

# Smart Technology for Semi-Trailers – Industry 4.0



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- To turn semi-trailers 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 the brake system and monitoring of 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 semi-trailers to be optimally predisposed.



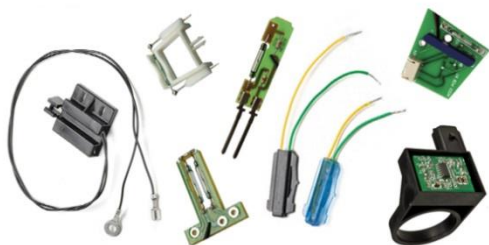
## Features:

- 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

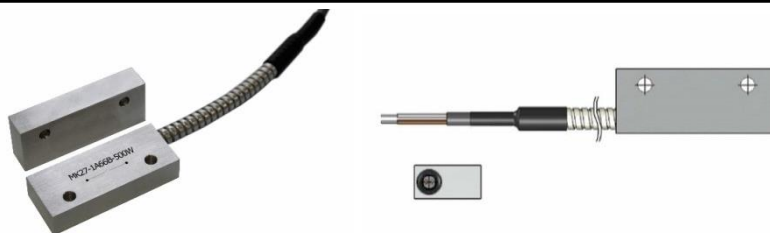
### Customized Reed Sensors



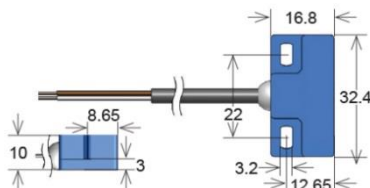
Customized Sensor Solutions allows us to consider the needs and desires of our customers to develop and produce custom innovations for them with the highest quality requirements. Sensors from Standex-Meder are characterized by high reliability, no power consumption, non-contact switching, and are hermetically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

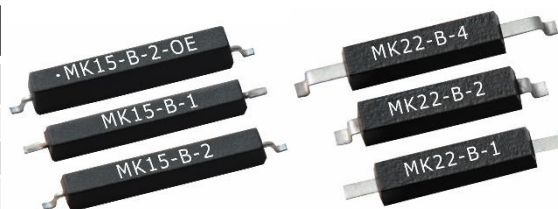
### SMD Reed Sensors – MK23 / MK15 / MK22



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





### Future Transportation

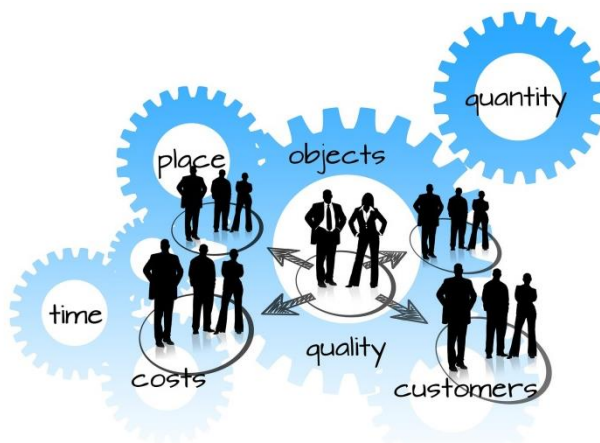
In the world of today, most semi-trailers do not have their own power supply system, nor their own sensors due to the high regulations, they need a robust and simple technology which fulfills the demands in terms of vibration, temperature, dirt, and moisture.

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



### Logistical Challenges

Most of the internal traffic of goods is made by road with trucks. The efficiency of road transportation is particularly determined by an efficient transportation infrastructure. The truck is the preferred choice, especially for the local transport and distribution of goods. The amount of goods will increase in the future, which is a logistics challenge for all of us.



### Networked Logistics with Sensor Technologies

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

## Sensor applications for semi trailers



WLAN



GPS



LEVEL



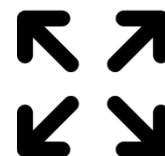
PRESSURE



DOORLOCK



DIAGNOSIS



POSITION



VIBRATION

MAINTENANCE



MONITORING



SPEED



TEMPERATURE

