

E-Saver 2016™

APPLICATION

E-Saver 2016 is an ultra-efficient low voltage dry-type transformer that exceeds the U.S. Dept. of Energy's new and more stringent efficiency legislation effective January 1, 2016¹. E-Saver 2016 is optimized to maximize energy savings and provide an attractive payback when supplying both light loading and electronic equipment, a load profile documented to be the most widespread in most building types.

KEY PERFORMANCE CHARACTERISTICS

When tested according to the U.S. Dept. of Energy's 10 CFR Part 431, a linear load test at 35% of nameplate capacity, the E-Saver 2016 delivers an average of 41% less losses than current EPC Act 2005 legislation/NEMA TP1/C802.2, and 14% less losses than NEMA Premium®, the Consortium for Energy Efficiency CEE Tier 1 and the U.S. DOE 2016 legislation¹. Under real-world conditions savings will be even higher.

E-Saver 2016 is k-rated per UL1561 in order to be compatible with the nonlinear load profile fed by most low voltage transformers today, and has been designed and tested to maintain higher efficiency and lower losses in this environment.

EXPANDED KVA SELECTION ENABLES RIGHT-SIZING

Powersmiths enables right-sizing of electrical infrastructure by offering a much broader selection of transformer kVA sizes. The capital cost, operating cost and footprint reductions can be dramatic - on the order of 30-50%, through smaller transformers, breakers, conductors, and distribution panels.

RETROFIT CONSIDERATIONS

Powersmiths' flexible design and manufacturing process removes the many barriers associated with replacing an existing transformer, including footprint, impedance, internal terminal layout, inrush, fault and arc flash levels.

Field measurement of loading, losses and efficiency are part of Powersmiths' retrofit best practice. The end result is a refreshed electrical infrastructure with the appropriate electrical characteristics with proven and documented energy savings.



75kVA E-Saver 2016 shown with Cyberhawk TX™, hinged door and Rotatable IR Port™ options

ENVIRONMENTAL/GREEN BUILDING CONTRIBUTIONS

E-Saver 2016 contributes to green building programs and carbon footprint reduction through its substantial reduction in energy losses compared to legislation. Additional benefits include our ISO14001 certified manufacturing, biodegradable packaging, integrated metering and ability to integrate with the Powersmiths WOW™ Sustainability Management Platform.

CERTIFICATIONS & TESTING

Powersmiths certifications include ISO 9001 (Quality), ISO 14001 (Environment), ISO 17025 (Efficiency Test Lab), UL and CSA. In addition to standard industry tests, Powersmiths has a production-integrated nonlinear load test program that replicates real-world conditions to enable true losses and efficiency verification.

WARRANTY

E-Saver 2016 has an industry leading 25-year pro-rated warranty.

INTEGRATED OPTIONS

Powersmiths offers many options, such as integrated metering to provide information about capacity utilization, load profiles, power and energy use, and patented Rotatable IR Port™ and lockable hinged doors to enable safer, cost-effective and non-invasive thermal imaging of the live transformer.

KEY FEATURES

- Optimized for light load and nonlinear load profiles found in most applications
- Energy savings through lower losses and reduced associated cooling provide lower lifecycle cost
- Efficiency beyond NEMA Premium®, Consortium for Energy Efficiency CEE Tier 1, U.S. DOE 2016 legislation¹ and CSL-3
- K-rated as required by UL for today's electronic equipment
- Manufactured in a certified ISO 9001, ISO 14001 and ISO 17025 facility for quality, low environmental impact, and transformer efficiency testing

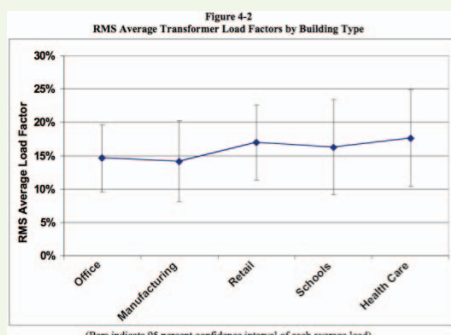


Chart from The Cadmus Group Inc. "Metered Load Factors for Low-Voltage, Dry-Type Transformers in Commercial, Industrial, and Public Buildings"

¹ U.S. Department of Energy, 10 CFR Part 431: Energy Conservation Program: Energy Conservation Standards for Distribution Transformers; Final Rule, April 2013.

TECHNICAL SPECIFICATIONS

E-Saver 2016 is a copper-wound dry-type isolation transformer with a common-core, 10kV BIL, 200% rated neutral, built to NEMA ST-20, UL1561 and other applicable ANSI and IEEE standards, and is cULus Listed and CSA Efficiency Verified. Both primary and secondary terminals and voltage taps (typically six 2.5%) are readily accessible by removing the front enclosure panel. E-Saver 2016 is UL Listed for 2" clearance for ventilated openings – a significant improvement over the typical industry 6" limit. E-Saver 2016's 220°C class insulation system is NOMEX-based with an Epoxy Co-polymer impregnant with technical performance characteristics that embed lower environmental impact, long term reliability and long life expectancy. E-Saver 2016 comes standard with 60Hz, K-7 rating, 115°C temperature rise, and carries OSHPD and IBC Seismic Certification ($S_{DS}=1.5\text{ g}$)*. The seismic bracing option provides a higher 2.28g.

E-Saver 2016 exceeds U.S. DOE 2016 efficiency legislation (Final Rule issued April 2013), and reduces losses over the kVA size range by an average of 41% when compared to current EPA 2005/NEMA TP1/C802.2 legislation, and 14% less losses than NEMA Premium® and the Consortium for Energy Efficiency CEE Tier 1 level.

Designs have been carefully optimized to address primary breaker inrush characteristics and manage secondary short circuit currents and arc flash levels.

Keeping noise at a minimum is key. Every Powersmiths E-Saver 2016 comes standard 3dB quieter than NEMA ST-20 and is tested for noise prior to shipment. An even lower noise option is available for very sensitive environments.

All E-Saver™ models come standard in a NEMA 1 ventilated drip-proof indoor enclosure made of heavy gauge steel finished with epoxy powder coating for durability and low environmental impact. A wide variety of enclosures and options are available.

ORDERING INFORMATION

kVA: Rating of unit (9-1000 kVA)

PV: Primary voltage (up to 600V)

SV: Secondary voltage (up to 600/347V)

PRODUCT & MODEL INFORMATION

E-SAVER 2016 model no. format: E-SAVER-C4L-KVA-PV-SV

TECHNICAL DATA

kVA	Efficiency (%)	Impedance (%Z)	CU Model Weight (lbs)	Standard Case Size (in)	Alternate Smaller Case Size (in)
15	98.22	3.0-6.0	250-300	A (18W x 17D x 27H)	17.4W x 14.5D x 25H
20	98.31	3.0-6.0	275-325	B (26W x 18D x 30H)	23W x 15.5D x 27.5H
25	98.41	3.0-6.0	300-350	B (26W x 18D x 30H)	23W x 15.5D x 27.5H
30	98.50	3.0-6.0	350-400	B (26W x 18D x 30H)	23W x 15.5D x 27.5H
45	98.64	3.0-6.0	450-500	B (26W x 18D x 30H)	25W x 16D x 29H
50	98.67	3.0-6.0	500-550	C (32W x 22D x 40H)	26.5W x 17D x 33H
63	98.74	3.0-6.0	550-600	C (32W x 22D x 40H)	26.5W x 17D x 33H
75	98.80	3.0-6.0	675-725	C (32W x 22D x 40H)	26.5W x 17D x 33H
100	98.85	3.0-6.0	775-825	C (32W x 22D x 40H)	30.5W x 20D x 33H
112.5	98.91	3.0-6.0	875-925	C (32W x 22D x 40H)	30.5W x 20D x 33H
125	98.94	3.0-6.0	1000-1100	D (38W x 27D x 48H)	33W x 22.5D x 38H
150	98.99	3.0-6.0	1150-1250	D (38W x 27D x 48H)	33W x 22.5D x 38H
175	99.02	3.0-6.0	1250-1350	D (38W x 27D x 48H)	34.5W x 24D x 42H
200	99.05	3.0-6.0	1325-1425	D (38W x 27D x 48H)	34.5W x 24D x 42H
225	99.08	3.0-6.0	1400-1500	D+ (38W x 32D x 52H)	34.5W x 24D x 42H
250	99.10	3.0-6.0	1550-1650	D+ (38W x 32D x 52H)	37W x 26D x 43H
300	99.14	3.0-6.0	1700-1850	D+ (38W x 32D x 52H)	37W x 26D x 43H
400	99.19	3.0-6.0	2200-2350	E+ (52W x 38D x 61H)	43W x 33D x 51H
450	99.22	3.0-6.0	2500-2650	E+ (52W x 38D x 61H)	43W x 33D x 51H
500	99.24	3.0-6.0	2750-2900	E+ (52W x 38D x 61H)	43W x 33D x 51H
600	99.27	3.0-6.0	3000-3150	F (64W x 47D x 67H)	51.4W x 37.5D x 60.6H
750	99.31	3.0-6.0	3550-3700	F (64W x 47D x 67H)	51.4W x 37.5D x 60.6H
850	99.33	3.0-6.0	4100-4300	F+ (64W x 53D x 67H)	Custom
1000	99.36	3.0-6.0	4700-4900	F+ (64W x 53D x 67H)	Custom

NOTE: The above data applies to the standard configuration of each kVA. Selection of some options may change enclosure size and/or transformer weight. Consult factory for detailed product data sheet for these and other configurations. Efficiencies tested according to U.S. Dept. of Energy's 10 CFR Part 431, a linear load test at 35% of nameplate capacity.

Technical specifications subject to change without notice.

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AVAILABLE OPTIONS

Metering: Express Logger™, SMART™ or Cyberhawk TX™ (See product cut sheets for more info)

N3R: NEMA 3R, ventilated enclosure

N2S: Indoor sprinkler proof enclosure

OSEC: Enclosure for outdoor public areas

OV: Enclosure for outdoor secure areas

SS: Painted stainless steel enclosure

NVI: Non-ventilated indoor enclosure

IRP: Rotatable IR Port™

HD: Hinged Door

F50: 50 Hz design

1S: Single electrostatic shield

2S: Dual electrostatic shields

3S: Triple electrostatic shields

SPD: (120/208 V OR 277/480V)

PRO80: 80kA, 7 mode, Filter

PRO120: 120kA, 7 mode, Filter

PRO200: 200kA, 7 mode, Filter

PRO240: 240kA, 7 mode Filter

PROXX: Where XX is custom ID

LKS: Lug kit, screw-type

LKC: Lug kit, compression type

LI: Low inrush

COL: Custom color

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

NLT: Nonlinear load test

SE: Sensitive environment, extra low noise

K9: K-9 rating

SB: Seismic bracing

**For Seismic certification details contact Powersmiths*

Wall-mount kit is available and sold separately

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