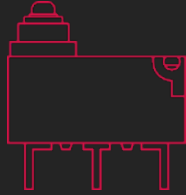
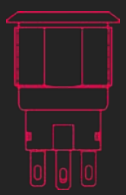




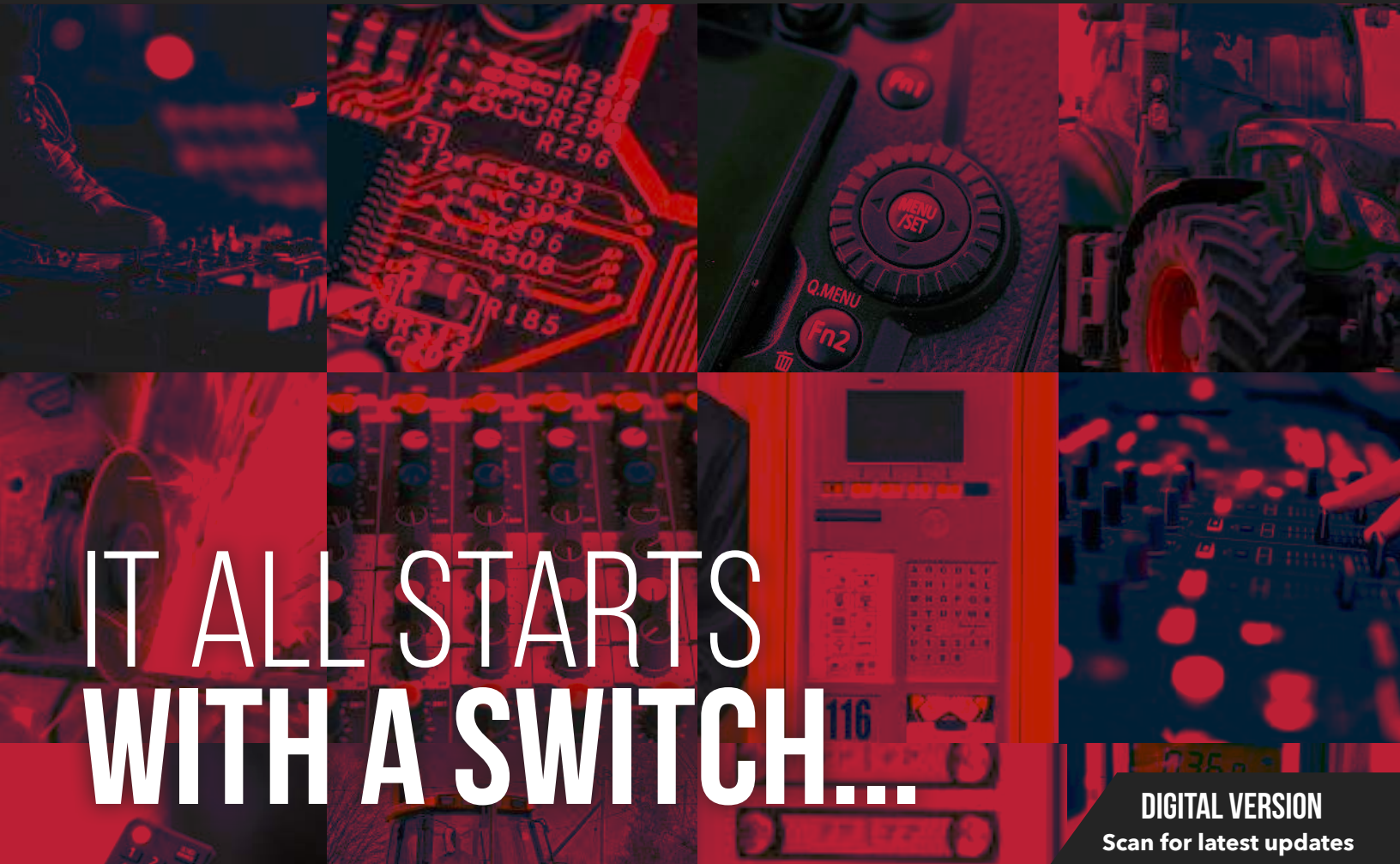
E-SWITCH®

# PRODUCT



# MATRIX

Ver. 5.0



# IT ALL STARTS WITH A SWITCH...

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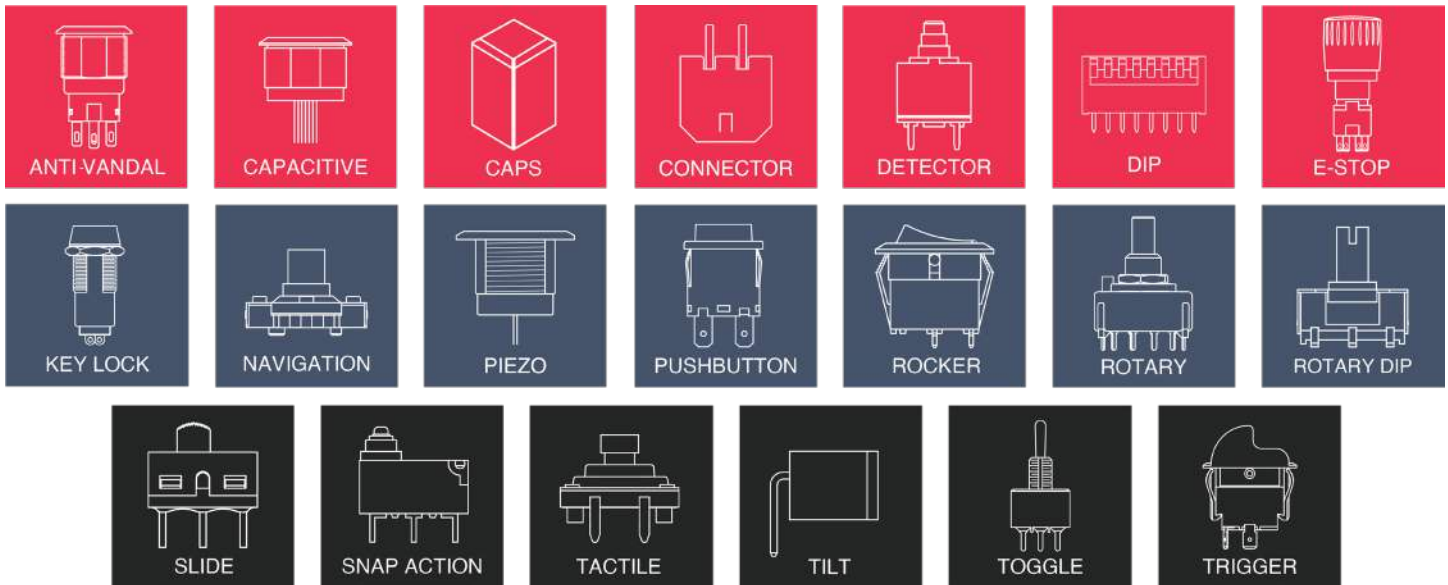


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# DO YOU NEED A SWITCH?

E-Switch has prepared a seven-step process to help users determine which type of switch is best suited to meet their needs.

## 1. WHAT TYPE OF SWITCH ARE YOU LOOKING FOR?



## 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 milliamps
  - 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



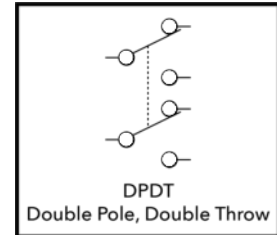
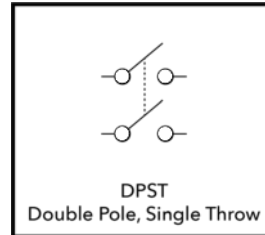
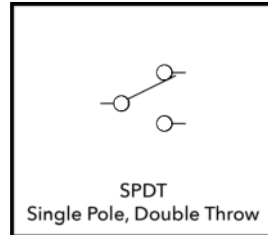
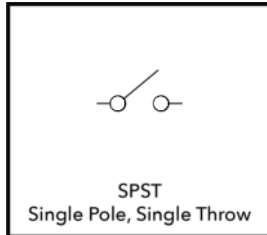
(TUV)

Worldwide Agency

## 3. HOW MANY POLES & 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:*



*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.

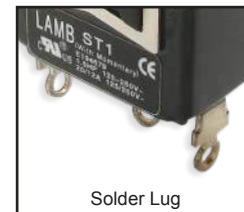
**DPST - Air Conditioner:** 1 pole controls the chiller, 1 pole controls the fan.

**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?

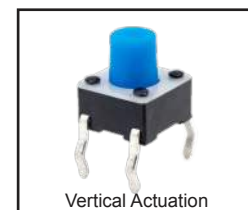
### 1. Panel Mount

- What is the panel cutout size?
- What is the thickness of the panel?
  - What type of termination?
  - Quick connect or solder lug



### 2. PCB 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?



## 5. 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 & COMPUTERS



HANDHELD DEVICES



INDUSTRIAL CONTROLS



INSTRUMENTATION



MEDICAL EQUIPMENT



SECURITY DEVICES

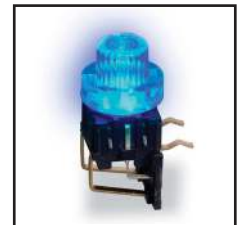


WHITE GOODS

## 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:

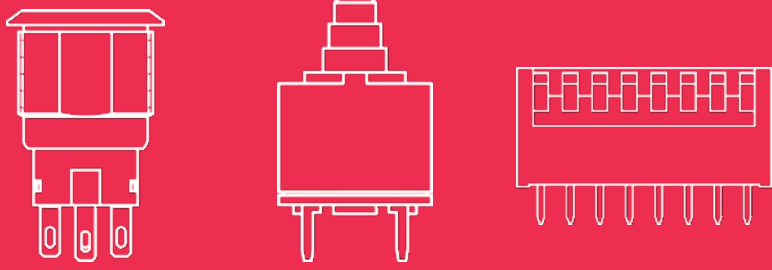
- Momentary or Latching
- Illumination
- Sealed Protection (IP Rating)
- Custom Cap Options
  - » Colors
  - » Graphics
  - » Styles
- Long Life Expectancy
- High Inrush or Horse Power Rating
- Extreme Temperature Rating
- Custom User Requirements



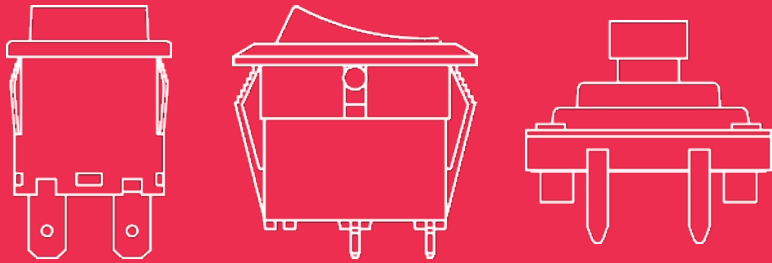
## 7. WHAT IS THE ESTIMATED ANNUAL USAGE (EAU)?

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.

# NEW PRODUCTS








# NEW PRODUCT INTRODUCTIONS







E-Switch is committed to responding to technological advancements and customer demand with the regular introduction of new products. We've recently introduced the PVHC7 Series (high current anti-vandal with a 22mm panel cutout), TD1260 Series (detector switch with an angled lever actuator), KJE32 Series (next generation of the KJD17 heavy duty, industrial power pushbutton) and the RRS20 Series (fully sealed, high current rocker). Additionally, E-Switch has introduced a new line of Big Red Connectors to further customize your order to your exact design specifications. Here at E-Switch, we energize innovation!



# NEW PRODUCTS

 E-SWITCH®	Electrical Ratings	Cutout	Functions Available	Terminal Options	Actuator Options	Material Options	Illumination	IP Rating	General
	<b>PVHC7</b> 20A @ 250VAC	22mm	SPST (Momentary or Latching)	Solder Lug	Stainless Steel Black Anodized	Stainless Steel Black Anodized	Ring Ring & Power Symbol White, Red, Green, Blue, Yellow	IP67	-40°C to +85°C Operating Temp
	<b>TD1260</b> 1mA @ 5VDC	NA	SPST-NO SPST-NC	J-Lead	Angled Lever	Silver Plated	✗	✗	Compact size
	<b>KJE32</b> 20(20)A 250VAC 1E5 T85/55 TUV(EN61058), 20(20)A 127VAC 1E5 T85/55 TUV(EN61058), 20(20)A 127VAC 1E5 T85/55 UL(EN61058), 25.1A 60VDC 10E4 T85/55 UL(EN61058)	46mm x 22mm x 2.5mm	2NO, 2NO w/ remote trip, NO + NC w/ remote trip, NO + NC, 2NO + NC, 2NO + NC w/ remote trip	Silver Plated Brass	Four Different Actuator Marking Styles	✗	✗	IP55	Protection Against Power Outages and Restarts
	<b>RRS20</b> 16(8)A, 125/250VAC ~T55 (cURs,ENEC15) 10(4)A, 125/250VAC ~T55 (cURs,ENEC15) 16A, 30VDC T55 (cURs,ENEC15)	20mm	SPST SPDT	Quick Connect - 0.187" Solder Wire Leads 300mm	6 Actuator Colors 6 Marking Options	Base Material: Nylon 66 UL94V-2 Actuator: PC/ Nylon66 UL94V-2	Full Actuator: White, Orange, Green, Red, Blue	IP68 from Panel	Operating/ Storage Temperature: 0°C to 55°C

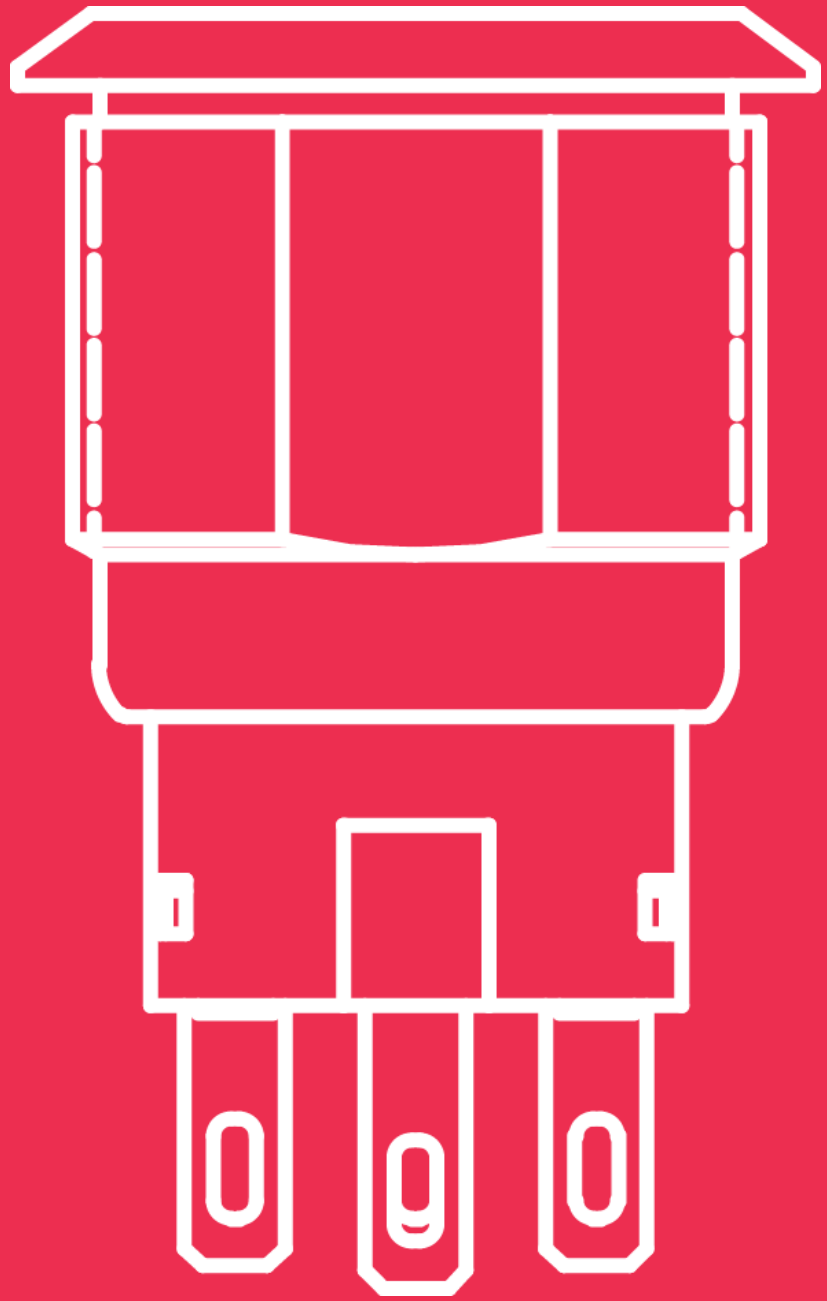
## BIG RED CONNECTORS

 E-SWITCH®	Connector Type	Free Hanging Spacing	Poles	System	Compatible w/
	<b>ECM3022</b> Hanging Plug Housing	3mm	2, 4, 6, 10	Wire-to-wire receptacle-to-plug	ECM3025
	<b>ECM3025</b> Free Hanging Receptacle Housing	3mm	2, 4, 6, 10	Wire-to-wire receptacle-to-plug	ECM3022 ECM3026
	<b>ECM3026</b> PCB Header	3mm	2, 4, 6, 10	Wire-to-wire receptacle-to-plug	ECM3025

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# ANTI-VANDAL SWITCHES



E-Switch offers the largest selection of anti-vandal switches in the marketplace. Sizes range from 6mm to 40mm in diameter, depending on the switch series. The anti-vandal series offers an aesthetically pleasing switch with quality housing materials and multi-illumination options in lens style (ring, dot, power symbol, ring/power symbol combo), as well as numerous choices in LED colors (including bi-color and RGB). Switches in these series, such as the PV and UL-certified ULV Series, are sealed to an IP65 or IP67 rating for dust and moisture resistance. Their durability and long-life expectancy make these switches excellent choices for high security locations and rugged industrial-use environments. An additional option is to order the switches pre-wired, off-the-shelf. Both the PV Series and ULV Series can be ordered with wire leads attached. E-Switch's anti-vandal switches can be found in public kiosks, security controls, appliances, medical equipment and transport vehicles.











 E-SWITCH®	Electrical Ratings	Cutout / Panel Depth	Functions Available	Terminal Options	Actuator Options	Material Options	Illumination	IP Rating	Wire Options
	PV0 2A, 36VDC	Diameter: 12mm Max. Depth: 6mm	1 Pole: Off-(On)	Solder Lug	High	Stainless Steel Black Anodized	Dot Ring	IP65	✗
	PV1 2A, 36VDC	Diameter: 19mm Max. Depth: 8mm	1 Pole: Off-(On)	Screw Solder Lug	Domed Flat High	Black Anodized Gold Plated Brass Nickel Plated Brass Stainless Steel	N/A	IP65	✗
	PV2 2A, 36VDC	Diameter: 16mm Max. Depth: 6mm	1 Pole: Off-(On)	Screw Solder Lug	Domed Flat High	Black Anodized Gold Plated Brass Nickel Plated Brass Stainless Steel	N/A	IP65	✗
	PV3 2A, 48VDC	Diameter: 16mm Max. Depth: 8mm	1 Pole: On-(On) 2 Pole: On-(On)	Solder Lug	Flat Guarded High	Black Anodized Gold Plated Brass Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring	IP40 or IP67	●
	PV4 2A, 24VDC .7A 125VAC (cURus)	Diameter: 19mm Max. Depth: 11mm	1 Pole: On-On On-(On) 1P Off-(On) + 1P On-(Off) 2 Pole: On-On On-(On)	Screw Solder Lug	Flat High	Black Anodized Stainless Steel	RGB Bi-Color Dot Ring Arrow	IP65	●
	PV5 2A, 36VDC	Diameter: 12mm Max. Depth: 5mm	1 Pole: Off-(On)	Screw Solder Lug	Raised Domed	Black Anodized Nickel Plated Brass Stainless Steel	N/A	IP65	✗
	PV6 2A, 48VDC	Diameter: 16mm Max. Depth: 10mm	1 Pole: Off-(On)	Solder Lug	Flat High	Black Anodized Nickel Plated Brass Stainless Steel	RGB Bi-Color Dot Ring	IP65	✗
	PV7 2A, 48VDC	Diameter: 22mm Max. Depth: 8mm (Momentary), 12mm (Maintained)	1 Pole: 1P Off-On + 1P On-Off 1P Off-(On) + 1P On-(Off)	Solder Lug	Flat	Black Anodized Nickel Plated Brass Stainless Steel	RGB Bi-Color Dot Ring	IP65	●
	PV8 2A, 48VDC	Diameter: 25mm Max. Depth: 10mm (Momentary), 12mm (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 Lug	Flat	Black Anodized Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring	IP65	●
	PV9 2A, 48VDC	Diameter: 28mm Max. Depth: 10mm	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 Lug	Flat	Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring	IP66	●
	PV10 2A, 48VDC	Diameter: 40mm Max. Depth: 5mm	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 Lug	Flat	Stainless Steel	Bi-Color Dot Ring	IP65	●



E-SWITCH®		Electrical Ratings	Cutout / Panel Depth	Functions Available	Terminal Options	Actuator Options	Material Options	Illumination	IP Rating	Wire Options
	<b>CS4 CS7</b>	1A @ 5-24VDC	<b>Diameter:</b> 19mm <b>Max. Depth:</b> 22mm	SPST	150mm Wire Leads with Connector	Flat	Aluminum, Clear Anodized	RGB Ring or Power Symbol	✗	●
	<b>PMV6</b>	2A @ 24VDC	<b>Diameter:</b> 22mm <b>Max. Depth:</b> 1-11mm	SPDT, DPDT	Solder Lug Wire Leads: 300mm	Flat	Plastic	None	IP65	●
	<b>PVA6</b>	2A, 36VDC	<b>Diameter:</b> 16mm <b>Max. Depth:</b> 6-8mm	<b>1 Pole:</b> Off-(On)	Solder Lug Wire-Lead	Rounded Flat High	Black Anodized Clear Anodized Stainless Steel Brushed Stainless Steel	Ring Power Symbol	IP67	●
	<b>PVB3</b>	2A, 24VDC 0.5A, 220VAC	<b>Diameter:</b> 16mm	SPDT On-(On) On-On	Solder Lug	Flat High	Stainless Steel Black Anodized	Ring Ring/Power Symbol Combo	IP65	●
	<b>PVHC4</b>	20A, 250VAC 25A, 30VDC	<b>Diameter:</b> 19mm	SPST Off-On Off-(On)	Solder Lug	Flat High	Stainless Steel Black Anodized	Ring Ring/Power Symbol Combo	IP67	●
	<b>PVHC7</b>	20A @ 250VAC	22mm	SPST (Momentary or Latching)	Solder Lug	Stainless Steel Black Anodized	Stainless Steel Black Anodized	Ring Ring & Power Symbol White, Red, Green, Blue, Yellow	IP67	●
	<b>PVK4</b>	2A, 24VDC	<b>Diameter:</b> 19mm <b>Max. Depth:</b> 10.0mm	SPDT ON-ON ON-(ON)  DPDT ON-ON-ON (ON)-ON-(ON)	Sold Lug	Flat	Stainless Steel	None Selector Arrow	IP40 IP65	✗
	<b>PVL</b>	✗	<b>Diameter:</b> 6-19mm <b>Max. Depth:</b> 6mm to 10mm (depending on mounting diameter)	✗	Solder Lug Wire leads: 150mm	Flat	Stainless Steel Black	Pilot Lamp	IP67	●
	<b>PVS7</b>	2A @ 24VDC	<b>Diameter:</b> 22mm <b>Max. Depth:</b> 1-11mm	SPDT, DPDT	Solder Lug Wire Leads: 300mm	Flat	Stainless Steel	RGB Ring	IP65	●
	<b>PVT4</b>	50mA, 24VDC	<b>Diameter:</b> 19mm <b>Max. Depth:</b> 6mm	<b>1 Pole:</b> Off-(On)	Solder Lug Wire-Lead	Flat	Stainless Steel	Ring	IP65	●
	<b>PZ</b>	1A @ 5-24VDC	<b>Diameter:</b> 16mm - 22mm <b>Max. Depth:</b> 10mm	Momentary Pulse	150mm Wire Lead 300mm Wire Lead	Concave Flat	Stainless Steel Black Anodized	RGB Ring	IP68	●




Specifications subject to change without notice



E-SWITCH®		Electrical Ratings	Cutout / Panel Depth	Functions Available	Terminal Options	Actuator Options	Material Options	Illumination	IP Rating	Wire Options
	<b>SAV4</b>	15A @ 125/250VAC	<b>Diameter:</b> 19mm <b>Max. Depth:</b> 1-11mm	<b>1 Pole:</b> 1P - ON - ON, 1P ON - (ON) Momentary	4.8 mm Quick Connect	Flat	Stainless Steel, Black Anodized	Non-illuminated, Dot, Ring, Power Symbol, Ring/Power Symbol Combo	IP67	✗
	<b>SAV7</b>	15A @ 125/250VAC	<b>Diameter:</b> 22mm <b>Max. Depth:</b> 1-11mm	<b>1 Pole:</b> 1P - ON - ON, 1P ON - (ON) Momentary	4.8 mm Quick Connect	Flat	Stainless Steel, Black Anodized	Non-illuminated, Ring, Ring/Power Symbol Combo	IP67	✗
	<b>SAV8</b>	15A @ 125/250VAC	<b>Diameter:</b> 25mm <b>Max. Depth:</b> 1-11 mm	<b>1 Pole:</b> 1P - ON - ON, 1P ON - (ON) Momentary	4.8 mm Quick Connect	Flat	Stainless Steel, Black Anodized	Non-illuminated, Ring, Ring/Power Symbol Combo	IP67	✗
	<b>SV4</b>	2A 2 36VDC	<b>Diameter:</b> 19mm <b>Max. Depth:</b> 1-6mm	<b>1 Pole:</b> SPST 1P OFF - (ON)	Solder Lug Wire Leads: 500mm	Flat	Stainless Steel	Ring, Ring/Power Symbol Combo	IP67	●
	<b>SV7</b>	2A 2 36VDC	<b>Diameter:</b> 22mm <b>Max. Depth:</b> 1-6mm	<b>Pole:</b> SPST 1P OFF - (ON)	Solder Lug Wire Leads: 500mm	Flat	Stainless Steel	Ring, Ring/Power Symbol Combo	IP67	●
	<b>SV8</b>	2A 2 36VDC	<b>Diameter:</b> 25mm <b>Max. Depth:</b> 1-6mm	<b>1 Pole:</b> SPST 1P OFF - (ON)	Solder Lug Wire Leads: 500mm	Flat	Stainless Steel	Ring, Ring/Power Symbol Combo	IP67	●

Specifications subject to change without notice

## UL CERTIFIED

E-SWITCH®		Electrical Ratings	Cutout / Panel Depth	Functions Available	Terminal Options	Actuator Options	Material Options	Illumination	IP Rating	Wire Options
	<b>ULV4</b>	3A 125/250VAC (cURus)	<b>Diameter:</b> 19mm <b>Max. Depth:</b> 10mm	<b>1 Pole:</b> On-On On-(On)  <b>2 Pole:</b> On-On On-(On)	<b>Solder Lug</b> Wire Leads: 300mm <b>Detachable Socket</b> Wire Leads 500mm <b>Molded Boot</b> Wire Leads: 500mm	Flat	Black Anodized Nickel Plated Brass Stainless Steel	Bi-Color Dot Ring Power	IP67	●
	<b>ULV7</b>	3A 125/250VAC (cURus)	<b>Diameter:</b> 22mm <b>Max. Depth:</b> 10mm	<b>1 Pole:</b> On-On On-(On)  <b>2 Pole:</b> On-On On-(On)	<b>Solder Lug</b> Wire Leads: 300mm <b>Detachable Socket</b> Wire Leads 500mm <b>Molded Boot</b> Wire Leads: 500mm	Flat	Anodized Aluminum Stainless Steel	Bi-Color Ring Ring w/ Power	IP67	●
	<b>ULV8</b>	3A 125/250VAC (cURus)	<b>Diameter:</b> 25mm <b>Max. Depth:</b> 10mm	<b>1 Pole:</b> On-On On-(On)  <b>2 Pole:</b> On-On On-(On)	<b>Solder Lug</b> Wire Leads: 300mm <b>Detachable Socket</b> Wire Leads 500mm <b>Molded Boot</b> Wire Leads: 500mm	Flat	Black Anodized Stainless Steel	Ring Bi-color	IP67	●

Specifications subject to change without notice


## Get Wired with E-Switch

E-Switch offers several terminal options which will enhance your production line and your bottom line. Selecting the right terminal option for your product assembly process will provide time and costs savings from:


- No need to second-source wire leads and assembly house.
- Reduce labor cost by ordering your switches pre-wired before arrival on your manufacturing floor.
- Decrease product assembly time with the ease of installing behind the panel.

The Anti-Vandal switch (aka Vandal-Resistant, Vandal-Proof, Tamper-Resistant or Tamper Proof) was designed to be installed in devices that are susceptible to harsh use, vandalism and theft, as well as to withstand extreme temperatures and to be resistant to dust and moisture. The wired options are color-coded for convenience and are compatible with a variety of connectors.

Head to [e-switch.com/resources/get-wired-with-e-switch](http://e-switch.com/resources/get-wired-with-e-switch) to find out more about our wired options.

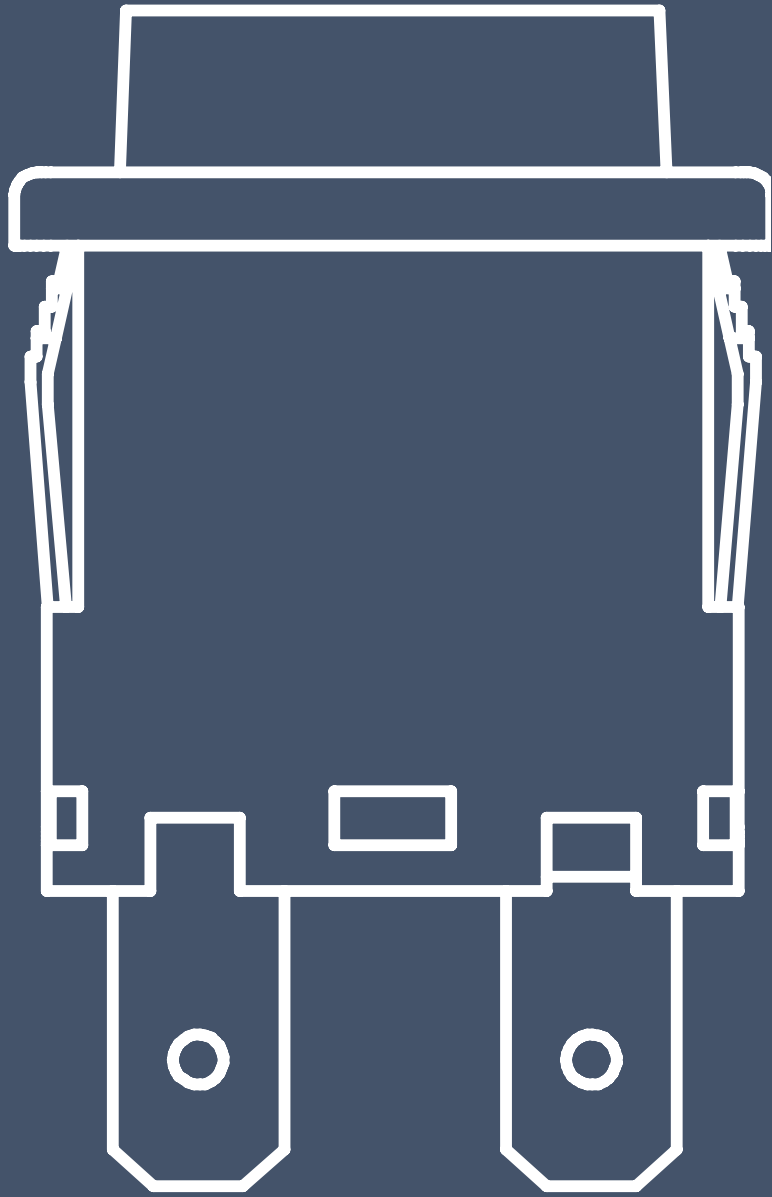
Terminal Options: Anti-Vandal Series <b>ULV</b>				
Anti-Vandal Series	Solder Lug	Terminal Option W Wire Leads Attached 300mm Long	Terminal Option M Molded Protective Boot with wire leads	Terminal Option P Detachable Socket with wire leads
<b>ULV4</b>				
<b>ULV7</b>				
<b>ULV8</b>				

Terminal Options:  
Anti-Vandal Series PV

Anti-Vandal Series	Solder Lug	Wire Leads Attached 300mm long	PVP Detachable Socket with Solder Lug	PVP Detachable Socket with Wire Leads
PV3				
PV4				
PV7				
PV6			×	×
PV8			×	
PV9			×	
PV10			×	












# PUSHBUTTON SWITCHES



Pushbutton switches open or close an electrical circuit by pressing or, in some cases, pulling on the actuator. Deciding on the size, style and functionality of the Pushbutton is often determined by the application. E-Switch offers a wide range of pushbutton switches, from miniature size with low current ratings to industrial use switches with high power and horsepower ratings. Several pushbutton switches provide an IP rating of IP54, IP65 or IP67, depending on the switch series. With E-Switch, the possibilities of shapes and styles are endless. Shape options include square, round, oval and rectangle, while some switches offer caps. Multiple termination options are available within the pushbutton family: solder lug, PCB pin, right angle PCB pins, vertical PCB pins, surface mount, socket and tab.





E SWITCH®		General Ratings	Electrical Ratings	Travel	Poles / Throws / Functions	Bushing Options	Terminal Options	Ingress Protection
	700	<p>Life Cycles: 50,000</p> <p>Operating Force: 200gf</p> <p>Operating Temperature: -30°C to 85°C</p> <p>Contact Resistance: 20mΩ Max.</p> <p>Insulation Resistance: 1,000MΩ Min.</p>	<p><b>Silver:</b></p> <p>3A, 120VAC [cURus]</p> <p>3A, 28VDC</p> <p>1A, 250VAC [cURus]</p> <p><b>Gold:</b></p> <p>0.4VA, Max. 20V (AC or DC)</p>	1.0mm	<p><b>SPDT:</b></p> <p>On-(On)</p> <p><b>DPDT:</b></p> <p>On-(On)</p>	<p>Flat Non-Threaded</p> <p>Flat Threaded</p> <p>Keyway Non-Threaded</p> <p>Keyway Threaded</p>	<p>Right Angle PCB Pin</p> <p>Solder Lug</p> <p>Vertical PCB Pin</p> <p>Vertical PCB Pin with Bracket</p> <p>Wire Wrap</p>	✗
	700A	<p>Life Cycles: 50,000</p> <p>Operating Force: 300gf</p> <p>Operating Temperature: -30°C to 85°C</p> <p>Contact Resistance: 20mΩ Max.</p> <p>Insulation Resistance: 1,000MΩ Min.</p>	<p><b>Silver:</b></p> <p>3A, 120VAC [cURus]</p> <p>3A, 28VDC</p> <p>1A, 250VAC [cURus]</p> <p><b>Gold:</b></p> <p>0.4VA, Max. 20V (AC or DC)</p>	1.0mm	<p><b>SPDT:</b></p> <p>On-(On)</p> <p><b>DPDT:</b></p> <p>On-(On)</p>	<p>Non-Threaded</p> <p>Threaded</p>	<p>Right Angle PCB Pin</p> <p>Solder Lug</p> <p>Vertical PCB Pin</p> <p>Vertical PCB Pin with Bracket</p>	IP67
	700C	<p>Life Cycles: 50,000</p> <p>Operating Force: 400gf SP7, 600gf DP7</p> <p>Operating Temperature: -30°C to 85°C</p> <p>Contact Resistance: 20mΩ Max.</p> <p>Insulation Resistance: 1,000MΩ Min.</p>	<p><b>Silver:</b></p> <p>3A, 120VAC [cURus]</p> <p>3A, 28VDC</p> <p>1A, 250VAC [cURus]</p> <p><b>Gold:</b></p> <p>0.4VA, Max. 20V (AC or DC)</p>	3.0mm	<p><b>SPDT:</b></p> <p>On-On</p>	<p>Flat Non-Threaded</p> <p>Flat Threaded</p> <p>Keyway Non-Threaded</p> <p>Keyway Threaded</p>	<p>Right Angle PCB Pin</p> <p>Solder Lug</p> <p>Vertical PCB Pin</p> <p>Vertical PCB Pin with Bracket</p>	✗
	800	<p>Life Cycles: 50,000</p> <p>Operating Force: 200gf</p> <p>Operating Temperature: -30°C to 85°C</p> <p>Contact Resistance: 10mΩ Max.</p> <p>Insulation Resistance: 1,000MΩ Min.</p>	<p><b>Silver:</b></p> <p>3A, 120VAC [cURus]</p> <p>3A, 28VDC</p> <p>1A, 250VAC [cURus]</p> <p><b>Gold:</b></p> <p>0.4VA, Max. 20V (AC or DC)</p>	0.9mm	<p><b>SPST</b></p> <p>Off-(On)</p> <p><b>SPDT</b></p> <p>On-(On)</p>	<p>Flat Non-Threaded</p> <p>Flat Threaded</p> <p>Non-Threaded</p>	<p>Right Angle PCB Pin</p> <p>Solder Lug</p> <p>Right Angle PCB Pin with Bracket</p> <p>Vertical PCB Pin</p> <p>Vertical PCB Pin with Bracket</p>	✗
	800A	<p>Life Cycles: 50,000</p> <p>Operating Force: 200gf</p> <p>Operating Temperature: -30°C to 85°C</p> <p>Contact Resistance: 10mΩ Max.</p> <p>Insulation Resistance: 1,000MΩ Min.</p>	<p><b>Silver:</b></p> <p>3A, 120VAC or 28VDC [cURus]</p> <p>1A, 250VDC</p> <p><b>Gold:</b></p> <p>0.4VA, Max. 20V (AC or DC)</p>	0.9mm	<p><b>SPST</b></p> <p>Off-(On)</p> <p><b>SPDT</b></p> <p>On-(On)</p>	<p>Non-Threaded</p>	<p>Right Angle PCB Pin</p> <p>Vertical PCB Pin</p>	IP67
	800B	<p>Life Cycles: 50,000</p> <p>Operating Force: 200gf</p> <p>Operating Temperature: -30°C to 85°C</p> <p>Contact Resistance: 20mΩ Max.</p> <p>Insulation Resistance: 1,000MΩ Min.</p>	<p><b>Gold:</b></p> <p>0.4VA, Max. 20V (AC or DC)</p>	0.9mm	<p><b>SPST</b></p> <p>Off-(On)</p> <p><b>SPDT</b></p> <p>On-(On)</p>	<p>Non-Threaded</p>	<p>Surface Mount</p>	✗
	800C	<p>Life Cycles: 6,000</p> <p>Operating Force: 350gf</p> <p>Operating Temperature: -30°C to 85°C</p> <p>Contact Resistance: Silver: 50mΩ Max initial Gold: 20mΩ Max initial</p> <p>Insulation Resistance: 1,000MΩ Min.</p>	<p><b>Silver:</b></p> <p>3A, 120VAC or 28VDC</p> <p>1A, 250VAC</p> <p><b>Gold:</b></p> <p>0.4VA, Max. 20V (AC or DC)</p>	<p>Electrical Make: 1.34mm</p> <p>Full travel: 1.88mm</p>	<p><b>SPDT</b></p> <p>On-On</p>	<p>Right Angle PCB Pin</p> <p>Solder Lug</p> <p>Vertical PCB Pin</p>	✗	
	800U	<p>Life Cycles: 6,000</p> <p>Operating Force: 250gf</p> <p>Operating Temperature: -30°C to 85°C</p> <p>Contact Resistance: 100mΩ Initial</p> <p>Insulation Resistance: 500MΩ Min.</p>	<p><b>Gold:</b></p> <p>0.4VA, Max. 20V (AC or DC)</p>	1.0mm	<p><b>SPDT</b></p> <p>On-(On)</p> <p><b>DPDT</b></p> <p>On-(On)</p>	<p>Non-Threaded</p>	<p>PC thru-hole</p> <p>Right Angle, PC thru-hole</p> <p>Vertical Right angle, PC thru-hole</p>	IP67
	TL2233	<p>Life Cycles: 10,000 Cycles</p> <p>Operating Temp: -10°C to 60°C</p> <p>Contact Resistance: 100mΩ Max. (Initial)</p> <p>Insulation Resistance: 10MΩ Min. at 100VDC</p>	<p>100mA @ 30VDC</p>	1.90mm	<p>DPDT</p>	<p>Non-Threaded</p>	<p>SMT</p> <p>Gull Wing</p>	IP67

Specifications subject to change without notice



E-SWITCH®		General Ratings	Electrical Ratings	Operating Force	Travel	Poles / Throws	Mounting Options	Terminal Options	Illumination	Ingress Protection
	<b>5500</b>	Life Cycles: 500,000 Operating Temperature: -25°C to 65°C Contact Resistance: 50mΩ Max. Insulation Resistance: 50MΩ Min.	300mA, 12VDC	255gf Max.	2.5mm	SPDT	PCB	PCB Pin	1 or 2 Dot	✗
	<b>FS5700</b>	Life Cycles: 30,000 Operating Temperature: -10°C to 70°C Contact Resistance: 50mΩ Max. Insulation Resistance: 100MΩ Min. @500VDC	1A, 9VDC	1000gf to 3000gfv	2.7mm to 5.0mm	SPDT DPDT 3PDT	PCB Panel Mount	PCB Pin Solder Lugs	✗	✗
	<b>KS1100</b>	Life Cycles: 50,000,000 Operating Temperature: -10°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. @100VDC	10mA, 12VDC	60gf	4.0mm	SPST	PCB	PCB Pin	✗	✗
	<b>LC</b>	Life Cycles: 10,000 Operating Temperature: -20°C to 85°C Contact Resistance: 20mΩ Max. Insulation Resistance: 100MΩ Min.	300mA, 30VDC	200gf to 330gf	3.5mm	SPDT DPDT	PCB	Right Angle PCB Pin	✗	✗
	<b>LP11</b>	Life Cycles: 1,000,000 Operating Temperature: -40°C to 85°C Contact Resistance: 200mΩ Max. Insulation Resistance: 100MΩ Min.	100mA, 12VDC	160(M) 200(L)	4.5mm (M) 3.5mm (L)	SPST	PCB	PCB Pin	RGB Full	✗
	<b>LP15</b>	Life Cycles: 300,000 Operating Temperature: -20°C to 70°C Contact Resistance: 200mΩ Max. Insulation Resistance: 100MΩ Min.	1mA, 20VDC	125gf	1.3mm	SPST	PCB	PCB Pin	Full	✗
	<b>LP16</b>	Life Cycles: 50,000,000 Operating Temperature: -5°C to 60°C Contact Resistance: 150mΩ Max. Insulation Resistance: 10MΩ Min.	100mA, 20VDC	250gf	3.3mm	SPST	PCB	PCB Pin	Full	✗
	<b>LP2</b>	Life Cycles: 300,000 Operating Temperature: -20°C to 70°C Contact Resistance: 200mΩ Max. Insulation Resistance: 100MΩ Min.	1mA, 20VDC 5mA, 5VDC	125gf	1.3mm	SPST	PCB	PCB Pin	Full	✗
	<b>LP37</b>	Life Cycles: 30,000 Operating Temperature: -30°C to 85°C Contact Resistance: 50mΩ Max. Insulation Resistance: 1,000MΩ Min. at 100VDC	20mVDC to 50VDC; 10mA to 250mA	250gf ± 100gf	Full: 5.1mm ± 0.5mm;	SPDT	PCB	PCB Pin	Full	✗






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E SWITCH		General Ratings	Electrical Ratings	Operating Force	Travel	Poles / Throws	Mounting Options	Terminal Options	Illumination	Ingress Protection
	LP4	<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	✗
	LP6	<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	RGB Full	✗
	PBH	<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	✗	✗
	PB300	<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	✗	✗
	PB350	<b>Life Cycles:</b> 20,000 <b>Operating Temperature:</b> -40°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. Initial <b>Insulation Resistance:</b> 10GΩ Min. @ 1000VDC	30mA @ 28 VDC	ST: 490 grams DT: 1st Position: 600 grams DT: 2nd Position: 1150 grams	2.0mm	SPST Double Action	PCB	PCB Pin	LED: Red, White, Yellow, Blue, Green	✗
	PB400	<b>Life Cycles:</b> 6,000 Cycles <b>Operating Temperature:</b> -5°C to 60°C <b>Contact Resistance:</b> 30mΩ Max. <b>Insulation Resistance:</b> 500MΩ Min.v	3A, 30VDC	3N-7N	1.8-3.2mm	DPST	PCB	PCB Pin	✗	✗
	TL2201 TL4201	<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	✗	✗
	TL2202	<b>Life Cycles:</b> 10,000 <b>Contact Resistance:</b> 100mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA 30VDC	220gf	2.5mm	DPDT	PCB	PCB Pin	✗	✗
	TL2203	<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	✗	✗

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E SWITCH®		General Ratings	Electrical Ratings	Operating Force	Travel	Poles / Throws	Mounting Options	Terminal Options	Illumination	Ingress Protection
	<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	<b>Full:</b> 2.5mm <b>Lock:</b> 1.5mm	DPDT	PCB	PCB Pin	Dot	✗
	<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	✗	✗
	<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	✗	✗
	<b>ULP</b>	<b>Life Cycles:</b> 200,000 Cycles <b>Operating Temperature:</b> -40°C to 85°C <b>Contact Resistance:</b> 50mΩ Silver, 100mΩ Gold <b>Insulation Resistance:</b> 100MΩ at 500VDC	Gold: 0.1A Max. @ 28VDC;  Silver: 0.5A @ 25VDC; 0.2A @ 250VAC	SPDT: 200gf ±  DPDT: 300gf	2.20mm	SPDT  PDT	PCB Panel Mount	PCB Pin Solder Lug	RGB Full	✗
	<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	<b>Full:</b> 3.3mm <b>Lock:</b> 2.5mm	DPDT 4PDT	PCB	Right Angle PCB Pin	Full	✗

Specifications subject to change without notice



E SWITCH®		General Ratings	Electrical Ratings	Operating Force	Travel	Poles / Throws / Functions	Panel Cutout Dimensions	Terminal Options	Illumination	Ingress Protection
	<b>700</b>	<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.	<b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]  <b>Gold:</b> 0.4VA, Max. 20V (AC or DC)	200gf	1.0mm	<b>SPDT:</b> On-(On)  <b>DPDT:</b> On-(On)	12.7mm x 15.7mm	Quick Connect Solder Lug	×	×
	<b>D16</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, CSA]  6A, 24VDC [cURus, CSA]	300gf	3.0mm	<b>SPDT, DPDT, 3PDT, 4PDT</b> On-On On-(On)	16mm Diameter	Solder Lug	Full	×
	<b>KJD17</b>	<b>Electrical Life:</b> 10,000 Cycles <b>Operating Temperature:</b> -25°C to 55°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min. at 500VDC	16A 120VAC [cURus UL508] 16A 220/240VAC [cURus UL508] 1/2 HP 120VAC [cURus UL508] 2HP 220/240VAC [cURus UL508]	N/A	N/A	Off-On  Off-On w/Remote Trip  NO+NC w/Remote Trip	46mm x 22mm	Silver Plated Brass	×	IP54 with PVC Cap
	<b>L16</b>	<b>Operating Temperature:</b> -25°C to 55°C	N/A	N/A	N/A	Signal Light	16mm Diameter	Solder Lug	Full Signal Light	×
	<b>LA</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 [cURus] 2A, 250VDC [cURus] 6A, 24VDC [cURus]	300gf	3.0mm	<b>SPDT, DPDT, 3PDT, 4PDT</b> On-On On-(On)	22mm Diameter 25.5mm Diameter 30.5mm Diameter	Socket Solder Tab	Full Signal Light	IP65
	<b>LB22</b>	<b>Electrical / Mechanical Life:</b> 500,000 Cycles 1,000,000 Cycles <b>Operating Temperature:</b> -20°C to 55°C <b>Contact Resistance:</b> 50mΩ Max. @1A 12VDC <b>Insulation Resistance:</b> 1,000 MΩ Min. @ 500VDC	3A @ 250VAC	<b>SPDT:</b> 2.5±1N ; <b>DPDT:</b> 3.5±1N	3.20mm	<b>SPDT, DPDT</b> ON-ON ON-(ON)	22mm Diameter	Solder Lug	Full Power Symbol	IP65
	<b>LP1</b>	<b>Electrical / Mechanical Life:</b> 50,000 / 50,000 Cycles <b>Operating Temperature:</b> -40°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 100MΩ Min.	100mA, 30VDC	250gf	1.8mm	<b>SPST</b> Off-(On)	8mm Diameter	Solder Lug	Full	×
	<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 6A, 24VDC	300gf	3.0mm	<b>SPDT, DPDT, 3PDT, 4PDT</b> On-On On-(On)	16mm Diameter	Socket	Full	×



E-SWITCH®		General Ratings	Electrical Ratings	Operating Force	Travel	Poles / Throws / Functions	Panel Cutout Dimensions	Terminal Options	Illumination	Ingress Protection
	PA4	<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 [ENEC] 16(8)A, 250VAC [ENEC]	500gf	4.5mm	<b>SPST</b> Off-On Off-(On)	13mm x 19mm PCB	PCB Pin Solder Tab	Full	IP54
	PA5	<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 [ENEC] 16(8)A, 250VAC [ENEC]	500gf	5.5mm	<b>SPST</b> Off-On Off-(On)  <b>DPST</b> Off-On Off-(On)	Capture Mount PCB	PCB Pin Solder Tab	×	×
	PB1973	<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]	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	×
	PB2	<b>Electrical / Mechanical Life:</b> 6,000 / 50,000 Cycles <b>Operating Temperature:</b> -20°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
	PB66	<b>Electrical Life:</b> 50,000 Cycles <b>Operating Temperature:</b> 0°C to 55°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 2MΩ MIN @ 500VDC	16(16)A 127VAC, UL	13N	1.5mm (Operating) 4.5mm (Lock Off) <b>Total:</b> 6mm	<b>DPST</b> Off-On Latching	25mm Diameter	Tab	Power Symbol Illuminated	IP66
	PP1	<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> 2MΩ Min.	16A, 125VAC [cURus] 12A, 250VAC [cURus] 1HP, 125/250VAC [cURus]	300gf to 500gf	<b>Push Only</b> Push: 9.4mm <b>Push-Pull</b> Push: 5.0mm Pull: 5.7mm	<b>SPDT</b> On <sub>2</sub> -On <sub>1</sub> -(On <sub>2</sub> ) Push-Pull On-(On)	13.3mm x 28.2mm	Tab	×	×
	PP2	<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> 10MΩ Min.	Rating Option 1: 10R(4)A 277VAC 5E4 [UL]  Rating Option 2: 16A, 125VAC [cURus] 12A, 250VAC [cURus] 1HP, 125/250VAC [cURus]	300gf to 500gf	<b>Push Only</b> Push: 9.4mm <b>Push-Pull</b> Push: 5.0mm Pull: 5.7mm	<b>DPDT</b> On <sub>2</sub> -On <sub>1</sub> -(On <sub>2</sub> ) Push-Pull On-(On)	13.5mm x 36mm	Tab	×	×
	RP3508	<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.	3A, 125VAC [cURus] 1.5A, 250VAC [cURus]	500gf	3.5mm	<b>SPST</b> Off-On Off-(On)	16mm Diameter	Solder Lug	Full	×

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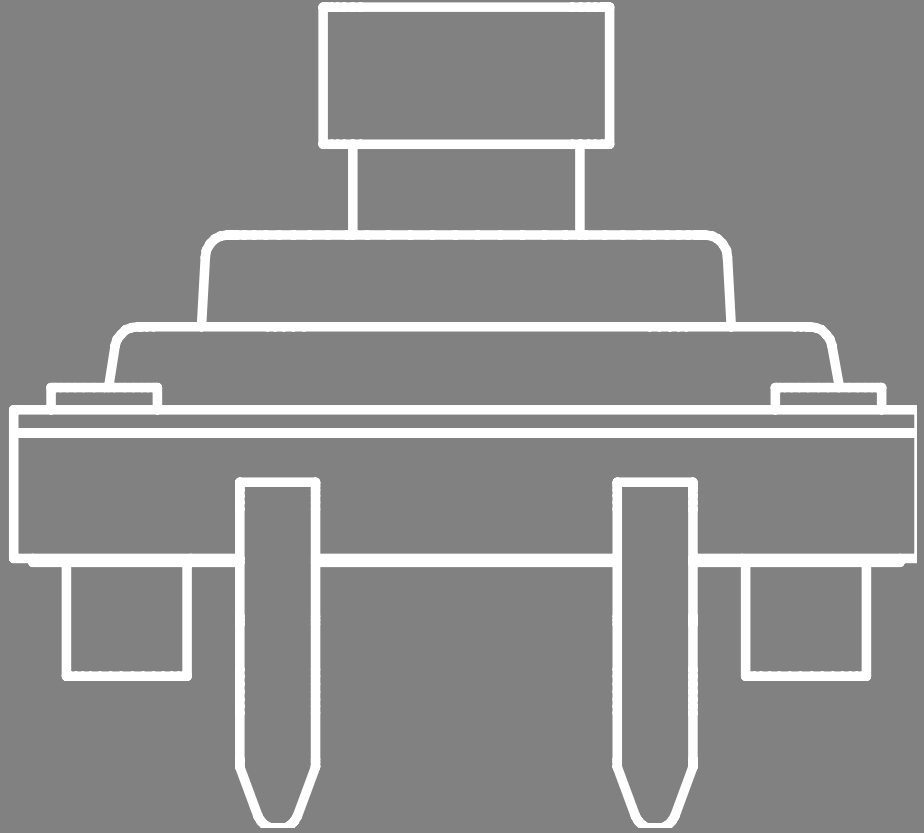
E-SWITCH®		General Ratings	Electrical Ratings	Operating Force	Travel	Poles / Throws / Functions	Panel Cutout Dimensions	Terminal Options	Illumination	Ingress Protection
	RP8100	<b>Electrical / Mechanical Life:</b> 500,000 Cycles <b>Operating Temperature:</b> -30°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Insulation Resistance:</b> 1,000MΩ Min.	125mA, 125 VAC 100mA, 50 VDC	350gf	1.5mm	SPST Off-(On)	13.6mm Diameter	Solder Lug Wire Leads	Dot	IP67
	RP8200	<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.	100mA, 24VDC	560gf	2.5mm	SPST Off-On	13.6mm Diameter	Solder Lug	Dot	IP67
	RP8300	<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.	200mA, 50VDC	350gf	1.5mm	SPST Off-(On)	13.6mm Diameter	Solder Lug	Dot	IP67
	RP8400	<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.	200mA, 50VDC	350gf	1.5mm	SPST Off-(On)	13.6mm Diameter	Solder Lug	Dot	IP67
	RP8500	<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	SPST Off-(On)	Solder Lug	13.6mm Diameter	Solder Lug	Dot	IP67
	RP8600	<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	SPST Off-(On)	16.0mm Diameter	Solder Lug	✗	IP67
	ULP	<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> 100MΩ Min.	<b>Silver:</b> 500mA, 25VDC  <b>Gold:</b> 0.4VA, Max. at 28V (AC or DC)	<b>SPDT</b> 200gf  <b>DPDT</b> 300gf	2.2mm	<b>SPDT</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 Lug	Full	N/A

## EMERGENCY STOP

E-SWITCH®		Electrical Ratings	Cutout	Functions Available	Terminal Options	Actuator Options	Material Options	Illumination	IP Rating	General
	E100	3A @ 125VAC, 1.5A @ 250VAC 0.22A @ 125VDC, 0.11A @ 250VDC	<b>Diameter:</b> 16mm	1NC, 1NC+1NO, 1NC/1NC	Solder Lug (Terminal Shroud)	Illuminated or Non-Illuminated	Silver Contacts	No Lamp Neon LED Incandescent	IP65	Pushlock Turn Design
	E200	200mA @ 250VDC 5A @ 250VAC [VDE] 6A @ 24 VDC 8A @ 125VAC	<b>Diameter:</b> 16mm	1NO/1NC+1NO/1NC, 1NO/1NC	Solder Lug (Terminal Shroud)	Illuminated or Non-Illuminated	Silver Contacts	No Lamp Neon LED Incandescent	IP65	Pushlock Turn Design

Specifications subject to change without notice

# TACTILE SWITCHES



Tactile, a.k.a Tact, switches are used to close an electrical circuit when pressed. When the switch is released, it opens the circuit. Tact switches come in a wide range of styles and sizes. E-Switch offers Tact switches from miniature to 12.4mm square in size and numerous styles — illuminated, non-illuminated, caps, round, square, rectangle and oval. Tact switches typically offer two mounting options, surface mount or thru-hole mount, and some right-angle options. Several Tact switches have very low profiles, from 0.35mm – 0.65mm and up. Reliability, long operation life and compact size make tact switches ideal for the growing market of wearable technology and handheld devices. Several other common markets include audio/visual equipment, telecommunications, computer electronics and peripheral equipment, instrumentation controls and medical devices.





E-SWITCH®		General Ratings	Electrical Ratings	Travel	Dimensions	Operating Force (gf)	Mounting Options	Ingress Protection
	<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	0.6mm	12.4mm x 12.4mm x 22.0mm	135	PCB Pin	✗
	<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)	✗
	<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)	✗
	<b>TL1016</b>	Life Cycles: 100,000 Operating Temp: -40°C to 85°C Contact Resistance: 500mΩ Max. (Initial) Insulation Resistance: 100MΩ Min at 100VDC.	50mA, 12VDC	0.20mm +0.2/-0.1mm	3.5mm x 2.9mm	160gf + 70/-40gf 220gf + 80/-70gf	Boss Pin Ground Terminal SMT (Gull Wing)	✗
	<b>TL1017</b>	Life Cycles: 200,000 cycles for 160gf 100,000 cycles for 260gf Operating Temperature: -20°C to 70°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 100MΩ Min. at 500VDC	50mA, 12VDC	0.15mm ± 0.1mm	4mm x 2.5mm	160gf ± 50gf; 260gf ± 50gf	SMT (Gull Wing)	✗
	<b>TL1018</b>	Life Cycles: 500,000 cycles for 160gf 200,000 cycles for 240gf, 340gf, and 450gf Operating Temperature: -40°C to 85°C	50mA, 12VDC	0.15mm ± 0.1mm	3.5mm x 2.6mm	160gf (Black) 240gf (Black) 340gf (Orange) 450gf (Orange)	SMT Gull-Wing Ground Terminal	N/A
	<b>TL1030</b>	Life Cycles: F160, F200, F350 - 200,000 cycles F500 - 100,000 cycles Operating Temperature: -40°C to 85°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 100MΩ Min. at 500VDC	50mA, 12VDC	0.15mm ± 0.1mm	3.5mm x 2.9mm	160gf ± 50gf (Grey) 200gf ± 50gf (White) 350gf ± 50gf (Blue) 500gf ± 100gf (Brown)	SMT Ground Terminal J Lead	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	✗
	<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	✗
	<b>RT1105</b>	Life Cycles: 100,000 Cycles Operating Temp: -20°C to 85°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 100MΩ Min. at 100VDC	12VDC, 50mA	0.25mm	6.60 x 6.60	160gf ± 50gf 260gf +100/-50gf 350gf +100/-50gf	Top Actuated Through-hole, Reverse	✗
	<b>RT3301</b>	Life Cycles: 100,000 cycles Operating Temperature: -40°C to 85°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 100MΩ Min. at 100VDC	50mA, 12VDC	0.25mm +0.2mm / - 0.1mm	6.00mm x 6.00mm	100gf ± 30gf 160gf ± 50gf 260gf ± 50gf 320gf ± 70gf	Top Actuated, Reverse Surface Mount Design	✗
	<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	✗



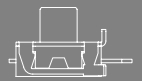
E-SWITCH®		General Ratings	Electrical Ratings	Travel	Dimensions	Operating Force (gf)	Mounting Options	Ingress Protection
	TL1220	Caps Available Life Cycles: 500,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.2mm	7.5mm x 7.5mm 10.0mm x 14.0mm 10.0mm x 19.0mm 7, 8, 10mm Dia	180	PCB Pin	✗
	TL1240	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	✗
	TL1250	Life Cycles: 50,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.2mm	7.0mm x 8.3mm	120, 180, 280	PCB Pin	✗
	TL1260	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	✗
	TL1265	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	✗
	TL1275	Life Cycles: 100,000 Operating Temp: -25°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	19mm	350	PMT	✗
	TL2243	Double Stacked Low Profile Life Cycles: 30,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	7.3mm x 9.1mm	180	PCB Pin	✗
	TL3145	Multiple Actuator Heights Life Cycles: up to 3,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max.	50mA, 12VDC	0.5mm	6.5mm x 6.5mm	180gf 260gf 350gf	Surface Mount	✗
	TL3200	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)	✗
	TL3210	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)	✗
	TL3215	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)	✗

Specifications subject to change without notice



E SWITCH®		General Ratings	Electrical Ratings	Travel	Dimensions	Operating Force (gf)	Mounting Options	Ingress Protection
	<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)	×
	<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	×
	<b>TL3265</b>	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	SMT	×
	<b>TL3275</b>	<b>Life Cycles:</b> 100,000 <b>Operating Temp:</b> -40°C to 85°C <b>Contact Resistance:</b> 500mΩ Max. (Initial) <b>Insulation Resistance:</b> 100MΩ Min at 100VDC.	50mA, 12VDC	0.20mm ± 0.10mm	6.4mm x 3.4mm	160gf ± 50gf	SMT	×
	<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)	×
	<b>TL3301</b>	Caps Available / 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)	×
	<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)	×
	<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)	×
	<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)	×
	<b>TL3312</b>	Life Cycles: 500,000(160gf) 50,000 (235 gf) Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.15mm	3.7mm x 3.7mm	160, 235	SMT (Gull Wing)	×

Specifications subject to change without notice



E SWITCH*		General Ratings	Electrical Ratings	Travel	Dimensions	Operating Force (gf)	Mounting Options	Ingress Protection
	<b>TL3313</b>	Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 50mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	4.8mm x 4.8mm	100, 160, 250	SMT (Gull Wing)	×
	<b>TL3315</b>	Life Cycles: 1,000,000 (100gf), 500,000 (160gf), 200,000 (250gf) Operating Temp: -20°C to 70°C Contact Resistance: 200mΩ Max. Insulation Resistance: 50MΩ Min.	50mA, 12VDC	0.2mm	4.5mm x 4.5mm	4.5mm x 4.5mm	SMT (Gull Wing)	×
	<b>TL3330</b>	Life Cycles: 50,000 (130gf), 30,000 (260gf) Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	6.9mm x 3.3mm	130, 260	Right Angle SMT (Gull Wing)	×
	<b>TL3336</b>	Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 100mΩ Max. (Initial)	12VDC, 50mA	0.35mm	7mm x 7.10mm	160gf ± 50gf	Right-Angle SMT	IP67
	<b>TL3340</b>	Life Cycles: 100,000 Operating Temp: -35°C to 85°C Contact Resistance: 500mΩ (Initial Max.) Insulation Resistance: 100MΩ (Min. @ 100V)	50mA @ 12VDC	0.20 ± 0.10mm	4mm x 3.3mm	160gf ± 50gf; 130gf ± 30g	SMT (Gull Wing)	×
	<b>TL3342</b>	Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 20mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	5.2mm x 5.2mm	160, 250	SMT (Gull Wing)	×
	<b>TL3360</b>	Life Cycles: 200,000 Operating Temp: -25°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.15mm	6.5mm x 6mm	185, 260	Right Angle SMT (Gull Wing)	×
	<b>TL3365</b>	Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.20mm	4.2mm x 3.2mm	180	SMT (Gull Wing)	×
	<b>TL3701</b>	Life Cycles: 100,000 Operating Temp: -40°C to 85°C Contact Resistance: 500mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.15mm	3.0mm x 2.6mm	100, 160	SMT (Gull Wing)	×
	<b>TL3780</b>	Life Cycles: up to 500,000 Operating Temp: -40°C to 85°C Contact Resistance: 500mΩ Max. Insulation Resistance: 50MΩ Min.	50mA, 12VDC	0.13mm	2.0mm x 3.0mm	100, 160, 240, 330	SMT (Gull Wing)	×

Specifications subject to change without notice



E-SWITCH®		General Ratings	Electrical Ratings	Travel	Dimensions	Operating Force (gf)	Mounting Options	Ingress Protection
	TL3901	Life Cycles: 50,000 Operating Temp: -40°C to 85°C Contact Resistance: 500mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.3mm	5.4mm x 5.0mm	180	Right Angle Edge (Gull Wing)	×
	TL4100	Life Cycles: 1,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.15mm	3.5mm x 6.2mm	120, 240	Right Angle Edge (Gull Wing)	×
	TL4105	Life Cycles: 200,000 Operating Temp: -40°C to 85°C Contact Resistance: 1Ω Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.15mm	2.9mm x 4.8mm	160	Right Angle Edge (Gullwing)	×
	TL4115	Life Cycles: 600,000 Operating Temp: -30°C to 85°C Contact Resistance: 500mΩ Max. (Initial) Insulation Resistance: 100MΩ Min. at 100VDC"	12VDC, 50mA	0.15mm	2.6mm x 4.5mm	160gf ± 50gf 220gf ± 70gf	SMT Right-Angle-Edge	×
	TL4110	Life Cycles: 300,000 Operating Temp: -40°C to 85°C Contact Resistance: 500mΩ Max. Insulation Resistance: 50MΩ Min.	20mA, 15VDC	0.13mm	2mm x 2.8mm	160	SMT	×
	TL52	IP67 Rated Life Cycles: 100,000 Operating Temp: -25°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.3mm	8.0mm x 8.0mm	160, 260	PCB Pin	IP67
	TL58	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	6.2mm x 6.2mm	100, 160, 260	Right Angle PCB Pin	×
	TL59	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	6.2mm x 6.2mm	100, 160, 260	PCB Pin	×
	TL6100	Multiple Actuator Styles Life Cycles: up to 1,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.5mm	7.4mm x 7.4mm	130, 160, 300, 500	PCB Pin	Process Sealed
	TL6105	Multiple Actuator Styles Life Cycles: up to 1,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.5mm	7.4mm x 7.4mm	130, 160, 300, 500	PCB Pin w/ Earth ground terminal	×

Specifications subject to change without notice



 E-SWITCH®		General Ratings	Electrical Ratings	Travel	Dimensions	Operating Force (gf)	Mounting Options	Ingress Protection
	<b>TL6110</b>	Multiple Actuator Styles Life Cycles: up to 1,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.5mm	5.8mm x 8.3mm	130, 160, 300, 500	Right Angle PCB Pin	Process Sealed
	<b>TL6120</b>	Multiple Actuator Styles Life Cycles: up to 1,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.5mm	7.4mm x 7.4mm	130, 160, 300, 500	SMT (Gull Wing)	Process Sealed
	<b>TL6150</b>	Life Cycles: Up to 5,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 10MΩ Min. at 100VDC	50mA, 32VDC	0.3mm; 160gf 0.35mm; 200gf 0.5mm; 350gf	6.2mm x 6.2mm	160gf 200gf 350gf	SMT Gull Wing or J-Lead	IP67
	<b>TL6155</b>	Life Cycles: 300,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 10MΩ Min. at 100VDC"	50mA, 32VDC	0.5mm	6.4mm x 6.55mm	350gf ± 100gf	Right-Angle SMT	IP67
	<b>TL6170</b>	Life Cycles: 300,000 Cycles Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 100MΩ Min. at 100VDC	50mA, 12VDC	0.40mm ± 0.20mm	6.3mm x 6.3mm	250gf ± 80gf 180gf ± 80gf	SMT Gull Wing	IP67
	<b>TL6190</b>	Life Cycles: 100,000 Operating Temp (Switch): -40°C to 105°C Operating Temp (Cap): -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.5mm	12.0mm x 11.5mm	220	Right Angle PCB Pin	Process Sealed
	<b>TL6200</b>	Life Cycles: 10,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 30mΩ Max. Insulation Resistance: 10MΩ Min.	50mA, 24VDC	1.0mm	10.10mm x 10.10mm	300	SMT (Gull Wing) PCB Pin	IP67
	<b>TL6210</b>	LED Illuminated Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 500mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.45mm	6.2mm x 4.6mm	200	SMT (Gull Wing)	IP67
	<b>TL6215</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	0.45mm	7.7mm x 6.37mm	200, 450	Vertical or Right Angle PCB Pin	IP67
	<b>TL6275</b>	LED Illuminated Life Cycles: 100,000 Operating Temp: -25°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.25mm	8mm x 8mm	350	PCB Pin	Process Sealed

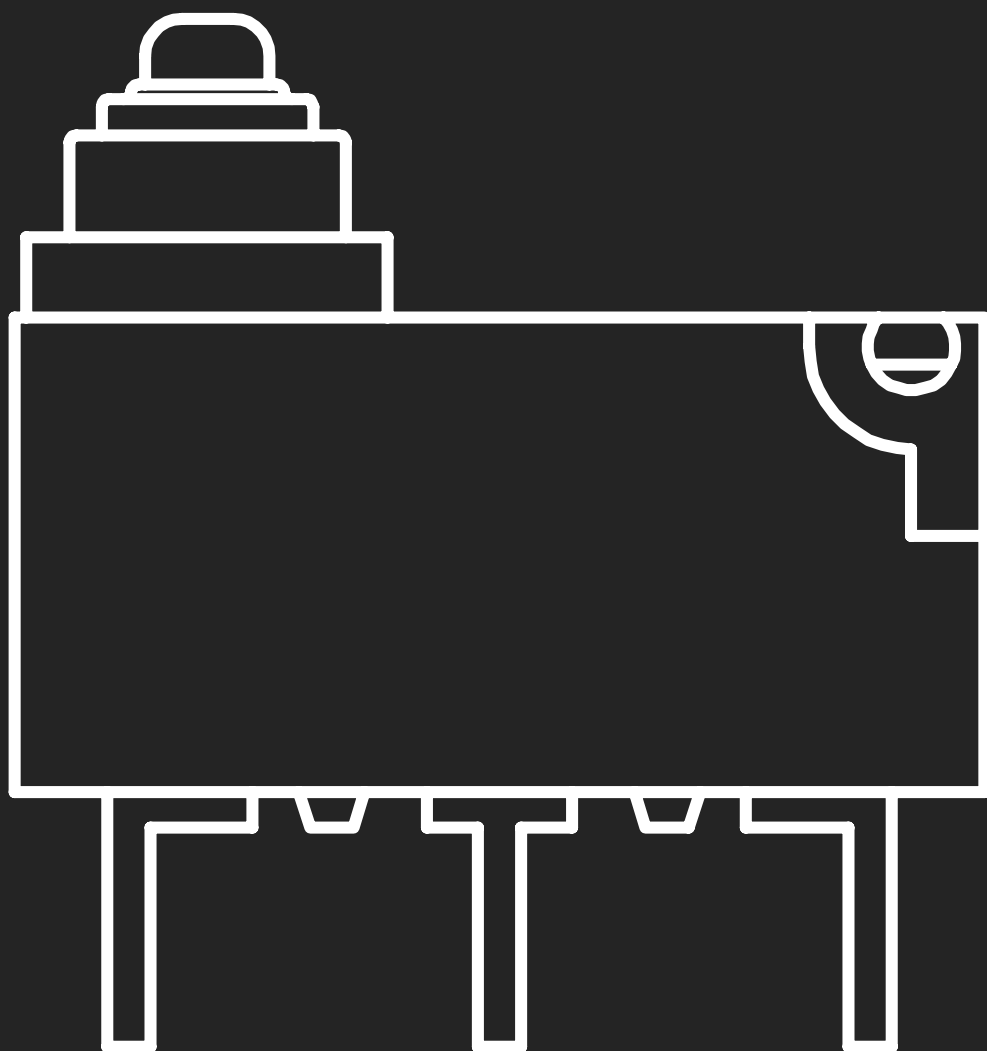
Specifications subject to change without notice



E-SWITCH®		General Ratings	Electrical Ratings	Travel	Dimensions	Operating Force (gf)	Mounting Options	Ingress Protection
	<b>TL6300</b>	Life Cycles: 10,000,000 Operating Temp: -40°C to 90°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.3mm	12mm x 12mm	260	PCB Pin	IP67
	<b>TL6330</b>	Life Cycles: 200,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 1GΩ Min.	50mA, 32VDC	0.25mm	2.8mm x 4.6mm	200	SMT	IP67
	<b>TL6340</b>	Life Cycles: 200,000 Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max.	20mA, 12VDC	0.2mm	2.9mm x 3.90mm x 2mm	160	Right Angle Surface Mount	IP67
	<b>TL6400</b>	Life Cycles: 30 - 50,000 Cycles Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 100MΩ Min. at 100VDC	50mA, 12VDC	0.15mm ± 0.10mm	6mm x 3.4mm	160gf ± 50gf 50,000 cycles 260gf ± 70gf 30,000 cycles	SMT (J-Bend)	IP67
	<b>TL6700</b>	Life Cycles: 500,000 (160gf), 100,000 (260gf) Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.35mm	6.9mm x 6.2mm	160, 260	SMT (Gull Wing J-Bend)	IP67
	<b>TL6800</b>	Life Cycles: 500,000 & 1,000,000 Operating Temp: -40°C to 90°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 100MΩ Min. at 100VDC	50mA, 12VDC	0.25mm +0.15mm	6.2mm x 6.3mm	160gf 1,000,000 260gf 500,000	SMT (J-Bend)	IP67
	<b>TL9100</b>	Life Cycles: 100,000(200gf); 30,000(350gf) Operating Temp: -40°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ @500 VDC.	50mA, 12VDC	1.3mm	6.0mm x 6.0mm	200, 350	SMT (J-Bend)	✗
	<b>TL9210</b>	Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ initial Insulation Resistance: 100MΩ Min.@100VDC	50mA, 12VDC	1.3mm	6.0mm x 6.0mm	200	SMT (J-Bend)	✗
	<b>TL9320</b>	Life Cycles: 500,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max.	50mA, 16VDC	0.9mm	8.4mm x 8.4mm x 3.95mm	400	Surface Mount	IP67

Specifications subject to change without notice

# SNAP ACTION SWITCHES



Snap Action switches, also called microswitches, are switch devices that can open and/or close an electrical circuit at a rapid speed. Triggered by an external force, either human or physical object, which is then applied to an actuator that requires very little pressure to operate. Snap Action switches offer multiple actuator options, such as pin plunger, lever, roller or simulated roller lever. Reliability and long operating life make snap action switches ideal for counter top appliances, timer controls, vending machines, gaming devices, power tools and industrial controls.

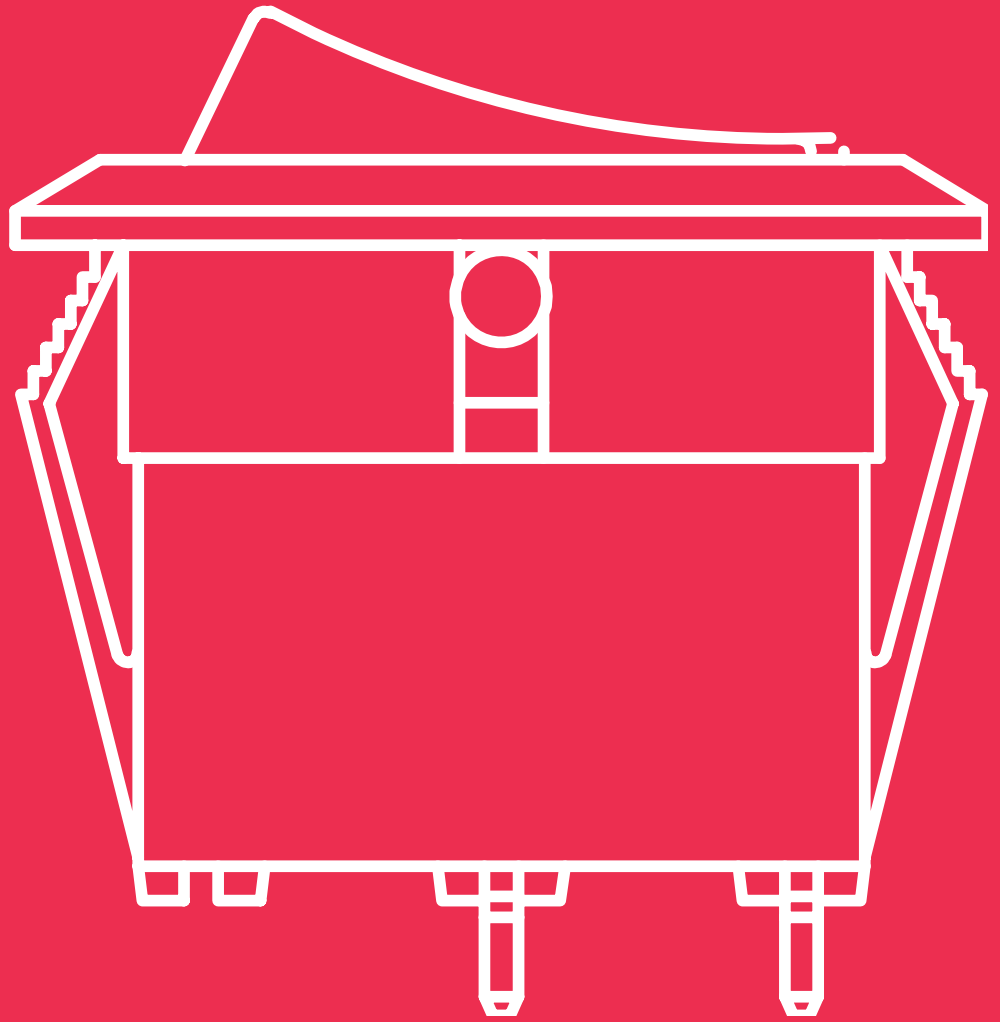




E-SWITCH®		General Ratings	Electrical Ratings	Functions	Operating Force	Actuator Options	Terminal Options	Body Options
	LS	<b>Electrical Life:</b> 50,000 Cycles <b>Mechanical Life:</b> 1,000,000 Cycles <b>Operating Temp:</b> -25°C to 85°C <b>Contact Resistance:</b> 100mΩ Max.	<b>Silver cURus,</b> 15A, 125/250VAC  <b>Gold:</b> 0.4VA, 20V (AC or DC)	SPST N.O. SPST N.C. SPDT	25-250 (*Depending upon actuator)	Pin Plunger Lever Roller Simulated Roller	Quick Connect Right Angle PCB Pin Left Angle PCB Pin Solder Lug	<b>Width:</b> 27.9mm <b>Height:</b> 15.9mm <b>Depth:</b> 10.3mm
	MS	<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.	<b>Silver cURus:</b> 5A, 125/250VAC  <b>Gold:</b> 0.4VA, 20V (AC or DC)	SPST N.O. SPDT	10-295 (*Depending upon actuator)	Pin Plunger Lever Roller Simulated Roller Custom	Quick Connect PCB Pin Right Angle PCB Pin Left Angle PCB Pin Solder Lug	<b>Width:</b> 19.8mm <b>Height:</b> 10.6mm <b>Depth:</b> 6.4mm
	SS	<b>Electrical Life:</b> 10,000 Cycles <b>Mechanical Life:</b> 1,000,000 Cycles <b>Operating Temp:</b> -25°C to 75°C <b>Contact Resistance:</b> 100mΩ Max.	<b>Silver cURus:</b> 3A, 125VAC 1.5A, 250VAC 0.1A, 5VDC  <b>Gold:</b> 0.4VA, 20V (AC or DC)	SPDT	15-130 (*Depending upon actuator)	Pin Plunger Lever Simulated Roller	PCB Pin PCB Retention Right Angle PCB Pin Left Angle PCB Pin Solder Lug	<b>Width:</b> 12.7mm <b>Height:</b> 6.5mm <b>Depth:</b> 5.75mm
	TS	<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.	300mA, 6VDC	SPDT	20	Lever	Vertical PCB Pin Right Angle PCB Pin Short Left Angle PCB Pin Short Right Angle PCB Pin Long Left Angle PCB Pin Long	<b>Width:</b> 8.2mm <b>Height:</b> 6.6mm <b>Depth:</b> 2.7mm
	TS2	<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.	100mA, 125VAC 100mA, 48VDC	SPST	70	Pin Plunger	SMT Terminals	<b>Width:</b> 8.6mm <b>Height:</b> 3.0mm <b>Depth:</b> 4.8mm
	WS	<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. <b>Ingress Protection:</b> IP67	0.5A, 42VDC 1A, 24VDC 2A, 12VDC 3A, 125 /250VAC	SPDT	50-70 (*Depending upon actuator)	Pin Plunger Lever Simulated Roller	PCB Pins Soldering Lugs	<b>Width:</b> 13.3mm <b>Height:</b> 7.0mm <b>Depth:</b> 5.3mm
	WS1	<b>Electrical Life:</b> 100,000 Cycles MIN. <b>Mechanical Life:</b> 500,000 Cycles MIN <b>Operating Temp:</b> -40°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Ingress Protection:</b> IP67	01 = 0.1A @ 48VDC 0.1A @ 125VAC, 250VAC 3 = 3A @ 12VDC 3A @ 125VAC, 250VAC	SPDT	130 gf MAX.	Pin Plunger	Solder Lug Wire Leads	<b>Width:</b> 14.7mm <b>Height:</b> 6.3mm <b>Depth:</b> 5.4mm
	WS2	<b>Electrical Life:</b> 100,000 Cycles MIN. <b>Mechanical Life:</b> 500,000 Cycles MIN <b>Operating Temp:</b> -25°C to 85°C <b>Contact Resistance:</b> 50mΩ Max. <b>Ingress Protection:</b> IP67	2A @ 30VDC 2A @ 250VAC	SPDT	130 gf MAX.	Pin Plunger	Solder Lug Quick Connect PCB Pin	<b>Width:</b> 19.8mm <b>Height:</b> 10mm <b>Depth:</b> 6.3mm

Specifications subject to change without notice


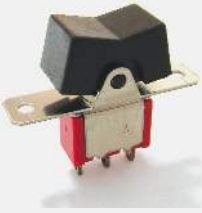





# ROCKER SWITCHES



Rocker switches are commonly used as an on/off switch that rocks (rather than trips) when pressed, meaning the rocker opens or closes the circuit. This means that one side of the Rocker switch is raised while the other side is depressed, much like a seesaw or rocking horse. E-Switch offers a range of Rocker switches, from miniature size with low current ratings to industrial use switches with high power and horsepower ratings. Several Rocker switches provide an IP rating of IP67, IP55 or IP54 depending the switch series. Panel mount installation is most common, however, a few E-Switch Rocker series provide PC mount options. Additional options include non-illuminated or illuminated, plus actuator shapes such as rectangle, round, oval and paddle style actuators.





 E-SWITCH®	Electrical Ratings	Poles / Functions	Actuator Options	Mounting Options	Terminal Options	Ingress Protection
	<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 Lug  <b>PC Mount:</b> Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical with Bracket	PCB Pin Quick Connect Solder Lug	×
	<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 Lug  <b>PC Mount:</b> Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical with Bracket	PCB Pin Quick Connect Solder Lug	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)  <b>2 Pole:</b> On-On      On-(On) On-Off-On	Rocker	<b>Panel Mount:</b> Vertical Solder Lug  <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 Lug	×
	<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)  <b>2 Pole:</b> On-On      On-(On) On-Off-On	Rocker	<b>Panel Mount:</b> Vertical Solder Lug  <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 Lug	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	SMT	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	×

Specifications subject to change without notice



		Electrical Ratings	Poles / Functions	Panel Cutout	Actuator Options	Illumination Options	Ingress Protection
	<b>R1966</b>	15A, 125VAC T65 [cURus]	<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	✗
	<b>R1973</b>	9A, 125VAC T65 [cURus]	<b>1 Pole:</b> On-Off <b>2 Pole:</b> On-Off	13mm x 19.2mm	Curved	Full	✗
	<b>R4</b>	20A, 125VAC T65 [cURus]	<b>1 Pole:</b> On-Off On-Off-On Off-(On) On-(Off) On-On On-(On) (On)-Off-(On)	11mm x 30mm	Curved	Full Dott	✗
	<b>R5</b>	20A, 125VAC T65 [cURus]	<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	✗
	<b>R6</b>	10A, 125VAC T65 [cURus]	<b>1 Pole:</b> On-Off (On)-Off	6.65mm x 19.2mm	Curved	✗	✗
	<b>R7</b>	16(8)A, 125/250VAC [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]	<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>RA4</b>	16A, 125VAC 1/3HP T105 [cURus]	<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
	<b>RA8</b>	16A, 125VAC 1/3HP T105 [cURus]	<b>1 Pole:</b> Off-On <b>2 Pole:</b> Off-On	13mm x 19mm	Bi-color Curved	Full Signal Light	IP54 with cap

Specifications subject to change without notice



E-SWITCH®		Electrical Ratings	Poles / Functions	Panel Cutout	Actuator Options	Illumination Options	Ingress Protection
	<b>RB1</b>	20A, 125VAC 1/4HP T65 [cURus]	<b>1 Pole:</b> Off-On On-(On) Off-(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]	<b>1 or 2 Pole:</b> Off-On On-Off-On (On)-Off-(On)  <b>2 Pole Only:</b> Off-(On)	22mm x 30mm	Curved Flat	Dot Full Signal Light	IP54 with cap
	<b>RB3</b>	A - 16(8)A, 125/250VAC, T55, IP67 B - 20(8)A, 125/250VAC, T55, IP67 C - 25(8)A, 125/250VAC, T55, IP67 D - 16A, 6-48VDC, T55, IP67 E - 20A, 6-36VDC, T55, IP67 1 - 16(8)A, 125/250VAC, T125/55 2 - 20(8)A, 125/250VAC, T125/55 4 - 16A, 6-48VDC, 40T125/55 5 - 20A, 6-36VDC, 40T125/55	<b>1 Pole:</b> On-Off On-Off-On (On)-On (On)-Off-(On)	13.8mm x 30.2mm	Flat Black or White	Single or Double LED	IP67
	<b>RB5</b>	A - 16(8)A, 125/250VAC, T55, IP67 B - 20(8)A, 125/250VAC, T55, IP67 C - 25(8)A, 125/250VAC, T55, IP67 D - 16A, 6-48VDC, T55, IP67 E - 20A, 6-36VDC, T55, IP67 1 - 16(8)A, 125/250VAC, T125/55 2 - 20(8)A, 125/250VAC, T125/55 4 - 16A, 6-48VDC, 40T125/55 5 - 20A, 6-36VDC, 40T125/55	<b>2 Pole:</b> On-Off On-Off-On (On)-On (On)-Off-(On)	22mm x 30.2mm	Flat Black or White	Single or Double LED	IP67
	<b>RBW2</b>	16(16)A, 125VAC 5E4 T85 [cURus]	<b>2 Pole:</b> Off-On	22mm x 30mm	Curved	Full	IP66
	<b>RD1</b>	16A, 125VAC 1/3HP T105 [cURus]	<b>1 Pole:</b> Off-On	6.8mm x 19.2mm	Curved	✗	✗
	<b>RSC</b>	20A, 125VAC 1/4HP T105 [cURus]	<b>1 Pole:</b> Off-On Off-(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>RWV</b>	20A, 125VAC [cURus UL508] <b>Momentary Switches:</b> 1.5HP, 220-240VAC [cURus UL508]	20A, 125VAC [cURus UL508] <b>Momentary Switches:</b> 1.5HP, 220-240VAC [cURus UL508]	21mm x 36.8mm	Curved	✗	IP54
	<b>WB2</b>	<b>Maintained Switches:</b> 20A, 125/250VAC T65/T85 [cURus] <b>Momentary Switches:</b> 20A, 125/250VAC T65/T85 [cURus]	<b>Maintained Switches:</b> 20A, 125/250VAC T65/T85 [cURus] <b>Momentary Switches:</b> 20A, 125/250VAC T65/T85 [cURus]	22mm x 30mm	Curved	✗	IP55



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

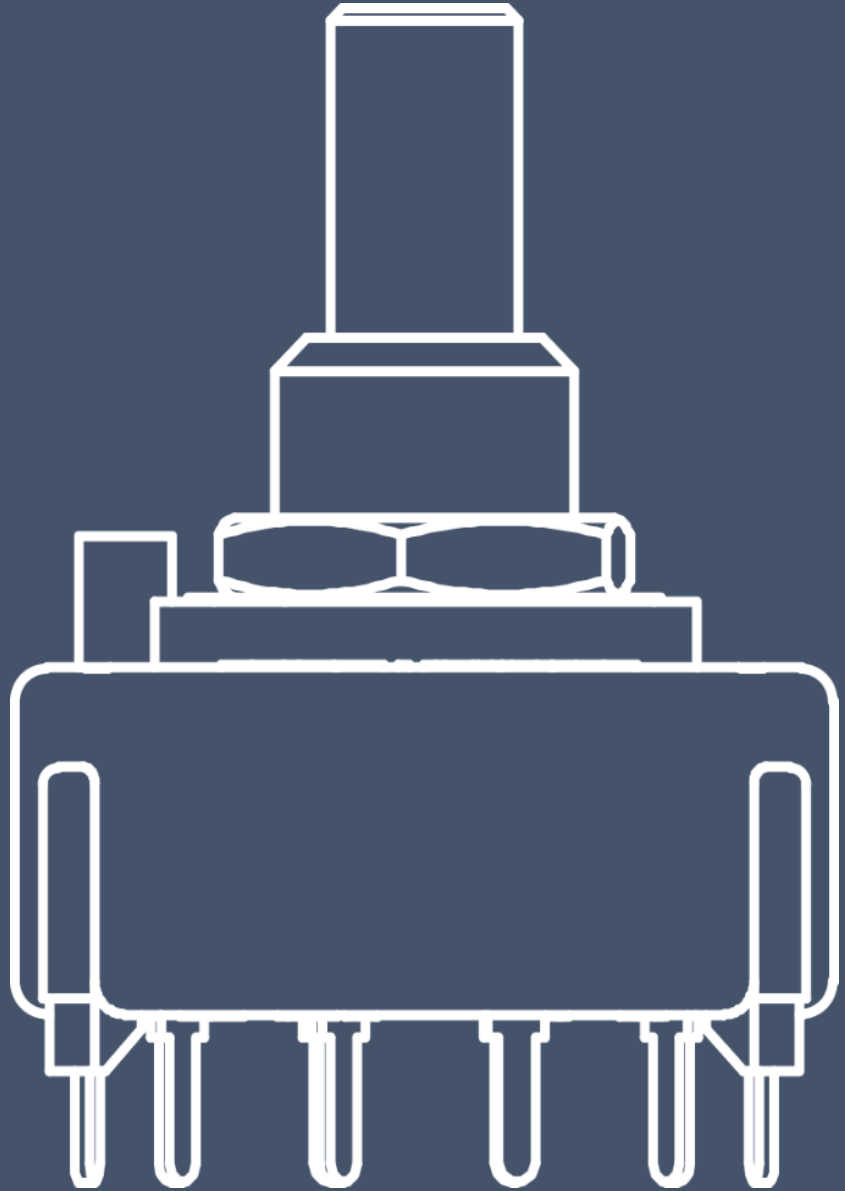
Specifications subject to change without notice



E SWITCH®		Electrical Ratings	Poles / Functions	Panel Cutout	Actuator Options	Illumination Options	Ingress Protection
	<b>RR5</b>	20A, 125VAC T65 [cURus] 12A, 250VAC T65 [cURus]	<b>1 Pole:</b> Off-On      Off-(On)	20mm	Curved	×	×
	<b>RR8</b>	16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus]	<b>1 Pole:</b> Off-On  <b>2 Pole:</b> Off-On	20mm	Curved	Full	×
	<b>RRA</b>	15A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus]	<b>1 Pole:</b> Off-On      On-On On-Off-On  <b>2 Pole:</b> Off-On      On-On On-Off-On	22mm	Curved	Full	Capped to provide protection from the elements at an <b>IP54</b> ingress protection rating
	<b>RRG3</b>	16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus]	<b>1 Pole:</b> Off-On      On-On Off-(On)      On-Off-On On-(Off)      On-(On) On-Off-(On)	20mm	Curved	×	×
	<b>RRGA</b>	16A, 125VAC 1/3HP T105 [cURus] 10A, 250VAC 1/3HP T105 [cURus]	<b>1 Pole:</b> Off-On      On-On Off-(On)      On-Off-On On-(Off)      On-(On) On-Off-(On)	22mm	Curved	×	×

Specifications subject to change without notice

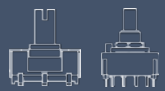
# ROTARY SWITCHES





Rotary Switches use a rotating mechanism to select one of several positions. E-Switch products can feature up to four poles and 12 positions, and there are many actuator style and length options to choose from, as well as thru hole and solder lug termination styles. These switches are commonly used to control and configure circuits in a wide range of applications.

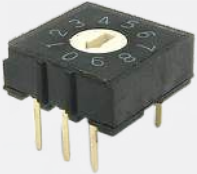


Rotary DIP switches are used in situations where manual configuration is necessary, and the binary-coded positions allow for a straightforward way to set various options in circuits. E-Switch rotary DIPs include up to 16 positions, PCB termination and IP67 ratings.





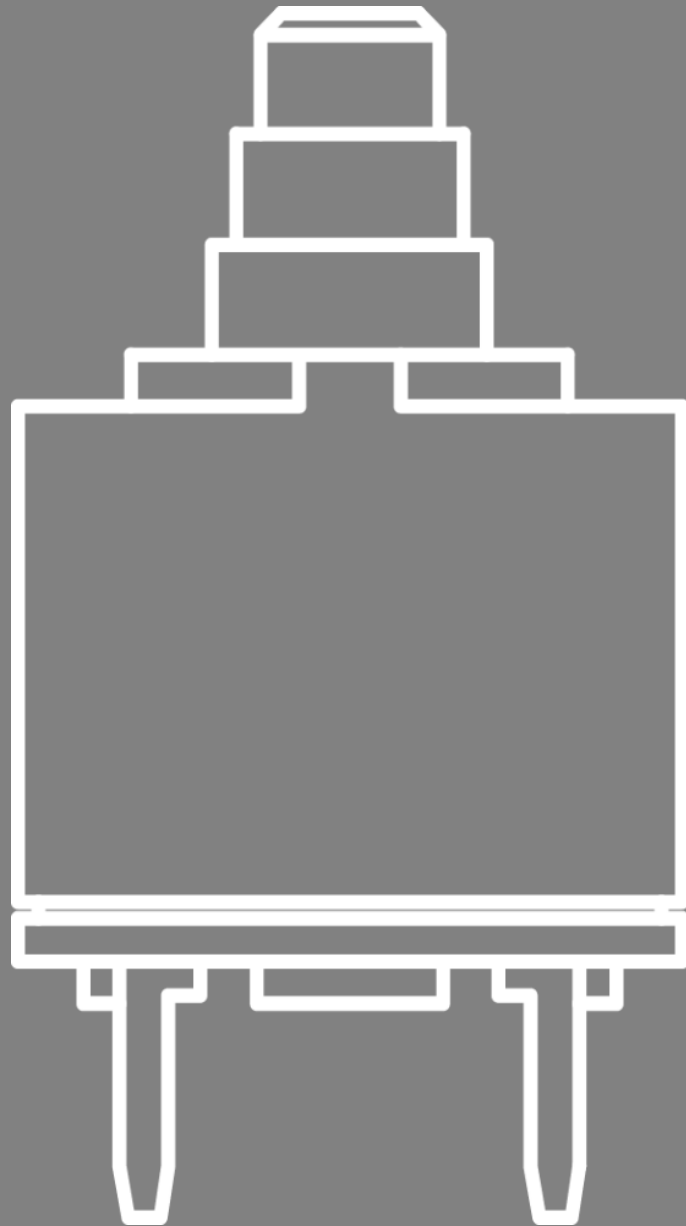
E-SWITCH®		General Ratings	Electrical Ratings	Poles / Functions	Actuator Options	Contact Options	Terminal Options
	<b>KC</b>	<b>Mechanical Life:</b> 10,000 Cycles <b>Operating Force:</b> 8.6 N/cm <b>Contact Resistance:</b> 25mΩ initial @ 2-4 VDC, 100mA	350mA, 125VAC; 150mA, 250VAC	1 to 4 poles; 1 to 12 positions	Flat Round Slotted  Multiple length options	Silver  Gold	Through Hole
	<b>KC1901</b>	<b>Mechanical Life:</b> 10,000 Cycles <b>Operating Force:</b> 0.5N/cm <b>Contact Resistance:</b> 50mΩ initial @ 2-4 VDC, 100mA	100mA, 16VDC	<b>SP9T</b> - single pole, 9 positions	9.8mm Shaft Actuator	Silver	Through Hole

## ROTARY DIP

E-SWITCH®		General Ratings	Electrical Ratings	Positions	Actuator Options	Terminal Options	Ingress Protection	Packaging
	<b>DR</b>	<b>Electrical Life:</b> 15,000 Cycles <b>Operating Force:</b> 200gf-cm <b>Operating Temp:</b> -25°C to 80°C <b>Contact Resistance:</b> 100mΩ Max.	Switch: 25mA, 24VDC; Carry: 100mA, 50VDC	10 or 16	Flush  Long  Short	Through Hole  Through Hole Right Angle  Surface Mount  Snap-In Through Hole	×	Bulk Tube Tape & Reel
	<b>RDM</b>	<b>Life Expectancy:</b> 25,000 Steps <b>Operating Force:</b> 250gf max <b>Operating Temp:</b> -60°C to 125°C <b>Contact Resistance:</b> 80mΩ Max.	Switch: 42VDC, 100mA; Carry: 42VDC, 400mA	10 or 16	Arrow Flush  Shaft 4.5mm High  Shaft 4.2mm High	Through Hole  Through Hole Right Angle  Surface Mount	IP67	Tube Tape & Reel
	<b>RDT</b>	<b>Life Expectancy:</b> 10,000 Steps <b>Operating Force:</b> 700 gf-cm Max <b>Operating Temp:</b> THT: -40°C to 85°C SMT: -60°C to 125°C <b>Contact Resistance:</b> 80mΩ Max.	Switch: 42VDC, 150mA; Carry: 42VDC, 200mA	4, 6, 8, 10, or 16	Arrow Flush  Arrow Shaft  Cross  Arrow 0.1mm High  Grey Segment Wheel  Black Segment Wheel	Through Hole  Through Hole Right Angle  Surface Mount	IP67 (A, B, D Actuators)	Tube Tape & Reel

Specifications subject to change without notice

# DETECTOR SWITCHES



Detector switches are commonly employed in various applications where the detection of a specific state or object is necessary, such as industrial automation, security systems and electronic devices. The specific operation of a detector switch depends on its type and technology. For example, in a limit switch, the movement of an actuator might physically open or close electrical contacts.

These types of switches come with long life and sealed options, as well as subminiature and ultra-miniature sizes. A variety of termination styles are available, ensuring the right fit for your application.

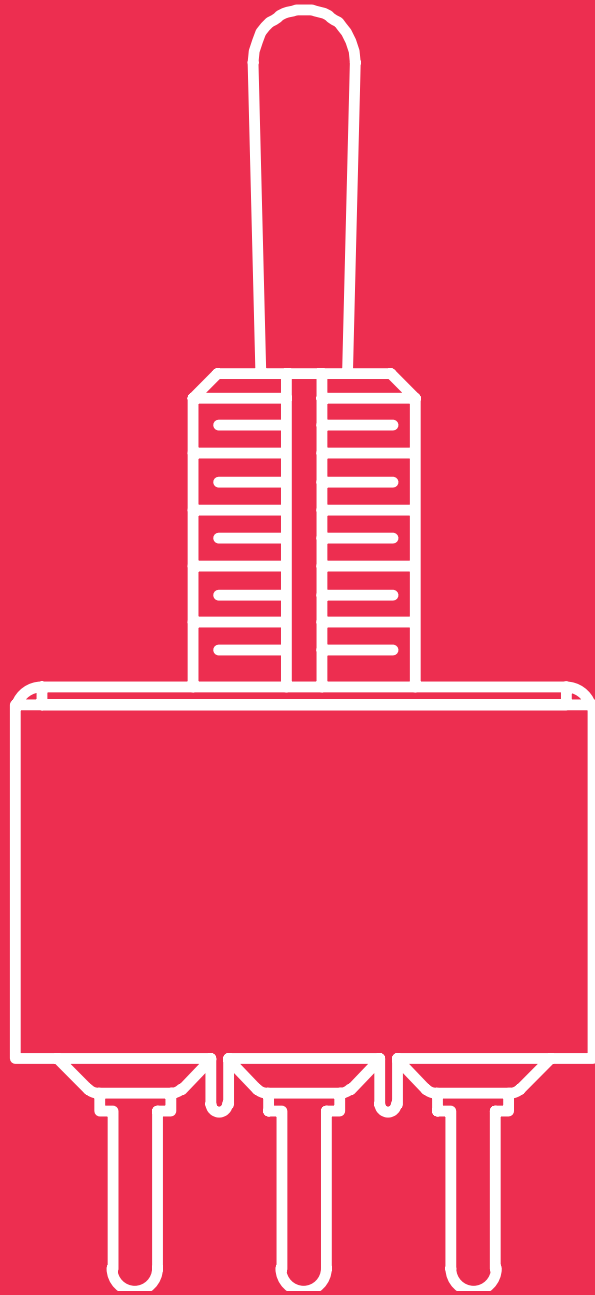




E-SWITCH®		General Ratings	Electrical Ratings	Poles / Functions	General Info	Ingress Protection
	<b>900</b>	<b>Life Expectancy:</b> 50,000 cycles typical <b>Operating Temp:</b> -25°C to +85°C <b>Operating Force:</b> 50 gf max <b>Contact Resistance:</b> 80mΩ max. typical @ 2-4 VDC 100mA	100mA, 50VDC	SPST or SPST-NO circuit	2.0mm Travel	✘
	<b>MR1000</b>	<b>Contact resistance:</b> 150mΩ	0.5A, 10V (AC or DC)	SPST-NO circuit	(2) 18 inch 22AWG Wire Leads	IP67
	<b>PP1</b>	<b>Electrical Life:</b> 6,000 Cycles <b>Mechanical Life:</b> 50,000 Cycles <b>Operating Temp:</b> 0°C to 85°C <b>Contact Resistance:</b> 10mΩ Max.	16A 125VAC; UL, cUL 12A 250VAC; UL, cUL 1HP 125/250VAC; UL, cUL	SPDT, push-pull or momentary functions	<b>Panel Cutout:</b> 28.4mm x 13.5mm	IP40
	<b>PP2</b>	<b>Electrical Life:</b> 6,000 Cycles <b>Mechanical Life:</b> 50,000 Cycles <b>Operating Temp:</b> 0°C to 85°C <b>Contact Resistance:</b> 10mΩ Max.	16A 125VAC; UL, cUL 12A 250VAC; UL, cUL 1HP 125/250VAC; UL, cUL 10R(4)A 277VAC 5E4; UL, cUL	DPDT, push-pull or momentary functions	<b>Panel Cutout:</b> 36.5mm x 13.5mm	IP40
	<b>TD1146</b>	<b>Electrical Life:</b> 30,000 Cycles <b>Operating Temp:</b> -25°C to 70°C <b>Operating Force:</b> <50 gf <b>Contact Resistance:</b> 100mΩ Max. Initial	1mA, 5VDC	SPST-NO circuit	3.0mm Travel	✘
	<b>TD1150</b>	<b>Electrical Life:</b> 300,000 Cycles <b>Operating Temp:</b> -40°C to 85°C <b>Operating Force:</b> 35gf <b>Contact Resistance:</b> 500 mΩ	100mA @ 12VDC	SPST-NO circuit; momentary function	0.5mm Travel (electrical) 2.5mm Travel (full stroke)	IP67
	<b>TD1250</b>	<b>Mechanical Life:</b> 500,000 Cycles <b>Operating Force:</b> 160gf max <b>Operating Temp:</b> -40°C to 85°C <b>Contact Resistance:</b> Solder: 1Ω max. Initial PCB: 500mΩ max. Initial	1mA, 5VDC ~ 50mA, 16VDC	SPST-NO circuit; momentary function	<b>Actuators:</b> Pin Plunger Straight Lever S-Shaped Lever	IP67
	<b>TD4700</b>	<b>Life Expectancy:</b> 100,000 Cycles <b>Operating Force:</b> 50gf max <b>Operating Temp:</b> -40°C to 85°C <b>Contact Resistance:</b> 2Ω Max. Initial	1mA, 5VDC	SPST-NO circuit	2.2mm Travel	✘

Specifications subject to change without notice








# TOGGLE SWITCHES



The Toggle switch is characterized by the presence of a manually operated handle or lever which controls the flow of electrical current from power supply to device, such as a household appliance. E-Switch offers Toggle switches with multiple options such as actuators, bushings and terminals, as well as low to high current ratings and some with horsepower ratings for industrial applications. Smaller size toggles are often used in equipment for telecommunications, networking, instrumentation and medical devices. High power Toggles are used in industrial control panels, motor-sports vehicles, commercial appliances, restaurant equipment and recreational vehicles.










E-SWITCH®		General Ratings	Electrical Ratings	Poles / Functions	Actuator Options	Bushing Options	Terminal Options	Ingress Protection
	100	<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> 10mΩ Max.	<b>Silver:</b> 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus]  <b>Gold:</b> 0.4VA, 20V Max. (AC or DC)	<b>1 or 3 Pole:</b> On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) <b>2 or 4 Pole:</b> On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) On-On-On On-On-(On) (On)-On-(On)	Flat Locking Metal Plastic	High Torque Non-Threaded Threaded Splash Proof	Quick Connect Right Angle PCB Pin Solder Lug Vertical PCB Pin Wire Wrap	×
	100A	<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.	<b>Silver:</b> 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus]  <b>Gold:</b> 0.4VA, 20V Max. (AC or DC)	<b>1 Pole:</b> On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) <b>2 Pole:</b> On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On)	Metal Plastic	Non-Threaded Threaded	Right Angle PCB Pin Solder Lug Vertical PCB Pin Wire Wrap	IP67
	200	<b>Electrical Life:</b> 6,000 Cycles <b>Mechanical Life:</b> 30,000 Cycles <b>Operating Temp:</b> -20°C to 85°C <b>Contact Resistance:</b> 20mΩ Max.	<b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]  <b>Gold:</b> 0.4VA, 20V Max. (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	Metal	Non-Threaded Threaded	Right Angle PCB Pin Solder Lug Vertical PCB Pin	×
	200A	<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.	<b>Silver:</b> 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]  <b>Gold:</b> 0.4VA, 20V Max. (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)	Metal Plastic	Non-Threaded	Right Angle PCB Pin Vertical PCB Pin	IP67
	200B	<b>Electrical Life:</b> 6,000 Cycles <b>Mechanical Life:</b> 50,000 Cycles <b>Operating Temp:</b> -30°C to 85°C <b>Contact Resistance:</b> 20mΩ Max.	<b>Gold:</b> 0.4VA, 20V Max. (AC or DC)	<b>1 Pole:</b> On-(On) On-Off-On (On)-Off-(On) On-Off-(On)	Metal Plastic	Non-Threaded	Surface Mount	IP67
	200R	<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.	<b>Gold:</b> 0.4VA, 48V Max. (AC or DC)	<b>1 or 2 Pole:</b> On-None-On On-None-(On) On-Off-On (On)-Off-(On) On-Off-(On)	Metal	Non-Threaded	Surface Mount Right Angle PCB Pin Verticle Right Angle PCB Pin	×
	200U	<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.	<b>Gold:</b> 0.4VA, 20V Max. (AC or DC)	<b>1 or 2 Pole:</b> On-On On-On On-Off-On	Plastic	Non-Threaded	PCB Pin Right Angle PCB Pin Vertical Right Angle-PCB Pin	IP67

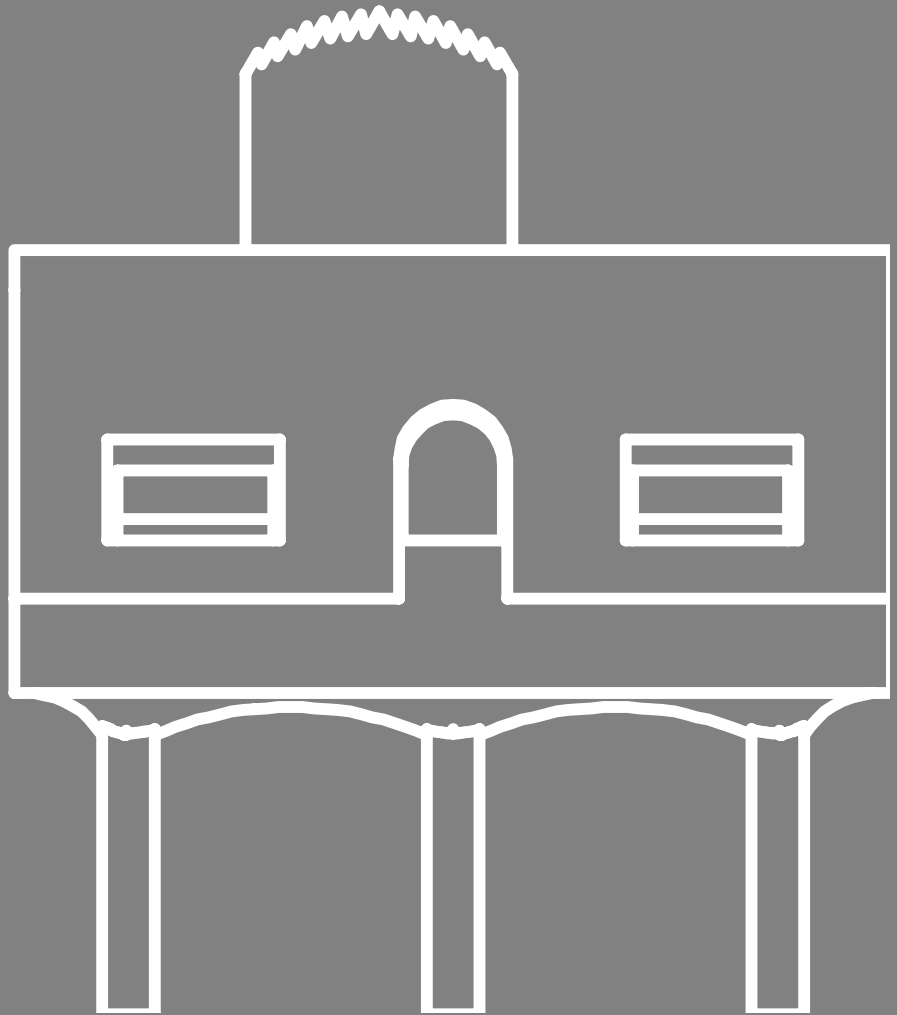
Specifications subject to change without notice



E SWITCH®		General Ratings	Electrical Ratings	Poles / Functions	Actuator Options	Bushing Options	Terminal Options	Ingress Protection
	ST1	<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.	<b>Maintained Switches:</b> 20A, 125VAC [cURus] 15A, 277VAC [cURus] 2HP, 125-277VAC [cURus] <b>Momentary Switches:</b> 20A, 125VAC [cURus] 15A, 277VAC [cURus] 1.5HP, 125-277VAC [cURus]	<b>2 Pole:</b> Off-On On-On Off-(On) On-Off-On On-Off-(On) (On)-Off-(On)	Metal	Threaded	Quick Connect Screw Solder Lug Wire Leads	×
	ST2	<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.	<b>Maintained Switches:</b> 20A, 125VAC [cURus] 15A, 277VAC [cURus] 2HP, 125-277VAC [cURus] <b>Momentary Switches:</b> 20A, 125VAC [cURus] 15A, 277VAC [cURus] 1.5HP, 125-277VAC [cURus]	<b>2 Pole:</b> Off-On On-On Off-(On) On-Off-On On-Off-(On) (On)-Off-(On)	Metal	Threaded	Quick Connect Screw Solder Lug Wire Leads	×
	ST3	<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.	<b>Maintained Switches:</b> 24A, 125VAC [cURus] 15A, 277VAC [cURus] 2HP, 125-277VAC [cURus]	<b>3 Pole:</b> Off-On On-On On-Off-On	Metal	Threaded	Quick Connect Screw Solder Lug Wire Leads	×
	ST4	<b>Electrical Life:</b> 10,000 Cycles <b>Operating Temp:</b> -10°C to 55°C <b>Contact Resistance:</b> 50mΩ Max. initial	16(8)A 125/250VAC μT55 20(8)A 125/250VAC μT55 20A 6-30VDC μT55	P1 - Off - (On) P2 - Off - On P3 - On - On P4 - (Off) - On P5 - (On) - Off P6 - (On) - ON P7 - ON - (On) P8 - On - Off - On P9 - On - Off - (On) P10 - (On) - Off - (On)	Metal Bat Plastic Bat	Threaded	Quick Connect Solder Lug Screw Terminals Wire Leads	IP68
	ST5	<b>Electrical Life:</b> 10,000 Cycles <b>Operating Temp:</b> -10°C to 125°C <b>Contact Resistance:</b> 50mΩ Max. initial	16(8)A 125/250VAC μT125/55 20(8)A 125/250VAC μT125/55 20A 6-30VDC μT125/55	P1 - Off - (On) P2 - Off - On P3 - On - On P4 - (Off) - On P5 - (On) - Off P6 - (On) - On P7 - On - (On) P8 - On - Off - On P9 - On - Off - (On) P10 - (On) - Off - (On)	Metal Bat Plastic Bat	Threaded	Quick Connect Solder Lug Screw Terminals	IP40

Specifications subject to change without notice

# SLIDE SWITCHES



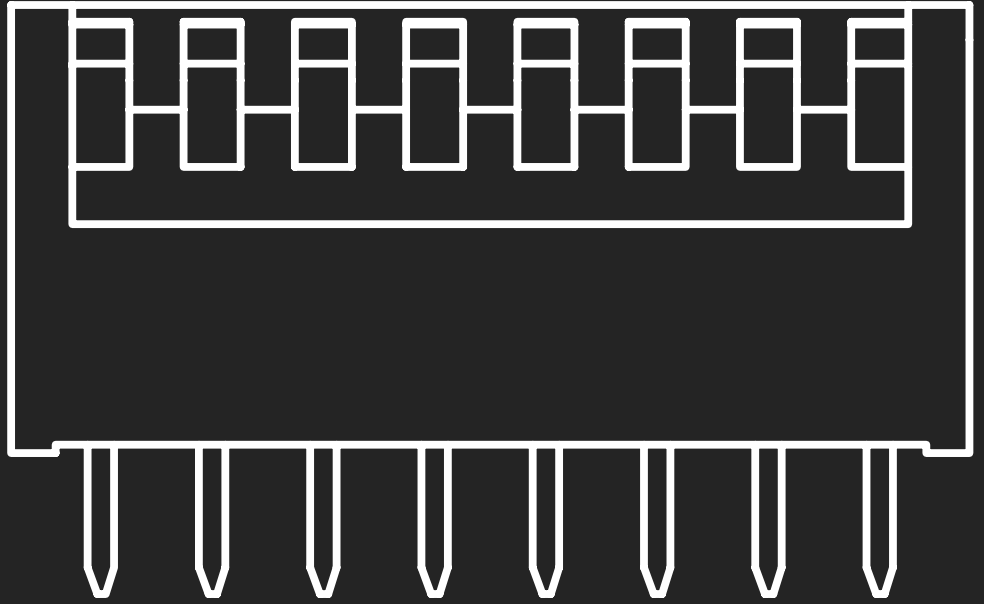
A slide switch utilizes a mechanical lever to turn an electrical current on and off. Depending on the number of positions available, the lever can move (slide) between an open or closed state. Compact in size, E-Switch offers Slide switches with multiple termination options. Slide switches are commonly used in computer server/peripheral equipment, instrumentation devices, test and measurement equipment and consumer electronics and household appliances.





 E-SWITCH®	Electrical Ratings	Poles	Positions	Terminal Options	Panel Mount Capable	Ingress Protection
	<b>500</b>  Silver: 5A, 120VAC [cURus] 2A, 250VAC [cURus]  Gold: 0.4VA, 20V (AC or DC)	Up to 2 Poles	Up to 3 Positions	PCB Pin Solder Lug Quick Connect Wire Wrap	●	×
	<b>500A</b>  Silver: 3A, 120VAC [cURus] 1A, 250VAC [cURus]  Gold: 0.4VA, 20V (AC or DC)	Up to 2 Poles	Up to 3 Positions	PCB Pin	×	×
	<b>500R</b>  Gold: 0.4VA, 20V (AC or DC)	Up to 2 Poles	Up to 3 Positions	Right Angle PCB Pin Vertical PCB Pin	×	IP67
	<b>600</b>  Silver: 1A, 30VDC  Gold: 0.4VA, 20V (AC or DC)	1 Pole	Up to 3 Positions	Right Angle PCB Pin Vertical PCB Pin Surface Mount	×	×
	<b>EG</b>  200mA, 30VDC	Up to 6 Poles	Up to 6 Positions	PCB Pin Surface Mount	●	×
	<b>EG1215</b>  25mA, 24VDC	1 Pole	2 Positions	Surface Mount	×	×
	<b>EG1312</b>  30mA @15VDC	3 Pole	3 Positions	Surface Mount PCB	×	×
	<b>EG1315</b>  25mA, 24VDC	1 Pole	3 Positions	Surface Mount	×	×
	<b>EGJ1210</b>  300mA @ 24VDC	1 Pole	2 Positions	Through Hole Through Hole Right Angle Gull Wing Gull Wing Right Angle	×	×
	<b>EGL2290</b>  300mA, 6VDC	2 Poles	2 Positions	Surface Mount	×	×

# DIP SWITCHES



DIP switch refers to a set of electrical switches packaged in a small box or housing, which are arranged in a line or circle (rotary DIP). The function is to provide a range of electrical inputs to an electronic device based on the position of the individual switches within the line or circle. The main advantage of a DIP switch is the ability to quickly change positions. Common applications for DIP switches include computer server/peripheral equipment, instrumentation devices, test and measurement equipment, audio/visual equipment, consumer electronics and medical equipment.



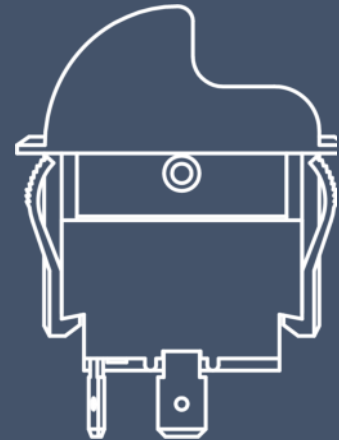
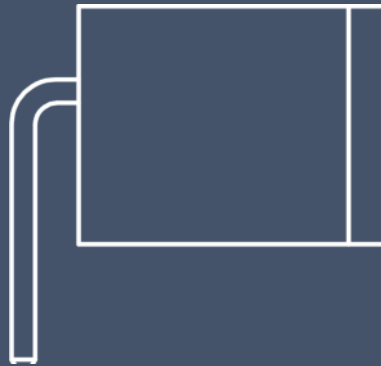
# DIP Switches



E SWITCH®		Genral Ratings	Electrical Ratings	Dimensions (mm)	Positions	Actuator Options	Mounting Options	Packaging	Tape Seal / Washable
	<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>KAD</b>	Life Cycles: 2,000 Operating Force: 1,000gf Max. Operating Temp: -20°C to 85°C	Switch: 25mA, 24VDC Carry: 100mA, 50VDC	Height: 3.70 (Gullwing) 7.20 (Straight) Width: 9.80 (Gullwing) 7.62 (Straight) Length: Varies per # of positions	4, 5, 8, 9, 10	Extended Recessed w/ or w/out Top Tape Seal	SMT (Gullwing) PCB Pin (Straight)	Tape and Reel Tube	✗
	<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>KAG</b>	Life Cycles: 1,000 Operating Temp: -40°C to 105°C	Switching 25mA @ 24VDC Non-Switching 100mA @ 50VDC	Height: 4.00 Width: 9.90 Length: Varies per # of positions	1, 2, 4, 8, 10	Extended Recessed w/ or w/out Top Tape Seal	SMT (Gull Wing)	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>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	✗

Specifications subject to change without notice

# OTHER SWITCHES



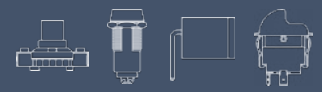
Navigation switches: Used for navigating through menus, options or interfaces on devices.

Keylock switches: Used to control and offer a physical barrier to prevent unauthorized operation of equipment.




Tilt switches: Detect changes in orientation and then trigger actions, like making or breaking a connection, in response.

Trigger switches: Used in devices where a quick, manual activation is required.








## NAVIGATION

E-SWITCH®		Electrical Ratings	Profile	Poles / Functions	Operating Force	Travel	Operating Temp	Terminal Options
	<b>JS1300</b>	50mA 12VDC	1.55mm	5-position 4-way directional Center select	Center: 320gf +80/-60gf; Tilt: 180gf ± 60gf	0.25 ± 0.15m	-40°C to 85°C	J Lead
	<b>JS1400</b>	50mA 12VDC	4.0mm 4.5mm 5.0mm 6.4mm	5-position 4-way directional Center select	Center: 360gf ± 60gf; Tilt: 160gf ± 50gf	5° +2.5°/-1° tilt 0.25mm +0.1/-0.2mm center	-40°C to 85°C	Flat Gull Wing Inverted Gull Wing (J Lead)
	<b>JS5208</b>	20mA 15VDC	12.2mm	5-position 4-way directional Center select	Center: 500gf ± 150gf; Tilt: 280gf ± 100gf	8° ± 2° tilt 1.0mm ± 0.2mm center	-20°C to 70°C	Gull Wing


## KEYLOCK

E-SWITCH®		Electrical Ratings	Lock Configurations	Key Options	Contact Options	Illumination Options	Ingress Protection
	<b>KO</b>	Varies by Configuration	25+ Lock Configurations	Barrel or Flat Key 1 to 5,000 Key Codes (Depends on Configuration)	Silver Plated Options	N/A	N/A
	<b>PVK4</b>	2A, 24VDC	2 or 3 Positions	Key or Selector	Silver or Gold	White Red Orange Green Blue Yellow	IP65 (Maintained) IP40 (Return)

## TILT

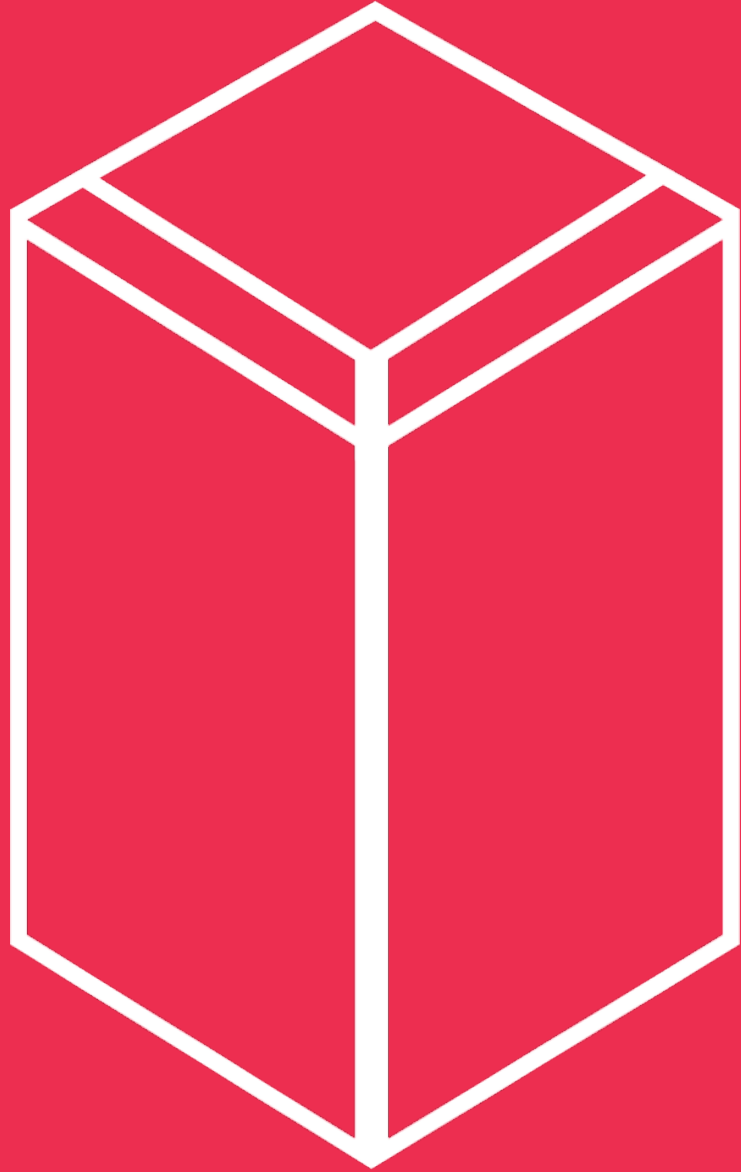
E-SWITCH®		Electrical Ratings	Life Expectancy	Poles / Functions	Contact Material	Operating Temp
	<b>TM1000</b>	20mA, 20V (AC or DC)	1,000,000 Cycles	SPST	Silver	-25°C to 70°C

## TRIGGER

E-SWITCH®		Customization
	<b>HY</b>	<i>Because each project has specific requirements, almost every trigger switch is custom. Contact us today to find out how we can create the ideal switch for your needs.</i>

Specifications subject to change without notice




# SWITCH CAPS



E-Switch offers a variety of caps (color, shape, mounting style) for supported switch types. Caps can add extra protection against harsh environments and use, while also potentially making desired adjustments to the sound and feel of the switch actuator.
















 E-SWITCH®		Dimensions	Colors	Supported Switches
	<b>1C</b>	L: 9.90mm W: 5.00mm H: 9.00mm	Black Light Grey Dark Grey White Blue Red	LC LL3301 PBH TL1105 TL2201 TL4201 TL3301 TL58
	<b>1D</b>	L: 5.00mm W: 5.00mm H: 9.00mm	Black Light Grey Dark Grey White Blue Red	LC LL3301 PBH TL1105 TL2201 TL4201 TL3301 TL58
	<b>1J</b>	L: 7.50mm W: 7.50mm H: 2.30mm	Black White Clear	TL1240
	<b>1R</b>	L: 5.0mm W: 5.0mm H: 9.00mm	Black White Red	LC LL3301 PBH TL1105 TL2201 TL4201 TL3301 TL58
	<b>1S</b>	L: 5.00mm W: 5.00mm H: 9.0mm	Black White Red	LC LL3301 PBH TL1105 TL3301 TL58
	<b>2J</b>	L: 7.50mm W: 7.50mm H: 2.30mm	Black Red	TL1240
	<b>320.08</b>	L: 11.94mm W: 11.94mm H: 5.97mm	Black Grey White Blue Red Yellow Green	320 LC TL1100 TL2201 TL4201
	<b>320.09</b>	L: 15.87mm W: 15.87mm H: 7.78mm	Black Grey White Blue Red Yellow Green	320 LC TL1100 TL2201 TL4201
	<b>320.094</b>	L: 11.85mm W: 11.85mm H: 7.55mm	Black Grey	320 LC TL1100
	<b>4J</b>	L: 12.00mm W: 12.00mm H: 5.60mm	Black Grey White Red	320 LC TL1100

 E-SWITCH®		Dimensions	Colors	Supported Switches
	<b>5J</b>	L: 11.00mm W: 5.00mm H: 4.95mm	Black Grey White Red Blue	320 LC TL1100
	<b>6J</b>	L: 8.00mm W: 8.00mm H: 5.00mm	Black Grey White Red	320 LC TL1100
	<b>700C1</b>	L: 7.70mm W: 7.70mm H: 7.60mm	Black Grey White Red Green	700
	<b>700C2</b>	L: 9.50mm W: 9.50mm H: 6.54mm	Black Grey White Red Green	700
	<b>700C3</b>	L: 11.7mm W: 11.7mm	Black Grey White Red Green	700
	<b>800A C1</b>	L: 5.00mm W: 5.00mm H: 4.03mm	Black Red White Green	800A 800B
	<b>800A C2</b>	L: 7.35mm W: 7.35mm H: 3.5mm	Black Red White Green	800A 800B
	<b>800C1</b>	L: 5.0mm W: 5.0mm H: 4.03mm	Black White Red Green	800 800B
	<b>800C2</b>	L: 7.45mm W: 7.45mm H: 3.50mm	Black White Red Green	800
	<b>800C3</b>	L: W: H:	Black	800

Specifications subject to change without notice

 E-SWITCH®		Dimensions	Colors	Supported Switches
	<b>800UR1</b>	L: 4mm W: 4mm H:	Black Red White	800U
	<b>8J</b>	L: 10.40mm W: 6.05mm H: 5.66mm	Black	320 LC TL1100
	<b>R1</b>	L: 8.80mm W: 8.80mm H: 10.50mm	Black	PB400
	<b>TA12</b>	L: W: 5.70mm H: 11.10mm	Black Grey White Red	LC
	<b>TAC</b>	L: 9.80mm W: 5.50mm H: 11.20mm	Black Grey White Red	LC
	<b>TAD</b>	L: 12.29mm W: 7.18mm H: 10.41mm	Black Grey White Red	LC
	<b>TAG</b>	L: 8.80mm W: 8.80mm H: 10.50mm	Black Grey White Red	LC
	<b>TAM</b>	L: 7.20mm W: 7.20mm H: 12.50mm	Black Grey White	TL1100C

 E-SWITCH®		Dimensions	Colors	Supported Switches
	<b>TL3240R1</b>	L: 10.2mm W: 10.2mm H: 3.5mm	Black Blue Green Ivory Red Yellow	TL3240
	<b>TL3240S1</b>	L: 10.2mm W: 10.2mm H: 3.5mm	Black Blue Green Ivory Red Yellow	TL3240
	<b>TL3265</b>	S - 5mm Diameter  T - 4.7mm Diameter	Clear	TL3265

Specifications subject to change without notice



# RECOMMENDED SOLDERING GUIDELINES & IP RATING

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.

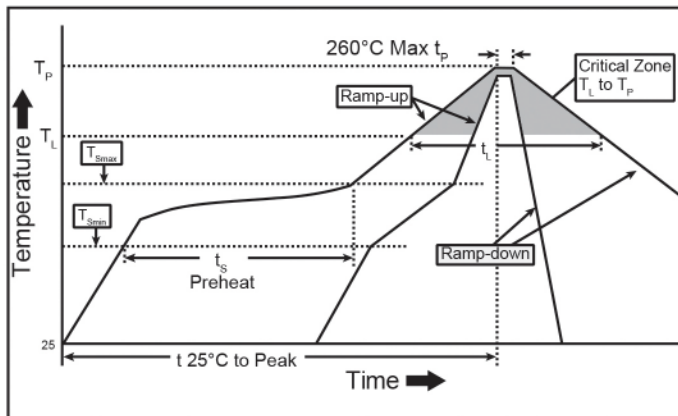
## SMT REFLOW (LEAD AND LEAD-FREE)

### "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

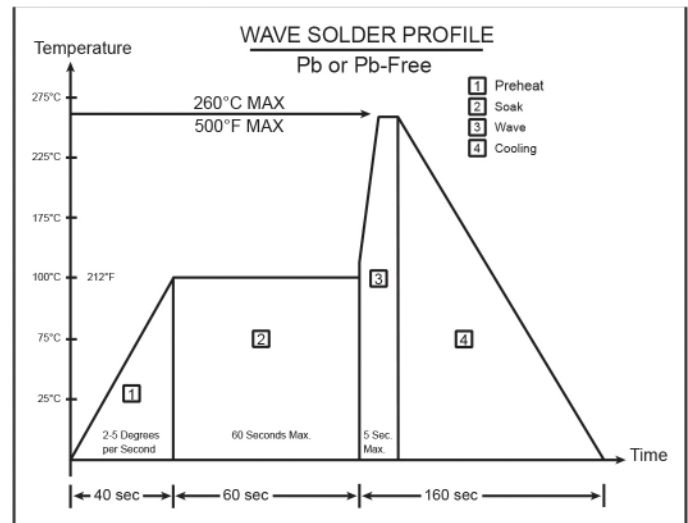


## WAVE SOLDER TIME AND TEMPERATURES

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®

## ABOUT US

E-Switch, headquartered in Minneapolis, Minnesota, has been delivering quality electromechanical switches to the telecom, high tech, medical, electronics, instrumentation, industrial, audio/visual, appliance and consumer markets since 1979. With international offices in Singapore and Hong Kong, E-Switch's global reach includes North America, Europe, Asia and Latin America.

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