

T1000-30H

Ultra Efficient Application Optimized Dry Type Transformer

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

Electrical Ratings	Power [kVA]	50						
	Continuous Overload [kVA]	60	Max. Linear Load; I THD < 0.05 p.u. < 30 Amb.					
Electrical Ratings	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)						
Topology & Materials	K-Rating (IEEE C57.110) [K]	K20 @ 100%; >K30 @ 80%; Refer Powersmiths published tables for other ratings						
	Electrical Topology	Primary: Delta 3-Wire	Secondary: Zig-Zag 4-wire					
	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						
Regulatory Efficiency	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						
Regulatory Efficiency	B.I.L.	10kV (Primary & Secondary)						
	35% Load @ 75 [%]	≥ 98.59 :tested per DOE 10CFR431 ⁺ , Subpart K. & CSA C802.2						
Load Performance	Reference levels:	(50kVA): DOE 2016: 98.43%; CSA C802.2-12: 97.75%						
	⁺ Powersmiths exceeds DOE test requirements by guaranteeing min. stated efficiency of every unit							
	Percent Loading:	No Load	16.7%	25.0%	35.0%	50.0%	75.0%	100.0%
	Linear Load Efficiency* [%]		98.32	98.63	98.71	98.62	98.26	97.74
	Linear Load Loss* [W]	118	142	173	227	346	657	1146
[BTU/hr]	403	485	590	775	1181	2242	3910	
General Operation	K7 Load (IEEE C57.110)* [%]		98.2	98.5	98.6	98.4	97.9	97.2
	*Calculated @ 20°C Amb. Accuracy: Loss ± 3% measurement tolerance per DOE 10CFR431; Efficiencies ± 0.05%							
General Operation	Temperature Rise/Ambient []	105	(Full Linear Load)			40	(Per ANSI C57.96.2013)	
	Regulation (full load) [%]	1.8	(Cos Φ=1.0)			3.6	(Cos Φ =0.8)	
	Excitation [A]	0.3	(~ Effective Current)					
	Audible Noise [dBA]	42 (6 dBA less than NEMA ST-20 > K13 requirement 31-50kVA)						
Impedance	Z: +/- Sequence [%]	Z: 3.8	X: 3.3	R: 1.7	(per ANSI C57.12.91/UL1561)			
	N/A	Zo: 1.04	Xo: 0.21	Ro: 1.02	(per ANSI C57.12.91)			
Abnormal	Bolted Faults (Output)** [A]	Symmetrical:	Source (reflected): 1,637			L/L-N: 3,778		
	**Zero Upstream Impedance	Asymmetrical:		L - N: 5,289		L - L: 4,580		
	Inrush x FLA (@ % Source Imp.)	5 @ 3%	10 @ 1½%	15 @ 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)						
Physical	Paint / Finish	Polyester Powder Coat, Semi-Gloss, Textured; Color: Green (RAL 6018)						
	Size & Drawing	TB0: (W: 26" D: 18" H: 30"); Drawing: 300-003760-800						
Quality, Standards & Certification	Net Weight	655 lbs / 298 kg						
	Quality	ISO 9001-2000: Quality Management System						
		ISO 14001-2004: Environmental Management System						
		ISO 17025: Efficiency Measurement Certification (CSA)						
Additional Specified Attributes & Options: (As listed)	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 INTERNATIONAL CORP.

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OPAL Series Model: T1000-30H-50-0-480-208

Prepared: N. Xie

Date: 24-Oct-16

Part No: 200-004623 -100

Revised:

Date:

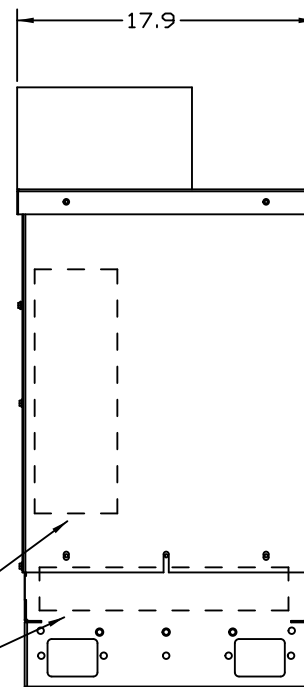
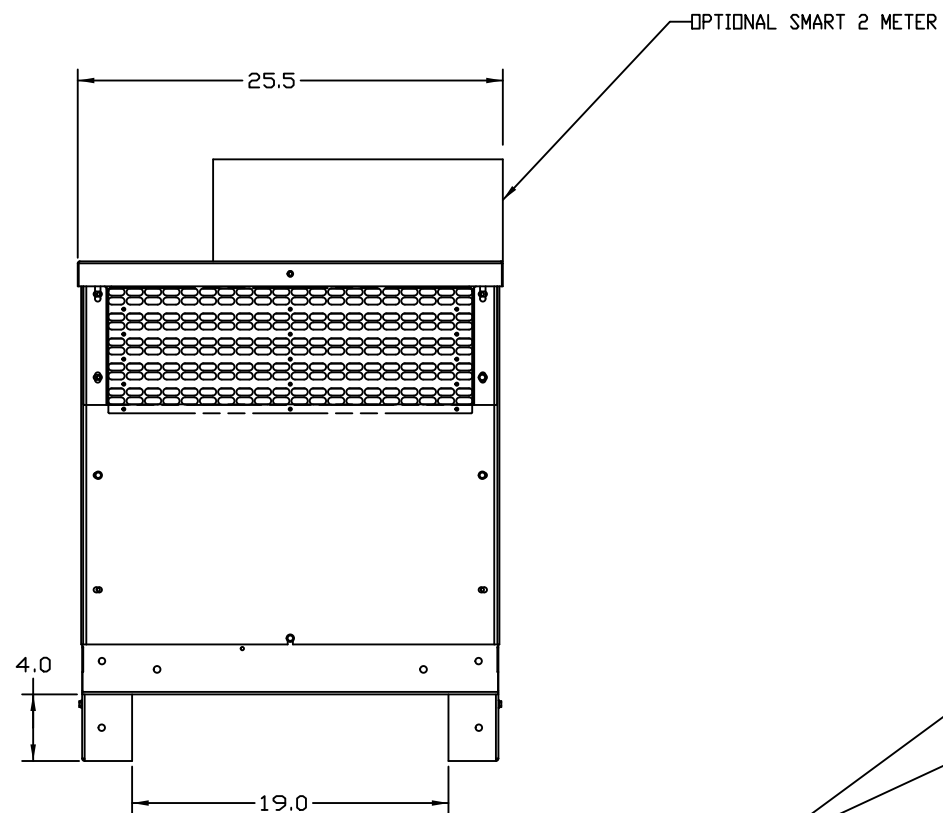
Doc No: 200-004623 -800

Rev: A00

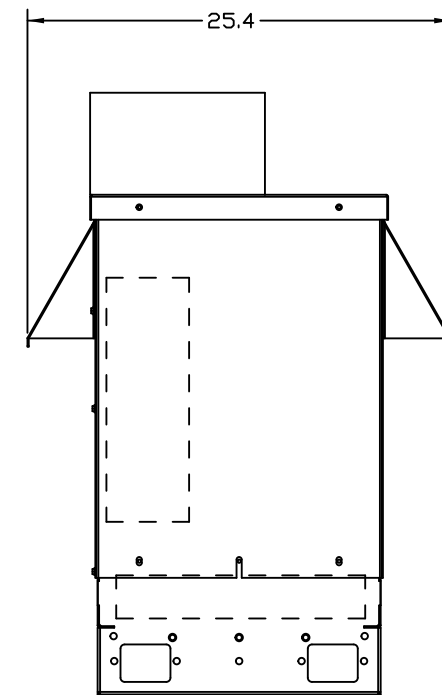
Note: Powersmiths International Corp. reserves the right to revise these specifications without notice; refer to most recent document revision

Ref. Project/Unit ID:

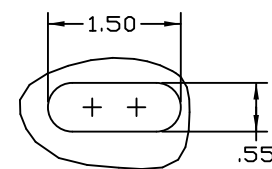
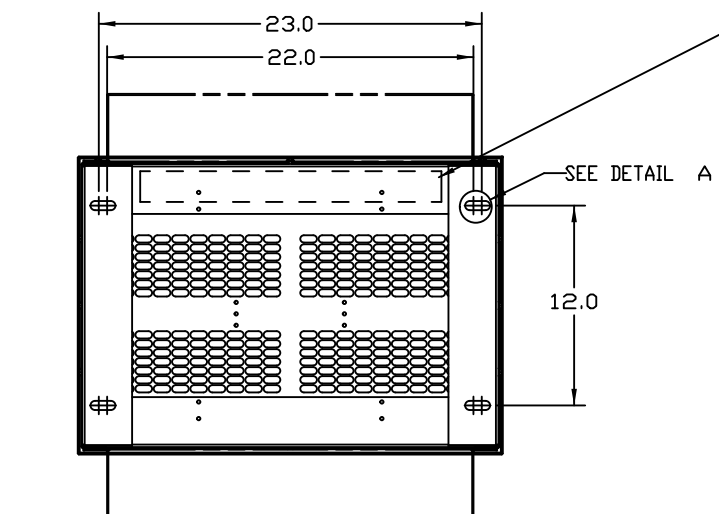
REV	ECD No.	DESCRIPTION



NEMA TYPE-1 (STANDARD)



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



DETAIL A
SCALE 1.000

<small>UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES.</small> <small>TOLERANCES ARE:</small> 1-PLACE DECIMAL ±.02 2-PLACE DECIMAL ±.010 3-PLACE DECIMAL ±.005 ANGULAR ±1/2° <small>SURFACE FINISH: 125</small>	<small>BY</small> APPROVED DT 19-Jan-14	<small>DATE</small> 19-Jan-14	POWERSMITHS INTERNATIONAL CORP 10 Devon Rd. Brimley, Ontario, Canada, L6T 5B5 TBO CASE OUTLINE	
	<small>APPROVED</small> <small>APPROVED</small>	<small>APPROVED</small> <small>APPROVED</small>		
	<small>UNLESS OTHERWISE NOTED REMOVE ALL BURRS AND SHARP EDGES</small> SCALE 0.188	<small>DRAWING NO.</small> 300-003760-800		<small>REV.</small> A00
	<small>REF:</small>	<small>SHEET</small> 1 of 1		<small>PRO/ENGINEER</small>