

**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>	<b>Power [kVA]</b>	<b>112.5</b>						
	Continous Overload [kVA]	135 <span style="float:right"><i>Max. Linear Load; 1THD &lt; 0.05 p.u. &lt; 30°C Amb.</i></span>						
	<b>Primary [V]</b>	<b>480</b>						
	<b>Secondaries [V]</b>	<b>120/208</b>						
<b>Topology &amp; Materials</b>	Frequency [Hz]/Phase/Shift	60 / 3-Phase <span style="float:right">0 deg.</span>						
	Primary Taps	2 x 2 1/2 % FCAN; 4 x 2 1/2 % FCBN; (6 Taps)						
	K-Rating (IEEE C57.110) [K]	K20 @ 100%; >K30 @ 80%; <i>Refer Powersmiths published tables for other ratings</i>						
	Electrical Topology	Primary: Delta 3 -Wire	Secondary: Zig-Zag 4-wire					
<b>Regulatory Efficiency</b>	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						
	Insulation Class / Type	220 (UL Listed, E221932)   Nomex based						
<b>Load Performance</b>	Impregnant / Properties	Epoxy/Polyester co-polymer; Dielectric 3.2kV/mil. x 3 mil. build; Low VOCs						
	B.I.L.	10kV (Primary & Secondary)						
	<b>35% Load @ 75 °C [%]</b>	≥ <b>98.86</b> ; <i>tested per DOE 10CFR431*, Subpart K, &amp; CSA C802.2</i>						
<b>General Operation</b>	Reference levels:	(112.5kVA): DOE 2016: 98.74%; CSA C802.2-12: 98.20%						
	<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> [%]		98.61	98.86	98.92	98.83	98.50	98.00
<b>Impedance</b>	Linear Load Loss <sup>+</sup> [W]	<b>218</b>	266	326	432	665	1283	2284
	[BTU/hr]	744	908	1112	1474	2269	4378	7793
	K13 Load (IEEE C57.110)* [%]		98.5	98.7	98.7	98.6	98.1	97.3
<i>+ Calculated @ 20°C Amb. Accuracy: Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%; Non-linear Load L-N</i>								
<b>Abnormal</b>	Temperature Rise/Ambient [°C]	< <b>105</b> (Full Linear Load)			40 (Per ANSI C57.96.2013)			
	Regulation (full load) [%]	1.6 (Cos Φ=1.0)			3.7 (Cos Φ =0.8)			
	Excitation [A]	1 (~ Effective Current)						
<b>Physical</b>	Audible Noise [dBA]	47 (6 dBA less than NEMA ST-20 > K13 requirement 51-150kVA)						
	Z: +/- Sequence [%]	Z: 4.1	X: 3.8	R: 1.5	(per ANSI C57.12.91/UL1561)			
<b>Quality, Standards &amp; Certification</b>	Zero Sequence [%]	Zo: 0.99	Xo: 0.61	Ro: 0.78	(per ANSI C57.12.91)			
	Shortcircuit Current** [A]	Symmetrical Bolted faults		Primary: 3,339	Secondary: 7,706			
<b>Additional Specified Attributes &amp; Options:</b> <i>(As listed)</i>	**Zero Upstream Impedance	Asymmetrical Bolted faults		L - N: 10,788	L - L: 9,343			
	Inrush x FLA /@ % Source	4 /@ 3%	7 /@ 1½%	11 /@ 0%	(per IEEE 389)			
	Type / Environment	2: Indoor Ventilated; 3R: Sprinkler/Weather Shields (Field Installed Option)						
<b>Enclosure Type &amp; Installation</b>	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)						
<b>Physical</b>	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>Quality, Standards &amp; Certification</b>	Net Weight	1090 lbs / 495 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-112.5-0-480-208**

Prepared: D. Faria

Date: 3-Feb-16

Part No: 222-004629 -100

Revised:

Date:

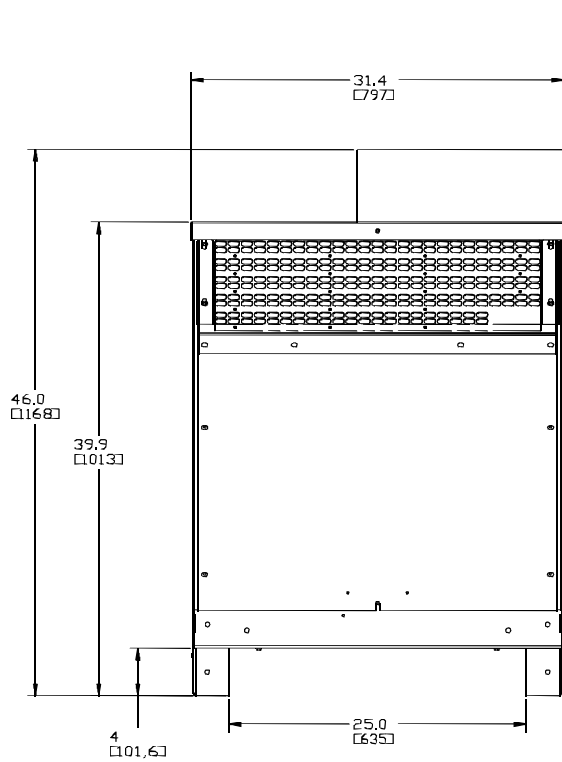
Doc No: 222-004629 -800

Rev: A00

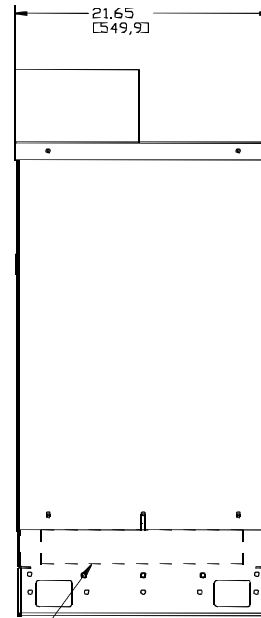
*Note: Powersmiths International Corp. reserves the right to revise these specifications without notice; refer to most recent document revision*

**Ref. Project/Unit ID:**

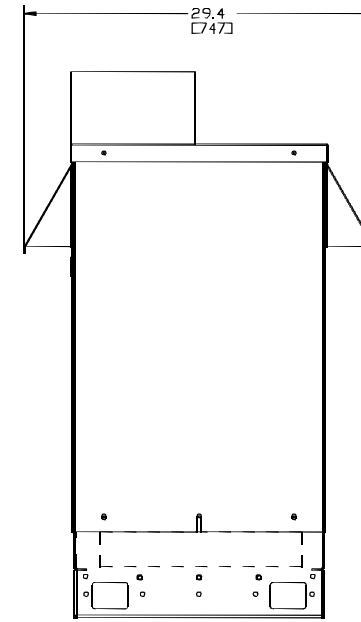
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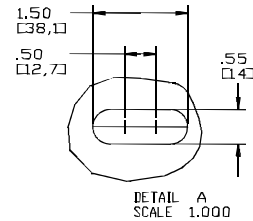
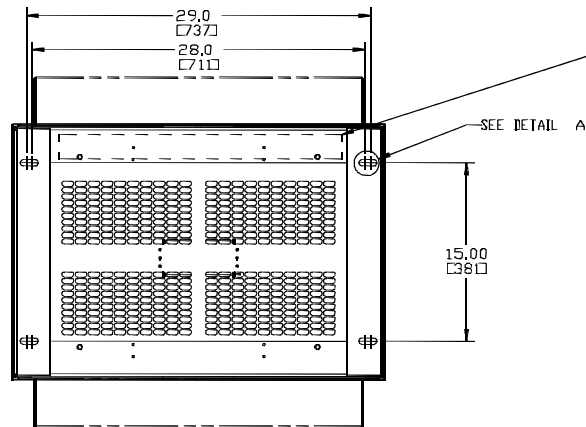
OPTIONAL SMART 2 METER



NWMA TYPE-1 (STANDARD)



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



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	BY: DATE BT 05-JUN-14	POWERSMITHS INTERNATIONAL CORP 10 Brown Rd. Shelburne, Ontario, Canada, L4T 2S5
TOLERANCES ARE: 1-PLACE DECIMAL 2-PLACE DECIMAL 3-PLACE DECIMAL ANGLES	APPROVED: BY: DATE APPROVED: BY: DATE APPROVED: BY: DATE	
MATERIAL:	APPROVED:	DRAWING NO. REV. 300-003761-800 A00
FINISH:	UNLESS OTHERWISE NOTED SHARP ALL CORNERS AND SWEEP EDGES	REF: SHEET 1 OF 1
	SCALE 0,188	PRO/ENGINEER