MK9 Series
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]


Reed Sensor Incorporated into a Hirschmann Connector

## ORDER INFORMATION

| SERIES | CONTACT <br> FORM | SWITCH <br> MODEL | MAGNETIC <br> SENSITIVITY |
| :---: | :---: | :---: | :---: |
| MK9 - | XX | XX | X |
|  | 1Form A | 81 | B, C, D, E |
| OPTIONS | 1 Form B <br> 1Fom C | 90,96 | C, D, E |

Part Number Example
MK9 - 1A71 C
1 A is the contact form
71 is the switch model
$\mathbf{C}$ is the magnetic sensitivity

## MAGNETIC SENSITIVITY

| SENSITIVITY <br> CLASS | PULL IN <br> AT RANGE |
| :---: | :---: |
| A | $5-10$ |
| B | $10-15$ |
| C | $15-20$ |
| D | $20-25$ |
| E | $25-30$ |

## PIN OUT

View from top of component


## Reed Sensor Incorporated into a Hirschmann Connector

## CONTACT DATA

| All data at $20{ }^{\circ} \mathrm{C}$ | Switch Model --> Contact Form --> | $\begin{gathered} \text { Contact } 71 \\ \text { Form A } \end{gathered}$ |  |  | Contact 81 Form A |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contact Ratings | Conditions | Min. | Typ. | Max. | Min. | Typ. | Max. | Units |
| Contact Rating | Any DC combination of V \& A not to exceed their individual max.'s |  |  | 10 |  |  | 5 | W |
| Switching Voltage | DC or peak AC |  |  | 200 |  |  | 90 | 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 | $\mathrm{w} / 0.5 \mathrm{~V}$ \& 10 mA |  |  | 150 |  |  | 200 | $\mathrm{m} \Omega$ |
| Dynamic Contact Resistance | Measured w/ 0.5V \& 50mA 1.5 ms after closure |  |  | 200 |  |  | 200 | $\mathrm{m} \Omega$ |
| Insulation Resistance across Contacts | 100 Volts applied | $10^{10}$ * |  |  | $10^{9}$ |  |  | $\Omega$ |
| Breakdown Voltage across Contacts | Voltage applied for 60 sec . min. | 225 * |  |  | 100 |  |  | VDC |
| Operate Time, incl. Bounce | Measured w/ 100\% overdrive |  |  | 0.5 |  |  | 0.5 | ms |
| Release Time | Measured w/ no coil suppression |  |  | 0.1 |  |  | 0.1 | ms |
| Capacitance | @ 10kHz across contact |  | 0.2 |  |  | 0.2 |  | pF |
| Contact Operation ** |  |  |  |  |  |  |  |  |
| Must Operate Condition | Steady state field | 10 |  | 30 | 5 |  | 10 | AT |
| Must Release Condition | Steady state field | 4 |  | 27 | 2 |  | 9 | AT |
| Environmental Data |  |  |  |  |  |  |  |  |
| Shock Resistance | $1 / 2$ sine wave duration 11 ms |  |  | 50 |  |  | 30 | g |
| Vibration Resistance | From 10-2000 Hz |  |  | 20 |  |  | 10 | g |
| Ambient Temperature | $10^{\circ} \mathrm{C} /$ minute max. allowable | -20 |  | 85 | -20 |  | 85 | ${ }^{0} \mathrm{C}$ |
| Storage Temperature | $10^{\circ} \mathrm{C} /$ minute max. allowable | -35 |  | 85 | -35 |  | 85 | ${ }^{\circ} \mathrm{C}$ |
| Soldering Temperature | $5 \mathrm{sec} . \mathrm{dwell}$ |  |  | 260 |  |  | 260 | ${ }^{\circ} \mathrm{C}$ |

Please note: The indicated electrical data are maximum values and can vary downwards when using a more sensitive switch. * Insulation resistance of $10^{12}$ and breakdown voltage of 480 VDC is available.
** These ranges refer to the uncut / unmodified Reed Switches described in our Reed Switch section. Consult factory if more detail is required.

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CONTACT DATA

| All data at $20^{\circ} \mathrm{C}$ | Switch Model --> Contact Form --> | Contact 84 Form A |  |  | $\begin{gathered} \text { Contact } 90 \\ \text { Form B / C } \end{gathered}$ |  |  | $\text { Contact } 96$Form B/C |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Contact Ratings | Conditions | Min. | Typ. | Max. | Min. | Typ. | Max. | Min. | Typ. | Max. | Units |
| Contact Rating | Any DC combination of V \& A not to exceed their individual max.'s |  |  | 10 |  |  | 3 |  |  | 20 | W |
| Switching Voltage | DC or peak AC |  |  | 400 |  |  | 175 |  |  | 150 | V |
| Switching Current | DC or peak AC |  |  | 0.5 |  |  | 0.25 |  |  | 1.0 | A |
| Carry Current | DC or peak AC |  |  | 1.0 |  |  | 1.2 |  |  | 2.0 | A |
| Static Contact Resistance | $\mathrm{w} / 0.5 \mathrm{~V}$ \& 10 mA |  |  | 150 |  |  | 150 |  |  | 150 | $\mathrm{m} \Omega$ |
| Dynamic Contact Resistance | Measured w/ 0.5 V \& 50 mA 1.5 ms after closure |  |  | 200 |  |  | 250 |  |  | 250 | $\mathrm{m} \Omega$ |
| Insulation Resistance across Contacts | 100 Volts applied | $10^{11}$ |  |  | $10^{9}$ |  |  | $10^{9}$ |  |  | $\Omega$ |
| Breakdown Voltage across Contacts | Voltage applied for 60 sec . min. | 700 |  |  | 200 |  |  | 200 |  |  | VDC |
| Operate Time, incl. Bounce | Measured w/ 100\% overdrive |  |  | 2.0 |  |  | 0.7 |  |  | 2.6 | ms |
| Reset Time | Measured w/ no coil suppression |  |  | 0.1 |  |  | 1.5 |  |  | 1.5 | ms |
| Capacitance | @ 10kHz across contact |  | 0.7 |  |  | 1.0 |  |  | 0.8 |  | pF |
| Contact Operation * |  |  |  |  |  |  |  |  |  |  |  |
| Must Operate Condition | Steady state field | 15 |  | 30 | 15 |  | 30 | 15 |  | 30 | AT |
| Must Reset Condition | Steady state field | 6 |  | 27 | 6 |  | 27 | 6 |  | 27 | AT |
| Environmental Data |  |  |  |  |  |  |  |  |  |  |  |
| Shock Resistance | $1 / 2$ sine wave duration 11 ms |  |  | 50 |  |  | 50 |  |  | 50 | g |
| Vibration Resistance | From $10-2000 \mathrm{~Hz}$ |  |  | 20 |  |  | 20 |  |  | 20 | g |
| Ambient Temperature | $10^{\circ} \mathrm{C} /$ minute max. allowable | -20 |  | 85 | -20 |  | 85 | -20 |  | 85 | ${ }^{\circ} \mathrm{C}$ |
| Storage Temperature | $10^{\circ} \mathrm{C} /$ minute max. allowable | -35 |  | 85 | -35 |  | 85 | -35 |  | 85 | ${ }^{\circ} \mathrm{C}$ |
| Soldering Temperature | $5 \mathrm{sec} . \mathrm{dwell}$ |  |  | 260 |  |  | 260 |  |  | 260 | ${ }^{\circ} \mathrm{C}$ |
| Please note: The indicated electrical data are maximum values and can vary downwards when using a more sensitive switch. <br> * These ranges refer to the uncut / unmodified Reed Switches described in our Reed Switch section. Consult factory if more detail is required. |  |  |  |  |  |  |  |  |  |  |  |

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