

T1000™ Transformer

APPLICATIONS

T1000 transformers are high-efficiency, harmonic-correcting transformers, designed to improve power quality and reduce electricity waste. Multiple efficiency ratings are available to deliver the lowest life cycle cost to a wide variety of applications.

DESCRIPTION

T1000 treats the 3rd harmonic through secondary flux cancellation and reduces fundamental current imbalance. Unlike delta-wye transformers, 3rd and other zero sequence currents in the T1000 do not couple into the primary winding. 5th and 7th harmonics are treated on a system basis by alternating phase shifted models within the facility.

QUIET OPERATION

Powersmiths transformers have embedded structural and acoustic treatments that combine to ensure quiet operation. Each transformer is noise tested as part of Powersmiths ISO 9001 production procedures.

INTEGRATED METERING OPTIONS

T1000 transformers can be ordered with integrated SMART™ meters to acquire energy, power and efficiency measurements. Integrating meters helps lower the cost of commissioning and performance validation, by eliminating the need to open transformer enclosures to acquire measurements. A variety of meters are available including web-accessible meters that can be connected to Powersmiths WOW sustainability management system or third-party building management systems to support ongoing accountability of energy use over time.

INTEGRATED BREAKER OPTION

To conserve wall-space and reduce installation costs, T1000 can be ordered with integrated input and/or output breakers.



ROTATABLE INFRARED VIEWING PORT OPTION

Powersmiths Rotatable IR (Infrared) Viewing Port enables safe, noninvasive thermographic imaging of live equipment, without exposing personnel to electrical hazards like Arc-Flash. It is available as a factory installed option on all Powersmiths transformers.

ENVIRONMENTAL IMPACT

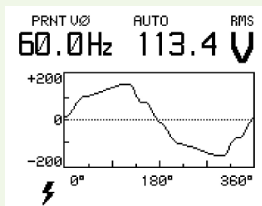
T1000 is built in an ISO 9001 (quality management) and ISO 14001 (environmental management) certified facility. Throughout the manufacturing process, Powersmiths takes steps to ensure that waste is eliminated and hazardous materials are avoided. Because Powersmiths transformers generate lower losses, they reduce power drawn from generating stations, resulting in less smog and lower greenhouse gas emissions.

TESTING AND WARRANTY

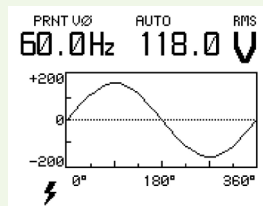
T1000 is subjected to rigorous testing to ensure efficiency under real-world operating conditions. Data can be provided for individual units by selecting the NLT option with your order. T1000's long life and dependable performance is backed up by Powersmiths' industry leading 25-year pro-rated warranty.

KEY FEATURES

- Provides best available efficiency on the market.
- Improves power quality to facilitate system wide compliance with IEEE-519
- Minimizes electricity waste
- Optimized for cool and quiet operation
- Significantly exceeds NEMA TP1 (C802) efficiency
- Provides the lowest life cycle cost for your energy rate



Voltage Waveform Before



Voltage Waveform with T1000

STANDARD CONFIGURATION

Powersmiths T1000 is a 3-phase common-core copper-wound dry type transformer, built in an ISO 9001 and ISO14001 certified facility to NEMA ST-20 and other applicable ANSI and IEEE standards. Secondary windings have less than 0.3% zero sequence reactance and low zero sequence impedance.

T1000 has 220°C class insulation and 115°C operating temperature rise, a single electrostatic shield, 60Hz rating and comes standard in a NEMA 2 ventilated indoor enclosure.

The standard configuration of the T1000 meets the efficiency requirements of Candidate Standard Level 3 (CSL-3*). Under the static NEMA TP2 test, T1000-C3 has up to 35% less losses than a TP1* (C802), but delivers over 50% less losses in real world conditions, as validated by extensive field testing.

The C4 and C5 models deliver additional incremental savings – up to 40% and 50% respectively compared to TP1 (C802), to satisfy the need for higher efficiencies and improved ROI (*) where higher energy rates prevail.

SELECT

Efficiency Class: C3, C4, C5

kVA: Rating of unit 15 -750 (special orders up to 5000 kVA)

DEG: 0 or 30 degrees phase shift

PV: Primary voltage 600, 480, 415, 400, 380, 208 (special order up to 15 kV)

SV: Secondary voltage 208/120V, 480/277V, 600/347V (others available)

SAMPLE PART NUMBER

T1000-C3-75-0-480-208

* FEDERAL REGISTER – US DOE, Office of Energy Efficiency and Renewable Energy, 10 CFR Part 430, July 29, 2004. Energy Conservation Program for Commercial and Industrial Equipment: Energy Conservation Standards for Distribution Transformers; Proposed Rule

TECHNICAL DATA

kVA	Impedance (+/- SEQ.)	Weight (lbs)	Case Size (Inches)
15	3.5 - 5.5%	220 - 260	A (18W x 17D x 27H)
30	3.0 - 5.0%	350 - 420	B (26W x 18D x 30H)
45	3.0 - 5.0%	450 - 550	B (26W x 18D x 30H)
75	3.0 - 5.0%	700 - 800	C (32W x 22D x 40H)
112.5	3.0 - 5.0%	900 - 1100	C (32W x 22D x 40H)
150	3.0 - 5.0%	1100 - 1300	D (38W x 27D x 48H)
225	3.0 - 5.0%	1550 - 1850	D+ (38W x 32D x 52H)
300	3.0 - 5.0%	1800 - 2000	D+ (38W x 32D x 52H)
400	3.0 - 6.0%	2400 - 2600	E (52W x 32D x 61H)
500	3.0 - 6.0%	3000 - 3300	E+ (52W x 38D x 61H)
750	3.0 - 6.0%	3800 - 4800	F (64W x 45D x 67H)

The above data applies to configurations up to 600V, with NEMA 2 enclosure and standard temperature rise. Selection of some options may change enclosure size and weight. Consult factory for detailed product data sheet for these and other configurations.
*Specific case used determined by factory unless specified. Up to 5000kVA, 15kV class available.

AVAILABLE OPTIONS

SMART1: Integrated metering port

SMART2: Integrated Power & Energy Meter

SMART3: Integrated Meter with Web access

CYBERHAWK-TX: Efficiency & Power Meter

ROTATABLE IR PORT: 2", 3", 4"

INTEGRATED BREAKERS

T80: 80 °C operating Temp. rise

F50: 50Hz design

2S: Dual electrostatic shields

3S: Triple electrostatic shields

ECO: ECOLOGO certified

SPD: 7 mode 80kA, 120kA, 160kA

PROXX: Where xx is custom ID

LK: Lug kit, screw-type

COL: Color other than the factory standard

TSB: Terminal Safety Barrier

TS: Thermal Sensors at 170 °C and 200 °C

NLT: Nonlinear load test

SE: Sensitive Environment, extra low noise

ENCLOSURE TYPES: N3R sprinkler proof, outdoor padmount, hinged doors, totally enclosed (75kVA Max), stainless steel

SEISMIC CERTIFICATIONS: OSHPD, IBC 2006/2009

C2AL: DOE class 2 efficiency, with aluminum windings

WARRANTY: 25 years pro-rated.

ISO 9001
ISO 14001



Technical specification subject to change without notice.

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