

T1000-30H

Ultra Efficient Harmonic Mitigating 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]	54 <i>Max. Linear Load; 1 THD < 0.05 p.u. < 30°C Amb.</i>						
	Primary [V]	480						
	Secondaries [V]	120/208						
Topology & Materials	Electrical Topology	Primary: Delta 3 -Wire		Secondary: Zig-Zag 4-wire				
	Terminals: Material / Rating	Neutral: Copper/200%		Line: Copper/100%		Ground: Copper Bus		
	Coils / Construction	Copper; Welded/Brazed Internal Connections						
	Core / Configuration	3 Leg, Low loss super grain-oriented electrical steel						
Regulatory Efficiency	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)						
	35% Load @ 75 °C [%]	≥ 98.56 ; <i>tested per DOE 10CFR431*, Subpart K, & CSA C802.2</i>						
Load Performance	Reference levels:	(45kVA): DOE 2016: 98.40%; CSA C802.2-12: 97.70%						
	<i>*Powersmiths exceeds DOE test requirements by guaranteeing min. stated efficiency of every unit</i>							
	Percent Loading:	No Load	16.7%	25.0%	35.0%	50.0%	75.0%	100.0%
	Linear Load Efficiency ⁺ [%]		98.29	98.58	98.65	98.53	98.12	97.53
	Linear Load Loss ⁺ [W]	106	131	162	216	332	642	1130
General Operation	[BTU/hr]	362	447	553	737	1133	2191	3856
	K13 Load (IEEE C57.110)* [%]		98.2	98.5	98.5	98.3	97.7	96.8
	<i>+ Calculated @ 20°C Amb. Accuracy: Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%; Non-linear Load L-N</i>							
	Temperature Rise/Ambient [°C]	< 105 (<i>Full Linear Load</i>)			40 (<i>Per ANSI C57.96.2013</i>)			
Impedance	Regulation (<i>full load</i>) [%]	2 (<i>Cos Φ=1.0</i>)			3.8 (<i>Cos Φ =0.8</i>)			
	Excitation [A]	0.6 (<i>~ Effective Current</i>)						
	Audible Noise [dBA]	42 (6 dBA less than NEMA ST-20 > K13 requirement 31-50kVA)						
Abnormal	Z: +/- Sequence [%]	Z: 3.9	X: 3.4	R: 1.9	<i>(per ANSI C57.12.91/UL1561)</i>			
	Zero Sequence [%]	Zo: 1.06	Xo: 0.22	Ro: 1.03	<i>(per ANSI C57.12.91)</i>			
Enclosure Type & Installation	Shortcircuit Current** [A]	Symmetrical Bolted faults		Primary: 1,420		Secondary: 3,277		
	**Zero Upstream Impedance	Asymmetrical Bolted faults		L - N: 4,588		L - L: 3,974		
	Inrush x FLA /@ % Source	5 /@ 3%	10 /@ 1½%	15 /@ 0%	<i>(per IEEE 389)</i>			
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: <i>(As listed)</i>	Net Weight	605 lbs / 275 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>		
Shields (1S):		1 Electrostatic Shield > 60 (CM Attenuation @ 10kHz)						
Harmonic Treatment:		Triplens (3rd, 9th...) plus 5th, 7th with complimentary system 30° Phase shifts						



POWERSMITHS INTERNATIONAL CORP.

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OPAL Series Model: T1000-30H-45-0-480-208

Prepared: D. Faria

Date: 29-Jan-16

Part No: **200-004622 -100**

Revised:

Date:

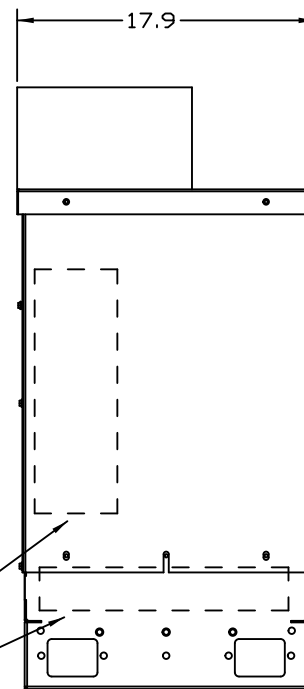
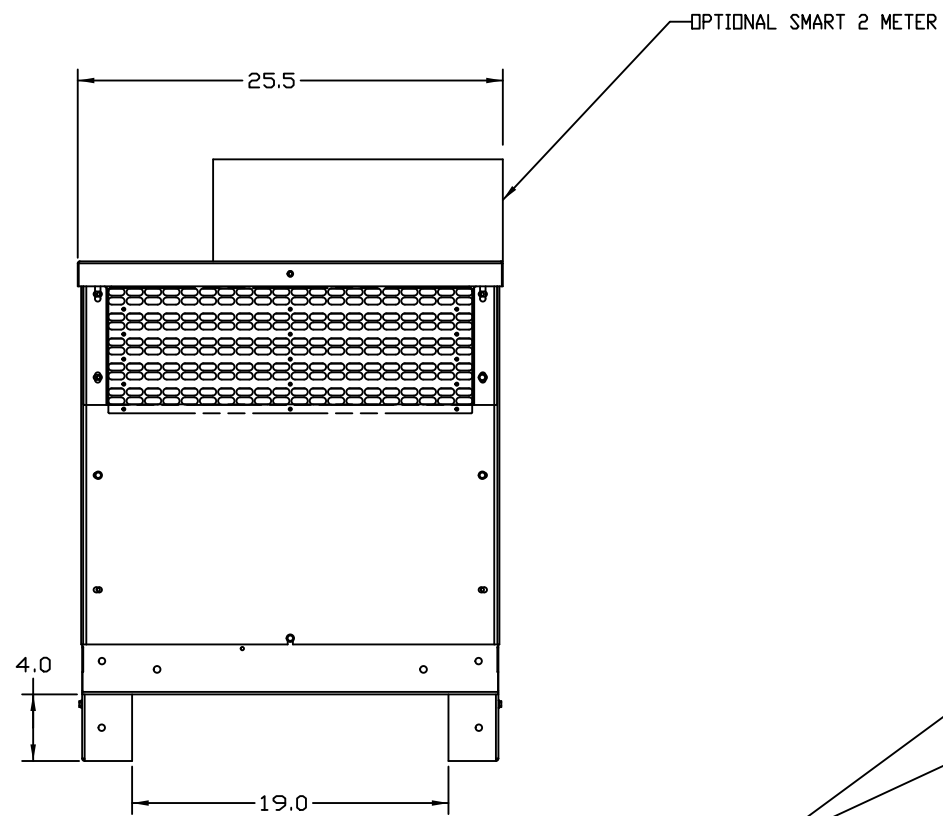
Doc No: **200-004622 -800**

Rev: **A00**

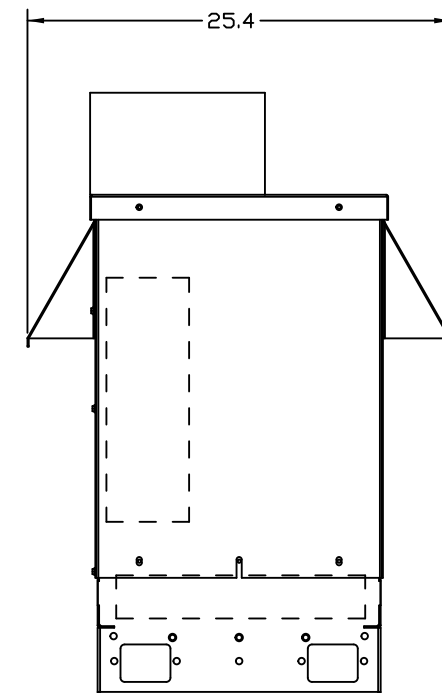
Note: Powersmiths International Corp. reserves the right to revise these specifications without notice; refer to most recent document revision

Ref. Project/Unit ID:

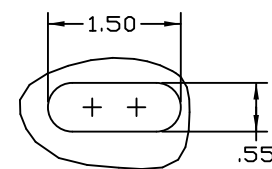
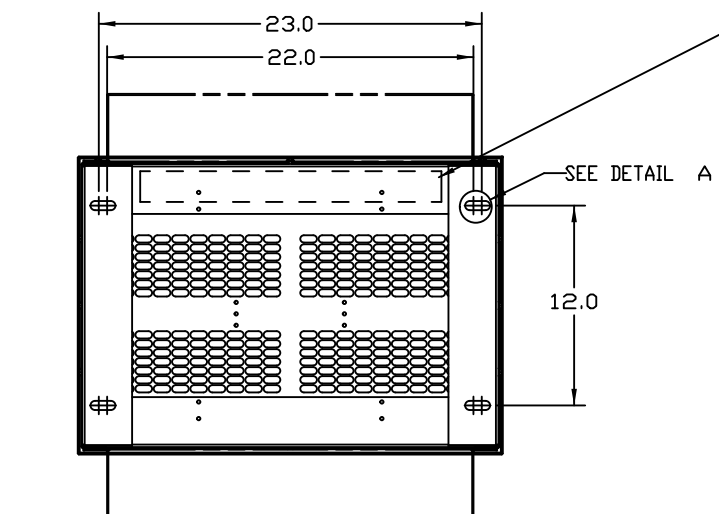
REV	ECD No.	DESCRIPTION



NEMA TYPE-1 (STANDARD)



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



DETAIL A
SCALE 1.000

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.	BY	DATE	POWERSMITHS INTERNATIONAL CORP 10 Devon Rd. Brimley, Ontario, Canada, L6T 5B5
TOLERANCES ARE: 1-PLACE DECIMAL ±.02 2-PLACE DECIMAL ±.010 3-PLACE DECIMAL ±.005 ANGULAR ±1/2°	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