

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]	45						
	Continous Overload [kVA]	50	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 [%]	≥ 98.64 ; tested per DOE 10CFR431*, Subpart K, & CSA C802.2						
Load Performance	Reference levels:	(45kVA): DOE 2016: 98.40%; CSA C802.2-12: 97.70%						
	*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 ⁺ [%]		98.62	98.77	98.73	98.50	97.90	97.03
General Operation	Linear Load Loss ⁺ [W]	77	105	141	202	340	719	1367
	[BTU/hr]	263	358	481	689	1160	2453	4664
	K7 Load (IEEE C57.110) ⁺ [%]		98.6	98.7	98.6	98.3	97.5	96.4
	⁺ 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) [%]	2.8 (Cos Φ=1.0)			4.8 (Cos Φ =0.8)			
	Excitation [A]	0.35 (~ Effective Current)						
Abnormal	Audible Noise [dBA]	42 (3 dBA less than NEMA ST-20 requirement 9.1-50kVA)						
	Z: +/- Sequence [%]	Z: 4.8	X: 4.0	R: 2.7	(per ANSI C57.12.91/UL1561)			
Enclosure Type & Installation	N/A	Zo:	Xo:	Ro:	(per ANSI C57.12.91)			
	Shortcircuit Current** [A]	Symmetrical Bolted faults		Primary: 1,153	Secondary: 2,662			
	**Zero Upstream Impedance	Asymmetrical Bolted faults		L - N: 2,662	L - L: 2,305			
	Inrush x FLA /@ % Source	4 /@ 3%	8 /@ 1½%	11 /@ 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	TBO: (W: 26" D: 18" H: 30"); Drawing: 300-003760-800						
Additional Specified Attributes & Options: (As listed)	Net Weight	530 lbs / 241 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-45-480-208

Prepared: D. Faria

Date: 20-Nov-15

Part No: **200-004390 -100**

Revised:

Date: 21-Jan-16

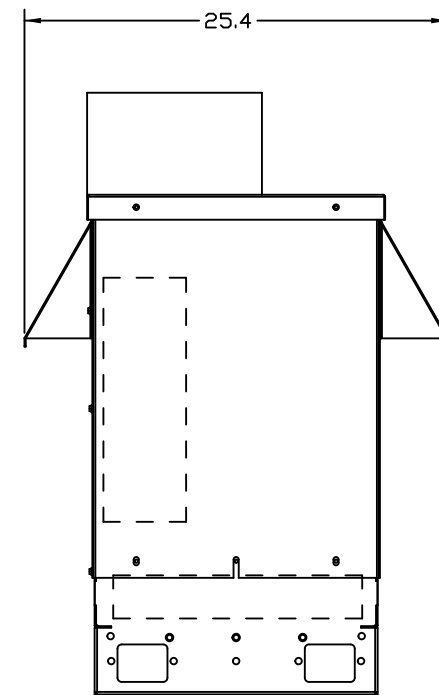
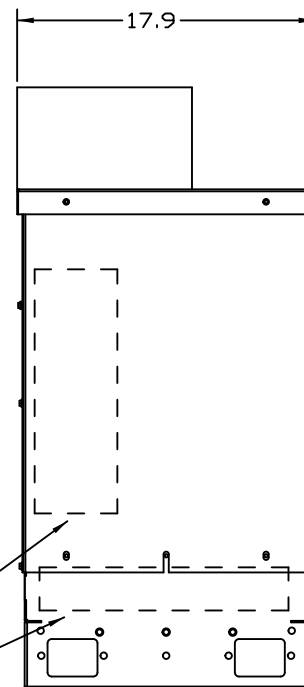
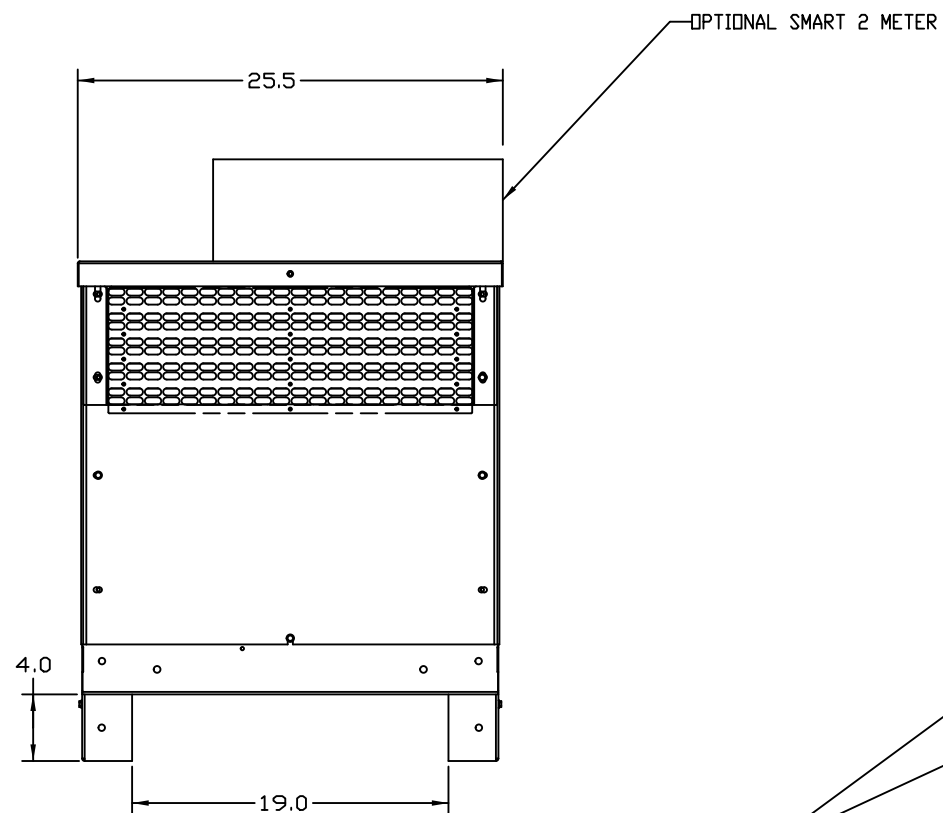
Doc No: **200-004390 -800**

Rev: **A01**

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

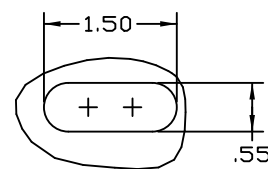
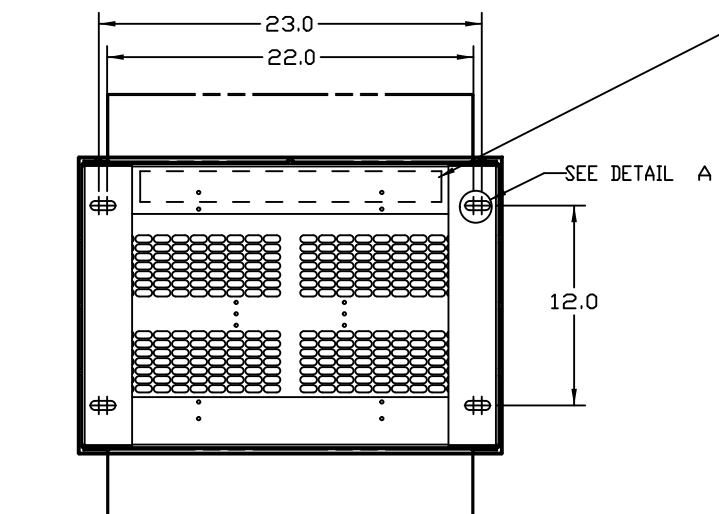
Ref. Project/Unit ID:

REV	ECD No.	DESCRIPTION



NEMA TYPE-1 (STANDARD)

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



DETAIL A
SCALE 1.000

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