

# 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</b> [kVA]	<b>500</b>						
	Continous Overload [kVA]	600 <i>Max. Linear Load; 1 THD &lt; 0.05 p.u. &lt; 30°C Amb.</i>						
	<b>Primary</b> [V]	<b>480</b>						
	<b>Secondaries</b> [V]	<b>120/208</b>						
	Frequency [Hz]/Phase/Shift	60 / 3-Phase <i>-30 deg.</i>						
	Primary Taps	2 x 2 1/2 % FCAN; 4 x 2 1/2 % FCBN; (6 Taps)						
	K-Rating (IEEE C57.110) [K]	K13 @ 100%; >K30 @ 80%; <i>Refer Powersmiths published tables for other ratings</i>						
<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						
	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>Regulatory Efficiency</b>	<b>35% Load @ 75 °C</b> [%]	≥ <b>99.24</b> ; <i>tested per DOE 10CFR431<sup>+</sup>, Subpart K, &amp; CSA C802.2</i>						
	Reference levels:	(500kVA): DOE 2016: 99.14%; CSA C802.2-12: 98.70%						
<sup>+</sup> Powersmiths exceeds DOE test requirements by guaranteeing min. stated efficiency of every unit								
<b>Load Performance</b>	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* [%]		99.06	99.24	99.28	99.24	99.03	98.71
	Linear Load Loss* [W]	<b>655</b>	790	961	1260	1916	3661	6479
	[BTU/hr]	1163	1423	1747	2320	3583	6947	12437
	K4 Load (IEEE C57.110)* [%]		99.0	99.2	99.2	99.1	98.8	98.4
<i>*Calculated @ 20°C Amb. Accuracy: Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%</i>								
<b>General Operation</b>	Temperature Rise/Ambient [°C]	< <b>105</b> ( <i>Full Linear Load</i> )			40 ( <i>Per ANSI C57.96.2013</i> )			
	Regulation ( <i>full load</i> ) [%]	1.2 ( <i>Cos Φ=1.0</i> )			3.4 ( <i>Cos Φ =0.8</i> )			
	Excitation [A]	3 ( <i>~ Effective Current</i> )						
	Audible Noise [dBA]	57 (6 dBA less than NEMA ST-20 > K13 requirement 301-500kVA)						
<b>Impedance</b>	Z: +/- Sequence [%]	Z:	4.1	X:	4.0	R:	1.1	<i>(per ANSI C57.12.91/UL1561)</i>
	N/A	Zo:		Xo:		Ro:		<i>(per ANSI C57.12.91)</i>
<b>Abnormal</b>	Bolted Faults (Output)** [A]	Symmetrical:	Source (reflected):			14,665	L/L/L-N: 33,842	
	**Zero Upstream Impedance	Asymmetrical:		L - N:		33,842	L - L: 29,307	
	Inrush x FLA (@ % Source Imp.)	4 @ 3%	7 @ 1½%	11 @ 0%	<i>(per IEEE 389)</i>			
<b>Enclosure Type &amp; Installation</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)						
	Paint / Finish	Polyester Powder Coat, Semi-Gloss, Textured; Color: Green (RAL 6018)						
<b>Physical</b>	Size & Drawing	TE1: (W: 52" D: 38" H: 61"); Drawing: 300-003780-800						
	Net Weight	2910 lbs /			1323 kg			
<b>Quality, Standards &amp; Certification</b>	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>			
<b>Additional Specified Attributes &amp; Options:</b> <i>(As listed)</i>								



**POWERSMITHS INTERNATIONAL CORP.**

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**OPAL Series Model: E-Saver-25H-500-480-208**

Prepared: D. Faria

Date: 30-Nov-15

Part No: **225-004530 -100**

Revised: D. Faria

Date: 25-Jan-16

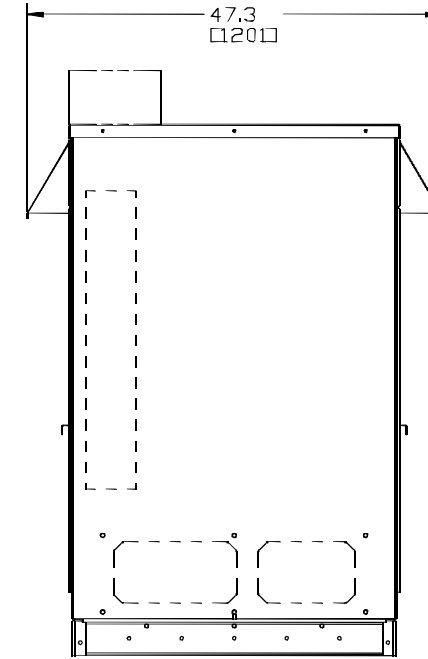
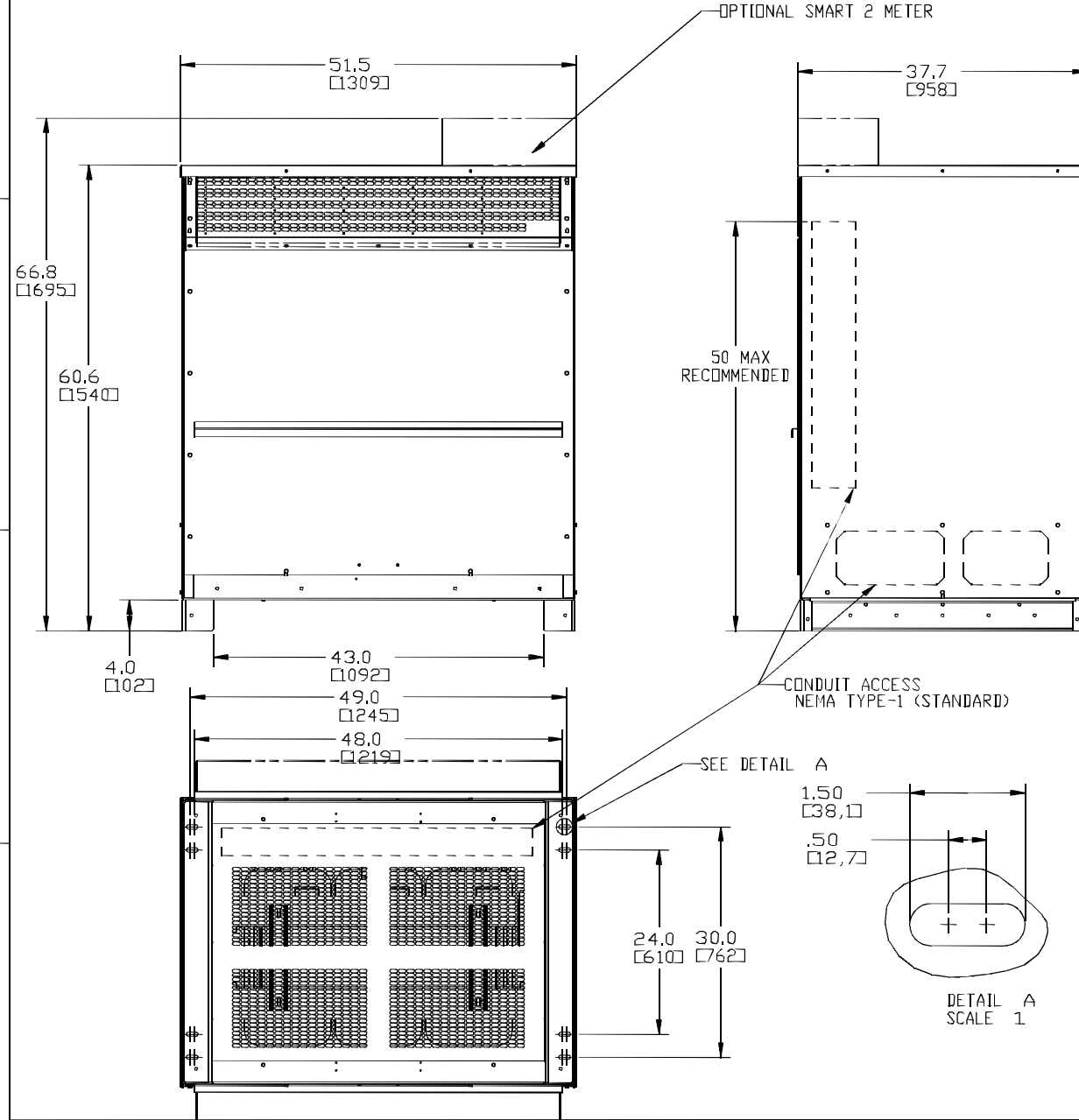
Doc No: **225-004530 -800**

Rev: **A01**

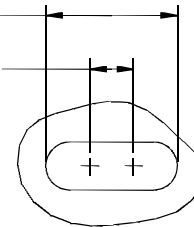
*Note: Powersmiths International Corp. reserves the right to revise these specifications without notice; refer to most recent document revision*

**Ref. Project/Unit ID:**

REV	ECD No.	DESCRIPTION
A00		RELEASED
A01		ADDED WIDTH DIMENSION
A02		
A03		
A04		



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



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.		BY	DATE	<b>POWERSMITHS INTERNATIONAL CORP</b> 10 Devon Rd. Brampton, Ontario, Canada, L6T 5B5	
TOLERANCES ARE:		APPROVED	DT 08-Sep-01		
1-PLACE DECIMAL	±.02 ±.05	APPROVED			
2-PLACE DECIMAL	±.010 ±.015	APPROVED			
3-PLACE DECIMAL	±.005 ±.010	APPROVED			
ANGLE	±1/2° ±1/2°	APPROVED			
SURFACE FINISH:	125	APPROVED		TITLE	
MATERIAL		APPROVED		OUTLINE, TE1 CASE	
FINISH		UNLESS OTHERWISE NOTED REMOVE ALL BURRS AND SWARP EDGES		DRAWING NO.	
		SCALE 0.100		300-003780-800	REV. A01
				REF:	SHEET 1 of 1

PRO/ENGINEER