

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]	15						
	Continous Overload [kVA]	18 <i>Max. Linear Load; 1THD < 0.05 p.u. < 30°C Amb.</i>						
	Primary [V]	480						
	Secondaries [V]	120/208						
Topology & Materials	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>						
	Electrical Topology	Primary: Delta 3 -Wire	Secondary: Zig-Zag 4-wire					
Regulatory Efficiency	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						
	Insulation Class / Type	220 (<i>UL Listed, E221932</i>)		Nomex based				
Load Performance	Impregnant / Properties	Epoxy/Polyester co-polymer; Dielectric 3.2kV/mil. x 3 mil. build; Low VOCs						
	B.I.L.	10kV (Primary & Secondary)						
Regulatory Efficiency	35% Load @ 75 °C [%]	≥ 98.10 ; <i>tested per DOE 10CFR431*, Subpart K, & CSA C802.2</i>						
	Reference levels:	(15kVA): DOE 2016: 97.89%; CSA C802.2-12: 97.00%						
<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 ⁺ [%]		97.68	98.09	98.18	98.04	97.46	96.60
	Linear Load Loss ⁺ [W]	49	61	77	104	165	329	607
	[BTU/hr]	167	208	263	355	563	1123	2071
General Operation	K13 Load (IEEE C57.110)* [%]		97.6	97.9	98.0	97.7	96.9	95.7
	<i>+ Calculated @ 20°C Amb. Accuracy: Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%; Non-linear Load L-N</i>							
Impedance	Temperature Rise/Ambient [°C]	< 105 (<i>Full Linear Load</i>)			40 (<i>Per ANSI C57.96.2013</i>)			
	Regulation (<i>full load</i>) [%]	2.7 (<i>Cos Φ=1.0</i>)			4.7 (<i>Cos Φ =0.8</i>)			
	Excitation [A]	0.3 (<i>~ Effective Current</i>)						
Abnormal	Audible Noise [dBA]	40 (5 dBA less than NEMA ST-20 > K13 requirement 9.1-30kVA)						
	Z: +/- Sequence [%]	Z: 4.4	X: 3.5	R: 2.7	<i>(per ANSI C57.12.91/UL1561)</i>			
Abnormal	Zero Sequence [%]	Zo: 1.43	Xo: 0.28	Ro: 1.39	<i>(per ANSI C57.12.91)</i>			
	Shortcircuit Current** [A]	Symmetrical Bolted faults		Primary: 421	Secondary: 971			
Enclosure Type & Installation	**Zero Upstream Impedance	Asymmetrical Bolted faults		L - N: 1,360	L - L: 1,178			
	Inrush x FLA /@ % Source	5 /@ 3%	10 /@ 1½%	16 /@ 0%	<i>(per IEEE 389)</i>			
	Type / Environment	2: Indoor Ventilated; 3R: Sprinkler/Weather Shields (Field Installed Option)						
Physical	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)						
Quality, Standards & Certification	Paint / Finish	Polyester Powder Coat, Semi-Gloss, Textured; Color: Green (RAL 6018)						
	Size & Drawing	TA0: (W: 18" D: 17" H: 27"); Drawing: 300-003759-800						
	Net Weight	320 lbs / 145 kg						
Additional Specified Attributes & Options: <i>(As listed)</i>	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						



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OPAL Series Model: T1000-30H-15-0-480-208

Prepared: D. Faria

Date: 1-Feb-16

Part No: **200-004616 -100**

Revised:

Date:

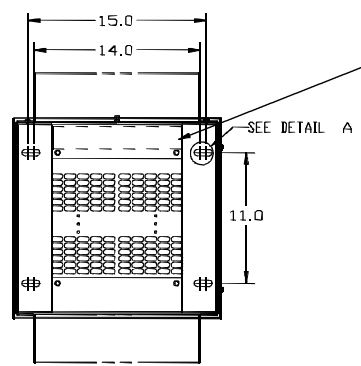
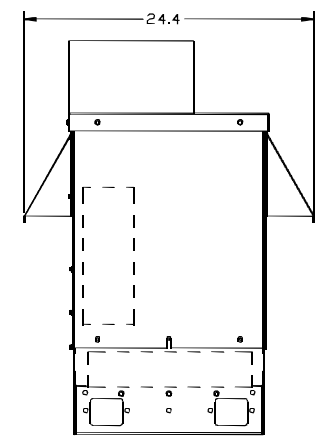
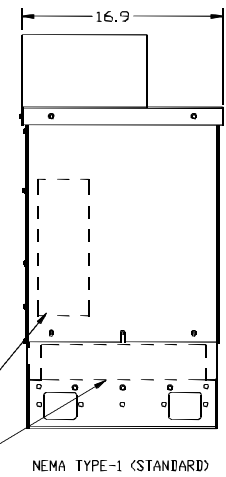
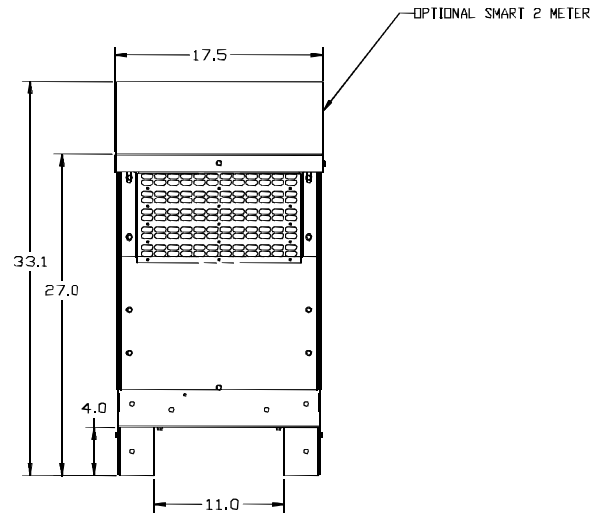
Doc No: **200-004616 -800**

Rev: **A00**

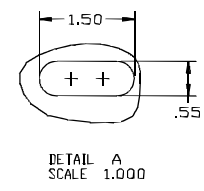
Note: Powersmiths International Corp. reserves the right to revise these specifications without notice; refer to most recent document revision

Ref. Project/Unit ID:

REV	ECO NO.	DESCRIPTION



CONDUIT ACCESS



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES	BY: [Signature] DATE: 19-JUN-14	POWERSMITHS INTERNATIONAL CORP 10 Brown Rd. Windsor, Ontario, Canada L9B 2B5
TOLERANCES ARE: 1-PLACE DECIMAL 2-PLACE DECIMAL 3-PLACE DECIMAL ANGLES	APPROVED: BY: [Signature] DATE: 19-JUN-14	
SURFACE FINISH: MATERIAL:	APPROVED: DATE: 19-JUN-14	DRAWING NO.: 300-003759-800
FINISH:	UNLESS OTHERWISE NOTED SHARP EDGES SCALE 0.198	REV.: A00
REF:		SHEET 1 OF 1

PRO/ENGINEER