

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]	225						
	Continous Overload [kVA]	248	Max. Linear Load; 1 THD < 0.05 p.u. < 30°C Amb.					
	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 (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)						
	35% Load @ 75 °C [%]	≥ 99.08 ; tested per DOE 10CFR431*, Subpart K, & CSA C802.2						
Load Performance	Reference levels:	(225kVA): DOE 2016: 98.94%; CSA C802.2-12: 98.50%						
	*Powersmiths exceeds DOE test requirements by guaranteeing performance of every unit							
	Percent Loading:	No Load	16.7%	25.0%	35.0%	50.0%	75.0%	100.0%
	Linear Load Efficiency ⁺ [%]		99.04	99.16	99.15	99.02	98.65	98.12
General Operation	Linear Load Loss ⁺ [W]	277	366	477	672	1106	2287	4282
	[BTU/hr]	945	1249	1628	2293	3774	7803	14610
	K7 Load (IEEE C57.110) ⁺ [%]		99.0	99.1	99.0	98.8	98.4	97.7
	⁺ Calculated @ 20°C Amb. Accuracy: Linear Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%							
Impedance	Temperature Rise/Ambient [°C]	< 130 (Full Linear Load)			40 (Per ANSI C57.96.2013)			
	Regulation (full load) [%]	1.8 (Cos Φ=1.0)			4.1 (Cos Φ =0.8)			
	Excitation [A]	1.4 (~ Effective Current)						
Abnormal	Audible Noise [dBA]	52 (3 dBA less than NEMA ST-20 requirement 151-300kVA)						
	Z: +/- Sequence [%]	Z: 4.6	X: 4.2	R: 1.7	(per ANSI C57.12.91/UL1561)			
	N/A	Zo:	Xo:	Ro:	(per ANSI C57.12.91)			
Enclosure Type & Installation	Shortcircuit Current** [A]	Symmetrical Bolted faults		Primary: 6,015		Secondary: 13,881		
	**Zero Upstream Impedance	Asymmetrical Bolted faults		L - N: 13,881		L - L: 12,021		
	Inrush x FLA /@ % Source	3 /@ 3%	6 /@ 1½%	9 /@ 0%	(per IEEE 389)			
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	TD1: (W: 38" D: 32" H: 52"); Drawing: 300-003779-800						
Additional Specified Attributes & Options: (As listed)	Net Weight	1660 lbs / 755 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.

10 Devon Rd. Brampton, ON. L6T 5B5, Canada

powersmiths.com

OPAL Series Model: E-Saver-33L-225-480-208

Prepared: D. Faria

Date: 23-Nov-15

Part No: **222-004405 -100**

Revised:

Date: 25-Jan-16

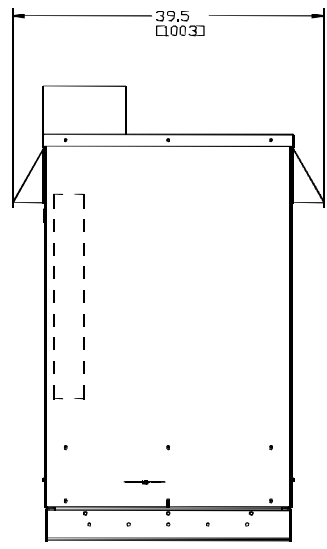
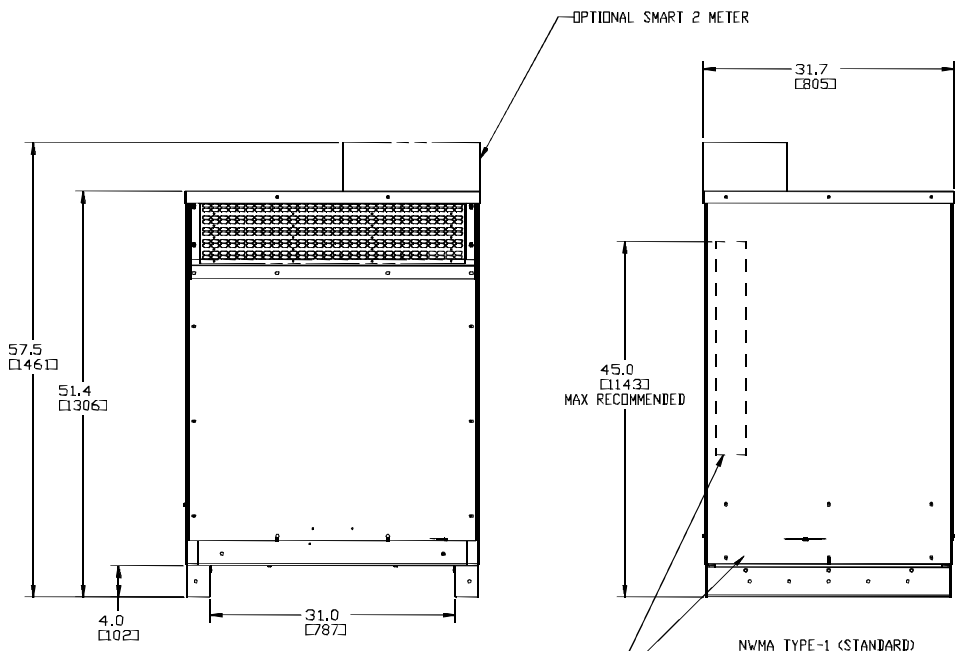
Doc No: **222-004405 -800**

Rev: **A01**

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

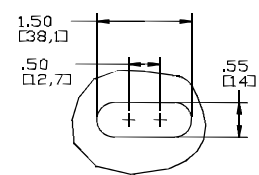
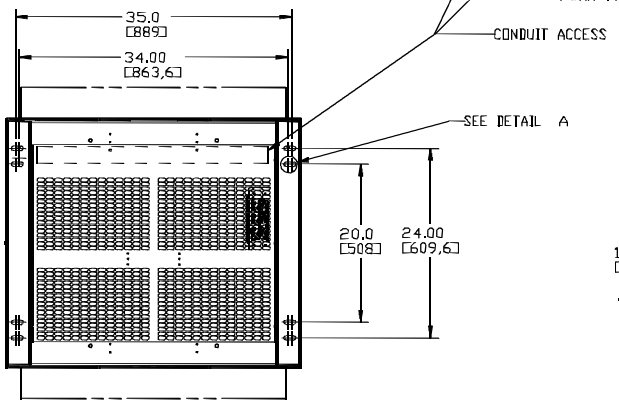
Ref. Project/Unit ID:

REV	ECO NO.	DESCRIPTION



NWMA TYPE-1 (STANDARD)

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



DETAIL A
SCALE 1.000

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.	BY: [Signature]	DATE: 05-JUN-14	POWERSMITHS INTERNATIONAL CORP 10 Brown Rd. Brampton, Ontario, Canada, L6T 2S6	
TOLERANCES ARE:	APPROVED:			
1-PLACE DECIMALS	APPROVED:		TITLE:	
2-PLACE DECIMALS	APPROVED:		OUTLINE, TDI CASE	
3-PLACE DECIMALS	APPROVED:		MATERIAL:	
4-PLACE DECIMALS	APPROVED:		FINISH:	
UNLESS OTHERWISE NOTED, BRACKETS, DIMENSIONS AND SHARP EDGES	UNLESS OTHERWISE NOTED, BRACKETS, DIMENSIONS AND SHARP EDGES	SCALE: 0.125	DRAWING NO. 300-003779-800	REV. A00
			REF:	SHEET 1 OF 1

PRO/ENGINEER