

E-Saver-33L

Ultra Efficient Application Optimized Dry Type Transformer

Optimized for Application Load (OPAL) yields substantially lower losses than typical DOE compliant units

| | | | | | | | | |
|---|---|--|--------------|------------------------|------------------------------------|---|--------------|---------------|
| Electrical Ratings | Power [kVA] | 75 | | | | | | |
| | Continous Overload [kVA] | 83 <i>Max. Linear Load; 1 THD < 0.05 p.u. < 30°C Amb.</i> | | | | | | |
| | Primary [V] | 480 | | | | | | |
| | Secondaries [V] | 120/208 | | | | | | |
| Topology & Materials | Electrical Topology | Primary: Delta 3 -Wire | | Secondary: Wye 4 -Wire | | | | |
| | Terminals: Material / Rating | Neutral: Copper/200% | | Line: Copper/100% | | Ground: Mechanical Lug | | |
| | Coils / Construction | Copper; Welded/Brazed Internal Connections | | | | | | |
| | Core / Configuration | 3 Leg, Low loss super grain-oriented electrical steel | | | | | | |
| Regulatory Efficiency | Insulation Class / Type | 220 (<i>UL Listed, E221932</i>) | | Nomex based | | | | |
| | Impregnant / Properties | Epoxy/Polyester co-polymer; Dielectric 3.2kV/mil. x 3 mil. build; Low VOCs | | | | | | |
| | B.I.L. | 10kV (Primary & Secondary) | | | | | | |
| | 35% Load @ 75 °C [%] | ≥ 98.80 ; <i>tested per DOE 10CFR431*, Subpart K, & CSA C802.2</i> | | | | | | |
| Load Performance | Reference levels: | (75kVA): DOE 2016: 98.60%; CSA C802.2-12: 98.00 % | | | | | | |
| | <i>*Powersmiths exceeds DOE test requirements by guaranteeing performance of every unit</i> | | | | | | | |
| | Percent Loading: | No Load | 16.7% | 25.0% | 35.0% | 50.0% | 75.0% | 100.0% |
| | Linear Load Efficiency ⁺ [%] | | 98.79 | 98.89 | 98.84 | 98.61 | 98.03 | 97.20 |
| General Operation | Linear Load Loss ⁺ [W] | 109 | 154 | 209 | 308 | 526 | 1125 | 2147 |
| | [BTU/hr] | 372 | 525 | 713 | 1051 | 1795 | 3839 | 7326 |
| | K7 Load (IEEE C57.110) ⁺ [%] | | 98.7 | 98.8 | 98.7 | 98.4 | 97.7 | 96.6 |
| | ⁺ Calculated @ 20°C Amb. Accuracy: Linear Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05% | | | | | | | |
| Impedance | Temperature Rise/Ambient [°C] | < 130 (<i>Full Linear Load</i>) | | | 40 (<i>Per ANSI C57.96.2013</i>) | | | |
| | Regulation (<i>full load</i>) [%] | 2.7 (<i>Cos Φ=1.0</i>) | | | 4.5 (<i>Cos Φ =0.8</i>) | | | |
| | Excitation [A] | 0.5 (<i>~ Effective Current</i>) | | | | | | |
| Abnormal | Audible Noise [dBA] | 47 (3 dBA less than NEMA ST-20 requirement 51-150kVA) | | | | | | |
| | Z: +/- Sequence [%] | Z: 4.6 | X: 3.8 | R: 2.6 | <i>(per ANSI C57.12.91/UL1561)</i> | | | |
| Enclosure Type & Installation | N/A | Zo: | Xo: | Ro: | <i>(per ANSI C57.12.91)</i> | | | |
| | Shortcircuit Current** [A] | Symmetrical Bolted faults | | Primary: 1,999 | Secondary: 4,612 | | | |
| | **Zero Upstream Impedance | Asymmetrical Bolted faults | | L - N: 4,612 | L - L: 3,994 | | | |
| | Inrush x FLA /@ % Source | 4 /@ 3% | 8 /@ 1½% | 12 /@ 0% | <i>(per IEEE 389)</i> | | | |
| Physical | Type / Environment | 2: Indoor Ventilated; 3R: Sprinkler/Weather Shields (Field Installed Option) | | | | | | |
| | Installation / Location | Non-combustible floor; Restricted Access Area, non-public accessible | | | | | | |
| Quality, Standards & Certification | Ventilation Clearances | 2" to rear wall; zero clearance for sides (Grill opening < 1/2", Vermin Resistant) | | | | | | |
| | Paint / Finish | Polyester Powder Coat, Semi-Gloss, Textured; Color: Green (RAL 6018) | | | | | | |
| | Size & Drawing | TC0: (W: 32" D: 22" H: 40"); Drawing: 300-003761-800 | | | | | | |
| Additional Specified Attributes & Options: <i>(As listed)</i> | Net Weight | 770 lbs / 350 kg | | | | | | |
| | Quality | ISO 9001-2000: Quality Management System ISO 14001-2004: Environmental Management System ISO 17025: Efficiency Measurement Certification (CSA) | | | | | | |
| | Design / Build / Test | UL 1561; CSA C22.2-47; NEMA ST-20; ANSI C57.91 | | | | | | |
| Certifications | | UL/CUL Listed; CSA Certified | | | | <i>UL1561 Listed for Non-linear loads</i> | | |



POWERSMITHS INTERNATIONAL CORP.

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OPAL Series Model: E-Saver-33L-75-480-208

Prepared: D. Faria

Date: 19-Nov-15

Part No: **200-004393 -100**

Revised:

Date: 21-Jan-16

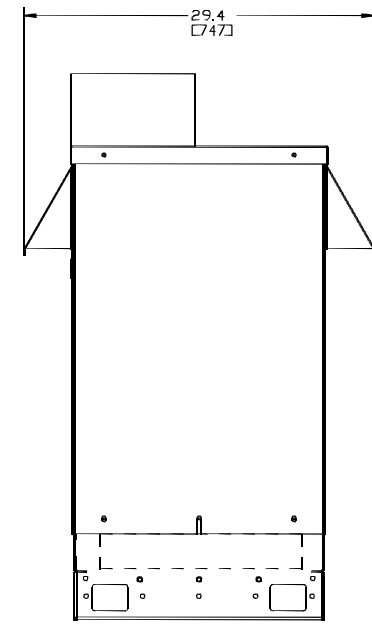
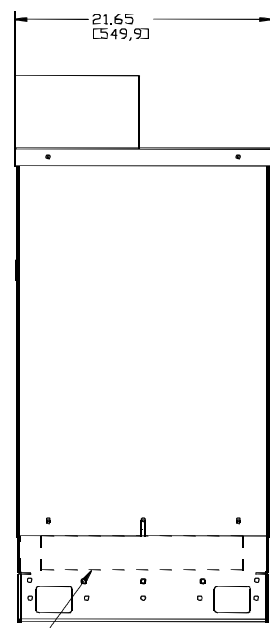
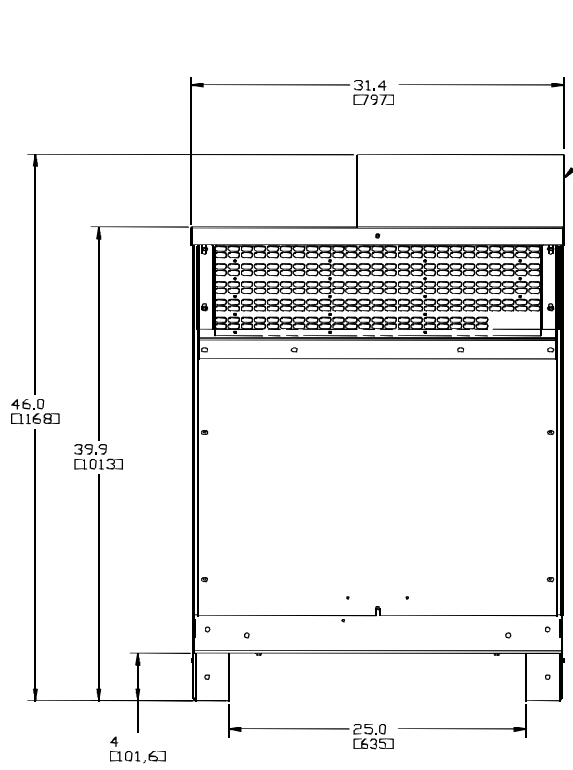
Doc No: **200-004393 -800**

Rev: **A01**

Note: Powersmiths International Corp. reserves the right to revise these specifications without notice; refer to most recent document revision

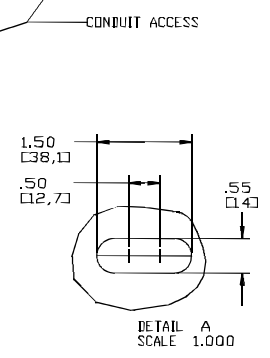
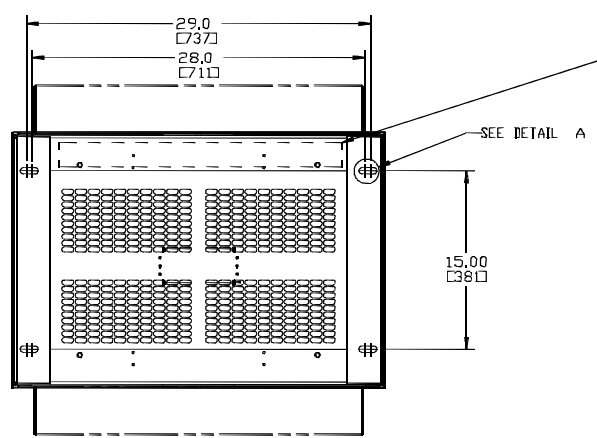
Ref. Project/Unit ID:

| REV | ECO NO. | DESCRIPTION |
|-----|---------|-------------|
| | | |
| | | |
| | | |



NWMA TYPE-1 (STANDARD)

UL/NEMA TYPE-2/3R (OPTION WHEN SPECIFIED)
NOTE: DRIP SHIELDS INSTALLED AT SITE



| | | | |
|--|--|--|------------------------------------|
| UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES | BY: [Signature] DATE: 05-JUN-14 | POWERSMITHS INTERNATIONAL CORP <small>10 Brown Rd. Stambridge, Ontario, Canada L4B 5M5</small> | |
| TOLERANCES ARE: FRACTIONS DECIMALS ANGLES 1-PLACE DECIMALS .005 .005 .005 2-PLACE DECIMALS .005 .005 .005 3-PLACE DECIMALS .005 .005 .005 ANGLES .1 .1 .1 | APPROVED: BY: [Signature] | | TITLE: OUTLINE, TCO CASE |
| SURFACE FINISH: [Symbol] | APPROVED: | | |
| MATERIAL: | APPROVED: | | |
| FINISH: | UNLESS OTHERWISE NOTED SHARP ALL CORNERS AND SWEEP EDGES | DRAWING NO.: 300-003761-800 | REV. A00 |
| | SCALE: 0,198 | REF: | SHEET 1 OF 1 |