

**T1000-30H**

**Ultra Efficient Harmonic Mitigating Dry Type Transformer**

*Optimized for Application Load (OPAL) yields substantially lower losses than typical DOE compliant units*

<b>Electrical Ratings</b>	Power [kVA]	<b>75</b>						
	Continous Overload [kVA]	90 <span style="float:right"><i>Max. Linear Load; 1 THD &lt; 0.05 p.u. &lt; 30°C Amb.</i></span>						
	Primary [V]	<b>480</b>						
	Secondaries [V]	<b>120/208</b>						
<b>Topology &amp; Materials</b>	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						
<b>Regulatory Efficiency</b>	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 [%]	≥ <b>98.74</b> ; <i>tested per DOE 10CFR431*, Subpart K, &amp; CSA C802.2</i>						
<b>Load Performance</b>	Reference levels:	(75kVA): DOE 2016: 98.60%; CSA C802.2-12: 98.00 %						
	<i>*Powersmiths exceeds DOE test requirements by guaranteeing min. stated efficiency of every unit</i>							
	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 <sup>+</sup> [%]		98.51	98.75	98.80	98.68	98.27	97.67
	Linear Load Loss <sup>+</sup> [W]	<b>153</b>	190	237	319	500	985	1776
<b>General Operation</b>	[BTU/hr]	522	648	809	1088	1706	3361	6060
	K13 Load (IEEE C57.110)* [%]		98.4	98.6	98.6	98.4	97.8	96.9
	<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]	<b>&lt; 105</b> ( <i>Full Linear Load</i> )			40 ( <i>Per ANSI C57.96.2013</i> )			
<b>Impedance</b>	Regulation ( <i>full load</i> ) [%]	1.9 ( <i>Cos Φ=1.0</i> )		3.9 ( <i>Cos Φ =0.8</i> )				
	Excitation [A]	0.8 ( <i>~ Effective Current</i> )						
	Audible Noise [dBA]	47 (6 dBA less than NEMA ST-20 > K13 requirement 51-150kVA)						
<b>Abnormal</b>	Z: +/- Sequence [%]	Z: 4.2	X: 3.8	R: 1.8	<i>(per ANSI C57.12.91/UL1561)</i>			
	Zero Sequence [%]	Zo: 0.98	Xo: 0.26	Ro: 0.95	<i>(per ANSI C57.12.91)</i>			
<b>Enclosure Type &amp; Installation</b>	Shortcircuit Current** [A]	Symmetrical Bolted faults		Primary: 2,180		Secondary: 5,032		
	**Zero Upstream Impedance	Asymmetrical Bolted faults		L - N: 7,045		L - L: 6,101		
	Inrush x FLA /@ % Source	4	/@ 3%	9	/@ 1½%	13	/@ 0%	<i>(per IEEE 389)</i>
<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						
<b>Quality, Standards &amp; Certification</b>	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	TC0: (W: 32" D: 22" H: 40"); Drawing: 300-003761-800						
<b>Additional Specified Attributes &amp; Options:</b> <i>(As listed)</i>	Net Weight	810 lbs		/ 368 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						
<b>Additional Specified Attributes &amp; Options:</b> <i>(As listed)</i>	Certifications	<b>UL/CUL Listed; CSA Certified</b>			<i>UL1561 Listed for Non-linear loads</i>			
	Shields (1S):	1 Electrostatic Shield > 60 (CM Attenuation @ 10kHz)						
<b>Additional Specified Attributes &amp; Options:</b> <i>(As listed)</i>	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-75-0-480-208**

Prepared: D. Faria

Date: 1-Feb-16

Part No: **200-004625 -100**

Revised:

Date:

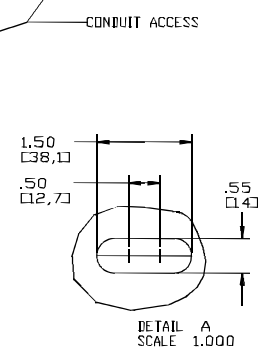
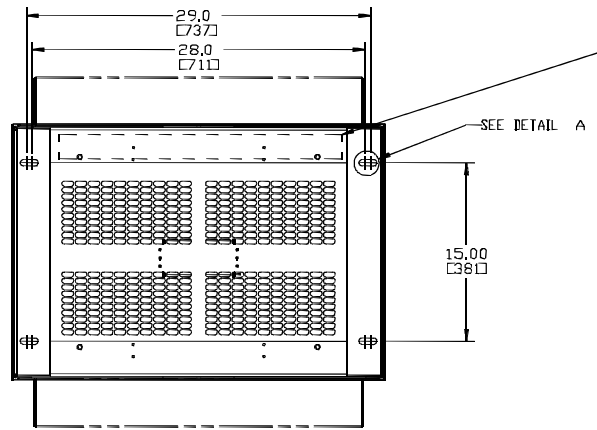
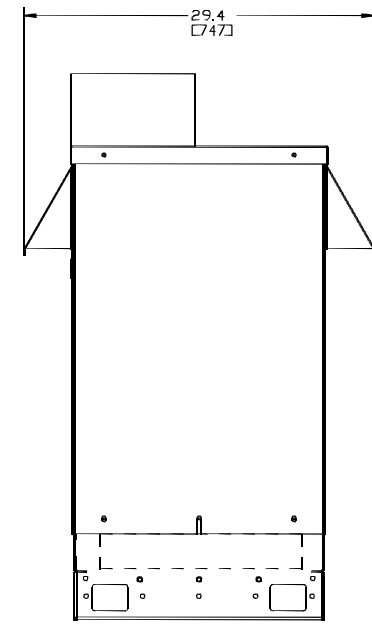
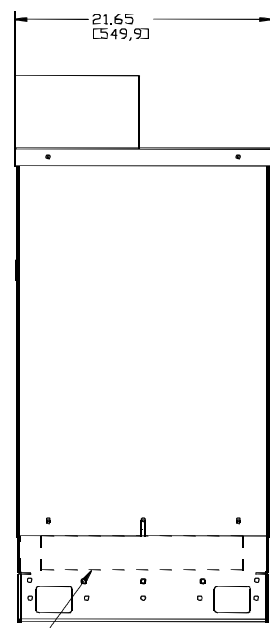
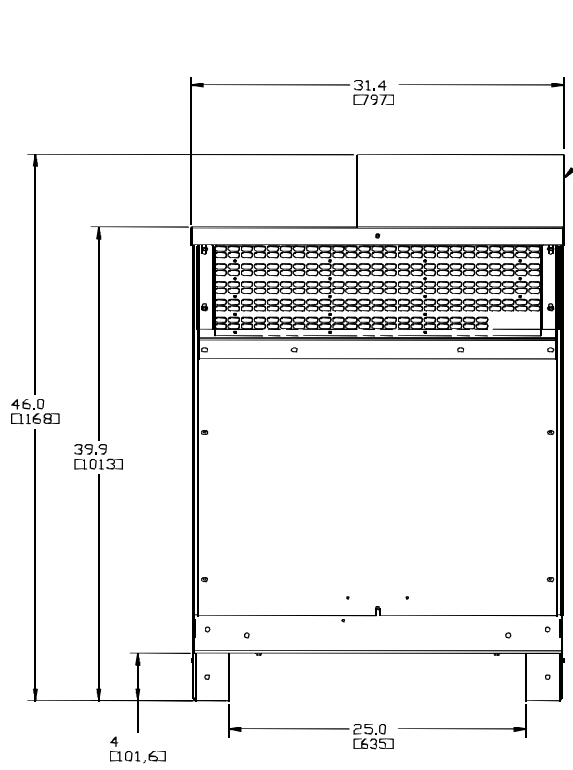
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Rev: **A00**

*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 BT 05-JUN-14	POWERSMITHS INTERNATIONAL CORP 10 Brown Rd. Shelburne, Ontario, Canada L4T 2S6
TOLERANCES ARE: 1-PHASE MECHANICAL: ±.015 2-PHASE MECHANICAL: ±.010 3-PHASE MECHANICAL: ±.010 FINISH: MATERIAL:	APPROVED: BY: DATE APPROVED: BY: DATE APPROVED: BY: DATE	
FINISH: SCALE: 0.188	UNLESS OTHERWISE NOTED: SHOWN ALL DIMENSIONS AND SHARP EDGES	DRAWING NO.: 300-003761-800
REV.:	REF:	REV.:
		A00
		SHEET 1 of 1

PRO/ENGINEER