

High Efficiency Power Conditioning Transformer



HIGH RELIABILITY

ENERGY EFFICIENT

POWER CONDITIONING TECHNOLOGY

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The ONYX Energy Guard transformer incorporates energy efficiency and power conditioning together with a high reliability design suitable for critical loads.

Thermal Management Advantages: ONYX Energy Guard transformers are designed to withstand even the most excessive harmonics and non-linear loads. Thermal management features include an expanded steel core for a K-20 rating, dual layers of Nomex™ thermal shielding between windings, embedded thermal monitoring, a 200% rated neutral bus and large copper flat bus connections for maximum conductivity and the elimination of hot spots.

Integrated Power Conditioning: The most frequent threat to loads on critical distribution systems results from noise disturbances. Electrical noise is typically generated from devices inside the facility such as lighting, motor drives, and other electronic loads sharing the critical bus. The Energy Guard transformer's noise suppression technology limits noise generated over a wide frequency range with no effect on the normal AC waveform. Both common and normal mode are attenuated up to 146 dB (or 20,000,000:1) reducing a 6000 Volt spike down to a negligible 0.0030 Volts.

About Energy Efficient Transformers: Typical general purpose dry type transformers operate well below their maximum rated load (i.e. typically 35% loaded). At these load levels the transformer efficiency is relatively low where a high efficiency transformer may be 2-6% more efficient. Even a slight 3% efficiency advantage can translate to an energy cost savings of a few thousand dollars per year in many applications.

FEATURES

- ▶ Meets NEMA TP_1, CSA 802 and Energy Star® requirements for energy efficient transformers
- ▶ High efficiency may yield payback in under three years
- ▶ Copper electrostatic shield between windings attenuates common mode (146 dB) and normal noise and voltage spikes and transients
- ▶ 200% rated neutral bus manages extra neutral current generated by harmonics and non-linear loads without risk of excessive heating
- ▶ K-20 rating to accommodate even the worst non-linear loads without the risk of heat-build-up
- ▶ Embedded thermal sensors monitor transformer performance and provide early warning due to accidental overloads
- ▶ Large copper flat bus bar connections with compression washers assure a lifetime of trouble free connections
- ▶ Dual Nomex™ barrier between windings eliminates risk of burn-through
- ▶ Vacuum impregnated varnish coating reduces vibration and audible noise over transformer life
- ▶ Copper or aluminum windings available
- ▶ Available in NEMA-1 or NEMA-3R rigid steel cabinet or transformer only
- ▶ Optional monitoring system shows actual savings
- ▶ UL listed and certified
- ▶ 10 year limited warranty



Energy Efficient Critical Grade Isolation Transformer

TECHNICAL SPECIFICATIONS

Engineering Description

Three Phase Energy Efficient Delta Wye Isolation Transformer

Input voltage(s)	208, 220, 380, 400, 480, 600 VAC
Output voltage(s)	208, 220, 380, 400, 480, 600 VAC (Y)
K-Factor Rating	K-20
Common-mode noise attenuation	146dB
Normal-mode noise attenuation	60dB
Overload capacity	500% for 1 cycle 200% for 30 seconds
Dielectric strength	2,500 VAC minimum
Recommended Nominal Frequency	47 - 53Hz for 50Hz models and 57 - 63Hz for 60Hz models
Impedance	3 - 5% typical
Energy Efficiency	> 97.5% typical (meets or exceeds Energy Star, NEMA TP-1 and CSA C802)
Taps	2.5% and 5% above nominal V / 2.5%, 5%, 7.5% and 10% below nominal V
Recommended input voltage range	+10% of nominal rated voltage
Load regulation	3.5% or less from no load to full load at unity power factor
Harmonic distortion	1% maximum
Insulation resistance	100M Ohms minimum from windings to core
Electro-magnetic interference	0.1 gauss maximum measured at 36 inches
Audible noise	< 50dB measured at 3 feet typical
Cabinet Type (no cabinet optional)	NEMA-1 steel construction / powder coat finish (NEMA-3R optional)
Operating temperature	0° C to 55° C
Storage temperature	-40° C to 85° C
Operating altitude	15,000 feet maximum
Operating humidity	95% relative (non-condensing)
Safety Standards	UL 1561, UL 1449, cUL listed

Standard Inventory Model Description (other voltages and frequencies available)

Power (kVA)	Input Voltage (VAC)	Output Voltage (VAC)	Dimensions (H"xW"xD")	Weight (lbs)	Model Number
15	480	480	28x23x18	380	EG15-4848-60
15	480	208	28x23x18	400	EG15-4828-60
30	480	480	34x28x22	460	EG30-4848-60
30	480	208	34x28x22	490	EG30-4828-60
50	480	480	34x28x22	650	EG50-4848-60
50	480	208	34x28x22	710	EG50-4828-60
75	480	208	34x28x22	870	EG75-4828-60
100	480	208	44x32x22	920	EG100-4828-60
125	480	208	44x32x22	1,100	EG125-4828-60
150	480	208	46x32x22	1,200	EG150-4828-60
200	480	208	46x32x22	1,600	EG200-4828-60
225	480	208	46x32x22	1,720	EG225-4828-60
300	480	208	60x40x32	1,950	EG300-4828-60
400	480	208	60x40x32	3,200	EG400-4828-60
500	480	208	60x40x32	4,140	EG500-4828-60



EngGrid 100-3/05

