



540 Energy
Saver™
Sustainability
Solutions

EXCLUSIVE SUSTAINABILITY SOLUTION FOR BUILDING OWNERS AND MANAGERS

Addressing the rising costs of electricity coupled with expensive equipment breakdowns due to power surges, harmonic distortion, and other power supply issues

The 540 Energy Saver™ will:

REDUCE

your electricity costs by 6-30%

PROTECT

every electrical device

EXTEND

the life of all connected devices

Product Benefits

- Electrical surge reduction
- Voltage spikes gone
- Balances all voltage phases
- Arc flash mitigation
- Protects against lightning strikes
- Saves energy
- 100% made in the United States
- 10 year warranty
- Available up to 3,000KVA
- Reduces harmonic distortion



A typical unit:



Permanent one time installation

Who can benefit from the 540 Energy Saver™?

Any building, company, or facility that uses electricity

How does it work?

The 540 Energy Saver™ is patented technology that provides active correction of your incoming power supply to reduce consumption while providing protection to all electrical devices connected to that system. There is nothing else like it on the market.

How soon can you expect the benefits of the 540 Energy Saver™ to begin?

Immediately (After installation by our qualified technical staff)

As an owner or manager, using a 540 Energy Saver™ extends the life cycle of every electrical device while decreasing your operating costs at the same time. Permanently and automatically.

How to contact us for more information:

By telephone: (888) 550-6583

By email: info@usgridsolutions.com

Engineering and Technical Data

Summary of Specifications

Supply voltage: through 600VAC
Maximum load current: 3 amps @ 600V
Response time: 0.0 seconds or less than 10 cycles
Mounting options: Floor or wall

Wire size: #10 AWG stranded
540 Box dimensions: 30"H x 24" W x 12" D
Weight: 250 lbs. (depending on the model)
Components: Hardened, shock resistant, UL

1. Voltage Stabilization and Voltage Balancing-

The 540 Energy Saver™ balances and stabilizes phase voltages with respect to ground. By this correction, drives and control systems operate reliably. This voltage stabilization also maintains a reference in the event of a power failure or scheduled shutdown which prevents damage to equipment. The 540 Energy Saver™ causes motors to run cooler therefore extending their life by as much as double.

2. Transient and arc fault damage elimination-

Transient voltages and arcing ground-faults cause high frequency noise, insulation breakdown, control lockups and premature equipment failure. Most solid grounds, which can cause an arc-flash hazard, start as arcing ground faults. The 540 Energy Saver™ prevents arcing ground faults which reduces the potential for arc-flash by over 85%. Even during a power outage, the 540 Energy Saver™ discharges the stored energy from the power distribution source reducing the arc-flash danger much like the dynamic braking resistor on a crane or elevator. Power systems with the 540 Energy Saver™ are protected from the high voltage buildup allowed by traditional TVSS units. Phaseback limits and exacts the voltages to system voltage whether the specification is 480, 277, 230, 208, or 115 volts.

3. Harmonic reduction-

Phase voltage harmonics contain eddy currents which cause excessive heat in motors, transformers, and all other inductive devices. They are all reduced with the 540 Energy Saver™. Phase voltages are balanced and stabilized with the 540 Energy Saver™ and as a result the phase voltage harmonics at all frequencies, including zero, even, odd and inter-harmonics are reduced by 85% allowing reliable operation of all the equipment connected to the power system.

4. Increased Efficiencies-

Harmonics cause eddy currents that restrict current flow through motors and other inductive loads which cause the motors that run DOL (direct on line) to be less energy efficient. With the 540 Energy Saver™ the harmonics are reduced and the motors run cooler and use less energy (watts or true power), reduce the volt-amp draw (apparent power), reduce the VAR power (imaginary power), and increase the power factor. The energy savings often result in rapid returns on investment.

5. Arc Flash Mitigation-

For the mitigation of arc flash hazards the goal is to achieve fault clearing within 10 cycles. Fault currents, even modest ones of 5-10kA, can yield catastrophic results. Major equipment damage, injury, or death to personnel can occur well before a circuit breaker can clear the fault. The 540 Energy Saver™ has a current detector to identify and notify personnel when the first fault occurs. This may provide enough time to correct the problem before a second fault occurs.

6. Power Factor Correction/ Dramatic Utility Reduction-

Power factor correction or KVAR improvement makes the power that is delivered to buildings more efficient. This technology is very effective initially but the commonly used capacitors diminish in a short amount of time because they cannot tolerate transient voltages and harmonics. Because the 540 Energy Saver™ is so effective at controlling transients and harmonics, capacitors can now be permanently installed onto a building power system. This one time installation will provide utility savings for years and boost the reliability of all electrical devices. The 540 Energy Saver™ comes with protected capacitors installed.

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540 Energy Saver™ / Energy Efficient Lighting™ Warranty Combination

The combination of 540's industry leading line of energy efficient lighting and the patented protection technology contained within the 540 Energy Saver is second to none. The 540 Energy Saver's ability to lengthen the useful life of all connected devices has allowed us to offer a level of warranty protection and assurance that is unmatched.

540 Energy Efficient Lighting Warranty Information

	Interior	Exterior	Panel Lighting
With the 540 Energy Saver	12 years	10 years	12 years
Without the 540 Energy Saver	5 years	5 years	10 years

** Warranty information is based on Energy Star's estimated typical burn rate of 14 hours per day**

540 Energy Efficient Lighting Hourly Usage Warranty Breakdown

Daily Hours of Operation	Annual Hours of Operation	Expected Product Life with 540 Energy Saver (years)	Expected Product Life without 540 Energy Saver (years)
5	1,825	34.25	27.40
8	2,920	21.40	17.12
12	4,380	14.27	11.42
14	5,110	12.23	9.78

Users operating more than 14 hours per day should contact 540 for extended warranty options

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