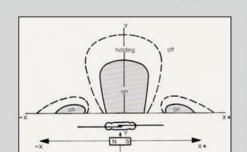
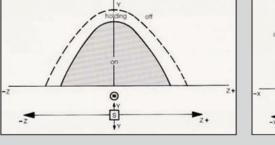


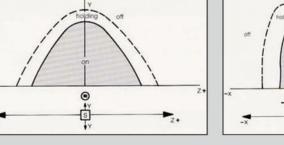
Ring Magnet

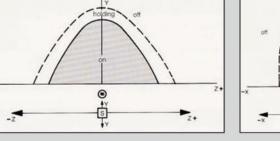
(Examples of switching with the use of a moving magnet.)

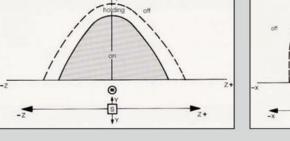
For all Reed Switches the standard pull-in sensitivity is given in the table.

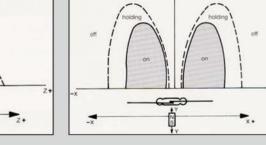




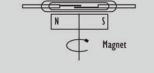








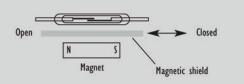
Actuation of Reed Switches with a Permanent Magnet Examples of switching through rotational movement.





Indirect Actuation: Shielding

With the stationary arrangement of a Reed Switch and magnet, the contact Reeds are closed. Should the magnetic field be diverted away from the Reed Switch by a shield of ferro magnetic material placed between the switch and the magnet, the contacts will open. When the shield is removed, the contact Reeds become magnetically actuated and close.



Pull-in Sensitivity:

The given pull-in sensitivity of the Reed Switch has a test equipment tolerance of \pm 2 AT.

Life Expectancy:

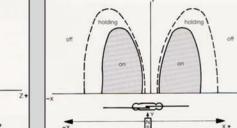
The life expectancy of a reed switch is dependent upon the load being switched. At maximum rated loads life expectancy is approximately 106 switching cycles. Lower load ratings can increase the life expectancy up to 5x108 operations. The mechanical life expectancy can reach at least 109 operations. Through the switching of inductive, capacitive, and lamp loads, the life expectancy is considerably reduced due to exceeding the specified maximum current.

Normally Closed Contact (Form B)

Normally Open Contact (Form C)

All dimensions are nominal, in millimeters unless otherwise stated. If further information is required, individual datasheets are available on our websites, and on CD.

As part of the groups policy of continued product improvement, specifications may change without notice. Our sales office will be pleased to help you with the latest information on our products.



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OTHER PRODUCTS

Reed relays consist of a switch and coil assembled into a housing, which uld be plastic, metal or moulded. Compared with electro-mechanical relays, reed relays are smaller in size

and generally have a faster response time, lower power consumption and longer life. Compared with solid state relays, reed relays have a real galvanic isolation betweeen input and output. The leakage current and the ON-resistance is much lower. Reed relays also can offer a higher dielectric

Reed Switches consist of two or three ferromagnetic blades (or reeds) hermetically sealed inside a glass envelope. The construction ensures protection from the external environment. Three types are available: Form A (normally open), Form B (normally closed), and Form C (changeover). Various voltage and current switching levels are available and contact plating materials can be varied to acccommodate specific



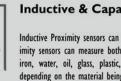
ed Proximity Switches are operated by a moving magnet and can be used to detect many directions of movement. When the magnet reaches the operate distance from the reed switch, the reed switch contacts will operate (open or close). Moving the magnet away will cause the reed switch contacts to switch back to their original position.



Tilt switches are used to sense movement (tilt) of a device above and below a horizontal axis. The angle through which the switch must move for proper operation (the differential angle) is measured from the point of just make to just break; it is specified as a maximum. When selecting a tilt switch, it is important to ensure that the operating mechanism can move the switch through an angle greater than the differential angle.

Solid State Relay

Solid State Relays (SSR) manufactured by the Comus Group of companies are sold around the world. The sign, with no moving parts, means that solid state relays have an almost unlimited life expectancy compared with electromechanical relays. With no mechanical parts there is no contact bounce, no sparks and no mechanical wear making solid state relays the natural choice in working environments where these features are impor-



Inductive & Capacitive Proximity

Inductive Proximity sensors can measure ferrous metals. Capacitive Proximity sensors can measure both metal and non-metalic objects, such as iron, water, oil, glass, plastic, etc. The mounting distance will vary depending on the material being sensed. Due to differing object conductivity, permitivity, and water absorption. If the metal connects with ground (GND) then maximum sensing distance will be achieved.

Reed Float Switches are designed to fit into tanks or containers containing liquid. They are operated by magnet fitted into the float assembly and a Reed Switch fitted into the stem of the float body. When the float moves past the Reed Switch inside the float body, the reed contacts operate (open or close). When the float moves back to its original position

the reed switch contacts will also return to their original state.





A Hybrid sensor has multiple sensors and multiple processing techniques to obtain and transmit more information than one could achieve from independent sensors. Standard and custom packaging is available for protection and ease of mounting. Hybrids consist of time proven sensors combined with reaction time as little as 2ms.

Reed relays consist of a switch and a coil fitted into a housing, which

High Voltage Reed Relay

could be plastic, metal or moulded. Compared with electromechanical relays, reed relays generally have a faster response time, lower coil consumption, and are smaller in size.

Furthermore, the switch is sealed in a dry, inert atmosphere, preventing the ingress of contaminants.



Flow Switch

The Flow Switch is designed to fit into a Tee connector within the pipework. The paddle section can be adjusted depending on the size of the pipe. It operates as water flows through the pipe it pushes the paddle

up thus triggering the switch.

Magents come in various sizes, materials, and coatings. Bare Magnets can be supplied as a separate product or part of a proximity switch

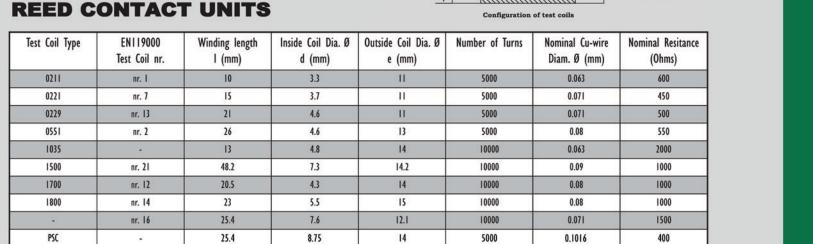
set consisting of switch and magnet. Cased Magnets can be supplied as a separate product, where you can select a magnet to suit your op-Comus Technology BV eration, or as part of a proximity switch set consisting of matching switch and magnet. Materials available are Alnico/Alcomax, Ceramic, Jan Campertstraat 11 6416 SG Heerlen The Netherlands

High Breakdown Switch

Ferrite and Neodymium Iron Boron.

The HBS line of reed switches is the Comus groups answer to the market demands for a lower cost reed switch that is still capable of handling high voltage applications. The HBS line of reed switches is ideal for certain markets such as Medical applications; for example defibrillation equipment where high reliability and excellent quality is absolutely es-

STANDARD TEST COILS FOR



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We also have a large network of worldwide agents. These can be seen on any of our websites, or on our company profile

The Comus Group of Companies

Comus Reed Switches

COMUS The Comus Group of Companies

INDIA Private Limited

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DESCRIPTION

Reed Switches consist of two or three ferromagnetic blades (or reeds) hermetically sealed inside a glass envelope. The construction ensures protection from the external environment. Three types are available: Form A (normally open), Form B (normally closed), and Form C (changeover). Form B reed switches are obtained by two methods: By using the normally closed blade of a Form C switch, or, by using a Form A switch, and biasing the contacts closed using a small block magnet. The switch is then able to re-open by the use of another stonger external magnet of opposite polarity. Sensitivity of a reed switch is measured in ampere turns (A.T.) and it should be noted that lower switch (A.T.) ratings are more sensitive as they require less magnetic field strength to operate them. Various voltage and current switching levels are available and contact plating materials can be varied to accommodate specific types of load.

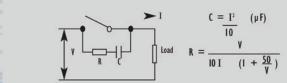
OPERATION

Reed switches are operated by a magnetic field, via a magnet or a current carrying coil. When the field is removed the switch reverts to its previous state. Operation by a magnet can be achieved in a large variety of ways, either moving the magnet toward and away from the reed either perpendicularly, or parallel to the glass. Reed switches are used in a variety of Comus Group products including Proximity Switches, Float Switches and Reed Relays. They are also available in moulded packages affording protection from damage and Surface Mount styles.

CONTACT PROTECTION

Inductive Loads

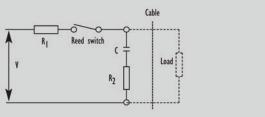
A reverse voltage is generated by stored energy in an inductive load when the reed contacts open. This voltage can reach very high levels and is capable of damaging the contacts. An RC network may be used as shown below to give protection.



Capacitive Loads

Unlike inductive loads, capacitive and lamp loads are prone to high inrush currents which can lead to faulty operation and even contact welding. When switching charged capacitors (including cable capacitance) a sudden unloading can occur,

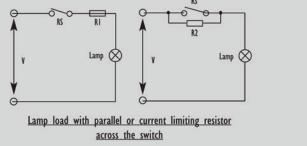
the intensity of which is determined by the capacity and length of the connecting leads to the switch. This inrush peak can be reduced by a series of resistors. The value is dependent on the particular application but should be as high as possible to ensure that the inrush current is within the allowable limits.



The above diagram illustrates a resistor/capacitor network for protecting a Reed Switch against high inrush currents. R₁ and/or R₂ are used depending upon circuit

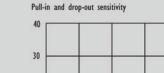
Lamp Loads

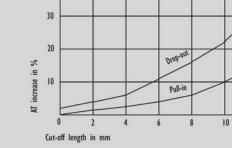
With lamp load applications it is important to note that cold lamp filaments have a resistance 10 times smaller than already glowing filaments. This means that when being turned on, the lamp filaament experiences a current flow 10 times greater than when already glowing. This high inrush current can be reduced to an acceptable level through the use of a series of current-limiting resistors. Another possibility is the parallel switching of a resistor across the switch. This allows just enough current to flow to the filament to keep it warm, yet not enough to make it glow.



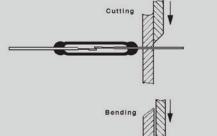
Cutting and Bending:

As the Reed Switch blades are part of the magnetic circuit of a Reed Switch shortening the leads results in increased pull-in and drop-out values.





When cutting or bending Reed Switches, it is important that the glass body should not be damaged. Therefore, the cutting or bending point should be no closer than 3mm(.118) to the glass body.



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