



**MEC PRODUCT SPECIFICATION**

**MAGNETISM COMPONENT**

**MGR560SPG REED SWITCH**

<b>MOBICON HOLDINGS LTD.</b>		
<b>Drawn</b>	<b>Sign.</b>	<b>Approved</b>
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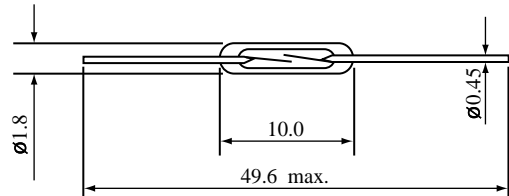
GERMANY

## MGR560SPG - AT10/20 REED SWITCH

General purpose Rhodium plated miniature Reed Switch. Applications including sensing elements used in safety and security systems, level sensing , counting and miniature relays.

### PHYSICAL CHARACTERISTICS (mm) DIMENSIONS

Glass Diameter	1.8 (max.)
Glass Length	10.0 (max.)
Lead Diameter	0.45 (typ.)
Overall Length	49.6 (max.)



Glass Appearance : Green Transparent

### ELECTRICAL CHARACTERISTICS

Contact Arrangement	SPST Form A Centre gap.
Contact Material	Rhodium
(1) Power Rating	10 VA
Switching Current	0.5 ADC 0.5 AAC max.
Carrying Current	0.5 ADC 0.5 AAC max.
Switching Voltage	100 V <sub>DC</sub> 125V <sub>AC</sub> - RMS max.
(2) Breakdown Voltage	150 V <sub>DC</sub>
(3) Contact Resistance	100 mΩ max.
Insulation Resistance	10 <sup>9</sup> Ω min.
Contact Capacitance	0.5 pF max.

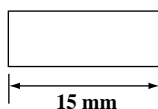
### OPERATING CHARACTERISTICS

Operate Time including Bounce	0.5 ms (typ.)
Release Time	0.3 ms (typ.)
Resonant Frequency	7.0 kHz (typ.)
Vibration 10 - 2,000Hz	10 G max.
Shock - 11ms, 1/2 Sine Wave	75 G max.
Operating Temperature	-40 °C ~ +125 °C
Storage Temperature	-50 °C ~ +155 °C
Pull-In Range	10 AT ~ 20 AT
Drop-Out	4 AT
Switching Frequency	400 Hz max.

### ELECTRICAL LIFE (RESISTIVE LOADS)

5 x 10<sup>6</sup> TIME @ 5V<sub>DC</sub>, 10mA  
10<sup>5</sup> TIME @ 24V<sub>DC</sub>, 250mA

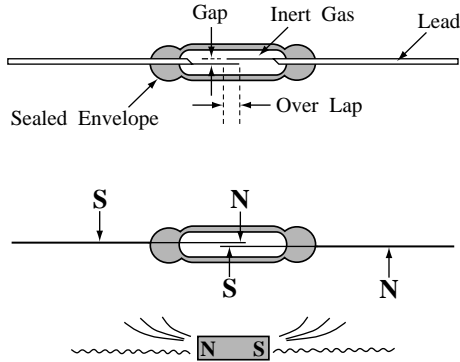
TEST COIL : NUMBER OF TURNS : 5,000  
RESISTANCE OF COILS : 580 Ω



BIN COOE : 10109

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## CONSTRUCTION



The reed switch consists of a pair of flexible reeds made of a magnetic material, and sealed in a glass tube filled with inert gas.

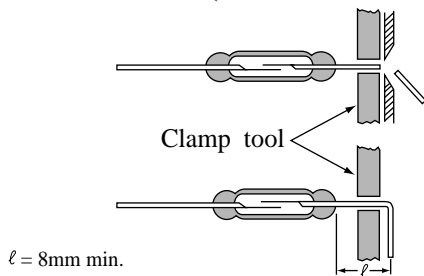
The reeds are overlapped but separated by a small gap. The contact area of each reed is plated with a noble metal, such as Rhodium or Ruthenium, to provide the switch with stable characteristics and long life.

Application of magnetic field, generated by a permanent magnet or a coil, to the reed switch causes both reeds to be magnetized. This produces an N-pole at the contact area of one reed, and an S-pole at that of the other reed, in a manner shown on the drawing (left). If the magnetic attracting force overcomes the resistive force caused by elasticity of the reed, the reeds come in contact (Pull-In) i.e., the circuit is closed. Once the magnetic field is removed, the reeds are separated again by the effect of elasticity of the reed (Drop-Out) i.e., the circuit is opened.

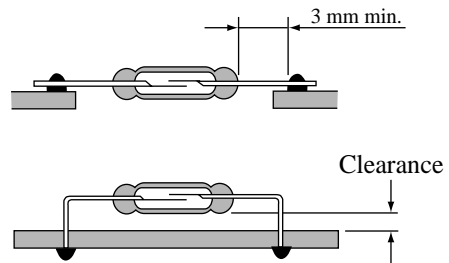
## FEATURES

- Compact and Light** ..... The reed switch can be mounted in a very limited space ; it is ideal for use in miniaturized equipment.
- Hermetically Sealed** ..... The switching elements of the reed switch are hermetically sealed in an inert gas atmosphere, so that they are never exposed to the external environment.
- Long Life** ..... The reed switch employs no sliding parts, so that there is no fatigue related degradation in the quality of the materials used, ensuring a virtually unlimited mechanical life.
- High Speed Operation** .... Every movable element has a very low mass resulting in a high speed of operation. This enables the reed switch to be used as an interface to a transistor or integrated circuit.

## LEAD FORMING (CUTTING AND BENDING)



## MOUNTING



## CONTACT MATERIAL

### Rhodium

Rhodium plated contacts are most popular. They have very stable characteristics and long life when switching low level to heavy loads. This is due to Rhodium's high melting point and high hardness.

### Ruthenium

Ruthenium's hardness is even greater than that of Rhodium. Ruthenium contacts have better mechanical wear and heat dissipation characteristics, yet only when switching low Loads.

## CONTACT FORM

### Form "A" (Normally Open)

Switch contacts will close in the presence of magnetic field.



## General application switches

Switching power rating of 10 watt. Applications are wide including switching signal loads, driving electromechanical relays, etc.

## High inrush current switches

May be used for switching in incandescent lamp or capacitive loads without external current limiting resistors.

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## REVIEW OF SPECIFICATIONS

- 1) When something get doubtful with this specifications, we shall jointly work to get an agreement.
- 2) This specification limits the quality of the components as a single unit. Please insure the component is thoroughly evaluated in your application circuit.
- 3) Please do not use this component in any application that deviates from its intended use as noted within the specification. It may cause any mishaps.
- 4) Please return one of this specification after your signature of acceptance. In case of no return within 3 months from submission date. This specification should be treated as accepted.

### **When using our products, the following precautions should be taken.**

- (1) Safety designing of apparatus or a system allowing for failures of electronic components used in the system  

In general, failures will occur in electronic components at a certain probability. MOBICON HOLDINGS LTD makes every effort to improve the quality and reliability of electronic component products. However, it is impossible to completely eliminate the probability of failures. Therefore, when using MOBICON HOLDINGS LTD electronic component products, systems should be carefully designed to ensure redundancy in the event of an accident which would result in injury or death, fire, or social damage, to ensure the prevention of the spread of fire, and the prevention of faulty operation.
- (2) Quality Level of various kinds of parts, and equipment in which the parts can be utilized  

Electronic components have a standard quality level unless otherwise specified.
- (3) This specifications is subject to change without notice.  

The contents of this specifications are based on data which is correct as of 2002, and they may be changed without notice. If our products are used for mass-production design, please enquire consult with a member of our company's sales staff by way of precaution.
- (4) Reprinting and copying of this specifications without prior written permission from MOBICON HOLDINGS LTD are not permitted.
- (5) Industrial Property Problems  

In the event any problems associated with industrial property of a third party arising as a result of the use of our products. MOBICON HOLDINGS LTD assumes no responsibility for problems other than problems directly associated with the constitution and manufacturing method of the products.



Prepared By: Leo Wong  
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