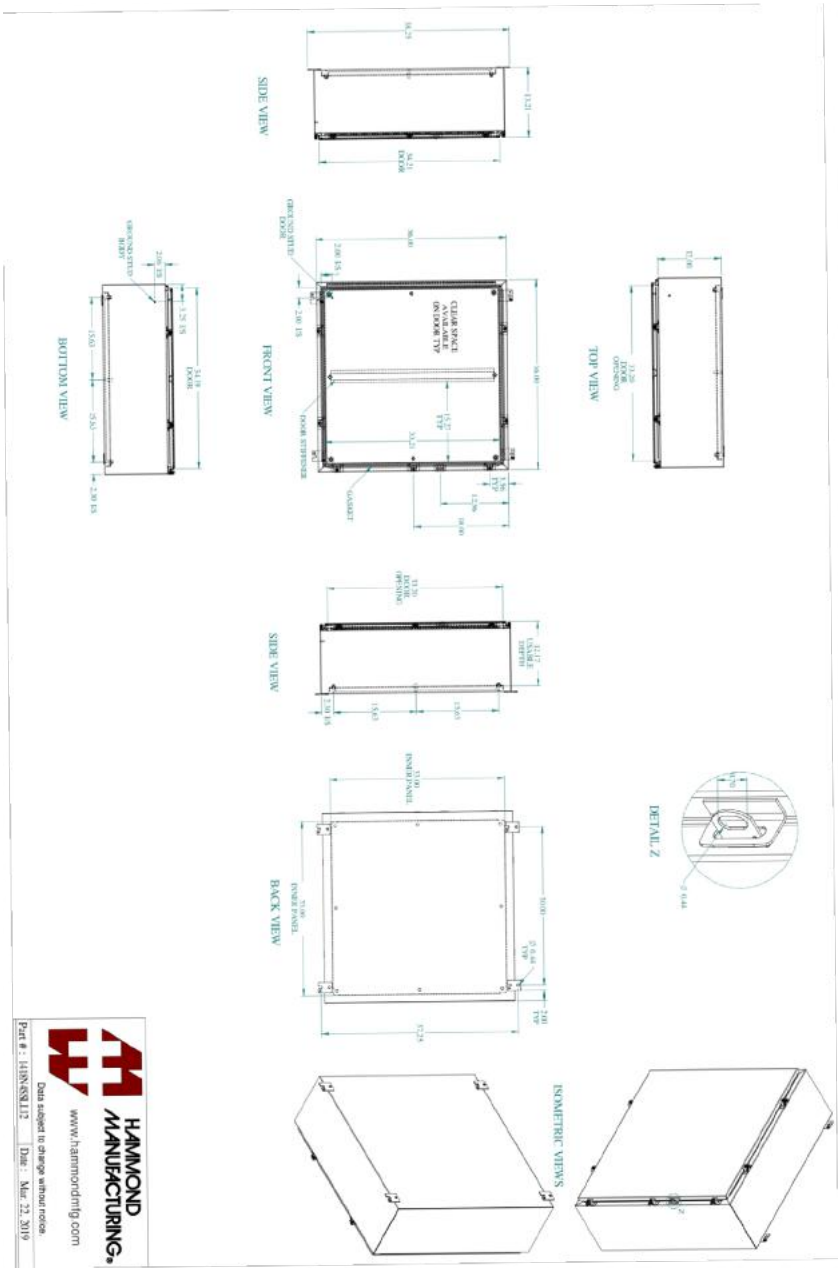
Product Attribute	Attribute Value
Enclosure Mounting	Wall Mount
IP Rating	IP54
Material	Stainless Steel
NEMA Rating	NEMA 4X
Series	1418 Series
Type	Junction Box
UPC Code	623980386058

Hammond 1418 Series — Type 12 Mild Steel Wallmount Enclosure | ContinuousHinge Door with Clamps:

Cover and enclosure are finished in recoatable smooth ANSI 61 gray powder coating on the outside, with white powder coating on the inside. Removable innerpanel is finished in white powder coating. Designed to house electrical, electronic, hydraulic or pneumatic controls and instruments. Provides a degree of protection from falling dirt, dust, oil and water.

Features:
Formed 14 gauge steel bodies and doors
Smooth, continuously welded seams without knockouts, cutouts or holes Door and body stiffeners are provided in the larger enclosures for extra rigidityWelded brackets provide for enclosure mounting
Formed lip on door and enclosure exclude flowing liquids and contaminantsContinuously hinged door may be removed by pulling the hinge pin
Door is secured with easily operated stainless steel clampsProvision for padlocking

Oil resistant gaskets are permanently securedA
removable 12 gauge inner panel is included
Collar studs are provided for mounting inner panels
A bonding stud is provided on the door and a grounding stud is provided in theenclosure
A literature pocket is provided for the inside of the doorUL 508A Type
12 and 13
CSA Type 12 and 13
NEMA Type 12 and 13
JIC EGP-1-1967 unless markedIEC
60529, IP54



HAMMOND MANUFACTURING®

HAMMOND MANUFACTURING COMPANY LIMITED
394 EDINBURGH RD. N, GUELPH, ON, CAN. N1H 1E5
TEL: (519) 822-2960 OR (905) 456-3770, FAX: (519) 822-0715
475 CAYUGA RD, CHEEKTOWAGA, NY, USA 14225
TEL: (716) 630-7030, FAX: (716) 630-7042
Visit us @ our web site: www.hammondmfg.com

BUL10020
REV. E
EFFECTIVE: AUGUST 2019

FINISH:

HAMMOND painted enclosures are finished with recoatable powder paint. Stainless steel and aluminum enclosures are also available.

SUB PANELS:

Panels are normally fitted to the mounting studs at the factory. If panels are ordered seperately, switched from another enclosure, or rotated, the mounting studs may not line up properly. Simply bend the misaligned stud using a short length of pipe or place the panel on the studs that do line up and pry the other studs into position with a large screwdriver.

HINGES:

PIANO HINGES: Removal of piano hinges may be accomplished by
1) Use a centre punch and hammer to start the removal process.
2) Use a hammer and pin with a smaller diameter than that of the hinge to continue driving the hinge pin out.

SLIP HINGES: Many freestanding enclosures feature heavy duty slip hinges which allow for convenient door removal when desired. These hinges provide excellent strength to support items mounted onto doors. (door for 72" high enclosure tested successfully at 575 lbs. loading)

DOOR ADJUSTMENTS:

TWO DOOR ENCLOSURES: The overlapping doors are fitted at the factory to match evenly at the top and bottom. If the enclosure is mounted on an uneven surface, the door may not close evenly and will require shims to be placed between the enclosure and the mounting surface.

FLOOR MOUNTED ENCLOSURES: Shims under the right front corner will raise the right door. Shims under the left front corner will raise the left door.

WALL MOUNTED ENCLOSURES: Shims behind the bottom right mounting foot will raise the right door. Shims under the bottom left foot will raise the left door.

SINGLE DOOR WALL MOUNT ENCLOSURES: If the surface on which the enclosure is mounted is not flat, or if heavy equipment is mounted on the door, the door may not close properly. If the top of the doorstrikes the flange around the body opening, metal shims placed between the mounting surface and the bottom of the mounting foot (on the hinge side) will raise the door. Tighten all mounting bolts.

COVER SCREW TORQUE RATINGS:

Screw Cover Series (10-32 screws) = 2.5 lbf-in

Clamp Cover Series (1/4-20 and 1/4-28 screws) = 30 lbf-in

HAMMOND MANUFACTURING®

HAMMOND MANUFACTURING COMPANY LIMITED
394 EDINBURGH RD. N, GUELPH, ON, CAN. N1H 1E5
TEL: (519) 822-2960 OR (905) 456-3770, FAX: (519) 822-0715
475 CAYUGA RD, CHEEKTOWAGA, NY, USA 14225
TEL: (716) 630-7030, FAX: (716) 630-7042
Visit us @ our web site: www.hammondmfg.com

BUL10020
REV. E
EFFECTIVE: AUGUST 2019

INSTRUCTIONS FOR REPAINTING HAMMOND POWDER COATED PRODUCTS

- All Hammond standard powder coated products can be repainted.
- Check with your paint manufacturer to insure that the paint you are applying is compatible with the paint on the Hammond product. (Hammond uses Polyester and Hybrid powder coatings on standard catalogue products)
- Always test the repainting process in an inconspicuous area prior to use.

This painting instruction applies to ANSI 61 (Gray) and RAL7035 (Light Gray).
All other Hammond powder paints can be repainted by following step 5.

1) IMPORTANT - This step is mandatory and must be done carefully.
Wipe down the entire area to be repainted with laquer thinner or acetone. Use a clean cloth and change cloth frequently.
2) Apply finish coats as per your paint manufacturers instructions.
3) Allow paint to cure properly for best adhesion and hardness. Consult your paint manufacturer for proper cure time and temperature.
4) The above procedure promotes good inter-coat adhesion. To enhance this process sanding with a 220 grit sandpaper is recommended. Remove all sanding dust using clean rags and a tack cloth.
5) All Hammond standard powders can be repainted after a light sanding with 220 grit sandpaper and cleaning.

	Part Number	Color Match
Hammond Touch-Up (Spray Cans)	1413LRS	Gray (ANSI 61)
	1413WH9003	White (RAL9003)
	1413CGRALS	Beige (RAL7032)
	1413BKS	Black
	1413LGS	Light Gray

RECOMMENDED CLEANING INSTRUCTIONS FOR STAINLESS STEEL PRODUCTS

Simple stainless steel stains can be cleaned using a soft cloth, mild soap, and warm water. For more stubborn stains including fingerprints and grease, a commercial grade stainless steel polish is recommended. (Note: Avoid use of chlorine based cleaners)

Electrical Installation

The Basic Power TruWatts® unit must only be installed by a licensed electrician who is familiar with the installation of the unit or is being supervised by another licensed electrician who has been trained by Basic Power in the installation of the unit.

The Basic Power TruWatts® unit has an internal circuit breaker but must be connected to the building's electrical power source through the use of a 100 Amp 3 Pole Circuit Breakerlocated in the Main Distribution Panel or Sub-Panel associated with the MDP. The exact connection location is determined by Basic Power Inc. and/or the licensed electrician supervising the installation for Basic Power Inc.

BASICPOWER™
"We Make Energy More Efficient"

I-480-2 – Electrician's Cut Sheet

Line Voltage	480/600
Phases	3
Running/Maximum Amperes	400-600/1,000
kWh Used Per Month Range	130,000-250,000
Approx. Draw at Panel (Min. Amperes per Leg)	41
Approx. Basic Draw (Amperes per Leg)	41
Frequency	50-60Hz
Total Capacitance (Microfarads)	1,440
Operating Temperature (°C)	-25 to +85
Installation Wire from Unit to Breaker Panel (drop 1 AWG if > 12' to panel)	2 AWG
Ground and Neutral Wire from Unit to Breaker Panel	2 AWG
Ground Wire from Electrical Panel to Earth	2 AWG
Circuit Breaker Required	60A 3-Pole
Collar Torque (in-lb/n-m)	80 or 9.0
Unit Dimensions (Inches)	30h x 24w x 12d
Mounting Holes Spacing (Inches)	31h x 18w
Unit Weight (Pounds)	190
Complies with UL 508A	E212591

Electricians Tools/Parts Required

- 1 1/2" Conduit Fitting and Conduit
- Hole punch or Drill
- Torque wrench with multiple attachments
- Mounting bracket (If necessary)
- Nuts/Bolts
- Wire Strippers, Screw Drivers, and Allen wrenches
- Grounding Materials (See Grounding Document No. 180741)
- Vacuum to remove metal filings

BASICPOWER™
"We Make Energy More Efficient"

I-480-3 – Electrician's Cut Sheet

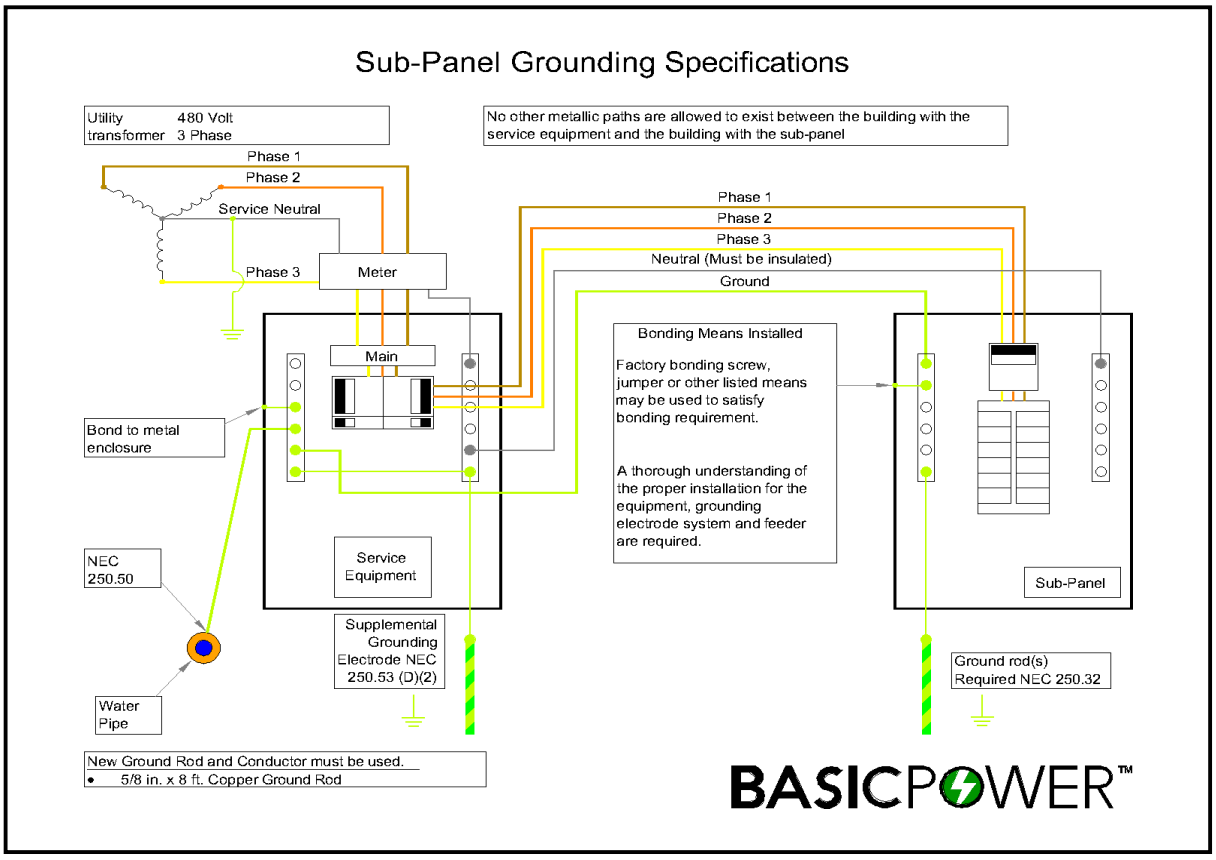
Line Voltage	480/600
Phases	3
Running/Maximum Amperes	600-1,000/2,000
kWh Used Per Month Range	250,000-350,000
Approx. Draw at Panel (Min. Amperes per Leg)	57
Approx. Basic Draw (Amperes per Leg)	52
Frequency	50-60Hz
Total Capacitance (Microfarads)	1,920
Operating Temperature (°C)	-25 to +85
Installation Wire from Unit to Breaker Panel (drop 1 AWG if > 12' to panel)	2 AWG
Ground and Neutral Wire from Unit to Breaker Panel	2 AWG
Ground Wire from Electrical Panel to Earth	2 AWG
Circuit Breaker Required	100A 3-Pole
Collar Torque (in-lb/n-m)	80 or 9.0
Unit Dimensions (Inches)	36h x 36w x 12d
Mounting Holes Spacing (Inches)	37h x 23.75w
Unit Weight (Pounds)	290
Complies with UL 508A	E212591

Electricians Tools/Parts Required

- 2" Conduit Fitting and Conduit
- Hole punch or Drill
- Torque wrench with multiple attachments
- Mounting bracket (If necessary)
- Nuts/Bolts
- Wire Strippers, Screw Drivers, and Allen wrenches
- Grounding Materials (See Grounding Document No. 180741)
- Vacuum to remove metal filings

BASICPOWER™
"We Make Energy More Efficient"

Important: A new ground rod must be installed at the location if the ground already installed is **NOT**less than **5 Ohms**. Otherwise, it is required to install a **new** ground rod that reaches 5 Ohms or less

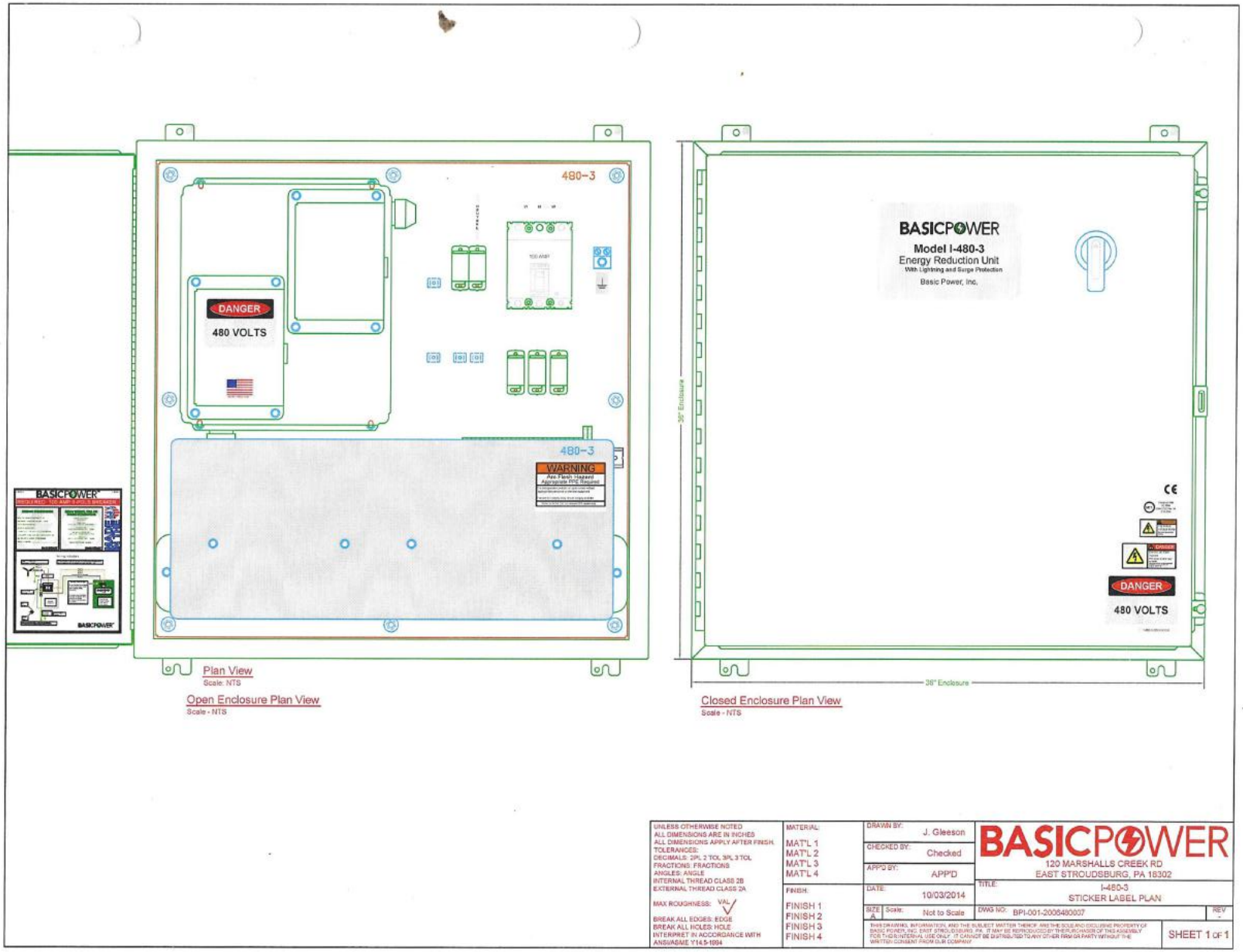


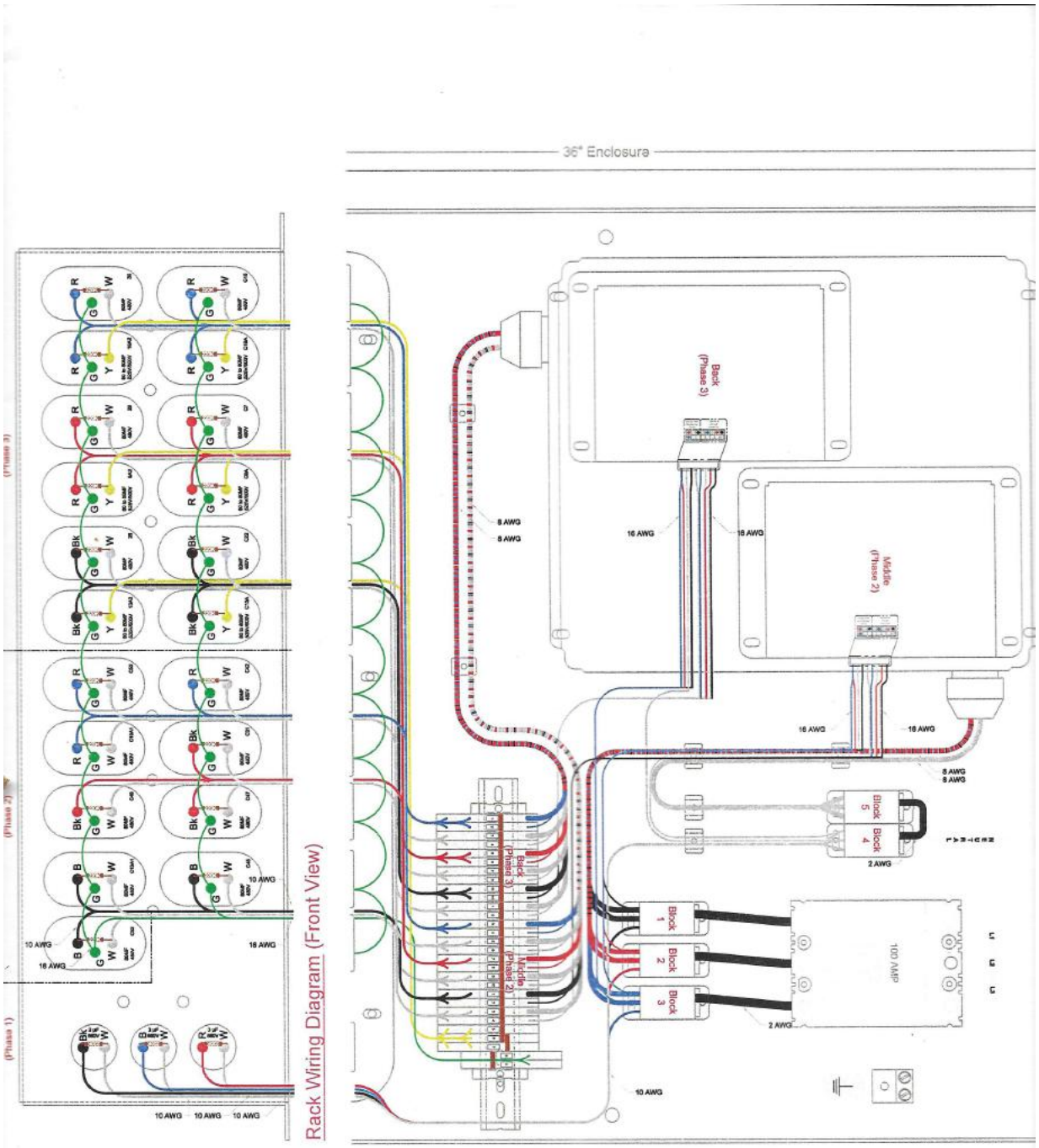
New Ground Rod and Conductor must be used if existing ground is not verified.

1. The ground rod shall be 8-10 feet by 5/8-inch copper. **No galvanized copper rods, no aluminum wire. Copper wire is required.**

2. The grounding conductor wire shall be THHN and sized according to theunit Cut Sheet and have a grounding clamp for the rod.

3. The grounding conductor wire shall be as short as practicable and protected where exposed to physical damage.


480-3
DANGER
480 VOLTS
480-3
WARNING
Arc Flash Hazard
Appropriate PPE Required
BASICPOWER
Plan View
Scale: NTS
Open Enclosure Plan View
Scale - NTS
BASICPOWER
Model I-480-3
Energy Reduction Unit
With Lightning and Surge Protection
Basic Power, Inc.
36" Enclosure
DANGER
480 VOLTS
36" Enclosure
Closed Enclosure Plan View
Scale - NTS
UNLESS OTHERWISE NOTED
ALL DIMENSIONS ARE IN INCHES
ALL DIMENSIONS APPLY AFTER FINISH.
TOLERANCES:
DECIMALS: 2PL ± TOL 3PL ± TOL
FRACTIONS: FRACTIONS
ANGLES: ANGLE
INTERNAL THREAD CLASS 2B
EXTERNAL THREAD CLASS 2A
MAX ROUGHNESS:
BREAK ALL EDGES: EDGE
BREAK ALL HOLES: HOLE
INTERPRET IN ACCORDANCE WITH
ANSI/ASME Y14.5-1994
MATERIAL:
MAT'L 1
MAT'L 2
MAT'L 3
MAT'L 4
FINISH:
FINISH 1
FINISH 2
FINISH 3
FINISH 4
DRAWN BY: J. Gleeson
CHECKED BY: Checked
APP'D BY: APP'D
DATE: 10/03/2014
SIZE A
Scale: Not to Scale
BASICPOWER
120 MARSHALLS CREEK RD
EAST STROUDSBURG, PA 18302
TITLE:
I-480-3
STICKER LABEL PLAN
DWG NO: BPI-001-2000480007
REV -
THIS DRAWING, INFORMATION, AND THE SUBJECT MATTER THEREOF, ARE THE SOLE AND EXCLUSIVE PROPERTY OF BASIC POWER, INC. EAST STROUDSBURG, PA. IT MAY BE REPRODUCED BY THE PURCHASER OF THIS ASSEMBLY FOR THEIR INTERNAL USE ONLY. IT CANNOT BE DISTRIBUTED TO ANY OTHER FIRM OR PARTY WITHOUT THE WRITTEN CONSENT FROM OUR COMPANY
SHEET 1 OF 1



Rack Wiring Diagram (Front View)

Unit Wiring Diagram (Plan View)

I-480-3

PRODUCT SPECIFICATIONS

MANUFACTURER: BASICPOWER™, INC.

EQUIPMENT TYPE: BASIC UNIT ENCLOSURE

ENCLOSURE RATING: NEMA 4,12

MODEL NUMBER: I-480-3

OPERATING TYPE: 480/227 VAC, 3 PHASE, 50-60HZ

LOAD AMPS: 58 AMPS, SHORT CIRCUIT CURRENT, 10K AIC 208V MAX.

SCHEMATIC NUMBER: BPI001-2006480007

SERIAL NUMBER: _____

I-480-3 BASICPOWER™

I-480-3

CUSTOMER REFERENCE DEVICE TERMINAL WIRE AND TORQUE SPECIFICATIONS

MAIN CIRCUIT BREAKER:
100 AMP 3 POLE

PRIMARY SIDE:
2 AWG THHN/THWN-2 90°C (194°F) - 80 IN-LB

NEUTRAL TERMINAL BLOCK:
2 AWG THHN/THWN-2 90°C (194°F) 57 IN-LB

GROUND LUG:
6 AWG THHN/THWN-2 90°C (194°F) - 80 IN-LB

USE COPPER CONDUCTORS ONLY

I-480-3 BASICPOWER™

Periodic Inspection & Maintenance

No Regular Maintenance

The Basic Power TruWatts® unit contains no firmware or software or moving parts and its operation is controlled by the magnetic fields within its internal electromagnetic reactorand therefore this technology does not require regular maintenance.

Visual Check - Internal Circuit Breaker

It is recommended that the unit is periodically inspected to ensure that it has not been switched off accidentally or if it is suspected that the building has experienced an electrical surge either from the utility power provider or a lightning event. In the event ofa surge or lightning strike on the building that has entered the electrical system the internal circuit breaker may have tripped and would need to be reset.

Visual Inspection - Capacitors

An annual visual check of the integrity of the capacitors is recommended to ensure thatthere is no leakage of the oil from within the capacitor enclosure. In the event that leakage is observed a Basic Power Inc. trained electrician will be provided to replace the faulty part under the five year Warranty Protection.

Electrical Ground

An earth ground of 5 Ohms or less is required for the optimal operation of the Basic Power TruWatts® unit and therefore a periodic testing of the electrical ground is recommendedusing a clamp-on ground testing device.

eurofins | E&E

Certification Record

Listing#: E212591
Report #: 86741 c2 101471
Original Certification Date: July 29, 2015
Revised Certification Date: July 26, 2021

This Certification is issued to:
Basic Power, Inc.
1101 West Pratt Street
Baltimore, MD 21223

Stating that the product(s):
Open/Enclosed Industrial Control Panels

Product Rating(s):
Less than 1000 Volts AC/DC for US Certified Panels

Achieved Certification to the following standard(s):
UL 508A: Standard for Safety, Industrial Control Panels, 3rd Edition, Rev., August 6, 2020

Harold Raab
Eurofins Electrical and Electronic Testing North America, Inc.

All changes proposed in the previously identified product that affects the above information must be submitted to Eurofins for evaluation prior to implementation to assure continued NRTL Certification status. The covered product(s) shall be subject to follow-up inspections to ensure that the Certified product(s) are identical to the product sample evaluated by Eurofins E&E NA and that all responsibilities are being fulfilled as specified in the Applicants' Responsibility section of the Certification Report. The Applicant named above has been authorized Eurofins E&E NA to represent the product(s) listed in this record as "MET Certified" and to mark this/these product(s) according to the terms and conditions of the Eurofins E&E NA Applicant Contract, Listing Reports, and the applicable agreements. Only the product(s) bearing the MET Mark and under a follow-up service are considered to be included in this Certification program. This certification has been granted under a System 3 program as defined in ISO/IEC 17067.

SCC Accredited CB-F/S

Eurofins E&E North America, Inc. is accredited by OSHA and the Standards Council of Canada.

NRTL

patents

10141096 Energy saving device with inductive capacitive reactor

9859049 System for reducing electrical consumption with triple core iterative transformers

20190139698 Electric appliances with inductive capacitive reactor

20190140611 Filter with inductive capacitive reactor for installed units

20190131064 Energy saving device with inductive capacitive reactor for high amp uses

20190103817 Inductor capacitive reactor

20180130598 Energy saving device with inductive capacitive reactor

20160322903 System for reducing electrical consumption with triple core iterative transformers

BASICPOWER™

"We Make Energy More Efficient"

Manufacturer's Warranty

1. Basic Power, Inc. warrants the BasicPower Unit™ to be free of defects in material (components meet the specifications they are rated for) and workmanship for the applications specified in its operation instruction for a period of five (5) years from the date of original installation. If the unit exhibits a defect in normal use, Basic Power will replace it, free of charge within a reasonable time after the unit is returned during the warranty period. Basic Power will be responsible for removal and shipping.

2. This warranty is void if any unit or parts therein have been modified in any manner, or it has been reinstalled at a facility different from its original location.

3. This warranty is void if the customer has significantly increased the electrical load on the installed unit without replacement or confirmation of applicability from the manufacturer.

4. WARRANTY DOES NOT APPLY TO:

- Damage, accidental or otherwise, to the BasicPower Unit™ while in the possession of the customer not caused by a defect in material or workmanship.
- Damage caused by improper installation or connection to improper power supply.
- Damage caused by customer or its agent's misuse.
- Damage to the appearance of unit caused by normal wear.
- Damage caused by repairs or alterations of the unit or the circuit breaker panel by anyone other than those authorized to perform the work.

5. Basic Power does not provide protection against normal wear and tear, theft, mysterious disappearance, misplacement, reckless, abusive, willful or intentional conduct associated with handling and use of this product, exposure to weather conditions, cosmetic damage and/or other damage that does not affect unit functionality.

6. All warranties, including any implied warranty of merchant ability are limited to a five (5) year duration of this express warranty. Basic Power disclaims any liability for consequential or incidental damages and in no event shall Basic Power's liability exceed the retail value of the equipment for breach of any written or implied warranty with respect to the equipment.

7. Warranty renews or extends with a replacement unit. All warranties are from the date of the installation of the unit.

8. This warranty covers only new BasicPower Units™ manufactured by Basic Power, Inc. It does not cover used, salvaged, or refurbished products.

9. Warranty applies only if proper installation procedures were followed as shown in Document Nos. 180739, 180740, or 180741 and Document Nos. 180530, 180531, or 180532.

10. As some states do not allow the limitation or exclusion of incidental or consequential damages, or do not allow limitation on implied warranties, the above limitations and exclusions may not apply to you.