

T1000 C2

- Enhanced energy efficient harmonic cancellation transformer
- Treats 3rd, 5th, 7th, 9th and other harmonic currents
- Facilitates system-wide compliance with IEEE-519
- Significantly exceeds NEMA TP-1 efficiency (meets DOE CSL2 Class)
- Optional SMART1 Integrated Metering Port (Revenue Class Accuracy)
- Optional SMART2 Integrated Power & Energy Meter
- Available 25 year warranty with built-in surge suppression



Description

Application of these transformers facilitates compliance with IEEE-519 in commercial and industrial facilities. The T1000 treats the 3rd harmonic through secondary flux cancellation. Unlike delta-wye transformers, in the T1000, 3rd and other zero sequence currents do not couple into the primary winding. 5th and 7th harmonics are treated on a system basis by alternating phase shifted models in a facility.

Production Nonlinear Load Test

When savings are on the table, performance needs to be proven. Powersmiths is the only manufacturer to production test transformers under ISO 9001 with actual computer power supply loading, and with revenue class accuracy. Data can be provided for individual units by selecting the 'NLT' option. Furthermore, using our SMART1 metering port and CYBERHAWK Efficiency & Power Meter enables the on-site performance commissioning.



On-Site Commissioning of Transformer Performance

The SMART1 integrated metering port option provides safe and revenue class accurate external access to live transformer primary and secondary voltages and currents, operating temperature, and TVSS status without opening the transformer enclosure. Powersmiths is the first transformer manufacturer to enable easy and accurate commissioning of the installed performance of a transformer for energy and power quality on a continuous basis. SMART1 is a key tool for achieving prerequisites and credits of LEED and other energy programs, as well as qualification for rebates and/or funding. The Powersmiths Cyberhawk Efficiency and Power Meter plugs directly into the SMART1, so comprehensive commissioning of performance takes only minutes.

The SMART2 option provides an integrated power and energy meter that can connect to a building management system and drive education for sustainability software.

Product Stewardship

Manufacturing

In addition to ISO 9001, the Powersmiths T1000 is built to ISO 14001, the international standard for minimizing environmental impact during the manufacturing process. Furthermore Powersmiths transformers have lower losses, which means less power drawn from a generating station - less smog, less greenhouse gas emissions, and less mining of our natural habitat.

Insulation System

Our superior insulation system extends the life of the transformer without compromising on performance and reliability.

The Nomex based insulation system is impregnated with an organic epoxy adhesive. It's performance is superior to varnish or polyester. Environmental emissions are reduced.

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Technical Data

kVA	Impedance (+/-SEQ.)	Weight (lbs)	Case Size (Inches)
15	3.5-5.0%	220-260	A (18W x 17D x 27H)
30	3.5-4.5%	400-500	B (26W x 18D x 30H)
45	3.0-4.0%	560-680	B (26W x 18D x 30H)
75	3.0-4.0%	750-860	C (32W x 22D x 40H)
112.5	3.0-4.0%	1050-1250	C (32W x 22D x 40H)
150	3.0-3.5%	1250-1450	D (38W x 27D x 48H)
225	3.5-4.5%	1850-2150	D+ (38W x 32D x 52H)
300	3.5-4.5%	2150-2450	D+ (38W x 32D x 52H)
500	3.0-4.0%	3100-3450	E+ (52W x 38D x 61H)
750	3.8-5.0%	4000-4800	F (64W x 47D x 67H)

THE ABOVE DATA APPLIES TO CONFIGURATIONS UP TO 600V, WITH NEMA 1 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.

Standard Configuration

The T1000-C2 is a 3-phase common-core copper-wound dry-type transformer, built in an ISO 9001 and ISO 14001 environment to NEMA ST-20 and other applicable ANSI and IEEE standards. Secondary windings have less than 0.3% zero sequence reactance and 112.5kVA and larger have less than 0.95% zero sequence impedance, and reduce fundamental current imbalance. It has a 220°C class insulation system and standard models come with a 115°C operating temperature rise, a single electrostatic shield, and a 60Hz rating, at which the T1000-C2 significantly exceeds the efficiency requirement of NEMA TP-1 and the EPA Energy Star program. The standard configuration of T1000-C2 meets the efficiency requirements of Candidate Standard Level 2* (CSL-2).

kVA: Rating of unit, (15-1000 kVA, up to 5000 kVA available)

DEG: 0 or 30 degree phase shift

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

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

N1: NEMA 1, ventilated drip proof enclosure

T115: 115 deg. C operating temperature rise

F60: 60Hz design

1S: Single electrostatic shield

Available Options

SMART1: Integrated metering port

SMART2: Integrated Power & Energy Meter

N3R: NEMA 3R, ventilated enclosure

NVE: Non-ventilated enclosure

T80: 80 deg. C operating Temp. rise

F50: 50Hz design

2S: Dual electrostatic shields

3S: Triple electrostatic shields

ECO: ECOLOGO certified

CE: CE mark on product

PRO702: 208V TVSS, 70kA/mode internal

PRO902: 208V TVSS, 90kA/mode internal

PRO904: 480V TVSS, 90kA/mode internal

PRO1502: 208V TVSS, 150kA/mode internal

PRO1504: 480V TVSS, 150kA/mode internal

TVSSxx: Where xx is custom ID

LK: Lug kit, screw-type

COL: Color other than factory standard

TSB: Terminal Safety Barrier

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

NLT: Nonlinear load test

W25: 25 year warranty with built-in surge suppression

SE: Sensitive Environment, extra low noise

C3: Meets DOE CSL3 Class efficiency



Warranty

Our Commitment to lasting performance is spelled out in the longest transformer warranty in the business - 25 years pro-rated with the Extended Warranty Option (10 years standard). T1000 is a trademark of Powersmiths International Corp.

As an Energy Star® partner Powersmiths has determined that the 115°C rise, T1000 configuration meets the requirements of the EPA ENERGY STAR guidelines for energy efficiency. Technical specification subject to change without notice.

* FEDERAL REGISTER – US Department of Energy, 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

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