

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]	150						
	Continuous Overload [kVA]	180 <i>Max. Linear Load; 1 THD < 0.05 p.u. < 30°C Amb.</i>						
	Primary [V]	480						
	Secondaries [V]	120/208						
	Frequency [Hz]/Phase/Shift	60 / 3-Phase <i>0 deg.</i>						
	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>						
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						
	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						
Regulatory Efficiency	35% Load @ 75 °C [%]	≥ 98.95 ; <i>tested per DOE 10CFR431*, Subpart K, & CSA C802.2</i>						
	Reference levels:	(150kVA): DOE 2016: 98.83%; CSA C802.2-12: 98.30%						
<i>*Powersmiths exceeds DOE test requirements by guaranteeing min. stated efficiency of every unit</i>								
Load Performance	Percent Loading:	No Load	16.7%	25.0%	35.0%	50.0%	75.0%	100.0%
	Linear Load Efficiency ⁺ [%]		98.75	98.96	99.01	98.92	98.60	98.14
	Linear Load Loss ⁺ [W]	257	318	394	528	820	1594	2827
	[BTU/hr]	877	1085	1344	1802	2798	5439	9646
	K13 Load (IEEE C57.110)* [%]		98.7	98.8	98.8	98.7	98.2	97.5
<i>+ Calculated @ 20°C Amb. Accuracy: Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%; Non-linear Load L-N</i>								
General Operation	Temperature Rise/Ambient [°C]	< 105 (<i>Full Linear Load</i>)			40 (<i>Per ANSI C57.96.2013</i>)			
	Regulation (<i>full load</i>) [%]	1.5 (<i>Cos Φ=1.0</i>)			3.6 (<i>Cos Φ =0.8</i>)			
	Excitation [A]	1.2 (<i>~ Effective Current</i>)						
	Audible Noise [dBA]	47 (6 dBA less than NEMA ST-20 > K13 requirement 51-150kVA)						
Impedance	Z: +/- Sequence [%]	Z: 4.0	X: 3.8	R: 1.4	<i>(per ANSI C57.12.91/UL1561)</i>			
	Zero Sequence [%]	Zo: 0.98	Xo: 0.52	Ro: 0.83	<i>(per ANSI C57.12.91)</i>			
Abnormal	Shortcircuit Current** [A]	Symmetrical Bolted faults		Primary: 4,566		Secondary: 10,536		
	**Zero Upstream Impedance	Asymmetrical Bolted faults		L - N: 14,750		L - L: 12,774		
	Inrush x FLA /@ % Source	4 /@ 3%	8 /@ 1½%	12 /@ 0%	<i>(per IEEE 389)</i>			
Enclosure Type & Installation	Type / Environment	2: Indoor Ventilated; 3R: Sprinkler/Weather Shields (Field Installed Option)						
	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)						
	Paint / Finish	Polyester Powder Coat, Semi-Gloss, Textured; Color: Green (RAL 6018)						
Physical	Size & Drawing	TD0: (W: 38" D: 27" H: 48"); Drawing: 300-003762-800						
	Net Weight	1380 lbs / 627 kg						
Quality, Standards & Certification	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>						
Additional Specified Attributes & Options: <i>(As listed)</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-150-0-480-208

Prepared: D. Faria

Date: 2-Feb-16

Part No: 222-004633 -100

Revised:

Date:

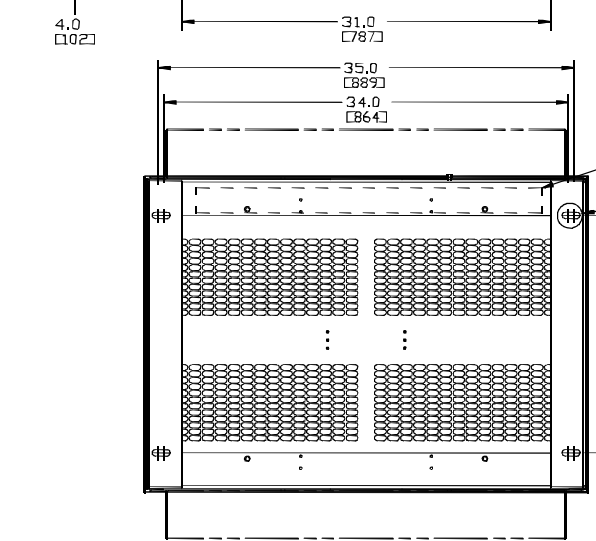
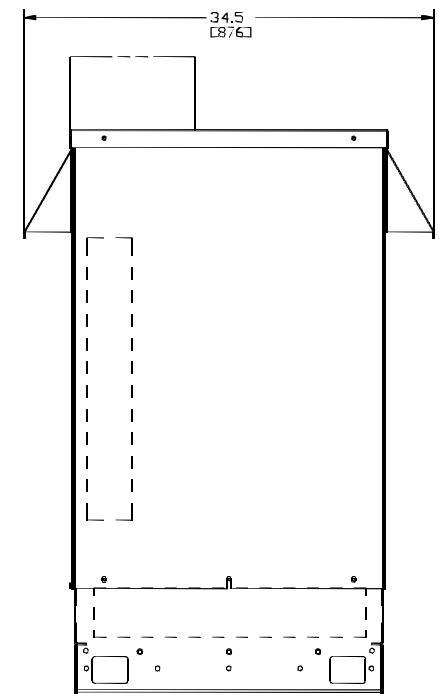
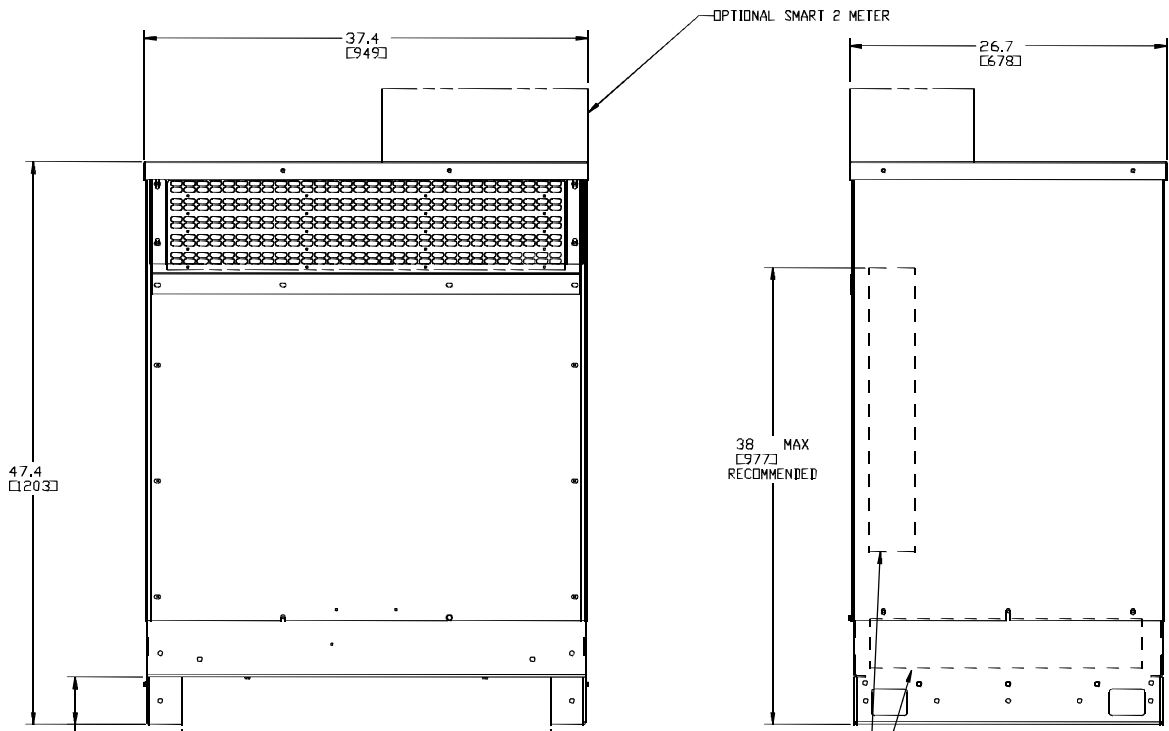
Doc No: 222-004633 -800

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:

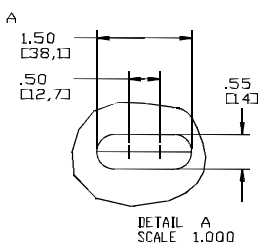
REV	ECO No.	DESCRIPTION



NWMA TYPE-1 (STANDARD)

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

CONDUIT ACCESS



UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES	BY DATE	POWERSMITHS INTERNATIONAL CORP 10 Brown Rd. Shelburne, Ontario, Canada, L4B 2M5
TOLERANCES ARE:	APPROVED BY 05-JUN-14	
1-PLACE DECIMAL	APPROVED	TITLE
2-PLACE DECIMAL	APPROVED	OUTLINE, TDO CASE
3-PLACE DECIMAL	APPROVED	
4-PLACE DECIMAL	APPROVED	
SURFACE FINISH:	APPROVED	
MATERIAL	APPROVED	
FINISH	UNLESS OTHERWISE NOTED BRUSH ALL SURFACES AND SHARP EDGES	DRAWING NO. 300-003762-800
	SCALE 0,188	REV. A00
		REF: SHEET 1 of 1

PRO/ENGINEER