- **Series 62** - chassis mounting with push-on HV connections on the top face
- **Series 63** - printed circuit mounting with push-on HV connections on the top face
- Up to **15 kV** stand-off, **12.5 kV** switching at **50 W** maximum
- **5**, **12**, and **24 V** coils
- Tungsten plated contacts ensure a long and reliable life
- Additional build options are available
- Many benefits compared to industry standard relays (see last page)

Package Type 1 2

The Series 62 and 63 ranges of high voltage reed relays feature push-on terminals and are supplied complete with the appropriate connectors and insulating boots.

Both Form A (energize to make) and Form B (energize to break) configurations are available and with appropriate control circuitry to ensure break before make for operate and release, it is usually possible to achieve a Form C (change-over) function by using the Form A and a Form B type together. However, a 1 Form C, up to 5 kV, is coming soon within the Series 67 range.

These relays feature an internal mu-metal magnetic screen which permits the Form A (energize to make) versions to be mounted side by side. Special versions can be manufactured with an electrostatic screen and/or earth connection to the magnetic screen. This can often be useful where EMC problems are encountered, please contact our technical sales office for more information and advice.

Form B types are magnetically biased and should not be mounted directly onto ferrous metal chassis or less than 1 inch (25 mm) away from other relays as the coil operating voltage characteristics will be altered due to magnetic interaction. The coils of Form B relays are polarity sensitive, the positive connection is identified by a red spot.

Switch Ratings

1 Form A (energize to make)	1 Form B (energize to break)
Stand-off 5 kV, switching up to 3.5 kV Stand-off 10 kV, switching up to 7.5 kV Stand-off 15 kV, switching up to 12.5 kV	Stand-off 5 kV, switching up to 3.5 kV Stand-off 10 kV, switching up to 7.5 kV

Series 62, 63 switch ratings - contact ratings for each switch type

Switch No	Switch form	Power rating	Max. switch current	Max. carry current	Max. switching volts	Max. stand-off volts	Life expectancy ops typical (see Note[2])	Operate time inc bounce (max)	Release time
1	A or B	50 W	3 A	5 A	3500 (Note[1])	5000	10^8	3 ms	2 ms
2	A or B	50 W	3 A	5 A	7500 (Note[1])	10000	10^8	3 ms	2 ms
3	A	50 W	3 A	5 A	12500 (Note[1])	15000	10^8	3 ms	2 ms

Note[1]: Switching Voltage

This high voltage rating is for **RESISTIVE loads only**. At these high voltages, even stray capacitance can generate very high current pulses, which can damage the contact plating causing welding of the reed switch. If there is capacitance in circuit, provision should be made to limit the surge, to within the current and power ratings of the relay.

Note[2]: Life Expectancy

The life of a reed relay depends upon the switch load and the end of life criteria. For example, for an 'end of life' contact resistance specification of 1Ω, switching low loads with the current less than 1 mA, or when 'cold' switching, typical life is expected to be greater than 1×10^8 ops. At higher voltages and up to the maximum 50 W load (resistive), typical life is 1×10^6 ops. In the event of abusive conditions, e.g. high currents due to capacitive inrushes, this figure reduces considerably. Pickering will be pleased to perform life testing with any particular load conditions.

ISSUE 1.1 MAR 2021

Operating Voltages

Coil voltage - nominal	Must operate voltage - maximum at 25°C	Must release voltage - minimum at 25°C
5 V	3.75 V	0.5 V
12 V	9 V	1.2 V
24 V	18 V	2.4 V

Environmental Specification/Mechanical Characteristics

In the table below, the upper temperature limit can be extended to +125 °C if the coil drive voltage is increased to accommodate the resistance/temperature coefficient of the copper coil winding. This is approximately 0.4% per °C. This means that at 125 °C the coil drive voltage will need to be increased by approximately 40 x 0.4 =16% to maintain the required magnetic drive level. Please contact sales@pickeringrelay.com for assistance.

Operating Temperature Range	-20 °C to +85 °C
Storage Temperature Range	-35 °C to +100 °C
Shock Resistance	50 g
Vibration Resistance (10 - 2000 Hz)	20 g
Soldering Temperature (max) (10 s max)	270 °C
Washability (Proper drying process is recommended)	Fully Sealed

Series 62 Coil data and type numbers

Device Type	Type Number	Coil (V)	Coil resistance	Max. contact resistance (initial)	Insulation resistance (minimum)		Capacitance (typical) (see Note)	
					Switch to coil	Across switch	Closed switch to coil	Across open switch
1 Form A Switch No. 1 (5 kV) Package Type 1	62-1-A-5/1	5	50 Ω	0.12 Ω	10^{12} Ω	10^{12} Ω	3 pF	0.15 pF
	62-1-A-12/1	12	150 Ω					
	62-1-A-24/1	24	500 Ω					
1 Form A Switch No. 2 (10 kV) Package Type 1	62-1-A-5/2	5	50 Ω	0.12 Ω	10^{12} Ω	10^{12} Ω	3 pF	0.15 pF
	62-1-A-12/2	12	150 Ω					
	62-1-A-24/2	24	500 Ω					
1 Form B Switch No. 1 (5 kV) Package Type 1	62-1-B-5/1	5	50 Ω	0.12 Ω	10^{12} Ω	10^{12} Ω	3 pF	0.15 pF
	62-1-B-12/1	12	150 Ω					
	62-1-B-24/1	24	500 Ω					
1 Form B Switch No. 2 (10 kV) Package Type 1	62-1-B-5/2	5	50 Ω	0.12 Ω	10^{12} Ω	10^{12} Ω	3 pF	0.15 pF
	62-1-B-12/2	12	150 Ω					
	62-1-B-24/2	24	500 Ω					

Note: Capacitance across open switch

The capacitance across the open switch was measured with other connections guarded.

Series 63 Coil data and type numbers

Device Type	Type Number	Coil (V)	Coil resistance	Max. contact resistance (initial)	Insulation resistance (minimum)		Capacitance (typical) (see Note)	
					Switch to coil	Across switch	Closed switch to coil	Across open switch
1 Form A Switch No. 1 (5 kV) Package Type 2	63-1-A-5/1	5	50 Ω	0.12 Ω	10^{12} Ω	10^{12} Ω	3 pF	0.15 pF
	63-1-A-12/1	12	150 Ω					
	63-1-A-24/1	24	500 Ω					
1 Form A Switch No. 2 (10 kV) Package Type 2	63-1-A-5/2	5	50 Ω	0.12 Ω	10^{12} Ω	10^{12} Ω	3 pF	0.15 pF
	63-1-A-12/2	12	150 Ω					
	63-1-A-24/2	24	500 Ω					
1 Form A Switch No. 3 (15 kV) Package Type 2	63-1-A-5/3	5	25 Ω	0.12 Ω	10^{12} Ω	10^{12} Ω	3 pF	0.15 pF
	63-1-A-12/3	12	75 Ω					
	63-1-A-24/3	24	350 Ω					
1 Form B Switch No. 1 (5 kV) Package Type 2	63-1-B-5/1	5	50 Ω	0.12 Ω	10^{12} Ω	10^{12} Ω	3 pF	0.15 pF
	63-1-B-12/1	12	150 Ω					
	63-1-B-24/1	24	500 Ω					
1 Form B Switch No. 2 (10 kV) Package Type 2	63-1-B-5/2	5	50 Ω	0.12 Ω	10^{12} Ω	10^{12} Ω	3 pF	0.15 pF
	63-1-B-12/2	12	150 Ω					
	63-1-B-24/2	24	500 Ω					

Note: Capacitance across open switch
The capacitance across the open switch was measured with other connections guarded.

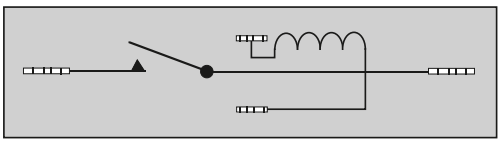
The technical information shown in this data sheet could contain inaccuracies or typographical errors. This information may be periodically changed or updated and these changes will be included in future versions of this data sheet.

For different values, latest specifications and product details, please contact you local Pickering sales office.

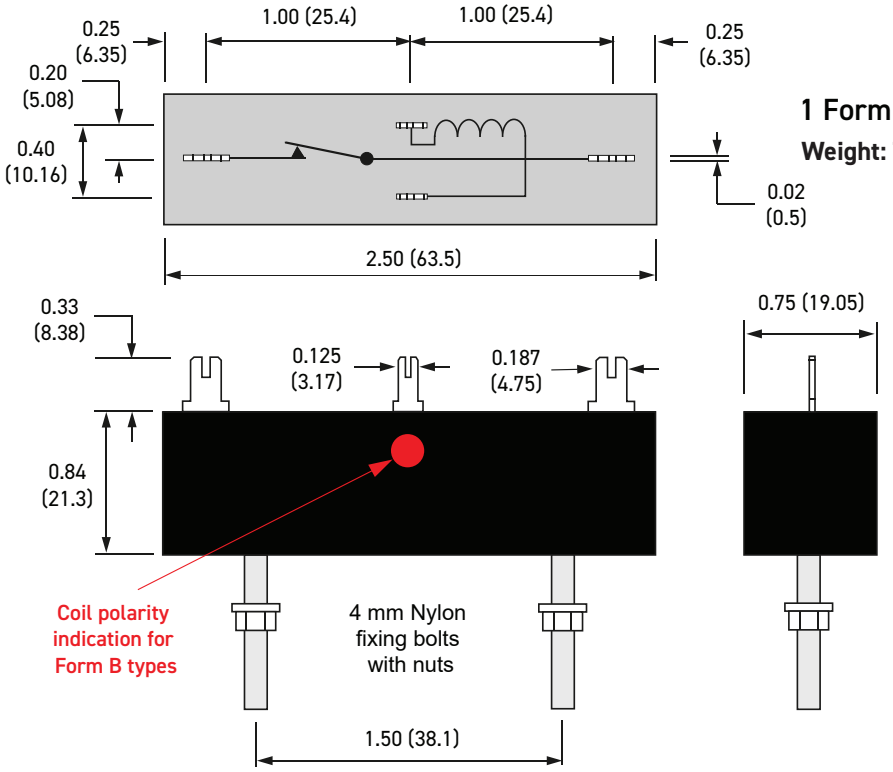
Series 62: Pin Configuration, Weights and Dimensional Data (dimensions in inches, millimeters in brackets)

Package Type 1

Sw. No.1 - 5 kV
Sw. No.2 - 10 kV



1 Form A
Weight: Typical 44.16 g



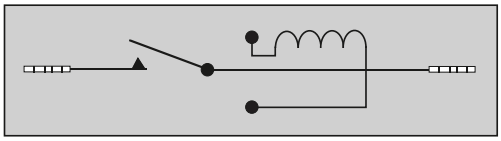
1 Form B
Weight: Typical 44.69 g

Important: For all Form B types, the correct coil polarity must be observed. The positive connection is shown by the red spot on the package.

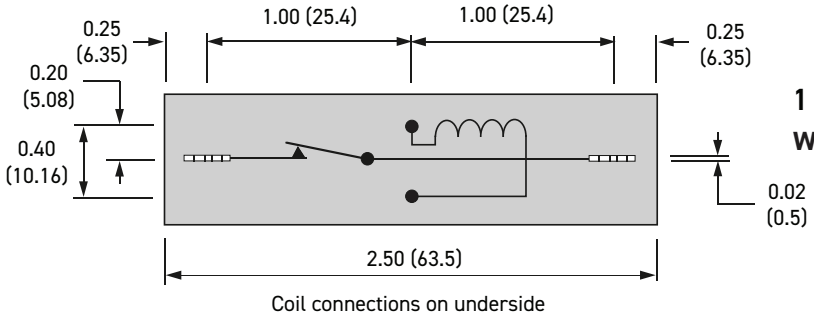
Series 63: Pin Configuration, Weights and Dimensional Data (dimensions in inches, millimeters in brackets)

Package Type 2

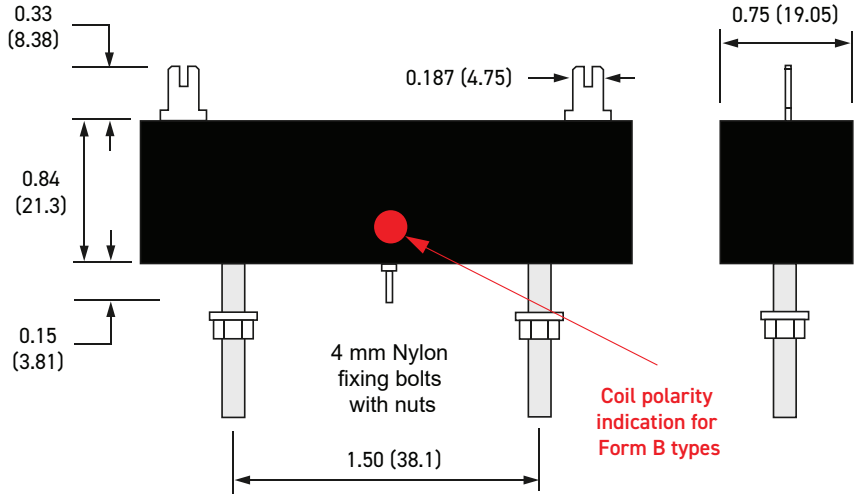
Sw. No.1 - 5 kV
Sw. No.2 - 10 kV
Sw. No.3 - 15 kV
(1 Form A only)



1 Form A
Weight: Typical 45.47 g



1 Form B
Weight: Typical 44.50 g



Important: For all Form B types, the correct coil polarity must be observed. The positive connection is shown by the red spot on the package.

Similar Relays Comparison

If the Series 62 and 63 are unsuitable for your application, Pickering also manufactures four other series of reed relays with similar characteristics, but in different package sizes.

Series Name		60-1-A			60-1-B		65-1-A		65-1-B		67-1-A		67-1-C	68-1-A	
Physical Outline															
Depth	mm (inches)	16.0 (0.63)					16.0 (0.63)				12.6 (0.495)				
Width		57.9 (2.28)					57.9 (2.28)				58.4 (2.3)				
Height		18.0 (0.71)					18.0 (0.71)				14.5 (0.57)				
Package Volume (mm^3)		16676					16676				9543				
Typical Weights (**g**)		28.43			31.83		23.99		31.65		14.53		13.58	16.47	
Contact Configuration		1-A (SPST)			1-B (SPNC)		1-A (SPST)		1-B (SPNC)		1-A (SPST)		1-C (SPDT)	1-A (SPST)	
Reed Switch Type		Dry			Dry		Dry		Dry		Dry		Dry	Dry	
Stand-off Voltage (**V**)		5000	10000	15000	5000	10000	5000	10000	5000	10000	5000	10000	5000	5000	10000
Switching Voltage (**V**)		3500	7500	12500	3500	7500	3500	7500	3500	7500	3500	7500	2500	3500	7500
Switching Current (**A**)		3					3				3		3	3	
Carry Current (**A**)		5					5				5		3.2	5	
Switch Power (**W**)		50					50				50		100	50	

Series Name		62-1-A		62-1-B		63-1-A			63-1-B	
Physical Outline										
Depth	mm (inches)	19.05 (0.75)				19.05 (0.75)				
Width		63.5 (2.5)				63.5 (2.5)				
Height		21.3 (0.84)				21.3 (0.84)				
Package Volume (mm^3)		① 25767				② 25767				
Typical Weights (**g**)		44.16		44.69)		45.47			44.69	
Contact Configuration		1-A (SPST)		1-B (SPNC)		1-A (SPST)			1-B (SPNC)	
Reed Switch Type		Dry		Dry		Dry			Dry	
Stand-off Voltage (**V**)		5000	10000	5000	10000	5000	10000	15000	5000	10000
Switching Voltage (**V**)		3500	7500	3500	7500	3500	7500	12500	3500	7500
Switching Current (**A**)		3				3				
Carry Current (**A**)		5				5				
Switch Power (**W**)		50				50				

Reed Relay Selection Tool

Because Pickering offer the largest range of high-quality reed relays, sometimes it can be difficult to find the right reed relay you require. That is why we created the Reed Relay Selector, this tool will help you narrow down our offering to get you the correct reed relay for your application. To try the tool today go to: pickeringrelay.com/reed-relay-selector-tool

Standard Build Options

The Series 62 and 63 Reed Relays are available with a number of standard build options to tailor them to your specific application. These options are detailed in the table below. If you decide to go ahead and specify one, or more, of these options you will be allocated a unique part number suffix.

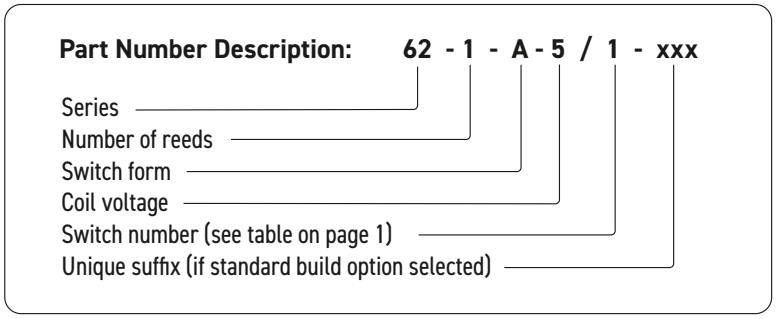
Mechanical Build Options	Electrical Build Options
Special pin configurations or pin lengths	Different coil resistance
Special print with customer's own part number or logo	Different stand-off or switching voltage
Custom packaging	Operate or de-operate time
Equivalents to competitors discontinued parts	Pulse capability
	Enhanced specifications
	Equivalents to competitors discontinued parts
	Non-standard coil voltages and resistance figures
	Special Life testing under customer's specific load conditions
	Specific environmental requirements

Customization

If your specific requirements are not met by standard relay, or any of the standard build options, please speak to us to discuss producing a customized reed relay to service your specific application: pickeringrelay.com/contact

3D Models

Interactive 3D models of the complete range of Pickering relay products in STEP, IGS and SLDPRT formats can be downloaded from the website: pickeringrelay.com/3d-models



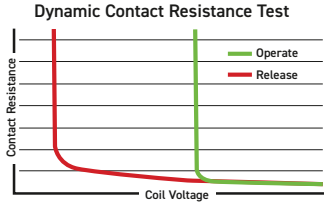
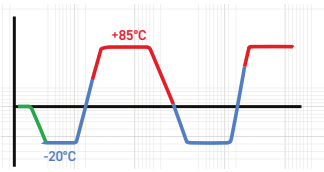
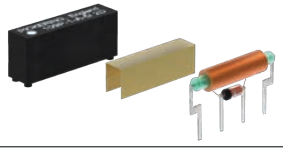
Help

If you need any technical advice or other help, please do not hesitate to contact our Technical Sales Department. We will always be pleased to discuss Pickering relays with you. email: techsales@pickeringrelay.com

Contact Us

UK Headquarters - email: sales@pickeringrelay.com | Tel. +44 1255 428141
USA - email: ussales@pickeringrelay.com | Tel. +1 781 897 1710
Germany - email: desales@pickeringtest.com | Tel. +49 89 125 953 160
France - email: frsales@pickeringtest.com | Tel. +33 9 72 58 77 00
Nordic - email: ndsales@pickeringtest.com | Tel. +46 340 69 06 69
Czech Republic: czsales@pickeringtest.com | Tel. +420 558-987-613
China - email: chinasales@pickeringtest.com | Tel. +86 4008 799 765
For a full list of agents, distributors and representatives visit: pickeringrelay.com/agents

10 Key Benefits of Pickering Reed Relays

Key Benefit	Pickering Reed Relays	Typical Industry Reed Relays	
1 **Instrumentation Grade Reed Switches**	Instrumentation Grade Reed Switches with vacuum sputtered Ruthenium plating to ensure stable, long life up to 5x10E9 operations.	Often low grade Reed Switches with electroplated Rhodium plating resulting in higher, less stable contact resistance.	
2 **Formerless Coil Construction**	Formerless coil construction increases the coil winding volume, maximizing magnetic efficiency, allowing the use of less sensitive reed switches resulting in optimal switching action and extended lifetime at operational extremes.	Use of bobbins decreases the coil winding volume, resulting in having less magnetic drive and a need to use more sensitive reed switches which are inherently less stable with greatly reduced restoring forces.	 Pickering former-less coil Typical industry coil wound on bobbin
3 **Magnetic Screening**	Mu-metal magnetic screening (either external or internal), enables ultra-high PCB side-by-side packing densities with minimal magnetic interaction, saving significant cost and space. **Pickering Mu-Metal magnetic screen - interaction approx. 5%**	Lower cost reed relays have minimal or no magnetic screening, resulting in magnetic interaction issues causing changes in operating and release voltages, timing and contact resistance, causing switches to not operate at their nominal voltages. **Typical industry screen - interaction approx. 30%**	 X-Ray of Pickering mu-metal magnetic screen X-Ray of typical industry magnetic screen
4 ***SoftCenter***™ **Technology**	***SoftCenter***™ technology, provides maximum cushioned protection of the reed switch, minimising internal lifetime stresses and extending the working life and contact stability.	Rigid hard moulded reed relays result in significant stresses to the glass reed switch which can cause the switch blades to deflect or misalign leading to changes in the operating characteristics, contact resistance stability and operating lifetime.	 Pickering soft center protection of the reed switch Typical industry thermo-setting hard moulded protection of the reed switch
5 **100% Dynamic Testing**	100% testing for all operating parameters including dynamic contact wave-shape analysis with full data scrutiny to maintain consistency.	Simple dc testing or just batch testing which may result in non-operational devices being supplied.	
6 **100% Inspection at Every Stage of Manufacturing**	Inspection at every stage of manufacturing maintaining high levels of quality.	Often limited batch inspection.	
7 **100% Thermal Cycling**	Stress testing of the manufacturing processes, from -20°C to +85°C to -20°C, repeated 3 times.	Rarely included resulting in field failures.	
8 **Flexible Manufacturing Process**	Flexible manufacturing processes allow quick-turn manufacturing of small batches.	Mass production: Usually large batch sizes and with no quick-turn manufacturing.	
9 **Custom Reed Relays**	Our reed relays can be customized easily, e.g. special pin configurations, enhanced specifications, non-standard coil or resistance figures, special life testing, low capacitance, and more.	Limited ability to customize.	
10 **Product Longevity**	Pickering are committed to product longevity; our reed relays are manufactured and supported for more than 25 years from introduction, typically much longer.	Most other manufacturers discontinue parts when they reach a low sales threshold; costing purchasing and R&D a great deal of unnecessary time and money to redesign and maintain supply.	

For more information go to: pickeringrelay.com/10-key-benefits