

# Bridgeport Magnetics Announces New Advanced Transformers

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SHELTON, CT, UNITED STATES, June 20, 2025 /EINPresswire.com/ -- Bridgeport Magnetics Group Inc., a U.S.-based manufacturer specializing in toroidal power components, has introduced a new line of advanced transformers. The addition brings technical variations to the company's existing catalog of [toroidal transformer](#) products, developed to meet current operational requirements in electrical environments across several industries. The updated line addresses technical priorities such as reduced electromagnetic interference, improved energy efficiency, and space-conscious installation — characteristics that have become more relevant in fields where system design and noise control are essential.

## Addressing Application Demands in Sensitive Electrical Systems

Transformers used in sensitive systems—such as medical diagnostics, audio laboratories, or marine

navigation controls—require precise energy handling and minimal interference. The structural design of the [transformer toroidal](#) core contributes to those performance needs. Its compact, donut-shaped geometry supports effective winding while limiting magnetic leakage.



Toroidal Transformer



Transformer Toroidal

In practical terms, this means reduced electrical noise, lower stray field emissions, and consistent thermal behavior. These qualities make the configuration suitable for equipment and environments where fluctuations or interference can affect operations.

### Design Principles Focused on Performance and Structure

Toroidal transformers operate with a geometry that helps reduce core losses. Their continuous magnetic path allows for smoother energy flow with less resistance. This structure also limits mechanical hum and vibration, supporting use cases that depend on quiet operation.

The new line incorporates these design principles while adapting to common space limitations found in power supplies, control panels, and integrated circuit systems. Several models offer vertical or low-profile options, which may be required in confined spaces.

### Efficiency Ratings and Thermal Management

Transformers in the updated product range are built to maintain energy efficiency ratings typically above 90%. These ratings are achieved through reduced core losses and tightly wound configurations that limit resistance.

Effective thermal performance also minimizes internal heat generation. This feature can reduce the need for external cooling components, helping the units remain stable in compact or enclosed housings. Proper insulation materials are used throughout to improve heat tolerance during extended operation.

### Structural Integrity and Environmental Resistance



Custom Toroidal Transformer



Custom transformer

To support varied use conditions, the new series includes models that feature encapsulated designs. Encapsulation helps protect internal windings from environmental factors such as moisture, dust, and corrosion. This is especially useful in marine or industrial settings where components may be exposed to non-controlled conditions.

Insulation systems in the units are rated to common standards such as Class B (130°C) or Class F (155°C), depending on the model. These specifications support thermal durability and consistent performance under typical loading patterns.

### International Compliance and Testing Standards

Bridgeport Magnetics manufactures its products in line with recognized international standards. The transformer series is developed according to guidelines including UL (UL 506/5085), CSA, EN 61558-1, and IEC 61558-1. Most models also meet CE and RoHS standards.

Units may also include overload protection and thermal cutoffs. These features allow the products to meet safety and certification requirements for various markets, including those with regulatory oversight on temperature control and insulation failure limits.

### Range of Models Based on Intended Use

Several model categories are available within the new product line. These include:

- Toroidal Power Transformers: Designed for use in general power supply systems with ratings from 30 VA to 50,000 VA.
- O-Core Transformers: Built with a 3:1 diameter-to-height ratio, these models are suitable for systems with vertical clearance limitations.
- Isolation Transformers: Suitable for applications where galvanic separation and noise control are necessary. Available up to 300 kVA.
- S-Series Transformers: These are standard configurations featuring dual primary windings (117/234 V) and tested for global compatibility.

This variety supports different voltage ratings, safety needs, and layout constraints in industrial, medical, and laboratory systems.

### Customization Options for Application-Specific Needs

Some environments require components not easily addressed by standardized designs. Bridgeport Magnetics continues to produce [custom toroidal transformer](#) models configured for specific project or equipment requirements.

Customization options may include dual or triple secondary windings, electrostatic shielding for electromagnetic compatibility (EMC), and special insulation or potting materials. These variations are developed through direct technical collaboration and are used where conventional units are

not suitable due to electrical, spatial, or safety requirements.

## Industries Utilizing Toroidal-Based Power Systems

The new product line is suitable for a variety of applications. In the medical field, transformers are often used in imaging equipment, diagnostic devices, and isolated power systems. In the marine sector, their compact shape and resistance to corrosion support engine systems and navigational electronics.

Laboratories using precise measurement instruments often specify toroidal transformers for low-hum operation and consistent voltage delivery. Other general-use areas include power conversion, battery charging systems, and distributed control units.

## Manufacturing Process and Facility Standards

Bridgeport Magnetics operates out of its manufacturing facility in Shelton, Connecticut. This facility manages product design, assembly, and testing under controlled conditions. The company oversees raw material sourcing, quality assurance, and compliance documentation internally.

Production processes are aligned with standard practices for electrical component manufacturing. All units are tested before delivery to verify insulation resistance, continuity, and conformance to stated voltage and current ratings.

## Support for Integration in Power System Design

The structural form of toroidal transformers often simplifies system integration. These transformers can be mounted with simple hardware and are typically compatible with both surface and frame installations. Low-profile options can be used in cabinets with restricted space or where airflow is limited.

Because of their reduced vibration and magnetic flux leakage, these units can be positioned near other sensitive components without affecting signal performance. This is an important feature in systems that include analog or low-voltage signal processing circuits.

## Outlook: Supporting Stability and Efficiency in Modern Systems

The expanded transformer product line from Bridgeport Magnetics Group Inc. is designed to meet common needs in regulated, space-conscious, and sensitive power environments. By offering a selection of structural formats, safety features, and core types, the company adds more flexibility for design engineers, equipment manufacturers, and systems integrators requiring reliable power conversion solutions.

## About Bridgeport Magnetics Group Inc.

Bridgeport Magnetics manufactures toroidal transformers for industrial, marine, medical, and instrumentation use. Known for energy efficiency and compact size, the company develops both standard and custom models designed to comply with international safety and performance standards.

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