



# E-SWITCH®



SELECTION. SERVICE. SPEED. ▶▶▶

PRODUCT MATRIX

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## PRODUCT MATRIX



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# Do You Need A Switch?

E-Switch has prepared a 7-step process to help guide users to determine the type of switch best suited to their needs.

1

## WHAT TYPE OF SWITCH ARE YOU LOOKING FOR?

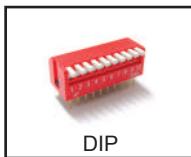
The switch categories below show the different types to choose from.



Anti-vandal



Detector



DIP



Keylock



Navigation



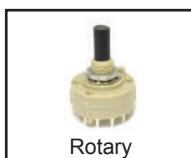
Pushbutton



Push-pull



Rocker



Rotary



Slide



Snap-action



Tactile



Tilt



Toggle



Trigger

2

## WHAT ELECTRICAL RATINGS ARE NEEDED?

1. Is the product AC or DC?
  - Common Voltages for AC: 125VAC, 250VAC
  - Common Voltages for DC: 3, 6, 12, 24 and 48VDC
2. How many amperes does the switch need to handle?
  - Low Power is in the millamps
  - Medium Power is from 2 amps to 5 amps
  - High Power is greater than 6 amps
3. If you're looking at medium to high power, what agency approvals are needed?
  - Where the product is sold determines what approvals are needed.



(cULus)  
North American Agency



(ENEC)  
European Agency



(VDE)  
German Agency



(TUV)  
Worldwide Agency



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# QUESTIONS TO ASK WHEN SPECIFYING A SWITCH

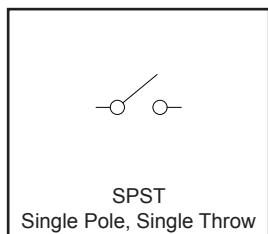
3

## HOW MANY POLES AND THROWS DO YOU NEED?

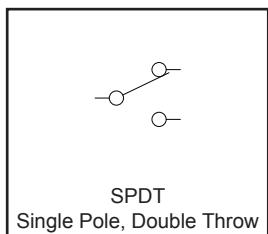
Poles are the number of closed independent circuits.

Throws are the number of positions in which a given pole is closed.

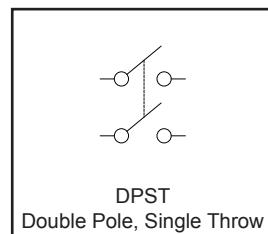
*Common pole/throw configurations are:*



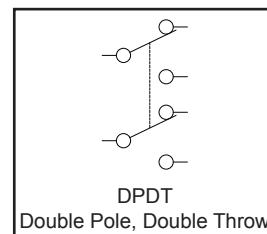
SPST  
Single Pole, Single Throw



SPDT  
Single Pole, Double Throw



DPST  
Double Pole, Single Throw



DPDT  
Double Pole, Double Throw

*Basic examples of above configurations are:*

**SPST - Flashlight:** 1 pole for turning the light on or off.

**SPDT - Vacuum Cleaner:** 1 pole for power, 1 throw for low speed, 1 throw for high speed.

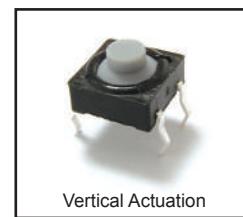
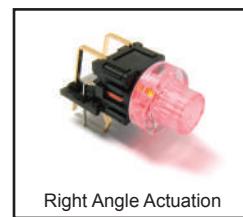
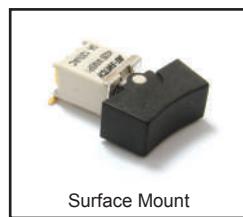
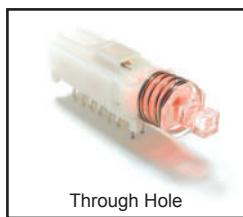
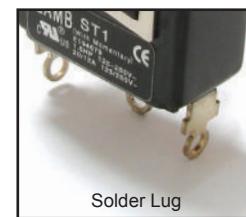
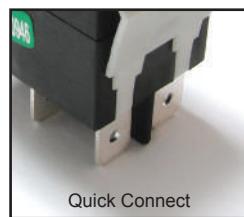
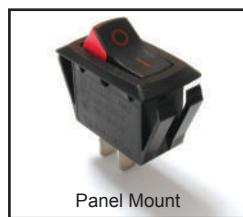
**DPST - Air Conditioner:** 1 pole controls the chiller, 1 pole controls the fan.

**DPDT - Hair Dryer:** 1 pole controls the heater, 1 pole controls the fan, 1 throw is for low speed, 1 throw is for high speed.

4

## HOW DOES THE SWITCH ATTACH TO YOUR PRODUCT?

1. Panel Mount
  - What is the panel cutout size?
  - What is the thickness of the panel?
  - What type of termination?
    - » Quick connect or solder lug
2. PC Board Mount
  - What type of termination?
    - » Through hole or surface mount
  - What type of actuation?
    - » Right angle or vertical
  - Do you need a process sealed component?



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### WHAT IS YOUR APPLICATION?

Knowing the application that the switch goes into aids us in the ability to look for unique instances where certain switches work better than others. Below are some examples of industries we sell our switches to.



Audio / Visual



Computer Peripherals



Consumer Electronics



Electrical Housewares



Floor Care Appliances



Gaming and Computer



Handheld Devices



Industrial Controls



Instrumentation



Medical Equipment



Security Devices



White Goods

## 6

### ARE THERE ANY ADDITIONAL REQUIREMENTS?

Many products have requirements that are not initially thought of. Some might make the switch more aesthetically pleasing and others will help the switch perform better under special circumstances. Below are examples that should be brought up during discussion:

- Momentary or Latching
- Illumination
- Sealed Protection (IP Rating)
- Custom Cap Options
  - » Colors
  - » Graphics
  - » Styles
- Long Life Expectancy
- High Inrush or Horse Power Rating
- Extreme Temperature Rating
- Custom User Requirements



## 7

### WHAT IS THE ESTIMATED ANNUAL USAGE (EAU)?

If you are looking for a custom switch, it is important to know an accurate EAU for your project. Once we know, we are able to determine how feasible certain customizations are. Since unique requirements sometimes incur additional tooling charges, knowing in the beginning will help expedite the process.



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Anti-vandal switches feature a metal housing and actuator which is sealed from dust and moisture penetration. The ULV anti-vandal series is also UL certified. These features along with the capacity for a long life expectancy make anti-vandal switches ideal for rugged use in harsh weather conditions, such as vending kiosks and parking ticket dispensers. The anti-vandal switches offer a variety of options, including bi-color and pattern illumination, different actuator styles and housing material.



# ANTI-VANDAL SWITCH SERIES

Electrical Ratings	Cutout Diameter / Panel Depth	Functions Available	Terminal Options	Actuator Options	Material Options	Water Resistance Ratings		Illumination Options		
						1 Pole:	Off-(On)	Solder	High	Stainless Steel Black Anodized
 <b>PV0</b>	2A, 36VDC	Diameter: 12.2mm Max. Depth: 6mm	1 Pole: Off-(On)	Solder	High	Anodized Aluminum Gold Plated Brass Nickel Plated Brass Stainless Steel	N/A	IP65		
 <b>PV1</b>	2A, 36VDC	Diameter: 19mm Max. Depth: 8mm	1 Pole: Off-(On)	Screw Solder	Domed Flat High	Anodized Aluminum Gold Plated Brass Nickel Plated Brass Stainless Steel	N/A	IP65		
 <b>PV2</b>	2A, 48VDC	Diameter: 16mm Max. Depth: 6mm	1 Pole: Off-(On)	Screw Solder	Domed Flat High	Anodized Aluminum Gold Plated Brass Nickel Plated Brass Stainless Steel	N/A	IP65		
 <b>PV3</b>	2A, 48VDC	Diameter: 16mm Max. Depth: 10mm or 14mm	1 Pole: On-(On) 2 Pole: On-(On)	Solder	Concave Flat Guarded High	Anodized Aluminum Gold Plated Brass Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring	IP67 Optional		
 <b>PV4</b>	2A, 24VDC .7A 125VAC (cURus)	Diameter: 19mm Max. Depth: 10mm	1 Pole: On-On 1P Off-(On) + 1P On-(Off) 2 Pole: On-On On-(On)	Screw Solder	Flat High	Anodized Aluminum Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring Arrow	IP65		
 <b>PV5</b>	2A, 36VDC	Diameter: 12mm Max. Depth: 6mm	1 Pole: Off-(On)	Screw Solder	Domed	Anodized Aluminum Nickel Plated Brass Stainless Steel	N/A	IP65		

Specifications subject to change without notice



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# ANTI-VANDAL SWITCH SERIES

Electrical Ratings	Cutout Diameter / Panel Depth	Functions Available	Terminal Options	Actuator Options	Material Options	Illumination Options	Water Resistance Ratings	
PV6	2A, 48VDC	Diameter: 16mm Max. Depth: 9mm	1 Pole: Off-(On)	Solder	Flat High	Anodized Aluminum Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring	IP65
PV7	2A, 48VDC	Diameter: 22mm Max. Depth: 8mm (Momentary), 13mm (Maintained)	1 Pole: 1P Off-On + 1P On-Off 1P Off-(On) + 1P On-(Off)	Solder	Flat	Anodized Aluminum Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring	IP65
PV8	2A, 48VDC	Diameter: 25mm Max. Depth: 10mm (Momentary), 14mm (Maintained)	1 Pole: 1P Off-On + 1P On-Off 1P Off-(On) + 1P On-(Off)  2 Pole: 2P Off-On + 2P On-Off 2P Off-(On) + 2P On-(Off)	Solder	Flat	Anodized Aluminum Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring	IP65
PV9	2A, 48VDC	Diameter: 28mm Max. Depth: 10mm (Momentary), 13mm (Maintained)	1 Pole: 1P Off-On + 1P On-Off 1P Off-(On) + 1P On-(Off)  2 Pole: 2P Off-On + 2P On-Off 2P Off-(On) + 2P On-(Off)	Solder	Flat	Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring	IP65
PVA6	2A, 48VDC	Diameter: 16mm Max. Depth: 6mm	1 Pole: Off-(On)	Solder Wire Lead	Dome Flat High	Anodized Aluminum Stainless Steel Brushed Stainless Steel	Ring Power Symbol	IP67
PVL	N/A	Diameter: 6-19mm Max. Depth: 6mm to 10mm (depending on mounting diameter)	N/A	Solder	Flat	Stainless Steel Black	Pilot Lamp	IP67

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# ANTI-VANDAL SWITCH SERIES (UL CERTIFIED)

Electrical Ratings	Cutout Diameter / Panel Depth	Functions Available	Terminal Options	Actuator Options	Material Options	Illumination Options	Water Resistance Ratings
 <b>ULV4</b> 3A 250VAC (cURus)	Diameter: 19mm Max. Depth: 10mm	<b>1 Pole:</b> On-On On-(On)  <b>2 Pole:</b> On-On On-(On)		Solder Flat High	Anodized Aluminum Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring Power	IP67
 <b>ULV7</b> 3A 250VAC (cURus)	Diameter: 22mm Max. Depth: 10mm	<b>1 Pole:</b> On-On On-(On)  <b>2 Pole:</b> On-On On-(On)		Solder Flat	Anodized Aluminum Stainless Steel	Bi-Color Ring Ring w/ Power	IP67
 <b>ULV8</b> 3A 250VAC (cURus)	Diameter: 25mm Max. Depth: 10mm	<b>1 Pole:</b> On-On On-(On)  <b>2 Pole:</b> On-On On-(On)		Solder Flat	Anodized Aluminum Stainless Steel	Ring Bi-color	IP67

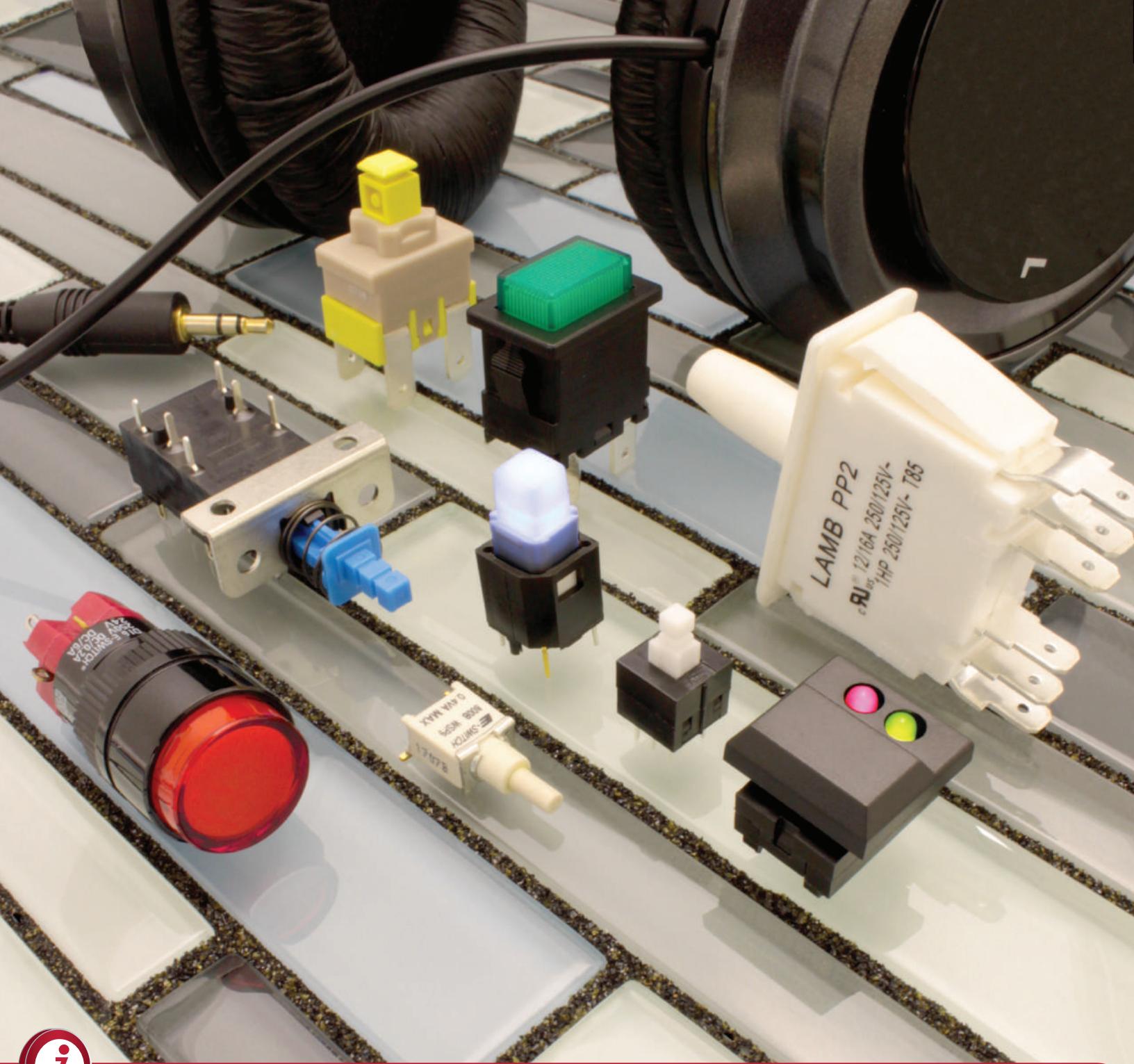
Specifications subject to change without notice



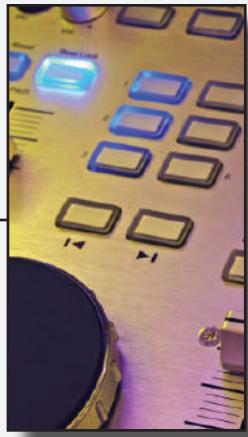
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Pushbutton switches open or close an electrical circuit by the user pressing down on the actuator or in some cases, pulling on the actuator. Our pushbutton switches come in many different shapes and sizes, ranging from low milliamp ratings to high power ratings with horse power. We also offer some that are sealed up to IP67 standards, and many different styles of actuation with illumination are available.



# PUSHBUTTON SWITCH SERIES (SUBMINIATURE)

		General Ratings	Electrical Ratings	Poles / Throws / Functions	Travel	Bushing Options	Terminal Options	Water Resistance Ratings
	<b>700</b> *Panel Mount Version	<p><b>Life Cycles:</b> 50,000  <b>Operating Force:</b> 200gf  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p><b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, Max. 20V (AC or DC)</p>	1.0mm	<p><b>SPDT:</b> On-(On)</p> <p><b>DPDT:</b> On-(On)</p>	Panel Cutout 12.7mm x 15.7mm	Quick Connect Solder	N/A
	<b>700</b>	<p><b>Life Cycles:</b> 50,000  <b>Operating Force:</b> 200gf  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p><b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, Max. 20V (AC or DC)</p>	1.0mm	<p><b>SPDT:</b> On-(On)</p> <p><b>DPDT:</b> On-(On)</p>	Flat Non-Threaded Flat Threaded Keyway Non-Threaded Keyway Threaded	Right Angle PCB Pin Solder Vertical PCB Pin Vertical PCB Pin with Bracket Wire Wrap	N/A
	<b>700A</b>	<p><b>Life Cycles:</b> 50,000  <b>Operating Force:</b> 300gf  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 20mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p><b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, Max. 20V (AC or DC)</p>	1.0mm	<p><b>SPDT:</b> On-(On)</p> <p><b>DPDT:</b> On-(On)</p>	Non-Threaded Threaded	Right Angle PCB Pin Solder Vertical PCB Pin Vertical PCB Pin with Bracket	
	<b>700C</b>	<p><b>Life Cycles:</b> 50,000  <b>Operating Force:</b> 400gf SP7, 600gf DP7  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p><b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, Max. 20V (AC or DC)</p>	3.0mm	<p><b>SPDT:</b> On-On</p>	Flat Non-Threaded Flat Threaded Keyway Non-Threaded Keyway Threaded	Right Angle PCB Pin Solder Vertical PCB Pin Vertical PCB Pin with Bracket	N/A
	<b>800</b>	<p><b>Life Cycles:</b> 50,000  <b>Operating Force:</b> 200gf  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p><b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, Max. 20V (AC or DC)</p>	0.9mm	<p><b>SPST</b> Off-(On)</p> <p><b>SPDT</b> On-(On)</p>	Flat Non-Threaded Flat Threaded Non-Threaded	Right Angle PCB Pin Solder Right Angle PCB Pin with Bracket Vertical PCB Pin Vertical PCB Pin with Bracket	N/A
	<b>800A</b>	<p><b>Life Cycles:</b> 50,000  <b>Operating Force:</b> 200gf  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p><b>Silver:</b> 1A, 120VAC [cURus] 1A, 28VDC</p> <p><b>Gold:</b> 0.4VA, Max. 20V (AC or DC)</p>	0.9mm	<p><b>SPST</b> Off-(On)</p> <p><b>SPDT</b> On-(On)</p>	Non-Threaded	Right Angle PCB Pin Vertical PCB Pin	IP67
	<b>800B</b>	<p><b>Life Cycles:</b> 50,000  <b>Operating Force:</b> 200gf  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 20mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p><b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, Max. 20V (AC or DC)</p>	0.9mm	<p><b>SPST</b> Off-(On)</p> <p><b>SPDT</b> On-(On)</p>	Non-Threaded	Surface Mount	IP67
	<b>800C</b>	<p><b>Life Cycles:</b> 6,000  <b>Operating Force:</b> 350gf  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> Silver: 50mΩ Max initial Gold: 20mΩ Max initial  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p><b>Silver:</b> 3A, 120VAC or 28VDC 1A, 250VAC</p> <p><b>Gold:</b> 0.4VA, Max. 20V (AC or DC)</p>	Electrical Make: 1.34mm Full travel: 1.88mm	<p><b>SPDT</b> On-On</p>	Non-Threaded Threaded		N/A
	<b>800U</b>	<p><b>Life Cycles:</b> 6,000  <b>Operating Force:</b> 250gf  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 100mΩ Initial  <b>Insulation Resistance:</b> 500MΩ Min.</p>	<p><b>Gold:</b> 0.4VA, Max. 20V (AC or DC)</p>	1.0mm	<p><b>SPDT</b> On-(On)</p> <p><b>DPDT</b> On-(On)</p>	Non-Threaded	PC thru-hole Right Angle, PC thru-hole Vertical Right angle, PC thru-hole	IP67

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# PUSHBUTTON SWITCH SERIES (PCB Mount)



**5500**

General Ratings	Electrical Ratings	Operating Force Options	Travel	Poles / Throws	Mounting Options	Terminal Options	Water Resistance Ratings	Illumination Options



**FS5700**

<b>5500</b>	<b>Life Cycles:</b> 500,000 <b>Operating Temperature:</b> -25°C to 65°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 50MΩ Min.	300mA, 12VDC	255gf Max.	2.5mm	SPDT	PCB	PCB Pin	1 or 2 Dot	N/A
<b>FS5700</b>	<b>Life Cycles:</b> 30,000 <b>Operating Temperature:</b> -10°C to 70°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min. @ 500VDC	1A, 9VDC	1000gf to 3000gf	2.7mm to 5.0mm	SPDT DPDT 3PDT	PCB Panel Mount	PCB Pin Soldering Lugs	N/A	N/A

**NEW**



**KS1100**

<b>KS1100</b>	<b>Life Cycles:</b> 50,000,000 <b>Operating Temperature:</b> -10°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min. @ 100VDC	10mA, 12VDC	60gf	4.0mm	SPST	PCB	PCB Pin	N/A	N/A
<b>LC</b>	<b>Life Cycles:</b> 10,000 <b>Operating Temperature:</b> -20°C to 85°C <b>Contact Resistance:</b> 20mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	300mA, 30VDC	200gf to 330gf	3.5mm	SPDT DPDT	PCB	Right Angle PCB Pin	N/A	N/A

**NEW**



**LC**

<b>LC</b>	<b>Life Cycles:</b> 10,000 <b>Operating Temperature:</b> -20°C to 85°C <b>Contact Resistance:</b> 20mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	300mA, 30VDC	200gf to 330gf	3.5mm	SPDT DPDT	PCB	Right Angle PCB Pin	N/A	N/A
<b>LP11</b>	<b>Life Cycles:</b> 200,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 200mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 12VDC	250gf	4.5mm	SPST	PCB	PCB Pin	Full	N/A



**LP11**

<b>LP11</b>	<b>Life Cycles:</b> 200,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 200mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 12VDC	250gf	4.5mm	SPST	PCB	PCB Pin	Full	N/A
<b>LP15</b>	<b>Life Cycles:</b> 300,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 200mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	1mA, 20VDC	125gf	1.3mm	SPST	PCB	PCB Pin	Full	N/A



**LP15**

<b>LP15</b>	<b>Life Cycles:</b> 300,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 200mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	1mA, 20VDC	125gf	1.3mm	SPST	PCB	PCB Pin	Full	N/A
<b>LP16</b>	<b>Life Cycles:</b> 50,000,000 <b>Operating Temperature:</b> -5°C to 60°C <b>Contact Resistance:</b> 150mΩ Max. <b>Insulation Resistance:</b> 10MΩ Min.	100mA, 200VDC	250gf	3.3mm	SPST	PCB	PCB Pin	Full	N/A



**LP16**

<b>LP16</b>	<b>Life Cycles:</b> 50,000,000 <b>Operating Temperature:</b> -5°C to 60°C <b>Contact Resistance:</b> 150mΩ Max. <b>Insulation Resistance:</b> 10MΩ Min.	100mA, 200VDC	250gf	3.3mm	SPST	PCB	PCB Pin	Full	N/A
<b>LP2</b>	<b>Life Cycles:</b> 300,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 200mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	1mA, 20VDC 5mA, 5VDC	125gf	1.3mm	SPST	PCB	PCB Pin	Full	N/A



**LP2**

<b>LP2</b>	<b>Life Cycles:</b> 300,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 200mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	1mA, 20VDC 5mA, 5VDC	125gf	1.3mm	SPST	PCB	PCB Pin	Full	N/A
<b>LP37</b>	<b>Life Cycles:</b> 30,000 <b>Operating Temperature:</b> -30°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 1,000MΩ Min.	10mA to 250mA 20mVDC to 50VDC	250gf	<b>Full:</b> 5.1mm <b>Switching:</b> 2.95mm <b>Latching:</b> 3.3mm	SPDT	PCB	Right Angle PCB Pin	Dot	N/A



**LP37**

<b>LP37</b>	<b>Life Cycles:</b> 30,000 <b>Operating Temperature:</b> -30°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 1,000MΩ Min.	10mA to 250mA 20mVDC to 50VDC	250gf	<b>Full:</b> 5.1mm <b>Switching:</b> 2.95mm <b>Latching:</b> 3.3mm	SPDT	PCB	Right Angle PCB Pin	Dot	N/A
<b>LP4</b>	<b>Life Cycles:</b> 50,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 30VDC	250gf	<b>Full:</b> 1.5mm <b>Latching:</b> 1.0mm	DPDT	PCB	PCB Pin	Full	N/A



**LP4**

<b>LP4</b>	<b>Life Cycles:</b> 50,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 30VDC	250gf	<b>Full:</b> 1.5mm <b>Latching:</b> 1.0mm	DPDT	PCB	PCB Pin	Full	N/A

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# PUSHBUTTON SWITCH SERIES (PCB Mount)

	General Ratings	Electrical Ratings	Operating Force Options	Travel	Poles / Throws	Mounting Options	Terminal Options	Water Resistance Ratings	Illumination Options
	<b>LP6</b>	<b>Life Cycles:</b> 200,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	12mA, 12VDC	150gf SPST 200gf DPST	2.2mm	SPST DPST	PCB	PCB Pin	Full N/A
	<b>P197</b>	<b>Electrical Life:</b> 10,000 Cycles <b>Temperature:</b> -20°C to 85°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 1,000MΩ Min.	10A, 125VAC [cURus] 5A, 250VAC [cURus, VDE] TV-5 125VAC [cURus]	300gf	3.5mm	SPST	PCB Panel Mount	Right Angle PCB Pin Solder	N/A N/A
	<b>PBH</b>	<b>Life Cycles:</b> 6,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 30VDC	230gf DPDT 280gf 4PDT 380gf 6PDT	5.5mm	DPST DPDT	PCB	Right Angle PCB Pin	N/A N/A
	<b>PB300</b>	<b>Life Cycles:</b> 20,000 <b>Operating Temperature:</b> -40°C to 95°C <b>Contact Resistance:</b> 50mΩ Max. Initial <b>Insulation Resistance:</b> 100MΩ Min.	30mA, 28VDC	ST: 490gf DT 1st position: 600gf 2nd position: 1150gf	2.0mm	SPST SPDT	PCB	PCB Pin	N/A N/A
	<b>TL2201</b> <b>TL4201</b> <small>*TL2201 Pictured</small>	<b>Life Cycles:</b> 10,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 30VDC	220gf DPDT 300gf 4PDT	2.5mm	DPDT 4PDT	PCB	PCB Pin	N/A N/A
	<b>TL2203</b>	<b>Life Cycles:</b> 10,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 30VDC	180gf	1.9mm	DPDT	PCB	PCB Pin	N/A N/A
	<b>TL2205</b>	<b>Life Cycles:</b> 10,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 30VDC	250gf	Full: 2.5mm Lock: 1.5mm	DPDT	PCB	PCB Pin	Dot N/A
	<b>TL2230</b>	<b>Life Cycles:</b> 10,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 30VDC	140gf 230gf	1.8mm	DPDT	PCB	PCB Pin	N/A N/A
	<b>TL2285</b>	<b>Life Cycles:</b> 10,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 30VDC	180gf	2.5mm	DPDT	PCB	PCB Pin	N/A N/A
	<b>WBL</b>	<b>Life Cycles:</b> 10,000 <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	300mA, 30VDC	200gf	Full: 3.3mm Lock: 2.5mm	DPDT 4PDT	PCB	Right Angle PCB Pin	Full N/A

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# PUSHBUTTON SWITCH SERIES (PANEL MOUNT)



**D16**

General Ratings	Electrical Ratings	Operating Force Options	Poles / Throws / Functions	Panel Cutout Dimensions	Terminal Options	Illumination Options	Water Resistance Ratings		
	<b>D16</b>								
	<b>L16</b>								
	<b>LA</b>								
	<b>LP1</b>								
	<b>MDP-16</b>								

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# PUSHBUTTON SWITCH SERIES (PANEL MOUNT)

General Ratings	Electrical Ratings	Operating Force Options	Travel	Poles / Throws / Functions	Panel Cutout Dimensions	Water Resistance Ratings	Illumination Options	Terminal Options		
	<b>P16</b>	<b>Electrical / Mechanical Life:</b> 50,000 / 100,000 Cycles <b>Operating Temperature:</b> -20°C to 55°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 1,000MΩ Min.	8A, 125VAC cURus 5A, 250VAC [VDE] 6A, 24VDC	300gf	3.0mm	<b>SPDT, DPDT, 3PDT, 4PDT</b> On-On On-(On)	16mm Diameter	Socket	Full	N/A
	<b>PA4</b>	<b>Electrical / Mechanical Life:</b> 10,000 / 50,000 Cycles <b>Operating Temperature:</b> -20°C to 65°C -20°C to 125°C <b>Contact Resistance:</b> 20mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	16A, 125VAC [cURus] 16A, 250VAC [cURus] 16(4)A, 250VAC [ENECA] 16(8)A, 250VAC [ENECA]	500gf	4.5mm	<b>SPST</b> Off-On Off-(On)	13mm x 19mm PCB	PCB Pin Solder Tab	Full	IP54
	<b>PA5</b>	<b>Electrical / Mechanical Life:</b> 10,000 / 50,000 Cycles <b>Operating Temperature:</b> -20°C to 125°C <b>Contact Resistance:</b> 20mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	16A, 125VAC [cURus] 16A, 250VAC [cURus] 16(4)A, 250VAC [ENECA] 16(8)A, 250VAC [ENECA]	500gf	5.5mm	<b>SPST</b> Off-On Off-(On)  <b>DPST</b> Off-On Off-(On)	Capture Mount PCB	PCB Pin Solder Tab	N/A	N/A
	<b>PB1973</b>	<b>Electrical / Mechanical Life:</b> 10,000 / 30,000 Cycles <b>Operating Temperature:</b> -10°C to 55°C <b>Contact Resistance:</b> 20mΩ Max. <b>Insulation Resistance:</b> 1,000MΩ Min.	15A, 125VAC [cURus] 15A, 250VAC [cURus] 10(4)A, 250VAC [VDE]	300gf to 800gf	2.8mm	<b>SPST</b> Off-On Off-(On)  <b>DPST</b> Off-On Off-(On)	13mm x 19.2mm	Tab	Full	N/A
	<b>PB2</b>	<b>Electrical / Mechanical Life:</b> 6,000 / 50,000 Cycles <b>Operating Temperature:</b> 0°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 5MΩ Min.	20A, 125VAC [UR] 12A, 250VAC [UR]	600gf	3.1mm	<b>SPST</b> Off-On On-On  <b>DPST</b> Off-On On-On	22mm x 30mm	Tab	Dot	IP54

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# PUSHBUTTON SWITCH SERIES (PANEL MOUNT)



**PP1**



**PP2**



**PR1**



**RP3508**



**RP8100**



**RP8200**

General Ratings	Electrical Ratings	Operating Force Options	Travel	Poles / Throws / Functions	Panel Cutout Dimensions	Water Resistance Ratings	Illumination Options	Terminal Options			
<b>PP1</b>	<p><b>Electrical / Mechanical Life:</b> 6,000 / 50,000 Cycles  <b>Operating Temperature:</b> 0°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.  <b>Insulation Resistance:</b> 2MΩ Min.</p>	<p>16A, 125VAC [cURus]  12A, 250VAC [cURus]  1HP, 125/250VAC [cURus]</p>	300gf to 500gf	<p><b>Push Only</b>  Push: 9.4mm  <b>Push-Pull</b>  Push: 5.0mm  Pull: 5.7mm</p>	<p><b>SPDT</b>  On-Off-(On) Push-Pull  On-(On)</p>	13.3mm x 28.2mm	Tab	N/A	N/A		
<b>PP2</b>	<p><b>Electrical / Mechanical Life:</b> 6,000 / 50,000 Cycles  <b>Operating Temperature:</b> 0°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.  <b>Insulation Resistance:</b> 10MΩ Min.</p>	<p><i>Rating Option 1:</i>  10R(4)A 277VAC 5E4 [UL]</p> <p><i>Rating Option 2:</i>  16A, 125VAC [cURus]  12A, 250VAC [cURus]  1HP, 125/250VAC [cURus]</p>	300gf to 500gf	<p><b>Push Only</b>  Push: 9.4mm  <b>Push-Pull</b>  Push: 5.0mm  Pull: 5.7mm</p>	<p><b>DPDT</b>  On-Off-(On) Push-Pull  On-(On)</p>	13.5mm x 36mm	Tab	N/A	N/A		
<b>PR1</b>	<p><b>Electrical / Mechanical Life:</b> 50,000 / 100,000 Cycles  <b>Operating Temperature:</b> -20°C to 105°C [cURus]  -20°C to 125°C [ENECL  <b>Contact Resistance:</b> 35mΩ Max.  <b>Insulation Resistance:</b> 100MΩ Min.</p>	<p>16A, 125VAC [cURus]  3/4HP, 250VAC [cURus]  16(6)A, 250VAC [ENECL  10(4)A, 250VAC [ENECL</p>	1,800gf	6.2mm	<p><b>SPST</b>  Off-On  Off-(On)</p> <p><b>DPST</b>  Off-On  Off-(On)</p>	25mm Diameter	Tab	Full	IP54 Optional		
<b>RP3508</b>	<p><b>Electrical / Mechanical Life:</b> 6,000 / 20,000 Cycles  <b>Operating Temperature:</b> 0°C to 65°C  <b>Contact Resistance:</b> 100mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p>3A, 125VAC [cURus]  1.5A, 250VAC [cURus]</p>	500gf	3.5mm	<p><b>SPST</b>  Off-On  Off-(On)</p>	15mm x 16mm (Rounded Edge)	Solder	Full	N/A		
<b>RP8100</b>	<p><b>Electrical / Mechanical Life:</b> 500,000 Cycles  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 50mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p>125mA, 125VAC  100mA, 50VDC</p>	350gf	1.5mm	<p><b>SPST</b>  Off-(On)</p>	13.6mm Diameter	Solder	Dot	IP67		
<b>RP8200</b>	<p><b>Electrical / Mechanical Life:</b> 200,000 Cycles  <b>Operating Temperature:</b> -30°C to 85°C  <b>Contact Resistance:</b> 100mΩ Max.  <b>Insulation Resistance:</b> 1,000MΩ Min.</p>	<p>100mA, 24VDC</p>	560gf	2.5mm	<p><b>SPST</b>  Off-On</p>	13.6mm Diameter	Solder	Dot	IP67		

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# PUSHBUTTON SWITCH SERIES (PANEL MOUNT)

General Ratings	Electrical Ratings	Operating Force Options	Travel	Poles / Throws / Functions	Panel Cutout Dimensions	Water Resistance Ratings	Illumination Options	Terminal Options	RP8300		
									RP8400	RP8500	RP8600
	<b>RP8300</b>	<b>Electrical / Mechanical Life:</b> 500,000 Cycles <b>Operating Temperature:</b> -30°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 1,000MΩ Min.	500mA, 48 VAC 200mA, 50 VDC 200mA, 250 VAC	350gf	1.5mm	<b>SPST</b> Off-(On)	13.6mm Diameter	Solder	Dot	IP67	
	<b>RP8400</b>	<b>Electrical / Mechanical Life:</b> 500,000 Cycles <b>Operating Temperature:</b> -30°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 1,000MΩ Min.	500mA, 48 VAC 200mA, 50 VDC 200mA, 250 VAC	350gf	1.5mm	<b>SPST</b> Off-(On)	13.6mm Diameter	Solder	Dot	IP67	
	<b>RP8500</b>	<b>Electrical / Mechanical Life:</b> 500,000 Cycles <b>Operating Temperature:</b> -30°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 1,000MΩ Min.	125mA, 125VAC 100mA, 50VDC	350gf	1.5mm	<b>SPST</b> Off-(On)	13.6mm Diameter	Solder	Dot	IP67	
	<b>RP8600</b>	<b>Electrical / Mechanical Life:</b> 50,000 / 100,000 Cycles <b>Operating Temperature:</b> -30°C to 85°C <b>Contact Resistance:</b> 200mΩ Initial @2-4VDC, 100mA <b>Insulation Resistance:</b> 100MΩ @500VDC	0.4VA Max @20V Max (AC or DC)	630gf	0.65mm	<b>SPST</b> Off-(On)	16.0mm Diameter	Solder	N/A	IP67	
	<b>ULP</b>	<b>Electrical / Mechanical Life:</b> 200,000 / 1,000,000 Cycles <b>Operating Temperature:</b> -20°C to 70°C <b>Contact Resistance:</b> 50mΩ Max. (Silver) 100mΩ Max. (Gold) <b>Insulation Resistance:</b> 1,000MΩ Min.	<b>Silver:</b> 500mA, 25VDC 200mA, 250VAC  <b>Gold:</b> 0.4VA, Max. at 28V (AC or DC)	<b>SPDT</b> 200gf	2.2mm	<b>SPST</b> On-On On-(On)  <b>DPST</b> On-On On-(On)	15.8mm x 16mm PCB  15.8mm x 18mm Panel Mount Cut-out size	PCB Pin Solder	Full	N/A	

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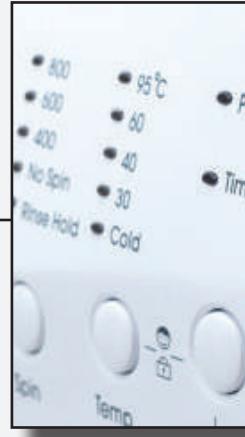
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# TACTILE SWITCH SERIES (PART 1)

	General Ratings	Electrical Ratings	Travel	Body Dimensions	Operating Force Options (gf)	Mounting Options	Washable
	<b>320</b> Multiple Actuator Styles Life Cycles: 1,000,000 Operating Temp: -20°C to 70°C Contact Resistance: 50mΩ Max. Insulation Resistance: 1,000MΩ Min.	25mA, 50VDC	0.5mm	12.4mm x 12.4mm 12.4mm x 22.0mm	135	PCB Pin	N/A
	<b>LL1105</b> Multiple Actuator Styles Life Cycles: 5,000,000 Operating Temp: -20°C to 70°C Contact Resistance: 50mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	6.0mm x 6.0mm	65	PCB Pin	N/A
	<b>TL1014</b> Life Cycles: up to 200,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm (160 gf) 0.30mm (220 gf)	4.7mm x 3.5mm	160, 220	SMT (Gull Wing)	N/A
	<b>TL1015</b> Life Cycles: 200,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.20mm	2.9mm x 3.9mm	160	SMT (Gull Wing)	N/A
	<b>TL1100</b> Multiple Actuator Styles Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.3mm	12.0mm x 12.0mm	160, 260	PCB Pin	N/A
	<b>TL1105</b> Caps Available Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	6.0mm x 6.0mm	100, 160, 250	PCB Pin	N/A
	<b>TL1107</b> Multiple Actuator Styles Life Cycles: 30,000 (260gf), 50,000 (130gf & 180gf) Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	3.5mm x 6.0mm	130, 180, 260	PCB Pin	N/A
	<b>TL1220</b> Caps Available Life Cycles: 500,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.2mm	7.5mm x 7.5mm 10.0mm x 14.0mm 10.0mm x 19.0mm 7, 8, 10mm Dia	180	PCB Pin	N/A
	<b>TL1240</b> Caps Available / LED Illuminated Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	6.0mm x 6.0mm	160	PCB Pin	N/A
	<b>TL1250</b> Life Cycles: 50,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	7.0mm x 8.3mm	120, 180, 280	PCB Pin	N/A

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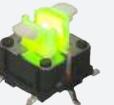


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# TACTILE SWITCH SERIES (PART 2)

	General Ratings	Electrical Ratings	Travel	Body Dimensions	Operating Force Options (gf)	Mounting Options	Washable
	<b>TL1260</b>	Caps Available / LED Illuminated Life Cycles: 50,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.2mm	6.8mm x 7.0mm	160	PCB Pin N/A
	<b>TL1265</b>	Caps Available / LED Illuminated Life Cycles: 500,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.2mm	6.8mm x 7.0mm	160	PCB Pin N/A
	<b>TL2243</b>	Double Stacked Low Profile Life Cycles: 30,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	40mA, 12VDC	0.25mm	7.3mm x 9.1mm	180	PCB Pin N/A
	<b>TL3200</b>	Single or Dual LED Illumination Life Cycles: 30,000 Operating Temp: -25°C to 85°C Contact Resistance: 500mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	6.8mm x 4.5mm	160	SMT (Gull Wing) N/A
	<b>TL3210</b>	LED Illuminated Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 500mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.2mm	5.6mm x 3.4mm	160	SMT (Gull Wing) N/A
	<b>TL3215</b>	LED Illuminated Life Cycles: 1,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	4.9mm x 4.9mm	160	SMT (Gull Wing) N/A
	<b>TL3240</b>	LED Illuminated / Caps Available Life Cycles: up to 200,000 Operating Temp: -25°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.2mm	6.1mm x 6.1mm	100, 160, 260	SMT (Gull Wing) N/A
	<b>TL3253</b>	LED Illuminated Life Cycles: up to 500,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	8.4mm x 10.55mm	160	Right Angle PCB Pin N/A
	<b>TL3265</b> <small>NEW</small>	Multiple Actuator Styles Life Cycles: up to 500,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. @ 500VDC	5mA, 12VDC	0.2mm	6.8mm x 7.0mm	160	PCB Pin N/A
	<b>TL3300</b>	Multiple Actuator Styles Life Cycles: up to 200,000 Operating Temp: -25°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.35mm	12mm x 12mm	160, 260, 320, 520	SMT (Gull Wing) N/A
	<b>TL3301</b>	Caps Available / Multiple Actuator Styles Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	6.0mm x 6.0mm	100, 160, 260	SMT (Gull Wing) N/A

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# TACTILE SWITCH SERIES (PART 3)

	General Ratings	Electrical Ratings	Travel	Body Dimensions	Operating Force Options (gf)	Mounting Options	Washable
	<b>TL3302</b>  Multiple Actuator Styles <b>Life Cycles:</b> 20,000 - 50,000 <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.25mm	3.5mm x 6.0mm	130, 180, 260	SMT (Gull Wing)	N/A
	<b>TL3303</b>  Multiple Actuator Styles <b>Life Cycles:</b> 100,000 <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.25mm	6.0mm x 6.0mm	100, 160, 260	SMT (Gull Wing)	N/A
	<b>TL3305</b>  Life Cycles: up to 500,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.20mm	4.5mm x 4.5mm	160, 260	SMT (Gull Wing)	N/A
	<b>TL3313</b>  <b>Life Cycles:</b> 100,000 <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.25mm	4.8mm x 4.8mm	100, 160, 250	SMT (Gull Wing)	N/A
	<b>TL3315</b>  <b>Life Cycles:</b> 100,000 (100gf), 500,000 (160gf), 200,000 (250gf) <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 200mΩ Max. <b>Insulation Resistance:</b> 50MΩ Min.	50mA, 12VDC	0.2mm	4.5mm x 4.5mm	100, 160, 250	SMT (Gull Wing)	N/A
	<b>TL3330</b>  <b>Life Cycles:</b> 50,000 (130gf), 30,000 (260gf) <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.25mm	6.9mm x 3.3mm	100, 200	Right Angle SMT (Gull Wing)	N/A
	<b>TL3340</b>  <b>Life Cycles:</b> 100,000 <b>Operating Temp:</b> -35°C to 85°C <b>Contact Resistance:</b> 500mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 15VDC	0.2mm	4.25mm x 3.3mm	160	Right Angle SMT (Gull Wing)	N/A
	<b>TL3342</b>  <b>Life Cycles:</b> 100,000 <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 20mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.25mm	5.2mm x 5.2mm	160, 250	SMT (Gull Wing)	N/A
	<b>TL3360</b>  <b>Life Cycles:</b> 200,000 <b>Operating Temp:</b> -25°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.15mm	6.5mm x 6mm	185, 260	Right Angle SMT (Gull Wing)	N/A

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# TACTILE SWITCH SERIES (PART 4)

		General Ratings	Electrical Ratings	Travel	Body Dimensions	Operating Force Options (gf)	Mounting Options	Washable
	<b>TL3365</b>	<p><b>Life Cycles:</b> 100,000  <b>Operating Temp:</b> -20°C to 70°C  <b>Contact Resistance:</b> 100mΩ Max.  <b>Insulation Resistance:</b> 100MΩ Min.</p>	50mA, 12VDC	0.20mm	4.2mm x 3.2mm	180	SMT (Gull Wing)	N/A
	<b>TL3700</b>	<p><b>Life Cycles:</b> 100,000  <b>Operating Temp:</b> -40°C to 85°C  <b>Contact Resistance:</b> 500mΩ Max.  <b>Insulation Resistance:</b> 100MΩ Min.</p>	20mA, 15VDC	0.15mm	3.0mm x 2.6mm	100, 160	SMT (Gull Wing)	N/A
	<b>TL3780</b>	<p><b>Life Cycles:</b> up to 500,000  <b>Operating Temp:</b> -40°C to 85°C  <b>Contact Resistance:</b> 500mΩ Max.  <b>Insulation Resistance:</b> 50MΩ Min</p>	20mA, 15VDC	0.13mm	2.0mm x 3.0mm	240, 330	SMT (Gull Wing)	N/A
	<b>TL3901</b>	<p><b>Life Cycles:</b> 50,000  <b>Operating Temp:</b> -40°C to 85°C  <b>Contact Resistance:</b> 500mΩ Max.  <b>Insulation Resistance:</b> 100MΩ Min</p>	50mA, 12VDC	0.3mm	5.4mm x 5.0mm	180	Right Angle Edge (Gull Wing)	N/A
	<b>TL4100</b>	<p><b>Life Cycles:</b> 1,000,000  <b>Operating Temp:</b> -40°C to 85°C  <b>Contact Resistance:</b> 100mΩ Max.  <b>Insulation Resistance:</b> 100MΩ Min.</p>	50mA, 12VDC	0.15mm	3.5mm x 6.2mm	120, 240	Right Angle Edge (Gull Wing)	N/A
	<b>TL4105</b>	<p><b>Life Cycles:</b> 200,000  <b>Operating Temp:</b> -40°C to 85°C  <b>Contact Resistance:</b> 1Ω Max.  <b>Insulation Resistance:</b> 100MΩ Min.</p>	50mA, 12VDC	0.15mm	2.9mm x 4.8mm	160	Right Angle Edge (Gullwing)	N/A
	<b>TL52</b>	<p><b>IP67 Rated</b>  <b>Life Cycles:</b> 100,000  <b>Operating Temp:</b> -25°C to 85°C  <b>Contact Resistance:</b> 100mΩ Max.  <b>Insulation Resistance:</b> 100MΩ Min.</p>	50mA, 12VDC	0.3mm	8.0mm x 8.0mm	160, 260	PCB Pin	●
	<b>TL58</b>	<p><b>Multiple Actuator Styles</b>  <b>Life Cycles:</b> 100,000  <b>Operating Temp:</b> -20°C to 70°C  <b>Contact Resistance:</b> 100mΩ Max.  <b>Insulation Resistance:</b> 100MΩ Min.</p>	50mA, 12VDC	0.25mm	6.2mm x 6.2mm	100, 160, 260	Right Angle PCB Pin	N/A
	<b>TL59</b>	<p><b>Multiple Actuator Styles</b>  <b>Life Cycles:</b> 100,000  <b>Operating Temp:</b> -20°C to 70°C  <b>Contact Resistance:</b> 100mΩ Max.  <b>Insulation Resistance:</b> 100MΩ Min.</p>	50mA, 12VDC	0.25mm	6.2mm x 6.2mm	100, 160, 260	PCB Pin	N/A
	<b>TL6100</b>	<p><b>Caps Available / Multiple Actuator Styles</b>  <b>Life Cycles:</b> up to 1,000,000  <b>Operating Temp:</b> -40°C to 85°C  <b>Contact Resistance:</b> 100mΩ Max.  <b>Insulation Resistance:</b> 100MΩ Min.</p>	50mA, 12VDC	0.5mm	7.4mm x 7.4mm	130, 160, 300, 500	PCB Pin	●

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# TACTILE SWITCH SERIES (PART 5)

	General Ratings	Electrical Ratings	Travel	Body Dimensions	Operating Force Options (gf)	Mounting Options	Washable
	<b>TL6105</b> Caps Available / Multiple Actuator Styles <b>Life Cycles:</b> up to 1,000,000 <b>Operating Temp:</b> -40°C to 85°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.5mm	7.4mm x 7.4mm	130, 160, 300, 500	PCB Pin w/ Earth ground terminal	●
	<b>TL6110</b> Caps Available / Multiple Actuator Styles <b>Life Cycles:</b> up to 1,000,000 <b>Operating Temp:</b> -40°C to 85°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.5mm	5.8mm x 8.3mm	130, 160, 300, 500	Right Angle PCB Pin	●
	<b>TL6120</b> Caps Available / Multiple Actuator Styles <b>Life Cycles:</b> up to 1,000,000 <b>Operating Temp:</b> -40°C to 85°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.5mm	7.4mm x 7.4mm	130, 160, 300, 500	SMT (Gull Wing)	●
	<b>TL6190</b> Caps Available <b>Life Cycles:</b> 100,000 <b>Operating Temp (Switch):</b> -40°C to 105°C <b>Operating Temp (Cap):</b> -40°C to 85°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.5mm	12.0mm x 11.5mm	160, 220, 320	Right Angle PCB Pin	●
	<b>TL6200</b> <b>Life Cycles:</b> 10,000,000 <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 30mΩ Max. <b>Insulation Resistance:</b> 10MΩ Min.	50mA, 24VDC	1.0mm	6.9mm x 6.2mm	300	SMT (Gull Wing) PCB Pin	●
	<b>TL6210</b> LED Illuminated <b>Life Cycles:</b> 100,000 <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 500mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.45mm	6.2mm x 4.6mm	200	SMT (Gull Wing)	●
	<b>TL6215</b> Caps Available / LED Illuminated <b>Life Cycles:</b> 500,000 <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.45mm	7.7mm x 6.37mm	200, 450	Vertical or Right Angle PCB Pin	●
	<b>TL6700</b> <b>Life Cycles:</b> 500,000 (160gf), 100,000 (260gf) <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	50mA, 12VDC	0.45mm	6.9mm x 6.2mm	160, 260	SMT (Gull Wing J-Bend)	●
	<b>TL9100</b> <b>Life Cycles:</b> 100,000(200gf); 30,000(350gf) <b>Operating Temp:</b> -40°C to 85°C <b>Contact Resistance:</b> 100mΩ Max <b>Insulation Resistance:</b> 100MΩ @500 VDC.	50mA, 12VDC	1.3mm	6.0mm x 6.0mm	200, 350	SMT (J-Bend)	N/A
	<b>TL9210</b> <b>Life Cycles:</b> 100,000 <b>Operating Temp:</b> -20°C to 70°C <b>Contact Resistance:</b> 100mΩ initial <b>Insulation Resistance:</b> 100MΩ Min. @100VDC	50mA, 12VDC	1.3mm	6.0mm x 6.0mm	180, 260	SMT (J-Bend)	N/A

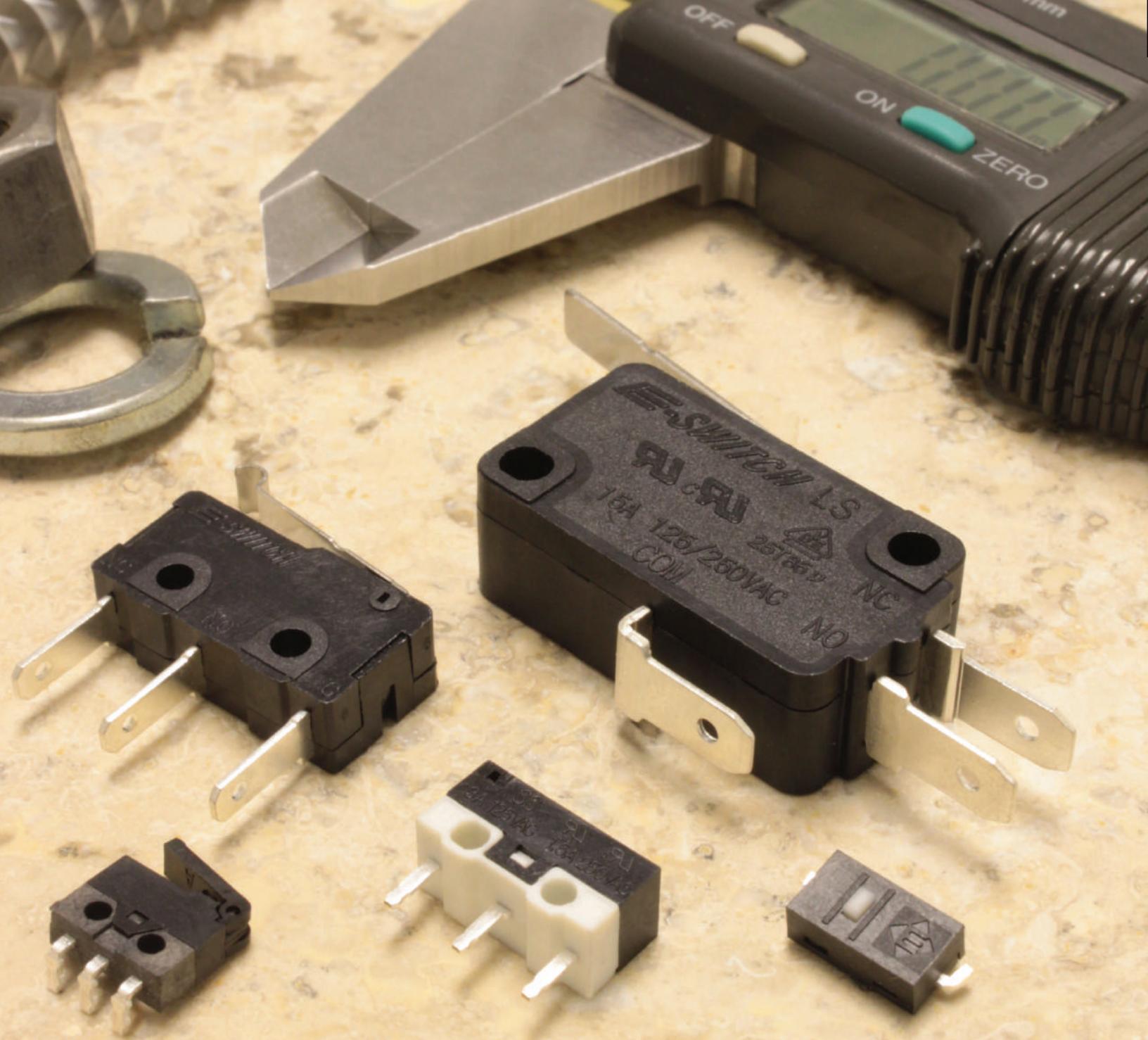
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Snap Action switches are uniquely designed to deliver a very precise "Turn-ON" function as well as featuring a very rapid actuation. Most actuator styles are easily customized. The actuation force and lever length also can be customizable at a low cost to fit many requirements. They are commonly used in vending machines, timing controls, power tools and the gaming industry.



# SNAP ACTION SWITCH SERIES

	General Ratings	Electrical Ratings	Operating Force Options*	Functions	Actuator Options	Terminal Options	Body Options	
	<b>LS</b>	<p><b>Electrical Life:</b> 50,000 Cycles  <b>Mechanical Life:</b> 1,000,000 Cycles  <b>Operating Temp:</b> -25°C to 85°C  <b>Contact Resistance:</b> 100mΩ Max.</p>	<p><b>Silver</b>  <b>cURus, VDE:</b> 15A, 125/250VAC  <b>Gold:</b> 0.4VA, 20V (AC or DC)</p>	<p>SPST N.O.  SPST N.C.  SPDT</p>	<p>25, 40, 45,  50, 60, 75,  85, 100, 120,  140, 160,  250</p>	<p>Pin Plunger  Lever  Simulated Roller</p>	<p>Quick Connect  Right Angle PCB Pin  Left Angle PCB Pin  Solder</p>	<p><b>Width:</b> 27.9mm  <b>Height:</b> 15.9mm  <b>Depth:</b> 10.3mm</p>
	<b>MS</b>	<p><b>Electrical Life:</b> 50,000 Cycles  <b>Mechanical Life:</b> 1,000,000 Cycles  <b>Operating Temp:</b> -25°C to 85°C  <b>Contact Resistance:</b> 100mΩ Max.</p>	<p><b>Silver</b>  <b>cURus:</b> 5A, 125/250VAC  <b>Gold:</b> 0.4VA, 20V (AC or DC)</p>	<p>SPST N.O.  SPDT</p>	<p>10, 15, 20,  25, 30, 35,  40, 45, 50,  55, 60, 65,  70, 75, 80,  85, 95, 115,  130, 150,  175, 190,  250, 295</p>	<p>Pin Plunger  Lever  Simulated Roller  Custom</p>	<p>Quick Connect  PCB Pin  Right Angle PCB Pin  Left Angle PCB Pin  Solder</p>	<p><b>Width:</b> 19.8mm  <b>Height:</b> 10.6mm  <b>Depth:</b> 6.4mm</p>
	<b>SS</b>	<p><b>Electrical Life:</b> 100,000 Cycles  <b>Mechanical Life:</b> 1,000,000 Cycles  <b>Operating Temp:</b> -25°C to 75°C  <b>Contact Resistance:</b> 100mΩ Max.</p>	<p><b>Silver</b>  <b>cURus:</b> 3A, 125VAC  1.5A, 250VAC  0.1A, 5VDC  <b>Gold:</b> 0.4VA, 20V (AC or DC)</p>	<p>SPDT</p>	<p>15, 20, 25,  30, 35, 40,  50, 70, 90,  110, 130</p>	<p>Pin Plunger  Lever  Simulated Roller</p>	<p>PCB Pin  PCB Retention  Right Angle PCB Pin  Left Angle PCB Pin  Solder</p>	<p><b>Width:</b> 12.7mm  <b>Height:</b> 6.5mm  <b>Depth:</b> 5.75mm</p>
	<b>TS</b>	<p><b>Electrical Life:</b> 50,000 Cycles  <b>Mechanical Life:</b> 100,000 Cycles  <b>Operating Temp:</b> -25°C to 85°C  <b>Contact Resistance:</b> 300mΩ Max.</p>	<p>300mA, 6VDC</p>	<p>SPDT</p>	<p>20</p>	<p>Lever</p>	<p>Vertical PCB Pin  Right Angle PCB Pin Short  Left Angle PCB Pin Short  Right Angle PCB Pin Long  Left Angle PCB Pin Long</p>	<p><b>Width:</b> 8.2mm  <b>Height:</b> 6.6mm  <b>Depth:</b> 2.7mm</p>
	<b>TS2</b>	<p><b>Electrical Life:</b> 3,000,000 Cycles  <b>Mechanical Life:</b> 3,000,000 Cycles  <b>Operating Temp:</b> -25°C to 85°C  <b>Contact Resistance:</b> 300mΩ Max.</p>	<p>100mA, 125VAC  100mA, 48VDC</p>	<p>SPST</p>	<p>70</p>	<p>Pin Plunger</p>	<p>SMT Terminals</p>	<p><b>Width:</b> 8.6mm  <b>Height:</b> 3.0mm  <b>Depth:</b> 4.8mm</p>
	<b>WS</b>	<p><b>Electrical Life:</b> 10,000 Cycles  <b>Mechanical Life:</b> 1,000,000 Cycles  <b>Operating Temp:</b> -25°C to 85°C  <b>Contact Resistance:</b> 100mΩ Max.</p>	<p>1A, 24VDC  2A, 12VDC  0.1A, 125 VAC</p>	<p>SPDT</p>	<p>70, 50</p>	<p>Pin Plunger  Lever</p>	<p>PCB Pins  Soldering Lugs</p>	<p><b>Width:</b> 13.3mm  <b>Height:</b> 7.0mm  <b>Depth:</b> 5.3mm</p>

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\*Not all force options work with all actuator options.



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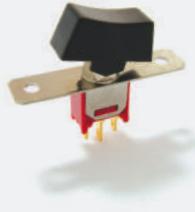
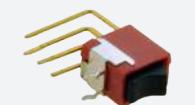
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Rocker switches open or close an electrical circuit by pivoting between the terminal contacts as the user rocks the actuator back and forth. Our rocker switches come in many different shapes and sizes, ranging from low milliamp ratings to high power ratings with horse power. We also offer some that are sealed up to IP67 standards and many different styles of actuation with illumination are available.



# ROCKER SWITCH SERIES (SUBMINIATURE)

Electrical Ratings	Poles / Functions	Actuator Options	Mounting Options	Terminal Options	Water Resistance Ratings
 <b>300</b> <b>Silver:</b> 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus] <b>Gold:</b> 0.4VA, 20V (AC or DC)	<b>1, 2, 3, or 4 Pole:</b> On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) <b>2 Pole:</b> On-On-On On-On-(On) (On)-On-(On) <b>4 Pole:</b> On-On-On	Paddle Rocker	<b>Panel Mount:</b> Quick Connect Vertical Solder  <b>PC Mount:</b> Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical with Bracket	PCB Pin Quick Connect Solder	N/A
 <b>300A</b> <b>Silver:</b> 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus] <b>Gold:</b> 0.4VA, 20V (AC or DC)	<b>1 or 2 Pole:</b> On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On)	Paddle Rocker	<b>Panel Mount:</b> Quick Connect Vertical Solder  <b>PC Mount:</b> Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical with Bracket	PCB Pin Quick Connect Solder	IP67
 <b>400</b> <b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] <b>Gold:</b> 0.4VA, 20V (AC or DC)	<b>1 Pole:</b> On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) Off-On <b>2 Pole:</b> On-On On-(On) On-Off-On	Rocker	<b>Panel Mount:</b> Vertical Solder  <b>PC Mount:</b> Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical Right Angle with Bracket Vertical with Bracket	PCB Pin Solder	N/A
 <b>400A</b> <b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] <b>Gold:</b> 0.4VA, 20V (AC or DC)	<b>1 Pole:</b> On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) Off-On <b>2 Pole:</b> On-On On-(On) On-Off-On	Rocker	<b>Panel Mount:</b> Vertical Solder  <b>PC Mount:</b> Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Right Angle Vertical Right Angle with Bracket Vertical with Bracket	PCB Pin Solder	IP67
 <b>400B</b> <b>Silver:</b> 3A, 120VAC [cURus] 1A, 250VAC [cURus]	<b>1 Pole:</b> On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On)	Rocker	<b>PC Mount:</b> Surface Mount	PCB Pin	IP67
 <b>400U</b> <b>Gold:</b> 0.4VA@ 24V AC or DC	<b>2 Pole:</b> On-None-On	Rocker Lever	<b>PC Mount:</b> Vertical Right Angle, PC thru-hole Right Angle, PC thru-hole PC thru-hole	PCB Pin	IP67

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# ROCKER SWITCH SERIES (RECTANGULAR PANEL MOUNT)

		Electrical Ratings	Poles / Functions	Panel Cutout Dimensions	Actuator Options	Illumination Options	Water Resistance Ratings	
	<b>R1966</b>	15A, 125VAC T65 [cURus] 8A, 250VAC T65 [cURus] 6A, 250VAC T85 [VDE]	<b>1 Pole:</b> On-Off On-Off-On Off-(On) On-Off-(On)	On-On On-(Off) On-(On) (On)-Off-(On)	13mm x 19.2mm	Curved	Full	N/A
	<b>R1973</b>	9A, 125VAC T65 [cURus] 6A, 250VAC T65 [cURus] 4(1)A, 250VAC T85 [VDE]	<b>1 Pole:</b> On-Off <b>2 Pole:</b> On-Off		13mm x 19.2mm	Curved	Full	N/A
	<b>R4</b>	20A, 125VAC T65 [cURus] 15A, 125VAC T65 [cURus] 3/4HP, 125VAC [cURus] 1HP, 250VAC [cURus] 15A, 250VAC T85 [VDE] 10A, 250VAC T85 [VDE]	<b>1 Pole:</b> On-Off On-Off-On Off-(On) On-(Off)	On-On On-(On) (On)-Off-(On) On-Off-(On)	11mm x 30mm	Curved	Full Dott	N/A
	<b>R5</b>	20A, 125VAC T65 [cURus] 15A, 125VAC T65 [cURus] 3/4HP, 125VAC [cURus] 1HP, 250VAC [cURus] 16A, 250VAC T85 [VDE] 10A, 250VAC T85 [VDE]	<b>2 Pole:</b> On-Off On-Off-On Off-(On) On-(Off)	On-On On-(On) (On)-Off-(On) On-Off-(On)	22mm x 30mm	Curved	Full	N/A
	<b>R6</b>	10A, 125VAC T65 [cURus] 6A, 250VAC T65 [cURus]	<b>1 Pole:</b> On-Off	(On)-Off	6.65mm x 19.2mm	Curved	N/A	N/A
	<b>R7</b>	16(8)A, 125/250VAC [cURus] 20(8)A, 125/250VAC [cURus] 16A, 30VDC [cURus]	<b>1 or 2 Pole:</b> On-Off (On)-Off On-(Off) On-Off-On	On-On (On)-On (On)-Off-On (On)-Off-(On)	21.1mm x 37mm	Hard PC or TPR	Multiple Lens Options	IP67
	<b>RA1</b>	16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus] 10(4)A, 250VAC 1E4 T125/55 [ENECA] 10(2)A, 250VAC 5E4 T85/55 [ENECA]	<b>1 Pole:</b> Off-On On-(On) Off-(On) On-Off-On	On-(Off) On-Off-(On) On-On (On)-Off-(On)	13mm x 19mm	Bi-Color Curved Custom	Full Signal Light	IP54 with cap
	<b>RA2</b>	16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus] 10(4)A, 250VAC 1E4 T125 [ENECA] 10(2)A, 250VAC 5E4 T85 [ENECA]	<b>1 Pole (Each Actuator):</b> Off-On Off-(On) On-(Off)	On-On On-Off-On	22mm x 19mm	Curved	Signal Light	IP54 with cap
	<b>RA4</b>	16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus] 10(4)A, 250VAC T125 1E4 [ENECA] 10(2)A, 250VAC 5E4 T85 [ENECA]	<b>1 or 2 Pole:</b> Off-On Off-(On) On-(Off)	On-On On-Off-On On-(On)	22mm x 19.2mm	Curved Paddle	Full	IP54 with cap

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# ROCKER SWITCH SERIES (RECTANGULAR PANEL MOUNT)

		Electrical Ratings	Poles / Functions	Panel Cutout Dimensions	Actuator Options	Illumination Options	Water Resistance Ratings
	<b>RA8</b>	16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus] 10(4)A, 250VAC 1E4 T125/55 [ENECA] 10(2)A, 250VAC 5E4 T85/55 [ENECA]	<b>1 Pole:</b> Off-On <b>2 Pole:</b> Off-On	13mm x 19mm	Bi-color Curved	Full Signal Light	IP54 with cap
	<b>RB1</b>	20A, 125VAC 1/4HP T65 [cURus] 20A, 250VAC 3/4HP T65 [cURus] 20(8)A, 250VAC 1E4 T125 [ENECA] 16(4)A, 250VAC 1E4 T85/55 [ENECA] 10(2)A, 250VAC 5E4 T85/55 [ENECA]	<b>1 Pole:</b> Off-On On-(On) Off-(On) On-Off-On  <b>2 Pole:</b> On-(Off) On-Off-(On) On-On (On)-Off-(On)	11mm x 30mm	Curved Flat	Dot Full Signal Light	IP54 with cap
	<b>RB2</b>	20A, 125VAC 1/4HP T65 [cURus] 20A, 250VAC 3/4HP T65 [cURus] 16(8)A, 250VAC 1E4 T125 [ENECA] 10(2)A, 250VAC 5E4 [ENECA] 16(4)A, 250VAC 1E4 T85/55 [ENECA]	<b>1 or 2 Pole:</b> Off-On On-Off-On (On)-Off-(On)  <b>2 Pole Only:</b> Off-(On)  On-(On)	22mm x 30mm	Curved Flat	Dot Full Signal Light	IP54 with cap
	<b>RB4</b>	16A, 125VAC T85 [cURus] 8A, 250VAC T85 [cURus] 16(4)A, 250VAC 1E4 T125 [ENECA]	<b>1 Pole (Each Actuator):</b> Off-On On-(On) Off-(On) On-Off-On  <b>2 Pole:</b> On-(Off) On-Off-(On) On-On (On)-Off-(On)	22mm x 30mm	Curved Flat	Dot Full Signal Light	IP54 with cap
	<b>RBW2</b>	16(16)A, 125VAC 5E4 T85 [cURus] 1/3HP, 125VAC IP66 [cURus] 10(10)A, 250VAC 5E4 T85 [VDE]	<b>2 Pole:</b> Off-On  <b>1 Pole:</b> On-On	22mm x 30mm	Curved	Full	IP66
	<b>RD1</b>	16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus] 10(4)A, 250VAC 1E4 T125 [ENECA] 10(2)A, 250VAC 5E4 T85 [ENECA]	<b>1 Pole:</b> Off-On	6.8mm x 19.2mm	Curved	N/A	N/A
	<b>RSC</b>	20A, 125VAC 1/4HP T105 [cURus] 16A, 250VAC 3/4HP T105 [cURus] 20(8)A, 250VAC 1E4 T125 [ENECA] 16(4)A, 250VAC 1E4 T125 [ENECA] 10(2)A, 250VAC 5E4 T125 [ENECA]	<b>1 Pole:</b> Off-On Off-(On)  <b>2 Pole:</b> On-On	28.6mm x 13.9mm 27.2mm x 12.1mm 27.2mm x 13.9mm 28.6mm x 12.1mm	Bi-Color Curved Flat	Full Signal Light	N/A
	<b>RVW</b>	20A, 125VAC [cURus UL508] 15A, 277VAC [cURus UL508] 2HP, 220-240VAC [cURus UL508] <b>Momentary Switches:</b> 1.5HP, 220-240VAC [cURus UL508]	<b>1 or 2 Pole:</b> Off-On Off-(On) On-(Off) On-Off-(On)  <b>2 Pole:</b> On-On On-Off-On On-(On) (On)-Off-(On)	21mm x 36.8mm	Curved	N/A	IP54
	<b>WB2</b>	<b>Maintained Switches:</b> 20A, 125/250VAC T65/T85 [cURus] 2.0HP, 125/250VAC [cURus] 18(12)A, 250VAC 5E4 T85 [TÜV] <b>Momentary Switches:</b> 20A, 125/250VAC T65/T85 [cURus] 1.5HP, 125/250VAC [cURus] 18(10)A, 250VAC 5E4 T85 [TÜV]	<b>2 Pole:</b> Off-On Off-(On) (On)-Off-(On)  On-On On-Off-On On-(On)	22mm x 30mm	Curved	N/A	IP55

Specifications subject to change without notice

\*Option only available with non-illuminated version.



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# ROCKER SWITCH SERIES (OVAL / ROUND PANEL MOUNT)

	Electrical Ratings	Poles / Functions	Panel Cutout Dimensions	Actuator Options	Illumination Options	Water Resistance Ratings	
	RE1 16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus] 10(4)A, 250VAC 1E4 T125 [ENECA] 10(2)A, 250VAC 5E4 T85 [ENECA]	<b>1 Pole:</b> Off-On On-On	On-Off-On	13.5mm x 23.3mm (Oval)	Curved	Full	N/A
	RR1 16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus] 10(4)A, 250VAC 1E4 T125/55 [ENECA] 10(2)A, 250VAC 5E4 T85/55 [ENECA]	<b>1 Pole:</b> Off-On Off-(On) On-(Off) On-Off-(On)	On-On On-Off-On On-(On)	20mm Diameter	Curved	Dot Full Signal Light	IP54 with cap
	RR3112 16A, 125VAC T65 [cURus] 10A, 250VAC T65 [cURus]	<b>1 Pole:</b> On-Off On-Off-On	On-On Off-(On)	20.2mm Diameter	Curved	Full	N/A
	RR3130 10A, 125VAC T65 [cURus] 6A, 250VAC T65 [cURus]	<b>1 Pole:</b> On-Off <b>2 Pole:</b> On-On	On-On	18.2mm Diameter	Curved	N/A	N/A
	RR3402 6A, 125VAC [cURus] 3A, 250VAC [cURus]	<b>1 Pole:</b> On-Off On-Off-On	On-On	15mm Diameter	Paddle	N/A	N/A

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# ROCKER SWITCH SERIES (OVAL / ROUND PANEL MOUNT)



**RR5**

20A, 125VAC T65 [cURus]  
12A, 250VAC T65 [cURus]  
10(4)A, 250VAC 5E4 T125 [ENECL]

**1 Pole:**  
Off-On  
Off-(On)

20mm Diameter

Curved

N/A

N/A



**RR8**

16A, 125VAC 1/3HP T105 [cURus]  
10A, 250VAC 1/3HP T105 [cURus]  
10(4)A, 250VAC 1E4 T125/55 [ENECL]  
10(2)A, 250VAC 5E4 T85/55 [ENECL]

**1 Pole:**  
Off-On

**2 Pole:**  
Off-On

20mm Diameter

Curved

Full

N/A



**RRA**

15A, 125VAC 1/3HP T105 [cURus]  
10A, 250VAC 1/3HP T105 [cURus]

**1 Pole:**  
Off-On  
On-Off-On

**2 Pole:**  
Off-On  
On-Off-On

22mm Diameter

Curved

Full

IP54 with cap



**RRG3**

16A, 125VAC 1/3HP T105 [cURus]  
10A, 250VAC 1/3HP T105 [cURus]  
10(4)A, 250VAC 1E4 T125/55 [ENECL]

**1 Pole:**  
Off-On  
Off-(On)  
On-(Off)  
On-Off-(On)

**2 Pole:**  
Off-On  
On-Off-On  
On-(On)  
On-Off-(On)

20mm Diameter

Curved

N/A

N/A



**RRGA**

16A, 125VAC 1/3HP T105 [cURus]  
10A, 250VAC 1/3HP T105 [cURus]  
10(4)A, 250VAC 1E4 T125/55 [ENECL]

**1 Pole:**  
Off-On  
Off-(On)  
On-(Off)  
On-Off-(On)

**2 Pole:**  
Off-On  
On-Off-On  
On-(On)  
On-Off-(On)

22mm Diameter

Curved

N/A

N/A

Electrical Ratings      Poles / Functions      Panel Cutout Dimensions      Actuator Options      Illumination Options      Water Resistance Ratings

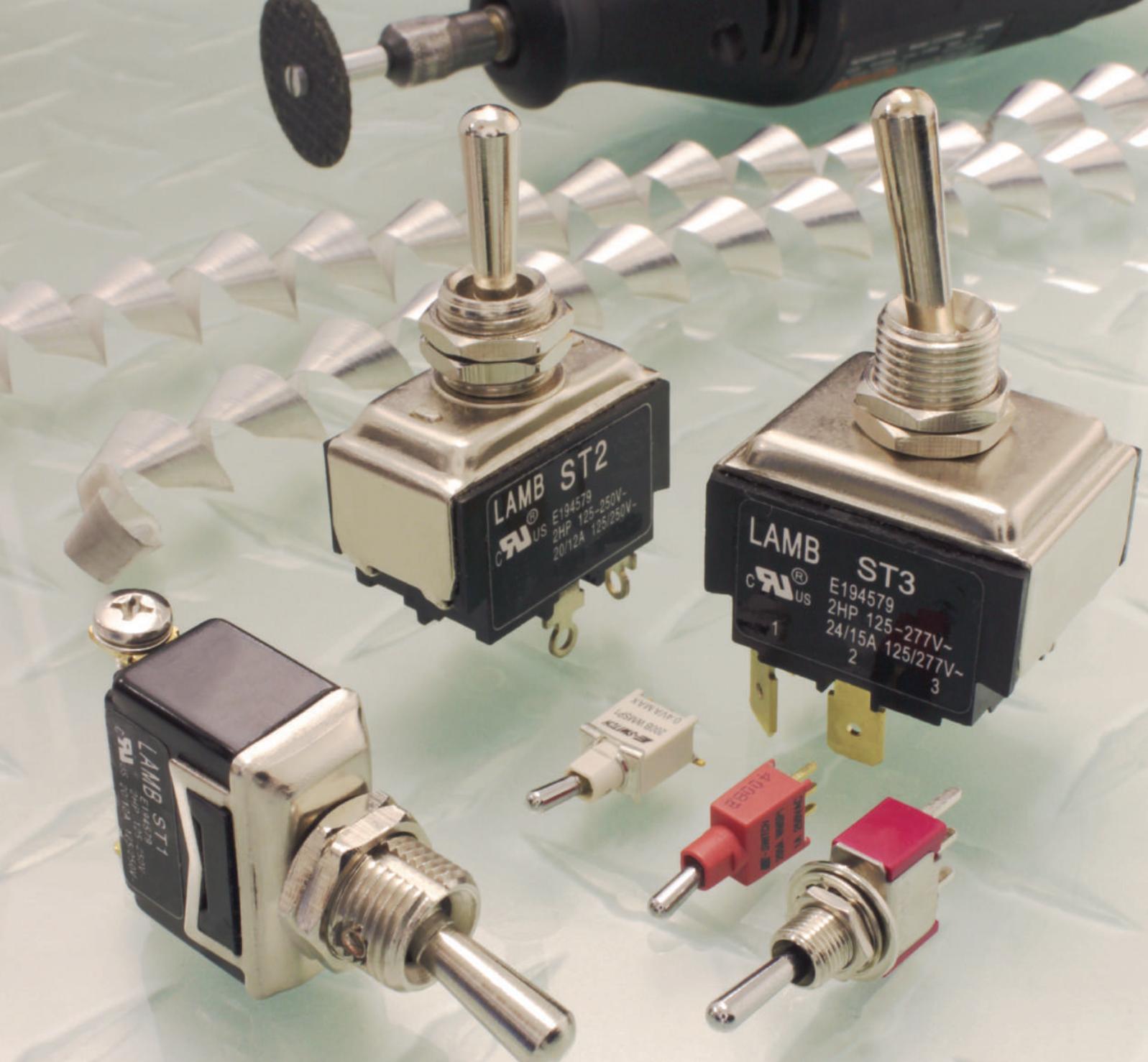
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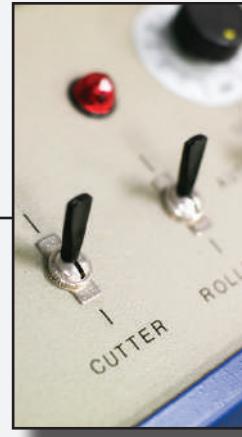
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Toggle switches are actuated by a mechanical lever and are used in both big industrial applications and smaller board level applications. Our toggle switches include a wide variety of actuator, bushing, and terminal options as well as low and high amperage ratings. There are even a few with horse power ratings for some of the more industrial strength applications.



# TOGGLE SWITCH SERIES

		General Ratings	Electrical Ratings	Poles / Functions	Actuator Options	Bushing Options	Terminal Options	Water Resistance Ratings
	<b>100</b>	<p><b>Electrical Life:</b> 6,000 Cycles  <b>Mechanical Life:</b> 30,000 Cycles  <b>Operating Temp:</b> -30°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.</p>	<p><b>Silver:</b> 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, 20V Max. (AC or DC)</p>	<p><b>1 or 3 Pole:</b> On-On (On-Off-On) On-Off-On (On-Off-Off) <b>2 or 4 Pole:</b> On-On (On-Off-On) On-Off-On (On-Off-Off) On-Off-(On) (On-On-Off) On-On-(On) (On-On-Off)</p>	Flat Locking Metal Plastic	High Torque Non-Threaded Threaded Splash Proof	Quick Connect Right Angle PCB Pin Solder Vertical PCB Pin Wire Wrap	N/A
	<b>100A</b>	<p><b>Electrical Life:</b> 6,000 Cycles  <b>Mechanical Life:</b> 30,000 Cycles  <b>Operating Temp:</b> -30°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.</p>	<p><b>Silver:</b> 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, 20V Max. (AC or DC)</p>	<p><b>1 Pole:</b> On-On (On-Off-On) On-Off-On (On-Off-Off) On-Off-(On)</p> <p><b>2 Pole:</b> On-On (On-Off-On) On-Off-On (On-Off-Off) On-On-(On)</p>	Metal Plastic	Non-Threaded Threaded	Right Angle PCB Pin Solder Vertical PCB Pin Wire Wrap	IP67
	<b>200</b>	<p><b>Electrical Life:</b> 6,000 Cycles  <b>Mechanical Life:</b> 30,000 Cycles  <b>Operating Temp:</b> -30°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.</p>	<p><b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, 20V Max. (AC or DC)</p>	<p><b>1 Pole:</b> On-On (On-Off-On) On-Off-On (On-Off-Off) On-Off-(On) Off-On</p> <p><b>2 Pole:</b> On-On (On-Off-On) On-Off-On (On-Off-Off)</p>	Metal	Non-Threaded Threaded	Right Angle PCB Pin Solder Vertical PCB Pin	N/A
	<b>200A</b>	<p><b>Electrical Life:</b> 6,000 Cycles  <b>Mechanical Life:</b> 30,000 Cycles  <b>Operating Temp:</b> -30°C to 85°C  <b>Contact Resistance:</b> 10mΩ Max.</p>	<p><b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p><b>Gold:</b> 0.4VA, 20V Max. (AC or DC)</p>	<p><b>1 Pole:</b> On-On (On-Off-On) On-Off-On (On-Off-Off) On-Off-(On) Off-On</p> <p><b>2 Pole:</b> On-On (On-Off-On) On-Off-On (On-Off-Off)</p>	Metal Plastic	Non-Threaded	Right Angle PCB Pin Vertical PCB Pin	IP67
	<b>200B</b>	<p><b>Electrical Life:</b> 6,000 Cycles  <b>Mechanical Life:</b> 30,000 Cycles  <b>Operating Temp:</b> -30°C to 85°C  <b>Contact Resistance:</b> 20mΩ Max.</p>	<b>Gold:</b> 0.4VA, 20V Max. (AC or DC)	<p><b>1 Pole:</b> On-(On) (On-Off-On) On-Off-(On) On-Off-(On)</p>	Metal Plastic	Non-Threaded	Surface Mount	IP67
	<b>200R</b>	<p><b>Electrical Life:</b> 6,000 Cycles  <b>Mechanical Life:</b> 40,000 Cycles  <b>Operating Temp:</b> -30°C to 85°C  <b>Contact Resistance:</b> 50mΩ Max.</p>	<b>Gold:</b> 0.4VA, 48V Max. (AC or DC)	<p><b>1 or 2 Pole:</b> On-None-On (On-None-On) On-Off-On (On-Off-On) On-Off-(On) On-Off-(On)</p>	Metal	Non-Threaded	Surface Mount Right Angle PCB Pin Vertical Right Angle PCB Pin	N/A
	<b>200U</b>	<p><b>Electrical Life:</b> 40,000 Cycles  <b>Mechanical Life:</b> 40,000 Cycles  <b>Operating Temp:</b> -30°C to 85°C  <b>Contact Resistance:</b> 100mΩ Max.</p>	<b>Gold:</b> 0.4VA, 20V Max. (AC or DC)	<p><b>1 or 2 Pole:</b> Off-On (On-Off-On) On-On</p>	Plastic	Non-Threaded	PCB Pin Right Angle PCB Pin Vertical Right Angle PCB Pin	IP67
	<b>ST1</b> <b>ST2</b>	<p><b>Electrical Life:</b> 6,000 Cycles  <b>Mechanical Life:</b> 100,000 Cycles  <b>Operating Temp:</b> -20°C to 85°C  <b>Contact Resistance:</b> 50mΩ Max.</p>	<p><b>Maintained Switches:</b> 20A, 125VAC [cURus] 15A, 277VAC [cURus] 2HP, 125-277VAC [cURus]</p> <p><b>Momentary Switches:</b> 20A, 125VAC [cURus] 15A, 277VAC [cURus] 1.5HP, 125-277VAC [cURus]</p>	<p><b>2 Pole:</b> Off-On (On-Off-On) On-On Off-(On) On-Off-On (On-Off-On)</p>	Metal	Threaded	Quick Connect Screw Solder Wire Leads	N/A
	<b>ST3</b>	<p><b>Electrical Life:</b> 6,000 Cycles  <b>Mechanical Life:</b> 100,000 Cycles  <b>Operating Temp:</b> -30°C to 85°C  <b>Contact Resistance:</b> 50mΩ Max.</p>	<p><b>Maintained Switches:</b> 24A, 125VAC [cURus] 15A, 277VAC [cURus] 2HP, 125-277VAC [cURus]</p>	<p><b>3 Pole:</b> Off-On (On-Off-On) On-On</p>	Metal	Threaded	Quick Connect Screw Solder Wire Leads	N/A

\*ST2 Pictured

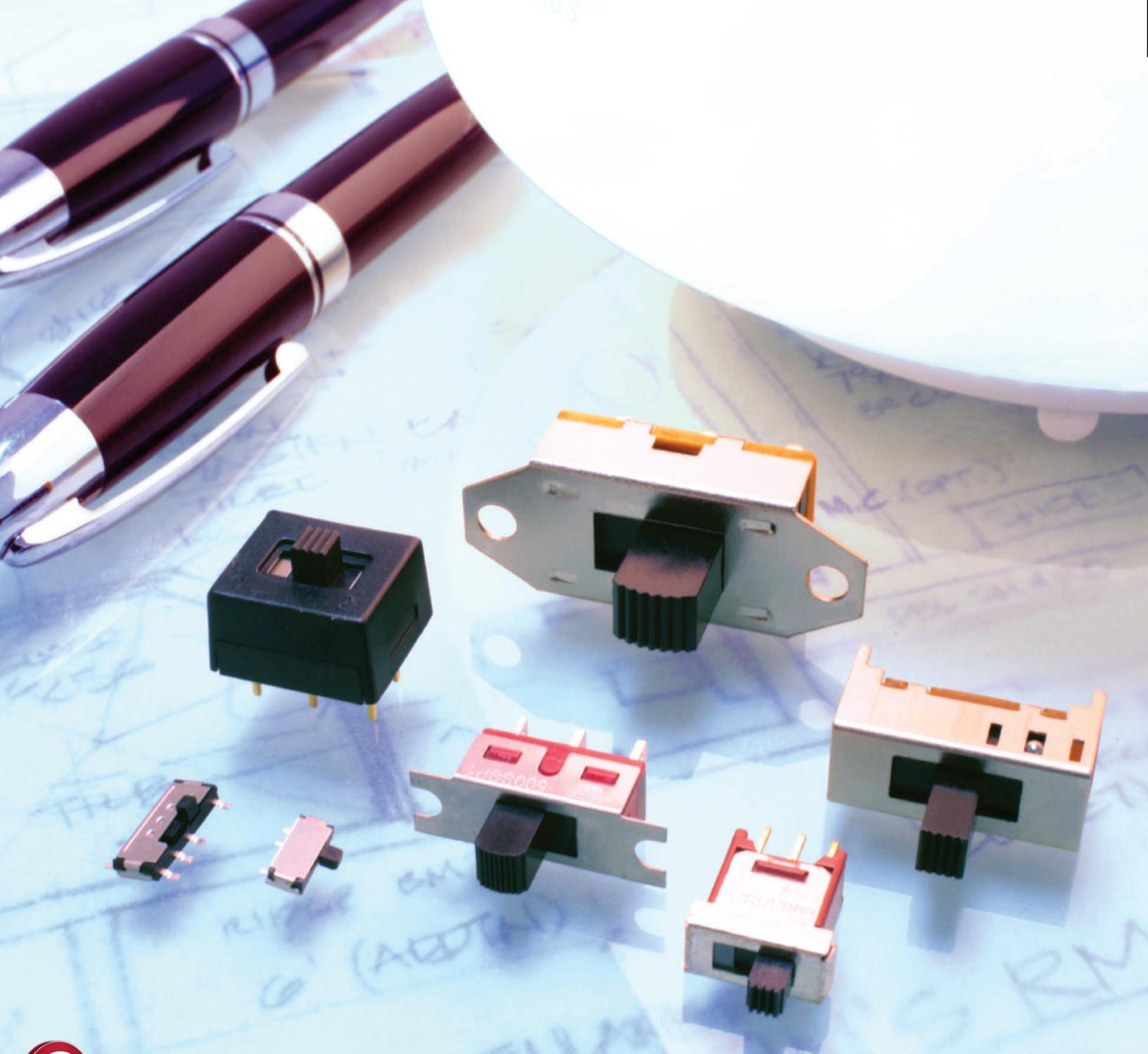
Specifications subject to change without notice



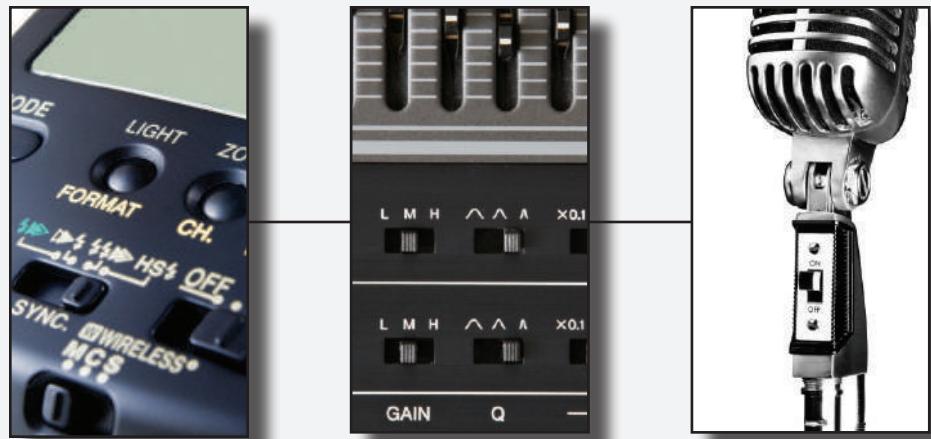
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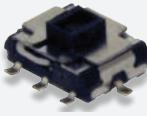
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Slide switches function in a sliding movement from the current position to the next. The method of activation is designed to move toward a switching condition with an option of flush or raised actuators. Our diverse selection of termination types allow the switch to be mounted in a variety of ways. They are frequently used in computer servers, consumer electronics, and testing equipment.



# SLIDE SWITCH SERIES

	Electrical Ratings	Number of Poles	Number of Positions	Terminal Options	Panel Mount Capable	Water Resistance Ratings	
	<b>500</b>	<b>Silver:</b> 5A, 120VAC [cURus] 2A, 250VAC [cURus]  <b>Gold:</b> 0.4VA, 20V (AC or DC)	Up to 2 Poles	Up to 3 Positions	PCB Pin Solder Quick Connect Wire Wrap	●	N/A
	<b>500A</b>	<b>Silver:</b> 3A, 120VAC [cURus] 1A, 250VAC [cURus]  <b>Gold:</b> 0.4VA, 20V (AC or DC)	Up to 2 Poles	Up to 3 Positions	PCB Pin	N/A	N/A
	<b>500R</b>	<b>Gold:</b> 0.4VA, 20V (AC or DC)	Up to 2 Poles	Up to 3 Positions	Right Angle PCB Pin Vertical PCB Pin	N/A	IP67
	<b>600</b>	<b>Silver:</b> 1A, 30VDC  <b>Gold:</b> 0.4VA, 20V (AC or DC)	1 Pole	Up to 3 Positions	Right Angle PCB Pin Vertical PCB Pin Surface Mount	●	N/A
	<b>EG</b>	200mA, 30VDC	Up to 6 Poles	Up to 6 Positions	PCB Pin Surface Mount	●	N/A
	<b>EGL2290</b>	300mA, 6VDC	2 Poles	2 Positions	Surface Mount	N/A	N/A

Specifications subject to change without notice





DIP switches are designed to be used on a PC board and are commonly used to customize the behavior of an electronic device for specific situations. DIP switches are also an alternative to jumper blocks, as one of their main advantages lies in the ability to quickly change positions. Also, there are no parts to lose. Some examples of applications include radio receivers such as the ones found in a garage door opener and a ceiling fan.



# DIP SWITCH SERIES



General Ratings	Electrical Ratings	Body Dimensions (mm)	Number of Positions	Actuator Options	Mounting Options	Packaging Options	Tape Seal / Washable
	<b>KAE</b> Life Cycles: 2,000 Operating Force: 1,000gf Max. Operating Temp: -20°C to 85°C	Switch: 25mA, 24VDC Carry: 100mA, 50VDC	Height: 3.05 Width: 6.3 Length: Varies per # of positions	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12	Extended Recessed	SMT (Gull Wing) PCB Pin (Splayed or straight)	Tape and Reel Tube
	<b>KAN</b> Life Cycles: 2,000 Operating Force: 500gf Max. Operating Temp: -40°C to 85°C	Switch: 25mA, 24VDC Carry: 100mA, 50VDC	Height: 1.5 Width: 4.5 Length: Varies per # of positions	2, 4, 6, 8, 10	Recessed	SMT (Gull Wing)	Tape and Reel Tube
	<b>KAP</b> Life Cycles: 2,000 Operating Force: 400gf Max. Operating Temp: -40°C to 85°C	Switch: 25mA, 24VDC Carry: 100mA, 50VDC	Height: 10.8 Width: 10.2 Length: Varies per # of positions	2, 3, 4, 5, 6, 7, 8, 9, 10, 12	Extended Recessed	PCB Pin	Tube
	<b>KAC</b> Life Cycles: 2,000 Operating Force: 800gf Max. Operating Temp: -20°C to 85°C	Switch: 25mA, 24VDC Carry: 100mA, 50VDC	Height: 5.0 Width: 6.0 Length: Varies per # of positions	2, 4, 6, 8, 10	Extended	SMT (Gull Wing) PCB Pin (Splayed)	Tape and Reel Tube
	<b>KAS</b> Life Cycles: 2,000 Operating Force: 1,000gf Max. Operating Temp: -40°C to 85°C	Switch: 25mA, 24VDC Carry: 100mA, 50VDC	Height: 6.0 Width: 9.9 Length: Varies per # of positions	2, 3, 4, 5, 6, 7, 8, 9, 10, 12	Extended Recessed	PCB Pin (Vertical & Right Angle)	Tube
	<b>DR</b> 2x3, 3x3, 4x1 Layout Life Cycles: 15,000 Steps Operating Force: 500gf-cm Max. Operating Temp: -40°C to 85°C	Switch: 25mA, 24VDC Carry: 100mA, 50VDC	Height: 4.5 Width: 9.8 Length: 9.9	10, 16	Extended Flush	PCB Pin	Tape and Reel Tube
	<b>RDM</b> 3x3 Layout Life Cycles: 25,000 Steps Operating Force: 120gf-cm Max. Operating Temp: -60°C to 125°C	Switch: 100mA, 42VDC Carry: 400mA, 42VDC	Height: 3.65 (Vert) Height: 5.80 (RA) Width: 7.4 Length: 7.4	10, 16	Extended Flush	PCB Pin (Vertical & Right Angle) SMT	Tape and Reel Tube
	<b>RDT</b> 2x3, 3x3 Layout Life Cycles: 10,000 Steps Operating Force: 700gf-cm Max. Operating Temp: -40°C to 85°C (Through Hole), -60°C to 125°C (SMT)	Switch: 150mA, 42VDC Carry: 200mA, 42VDC	Height: 6.50 (Vert) Height: 12.05 (RA) Width: 10.0 Length: 10.0	04, 06, 08, 10, 16	Extended Flush	PCB Pin (Vertical & Right Angle) SMT	Tape and Reel Tube
							IP67

Specifications subject to change without notice

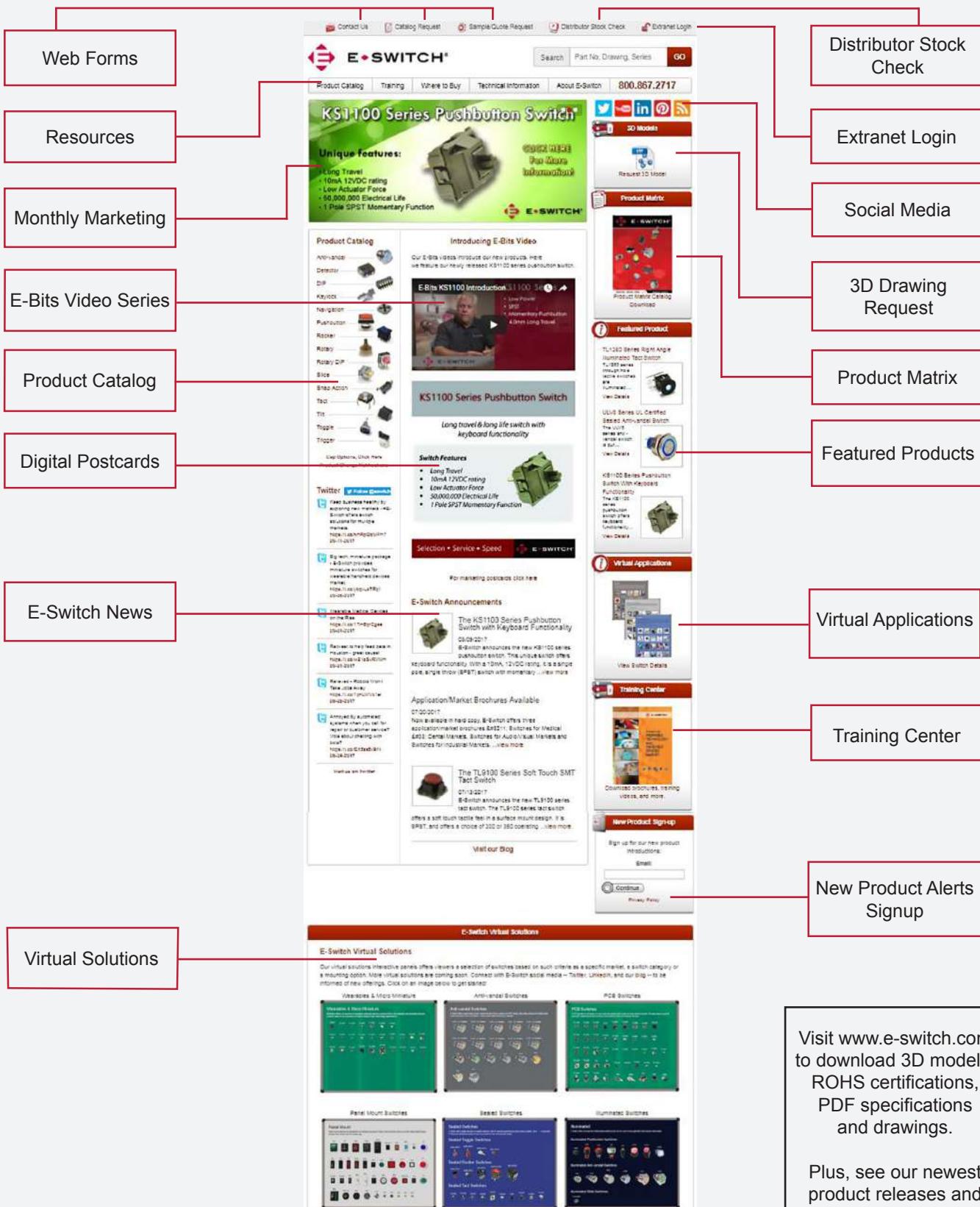


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# RECOMMENDED SOLDERING GUIDELINES & IP RATINGS

Most contamination problems can be prevented by exercising care during the cleaning and soldering process. Care should be taken not to immerse or spray unsealed switches during flux removal. Contact E-Switch for specific soldering recommendations and specifications not found in this catalog. Generalized soldering procedures are outlined below.

## HAND SOLDERING AND TEMPERATURES

Recommend soldering irons of 30 watt maximum with a tip temperature of 345°C (650°F) for 2-3 seconds and solder of 0.030 - 0.040 diameter.

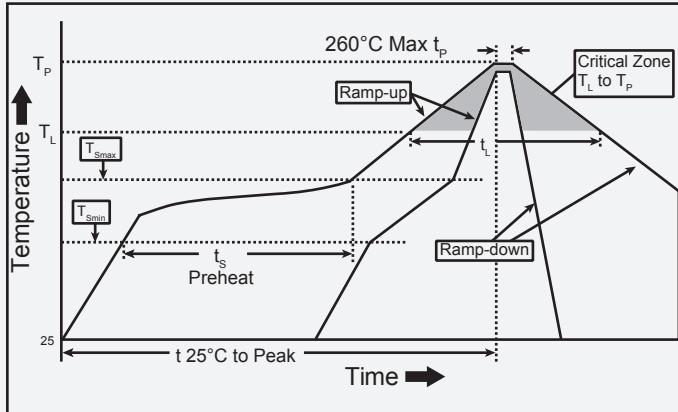
## SMT REFLOW (LEAD AND LEAD-FREE)

### "TYPICAL" SMT REFLOW (Pb and Pb-Free)

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average Ramp-Up Rate ( $T_{Smax}$ to $T_p$ )	3°C/second max.	3°C/second max.
<b>Preheat</b>		
-Temperature Min. ( $T_{Smin}$ )	100°C	150°C
-Temperature Max. ( $T_{Smax}$ )	150°C	200°C
-Time ( $t_{Smin}$ to $t_{Smax}$ )	60-120 seconds	60-180 seconds
Time maintained above:		
-Temperature ( $T_L$ )	183°C	217°C
-Time ( $t_L$ )	60-150 seconds	60-150 seconds
Time within 5°C of actual Peak Temperature ( $t_p$ )	10-30 seconds	20-40 seconds
Ramp-Down Rate	6°C/second max.	6°C/second max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.

**Note 1:** All temperatures refer to topside of the package, measured on the package body surface.

## Classification Reflow Profile

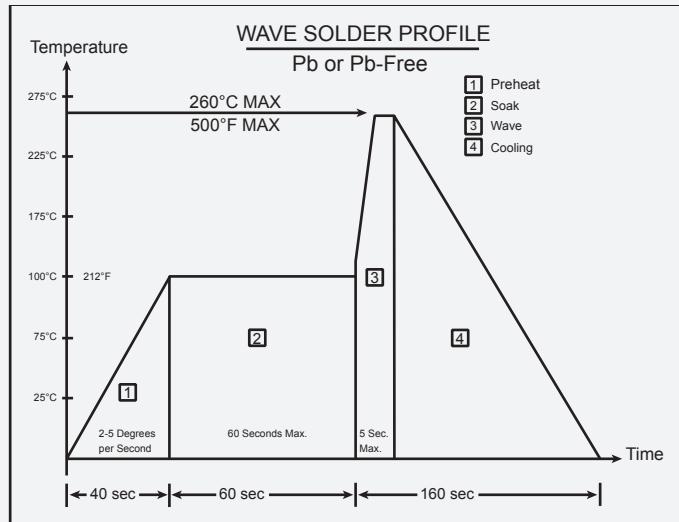


## WAVE SOLDER TIME AND TEMPERATURES

When wave soldering, we recommend using a no-clean flux soldering process, rather than a process that requires washing. The fluxing process must be controlled so as not to have flux migrate inside the switch.

### WAVE SOLDER

(Includes Pb-Free, max. component side preheat temp-130°C)



Good venting is required. No-clean flux vapors can enter the switch if adequate venting is not available. The vapors will condense on the internal contacts and become an insulator when they solidify.

- Preheat temperature/time: Circumferential temperature of the P.C. Board not to exceed 100°C (212°F) for 60 seconds.
- Soldering temperature/time: not to exceed 260°C (500°F) for 5 seconds.

## IP Rating Chart

First Number	Definition	Second Number	Definition
Protection against solid objects		Protection against liquids	
0	No protection	0	No protection
1	Protected against solid objects over 50mm (e.g. accidental touch by hands)	1	Protected against vertically falling drops of water
2	Protected against solid objects over 12mm (e.g. fingers)	2	Protected against direct sprays up to 15° from the vertical
3	Protected against solid objects over 2.5mm (e.g. tools and wires)	3	Protected against direct sprays up to 60° from vertical
4	Protected against solid objects over 1mm (e.g. tools, wires and small wires)	4	Protected against sprays from all directions - limited ingress permitted
5	Protected against dust - limited ingress (no harmful deposit)	5	Protected against low pressure jets if water from all directions - limited ingress permitted
6	Totally protected against dust	6	Protected against strong jets of water (e.g. for use on shipdecks - limited ingress permitted)
		7	Protected against the effects of temporary immersion between 15cm and 1m. Duration of test 30 min.
		8	Protected against long periods of immersion under pressure



**E-SWITCH**®

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**For more information on other switches or  
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