

Security and Construction

A reed sensor is the best choice when it comes to construction and security, due to the fact that they can work reliably in dirty environments amidst dust, grease, and oil. Unlike optic sensors, reed sensors used in dirty greasy environments are maintenance free and do not need any cleaning. A few applications are listed below.

Deep bore liquid detection probes

Reed switch based float switches are fitted with a perforated sheet around the whole float assembly. This assembly can be used as a depth probe and lowered into narrow bores with the help of the lead wire. The perforated sheet around the moving float assembly prevents solids from activating the float, and also allows liquids to easily seep in and activate the float. Suitable products: **SM-1322** and **IL-2022** reed switches in liquid detection probes.

Door and window Security

Magnets can be mounted on doors and windows, and reed sensors, on the fixed frames. As long as the doors or windows remain closed, the contact is not broken. Normally open (NO), or normally closed (NC) reed sensors can be used depending on the circuit logics. Special reed sensors which contain highly accurate magnets can even sense metal doors using the principal of field shunting. Suitable products: **MS-324** and **MS-328** flat pack sensors.

Floor detection in Elevators and Lifts

Latching reed sensors can be mounted on every floor, and a magnet on the elevator or lift will actuate them as floors change. Latching reed sensors can be mounted in two ways with respect to the pole of the magnet. Reed sensors on floors above can be latched and floors below can be unlatched, or vice versa. The latched and unlatched condition of the sensors can be compared to electronic flip flops with built in driver circuits, and have the added advantage of switching higher loads. Suitable products: **R2E** latching reed sensors, **HW-5052** reed switches, and **MS-228** threaded sensors.

End position sensing in hoists and fork lifts

Hoists and fork lifts use hydraulics to move cylinders and pistons to lift heavy weights. Reed sensors can be used on these pistons and cylinders to sense end positions and intermediary positions and the signals can be used by the proportional pressure valves for control of oil pressure to the cylinders and pistons. Suitable products: **MS-216-L** cylindrical sensors, **MS-228** threaded sensors, and **MS-328** flat pack sensors.

Emergency lamp holders

When emergency lamps are taken off their holders, a buzzer should sound. The lamp itself can be built with a small magnet, and a normally closed reed sensor can be mounted on the holder. As long as the lamp is in its holder, the buzzer circuit remains open. Taking the lamp off the holder, closes the reed sensor and triggers the buzzer circuit. Suitable products: **R2B** normally closed reed sensors, **R2** normally open reed sensors, and **MS-10x** miniature PCB mountable reed sensors.

Power switches for explosive areas

Reed switches, being hermetically sealed and unaffected by the atmosphere and surroundings, can be used with sliding magnets to work as on / off switches in explosive areas, for example, in mines where arcing could cause an explosion. Reed switch based reed relays are also safe devices to use in explosive areas for switching higher loads. Suitable products: **MS-10x** PCB mountable reed sensors, and goal post formed **SM-1322** and **HB-2232** reed switches.

Magnet Extensometers

Reed switches are used in magnet extensometer probes to monitor settlement and heave in construction sites, dams, excavations, mines and tunnels. Access pipes are inserted into the earth, and magnets are provided at every joint and coupling. The reed switch probe, coupled to a measuring tape is inserted from above. Each time the probe comes near one of the magnets, an indication is given and the depth can be read off the tape. Suitable products: **HB-2232** and **LV-1925** reed switches with cropped leads, encapsulated in probes.

Blower and Vacuum duct efficiency

In blowers and vacuum ducts, a vane with a tiny light magnet is fitted across the flow of air, inside the duct. A reed sensor is mounted outside the duct. Nominal flow of air lifts the vane and keeps it near the reed sensor. If the rate of blowing or sucking decreases due to dust collection in the filters, the reed sensor does not get actuated. This signal is used to trigger a "filter change" LED. Suitable products: **MM-1018** and **UM-0018** ultra-miniature reed switches with cropped leads, in vane sensors.

Adjustable chairs and beds

Chairs and beds with electronic controls for adjusting tilting and height use reed sensors to sense intermediary and end positions. A magnet is mounted on the moving part with the reed sensor mounted on the stationary part. These sensing voltages are very low and therefore, there is no risk of electric shocks. Suitable products: **MS-328** flat pack sensors and **MS-216-L** cylindrical sensors.

Tamper proof meters

Electricity meters, water meters, and gas meters use a reed sensor to prevent unauthorized opening of the panel covers. The reed sensor is mounted inside the housing with a magnet on the cover. If the meter cover is opened, the reed switch opens and shuts off the meter. Only a service person with an adapter which plugs into the system can reset the meter with an external command. Suitable products: **MS-324** miniature flat pack sensors, and **MS-214** cylindrical sensors.

Due to continual improvement, specifications are subject to change without notice

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Water tank control

Reed switch based float switches are used to control the pump, which fills an overhead water tank. Two of these float switches are fitted into the tank, at the near empty level and the full level. These signals are given to a controller, which switches the pump on when the tank level reaches the near empty point, and shuts it off when the tank gets filled up. This is particularly useful for blocks of apartments with a common water tank for all tenants. Care should be taken to protect the reed switches from the static capacitance caused by the long wires running from the float switches to the controller. Suitable products: **MS-401** float switches, and **IL-2022** reed switches with cropped leads, in level sensors.

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