

Standex-Meder Electronics

Custom Engineered Solutions for Tomorrow

Company Philosophy

Standex-Meder Electronics is a worldwide market leader in the design, development and manufacture of standard and custom electromagnetic components, including magnetics products and reed switch based solutions. Our magnetic offerings include planar, Rogowski, current, and low- and high frequency transformers and inductors. Our reed switch-based solutions include Meder, Standex and OKI brand reed switches, as well as a complete portfolio of reed relays, and a comprehensive array of fluid level, proximity, motion, water flow, HVAC condensate, hydraulic pressure differential, capacitive, conductive and inductive sensors.

We offer engineered product solutions for a broad spectrum of product applications to markets like automotive, medical, metering, military, aerospace, household and general industry.

Standex-Meder Electronics has a commitment to absolute customer satisfaction and customer-driven innovation, with a global organization that offers premier sales support, engineering capabilities, and technical resources worldwide.

The New Company



Division of

Standex
International
Corporation

(NYSE:SXI)

The New Company

- Standex Electronics + MEDER electronic = Standex-Meder Electronics
- Division of Standex International Corporation (NYSE:SXI)
- Headquartered in Cincinnati, OH, USA
- 3 continents – 9 manufacturing sites
- \$115M in annual revenue
- 1,300 global employees
- Global geographic coverage
- Comprehensive product portfolio
- Diverse industry exposure
- Worldwide sales and engineering infrastructure

Sites

□ Americas

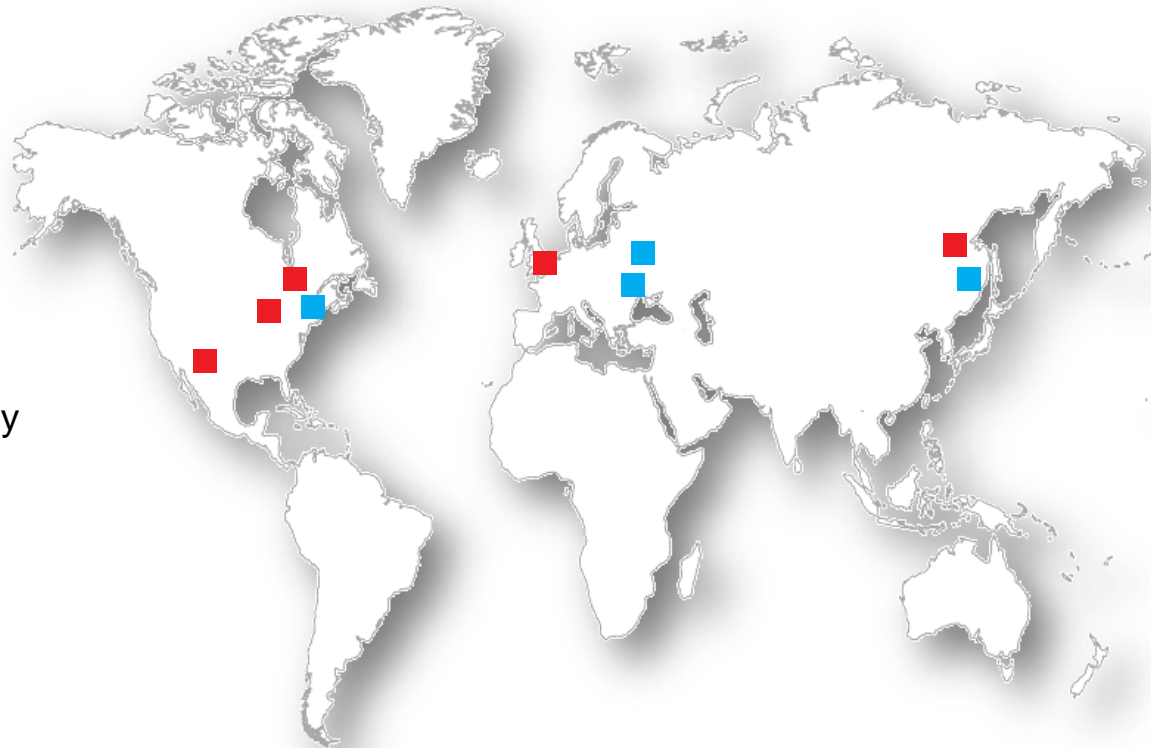
- Cincinnati, OH, USA
(9750 qm / 122 Mitarbeiter)
- West Wareham, MA, USA
(3000 qm / 21 Mitarbeiter)
- Oakville, ON, Canada
(3600 qm / 34 Mitarbeiter)
- Sonora, Mexico
(11300 qm / 502 Mitarbeiter)

□ Europa

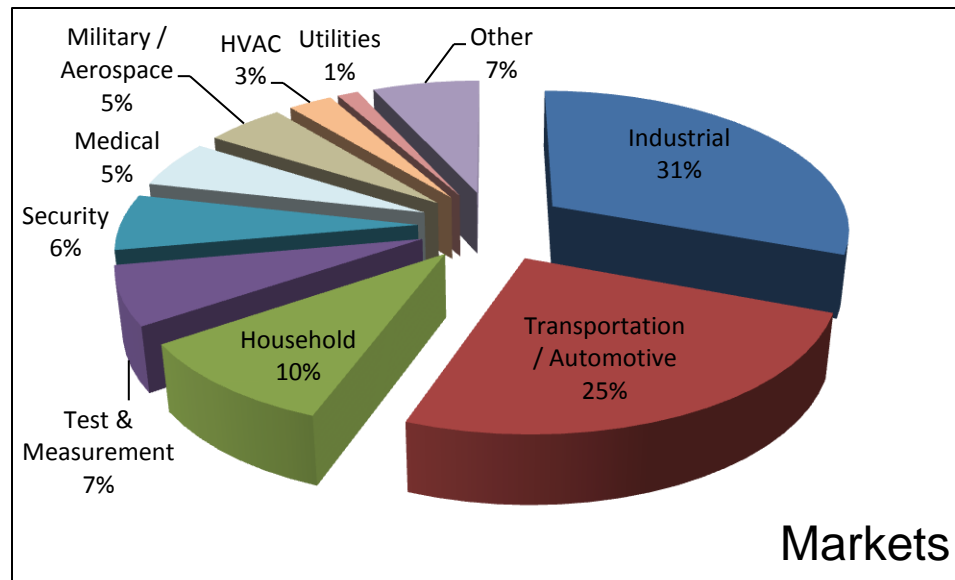
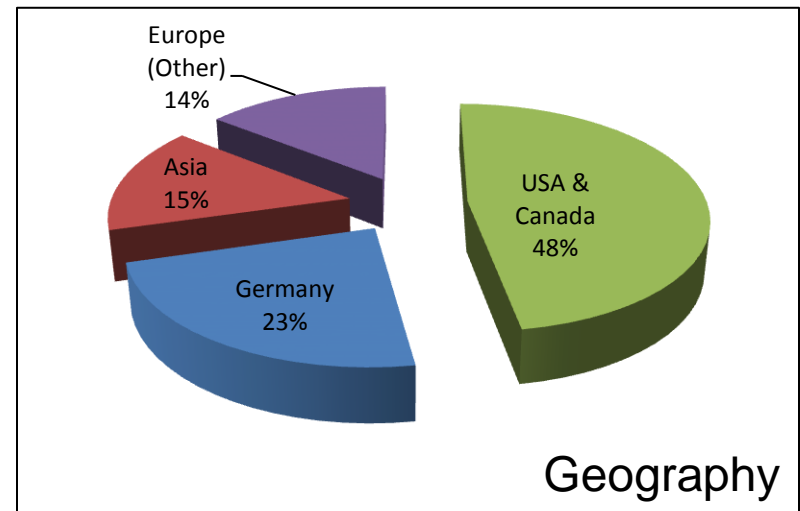
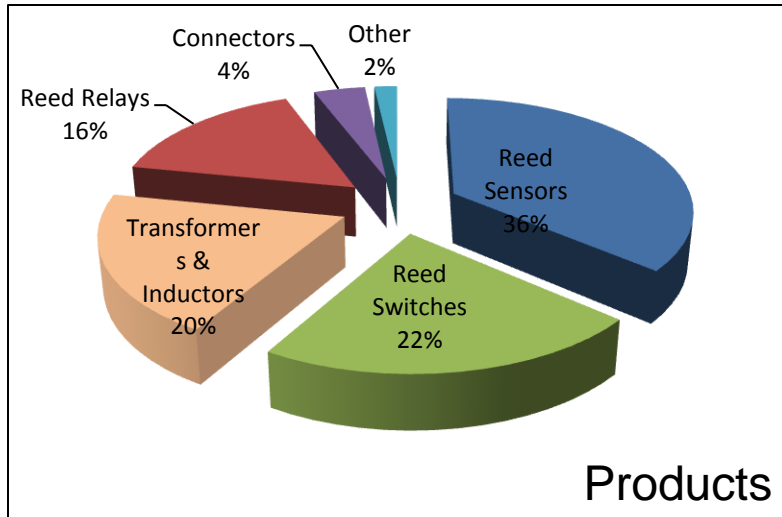
- Grossbreitenbach, Germany
(8500 qm / 145 Mitarbeiter)
- Singen, Germany
(5200 qm / 80 Mitarbeiter)
- Kent, UK
(8000 qm / 78 Mitarbeiter)

□ Asien

- Shanghai, China
(11200 qm / 215 Mitarbeiter)
- Tianjin, China
(6100 qm / 155 Mitarbeiter)



Strong Global Company



Product Portfolio

Reed Switch-Based Products:

- Reed Switches
 - Standex, Meder & OKI
- Reed Relays
- Reed Sensors
 - Fluid Level
 - Proximity
 - Motion
 - Water Flow
 - HVAC Condensate
 - Hydraulic Pressure Differential
 - Capacitive, Conductive and Inductive Technologies

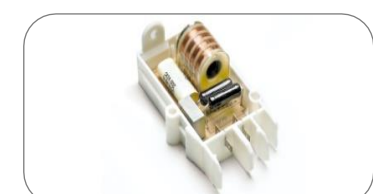
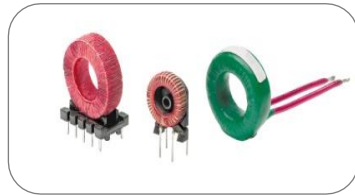
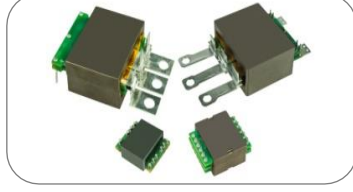
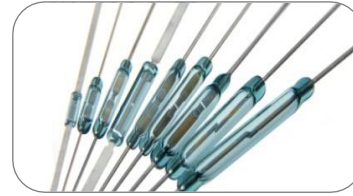
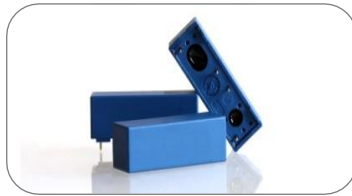
Magnetics:

- Planar Transformers & Inductors
- Current Transformers
- Rogowski Coils & Modules
- High- & Low-Frequency Transformers & Inductors
- Military, Space & Aerospace Magnetics

Other Solutions:

- Antennas & Coils
- Hermetic Connector Products

Adjusted Product Range



Markets Served



Alternative Energy



General Industrial



Industrial / Power



Mil-Aero



Space



Appliances / Household



Heavy Duty Truck



Lighting



Off Highway



Test & Measurement



Fluid Flow



HVAC OEM & Aftermarket



Medical



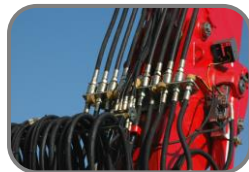
Recreational



Transportation / Automotive



Food Service



Hydraulics



Metering



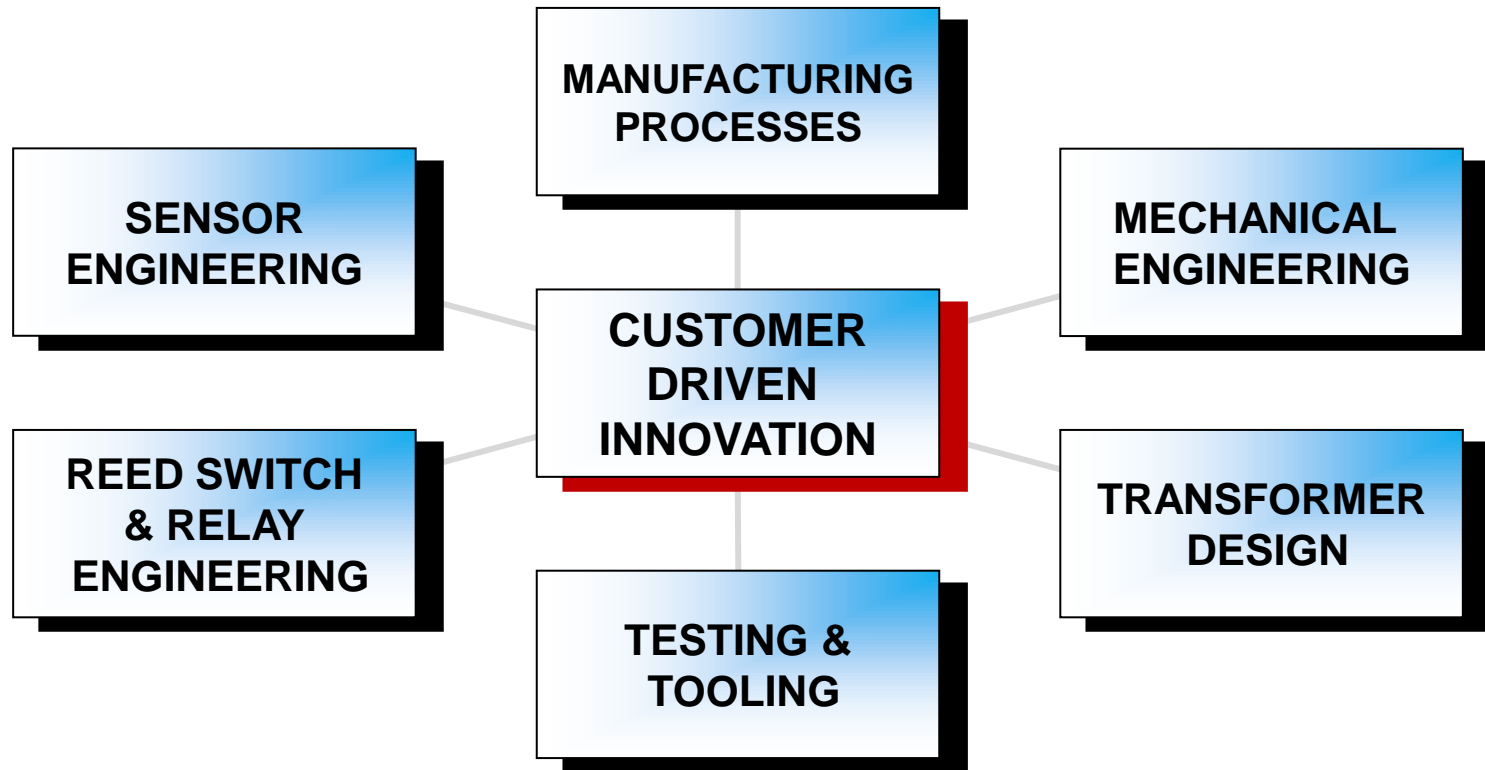
Security



Utilities

Capabilities Overview

Our unique combination of capabilities is a result of **strategic acquisitions** as well as **organic development** over the years.



We continue to leverage these capabilities to allow for **vertical integration** and **unique, innovative designs**.

Success factors / Competitive advantages

Success factors

- Excellent quality and very reliable products
- Technical know-how and expertise
- Product availability and service
- Orientation on market segments
- Customer-specific solutions
- Innovations
- Any case form possible by own tool shop and injection molding
- Full solutions

Competitive advantages

- Full range of standard products
- Customer-specific solutions and concepts
- Competent service and very good expertise of our employees
- Long-standing experience in the range of reed technology

Success factors / Competitive advantages



CUSTOMER DRIVEN INNOVATION. PREMIER WORLDWIDE CAPABILITIES.

COMMITMENT & EXPERTISE

Standex-Meder Electronics has a commitment to absolute customer satisfaction and customer-driven innovation, with a global organization that offers premier sales support, engineering capabilities, and technical resources worldwide.

Headquartered in Cincinnati, Ohio, USA, Standex-Meder Electronics has eight manufacturing facilities in six countries, located in the United States, Germany, China, Mexico, the United Kingdom, and Canada.

MANUFACTURING

- Auto AT Switch Sorting
- Bobbin and Toroidal Winding

- Auto Termination
- Coil Molding & Packaging
- Insert and Thermoset Molding
- Low Pressure Molding (Hot Melt)
- Pick & Place – Vision & Camera System
- Plasma Surface Treatment
- Plastic Injection Molding
- Potting - 2 Component
- Progressive Stamping
- Reflow Oven – Multiple Zone Convection
- Reed Switch Manufacturing
- Reed Relay Design and Manufacturing - SMD, Low Thermal, High Insulation, High Voltage, High Frequency, Latching and Atex
- Selective Soldering

- Sensor Packaging
- Transformer Design And Manufacturing
- Wave soldering

ENGINEERING

- Electronic sensor engineering
- Circuit Design and PCB Layout
- Patented Conductive Sensors
- Patented Inductive Sensors
- 3-D CAD Modeling
- 3-MS Magnetic Sensor Mapping
- EMS Software
- PCB Prototyper
- Quick Turn Samples
- 3-D Printing

TESTING & TOOLING

- Automated Assembly and Test Systems
- Environmental and Durability Testing
- Life Testing

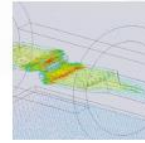
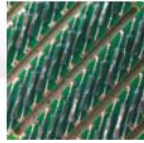
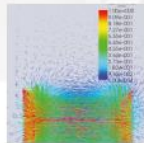
Specialized Lab Testing Equipment including but not limited to:

- Network Analyzers
- Fluxmeters

- Nanovoltmeters
- Picoammeters
- Destructive Pull Testers
- Gauss / Teslameters

QUALITY/ LAB CAPABILITIES

- Certifications: AS9100, ITAR, ISO9000, TS16949
- SPC Data Collection
- Fully Equipped Certified Test Labs
- Burn-in and Life Testing
- Complete, In-House Machine Shop
- Corona Discharge Testing Capabilities
- Microscopic Investigation / DPA
- Moisture Resistance and Seal Testing
- Radiographic
- Salt Fog and Solderability
- Scott T Angular Accuracy
- Terminal Strength
- Thermal Cycling
- Mechanical and Thermal Shock, Temperature Rise and Vibration



Certifications

TS16949



ISO9000



AS9100



ITAR

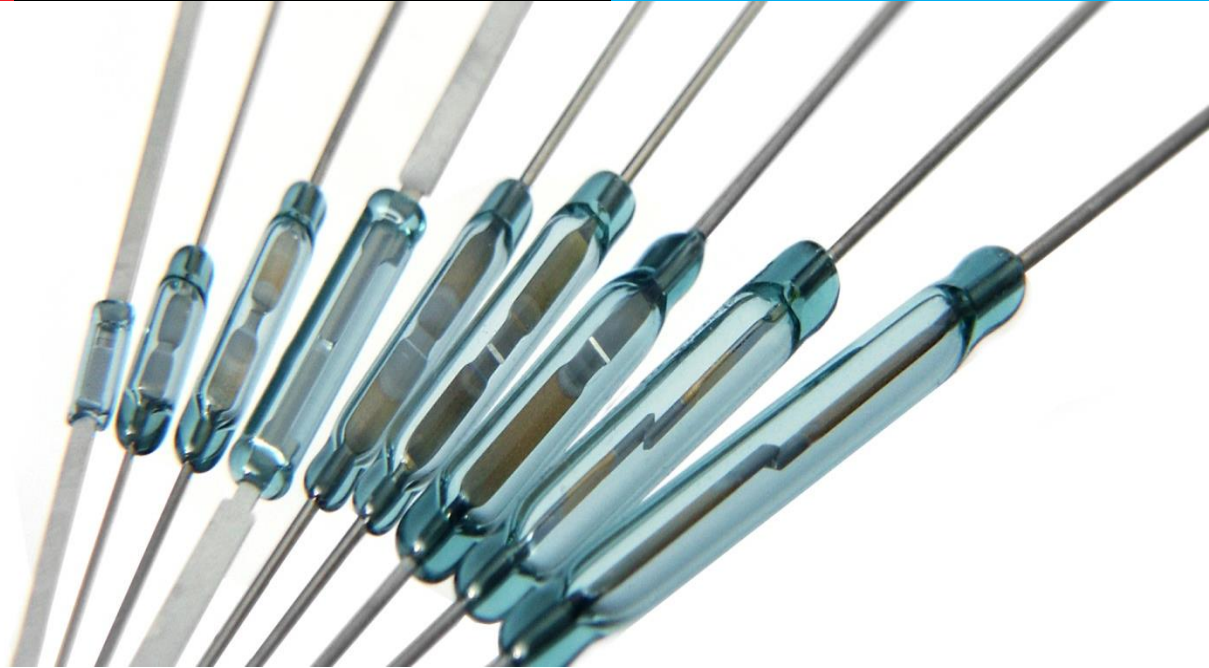




Reed Switches

Reed Switches

- 3 Leading Brands
 - OKI
 - Meder
 - Standex



Custom
Engineered
Solutions for
Tomorrow

OKI
OKI Sensor Device Corporation

Your Source for Reed Switches Worldwide

Your Source for Reed Switches Worldwide

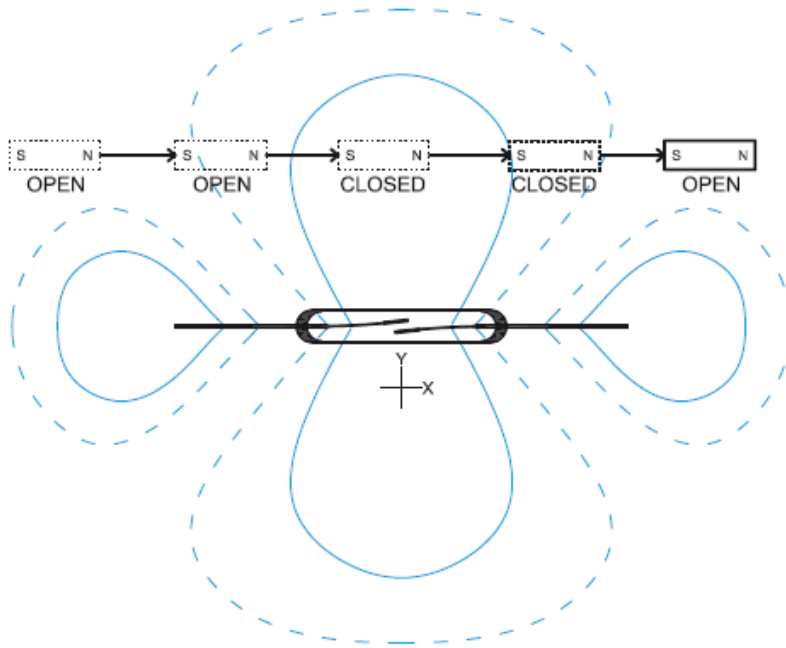
The Basic Reed Switch

- A pair of low loss ferromagnetic reed blades hermetically sealed in a glass envelope and filled with inert gas
- Ends will assume opposite magnetic polarity when under influence of a magnetic field
- When the magnetic flux density across the gap is sufficient the reed blades will make contact



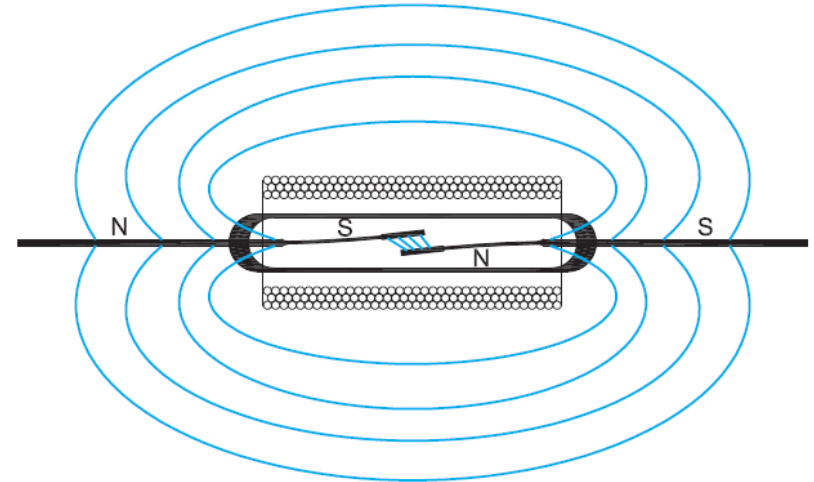
The Basic Reed Switch

Reed Switch with a Permanent Magnet



Areas of Pull In and Drop Out with
PARALLEL MAGNET ORIENTATION

Reed Switch with a Coil



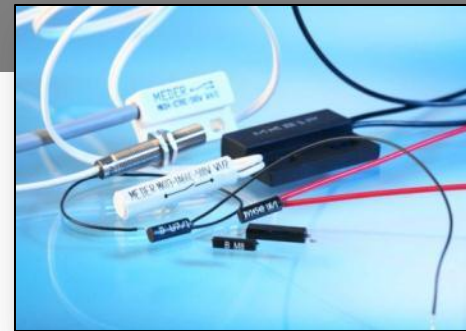
In a Reed Relay, the Reed Switch
uses an electromagnetic coil for
activation

Reed Switches Advantages

- ❑ No physical contact between sensing units necessary
- ❑ No power supply required
- ❑ Hermetically closed, no influence of dust or corrosion; long term reliability in heavy duty environment
- ❑ Also suitable to switch very low current and voltage (low level applications)
- ❑ High life expectancy on the switch (Low-Level >10e9)
- ❑ High magnetic sensitivity, so good size distance between switch and magnet possible; up to 50mm possible
- ❑ No switching noise
- ❑ High temp application up to 150°C and higher
- ❑ Low contact resistance
- ❑ Small size
- ❑ Inexpensive solution
- ❑ Passive, no external electrical power required to close the switch

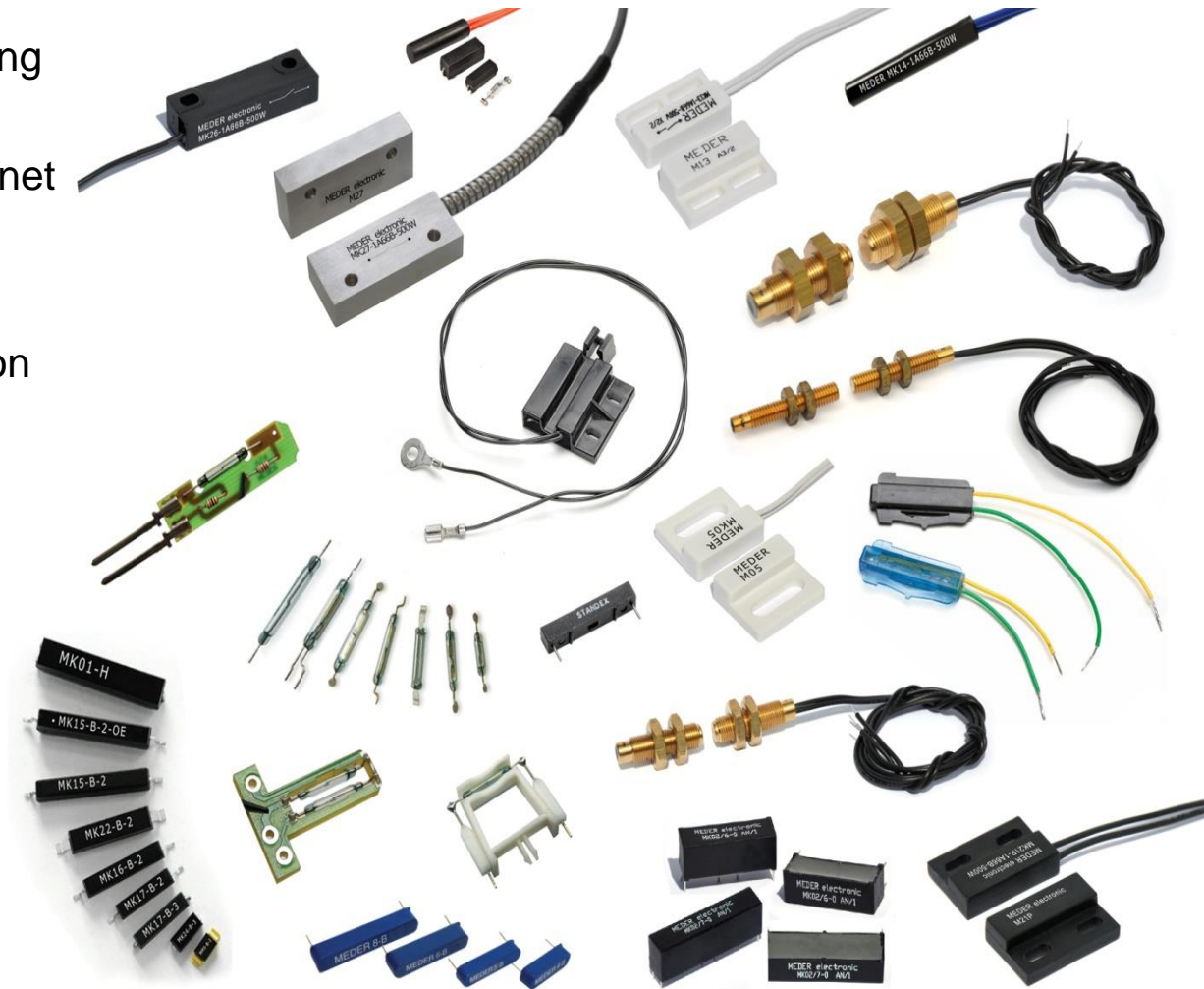


Reed Sensors



Reed Sensors

- ❑ Reed Sensors for demanding environmental conditions
- ❑ Sensors with included magnet
- ❑ Reed Sensors for panel mounting
- ❑ Cylindrical proximity / motion sensor
- ❑ Threaded Reed Sensors



Reed Sensors

- Level Sensors
 - Capacitive
 - Conductive
 - HVAC Condensate
 - Hydraulic Pressure Differential
 - Inductive
 - Water Flow



Reed Sensors

- Level Sensors
 - Capacitive
 - Conductive
 - HVAC Condensate
 - Hydraulic Pressure Differential
 - Inductive
 - Water Flow



Reed Relays

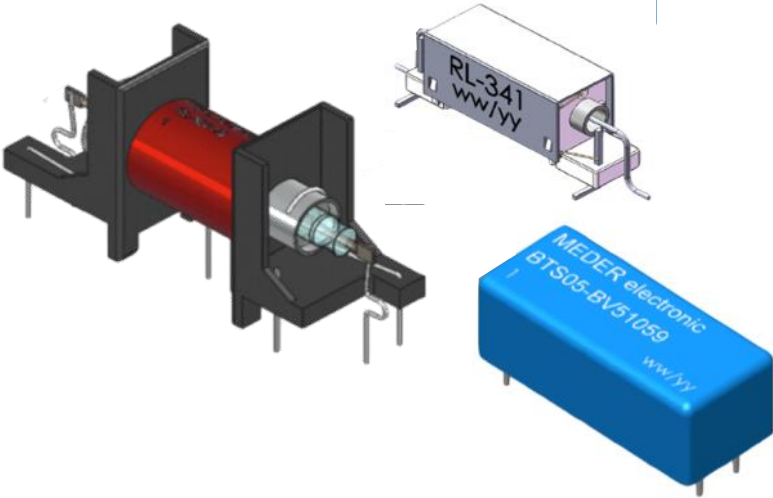


Reed Relays

Instrumentation Grade



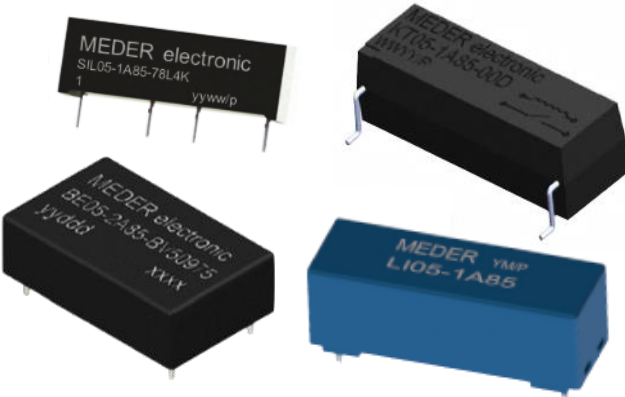
Specialized Low Thermal



High Insulation Resistance



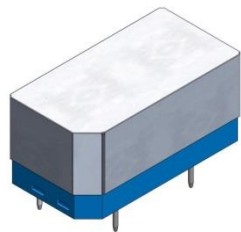
High Power



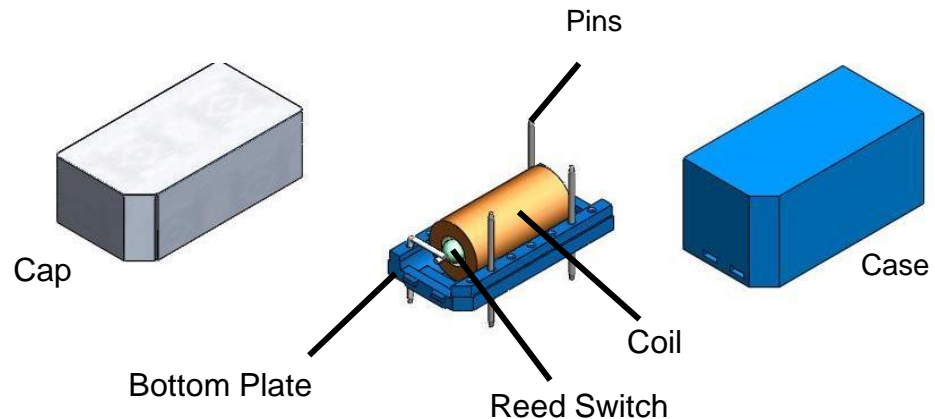
Reed Relays

□ Functionality of a Reed Relay:

- The control circuit will be activated by a relay coil (3 to 48V)
- This generates a magnetic field, which activates and closes the ferromagnetic contact leads
- Load circuit is closed
- If the coil power is disconnected again, the contact leads will return to their mechanical rested and normally open state
- Load circuit is opened again



Finished DIL Relay





Magnetics

Planar Transformers

- For demanding applications like military and aerospace
- High-performance from a compact, low-profile package:
 - SX-40 Series with power ratings to 180W/360W
 - SX-55 Series with power ratings to 350W/700W
 - SX-58 Series for 1KW to 5KW applications
 - SX-64 Series for 1KW to 10KW applications
- Manufactured to exacting standards with precise electrical characteristics like capacitance, output and aspect ratio
- Mounting and termination options are available to suit virtually any application requirements



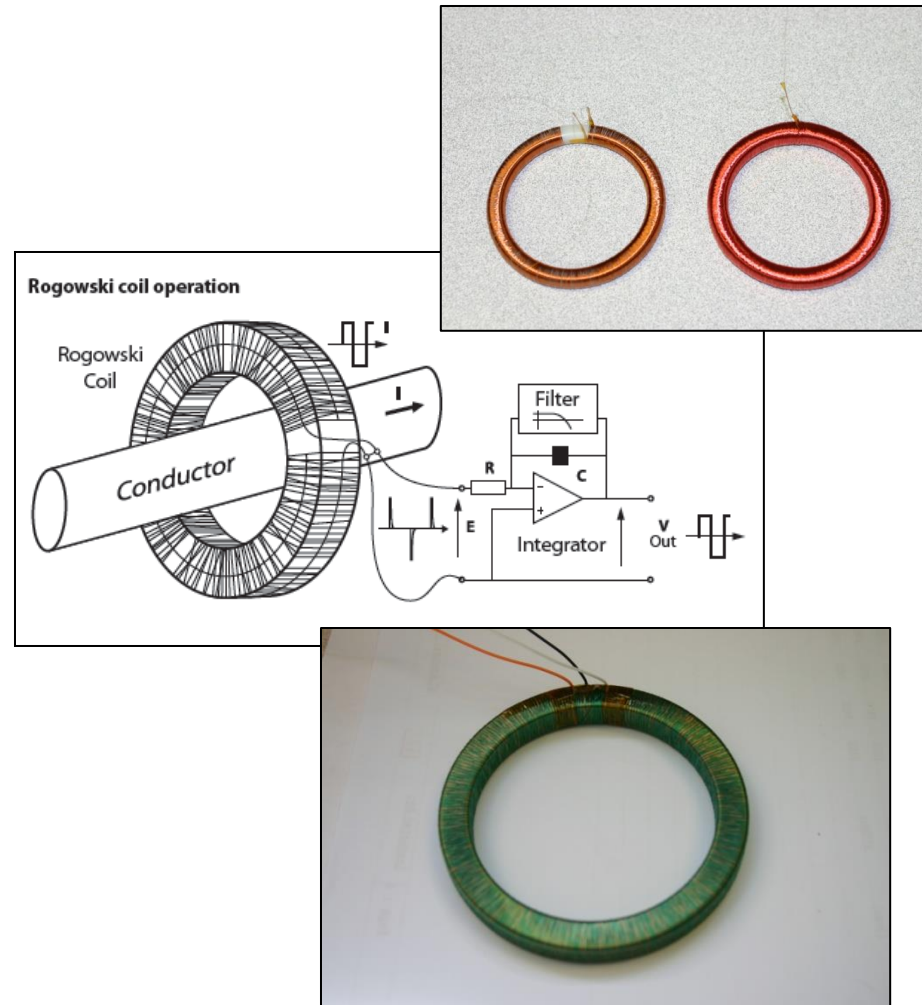
Current Transformers

- Standard products including CSB series plug-in solutions for PC board mounting
- Custom engineered products designed for extreme conditions and hazards - like temperature, radiation, humidity and more
- Designs are available in open toroidal construction or custom moldings - with virtually any current ratio, output or capacitance desired
- Many termination options are available - including P.C. mount, flying lead, custom leads and connectors, and more



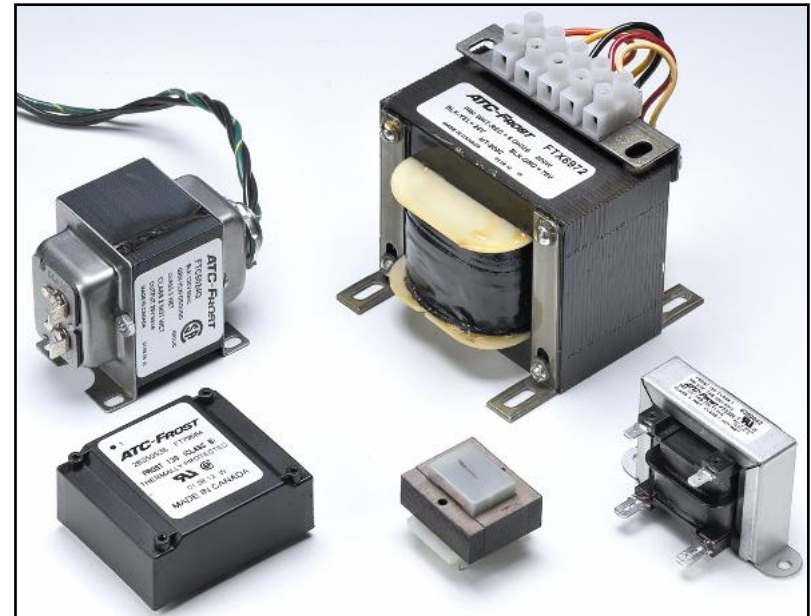
Rogowski Coils / Modules

- Ideal for High Current Metering Applications
- Rogowski coils are wire wound “air” core toroids which are used to measure AC current
- The AC current that is measured creates a magnetic field which induces a voltage in the coil that is proportional to the change in current
- This innovative technology has been used in high current metering applications with a very high accuracy



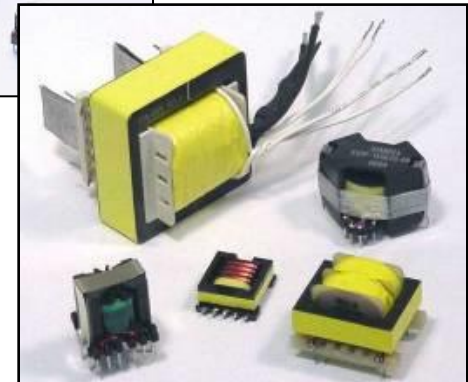
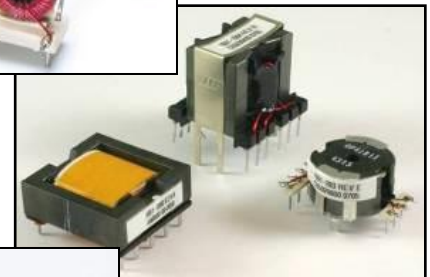
Low Frequency Magnetics

- ❑ Class 2 transformers, wired, in plastic casing
- ❑ Chokes mounted in L bracket or channel frame
- ❑ Toroidal common mode chokes
- ❑ PC mount current transformers
- ❑ Class 2 energy limiting wall plug, wired, cord connected or PC mounted transformers
- ❑ Autotransformers in open, enclosed or toroidal designs
- ❑ Control circuit transformers



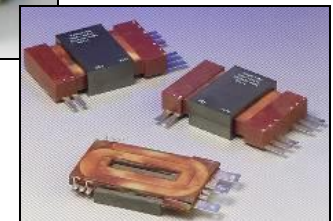
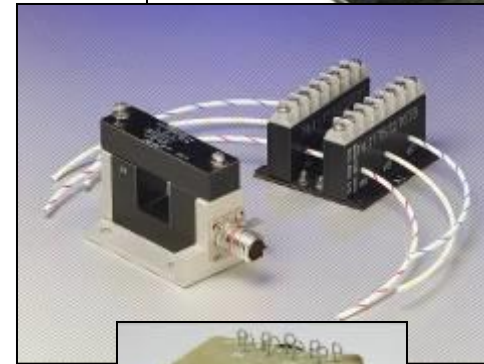
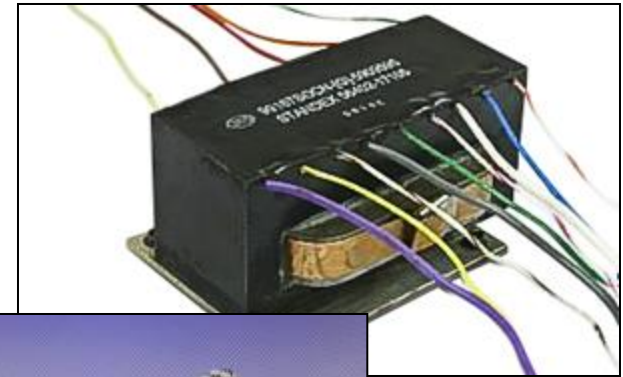
High Frequency Magnetics

- Variety of high frequency custom and standard transformers, inductors and chokes in the in the 20 KHz to RF range
- Smallest surface mount toroidal power "chip" inductors in the industry
- Toroidal common mode chokes can be specified with exact value required from an economical family of standard products
- Can be configured for vertical or horizontal mounting, with or without base
- Standard or custom designs can be proven in industry-leading environmental and electrical test lab



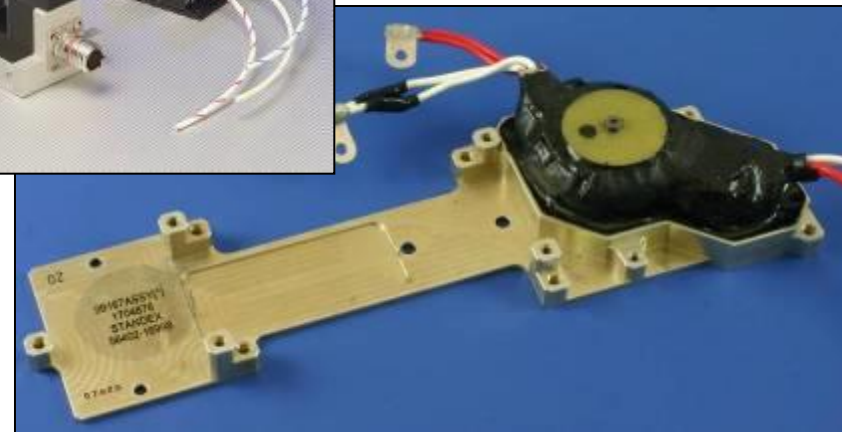
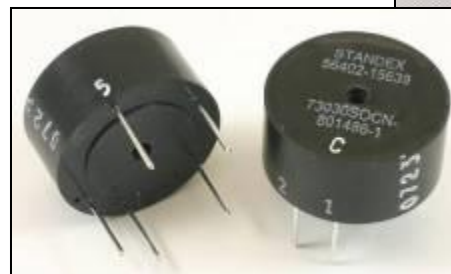
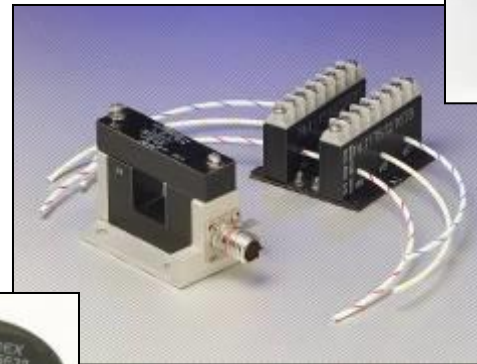
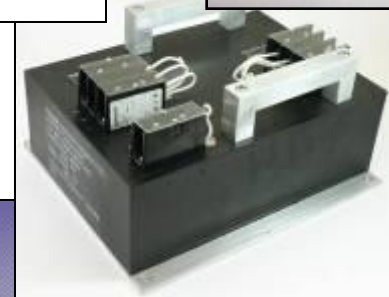
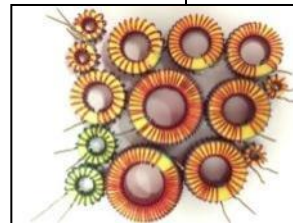
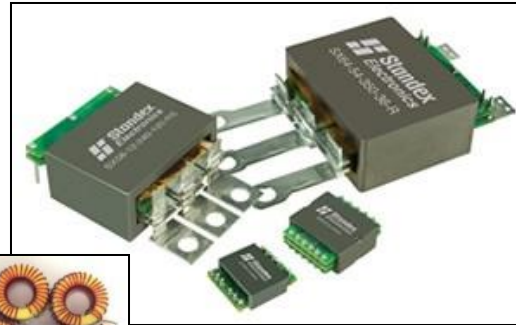
Mil-Aero Magnetics

- ❑ Experienced in providing "flight" assemblies that are manufactured to the most stringent quality standards then proven in an industry leading environmental and electronic test lab
- ❑ Stringent quality standards - Mil-Std 202, Mil-Std 981, Mil-PRF 27, NASA standard NHB 8739.3, AS9100, and ITAR
- ❑ Military and aerospace design engineers trust Standex for planar transformers, Scott-T transformers, power supplies and custom electronic components



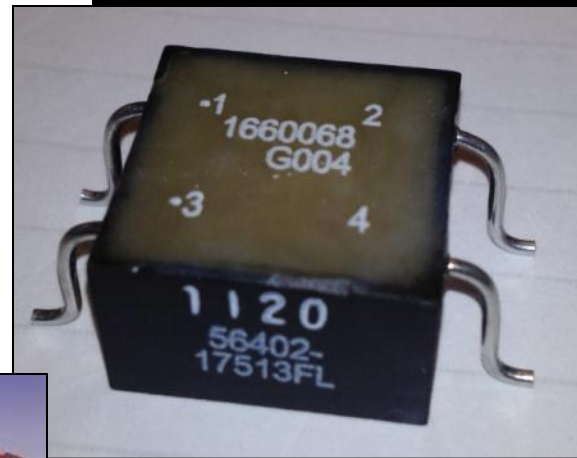
Magnetics for Mil-Aero Applications

- ❑ Aircraft controls
- ❑ Satellite / Space applications
- ❑ Engine controls
- ❑ Naval shipboard power supplies
- ❑ Current transformers
- ❑ Air core military radio antennas



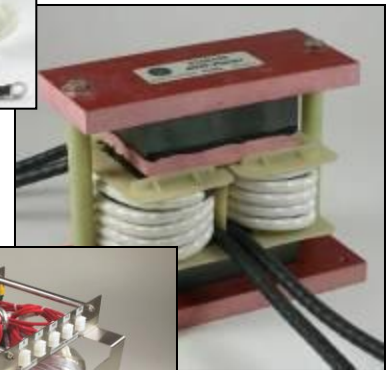
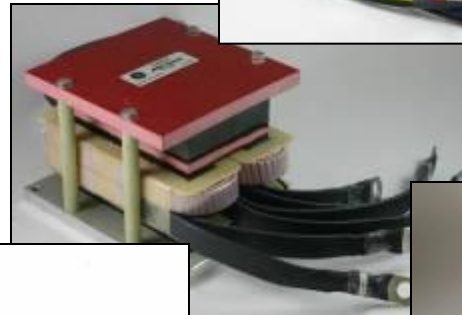
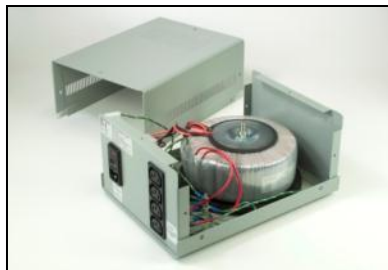
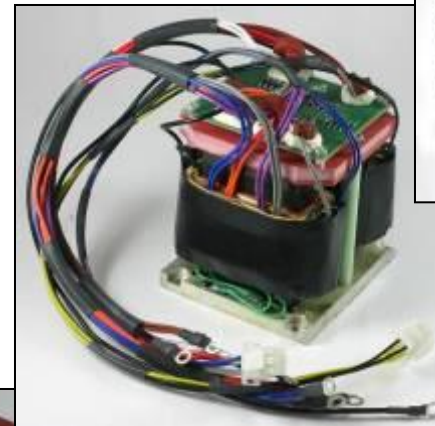
Magnetics for Space Applications

- ❑ Encapsulated PC-Mount Toroidal Transformers with Open Center Hole for High-Reliability applications
- ❑ Flight inductors for space applications
- ❑ Planar Transformers for space satellite applications



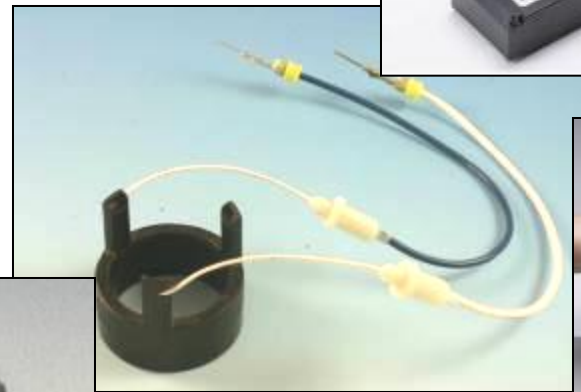
Magnetics for Medical Applications

- ❑ Power isolation for bone density scanner
- ❑ Mobile imaging / surgery
- ❑ Hi-Definition video for MRI
- ❑ MRI power supplies
- ❑ High frequency transformers
- ❑ Current transformers



Magnetics for Industrial Power

- ❑ Injector coil for 2-cycle engine
- ❑ Irrigation control systems
- ❑ Proximity sensing
- ❑ Battery driven DC-DC converters



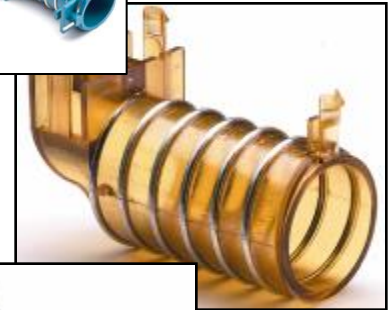
Magnetics for Metering Applications

- Current Sense Transformer for smart power meters
- Molded reed switches for power meters



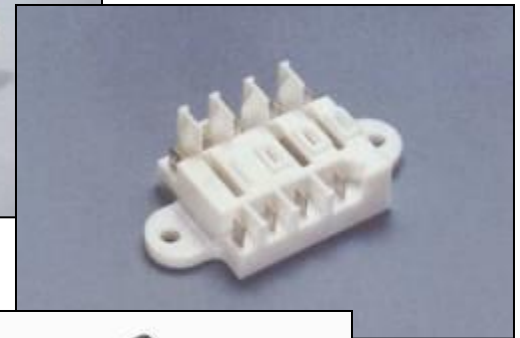
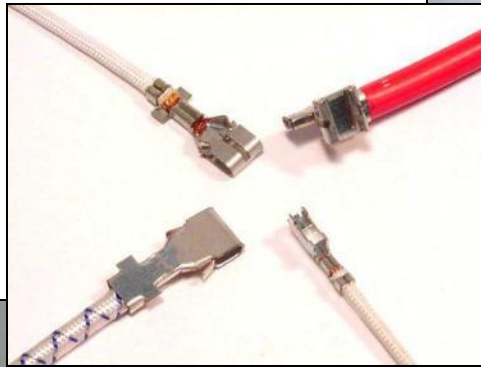
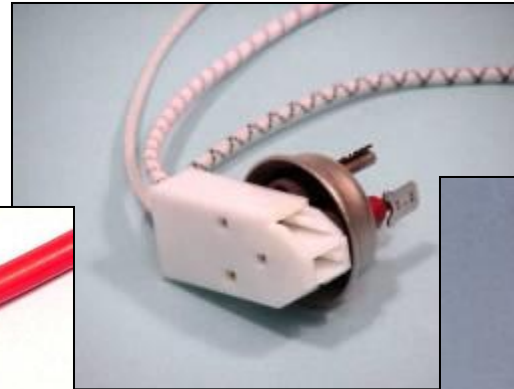
Antennas & Coils

- Standex supplies antenna coils and components using leading edge design and manufacturing technologies
- Our products are used throughout the world in innocuous environments like automotive keyless entry, or garage door openers to military sonobuoys in remote locations
- Immobilizer security antennas are used in many automotive, motorcycle and marine ignition systems
- Antenna coils are found on in-home security systems
- 125 KHz RFID antenna receivers can be custom molded into any configuration for virtually limitless applications



Connectors for HVAC Applications

- ❑ Air conditioner compressor
- ❑ Current transformers
- ❑ Push-on connectors



Visit standexmeder.com for more ...

Standex MEDER ELECTRONICS
Custom Engineered Solutions for Tomorrow

Got Questions?
Click Here to Get Answers

Submit RFO | Request Form | Click to Talk | Click to Chat

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- Reed Switches
- Proximity Sensors
- Fluid Level Sensors
- Transformers & Inductors
- Current Sense Transformers
- Planar Transformers
- Antennas & Coils
- Hermetic Connector Products
- MEDER Reed Switches
- MEDER Reed Relays
- MEDER Reed Sensors

CONSERV

Standex.Meder Electronics is a global leader in the design, development and manufacturing of custom magnetic components. Our product portfolio includes magnetics – from high-frequency, and mil-aero magnetics – and reed switch-based products for proximity, motion, hydraulic pressure differential, capacitive, conductive and inductive sensing.

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Posted: August 18, 2012
AHR Expo 2013, Dallas TX, USA

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Standex MEDER ELECTRONICS

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Products | Company | Applications | **Technical** | Marketing | Contact | Services | Jobs

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- Technical Papers
- Application Notes
- Useful information
- Soldering
- MEDER-COTO Cross-Reference
- Glossary
- FAQs

MEDER global

Technical Overview

How a Reed Switch Works
Watch Now

How a Reed Switch is Made
Watch Now

Newsroom
KT Series of High Isolation Reed Relays for Surface or Through-Hole Mounting
Ideal for green applications requiring high isolation characteristics and small profile
[more]

Reed Sensor MK11 in Brass Version
MK11 Series Threaded Reed Sensors are even more diversified with the addition of a new brass...
[more]

Welcome to the MEDER electronic Technical Section where you will find a complete tutorial as well as detailed descriptions of typical applications for Reed Switches, Reed Relays, and Reed Sensor products. This section also provides a full glossary of terms, technical papers and life test data. Please use the top and left menu bar to guide you through this section. For any additional needs or technical questions, please contact our sales office at info@meder.com.



Thank You for Your Attention