

# E-Saver-33L

# Ultra Efficient Application Optimized Dry Type Transformer

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

<b>Electrical Ratings</b>	<b>Power [kVA]</b>	<b>30</b>						
	Continous Overload [kVA]	33 <span style="float: right;"><i>Max. Linear Load; 1 THD &lt; 0.05 p.u. &lt; 30°C Amb.</i></span>						
	<b>Primary [V]</b>	<b>480</b>						
	<b>Secondaries [V]</b>	<b>120/208</b>						
<b>Topology &amp; Materials</b>	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						
<b>Regulatory Efficiency</b>	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)						
	<b>35% Load @ 75 °C [%]</b>	≥ <b>98.50</b> ; <i>tested per DOE 10CFR431*, Subpart K, &amp; CSA C802.2</i>						
<b>Load Performance</b>	Reference levels:	(30kVA): DOE 2016: 98.23%; CSA C802.2-12: 97.50%						
		<i>*Powersmiths exceeds DOE test requirements by guaranteeing performance of every unit</i>						
	Percent Loading:	<b>No Load</b>	<b>16.7%</b>	<b>25.0%</b>	<b>35.0%</b>	<b>50.0%</b>	<b>75.0%</b>	<b>100.0%</b>
	Linear Load Efficiency <sup>+</sup> [%]		98.51	98.65	98.59	98.33	97.67	96.75
<b>General Operation</b>	Linear Load Loss <sup>+</sup> [W]	<b>55</b>	77	102	149	253	532	995
	[BTU/hr]	188	263	348	508	863	1815	3395
	K7 Load (IEEE C57.110) <sup>+</sup> [%]		98.4	98.5	98.4	98.1	97.3	96.2
		<sup>+</sup> Calculated @ 20°C Amb. Accuracy: Linear Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%						
<b>Impedance</b>	Temperature Rise/Ambient [°C]	< <b>130</b> ( <i>Full Linear Load</i> )			40 ( <i>Per ANSI C57.96.2013</i> )			
	Regulation ( <i>full load</i> ) [%]	3.1 ( <i>Cos Φ=1.0</i> )			4.4 ( <i>Cos Φ =0.8</i> )			
	Excitation [A]	0.3 ( <i>~ Effective Current</i> )						
	Audible Noise [dBA]	42 (3 dBA less than NEMA ST-20 requirement 9.1-50kVA)						
<b>Abnormal</b>	Z: +/- Sequence [%]	Z: 4.3	X: 3.0	R: 3.0	<i>(per ANSI C57.12.91/UL1561)</i>			
	N/A	Zo:	Xo:	Ro:	<i>(per ANSI C57.12.91)</i>			
<b>Enclosure Type &amp; Installation</b>	Shortcircuit Current** [A]	Symmetrical Bolted faults		Primary: 871		Secondary: 2,010		
	**Zero Upstream Impedance	Asymmetrical Bolted faults		L - N: 2,010		L - L: 1,741		
	Inrush x FLA /@ % Source	5 /@ 3%	10 /@ 1½%	15 /@ 0%	<i>(per IEEE 389)</i>			
<b>Physical</b>	Type / Environment	2: Indoor Ventilated; 3R: Sprinkler/Weather Shields (Field Installed Option)						
	Installation / Location	Non-combustible floor; Restricted Access Area, non-public accessible						
<b>Quality, Standards &amp; Certification</b>	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	TBO: (W: 26" D: 18" H: 30"); Drawing: 300-003760-800						
<b>Additional Specified Attributes &amp; Options:</b> <i>(As listed)</i>	Net Weight	410 lbs / 186 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	<b>UL/CUL Listed; CSA Certified</b>				<i>UL1561 Listed for Non-linear loads</i>		



**POWERSMITHS INTERNATIONAL CORP.**

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**OPAL Series Model: E-Saver-33L-30-480-208**

Prepared: D. Faria

Date: 23-Nov-15

Part No: **200-004387 -100**

Revised:

Date: 20-Jan-16

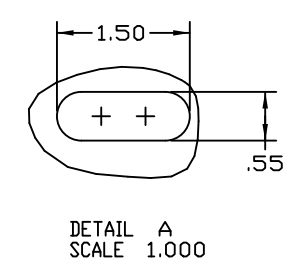
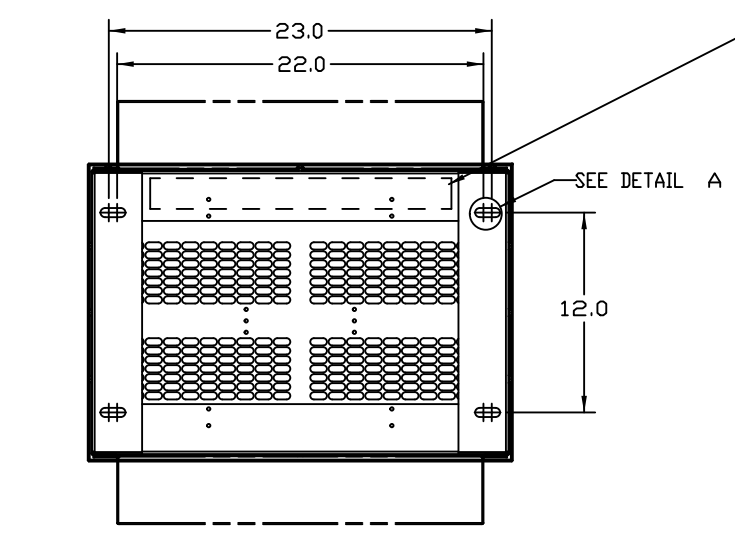
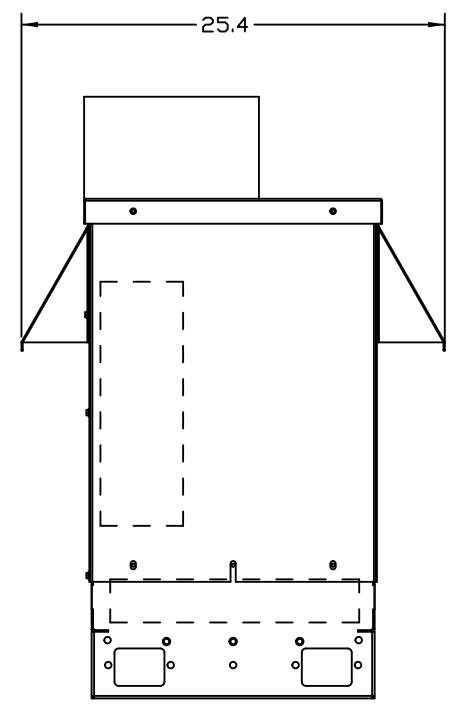
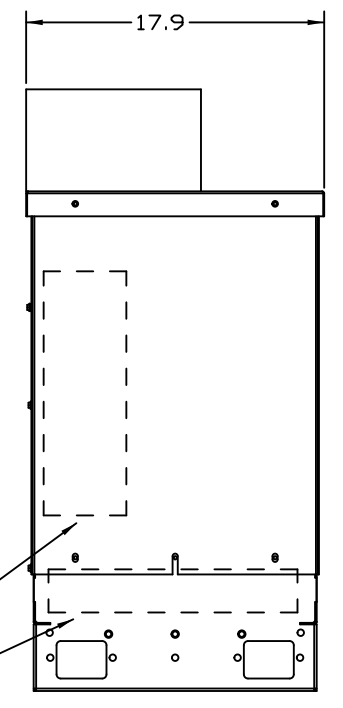
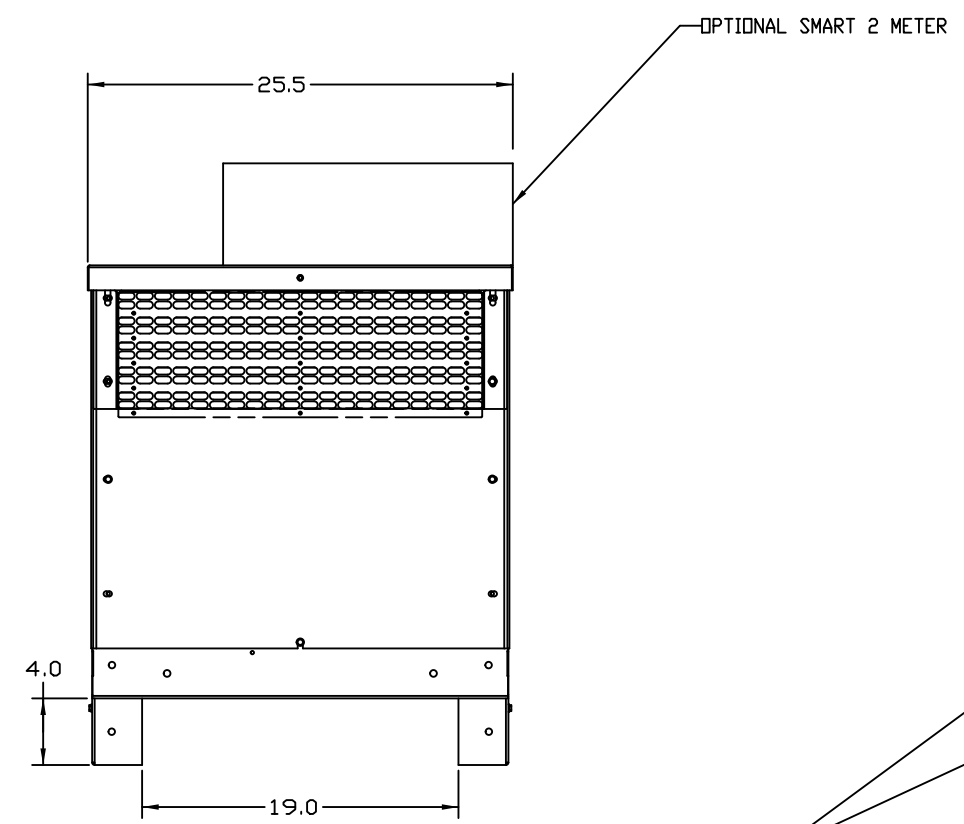
Doc No: **200-004387 -800**

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	ECD No.	DESCRIPTION



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE: 1-PLACE DECIMAL ±.02 2-PLACE DECIMAL ±.010 3-PLACE DECIMAL ±.005 ANGULAR ±1/2°	BY	DATE	<b>POWERSMITHS INTERNATIONAL CORP</b> 10 Devon Rd. Brantford, Ontario, Canada, L6T 5B5
	APPROVED	DT 19-Jan-14	
SURFACE FINISH: 125/√	APPROVED		TITLE
MATERIAL	APPROVED		TB0 CASE OUTLINE
FINISH	UNLESS OTHERWISE NOTED REMOVE ALL BURRS AND SHARP EDGES		DRAWING NO.
	SCALE 0.188		300-003760-800
			REV. A00
			REF: SHEET 1 of 1

PRO/ENGINEER