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Products for Tomorrow...

Reed Technology Solutions

Product Spotlight

REED RELAYS | REED SENSORS | REED SWITCHES

MK02 Metal Detection Series Reed Sensors

DESCRIPTION

The MK02 Metal Detection Reed Sensors have expanded with the addition of two new PCB mount packages. No external magnet is required. This rugged sensor has a patented design that will detect magnetically conductive metal.

FEATURES

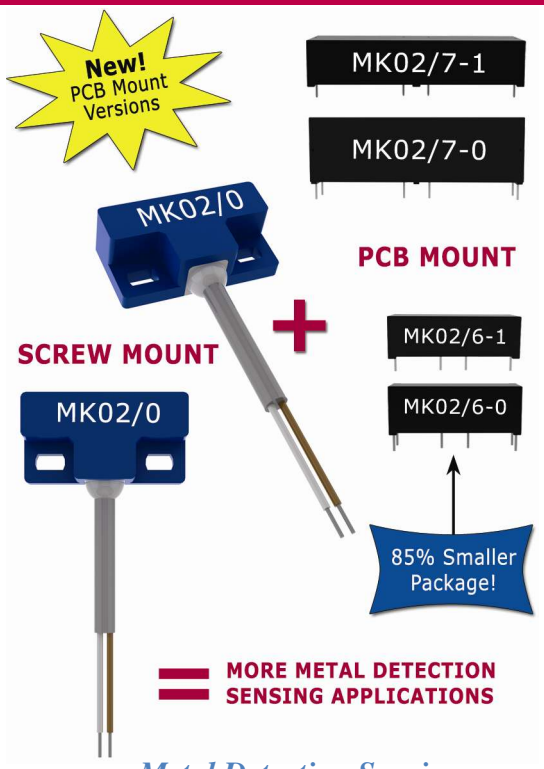
- Alternative to inductive proximity sensors
- No power required to operate
- Mechanically stable enclosure
- Top or front actuation
- SPST in normally open (Form A) or normally closed (Form B) contact form
- Screw flange or PCB through hole mount
- Two sabotage loop versions
- Potential ON/OFF sensing distances range from 3.5mm-15mm from sensor
- Customizable wire termination
- Hermetically sealed for operation in dirty environments
- Dynamically tested contacts
- Millions of reliable operations

APPLICATIONS

Door & Gate sensor
Elevator control
Freight container security
Industrial
Machinery safety control
Mechanization systems
Position & Limit Switch
RV leveling systems
Safety control
Window sensor

MARKETS

General purpose
Security
Machinery & Tools



Metal Detection Sensing in More Applications Than Ever Before…

- Alternative to inductive proximity sensors
- No external power required
- The MK02 Series offers robust packaging in screw panel mount and now PCB through hole mounting
- 85% smaller package than MK02/5
- No external magnet required. Senses ferromagnetic materials from front or above actuation
- Non-contact position and proximity sensing
- Potential ON/OFF sensing distances range from 3.5mm-15mm from sensor
- Screw flange mount has two optional sabotage loop versions
- Available in four package sizes: 2 PCB mount and 2 screw mount

The MK02 Series is a non-contact position and proximity sensor. Formerly only available in five different screw flange mount style packages, the MK02 is now also available in four additional PCB through hole mount versions. The smallest PCB mount version is 85% smaller than the MK02/5. The MK02 Series is currently MEDER's only series that works like a metal detection sensor. These metal detection sensors have a patented design that is used to detect the presence of magnetically conductive metals, eliminating the need for a permanent magnet used in a conventional reed sensor to actuate the reed switch. This metal detection sensor series requires no power to operate and is an excellent alternative to inductive proximity sensors.

Whether screw flange mounted with cable or PCB mounted, choose from two different actuation directions: from the front of the sensor or above the sensor. The MK02 is available in SPST normally open (Form A) and normally closed (Form B) contact forms. The overall potential ON sense distance spans from 3.5-13.5mm and OFF distance from 3.7-15mm. MK02 sensors are an excellent proximity sensor in a variety of security applications due to their rugged construction. From door sensors to machinery safety controls, the MK02 series are rising to the occasion in more applications than ever before with the addition of the four new PCB mount versions.

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PLEASE NOTE!

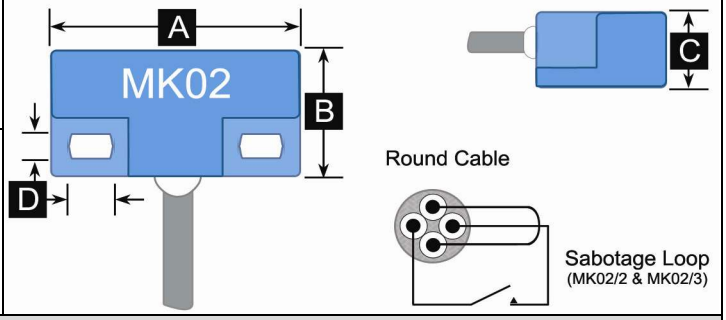
For best operation it is recommended that you **DO NOT** mount these sensors on any ferromagnetic material **OR** use any ferromagnetic screws.

- Alternative to inductive proximity sensors
- No power required to operate
- No external magnet required

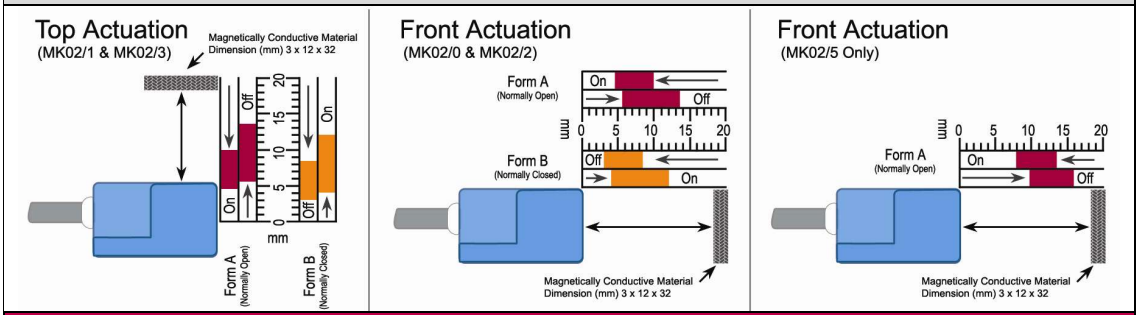
SCREW FLANGE MOUNT

Model		
MK02/0 MK02/1 MK02/2 MK02/3	A	32.40mm [1.276"]
	B	16.70mm [0.657"]
	C	10.00mm [0.394"]
	D	3.30 x 6.10mm [0.130 x 0.240"]
MK02/5	A	46.00mm [1.811"]
	B	18.35mm [0.722"]
	C	13.00mm [0.512"]
	D	4.10 x 9.50mm [0.161 x 0.374"]

Dimensional Reference



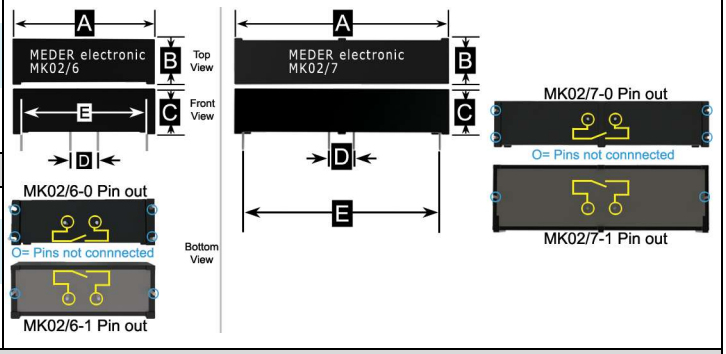
Actuation Example



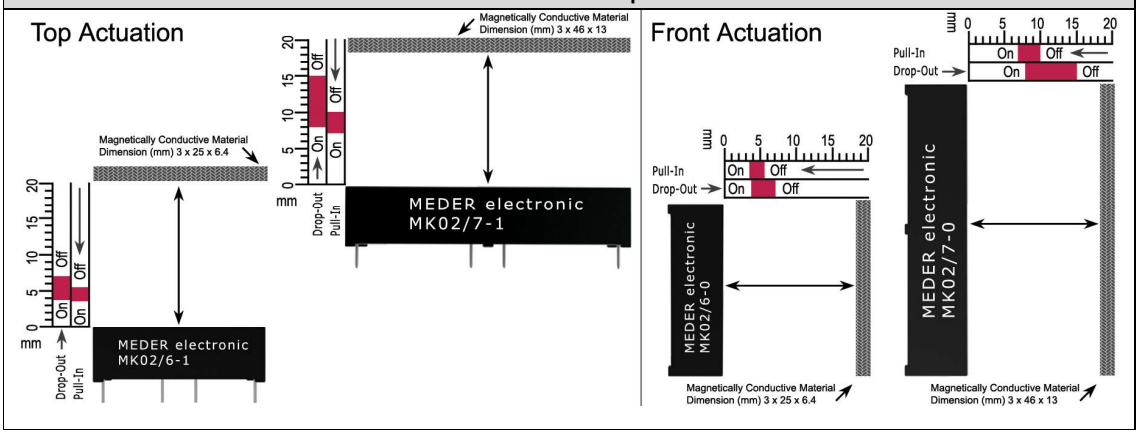
PCB THROUGH HOLE MOUNT

MK02/6-0		MK02/6-1	
A	24.00mm [0.945"]	A	24.00mm [0.945"]
B	8.90mm [0.350"]	B	7.70mm [0.303"]
C	7.70mm [0.303"]	C	8.90mm [0.350"]
D	5.00mm [0.197"]	D	5.00mm [0.197"]
E	22.50mm [0.886"]	E	22.50mm [0.886"]
MK02/7-0		**MK02/7-1**	
A	40.50mm [1.594"]	A	40.50mm [1.594"]
B	8.70mm [0.343"]	B	12.70mm [0.500"]
C	12.70mm [0.500"]	C	8.70mm [0.343"]
D	5.00mm [0.197"]	D	5.00mm [0.197"]
E	39.00mm [1.535"]	E	39.00mm [1.535"]

Dimensional Reference



Actuation Example



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MK02 SERIES CONTACT DATA

All Data at 20° C	Contact Form →	Switch Model: Form A				Form B	
Contact Ratings	**Conditions**	**41**	**66**	**80**	**87**	**90**	**Unit**
Rated Power (max.)	Any DC combination of V & A not to exceed their individual max.'s	16*	10*	10*	10*	10*	W
Switching Voltage (max.)	DC or peak AC	40	200	170	200	175	V
Switching Current (max.)	DC or peak AC	0.4	0.5	0.25	0.5	0.5	A
Carry Current (max.)	DC or peak AC	0.7	1.25	0.5	0.5	1.0	A
Static Contact Resistance (max.)	w/ 0.5V & 10mA	150	150	200	150	150	mΩ
Insulation Resistance (min.)	RH 45%	10^9	10^{10}	10^9	10^9	10^9	Ω
Breakdown Voltage (min.)	Voltage applied for 60 sec. min.	200	225	210	230	200	VDC
Operation Time incl. Bounce (max.)	Measured w/ 100% overdrive	0.7	0.5	0.6	0.6	0.7	ms
Release Time (max.)	Measured w/ no coil suppression	0.1	0.1	0.1	0.1	1.5	ms
Capacitance (typ.)	At 10kHz across contact	0.3	0.2	0.2	0.2	1.0	pF
Environmental Data							
Shock Resistance (max.)	½ sine wave duration 11ms	50	50	50	50	50	g
Vibration Resistance (max.)	From 10-2000 Hz	20	20	20	20	20	g
Operating Temp.	10°C/ minute max. allowable	-20 to +85					°C
Storage Temp.	10°C/ minute max. allowable	-35 to +85					°C
Soldering Temp. (max.)	5 sec. dwell	260	260	260	260	260	°C

* The indicated electrical data are maximum values and can vary downwards when using a more sensitive switch. Consult factory if more detail is required.

MK02 SERIES QUICK REFERENCE

Series	Contact Form	Switch Model	Cable Length (mm)	Mounting Style	Sabotage Loop	Actuation	Dimensions L x W x H
MK02/0	1 A 1 B	66 90	500W	Screw Flange Mount	No	Front	32.40 x 16.70 x 10.00mm 1.276" x 0.657" x 0.394"
MK02/1	1 A 1 B	66 90	500W	Screw Flange Mount	No	Top	
MK02/2	1 A 1 B	66 90	500W	Screw Flange Mount	Yes	Front	
MK02/3	1 A 1 B	66 90	500W	Screw Flange Mount	Yes	Top	
MK02/5	1 A	41	500W	Screw Flange Mount	No	Front	46.00 x 18.35 x 13.00mm 1.811" x 0.722" x 0.512"
MK02/6-0	1 A	80	N/A	PCB Through Hole	No	Front	24.00 x 8.90 x 7.70mm 0.945" x 0.350" x 0.303"
MK02/6-1	1 A	80	N/A	PCB Through Hole	No	Top	24.00 x 7.70 x 8.90mm 0.945" x 0.303" x 0.350"
MK02/7-0	1 A	87	N/A	PCB Through Hole	No	Front	40.50 x 8.70 x 12.70mm 1.594" x 0.343" x 0.500"
MK02/7-1	1 A	87	N/A	PCB Through Hole	No	Top	40.50 x 12.70 x 8.70mm 1.594" x 0.500" x 0.343"

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