



PARTNER | SOLVE | DELIVER®

Magnetics

PRODUCT LINE BROCHURE



Standex | Smart.

Partner, Solve, Deliver® "Solving your complex problems is why we exist."



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ABOUT STANDEX

Customer Focused Engineering Solutions. “Innovating for more than 50 years.”

The Standex Electronics business, a division of Standex International Corporation (NYSE:SXI), has been providing solutions through high-performing products since the 1950's. Through growth, acquisition, strategically partnering with customers, and applying the latest engineering designs to the needs of our ever-changing world, Standex Electronics technology has been providing quality results to the end-user. The approach is achieved by partnering with customers to design and deliver individual solutions and products that truly address customers' needs.

Standex Electronics is headquartered in Cincinnati, Ohio, USA, Standex Electronics has nine manufacturing facilities in six countries, located in the United States, Germany, China, Mexico, the United Kingdom, and Japan.



That's **Standex** | Smart.

standexelectronics.com

WHO WE ARE / WHERE WE PLAY

Powerfully transforming. “When failure is not an option, designers of critical electronic components rely on Standex and their decades of experience.”



Standex Electronics is a worldwide market leader in the design, development and manufacture of custom magnetics and power conversion components and assemblies. Our work, growth, and dedication to providing reliable high-quality products through our engineering and manufacturing expertise go beyond products we ship. We offer engineered product solutions for a broad spectrum of product

applications in all major markets, including but not limited to:

- Aerospace & Military
- Alternative Energy
- Automotive (EV) & Transportation
- Electric Power & Utilities
- Medical
- Smart Grid & Metering
- Industrial & Power Distribution
- Test & Measurement
- Security & Safety
- Household & Appliances

Our values and what we believe align to the partner, solve, and deliver® approach. We produce parts but we are more than that. Connecting with your team as a strategic partner, listening to your challenges, and arriving at ways to solve your complex problems through our solutions are why we exist. We have custom capabilities that address your needs. Our team leverages our dynamic and diverse engineering expertise and other resources such as our global facilities for logistics and production.

50
YEARS of
INNOVATION

Standex Electronics has been innovating for over 50 years by developing new products, partnering with customers, and expanding our global capabilities. We have also grown our global reach and local touch through synergistic acquisitions.

1960 National Transistor
1969 Paul Smith Company

1960

1971 Comtelco
1973 Underwood Electric
1974 Van Products

1970

1998 ATR Coil /
Classic Coil Winding

1990

2001 ATC-Frost Magnetics
2002 Cin-Tran
2003 Magneto /Trans America
2004 Lepco
2008 BG Laboratories

2000

2012 Meder Electronic
2014 Planar Quality Corp.
2015 Northlake Engineering, Inc.[®]
2017 OKI Sensor Device Corp.
2018 Agile Magnetics

2010

MEDER
electronic

ATC-FROST
Magnetics Inc.

BG
LABORATORIES
INCORPORATED

MAGNETICO
INCORPORATED

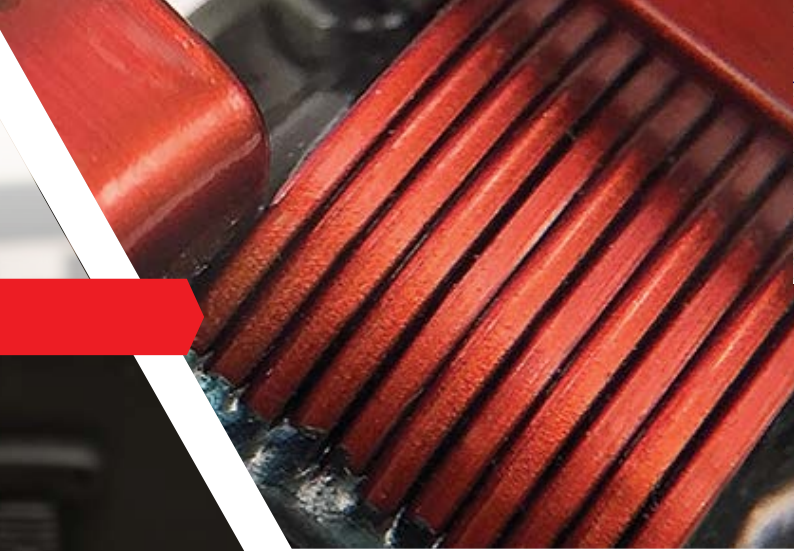


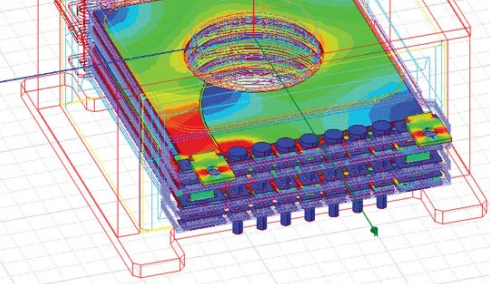
NORTHLAKE ENGINEERING, INC.[®]

Agile
Magnetics
A STANDAX ELECTRONICS COMPANY

Standex | Strong.

OUR CAPABILITIES



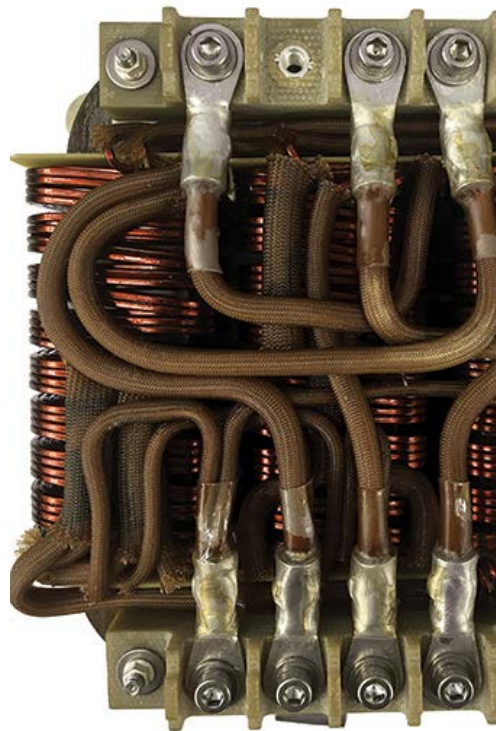


MANUFACTURING

- 52 to 5awg Magnetic Wire Winding
- Foil, Flat, & Square Wire Winding
- Automatic CNC Winding
- Bobbin, Layer, & Self-Supporting Winding
- Toroidal Hook & Shuttle Winding
- Thermoplastic & Thermoset Overmolding
- Impregnation, Casting, & Potting
- Void-Free Vacuum Potting
- NASA Certified Soldering
- Wire Prep & Harness Assembly
- Injection Molding
- Metal & Plastic Fabrication
- Lean Manufacturing Principles
- Complete, In-House Machine Shop
- Poka-Yoke "Mistake Proofing"

ENGINEERING

- 3-D CAD Modeling
- 3-D Printing
- Mechanical Design & Packaging
- Rapid Prototyping
- Magnetic Simulation Software
- Mechanical, Thermal & FEA Analysis
- Plastic Mold Flow Simulation
- APQP Project Management



That's **Standex** | Strong.

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IATF
16949

ISO9001
CERTIFIED

REGISTERED
AS9100



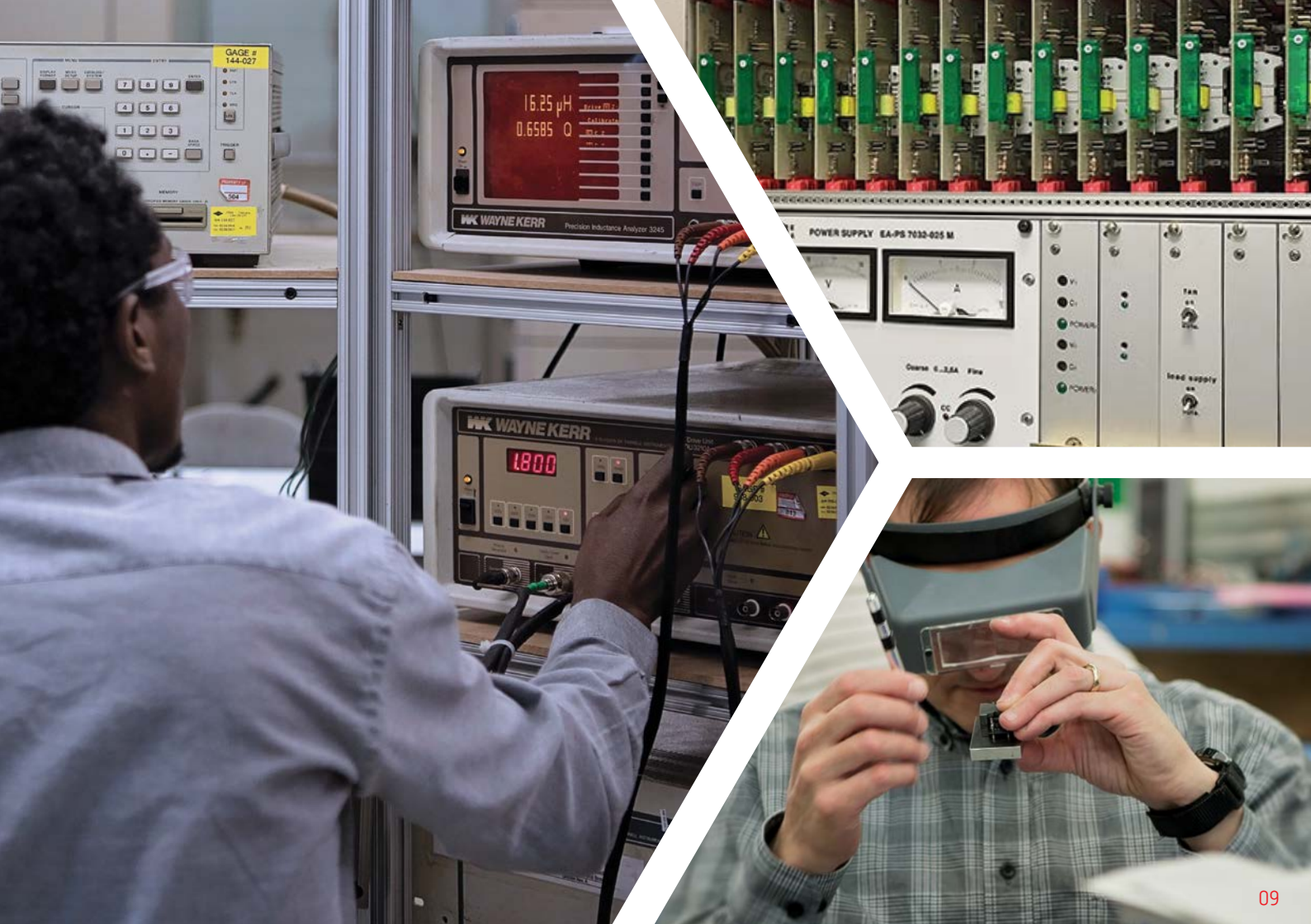
QUALITY & COMPLIANCE

AS9100 & IATF16949 Certifications
ITAR Compliance
Regulatory Agency Approvals
PPAP & First Article Inspection
SPC Data Collection

TESTING & LAB CAPABILITIES

Automated Transformer Testing
Medical Safety Testing
High Voltage/Partial Discharge Testing
Full Load & Temperature Rise Testing
2-D/3-D Microfocus X-ray Inspection
Digital Microscopic Inspection
MIL-STD-202 In-House Qualification Testing

- Mechanical, Shock & Vibration
- Burn-In & Life Testing
- Thermal Shock & Temperature Cycling
- Humidity, Salt Fog, & Solderability
- Moisture Resistance & Seal Testing



GAGE #
144-027

WAYNE KERR
Precision Inductance Analyzer 3345

WAYNE KERR

1800

POWER SUPPLY EA-PS 7032-025 M

Output 0...3.5A 5Vdc

Standex | Strong.

CUSTOM MAGNETICS DESIGN & VALUE-ADD

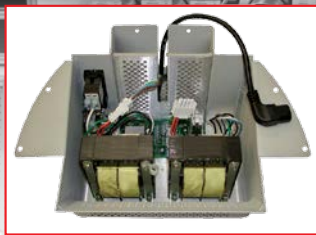
“Our global footprint means that we can manufacture components close to where you need them.”

CUSTOM MAGNETICS RANGE

- Power Transformers
- Current Sense Transformers
- High Voltage Transformers
- High Frequency Transformers
- Medical Grade Isolation
- Inductors, Chokes & Reactors
- Ferro Resonant Transformers
- Power Supplies & Assemblies
- Planar Transformers & Inductors
- 3-Phase Transformers
- Solenoids & Actuators
- Coils & Antennas

Custom designed Standex Electronic magnetics and power conversion components are used in a wide variety of assemblies across all major markets. Our robust designs are available as single components – or can be combined with ancillary services such as wiring harnesses, leads, molding, stamping, even integration into up-stream/ downstream

components to simplify installation and reduce costs, as well as improves our customer’s quality of supply and critical resources. Furthermore, our global footprint means that we can manufacture components close to where you need them – reducing transit times and delivery costs, and simplifying your supply chain management.

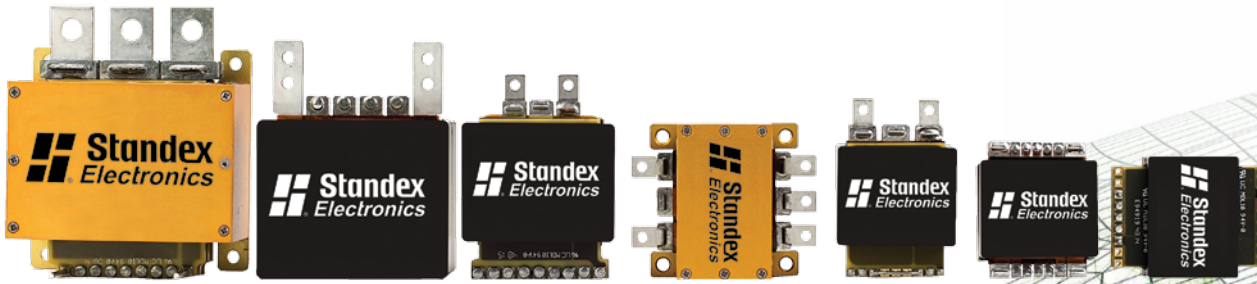


Our Products are Recognized...



That's **Standex** | Strong.

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PLANAR MAGNETICS

“When you combine planar technology with excellent engineering, you can get a solution that with exceptional efficiency and thermal performance in small package.”

Planar technology is making headway in some of the most demanding applications and emerging markets. Battery charging, electric vehicles, solar inverters, aviation, healthcare, and industrial markets are just some of the areas where this technology is gaining ground. Planar transformers offer improved power density and performance compared to equivalent wire wound transformer designs.

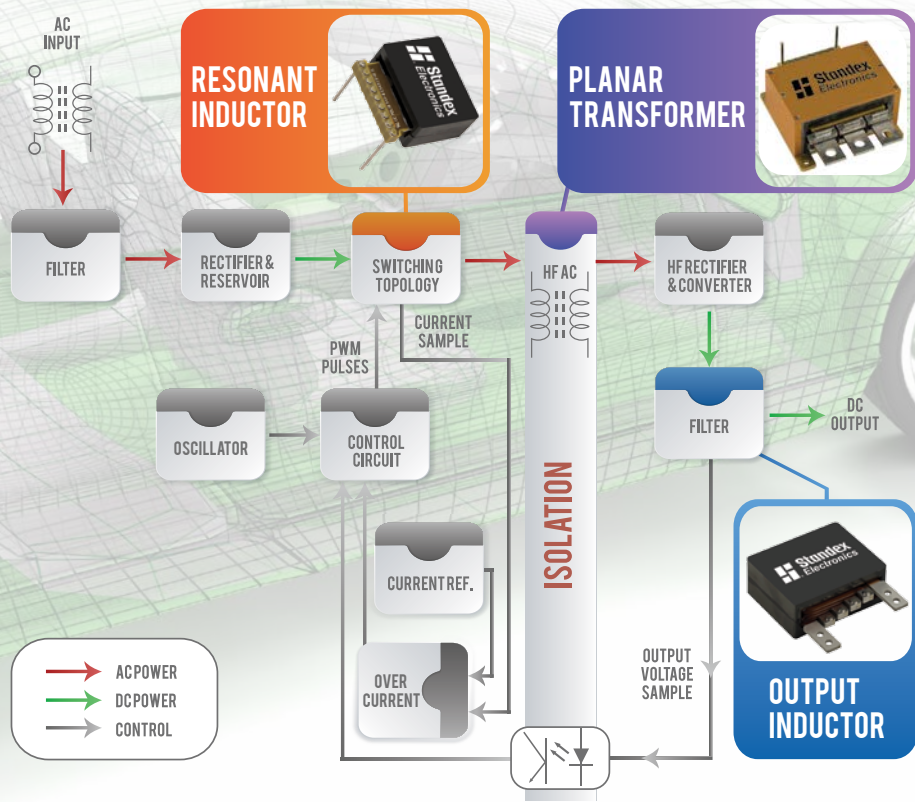
Planar transformers offer:

- Reduced high frequency AC losses
- Low leakage inductance
- Better thermal management
- Excellent repeatability
- Extremely low profile.

Planar transformers and inductors are the ideal solution for efficient SMPS applications. We have hundreds of multi-layer PCB's and lead frames that can be custom configured for your custom power requirements.



SWITCH-MODE POWER SUPPLY // PLANAR MAGNETICS APPLICATIONS //



Custom Configurations / Standard Sizes

CUSTOM CONFIGURATIONS

Inductors, >30kW, Thermal Solutions, and Custom Terminations

HIGH POWER 10kW-30kW

P900, P2100, P4000 SERIES

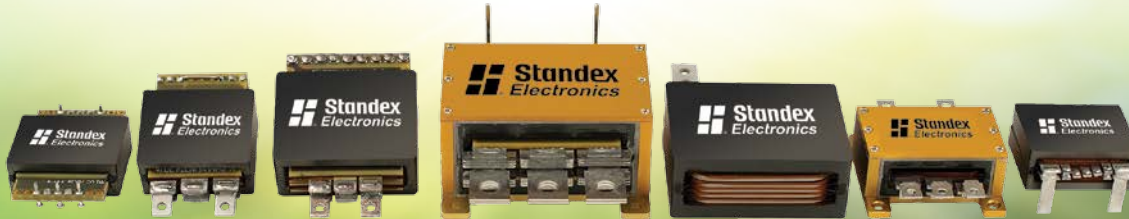
MED/HIGH POWER 700W-10kW

P220, P350, P560 SERIES

LOW POWER UP TO 700W

P035, P055 P075, P110, P135 SERIES

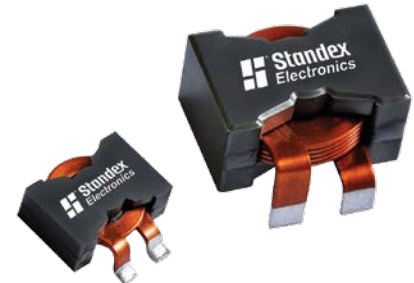
“With the industry’s broadest custom in-house capabilities, Standex is uniquely qualified to address alternative power projects.”



ALTERNATIVE ENERGY

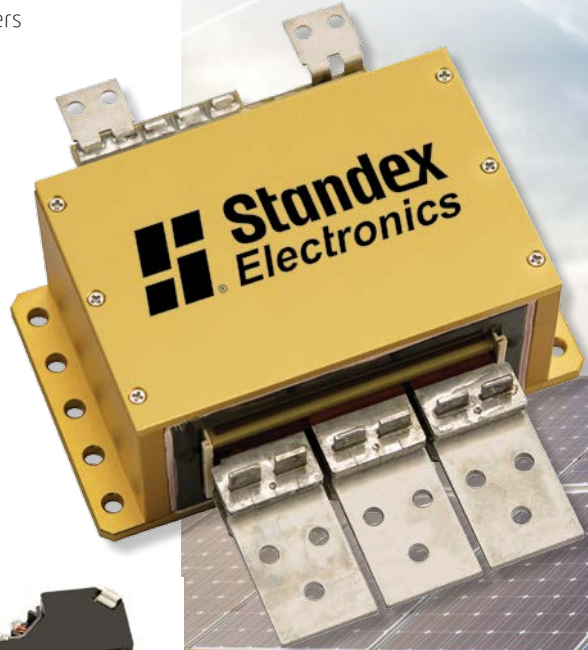
Standex Electronics custom magnetics and power conversion components play a leading role in the greening of the environment and your bottom line. From custom transformers and electronic assemblies used in electric and hybrid vehicles, photovoltaic systems and wind turbines – we’re using technology and innovative designs

to conserve the world’s natural resources. With the industry’s broadest custom in-house capabilities for engineering, winding, molding, packaging, assembly, and testing, Standex is uniquely qualified to address alternative power projects.



Typical components and projects include:

- Current sense transformers for wind, wave, and solar
- Transformers for emissions control energy
- Load sensing transformers to conserve
- Electric vehicle on-board charger
- Electric vehicle DC/DC converters
- Electric vehicle fast charging



Standex | Strong.

ELECTRIC POWER

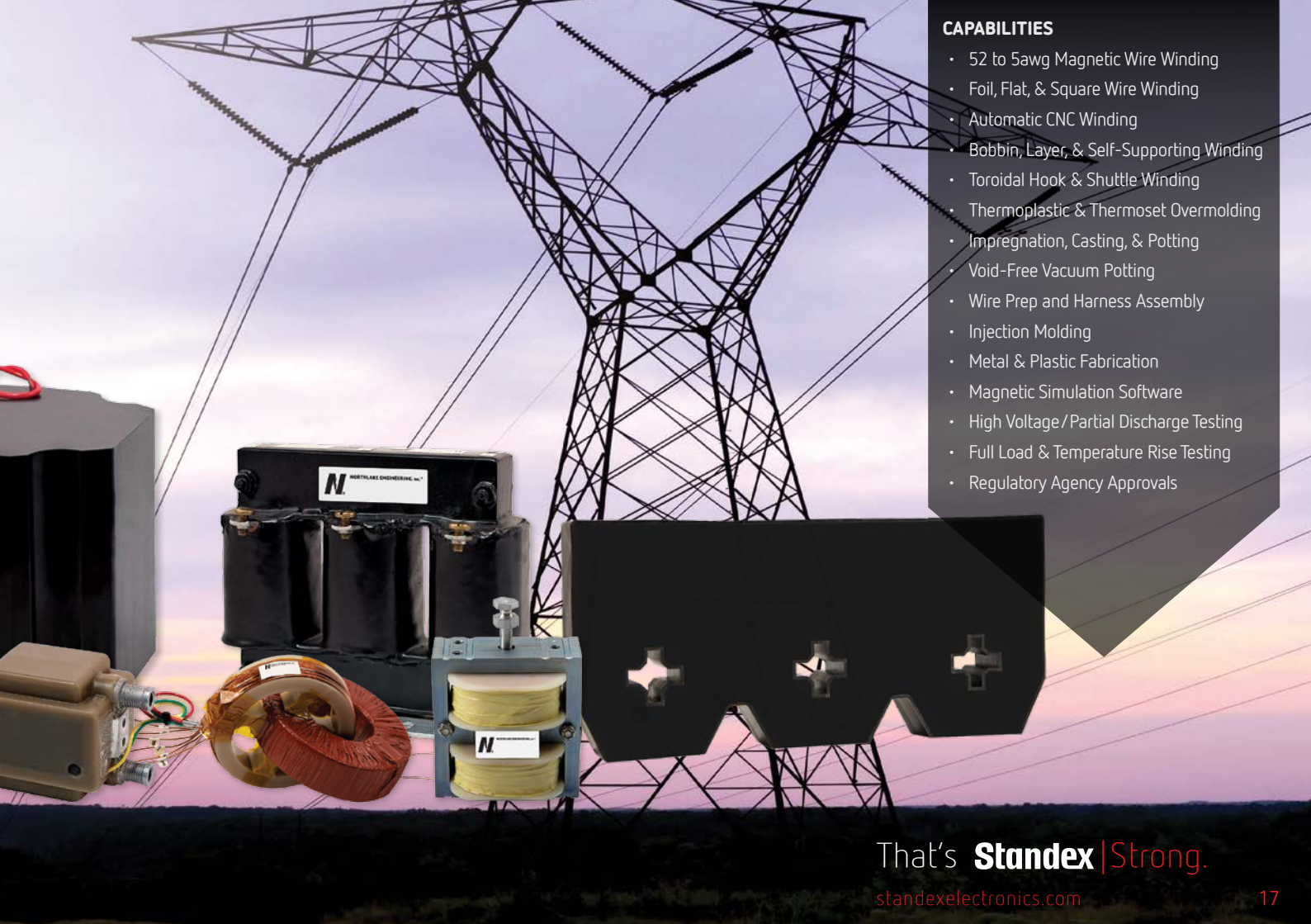
“Standex is a preferred supplier to the world’s leading manufacturers of electrical power distribution and management systems.”

We engineer power management solutions that operate in energy conservation technology systems, multifunction power system protection and control equipment, and medium voltage overhead distribution systems. Custom current sense products and modules are well suited for many smart grid and power monitoring applications. Our engineers routinely work with customers to develop custom solutions to their challenging projects.

Some value-added examples include:

- Shielding to isolate current from downstream components
- Special mechanical packaging
- Single or double sided PCB with ground planes to reduce noise
- Potting, casting, and impregnation for environmental protection, electrical isolation, and insulation system longevity





CAPABILITIES

- 52 to 5awg Magnetic Wire Winding
- Foil, Flat, & Square Wire Winding
- Automatic CNC Winding
- Bobbin, Layer, & Self-Supporting Winding
- Toroidal Hook & Shuttle Winding
- Thermoplastic & Thermoset Overmolding
- Impregnation, Casting, & Potting
- Void-Free Vacuum Potting
- Wire Prep and Harness Assembly
- Injection Molding
- Metal & Plastic Fabrication
- Magnetic Simulation Software
- High Voltage / Partial Discharge Testing
- Full Load & Temperature Rise Testing
- Regulatory Agency Approvals

That's **Standex** | Strong.

standxelectronics.com

“When you are designing the most advanced jet fighter in the world, you never want to hear “you’re grounded.” That’s why they trust Standex Electronics.”

With decades of meeting Mil-Specs and earning our way onto Mil PRF-27 and QPL (Qualified Products Lists), our engineering team understands how critical weight and space is to the industry. We understand both the magnetic components and the mechanical requirements of the application that allow

it to perform in harsh environments. We have in-house screening and qualification capabilities to verify the design and meet the industry requirements. The culmination of this experience and mindset helps our customers meet or exceed performance and project schedules.

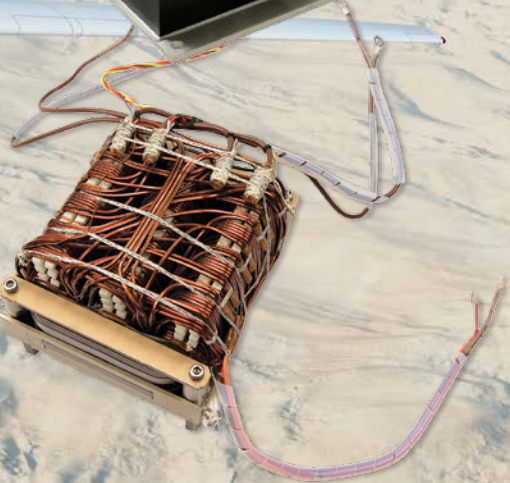


REGISTERED
AS9100



APPROVALS & SPECIFICATIONS

- AS9100 Certified
- ITAR Compliance
- MIL-PRF-27
- MIL-STD-981
- MIL-PRF-21038
- MIL-I-45208
- NASA-STD-8739.3
- NASA-STD-8739.4
- J - STD-001 to -006 Soldering
- MIL-STD-202 Testing
- 2-D/3-D Micro Focus X-ray



Standex | Smart.

MEDICAL

Powerfully transforming. "Our customer's products go on to influence people's daily lives and well-being. – We bring what seems basic – alive."

Standex Electronics has a strong background in custom medical transformer design and power supply. Our transformers and power supplies protect sensitive medical devices including those used in patient care environments, including but not limited to:

- Diagnostic Ultrasound
- Nuclear Imaging Systems
- Defibrillators
- Radiotherapy Systems
- Life Science Research Equipment
- Bone Density Scanner Power Isolation
- Mobile Imaging & Surgery
- Hi-Definition Video for MRI
- MRI Power Supplies
- Robotic Radio Surgery Systems
- Image Guided Radiotherapy Systems

Our knowledgeable personnel are experienced in agency submittals, international standards, and registrations. Standex Electronics has built long standing relationships with major Medical equipment manufacturers for decades.



CUSTOM IS STANDARD

- Customer Specific Package Design
- Optimized Voltage & Power Needs
- UL/IEC 60601 Compliant
- Robust Insulation Properties
- UL Recognized Insulation Systems

Our Products are Recognized...



That's **Standex** | Smart.

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“Planes, trains, automobiles and more... providing quality magnetics and power conversion components for diverse applications”

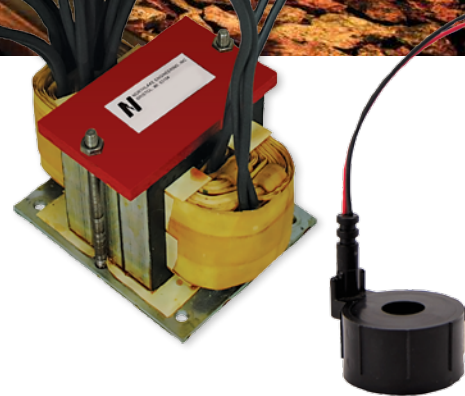


TRANSPORTATION

From custom designs operating power systems in harsh environment rail applications to high frequency solutions that function in engine controls, Standex Electronics Electronics delivers quality magnetics for a vast array of transportation applications.

Such applications include but not limited to:

- Immobilizer coils for ignition switches and automotive security systems
- Antenna coils for tire pressure monitoring receiver and security systems
- Dual-solenoid coils for anti-lock brake systems for truck air brakes



- High frequency inductors for engine control
- Voice coil to energize fuel injectors for marine outboard engine



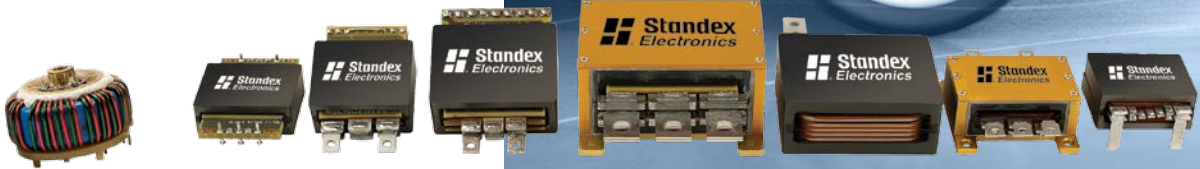
DESIGNED TO WITHSTAND

Design With Weight Reduction In Mind
 Ingress Protection Rating Per IEC60529
 Knowledgeable In:

- Critical Pollution Degree Levels
 - Shock Levels & Vibration Resistance
- IEC60721 Experience In Environmental Conditions

Robust Insulation Properties:

- Partial Discharge Test Certification
- Insulation Resistance
- Dielectric Withstand





Standex **Electronics**

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