

Smart Technology for Networked Freight Wagons – Industry 4.0



Contact Information:

Standex-Meder Electronics
World Headquarters
4538 Camberwell Road
Cincinnati, OH 45209 USA

Standex Americas (OH)

+1.866.STANDEX
(+1.866.782.6339)
info@standexelectronics.com

Meder Americas (MA)

+1.800.870.5385
salesusa@standexmeder.com

Standex-Meder Asia (Shanghai)

+86.21.37820625
salesasia@standexmeder.com

Standex-Meder Europe (Germany)

+49.7731.8399.0
info@standexmeder.com

- To turn freight trains into connected modes of transport, they are equipped with sensors that collect data on their current position and the condition of wagons and their cargo, including parameters such as temperature, air humidity, and amount of shocks sustained.
- Sensors can be used to detect the brake system 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 process.
- In collaboration with digital IT infrastructures for controlling logistic processes – business automation allows freight trains to be optimally predisposed.



Image: BOSCH

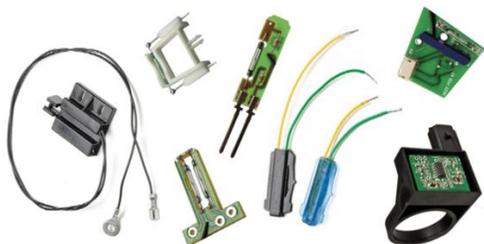
Features:

- 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

Customized Reed Sensors



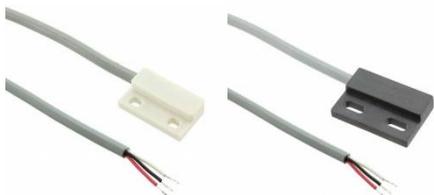
Customized Sensor Solutions allows us to consider the needs and desires of our customers to develop and produce custom innovations for them with the highest quality requirements. Sensors from Standex-Meder are characterized by a high reliability, no power consumption, non contact switching and they are 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



Hall Effect Sensors



Hall Effect Sensors offer solid state reliability, low power consumption, and consistent activation points over a wide temperature range in a rugged and environmentally isolated package.

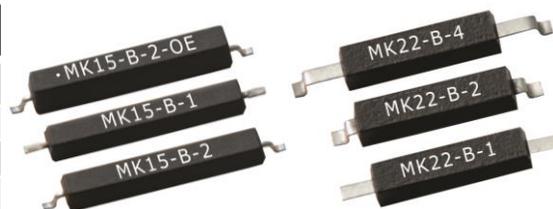
SMD Reed Sensors – MK23 / MK15 / MK22



Specifications 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.

Specifications	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

There are almost 1.37 million kilometers of railways globally, mostly transporting heavy goods such as steel, gravel, and coal. The trend is rising -- more and more goods are transported via train. In the world of today, freight trains do not have their own power supply system nor their own sensors due to high regulations for railroad application -- they need a robust and simple technology which fulfills the demands in terms of vibration, temperature, dirt, and moisture.

Future Transportation

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 make this happend.

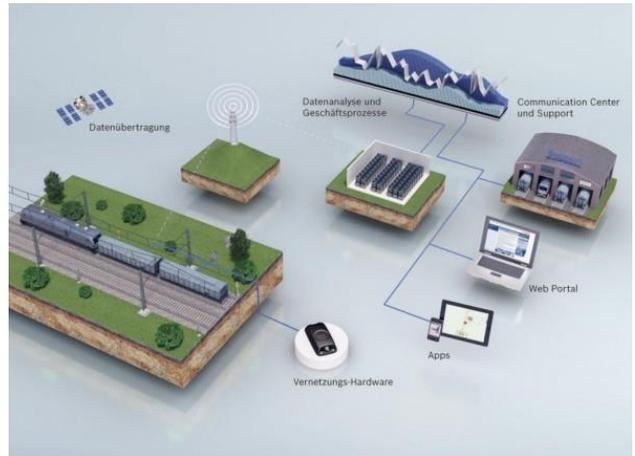


Foto: BOSCH



Networked Logistics with Sensor Technologies

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

Sensor applications for freight wagons



WLAN



GPS



LEVEL



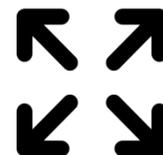
PRESSURE



DOORLOCK



DIAGNOSIS



POSITION



VIBRATION

MAINTENANCE



MONITORING



SPEED



TEMPERATURE

