

# E-Saver-25H

# 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>112.5</b>						
	Continous Overload [kVA]	135			Max. Linear Load; 1 THD < 0.05 p.u. < 30°C Amb.			
	<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	Aluminium (Sec.)/Copper (Prim.); Welded/Brazed Internal Connections						
	Core / Configuration	3 Leg, Low loss super grain-oriented electrical steel						
<b>Regulatory Efficiency</b>	Insulation Class / Type	220 (UL Listed, E221932)		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>98.91</b> ; tested per DOE 10CFR431 <sup>+</sup> , Subpart K, & CSA C802.2						
<b>Load Performance</b>	Reference levels:	(112.5kVA): DOE 2016: 98.74%; CSA C802.2-12: 98.20%						
	<sup>+</sup> Powersmiths exceeds DOE test requirements by guaranteeing min. stated efficiency of every unit							
	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* [%]		98.65	98.89	98.95	98.87	98.55	98.09
<b>General Operation</b>	Linear Load Loss* [W]	<b>189</b>	257	315	417	641	1233	2176
	[BTU/hr]	645	877	1075	1423	2187	4207	7425
	K4 Load (IEEE C57.110)* [%]		98.6	98.8	98.9	98.7	98.3	97.8
	*Calculated @ 20°C Amb. Accuracy: Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%							
<b>Impedance</b>	Temperature Rise/Ambient [°C]	< <b>105</b> (Full Linear Load)			40 (Per ANSI C57.96.2013)			
	Regulation (full load) [%]	1.7 (Cos Φ=1.0)			3.8 (Cos Φ =0.8)			
	Excitation [A]	1.0 (~ Effective Current)						
<b>Abnormal</b>	Audible Noise [dBA]	47 (6 dBA less than NEMA ST-20 > K13 requirement 51-150kVA)						
	Z: +/- Sequence [%]	Z: 4.3	X: 4.0	R: 1.7	(per ANSI C57.12.91/UL1561)			
	N/A	Zo:	Xo:	Ro:	(per ANSI C57.12.91)			
<b>Enclosure Type &amp; Installation</b>	Bolted Faults (Output)** [A]	Symmetrical:		Source (reflected):		3,220		L/L/L-N: 7,430
	**Zero Upstream Impedance	Asymmetrical:		L - N:		7,430		L - L: 6,434
	Inrush x FLA (@ % Source Imp.)	4 @ 3%	7 @ 1½%	11 @ 0%	(per IEEE 389)			
<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						
	Ventilation Clearances	2" to rear wall; zero clearance for sides (Grill opening < 1/2", Vermin Resistant)						
<b>Quality, Standards &amp; Certification</b>	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						
	Net Weight	970 lbs		/ 441 kg				
<b>Additional Specified Attributes &amp; Options:</b> (As listed)	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-25H-112.5-480-208**

Prepared: D. Faria

Date: 27-Nov-15

Part No: **225-004514 -100**

Revised: D. Faria

Date: 16-Nov-16

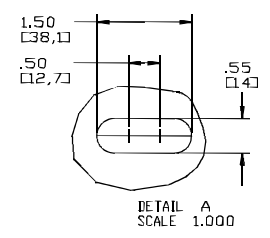
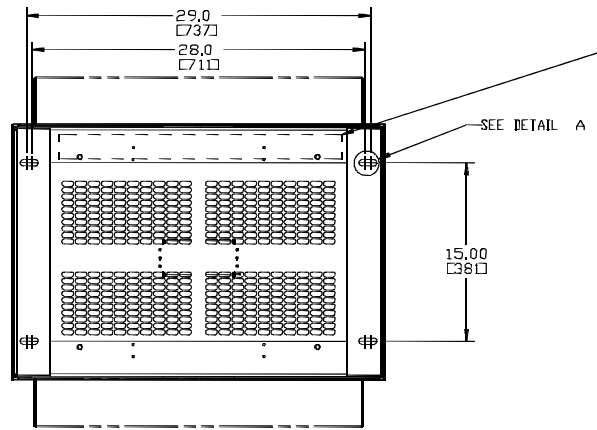
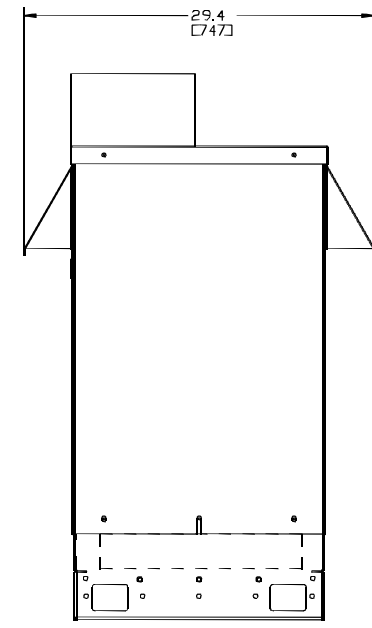
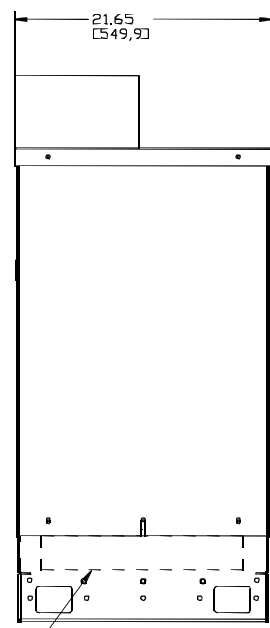
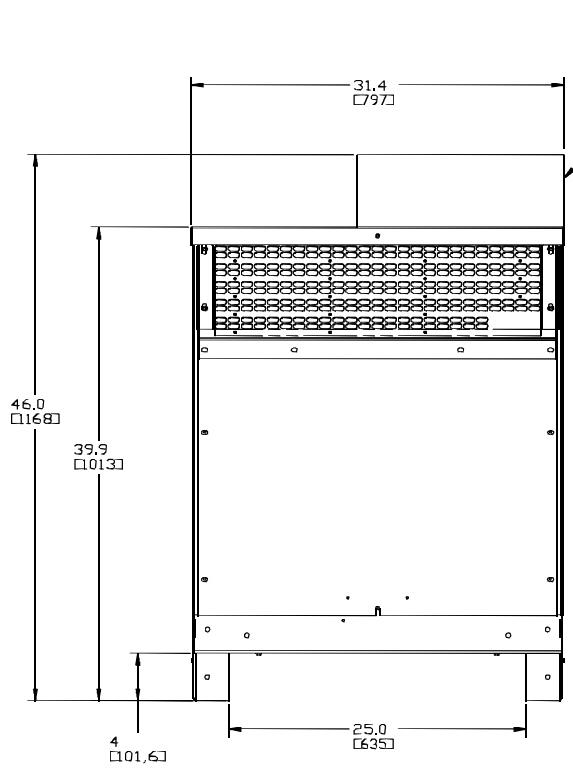
Doc No: **225-004514 -800**

Rev: **A00**

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



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	BY: DATE	POWERSMITHS INTERNATIONAL CORP 10 Brown Rd. Shelburne, Ontario, Canada L4B 2B6
TOLERANCES ARE: 1-PLACE DECIMAL 2-PLACE DECIMAL 3-PLACE DECIMAL ANGLES	APPROVED BY: 05-JUN-14	
SURFACE FINISH:	APPROVED	TITLE: OUTLINE, TCO CASE
MATERIAL:	APPROVED	DRAWING NO.: 300-003761-800
FINISH:	UNLESS OTHERWISE NOTED BRUSH ALL SURFACES AND SHARP EDGES	REV: A00
SCALE: 0,188	REF:	SHEET 1 of 1

PRO/ENGINEER