

## Reed Sensor Incorporated into a Hirschmann Connector



### DESCRIPTION

MK9 sensors are magnetically operated Reed proximity switches potted into a standard Hirschmann connector casing according to "DIN 43650 / type AM3". In combination with the corresponding Hirschmann socket a coupling with firmly defined position is achieved. In order to fix the sensor, its potted surface is screwed to a flat surface in the direction of the operating magnet. The magnet is fixed to a moving part which is travelling towards the sensor.

### APPLICATIONS

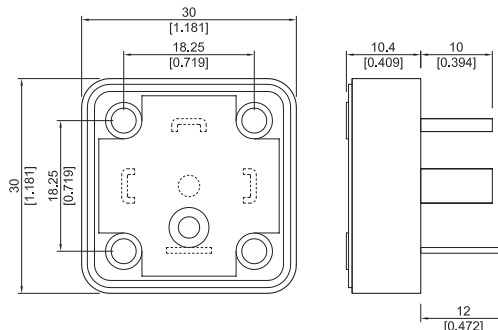
- **Air filter maintenance**  
Monitoring of filter condition
- **Air conditioning and clean room systems**  
Filter condition detection
- **Pneumatic and hydraulic cylinders**  
Position detection
- **Machine industry**

### FEATURES

- Form A, B and C available
- High power switches available
- Five operate sensitivities available

### DIMENSIONS

All dimensions in mm [inches]



**ORDER INFORMATION**

**Part Number Example**

MK9 - 1A66 C

**1A** is the contact form

**66** is the switch model

**C** is the magnetic sensitivity

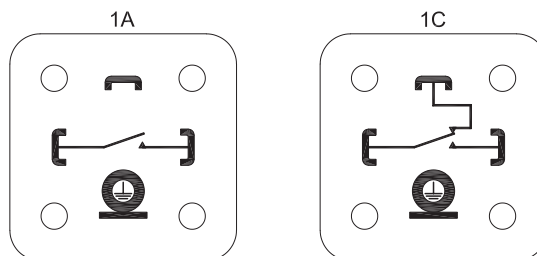
| Series         | Contact-form          | Switch-model | Magnetic Sensitivity |
|----------------|-----------------------|--------------|----------------------|
| <b>MK9 -</b>   | <b>1A</b>             | <b>XX</b>    | <b>X</b>             |
| <b>Options</b> | 1 Form A              | 66           | B, C, D, E           |
|                |                       | 84           | B, C, D, E           |
|                | 1 Form B<br>1 Form fC | 90           | C, D, E              |

**MAGNETIC SENSITIVITY**

| Sensitivity Class | Pull In At Range |
|-------------------|------------------|
| B                 | 10 - 15          |
| C                 | 15 - 25          |
| D                 | 20 - 25          |
| E                 | 25 - 30          |

**PIN OUT**

View from top of component



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### CONTACT DATA

| All Data at 20° C   | Switch Model →<br>Contact Form →                                  | Switch 66<br>Form A |      |      | Switch 84<br>Form A |      |      | Units |
|---|---|---------------------|------|------|---------------------|------|------|-------|
|   |   | Min.                | Typ. | Max. | Min.                | Typ. | Max. |       |
| Contact Ratings   | Conditions  |                     |      |      |                     |      |      |       |
| Switching Power   | Any DC combination of V & A not to exceed their individual max.'s |                     |      | 10   |                     |      | 10   | W     |
| Switching Voltage   | DC or peak AC   |                     |      | 200  |                     |      | 400  | V     |
| Switching Current   | DC or peak AC   |                     |      | 0.5  |                     |      | 0.5  | A     |
| Carry Current   | DC or peak AC   |                     |      | 1.25 |                     |      | 1.0  | A     |
| Static Contact Resistance   | w/ 0.5 V & 10 mA  |                     |      | 150  |                     |      | 150  | mΩ    |
| Dynamic Contact Resistance  | Measured w/ 0.5 V & 50 mA ,<br>1.5 ms after closure               |                     |      | 200  |                     |      | 200  | mΩ    |
| Insulation Resistance across Contacts   | 100 volts applied   | 10 <sup>10</sup> *  |      |      | 10 <sup>11</sup>    |      |      | Ω     |
| Breakdown Voltage across Contact  | Voltage applied for 60 sec. min.                                  | 225*                |      |      | 700                 |      |      | VDC   |
| Operation Time incl. Bounce   | Measured w/ 100 % overdrive                                       |                     |      | 0.5  |                     |      | 2.0  | ms    |
| Release Time  | Measured w/ no coil suppression                                   |                     |      | 0.1  |                     |      | 0.1  | ms    |
| Capacitance   | at 10 kHz cross contact   |                     | 0.2  |      |                     | 0.7  |      | pF    |
| <b>Contact Operation **</b>   |   |                     |      |      |                     |      |      |       |
| Must Operate Condition  | Steady state field  | 10                  |      | 30   | 15                  |      | 30   |       |
| Must Release condition  | Steady state field  | 4                   |      | 27   | 6                   |      | 27   |       |
| <b>Environmental Data</b>   |   |                     |      |      |                     |      |      |       |
| Shock Resistance  | 1/2 sinus wave duration 11 ms                                     |                     |      | 50   |                     |      | 50   | g     |
| Vibration Resistance  | From 10 - 2000 Hz   |                     |      | 20   |                     |      | 20   | g     |
| Ambient Temperature   | 10°C/ minute max. allowable                                       | -20                 |      | 85   | -20                 |      | 85   | °C    |
| Stock Temperature   | 10°C/ minute max. allowable                                       | -35                 |      | 85   | -35                 |      | 85   | °C    |
| Soldering Temperature   | 5 sec.  |                     |      | 260  |                     |      | 260  | °C    |
| Please note: The indicated electrical data are maximum values and can vary downwards when using a more sensitive switch.<br>* Insulation resistance of 10 <sup>12</sup> and breakdown voltage of 480 VDC is available.<br>** These ranges refer to the uncut / unmodified Reed Switches described in our Reed Switch section. Consult factory if more detail is required. |   |                     |      |      |                     |      |      |       |

**CONTACT DATA**

| <b>All Data at 20° C</b>   | <b>Switch Model →<br/>Contact Form →</b>                          | <b>Switch 90<br/>Form C / B</b> |             |             |              |
|--|---|---------------------------------|-------------|-------------|--------------|
| <b>Contact Ratings</b>   | <b>Conditions</b>   | <b>Min.</b>                     | <b>Typ.</b> | <b>Max.</b> | <b>Units</b> |
| Switching Power  | Any DC combination of V & A not to exceed their individual max.'s |                                 |             | 3           | W            |
| Switching Voltage  | DC or peak AC   |                                 |             | 175         | V            |
| Switching Current  | DC or peak AC   |                                 |             | 0.25        | A            |
| Carry Current  | DC or peak AC   |                                 |             | 1.2         | A            |
| Static Contact Resistance  | w/ 0.5 V & 10 mA  |                                 |             | 150         | mΩ           |
| Dynamic Contact Resistance   | Measured w/ 0.5 V & 50 mA , 1.5 ms after closure                  |                                 |             | 250         | mΩ           |
| Insulation Resistance across Contacts  | 100 volts applied   | 10 <sup>9</sup>                 |             |             | Ω            |
| Breakdown Voltage across Contact   | Voltage applied for 60 sec. min.                                  | 100                             |             |             | VDC          |
| Operation Time incl. Bounce  | Measured w/ 100 % overdrive                                       |                                 |             | 0.7         | ms           |
| Release Time   | Measured w/ no coil suppression                                   |                                 |             | 1.5         | ms           |
| Capacitance  | at 10 kHz cross contact   |                                 | 0.2         |             | pF           |
| <b>Contact Operation *</b>   |   |                                 |             |             |              |
| Must Operate Condition   | Steady state field  | 15                              |             | 30          | AT           |
| Must Release condition   | Steady state field  | 6                               |             | 27          | AT           |
| <b>Environmental Data</b>  |   |                                 |             |             |              |
| Shock Resistance   | 1/2 sinus wave duration 11 ms                                     |                                 |             | 50          | g            |
| Vibration Resistance   | From 10 - 2000 Hz   |                                 |             | 20          | g            |
| Ambient Temperature  | 10°C/ minute max. allowable                                       | -20                             |             | 85          | °C           |
| Stock Temperature  | 10°C/ minute max. allowable                                       | -35                             |             | 85          | °C           |
| Soldering Temperature  | 5 sec.  |                                 |             | 260         | °C           |
| Please note: The indicated electrical data are maximum values and can vary downwards when using a more sensitive switch.                       |   |                                 |             |             |              |
| * These ranges refer to the uncut / unmodified Reed Switches described in our Reed Switch section. Consult factory if more detail is required. |   |                                 |             |             |              |