Application Alley

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Reed Sensors for Automotive LED Applications

“Lighting the Way With Innovation for Automotive LED Applications”

Standex MEDER ELECTRONICS

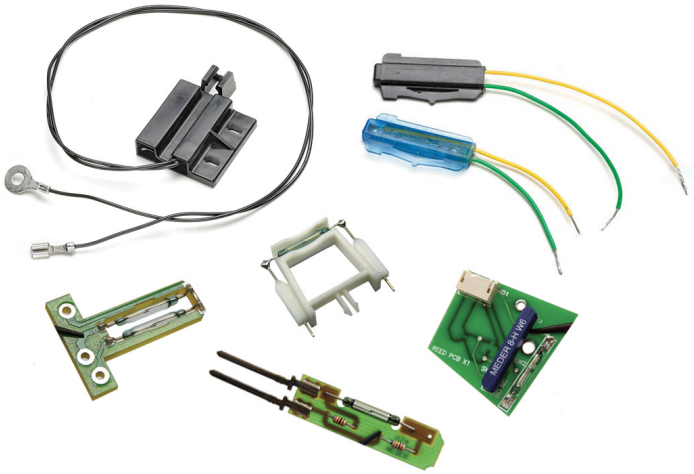
Custom Engineered Solutions for Tomorrow

Simplifying design, improving reliability, reducing components

Automakers are increasingly adopting LEDs as a preferred solution for internal indicator lights, running lights, tail lights, and other applications in which incandescent bulbs were previously used. The reasoning behind this switch is five-fold: LEDs can lower warranty costs, they draw less average current, they do not have an initial turn-on surge current, they allow for component reduction, and offer a more reliable and longer working life. By switching to LEDs, automakers can enjoy improved efficiency, reliability, and power consumption savings.

The use of LEDs also allows for important changes in electrical design. Since there is no large initial in-rush when an LED is turned on, it becomes much easier to use a reed switch to turn indicator lights on and off. With incandescent bulbs, an additional resistor was often required to reduce the in-rush current and prolong the life of the switching device. Since LEDs use less power, switching via reed switch becomes much simpler and more feasible.

Standex-Meder reed switches are already present in many automotive applications, including gear shift and brake pedal position sensing, speed sensors, washer fluid, coolant, and brake fluid level sensors and a wide range of other safety feature applications. It is therefore no surprise that reed switches also offer a variety of benefits when used in automotive LED lighting applications. Firstly, they are capable of switching most interior automotive lighting loads directly. Reed sensors can be directly mounted to a printed circuit board or electrical circuit to make instant electrical transfer.



Our reed switches are also robust enough to endure the conditions inside a vehicle. The switching element in Standex-Meder reed switch sensors is hermetically sealed, protecting the sensor from its surroundings. As a result, reed sensors can operate over a wide range of temperatures (-55°C to 155°C) and function in dirty, corrosive under-the-hood environments without any negative effects on their operating characteristics. Lastly, unlike competing types of sensors, reed switch sensors are not EMI/RFI susceptible.

Standex-Meder's products also offer adaptability. Reed switch position sensors can be actuated from several different directions, providing manufacturers with the flexibility to simplify mechanical system design.

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They can even provide remote sensing at distances greater than 1 inch (25.4mm). This is especially applicable in more complicated areas such as visor and glove box lighting. In addition, during the system design process, the hysteresis (the distance between the point of switch closure and switch open point) can be adjusted 30-95% to fit the application. This is not true of most other types of sensors.

With the ever increasing pressure for automobiles to perform better, more sustainably, and with more features, LED lighting powered by Standex-Meder reed switches offers a replacement for incandescent lighting that both simplifies and optimizes system design.

Why LED Lighting

- Lower warranty costs
- Greater efficiency
- Leads to component reduction
- Draw less average current
- No initial turn-on surge current
- Long lifespan

Why Standex-Meder Reed Sensors

- Repeatability, high-performance and reliability
- Not EMI/RFI susceptible
- Capable of switching most interior lighting loads directly
- Hermetically sealed
- Draw zero current
- Ability to adjust hysteresis 30-95%
- Operating temperatures from -55°C to 155°C
- Long life with millions of trouble-free switching cycles
- Can be actuated from several different directions
- Provide normally closed, normally open, and Form C operation

Component Corner (Expert Insights)
Paul Linsley
Product Manager, Standex-Meder

"When automotive manufacturers make the move toward LED indicators and lighting, they have a great opportunity to take a fresh look at their entire electrical system design. When they do so, we hope they'll realize that the flexibility and durability of a reed switch sensor can eliminate many common design constraints – concerns about the placement of the sensor, the need for additional circuitry, issues with the harsh under-the-hood environment – that can overcomplicate and impede a system. The most elegant design is often the most simple, and reed switch sensors provide a simpler solution that will last for millions of operating cycles."

Find out more about our ability to propel your business with our products by visiting www.standexmeder.com or by giving us a hello@standexelectronics.com today! One of our brilliant engineers or sales leaders will listen to you intently.

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About Standex-Meder Electronics

Standex-Meder Electronics is a worldwide market leader in the design, development and manufacture of standard and custom electro-magnetic 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 in the automotive, medical, test and measurement, military and aerospace, as well as appliance and general industrial markets.

Standex-Meder Electronics has a commitment to absolute customer satisfaction and customer-driven innovation, with a global organization that offers 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.

For more information on Standex-Meder Electronics, please visit us on the web at www.standexmeder.com.

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