Standex MEDER ELECTRONICS

Custom Engineered Solutions for Tomorrow

A Global Leader in the Design, Development, and Manufacture of Sensors and Magnetic Components

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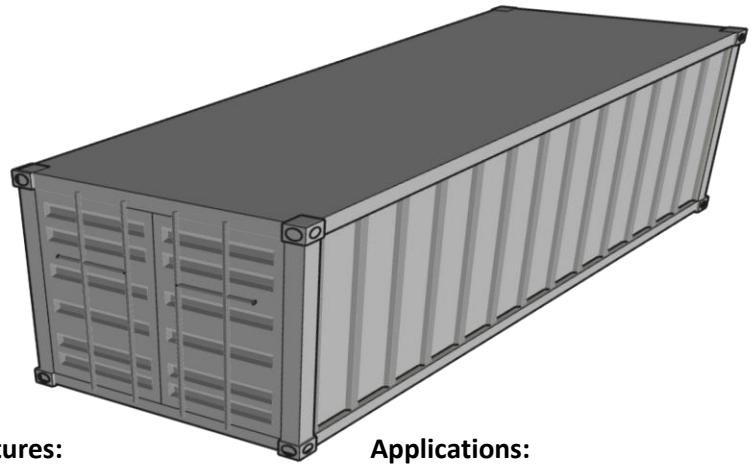
Smart Technology for Shipping Containers – Industry 4.0

- To turn shipping containers into connected modes of transport, they are equipped with sensors that collect data on their current position and the condition of their cargo, including parameters such as temperature, air humidity, and amount of shocks sustained.
- Sensors can be used to detect and monitor the diagnosis during maintenance intervals.
- The GPS position allows the customer to locate the exact location of the goods and optimize their logistic's process.
- In collaboration with digital IT infrastructures for controlling logistic processes – business automation allows shipping containers to be optimally predisposed.



Features:

- Hermetically sealed
- Minimal space required
- Corrosion resistant
- Good implementation
- Invisible
- Cost effective solution

Applications:

- Position Detection
- Temperature
- Diagnosis
- Door contact
- On/Off Switch
- Shock Detection

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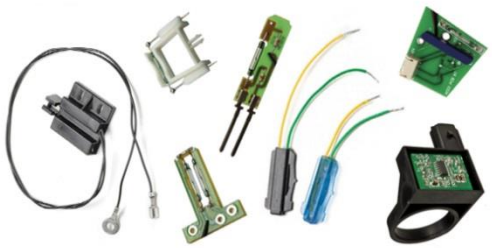
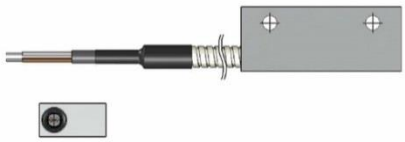
Customized Reed Sensors



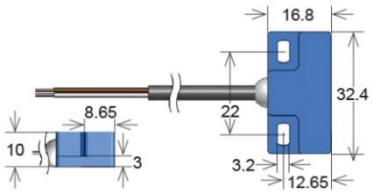
Customized Sensor Solutions allows us to consider the needs and desires of our cutomers to develop and produce custom innovations for them with the highest quality requirements. Sensors from Standex-Meder are characterized by high reliability, no power consumtion, non-contact switching, and are hermetically sealed in a robust and shielded housing.

Technical Specifications – MK27 Reed Sensor

Specifications MK27	
Contact form	1A, 1B, 1C, 1E
Rated Power (W)	0 up to 100
Switching Voltage (VDC)	0 up to 1000
Switching Current (A)	0 up to 1
Carry Current (A)	0 up to 1

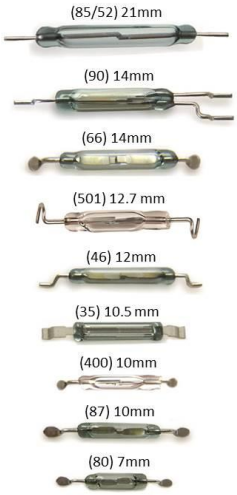


MK02 // MK02/6 - Metal Detection Reed Sensor



Metal detection reed sensor products are a great alternative to inductive proximity sensors. Available in screw fastened flange mount and PCB through-hole (THT) designs, these ferromagnetic metal detection sensors are suitable for a wide range of applications such as position control and security uses of doors.

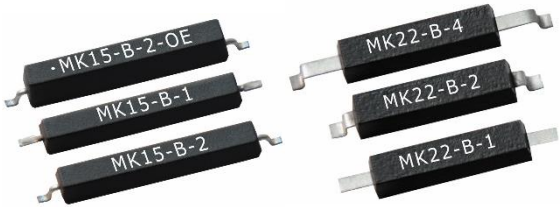
SMD Reed Sensors – MK23 / MK15 / MK22



Spezifications MK27	
Contact form	1A, 1C
Rated Power (W)	0 up to 100
Switching Voltage (VDC)	0 up to 1000
Switching Current (A)	0 up to 1
Carry Current (A)	0 up to 2,5

Surface mount reed sensor products are an SMT design used in switching and sensing applications. Choose from bare glass or rugged thermoset overmolded versions in SPST-NO, SPST-NC or SPDT changeover contacts. Choose from 9 different switch models from 7mm and up, ranging from 0-100W and switch voltages up to 1,000 VDC as well as 5 different surface mount lead designs. They are typically supplied in tape and reel and are ideal for automatic pick and place.

Spezifications	MK15	MK22
Contact form	1A, 1B	1A
Rated Power (W)	0 up to 10	0 up to 20
Switching Voltage (VDC)	0 up to 200	0 up to 200
Switching Current (A)	0 up to 0,5	0 up to 1
Carry Current (A)	0 up to 1	0 up to 1,25



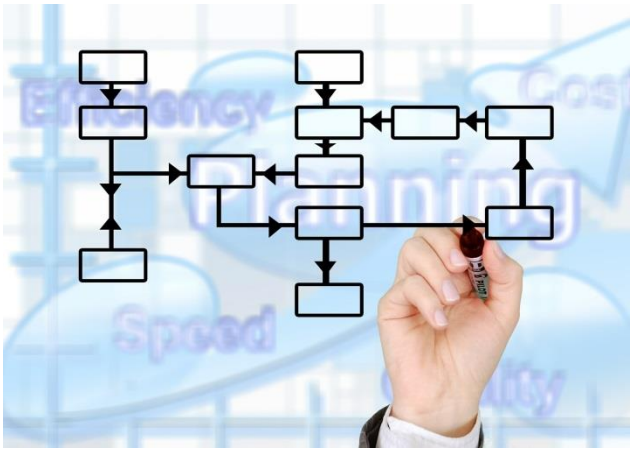
Logistical Challenges

Most of the global exchange of goods is made by the Merchant Marine, which contributes about 98 percent for intercontinental and 62 percent for intra-European trade. The efficiency of maritime trade is particularly determined by a productive transport infrastructure. Important today, is the transport of bulk goods (ore, coal and especially oil), as well as the fast container and general cargo traffic. Trade between the major economic regions of the world, East Asia, Europe and North America is handled largely by ship.

Future Transportation

In the world of today, shipping containers do not have their own power supply system, nor their own sensors due to the high regulations, they need a robust and simple technology which fulfills the demands in terms of vibration, temperature, dirt, and moisture.

Customers can track their goods via the internet and know exactly where they are, and if the cold chain for perishable products was interrupted, Industry 4.0 makes this noted.



Networked Logistics with Sensor Technologies

In order to make the shipping containers a vital part of a supply chain, they equip them in the future with sensors for monitoring conditions. This helps integrate containers and the goods into a system with more transparency throughout the supply chain.

Sensor applications for shipping containers

WLAN

GPS

LEVEL

PRESSURE

DOORLOCK

POSITION

DIAGNOSIS

VIBRATION

MAINTENANCE

MONITORING

SPEED

TEMPERATURE