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]	**300**
	Continous Overload [kVA]	360 — *Max. Linear Load; I THD < 0.05 p.u. < 30°C Amb.*
	Primary [V]	**480**
	Secondaries [V]	**120/208**
	Frequency [Hz]/Phase/Shift	**60** / 3-Phase — *0 deg.*
	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%; *Refer Powersmiths published tables for other ratings*
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 *(UL Listed, E221932)* | Nomex based
	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 [%]	**≥ 99.12** *;tested per DOE 10CFR431*, Subpart K, & CSA C802.2*
	Reference levels:	(300kVA): DOE 2016: 99.02%; CSA C802.2-12: 98.60%
	**Powersmiths exceeds DOE test requirements by guaranteeing min. stated efficiency of every unit*	

Load Performance

Percent Loading:	**No Load**	**16.7%**	**25.0%**	**35.0%**	**50.0%**	**75.0%**	**100.0%**
Linear Load Efficiency+ [%]		98.93	99.12	99.16	99.08	98.81	98.41
Linear Load Loss+ [W]	**444**	546	673	898	1392	2708	4850
[BTU/hr]	1515	1863	2296	3064	4750	9240	16548
K13 Load (IEEE C57.110)* [%]		98.9	99.0	99.0	98.9	98.4	97.8

+Calculated @ 20°C Amb. Accuracy: Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%; Non-linear Load L-N

General Operation	Temperature Rise/Ambient [°C]	**< 105** *(Full Linear Load)*	40	*(Per ANSI C57.96.2013)*
	Regulation *(full load)* [%]	1.2 *(Cos Φ=1.0)*	3.5	*(Cos Φ =0.8)*
	Excitation [A]	2 *(~ Effective Current)*		
	Audible Noise [dBA]	52 (6 dBA less than NEMA ST-20 > K13 requirement 151-300kVA)		

Impedance	Z: +/- Sequence [%]	Z: 4.1	X: 3.9	R: 1.2	*(per ANSI C57.12.91/UL1561)*	
	Zero Sequence [%]	Zo: 0.77	Xo: 0.46	Ro: 0.62	*(per ANSI C57.12.91)*	

Abnormal	Shortcircuit Current** [A]	Symmetrical Bolted faults	Primary: 9,055		Secondary: 20,896	
	***Zero Upstream Impedance**	Asymmetrical Bolted faults	L - N: 29,254		L - L: 25,334	
	Inrush *x FLA /@ % Source*	4 /@ 3%	8 /@ 1½%	12 /@ 0%	*(per IEEE 389)*	

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	TD1: (W: 38" D: 32" H: 52"); Drawing: 300-003779-800
	Net Weight	2030 lbs / 923 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** ***UL1561 Listed for Non-linear loads***
Additional Specified Attributes & Options: *(As listed)*	Shields (1S):	| 1 Electrostatic Shield > 60 (CM Attenuation @ 10kHz)
	Harmonic Treatment:	| Triplens (3rd, 9th...) plus 5th, 7th with complimentary system 30° Phase shifts

POWERSMITHS

POWERSMITHS INTERNATIONAL CORP.

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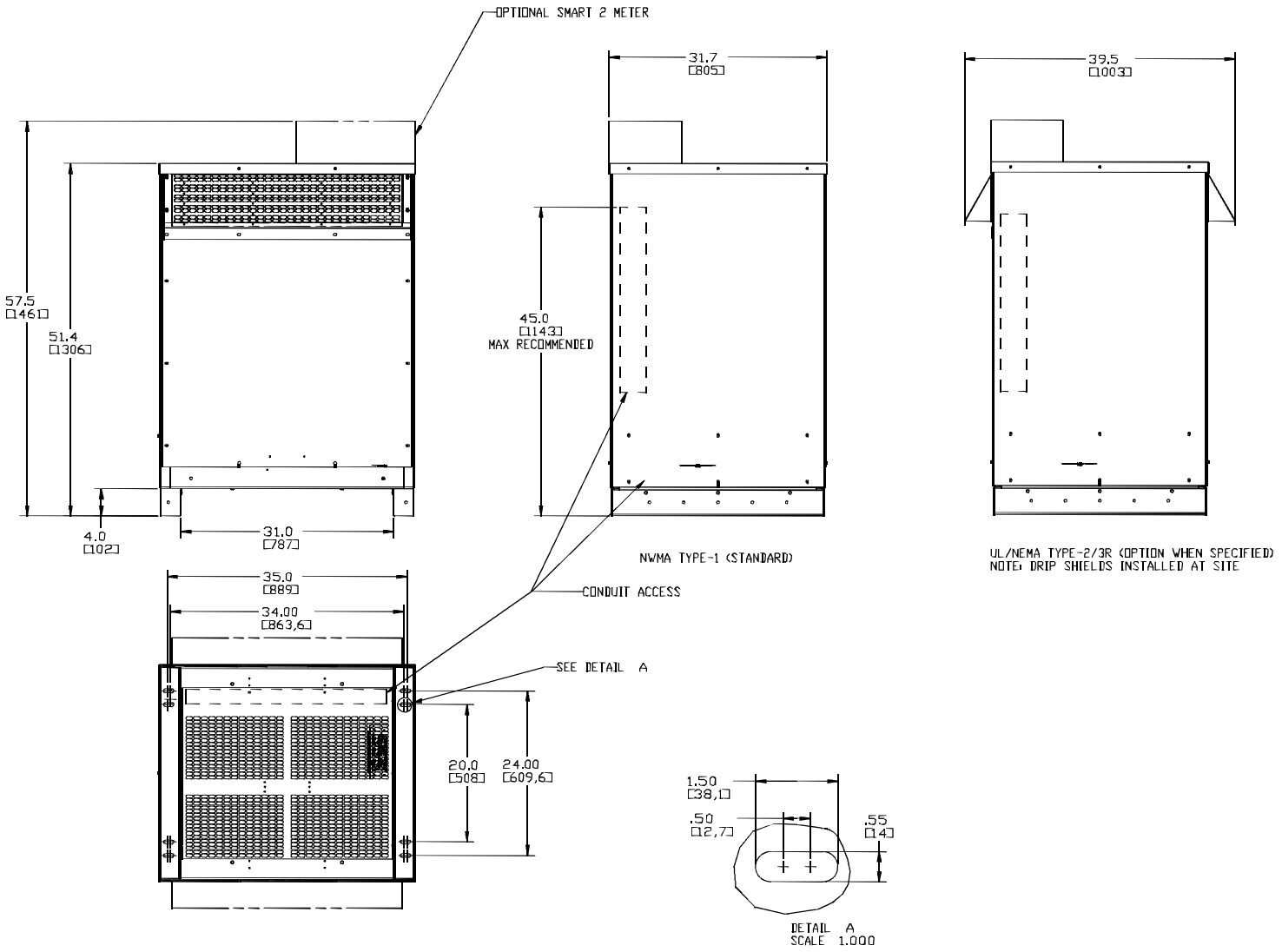
OPAL Series Model: **T1000-30H-300-0-480-208**

Prepared:	D. Faria	Date: 1-Feb-16	Part No:	**222-004639 -100**	
Revised:		Date:	Doc No:	**222-004639 -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



UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: INCH MM; 1-PLACE DECIMAL ±.03 ±0.8; 2-PLACE DECIMAL ±.010 ±0.25; 3-PLACE DECIMAL ±.005 ±0.10; ANGULAR ±1/2° ±1/2°; SURFACE FINISH: 125; MATERIAL; FINISH	BY DATE; APPROVED DT 05-Jan-14; APPROVED; APPROVED; APPROVED; UNLESS OTHERWISE NOTED REMOVE ALL BURRS AND RaMAX EDGES; SCALE 0.125	POWERSMITHS INTERNATIONAL CORP 10 Bevon Rd. Brampton, Ontario, Canada, L6T 5B5 TITLE: OUTLINE, TD1 CASE DRAWING NO. 300-003779-800 REV. A00 REF: SHEET 1 of 1

PRO/ENGINEER