

# Reed Switches

◆ Close Differential ◆

◆ Low Contact Resistance ◆

◆ Fast Switching Time ◆

◆ High Life Expectancy ◆

# RRE

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◆ Line Voltage Switching ◆

◆ Release AT Configurable ◆



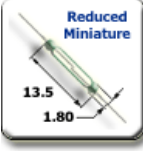
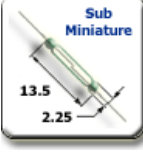

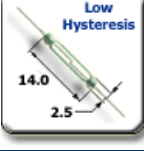


# Miniature Reed switches

## Contents

We manufacture a range of Ruthenium plated, inert gas filled, non-pressurized dry reed switches with Tin plated lead outs, for switching as low as 100 microwatts to as high as 120 W. Our reed switches can be used in a wide range of applications, from low level signal switching in mobile phones, to temperature sensing in heating appliances, and high wattage switching in relays.

Our Miniature magnetic reed switches are specially designed for switching low and medium loads without sacrificing on size, are highly configurable with respect to ampere-turn differential, and are RoHS compliant.

	<b>UM-0018 Ultra Miniature Reed Switch</b> These highly sensitive, form A reed switches are designed for low power, high speed switching applications, where there is a size restriction. The 5 mm glass version is built for use in very compact applications, and the 7 mm glass version is built for lower contact resistance...
	<b>MM-1018 Micro Miniature Reed Switch</b> This 10mm long form A reed switch is designed for low power, high speed switching applications, and has a cost advantage over the UM-0018 Ultra-miniature series. The flattened lead outs are useful for orienting the internal blades to face one way while soldering, welding etc...
	<b>RM-1318 Reduced Miniature Reed Switch</b> This reed switch is designed for applications where a size restriction is present, but higher load switching and current carrying capability is required. The blades have a good flexibility, for fast operation and good contact force, and can carry up to 1.5 A...
	<b>SM-1322 Sub Miniature Reed Switch</b> This form A reed switch is built with a 2.25 mm diameter glass with a high wall thickness for better glass to metal seals, and is a good solution for general purpose, high volume applications with a little shock and vibration, such as toys...
	<b>MO-1422 Miniature Off Centre Contact Reed Switch</b> This off centre contact form A reed switch is designed for magnet applications. Measurements are always taken with the contact overlap portion centred to the length of the test coil, with the width of all blades in a batch of switches...
	<b>MC-1425 Miniature Closed Differential Reed Switch</b> This form A reed switch is built with specially pressed blades with slightly higher rigidity for close differential, low hysteresis applications, where an operate and release is required with minimum magnet travel...

Due to continual improvement, specifications are subject to change without notice


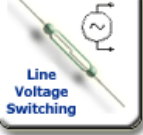
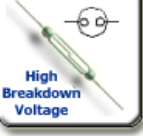


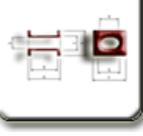


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# Standard size Reed switches

## Contents

Our standard size reed switches are classified by type of load switching, and are manufactured with round glass tubes and wire for maximum seal strength. We incorporate a special multi-layer plating technology to ensure long life of high wattage reed switches. Life test details for different loads are available on request. For RoHS compliance, the leads are plated with pure Tin and restricted substances are not present.

 <p><b>Inductive Load Switching</b></p>	<p><b>IL-2022 Reed Switch for Inductive Loads</b>                  This reed switch is designed for performance at moderate inductive loads of 15W. The flattened lead outs are specially useful for orienting the internal blades to face one way while soldering, welding etc, for maximum in-group sensitivity...</p>
 <p><b>Line Voltage Switching</b></p>	<p><b>LV-1925 Reed Switch for Line Voltage</b>                  The LV-1925 is designed for endurance at switching 90W at 230V AC. Two versions are capable of switching 30W and 60W. The third version is manufactured with specially plated blades for endurance at high current levels and can...</p>
 <p><b>High Breakdown Voltage</b></p>	<p><b>HB-2232 High Breakdown Reed Switch</b>                  This reed switch is designed with highly flexible blades to get maximum contact gap at lower AT ranges, and consequently having high break down characteristics. The two types of contacts options available provide breakdown at 350V or 500V minimum...</p>
 <p><b>High Wattage</b></p>	<p><b>HW-5052 High Wattage Reed Switch</b>                  This reed switch is physically robust and can switch up to 120W. The two types of contact ratings available cover a wide range of high wattage applications. When supplied in an RAT group and used normally closed with a biased magnet, it is useful in elevator and hoists...</p>
	<p><b>Reed Switch Lead Formations</b>                  Modifying the leads of reed switches is a very delicate process and should be carried out by special tools which do not transfer shock into the contact or shift the sensitivity. We have the necessary tools to modify reed switches to...</p>
	<p><b>Test Coils</b>                  List of standard test coils used to measure reed switch and reed sensor operating parameters. All reed sensors we produce are measured in one of these coils...</p>
	<p><b>Magnets</b>                  Our range of rare earth NdFeB and SmCo5 cylindrical and bar magnets. Reed switches and magnets should be acquired from one source.</p>
	<p><b>RoHS Compliance</b>                  All reed switches are SGS certified for the RoHS compliant levels of Lead, Mercury, Cadmium and Hexalent Chromium.</p>

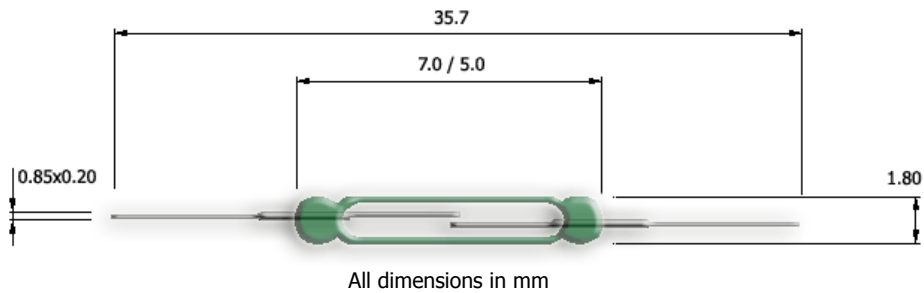
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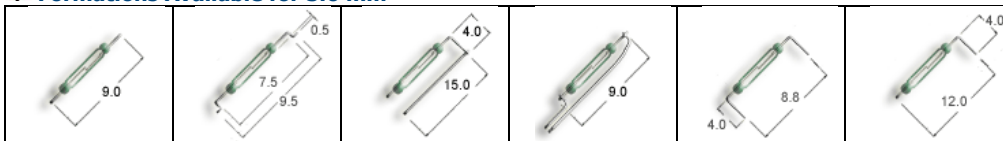
## UM-0018 Ultra-miniature Reed Switch

5.0 mm and 7.0 mm Glass, Form A, Center Contact

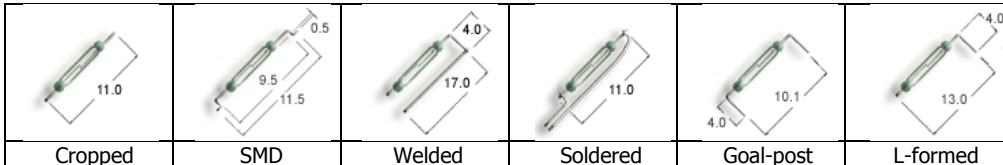


These highly sensitive, form A reed switches are designed for low power, high speed switching applications, where there is a size restriction. The 5 mm glass version is built for use in very compact applications, and the 7 mm glass version is built for lower contact resistance, and can switch higher loads.

### Formations Available for 5.0 mm



### Formations Available for 7.0 mm



### Applications

This reed switch is suitable for use in the following applications and many others: dentists drills, reed relays, pacemakers, shock sensors, automobile crash sensors, vane sensors, LEGO sensors, musical greeting cards...

### Electrical

Sub code		<b>M</b>	<b>H</b>
Glass Length	mm	5.0	7.0
Operate Range	AT	7 – 20	7 – 20
Release Range	AT	3 – 18	3 – 18
Contact Rating (max)	W/ VA	5.0	10.0
Switching Current (max)	A	0.35	0.5
Carry Current (max)	A	0.5	0.5
Switching Voltage (max)	V <sub>DC</sub>	100	100
Switching Voltage (max)	V <sub>AC</sub>	70	70
Breakdown Voltage	V <sub>DC</sub>	150	150
Initial Contact Resistance (max)	mΩ	200	200
Insulation Resistance (min)	Ω	10 <sup>9</sup>	10 <sup>9</sup>
Capacitance (min)	pF	0.2	0.2

### Miscellaneous

Operate Time (max)	ms	0.35
Bounce Time (max)	ms	0.3
Release Time (max)	ms	0.1
Resonance Frequency	Hz	>2000
Operating Frequency	Hz	500
Operating Temperature	°C	-40 to +120
Test Coil		717 102 003
Lead out plating		Sn (Pb free)
Shock Resistance	g	30
Vibration (10-2000Hz)	g	20

### Ordering Code

UM-0018-(Sub Code)-(Start Operate AT)-(Finish Operate AT)

### Example UM-0018-M-15-18

Denotes 5 mm glass length, in 15-18 Operate AT band.

### Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

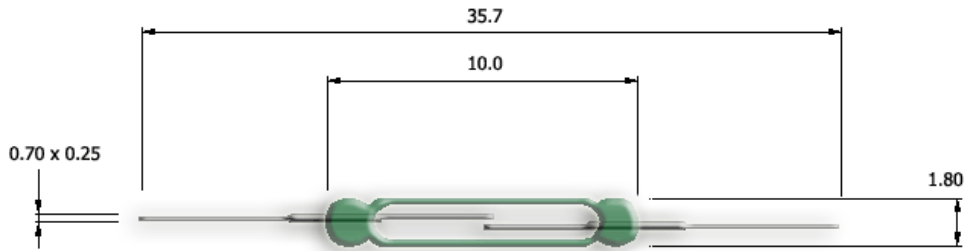
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# MM-1018 Micro-miniature Reed Switch

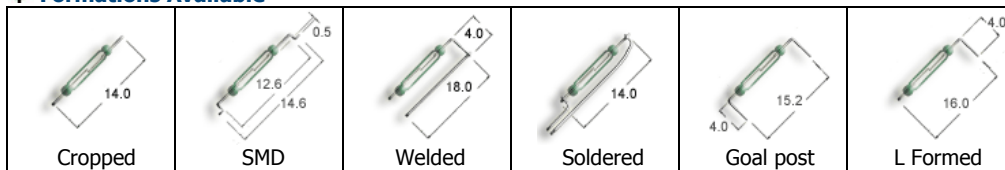
Form A, Center Contact, Release AT Configurable



All dimensions in mm

This 10mm long, form A reed switch is designed for low power, high speed switching applications, and has a cost advantage over the UM-0018 Ultra-miniature series. The flattened lead outs are useful for orienting the internal blades to face one way while soldering, welding etc., for maximum in-group sensitivity, and the three different differential types available, cover a wide range of release specific applications. This reed switch is Lead (Pb) free and RoHS compliant.

### Formations Available



### Applications

This reed switch is suitable for use in the following applications and many others: Microphones, reed relays, power showers, vibration sensors, sewing machines, automobile crash sensors, defective lamp detection, pressure gauges, vane sensors, fuel pumps, electric fishing reels, pedometers, board games...

### Electrical

Sub code		L	M	H
Operate Range	AT	10-40	10-40	10-40
Release Range	AT	4-20	6-25	7.5-30
Contact Rating (max)	W/ VA	10.0	10.0	10.0
Switching Current (max)	A	0.5	0.5	0.5
Carry Current (max)	A	0.75	0.75	0.75
Switching Voltage (max)	V <sub>DC</sub>	100	100	100
Switching Voltage (max)	V <sub>AC</sub>	70	70	70
Breakdown Voltage	V <sub>DC</sub>	200	200	200
Initial Contact Resistance (max)	mΩ	100	120	150
Insulation Resistance (min)	Ω	10 <sup>9</sup>	10 <sup>9</sup>	10 <sup>9</sup>
Capacitance (min)	pF	0.2	0.2	0.2

### Miscellaneous

Operate Time (max)	ms	0.35
Bounce Time (max)	ms	0.3
Release Time (max)	ms	0.15
Resonance Frequency	Hz	>2000
Operating Frequency	Hz	500
Operating Temperature	°C	-40 to +120
Test Coil		717 102 003
Lead out plating		Sn (Pb free)
Shock Resistance	g	30
Vibration (10-2000Hz)	g	20

### Ordering Code

MM-1018-(Sub Code)-(Start Operate AT)-(Finish Operate AT)

### Example MM-1018-M-10-14

Denotes 10-14 Operate AT band, with a minimum Release AT of 6.

### Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

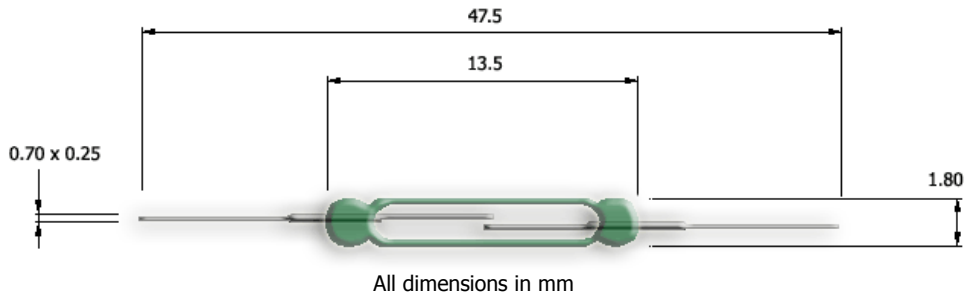
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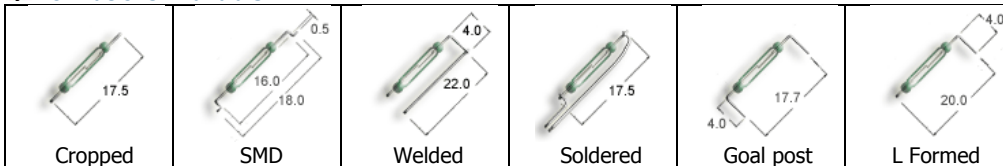
# RM-1318 Reduced-miniature Reed Switch

Form A, Center Contact, Release AT Configurable



This reed switch is designed for applications where a size restriction is present, but higher load switching and current carrying capability is required. The blades have a good flexibility, for fast operation and good contact force, and can carry up to 1.5 A. The flattened leads are useful for orienting the internal blades to face one way while soldering, welding etc., for maximum in-group sensitivity. The three differential ranges available, cover a wide range of release specific applications. This reed switch is Lead (Pb) free and RoHS compliant.

## Formations Available



## Applications

This reed switch is suitable for use in the following applications and many others: radio transmitters, instant water heaters, defective lamp detection, inclination sensors, pressure gauges, lake current measurement, fuel pumps, electric fishing reels, LEGO sensors...

## Electrical

Sub code		L	M	H
Operate Range	AT	10 – 40	10 - 40	10 – 40
Release Range	AT	4 – 20	6 – 25	7.5 – 30
Contact Rating (max)	W/ VA	10.0	10.0	10.0
Switching Current (max)	A	0.5	0.5	0.5
Carry Current (max)	A	1.50	1.50	1.50
Switching Voltage (max)	V <sub>DC</sub>	180	180	180
Switching Voltage (max)	V <sub>AC</sub>	130	130	130
Breakdown Voltage (Min)	V <sub>DC</sub>	200	200	200
Initial Contact Resistance (max)	mΩ	100	120	150
Insulation Resistance (min)	Ω	10 <sup>11</sup>	10 <sup>11</sup>	10 <sup>11</sup>
Capacitance (min)	pF	0.2	0.2	0.2

## Miscellaneous

Operate Time (max)	ms	0.5
Bounce Time (max)	ms	0.15
Release Time (max)	ms	0.15
Resonance Frequency	Hz	>2000
Operating Frequency	Hz	500
Operating Temperature	°C	-40 to +200
Test Coil		717 102 004
Lead out plating		Sn (Pb free)
Shock Resistance	g	30
Vibration (10-2000Hz)	g	20

## Ordering Code

RM-1318-(Sub Code)-(Start Operate AT)-(Finish Operate AT)

**Example** RM-1318-M-10-14  
Denotes 10-14 Operate AT band, with a minimum Release AT of 6.

## Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

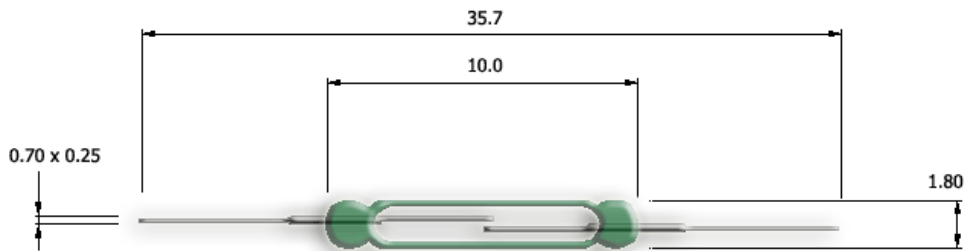
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# MM-1018 Micro-miniature Reed Switch

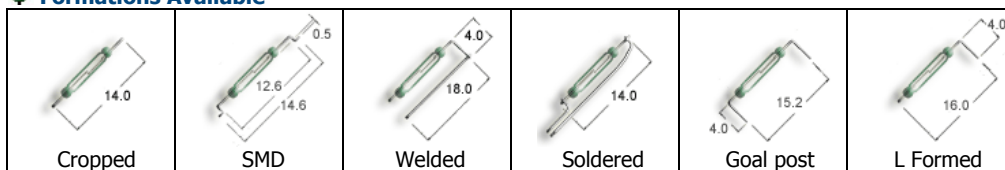
Form A, Center Contact, Release AT Configurable



All dimensions in mm

This 10mm long, form A reed switch is designed for low power, high speed switching applications, and has a cost advantage over the UM-0018 Ultra-miniature series. The flattened lead outs are useful for orienting the internal blades to face one way while soldering, welding etc., for maximum in-group sensitivity, and the three different differential types available, cover a wide range of release specific applications. This reed switch is Lead (Pb) free and RoHS compliant.

### Formations Available



### Applications

This reed switch is suitable for use in the following applications and many others: Microphones, reed relays, power showers, vibration sensors, sewing machines, automobile crash sensors, defective lamp detection, pressure gauges, vane sensors, fuel pumps, electric fishing reels, pedometers, board games...

### Electrical

Sub code		L	M	H
Operate Range	AT	10-40	10-40	10-40
Release Range	AT	4-20	6-25	7.5-30
Contact Rating (max)	W/ VA	10.0	10.0	10.0
Switching Current (max)	A	0.5	0.5	0.5
Carry Current (max)	A	0.75	0.75	0.75
Switching Voltage (max)	V <sub>DC</sub>	100	100	100
Switching Voltage (max)	V <sub>AC</sub>	70	70	70
Breakdown Voltage	V <sub>DC</sub>	200	200	200
Initial Contact Resistance (max)	mΩ	100	120	150
Insulation Resistance (min)	Ω	10 <sup>9</sup>	10 <sup>9</sup>	10 <sup>9</sup>
Capacitance (min)	pF	0.2	0.2	0.2

### Miscellaneous

Operate Time (max)	ms	0.35
Bounce Time (max)	ms	0.3
Release Time (max)	ms	0.15
Resonance Frequency	Hz	>2000
Operating Frequency	Hz	500
Operating Temperature	°C	-40 to +120
Test Coil		717 102 003
Lead out plating		Sn (Pb free)
Shock Resistance	g	30
Vibration (10-2000Hz)	g	20

### Ordering Code

MM-1018-(Sub Code)-(Start Operate AT)-(Finish Operate AT)

### Example MM-1018-M-10-14

Denotes 10-14 Operate AT band, with a minimum Release AT of 6.

### Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

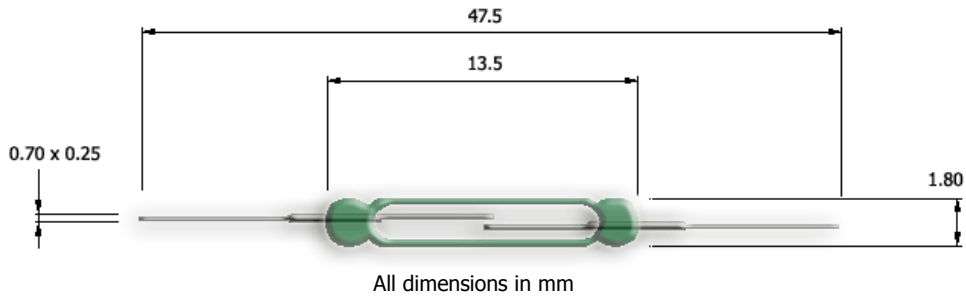
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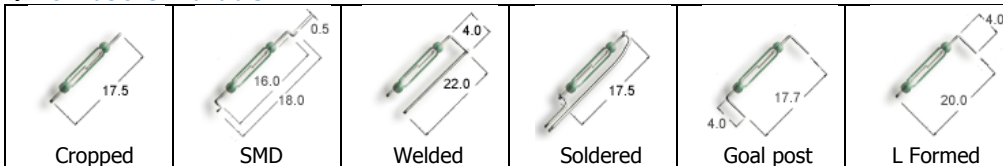
# RM-1318 Reduced-miniature Reed Switch

Form A, Center Contact, Release AT Configurable



This reed switch is designed for applications where a size restriction is present, but higher load switching and current carrying capability is required. The blades have a good flexibility, for fast operation and good contact force, and can carry up to 1.5 A. The flattened leads are useful for orienting the internal blades to face one way while soldering, welding etc., for maximum in-group sensitivity. The three differential ranges available, cover a wide range of release specific applications. This reed switch is Lead (Pb) free and RoHS compliant.

## Formations Available



## Applications

This reed switch is suitable for use in the following applications and many others: radio transmitters, instant water heaters, defective lamp detection, inclination sensors, pressure gauges, lake current measurement, fuel pumps, electric fishing reels, LEGO sensors...

## Electrical

Sub code		L	M	H
Operate Range	AT	10 – 40	10 - 40	10 – 40
Release Range	AT	4 – 20	6 – 25	7.5 – 30
Contact Rating (max)	W/ VA	10.0	10.0	10.0
Switching Current (max)	A	0.5	0.5	0.5
Carry Current (max)	A	1.50	1.50	1.50
Switching Voltage (max)	V <sub>DC</sub>	180	180	180
Switching Voltage (max)	V <sub>AC</sub>	130	130	130
Breakdown Voltage (Min)	V <sub>DC</sub>	200	200	200
Initial Contact Resistance (max)	mΩ	100	120	150
Insulation Resistance (min)	Ω	10 <sup>11</sup>	10 <sup>11</sup>	10 <sup>11</sup>
Capacitance (min)	pF	0.2	0.2	0.2

## Miscellaneous

Operate Time (max)	ms	0.5
Bounce Time (max)	ms	0.15
Release Time (max)	ms	0.15
Resonance Frequency	Hz	>2000
Operating Frequency	Hz	500
Operating Temperature	°C	-40 to +200
Test Coil		717 102 004
Lead out plating		Sn (Pb free)
Shock Resistance	g	30
Vibration (10-2000Hz)	g	20

## Ordering Code

RM-1318-(Sub Code)-(Start Operate AT)-(Finish Operate AT)

### Example RM-1318-M-10-14

Denotes 10-14 Operate AT band, with a minimum Release AT of 6.

## Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

Due to continual improvement, specifications are subject to change without notice

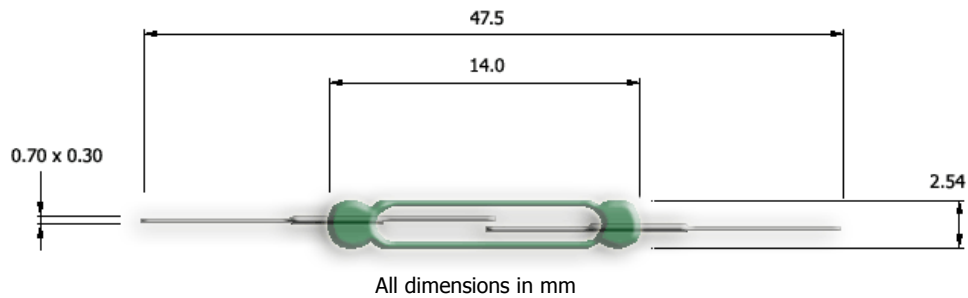
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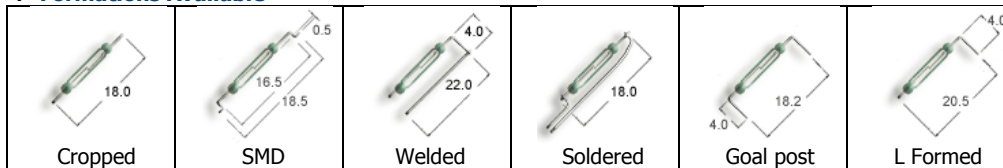
# MC-1425 Miniature Close Differential Reed Switch

Form A, Center Contact, 10W



This form A reed switch is built with specially pressed blades with slightly higher rigidity for close differential, low hysteresis applications where an operate and release is required with minimum magnet travel or minimum change in coil voltage. This reed switch is Lead (Pb) free and RoHS compliant.

## Formations Available



## Applications

This reed switch is suitable for use in the following applications and many others: automobile seatbelt sensors, automobile coolant flow sensing, digital wind vanes, ferrous metal detection sensors, gear speed and direction sensors...

## Electrical

Differential (min)	%	70
Operate Range	AT	10 – 40
Release Range	AT	7.5 – 30
Contact Rating (max)	W/ VA	10.0
Switching Current (max)	A	0.5
Carry Current (max)	A	1.50
Switching Voltage (max)	V <sub>DC</sub>	180
Switching Voltage (max)	V <sub>AC</sub>	130
Breakdown Voltage	V <sub>DC</sub>	200
Initial Contact Resistance (max)	mΩ	150
Insulation Resistance (min)	Ω	10 <sup>11</sup>
Capacitance (min)	pF	0.20

## Miscellaneous

Operate Time (max)	ms	0.5
Bounce Time (max)	ms	0.15
Release Time (max)	ms	0.15
Resonance Frequency	Hz	>2000
Operating Frequency	Hz	500
Operating Temperature	°C	-40 to +200
Test Coil		717 102 005
Lead out plating		Sn (Pb free)
Shock Resistance	g	50
Vibration (10-2000Hz)	g	20

## Ordering Code

MC-1425-(Start Operate AT)-(Finish Operate AT)

**Example** MC-1425-15-18

Denotes 15-18 Operate AT band.

## Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

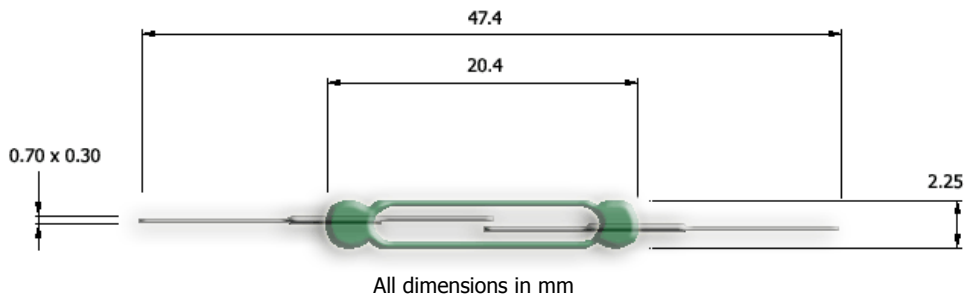
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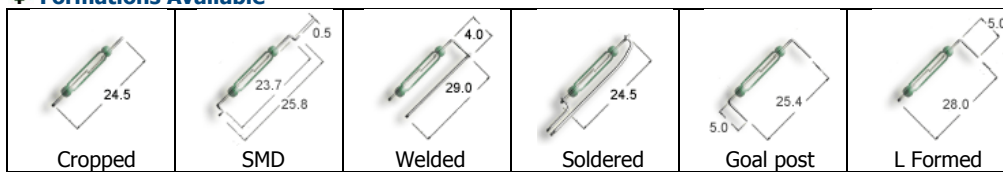
## IL-2022 Reed Switch for Inductive Loads

Form A, Center Contact, Release AT Configurable



This reed switch is designed for performance at moderate inductive loads of 15W. The flattened lead outs are especially useful for orienting the internal blades to face one way while soldering, welding etc, for maximum in-group sensitivity. The three differential bands which are available cover a wide range of release specific applications. This reed switch is Lead (Pb) free and RoHS compliant.

### Formations Available



### Applications

This reed switch is suitable for use in the following applications and many others: coffee machines, water tank control, digital wind vanes, rowing electronics, electronics and science kits...

### Electrical

Sub code		<b>L</b>	<b>M</b>	<b>H</b>
Operate Range	AT	20 – 50	20 – 50	20 - 50
Release Range	AT	8 – 25	11 – 30	14 - 50
Contact Rating (max)	W/ VA	15.0	15.0	15.0
Switching Current (max)	A	0.5	0.5	0.5
Carry Current (max)	A	1.75	1.75	1.75
Switching Voltage (max)	V <sub>DC</sub>	150	150	150
Switching Voltage (max)	V <sub>AC</sub>	125	125	125
Breakdown Voltage	V <sub>DC</sub>	200	200	200
Initial Contact Resistance (max)	mΩ	100	150	200
Insulation Resistance (min)	Ω	10 <sup>11</sup>	10 <sup>11</sup>	10 <sup>11</sup>
Capacitance (min)	pF	0.2	0.2	0.2

### Miscellaneous

Operate Time (max)	ms	1.0
Bounce Time (max)	ms	0.5
Release Time (max)	ms	0.15
Resonance Frequency	Hz	>2000
Operating Frequency	Hz	500
Operating Temperature	°C	-40 to +200
Test Coil		717 102 002
Lead out plating		Sn (Pb free)
Shock Resistance	g	50
Vibration (10-2000Hz)	g	20

### Ordering Code

IL-2022-(Sub Code)-(Start Operate AT)-(Finish Operate AT)

### Example IL-2022-H-20-25

Denotes 20-25 Operate AT with a minimum Release AT of 14.

### Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

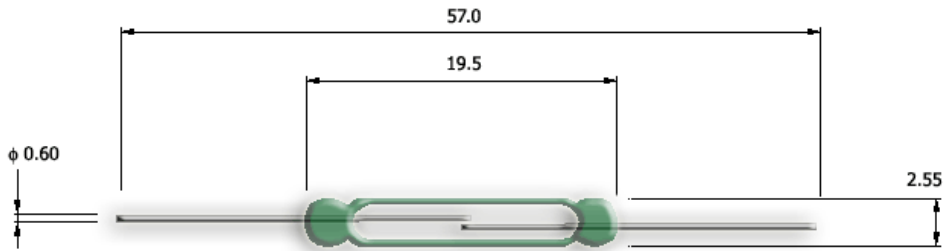
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27 December 2013

# LV-1925 Reed Switch for Line Voltage Switching

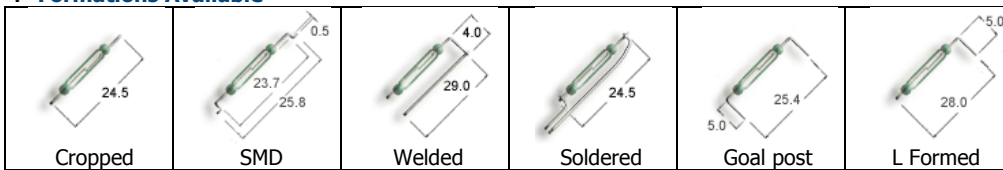
Form A, Center Contact, Contact Rating Configurable



All dimensions in mm

The LV-1925 is designed for endurance at switching line voltage loads of 230V AC. Two versions are capable of switching 30W and 60W. The third version is manufactured with specially plated blades for endurance at high current levels and can switch up to 90W. When used with contact protection, direct switching of tungsten filament lamps is possible. This reed switch is Lead (Pb) free and RoHS compliant.

### Formations Available



### Applications

This reed switch is suitable for use in the following applications and many others: over current sensors, magnetic extensometers, electronics and science kits, high voltage reed relays, thermal sensors...

### Electrical

Sub code		<b>L</b>	<b>M</b>	<b>H</b>
Operate Range	AT	20 – 60	30 – 50	30 – 50
Release Range	AT	5 – 25	10 – 30	10 – 30
Contact Rating (max)	W/ VA	30.0	60.0	90.0
Switching Current (max)	A	0.5	0.5	0.5
Carry Current (max)	A	2.5	2.5	2.5
Switching Voltage (max)	V <sub>DC</sub>	230	230	230
Switching Voltage (max)	V <sub>AC</sub>	230	230	230
Breakdown Voltage	V <sub>DC</sub>	350	350	350
Initial Contact Resistance (max)	mΩ	100	100	100
Insulation Resistance (min)	Ω	10 <sup>11</sup>	10 <sup>11</sup>	10 <sup>11</sup>
Capacitance (min)	pF	0.2	0.2	0.2

### Miscellaneous

Operate Time (max)	ms	1.0
Bounce Time (max)	ms	0.6
Release Time (max)	ms	0.15
Resonance Frequency	Hz	>2000
Operating Frequency	Hz	300
Operating Temperature	°C	-40 to +200
Test Coil		717 102 002
Lead out plating		Sn (Pb free)
Shock Resistance	g	50
Vibration (10-2000Hz)	g	20

### Ordering Code

LV-1925-(Sub Code)-(Start Operate AT)-(Finish Operate AT)

### Example

LV-1925-L-26-30  
Denotes 30 W contact rating in 26-30 Operate AT band.

### Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

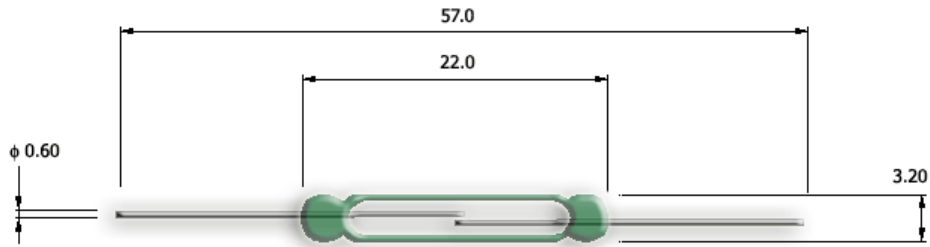
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# HB-2232 Reed Switch with High Breakdown

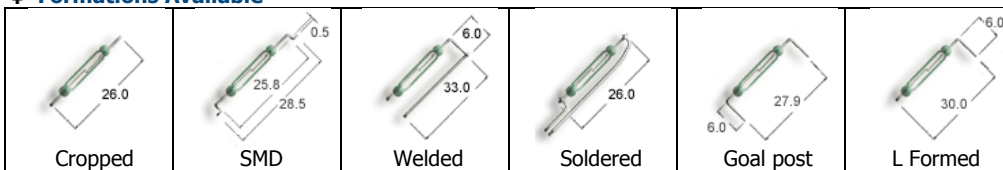
Form A, Center Contact, Breakdown Voltage Configurable



All dimensions in mm

This reed switch is designed with highly flexible blades to get maximum contact gap at lower AT ranges, and consequently having high break down characteristics. The two types of contacts options available provide breakdown at 350V or 500V minimum. Higher ampere turn groups will have even higher breakdown voltage values. This reed switch is Lead (Pb) free and RoHS compliant.

### Formations Available



### Applications

This reed switch is suitable for use in the following applications and many others: relays in food processors, power switches in explosive areas, magnetic extensometers...

### Electrical

Sub code		L	H
Operate Range	AT	20 – 60	30 – 60
Release Range	AT	8 – 25	12 – 25
Contact Rating (max)	W/ VA	30.0	90.0
Switching Current (max)	A	0.5	0.75
Carry Current (max)	A	1.75	2.50
Switching Voltage (max)	V <sub>DC</sub>	230	230
Switching Voltage (max)	V <sub>AC</sub>	125	125
Breakdown Voltage	V <sub>DC</sub>	350	500
Initial Contact Resistance (max)	mΩ	100	100
Insulation Resistance (min)	Ω	10 <sup>11</sup>	10 <sup>11</sup>
Capacitance (min)	pF	0.2	0.2

### Miscellaneous

Operate Time (max)	ms	1.0
Bounce Time (max)	ms	0.5
Release Time (max)	ms	0.2
Resonance Frequency	Hz	>2000
Operating Frequency	Hz	500
Operating Temperature	°C	-40 to +200
Test Coil		717 102 002
Lead out plating		Sn (Pb free)
Shock Resistance	g	50
Vibration (10-2000Hz)	g	20

### Ordering Code

HB-2232-(Sub Code)-(Start Operate AT)-(Finish Operate AT)

**Example** HB-2232-H-30-35

Denotes 500 V breakdown voltage in 30-35 Operate AT band

### Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

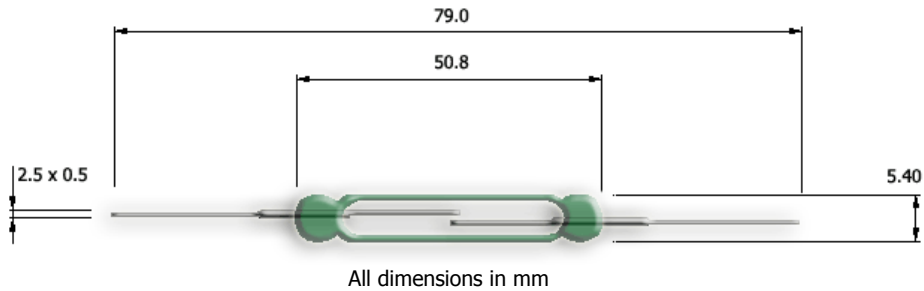
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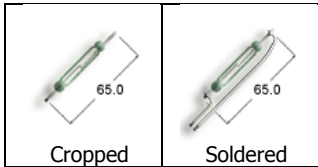
# HW-5052 High Wattage Reed Switch

Form A, Center Contact, Contact Rating Configurable



This reed switch is physically robust and can switch up to 120W. The two types of contact ratings available cover a wide range of high wattage applications. When supplied in an RAT group and used normally closed with a biased magnet, it is especially useful in elevator and hoist applications. Close differential characteristics can also be built into this reed switch. This reed switch is Lead (Pb) free and RoHS compliant.

### Formations Available



### Applications

This reed switch is suitable for use in the following applications and many others: elevators and hoists, transformer tap changers, high voltage reed relays...

### Electrical

Sub code		<b>L</b>	<b>H</b>
Operate Range	AT	40 – 120	75 – 120
Release Range	AT	15 - 40	28 - 55
Contact Rating (max)	W/ VA	80	120
Switching Current (max)	A	2.0	3.0
Carry Current (max)	A	3.0	5.0
Switching Voltage (max)	V <sub>DC</sub>	300	300
Switching Voltage (max)	V <sub>AC</sub>	240	240
Breakdown Voltage	V <sub>DC</sub>	500	800
Initial Contact Resistance (max)	mΩ	100	100
Insulation Resistance (min)	Ω	10 <sup>10</sup>	10 <sup>10</sup>
Capacitance (min)	pF	0.4	0.4

### Miscellaneous

Operate Time (max)	ms	4.0
Bounce Time (max)	ms	1.0
Release Time (max)	ms	0.4
Resonance Frequency	Hz	>900
Operating Frequency	Hz	185
Operating Temperature	°C	-40 to +200
Test Coil		717 102 001
Lead out plating		Sn (Pb free)
Shock Resistance	g	50
Vibration (10-2000Hz)	g	20

### Ordering Code

HW-5052-(Sub Code)-(Start Operate AT)-(Finish Operate AT)

**Example** HW-5052-H-90-95  
Denotes 120 W contact rating, in 90-95 Operate AT band.

### Other Configurations Available

Dynamic contact resistance limit, Higher insulation resistance, Special release limits, Gold plates leads

Please refer to our reed switch [usage notes](#)

Due to continual improvement, specifications are subject to change without notice

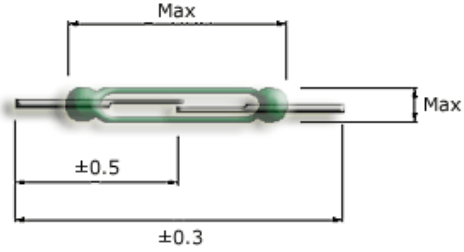
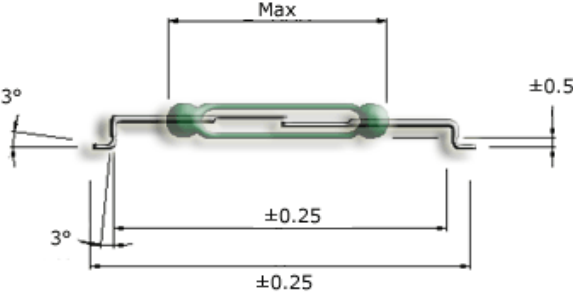
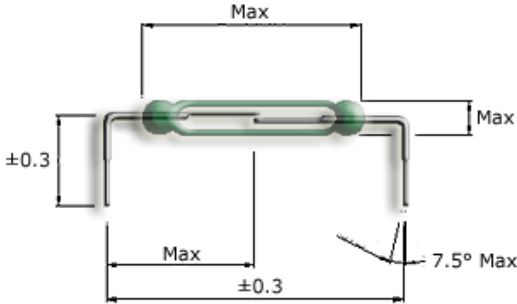
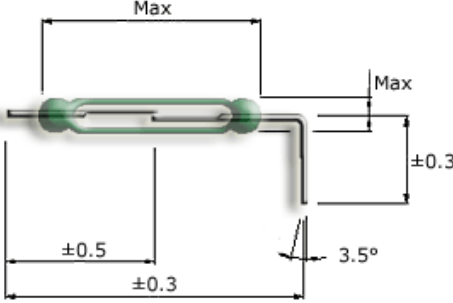
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## Reed Switch Lead Formations

### Cropping, SMD, goal-post and L-formed

Modifying the leads of reed switches is a very delicate process and should be carried out by special tools which do not transfer shock into the contact or shift the sensitivity. We have the necessary tools to modify reed switches to the following formations, within the specified tolerances to suit different applications.

	<p><b>Cropped Reed Switch</b> The leads are gripped just outside the glass seals to prevent shock from transferring to the contacts, and the unwanted leads are cropped in one swift motion. Cropped reed switches can be used for soldering longer wires for encapsulation in customized housings.</p>
	<p><b>SMD Reed Switch</b> The leads are gripped just outside the glass seals, cropped to the required length, and then SMD formed. No flattening (which needs extra pressure that could damage the contacts) takes place as all reed switches are produced with flat leads. As a result, SMD formed reed switches have oriented internal blades for maximum in-group sensitivity. These devices are a cost effective solution to SMD reed sensors for applications without shock and vibration.</p>
	<p><b>Goal-post Reed Switch</b> The leads are gripped just outside the glass seals to prevent shock from transferring to the contacts, cropped to the required length, and then goal post formed. Blades are always oriented perpendicular to the formed leads for maximum in-group sensitivity. These devices are a cost effective solution to PCB mountable reed sensors for applications with stable environmental conditions.</p>
	<p><b>L-Formed Reed Switch</b> The leads are gripped just outside the glass seals to prevent shock from transferring to the contacts, cropped to the required length, and then L formed. This formation can be used for manufacturing welded and soldered assemblies.</p>

All dimensions in mm

Due to continual improvement, specifications are subject to change without notice

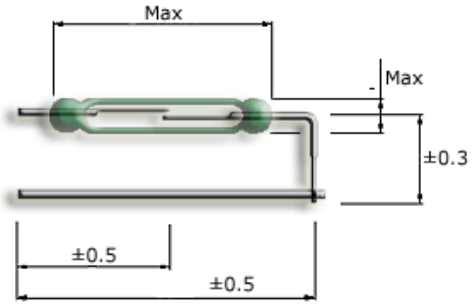
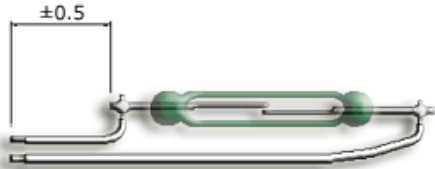
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## Reed Switch Lead Formations

### Soldered and Welded assemblies

Modifying the leads of reed switches is a very delicate process and should be carried out by special tools which do not transfer shock into the contact or shift the sensitivity. We have the necessary tools to modify reed switches to the following formations, within the specified tolerances to suit different applications.

	<p><b>Welded Reed Switch</b></p> <p>The leads are gripped just outside the glass seals to prevent shock from transferring to the contacts, cropped to the required length, and then L formed. The L formed assembly is welded to a non-magnetic wire and the final assembly is lead out plated for solderability after welding. These kinds of reed switches are suitable for vertical PCB mounting.</p>
 <p>Other tolerances same as cropped version</p>	<p><b>Soldered Reed Switch</b></p> <p>Cropped reed switches are soldered to stripped and tinned wires. These assemblies can be encapsulated in plastic housings. This assembly, with a thin layer of a flexible and resilient compound is a cost effective alternative to proximity sensors in cylindrical housings.</p>

All dimensions in mm

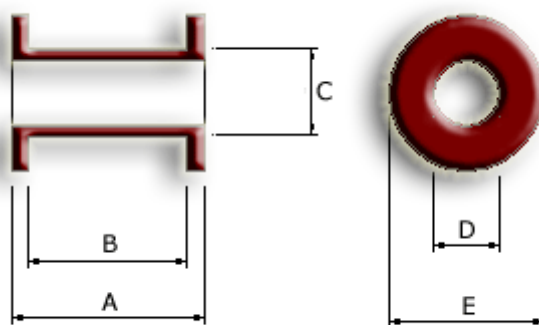
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## Test Coils

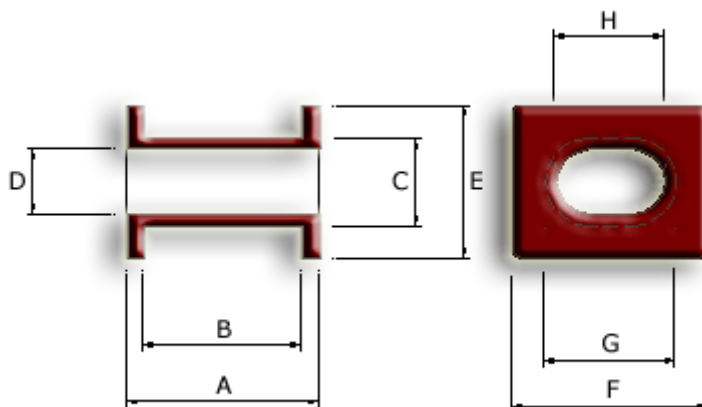
For Reed Switches and Sensors



### Cylindrical

Test Coil No.	717 102 001	717 102 002	717 102 003	717 102 004	717 102 005
A	53.3	21.0	12.0	27.8	19.0
B	50.8	19.0	10.0	25.4	15.0
C	7.6	4.3	3.3	8.7	3.7
D	5.6	3.4	2.3	2.4	2.9
E	14.1	7.7	11.0	17.2	11.0
Wire Diameter	0.090	0.050	0.060	0.100	0.071
Turns	10000	5000	5000	5000	5000
Coil Res. $\Omega$	845	740	600	404	450

All dimensions in mm



### Rectangular

Test Coil	TCP 3001	TCP3002	TCP 3003	TCP 3004
A mm	13.5	23.3	42.5	42.5
B mm	7	19.7	36.5	36.5
C mm	8	6.8	14.8	15.8
D mm	6	6.2	13.8	13.8
E mm	14	14.8	25.0	25.0
F mm	18	20.6	28.6	35.6
G mm	12	12.2	14.6	22.8
H mm	10	11.6	13.6	20.8
Wire Diameter mm	0.05	0.08	0.15	0.15
Turns	5000	10000	5000	5000
Coil Resistance $\Omega$	2000	1900	290	440

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## Standard Magnets

For Reed Switches and Sensors

### Cylindrical Magnets

	Part Number	Material	D (mm)	L (mm)
	NDC-T	NdFeB:N35	2.0	4.0
	NDC-S	NdFeB:N35	3.0	7.0
	NDC-M	NdFeB:N35	4.0	10.0
NDC-L	NdFeB:N35	8.0	15.0	

### Bar Magnets

	Part Number	Material	L (mm)	B (mm)	H (mm)
	NDR-T	NdFeB:N35	4.0	1.5	1.5
	NDR-S	NdFeB:N35	6.0	2.5	2.5
	NDR-M	NdFeB:N35	8.0	3.0	3.0
	NDR-L	NdFeB:N35	19.0	4.0	4.0

### Magnet Material Specifications

Magnet Type		Remanance Br (mT)	Coercivity		Energy Product max. BH (kJ/m <sup>3</sup> )	Operating Temperature (°C)
Composition	Code		HcB (kA/m)	HcJ (kA/m)		
Ferrite	C8	385	235	242	27.8	300
AlNiCo	LNG37	1180	48	53	37	550
NdFeB	N35	1180	880	955	270	80
NdFeB	N35SH	1180	880	1353	270	120
SmCo	YX20	925	680	1595	160	300

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## Restriction of Hazardous Substances

### RoHS Compliance

In late 2002 the European Parliament approved two directives related to the reduction of electrical and electronic waste, namely the Waste Electrical and Electronic Equipment (WEEE) and Restriction of the use of certain Hazardous Substances (RoHS) Directives. The WEEE Directive aims to regulate the reuse, recycling and recovery of waste electrical and electronic equipment; the ultimate goal is to prevent the disposal of this waste.

In the RoHS Directive, the use of the aforementioned substances in most electrical and electronic equipment will be banned or severely restricted. The RoHS Directive calls for the elimination of these substances from most electronic equipment starting 1 July 2006. Our products are SGS certified for the RoHS compliant levels of Lead, Mercury, Cadmium and Hexavalent Chromium.

#### **End-of-Life Vehicle (ELV)**

End-of-Life Vehicle (ELV) regulations set limits for the following substances:

Lead  
Mercury  
Cadmium  
Hexavalent Chromium

#### **Restriction of Hazardous Substances (RoHS)**

The Reduction of Hazardous Substances (RoHS) regulations set limits for the following substances:

Lead  
Mercury  
Cadmium  
Hexavalent Chromium  
Polybrominated Biphenyls (PBB)  
Polybrominated Diphenyl Ethers (PBDE)

To certify to the above compliances, these substances must not be intentionally added to the product AND cannot exceed the following maximum allowable levels as a trace substance:

0.1% (1,000 ppm) for: Lead\*, Mercury, Hexavalent Chromium, PBB and PBDE

0.01% (100 ppm) for: Cadmium

\*Lead as an alloying element in copper alloys is allowed up to 4.0% (40,000 ppm); in steel up to 0.35% (3,500 ppm) is allowed; in aluminum alloys up to 0.40% (4,000 ppm) is allowed. These requirements must be applied at the homogeneous material level. Since RoHS compliance is a stricter standard than ELV compliance, parts that are RoHS compliant are also ELV compliant.

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## Reed Switch Usage Notes

### Do's and Don'ts

Reed switches and reed sensors are delicate products. Handle with extra care. Cropping and forming of terminals will change the operate, release, and differential values.

#### ✔ Do's

Use a flexible resin for potting or encapsulation, after protecting the seals with a resilient, shock absorbing compound like a silicone paste.

While **cropping or forming**, gripping of leads between the seal and the cropping or forming point is mandatory.

When switching inductive or capacitive loads, use **contact protection** circuits.

Ask for reed switches in an RAT group instead of an OAT group, when combining with magnets for making them normally closed contacts.

Ask for reed switches in an OAT group and specify a minimum hysteresis, when combining with magnets for making them latching contacts.

#### ✘ Don'ts

Do not crop or form the leads less than 2 mm from the seals.

Do not use ferro-magnetic mounting parts, screws, or other ferro-magnetic devices nearby. This will affect the sensitivity (AT).

When manual soldering, do not subject to more than a 5 second dwell. This may cause damage to the seals, change sensitivity, and reduce solderability.

Do not drop. Dropping or subjection to shock will permanently damage the contact or alter the sensitivity (AT).

Switching voltage, switching current, and contact rating should not exceed maximum limits stated in specification sheets.

**Do contact us for more information**

Due to continual improvement, specifications are subject to change without notice

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