



2023

Product Matrix



IT ALL STARTS
WITH A SWITCH...

www.e-switch.com

800-867-2717

@E-Switch, Inc



DO YOU NEED A SWITCH?

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PRODUCT MATRIX

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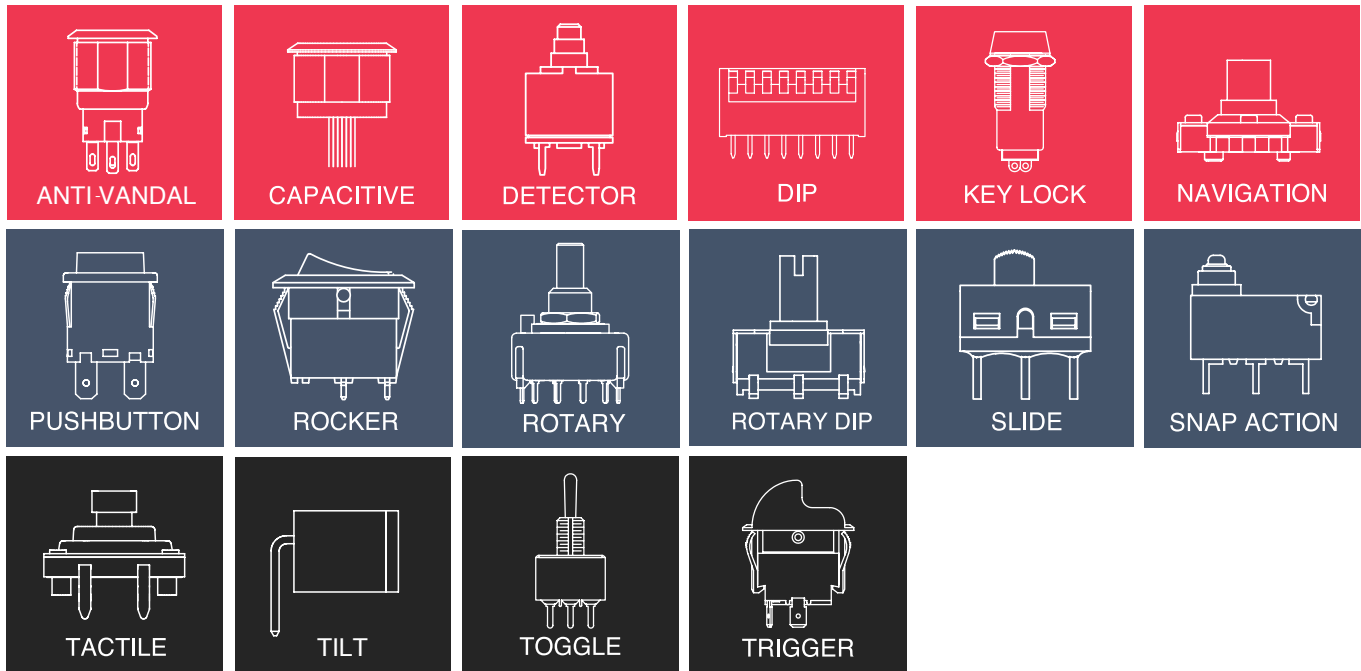
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DO YOU NEED A SWITCH?

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

1. WHAT TYPE OF SWITCH ARE YOU LOOKING FOR?



2. WHAT ELECTRICAL RATINGS ARE NEEDED?

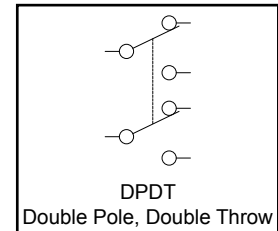
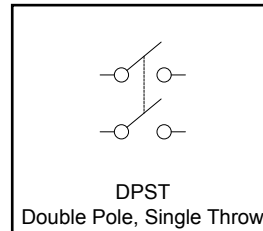
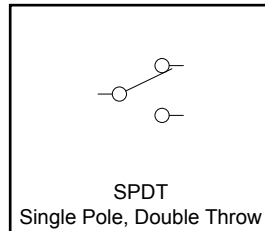
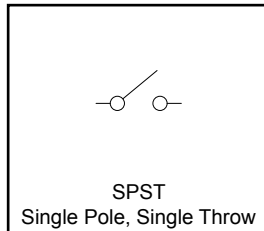
1. Is the product AC or DC?
 - Common Voltages for AC: 125VAC, 250VAC
 - Common Voltages for DC: 3, 6, 12, 24 and 48VDC
2. How many amperes does the switch need to handle?
 - Low Power is in the milliamps
 - Medium Power is from 2 amps to 5 amps
 - High Power is greater than 6 amps
3. If you're looking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



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.

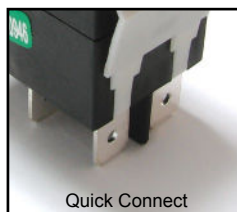
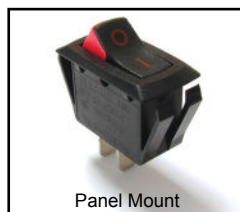
DPDT - Hair Dryer: 1 pole controls the heater, 1 pole controls the fan, 1 throw is for low speed, 1 throw is for high speed.

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

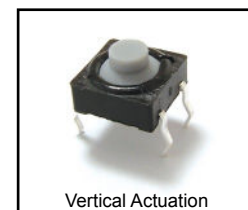
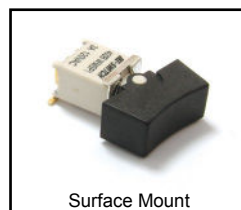
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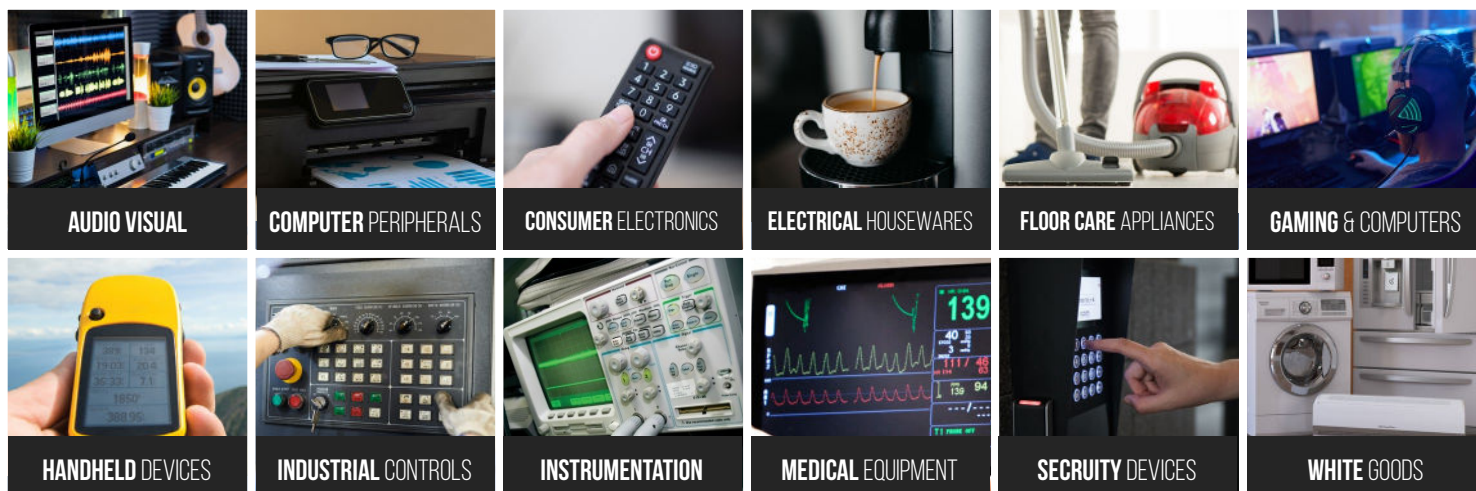
2. PCB Mount

- 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.

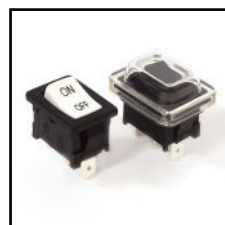
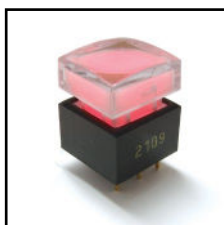


6. ARE THERE ANY ADDITIONAL REQUIREMENTS?

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:

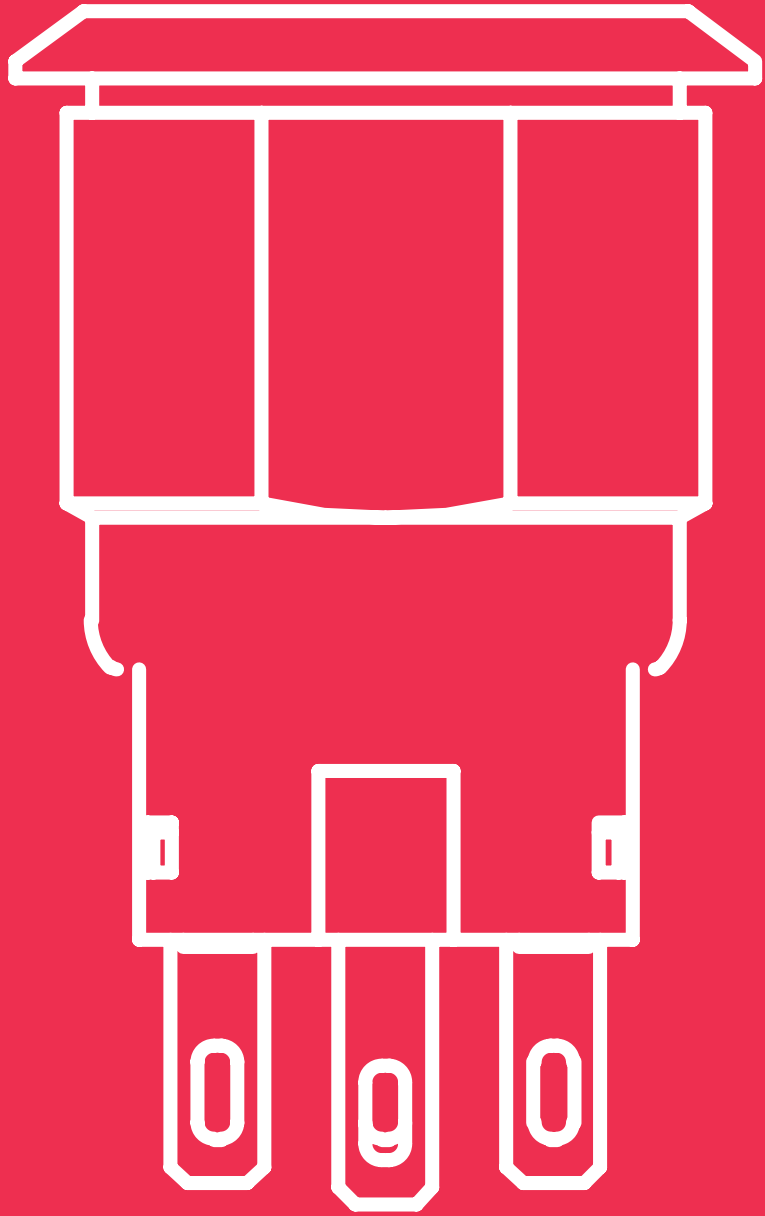
- Momentary or Latching
- Illumination
- Sealed Protection (IP Rating)
- Custom Cap Options
 - » Colors
 - » Graphics
 - » Styles
- Long Life Expectancy
- High Inrush or Horse Power Rating
- Extreme Temperature Rating
- Custom User Requirements



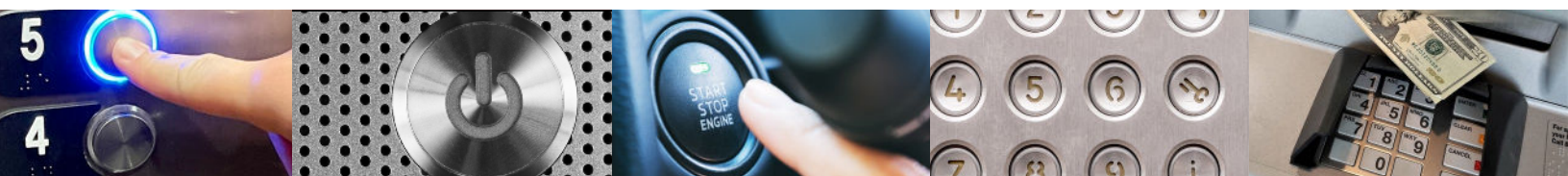
6. WHAT IS THE ESTIMATED ANNUAL USAGE (EAU)?

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.

ANTI-VANDAL SWITCHES



E-Switch offers a large selection of Anti-Vandal switches in the marketplace. Diameter sizes range from 6mm to 40mm, depending on the switch series. The Anti-Vandal series offer an esthetically pleasing switch due the quality housing materials and multi-illumination options in pattern style – ring, dot, power symbol, ring/power symbol combo, plus numerous choices in LED colors including bi-color and RGB. All PV switch series provide dust and moisture protection rating of IP65, excluding the PVA6 and PVL, which offer IP67 rating. A UL-certified series - ULV4, ULV 7, ULV 8 - are sealed to IP67 rating for dust and moisture resistance. Not only durable to resist damage of sharp or heavy objects, the long-life expectancy of the PV and ULV series, make these switches excellent choices for high security locations, harsh and rugged industrial-use environments. E-Switch's Anti-Vandal switches can be found in vending and parking kiosks, security control boxes, commercial appliances, industrial controls, medical equipment and transport vehicles, such as motor boats.






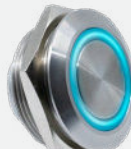


|  E-SWITCH® | | Electrical Ratings | Cutout / Panel Depth | Functions Available | Terminal Options | Actuator Options | Material Options | Illumination | IP Rating | Wire Options |
|--|------|---------------------------------|---|--|------------------|-------------------|--|-----------------------------|--------------|--------------|
|  | 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 |
|---|--------------------|---------------------|---|--|------------------------------------|-------------------|--|--|--------------|--------------|
|  | CS4 CS7 | 1A @ 5-24VDC | Diameter: 19mm 22mm | SPST | 150mm Wire Leads with Connector | Flat | Aluminum, Clear Anodized | RGB Ring or Power Symbol | × | ● |
|  | PMV6 | 2A @ 24VDC | Diameter: 22mm Max. Depth: 1-11mm | SPDT, DPDT | Solder Lug Wire Leads: 300mm | Flat | Plastic | None | IP65 | ● |
|  | PVA3 | 2A, 36VDC | Diameter: 16mm Max. Depth: 8mm | 1 Pole: On-On On-(On) | Solder Lug | Flat High | Black Anodized Nickel Plated Brass Stainless Steel | RGB Bi-Color Ring | IP65 | × |
|  | PVA6 | 2A, 36VDC | Diameter: 16mm Max. Depth: 6-8mm | 1 Pole: Off-(On) | Solder Lug Wire-Lead | Rounded Flat High | Black Anodized Clear Anodized Stainless Steel Brushed Stainless Steel | Ring Power Symbol | IP67 | ● |
|  | PVK4 | 2A, 24VDC | Diameter: 19mm Max. Depth: 10.0mm | SPDT ON-ON ON-(ON) DPDT ON-ON-ON (ON)-ON-(ON) | Sold Lug | Flat | Stainless Steel | None Selector Arrow | IP40 IP65 | × |
|  | PVL | × | Diameter: 6-19mm Max. Depth: 6mm to 10mm (depending on mounting diameter) | × | Solder Lug Wire leads: 150mm | Flat | Stainless Steel Black | Pilot Lamp | IP67 | ● |
|  | PVS7 | 2A @ 24VDC | Diameter: 22mm Max. Depth: 1-11mm | SPDT, DPDT | Solder Lug Wire Leads: 300mm | Flat | Stainless Steel | RGB Ring | IP65 | ● |
|  | PVT4 | 50mA, 24VDC | Diameter: 19mm Max. Depth: 6mm | 1 Pole: Off-(On) | Solder Lug Wire-Lead | Flat | Stainless Steel | Ring | IP65 | ● |
|  | PZ | 1A@5-24VDC | Diameter: 19mm - 22mm Max. Depth: 10mm | Momentary Pulse | 150mm Wire Lead 300mm Wire Lead | Concave Flat | Stainless Steel Black Anodized | RGB Ring | IP68 | ● |
|  | SAV4 | 15A @ 125/250VAC | Diameter: 19mm Max. Depth: 1-11mm | 1 Pole: 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 | × |
|  | SAV7 | 15A @ 125/250VAC | Diameter: 22mm Max. Depth: 1-11mm | 1 Pole: 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 | × |
|  | SAV8 | 15A @ 125/250VAC | Diameter: 25mm Max. Depth: 1-11 mm | 1 Pole: 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 | × |



|  E-SWITCH® | | Electrical Ratings | Cutout / Panel Depth | Functions Available | Terminal Options | Actuator Options | Material Options | Illumination | IP Rating | Wire Options |
|--|-----|--------------------|-------------------------------------|----------------------------------|---------------------------------|------------------|------------------|-------------------------------|-----------|--------------|
|  | SV4 | 2A 2 36VDC | Diameter: 19mm Max. Depth: 1-6mm | 1 Pole: SPST 1P OFF - (ON) | Solder Lug Wire Leads: 500mm | Flat | Stainless Steel | Ring, Ring/Power Symbol Combo | IP67 | ● |
|  | SV7 | 2A 2 36VDC | Diameter: 22mm Max. Depth: 1-6mm | Pole: SPST 1P OFF - (ON) | Solder Lug Wire Leads: 500mm | Flat | Stainless Steel | Ring, Ring/Power Symbol Combo | IP67 | ● |
|  | SV8 | 2A 2 36VDC | Diameter: 25mm Max. Depth: 1-6mm | 1 Pole: SPST 1P OFF - (ON) | Solder Lug Wire Leads: 500mm | Flat | Stainless Steel | Ring, Ring/Power Symbol Combo | IP67 | ● |

UL CERTIFIED

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





Get Wired! with E-Switch







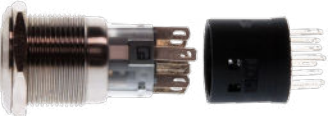



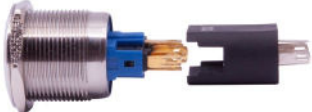





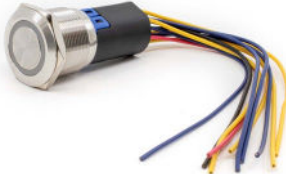






E-Switch offers several terminal options which will enhance your production line and your bottom line. Selecting the right terminal option for your product assembly process will provide time and costs savings from:

- 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 and equipment that are susceptible to harsh use, vandalism, theft, as well as withstand extreme temperatures and be resistant to dust and moisture. The wired options are color-coded for convenience and are compatible with a variety of connectors.

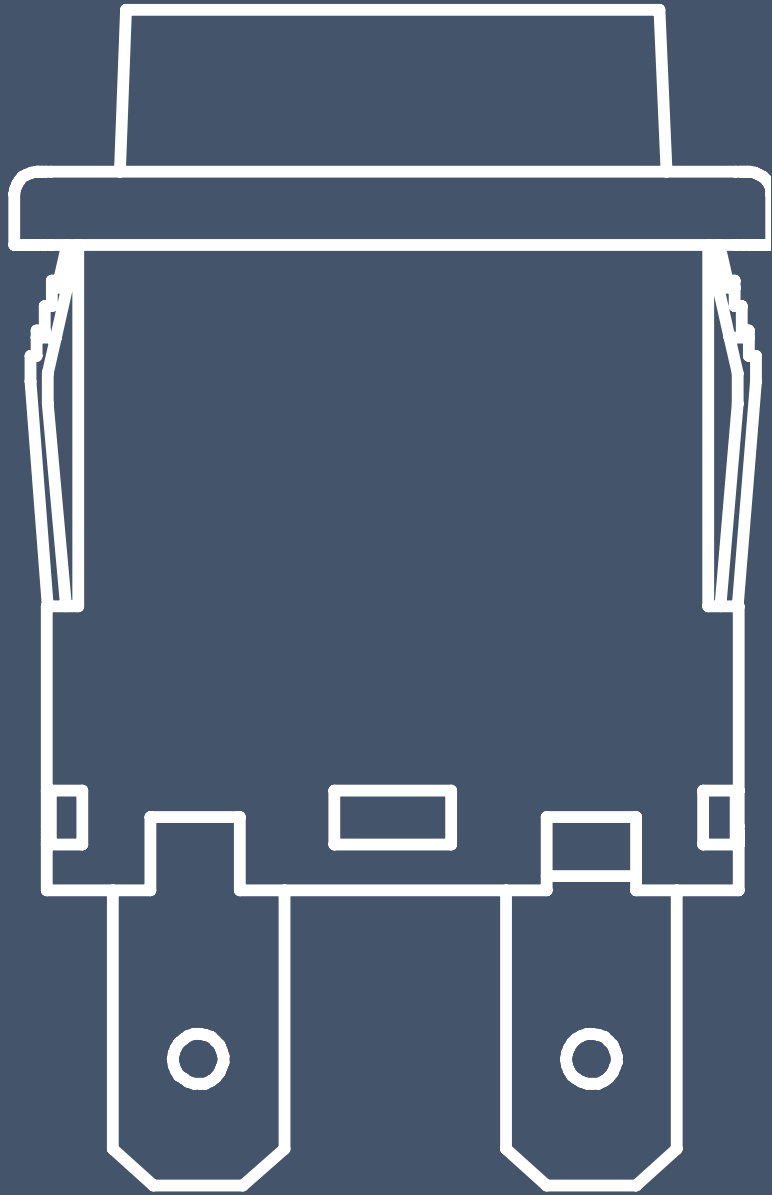
Head to e-switch.com/get-wired-with-e-switch to find out more about our wired options.

| Terminal Options: Anti-Vandal Series ULV | | | | |
|--|---|---|--|---|
| 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 |
| ULV4 |  |  |  |  |
| ULV7 |  |  |  |  |
| ULV8 |  |  |  |  |

| 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, by definition, open or close an electrical circuit by pressing on the actuator 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 the switch series. The shapes and styles of Pushbutton switches are endless from E-Switch. Shape options include square, round, oval, rectangle and 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 | Life Cycles: 50,000 Operating Force: 200gf Operating Temperature: -30°C to 85°C Contact Resistance: 20mΩ Max. Insulation Resistance: 1,000MΩ Min. | Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] Gold: 0.4VA, Max. 20V (AC or DC) | 1.0mm | SPDT: On-(On) DPDT: On-(On) | Flat Non-Threaded Flat Threaded Keyway Non-Threaded Keyway Threaded | Right Angle PCB Pin Solder Lug Vertical PCB Pin Vertical PCB Pin with Bracket Wire Wrap | × |
|  | 700A | Life Cycles: 50,000 Operating Force: 300gf Operating Temperature: -30°C to 85°C Contact Resistance: 20mΩ Max. Insulation Resistance: 1,000MΩ Min. | Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] Gold: 0.4VA, Max. 20V (AC or DC) | 1.0mm | SPDT: On-(On) DPDT: On-(On) | Non-Threaded Threaded | Right Angle PCB Pin Solder Lug Vertical PCB Pin Vertical PCB Pin with Bracket | IP67 |
|  | 700C | Life Cycles: 50,000 Operating Force: 400gf SP7, 600gf DP7 Operating Temperature: -30°C to 85°C Contact Resistance: 20mΩ Max. Insulation Resistance: 1,000MΩ Min. | Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] Gold: 0.4VA, Max. 20V (AC or DC) | 3.0mm | SPDT: On-On | Flat Non-Threaded Flat Threaded Keyway Non-Threaded Keyway Threaded | Right Angle PCB Pin Solder Lug Vertical PCB Pin Vertical PCB Pin with Bracket | × |
|  | 800 | Life Cycles: 50,000 Operating Force: 200gf Operating Temperature: -30°C to 85°C Contact Resistance: 10mΩ Max. Insulation Resistance: 1,000MΩ Min. | Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] Gold: 0.4VA, Max. 20V (AC or DC) | 0.9mm | SPST: Off-(On) SPDT: On-(On) | Flat Non-Threaded Flat Threaded Non-Threaded | Right Angle PCB Pin Solder Lug Right Angle PCB Pin with Bracket Vertical PCB Pin Vertical PCB Pin with Bracket | × |
|  | 800A | Life Cycles: 50,000 Operating Force: 200gf Operating Temperature: -30°C to 85°C Contact Resistance: 10mΩ Max. Insulation Resistance: 1,000MΩ Min. | Silver: 3A, 120VAC or 28VDC [cURus] 1A, 250VDC Gold: 0.4VA, Max. 20V (AC or DC) | 0.9mm | SPST: Off-(On) SPDT: On-(On) | Non-Threaded | Right Angle PCB Pin Vertical PCB Pin | IP67 |
|  | 800B | Life Cycles: 50,000 Operating Force: 200gf Operating Temperature: -30°C to 85°C Contact Resistance: 20mΩ Max. Insulation Resistance: 1,000MΩ Min. | Gold: 0.4VA, Max. 20V (AC or DC) | 0.9mm | SPST: Off-(On) SPDT: On-(On) | Non-Threaded | Surface Mount | × |
|  | 800C | Life Cycles: 6,000 Operating Force: 350gf Operating Temperature: -30°C to 85°C Contact Resistance: Silver: 50mΩ Max initial Gold: 20mΩ Max initial Insulation Resistance: 1,000MΩ Min. | Silver: 3A, 120VAC or 28VDC 1A, 250VAC Gold: 0.4VA, Max. 20V (AC or DC) | Electrical Make: 1.34mm Full travel: 1.88mm | SPDT: On-On | Right Angle PCB Pin Solder Lug Vertical PCB Pin | × | × |
|  | 800U | Life Cycles: 6,000 Operating Force: 250gf Operating Temperature: -30°C to 85°C Contact Resistance: 100mΩ Initial Insulation Resistance: 500MΩ Min. | Gold: 0.4VA, Max. 20V (AC or DC) | 1.0mm | SPDT: On-(On) DPDT: On-(On) | Non-Threaded | PC thru-hole Right Angle, PC thru-hole Vertical Right angle, PC thru-hole | IP67 |
|  | TL2233 | Life Cycles: 10,000 Cycles Operating Temp: -10°C to 60°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 10MΩ Min. at 100VDC | 100mA @ 30VDC | 1.90mm | DPDT | Non-Threaded | SMT Gull Wing | 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 |
|--|--------|--|-----------------------------------|----------------------|----------------------------|----------------------|--------------------|------------------------|--------------|--------------------|
|  | 5500 | 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 | × |
|  | FS5700 | 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 | × | × |
|  | KS1100 | 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 | × | × |
|  | LC | 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 | × | × |
|  | LP11 | 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 | × |
|  | LP15 | 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 | × |
|  | LP16 | 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 | × |
|  | LP2 | 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 | × |
|  | LP37 | 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 | × |







Specifications subject to change without notice



|  E-SWITCH® | | General Ratings | Electrical Ratings | Operating Force | Travel | Poles / Throws | Mounting Options | Terminal Options | Illumination | Ingress Protection |
|--|------------------|---|--------------------|--|--------------------------------------|----------------|------------------|---------------------|--------------|--------------------|
|  | LP4 | Life Cycles: 50,000 Operating Temperature: -20°C to 70°C Contact Resistance: 50mΩ Max. Insulation Resistance: 100MΩ Min. | 100mA, 30VDC | 250gf | Full: 1.5mm Latching: 1.0mm | DPDT | PCB | PCB Pin | Full | × |
|  | LP6 | Life Cycles: 200,000 Operating Temperature: -20°C to 70°C Contact Resistance: 50mΩ Max. Insulation Resistance: 100MΩ Min. | 12mA, 12VDC | 150gf SPST 200gf DPST | 2.2mm | SPST DPST | PCB | PCB Pin | RGB Full | × |
|  | PBH | Life Cycles: 6,000 Operating Temperature: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. | 100mA, 30VDC | 230gf DPDT 280gf 4PDT 380gf 6PDT | 5.5mm | DPST DPDT | PCB | Right Angle PCB Pin | × | × |
|  | PB300 | Life Cycles: 20,000 Operating Temperature: -40°C to 95°C Contact Resistance: 50mΩ Max. Initial Insulation Resistance: 100MΩ Min. | 30mA, 28VDC | ST: 490gf DT 1st position: 600gf 2nd position: 1150gf | 2.0mm | SPST SPDT | SPST SPDT | PCB | × | × |
|  | PB400 | Life Cycles: 6,000 Cycles Operating Temperature: -5°C to 60°C Contact Resistance: 30mΩ Max. Insulation Resistance: 500MΩ Min.v | 3A, 30VDC | 3N-7N | 1.8-3.2mm | DPST | PCB | PCB Pin | × | × |
|  | TL2201 TL4201 | Life Cycles: 10,000 Operating Temperature: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. | 100mA, 30VDC | 220gf DPDT 300gf 4PDT | 2.5mm | DPDT 4PDT | PCB | PCB Pin | × | × |
|  | TL2202 | Life Cycles: 10,000 Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. | 100mA 30VDC | 220gf | 2.5mm | DPDT | PCB | PCB Pin | × | × |
|  | TL2203 | Life Cycles: 10,000 Operating Temperature: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. | 100mA, 30VDC | 180gf | 1.9mm | DPDT | PCB | PCB Pin | × | × |

Specifications subject to change without notice



|  E-SWITCH® | | General Ratings | Electrical Ratings | Operating Force | Travel | Poles / Throws | Mounting Options | Terminal Options | Illumination | Ingress Protection |
|--|--------|---|---|--|----------------------------------|----------------|--------------------|---------------------------|--------------|--------------------|
|  | TL2205 | Life Cycles: 10,000 Operating Temperature: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. | 100mA, 30VDC | 250gf | Full: 2.5mm Lock: 1.5mm | DPDT | PCB | PCB Pin | Dot | ✗ |
|  | TL2230 | Life Cycles: 10,000 Operating Temperature: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. | 100mA, 30VDC | 140gf 230gf | 1.8mm | DPDT | PCB | PCB Pin | ✗ | ✗ |
|  | TL2285 | Life Cycles: 10,000 Operating Temperature: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. | 100mA, 30VDC | 180gf | 2.5mm | DPDT | PCB | PCB Pin | ✗ | ✗ |
|  | ULP | Life Cycles: 200,000 Cycles Operating Temperature: -40°C to 85°C Contact Resistance: 50mΩ Silver, 100mΩ Gold Insulation Resistance: 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 | ✗ |
|  | WBL | Life Cycles: 10,000 Operating Temperature: -20°C to 70°C Contact Resistance: 50mΩ Max. Insulation Resistance: 100MΩ Min. | 300mA, 30VDC | 200gf | Full: 3.3mm Lock: 2.5mm | DPDT 4PDT | PCB | Right Angle PCB Pin | Full | ✗ |








| E-SWITCH® | | General Ratings | Electrical Ratings | Operating Force | Travel | Poles / Throws / Functions | Panel Cutout Dimensions | Terminal Options | Illumination | Ingress Protection |
|--|-------|---|---|---|--------|---|---|--------------------------------|-------------------------|----------------------|
|  | 700 | Life Cycles: 50,000 Operating Force: 200gf Operating Temperature: -30°C to 85°C Contact Resistance: 20mΩ Max. Insulation Resistance: 1,000MΩ Min. | Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] Gold: 0.4VA, Max. 20V (AC or DC) | 200gf | 1.0mm | SPDT: On-(On) DPDT: On-(On) | 12.7mm x 15.7mm | Quick Connect Solder Lug | × | × |
|  | D16 | Electrical / Mechanical Life: 50,000 / 100,000 Cycles Operating Temperature: -20°C to 55°C Contact Resistance: 100mΩ Max. Insulation Resistance: 1,000MΩ Min. | 8A, 125VAC [cURus, CSA] 6A, 24VDC [cURus, CSA] | 300gf | 3.0mm | SPDT, DPDT, 3PDT, 4PDT On-On On-(On) | 16mm Diameter | Solder Lug | Full | × |
|  | KJD17 | Electrical Life 10,000 Cycles Operating Temperature: -25°C to 55°C Contact Resistance: 50mΩ Max. Insulation Resistance: 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 |
|  | L16 | Operating Temperature: -25°C to 55°C | N/A | N/A | N/A | Signal Light | 16mm Diameter | Solder Lug | Full Signal Light | × |
|  | LA | Electrical / Mechanical Life: 50,000 / 100,000 Cycles Operating Temperature: -20°C to 55°C Contact Resistance: 100mΩ Max. Insulation Resistance: 1,000MΩ Min. | 8A, 125VAC [cURus] 5A, 250VAC [cURus] 2A, 250VDC [cURus] 6A, 24VDC [cURus] | 300gf | 3.0mm | SPDT, DPDT, 3PDT, 4PDT On-On On-(On) | 22mm Diameter 25.5mm Diameter 30.5mm Diameter | Socket Solder Tab | Full Signal Light | IP65 |
|  | LB22 | Electrical / Mechanical Life: 500,000 Cycles 1,000,000 Cycles Operating Temperature: -20°C to 55°C Contact Resistance: 50mΩ Max. @1A 12VDC Insulation Resistance: 1,000 MΩ Min. @ 500VDC | 3A @ 250VAC | SPDT: 2.5±1N ; DPDT: 3.5±1N | 3.20mm | SPDT , DPDT ON-ON ON-(ON) | 22mm Diameter | Solder Lug | Full Power Symbol | IP65 |
|  | LP1 | Electrical / Mechanical Life: 50,000 / 50,000 Cycles Operating Temperature: -40°C to 85°C Contact Resistance: 50mΩ Max. Insulation Resistance: 100MΩ Min. | 100mA, 30VDC | 250gf | 1.8mm | SPST Off-(On) | 8mm Diameter | Solder Lug | Full | × |
|  | P16 | Electrical / Mechanical Life: 50,000 / 100,000 Cycles Operating Temperature: -20°C to 55°C Contact Resistance: 100mΩ Max. Insulation Resistance: 1,000MΩ Min. | 8A, 125VAC cURus 6A, 24VDC | 300gf | 3.0mm | SPDT, DPDT, 3PDT, 4PDT 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 | Electrical / Mechanical Life: 10,000 / 50,000 Cycles Operating Temperature: -20°C to 65°C -20°C to 125°C Contact Resistance: 20mΩ Max. Insulation Resistance: 100MΩ Min. | 16A, 125VAC [cURus] 16A, 250VAC [cURus] 16(4)A, 250VAC [ENEC] 16(8)A, 250VAC [ENEC] | 500gf | 4.5mm | SPST Off-On Off-(On) | 13mm x 19mm PCB | PCB Pin Solder Tab | Full | IP54 |
|  | PA5 | Electrical / Mechanical Life: 10,000 / 50,000 Cycles Operating Temperature: -20°C to 125°C Contact Resistance: 20mΩ Max. Insulation Resistance: 100MΩ Min. | 16A, 125VAC [cURus] 16A, 250VAC [cURus] 16(4)A, 250VAC [ENEC] 16(8)A, 250VAC [ENEC] | 500gf | 5.5mm | SPST Off-On Off-(On) DPST Off-On Off-(On) | Capture Mount PCB | PCB Pin Solder Tab | × | × |
|  | PB1973 | Electrical / Mechanical Life: 10,000 / 30,000 Cycles Operating Temperature: -10°C to 55°C Contact Resistance: 20mΩ Max. Insulation Resistance: 1,000MΩ Min. | 15A, 125VAC [cURus] 15A, 250VAC [cURus] | 300gf to 800gf | 2.8mm | SPST Off-On Off-(On) DPST Off-On Off-(On) | 13mm x 19.2mm | Tab | Full | × |
|  | PB2 | Electrical / Mechanical Life: 6,000 / 50,000 Cycles Operating Temperature: -20°C to 85°C Contact Resistance: 50mΩ Max. Insulation Resistance: 5MΩ Min. | 20A, 125VAC [UR] 12A, 250VAC [UR] | 600gf | 3.1mm | SPST Off-On On-On DPST Off-On On-On | 22mm x 30mm | Tab | Dot | IP54 |
|  | PP1 | Electrical / Mechanical Life: 6,000 / 50,000 Cycles Operating Temperature: 0°C to 85°C Contact Resistance: 50mΩ Max. Insulation Resistance: 2MΩ Min. | 16A, 125VAC [cURus] 12A, 250VAC [cURus] 1HP, 125/250VAC [cURus] | 300gf to 500gf | Push Only Push: 9.4mm Push-Pull Push: 5.0mm Pull: 5.7mm | SPDT Onz-Onz-(Onz) Push-Pull On-(On) | 13.3mm x 28.2mm | Tab | × | × |
|  | PP2 | Electrical / Mechanical Life: 6,000 / 50,000 Cycles Operating Temperature: 0°C to 85°C Contact Resistance: 50mΩ Max. Insulation Resistance: 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 | Push Only Push: 9.4mm Push-Pull Push: 5.0mm Pull: 5.7mm | DPDT Onz-Onz-(Onz) Push-Pull On-(On) | 13.5mm x 36mm | Tab | × | × |
|  | RP3508 | Electrical / Mechanical Life: 6,000 / 20,000 Cycles Operating Temperature: 0°C to 65°C Contact Resistance: 100mΩ Max. Insulation Resistance: 1,000MΩ Min. | 3A, 125VAC [cURus] 1.5A, 250VAC [cURus] | 500gf | 3.5mm | SPST Off-On Off-(On) | 16mm Diameter | Solder Lug | Full | × |
|  | RP8100 | Electrical / Mechanical Life: 500,000 Cycles Operating Temperature: -30°C to 85°C Contact Resistance: 50mΩ Max. Insulation Resistance: 1,000MΩ Min. | 125mA, 125 VAC 100mA, 50 VDC | 350gf | 1.5mm | SPST Off-(On) | 13.6mm Diameter | Solder Lug Wire Leads | Dot | IP67 |

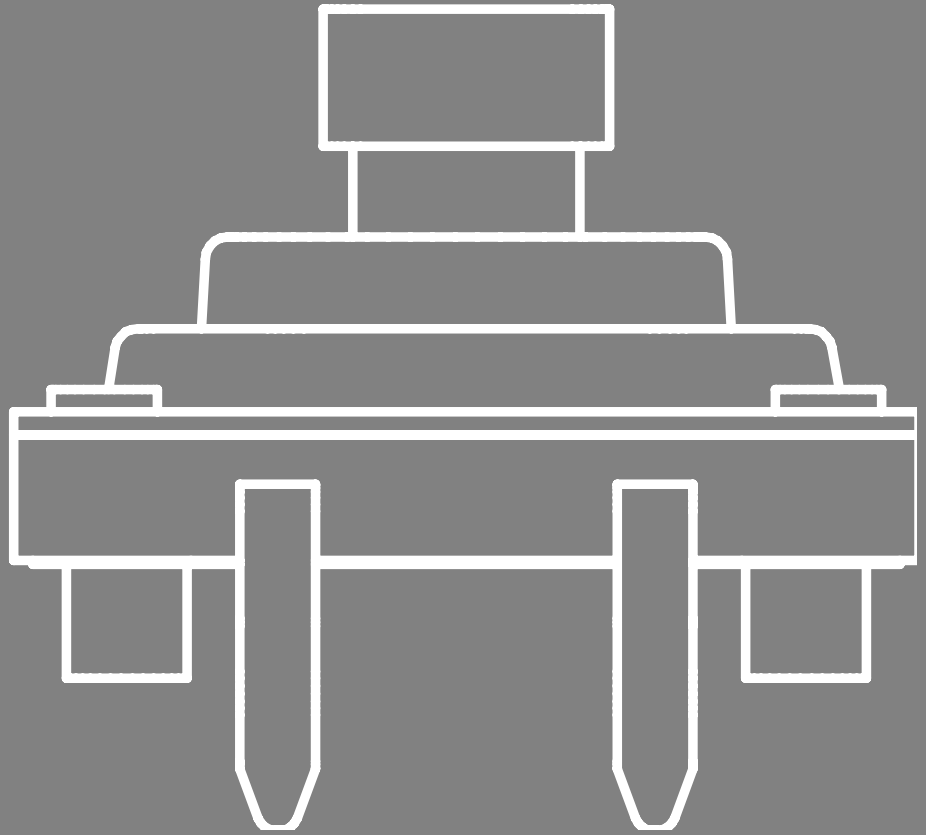
Specifications subject to change without notice



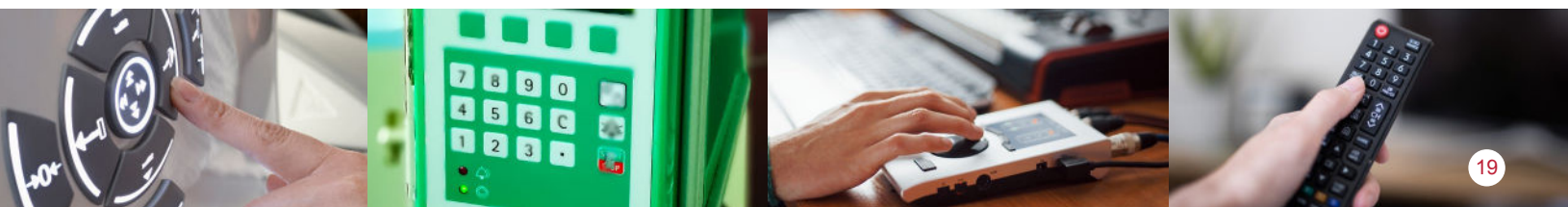
| E-SWITCH® | | General Ratings | Electrical Ratings | Operating Force | Travel | Poles / Throws / Functions | Panel Cutout Dimensions | Terminal Options | Illumination | Ingress Protection |
|--|--------|---|-------------------------------|-----------------|---------------|----------------------------|-------------------------|------------------|--------------|--------------------|
|  | RP8200 | Electrical / Mechanical Life: 200,000 Cycles Operating Temperature: -30°C to 85°C Contact Resistance: 100mΩ Max. Insulation Resistance: 1,000MΩ Min. | 100mA, 24VDC | 560gf | 2.5mm | SPST Off-On | 13.6mm Diameter | Solder Lug | Dot | IP67 |
|  | RP8300 | Electrical / Mechanical Life: 500,000 Cycles Operating Temperature: -30°C to 85°C Contact Resistance: 50mΩ Max. Insulation Resistance: 1,000MΩ Min. | 200mA, 50VDC | 350gf | 1.5mm | SPST Off-(On) | 13.6mm Diameter | Solder Lug | Dot | IP67 |
|  | RP8400 | Electrical / Mechanical Life: 500,000 Cycles Operating Temperature: -30°C to 85°C Contact Resistance: 50mΩ Max. Insulation Resistance: 1,000MΩ Min. | 200mA, 50VDC | 350gf | 1.5mm | SPST Off-(On) | 13.6mm Diameter | Solder Lug | Dot | IP67 |
|  | RP8500 | Electrical / Mechanical Life: 500,000 Cycles Operating Temperature: -30°C to 85°C Contact Resistance: 50mΩ Max. Insulation Resistance: 1,000MΩ Min. | 125mA, 125VAC 100mA, 50VDC | 350gf | SPST Off-(On) | Solder Lug | 13.6mm Diameter | Solder Lug | Dot | IP67 |
|  | RP8600 | Electrical / Mechanical Life: 50,000 / 100,000 Cycles Operating Temperature: -30°C to 85°C Contact Resistance: 200mΩ Initial @2-4VDC, 100mA Insulation Resistance: 100MΩ @500VDC | 0.4VA Max @20V Max (AC or DC) | 630gf | 0.65mm | SPST Off-(On) | 16.0mm Diameter | Solder Lug | × | IP67 |

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, some offer 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.




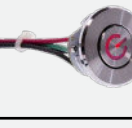
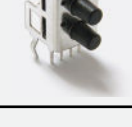



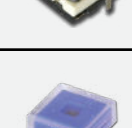
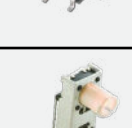





|  E-SWITCH® | | General Ratings | Electrical Ratings | Travel | Dimensions | Operating Force (gf) | Mounting Options | Ingress Protection |
|---|--------|---|--------------------|------------------------------------|---|--|--|--------------------|
|  | 320 | Multiple Actuator Styles Life Cycles: 1,000,000 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 12.4mm x 22.0mm | 135 | PCB Pin | × |
|  | TL1014 | 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) | × |
|  | TL1015 | 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) | × |
|  | TL1016 | 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) | × |
|  | TL1100 | 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 | × |
|  | TL1105 | 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 | × |
|  | RT1105 | 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 | × |
|  | TL1107 | 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 | × |
|  | 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 | × |

Specifications subject to change without notice

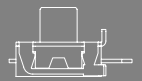


| E-SWITCH® | | General Ratings | Electrical Ratings | Travel | Dimensions | Operating Force (gf) | Mounting Options | Ingress Protection |
|---|--------|--|--------------------|--------|-----------------|-------------------------|---------------------|--------------------|
|  | TL1250 | Life Cycles: 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 | 0.15mm | 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) | × |
|  | TL3240 | 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) | × |
|  | TL3253 | 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 | × |

Specifications subject to change without notice



|  E-SWITCH® | | General Ratings | Electrical Ratings | Travel | Dimensions | Operating Force (gf) | Mounting Options | Ingress Protection |
|---|--------|--|--------------------|-----------------|---------------|----------------------|-----------------------------|--------------------|
|  | TL3265 | 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 | × |
|  | TL3275 | 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 ± 0.10mm | 6.4mm x 3.4mm | 160gf ± 50gf | SMT | × |
|  | TL3300 | 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) | × |
|  | TL3301 | Caps Available / Multiple Actuator Styles Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. | 50mA, 12VDC | 0.25mm | 6.0mm x 6.0mm | 100, 160, 260 | SMT (Gull Wing) | × |
|  | TL3302 | Multiple Actuator Styles Life Cycles: 20,000 - 50,000 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 | SMT (Gull Wing) | × |
|  | TL3303 | Multiple Actuator Styles Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min. | 50mA, 12VDC | 0.25mm | 6.0mm x 6.0mm | 100, 160, 260 | SMT (Gull Wing) | × |
|  | TL3305 | 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) | × |
|  | TL3312 | 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) | × |
|  | TL3313 | 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) | × |
|  | TL3315 | 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) | × |
|  | TL3330 | 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) | × |



| E-SWITCH® | | General Ratings | Electrical Ratings | Travel | Dimensions | Operating Force (gf) | Mounting Options | Ingress Protection |
|--|--------|---|--------------------|---------------|---------------|------------------------------|------------------------------|--------------------|
|  | TL3336 | 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 | 7 x 7.10 | 160gf ± 50gf | Right-Angle SMT | IP67 |
|  | TL3340 | 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) | × |
|  | TL3342 | 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) | × |
|  | TL3360 | 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) | × |
|  | TL3365 | 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) | × |
|  | TL3701 | 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) | × |
|  | TL3780 | 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) | × |
|  | 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 | × |



|  E-SWITCH® | | General Ratings | Electrical Ratings | Travel | Dimensions | Operating Force (gf) | Mounting Options | Ingress Protection |
|---|--------|--|--------------------|---|----------------|-------------------------|----------------------------------|--------------------|
|  | 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 | × |
|  | TL6110 | 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 |
|  | TL6120 | 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 |
|  | TL6150 | 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 |
|  | TL6155 | 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 |






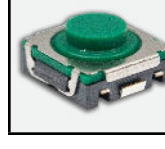
Specifications subject to change without notice



| E-SWITCH® | | General Ratings | Electrical Ratings | Travel | Dimensions | Operating Force (gf) | Mounting Options | Ingress Protection |
|--|--------|---|--------------------|-----------------|-------------------------|------------------------------|------------------------------------|--------------------|
|   | TL6170 | 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 |
|  | TL6190 | 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 |
|  | TL6200 | Life Cycles: 10,000,000 Operating Temp: -40°C to 85°C Contact Resistance: 30mΩ Max. Insulation Resistance: 10MΩ Min. | 50mA, 24VDC | 1.0mm | 6.9mm x 6.2mm | 300 | SMT (Gull Wing) PCB Pin | IP67 |
|  | TL6210 | 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 |
|  | TL6215 | 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 |
|  | TL6275 | 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 |
|  | TL6300 | 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 |
|  | TL6330 | 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 |
|  | TL6340 | 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 |

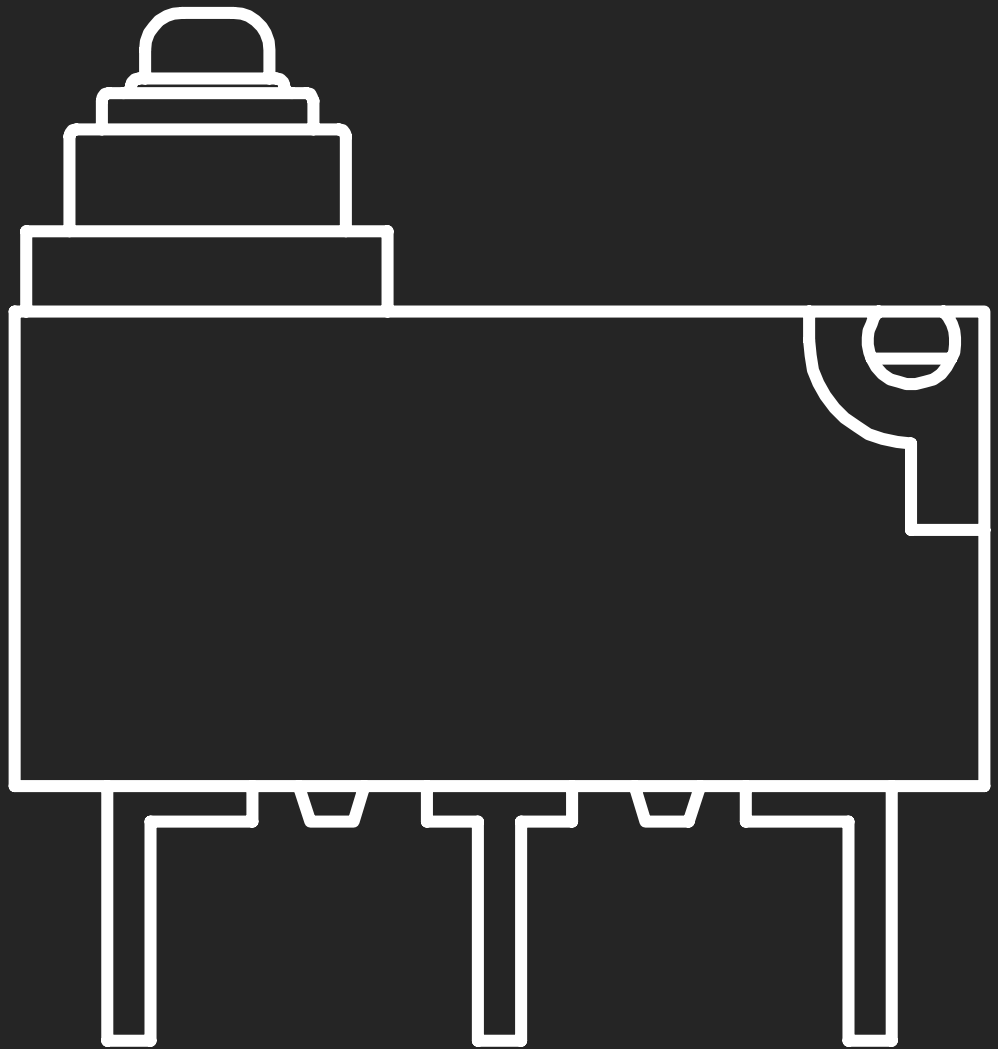
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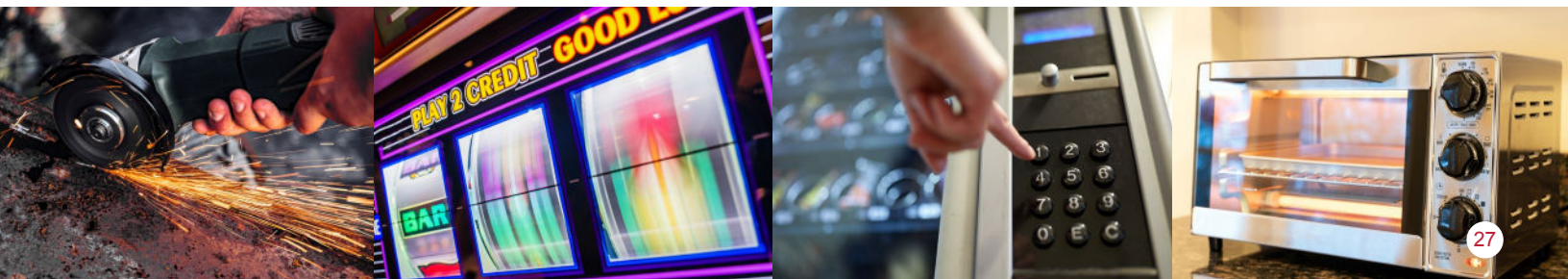
| E-SWITCH® | | General Ratings | Electrical Ratings | Travel | Dimensions | Operating Force (gf) | Mounting Options | Ingress Protection |
|--|--------|--|--------------------|-----------------|------------------------|--|------------------------|--------------------|
|  | TL6400 | Life Cycles: 30 - 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 |
|  | TL6700 | 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 |
|  | TL6800 | 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 |
|  | TL9100 | 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) | × |
|  | TL9210 | 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) | × |
|  | TL9320 | 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 applied to the actuator 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.

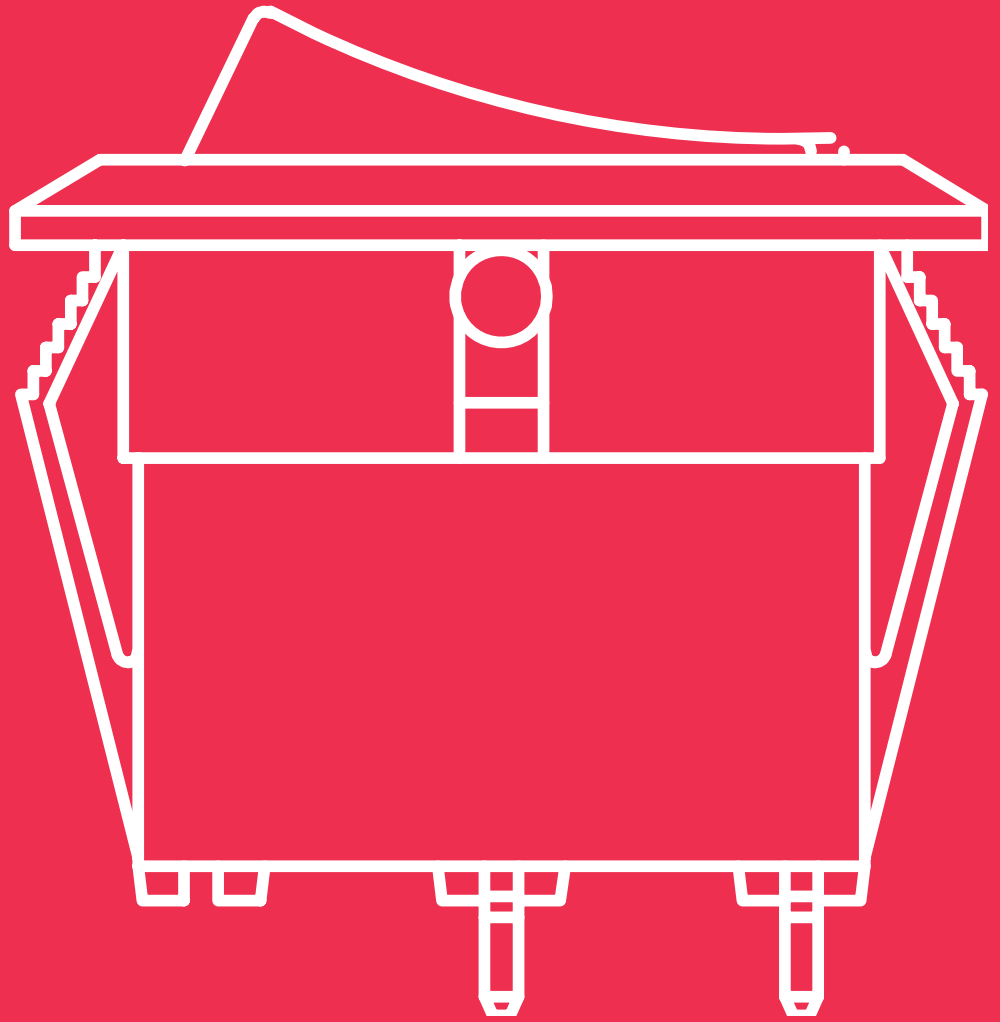




| E-SWITCH® | | General Ratings | Electrical Ratings | Functions | Operating Force | Actuator Options | Terminal Options | Body Options |
|---|-----|--|---|--------------------------------|--------------------------------------|--|--|---|
|  | LS | Electrical Life: 50,000 Cycles Mechanical Life: 1,000,000 Cycles Operating Temp: -25°C to 85°C Contact Resistance: 100mΩ Max. | Silver cURus, 15A, 125/250VAC Gold: 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 | Width: 27.9mm Height: 15.9mm Depth: 10.3mm |
|  | MS | Electrical Life: 50,000 Cycles Mechanical Life: 1,000,000 Cycles Operating Temp: -25°C to 85°C Contact Resistance: 100mΩ Max. | Silver cURus: 5A, 125/250VAC Gold: 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 | Width: 19.8mm Height: 10.6mm Depth: 6.4mm |
|  | SS | Electrical Life: 10,000 Cycles Mechanical Life: 1,000,000 Cycles Operating Temp: -25°C to 75°C Contact Resistance: 100mΩ Max. | Silver cURus: 3A, 125VAC 1.5A, 250VAC 0.1A, 5VDC Gold: 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 | Width: 12.7mm Height: 6.5mm Depth: 5.75mm |
|  | TS | Electrical Life: 50,000 Cycles Mechanical Life: 100,000 Cycles Operating Temp: -25°C to 85°C Contact Resistance: 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 | Width: 8.2mm Height: 6.6mm Depth: 2.7mm |
|  | TS2 | Electrical Life: 3,000,000 Cycles Mechanical Life: 3,000,000 Cycles Operating Temp: -25°C to 85°C Contact Resistance: 300mΩ Max. | 100mA, 125VAC 100mA, 48VDC | SPST | 70 | Pin Plunger | SMT Terminals | Width: 8.6mm Height: 3.0mm Depth: 4.8mm |
|  | WS | Electrical Life: 10,000 Cycles Mechanical Life: 1,000,000 Cycles Operating Temp: -25°C to 85°C Contact Resistance: 100mΩ Max. Ingress Protection: 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 | Width: 13.3mm Height: 7.0mm Depth: 5.3mm |
|  | WS1 | Electrical Life: 100,000 Cycles MIN. Mechanical Life: 500,000 Cycles MIN. Operating Temp: -40°C to 85°C Contact Resistance: 50mΩ Max. Ingress Protection: 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 | Width: 14.7mm Height: 6.3mm Depth: 5.4mm |
|  | WS2 | Electrical Life: 100,000 Cycles MIN. Mechanical Life: 500,000 Cycles MIN. Operating Temp: -25°C to 85°C Contact Resistance: 50mΩ Max. Ingress Protection: IP67 | 2A @ 30VDC 2A @ 250VAC | SPDT | 130 gf MAX. | Pin Plunger | Solder Lug Quick Connect PCB Pin | Width: 19.8mm Height: 10mm Depth: 6.3mm |

Specifications subject to change without notice


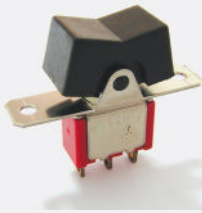




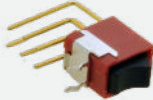
ROCKER SWITCHES



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 a rocking horse. E-Switch offers a range of Rocker switches, from miniature size with low current ratings to industrial use switches with high power ratings and with 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 |
|---|------|--|---|------------------|---|--|--------------------|
|  | 300 | Silver: 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus] Gold: 0.4VA, 20V (AC or DC) | 1, 2, 3, or 4 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) 2 Pole: On-On-On On-(On) (On)-On-(On) 4 Pole: On-On-On | Paddle Rocker | Panel Mount: Quick Connect Vertical Solder Lug PC Mount: Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical with Bracket | PCB Pin Quick Connect Solder Lug | × |
|  | 300A | Silver: 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus] Gold: 0.4VA, 20V (AC or DC) | 1 or 2 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) | Paddle Rocker | Panel Mount: Quick Connect Vertical Solder Lug PC Mount: Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical with Bracket | PCB Pin Quick Connect Solder Lug | IP67 |
|  | 400 | Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] Gold: 0.4VA, 20V (AC or DC) | 1 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) Off-On 2 Pole: On-On On-(On) On-Off-On | Rocker | Panel Mount: Vertical Solder Lug PC Mount: Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical Right Angle with Bracket Vertical with Bracket | PCB Pin Solder Lug | × |
|  | 400A | Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] Gold: 0.4VA, 20V (AC or DC) | 1 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) Off-On 2 Pole: On-On On-(On) On-Off-On | Rocker | Panel Mount: Vertical Solder Lug PC Mount: Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Right Angle Vertical Right Angle with Bracket Vertical with Bracket | PCB Pin Solder Lug | IP67 |
|  | 400B | Silver: 3A, 120VAC [cURus] 1A, 250VAC [cURus] | 1 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) | Rocker | PC Mount: Surface Mount | SMT | IP67 |
|  | 400U | Gold: 0.4VA@ 24V AC or DC | 2 Pole: On-None-On | Rocker Lever | PC Mount: Vertical Right Angle, PC thru-hole Right Angle, PC thru-hole PC thru-hole | PCB Pin | × |

Specifications subject to change without notice



|  E-SWITCH® | | Electrical Ratings | Poles / Functions | Panel Cutout | Actuator Options | Illumination Options | Ingress Protection |
|---|--------------|--------------------------------|--|-----------------|------------------------------|--------------------------|--------------------|
|  | R1966 | 15A, 125VAC T65 [cURus] | 1 Pole: 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 | ✗ |
|  | R1973 | 9A, 125VAC T65 [cURus] | 1 Pole: On-Off 2 Pole: On-Off | 13mm x 19.2mm | Curved | Full | ✗ |
|  | R4 | 20A, 125VAC T65 [cURus] | 1 Pole: On-Off On-Off-On Off-(On) On-(Off) On-On On-(On) (On)-Off-(On) | 11mm x 30mm | Curved | Full Dott | ✗ |
|  | R5 | 20A, 125VAC T65 [cURus] | 2 Pole: On-Off On-Off-On Off-(On) On-(Off) On-On On-(On) (On)-Off-(On) On-Off-(On) | 22mm x 30mm | Curved | Full | ✗ |
|  | R6 | 10A, 125VAC T65 [cURus] | 1 Pole: On-Off (On)-Off | 6.65mm x 19.2mm | Curved | ✗ | ✗ |
|  | R7 | 16(8)A, 125/250VAC [cURus] | 1 or 2 Pole: 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 |
|  | RA1 | 16A, 125VAC 1/3HP T105 [cURus] | 1 Pole: 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 |
|  | RA4 | 16A, 125VAC 1/3HP T105 [cURus] | 1 or 2 Pole: Off-On Off-(On) On-(Off) On-On On-Off-On On-(On) | 22mm x 19.2mm | Curved Paddle | Full | IP54 with cap |

Specifications subject to change without notice



|  E-SWITCH® | | Electrical Ratings | Poles / Functions | Panel Cutout | Actuator Options | Illumination Options | Ingress Protection |
|---|-------------|---|--|--|----------------------|-----------------------|--------------------|
|  | RA8 | 16A, 125VAC 1/3HP T105 [cURus] | 1 Pole: Off-On 2 Pole: Off-On | 13mm x 19mm | Bi-color Curved | Full Signal Light | IP54 with cap |
|  | RB1 | 20A, 125VAC 1/4HP T65 [cURus] | 1 Pole: Off-On On-(Off) On-(On) On-Off-(On) Off-(On) On-On On-Off-On (On)-Off-(On) | 11mm x 30mm | Curved Flat | Dot Full Signal Light | IP54 with cap |
|  | RB2 | 20A, 125VAC 1/4HP T65 [cURus] | 1 or 2 Pole: Off-On On-On On-Off-On On-Off-(On) (On)-Off-(On) 2 Pole Only: Off-(On) On-(On) | 22mm x 30mm | Curved Flat | Dot Full Signal Light | IP54 with cap |
|  | RBW2 | 16(16)A, 125VAC 5E4 T85 [cURus] | 2 Pole: Off-On *On-On | 22mm x 30mm | Curved | Full | IP66 |
|  | RD1 | 16A, 125VAC 1/3HP T105 [cURus] | 1 Pole: Off-On | 6.8mm x 19.2mm | Curved | ✗ | ✗ |
|  | RSC | 20A, 125VAC 1/4HP T105 [cURus] | 1 Pole: Off-On On-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 |
|  | RVW | 20A, 125VAC [cURus UL508] Momentary Switches: 1.5HP, 220-240VAC [cURus UL508] | 20A, 125VAC [cURus UL508] Momentary Switches: 1.5HP, 220-240VAC [cURus UL508] | 21mm x 36.8mm | Curved | ✗ | IP54 |
|  | WB2 | Maintained Switches: 20A, 125/250VAC T65/T85 [cURus] Momentary Switches: 20A, 125/250VAC T65/T85 [cURus] | Maintained Switches: 20A, 125/250VAC T65/T85 [cURus] Momentary Switches: 20A, 125/250VAC T65/T85 [cURus] | 22mm x 30mm | Curved | ✗ | IP55 |

Specifications subject to change without notice



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

Specifications subject to change without notice



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

Specifications subject to change without notice

TOGGLE SWITCHES







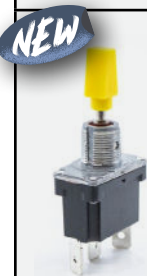
The Toggle switch is characterized by the presence of a manually operated handle or lever which controls the flow of electrical current from power supply to device such as household appliance. E-Switch offers Toggle switches with multiple options such as actuators, bushings, terminals, as well as low to high current ratings, plus some with horsepower ratings for industrial applications. Smaller size toggles are often used in equipment and devices 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 | Electrical Life: 6,000 Cycles Mechanical Life: 40,000 Cycles Operating Temp: -30°C to 85°C Contact Resistance: 10mΩ Max. | Silver: 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus] Gold: 0.4VA, 20V Max. (AC or DC) | 1 or 3 Pole: On-On On- (On) On-Off-On (On)- Off-(On) On-Off-(On) 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 | Electrical Life: 6,000 Cycles Mechanical Life: 30,000 Cycles Operating Temp: -30°C to 85°C Contact Resistance: 10mΩ Max. | Silver: 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus] Gold: 0.4VA, 20V Max. (AC or DC) | 1 Pole: On-On On-(On) On-Off-On (On)- Off-(On) On-Off-(On) 2 Pole: 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 | Electrical Life: 6,000 Cycles Mechanical Life: 30,000 Cycles Operating Temp: -20°C to 85°C Contact Resistance: 20mΩ Max. | Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] Gold: 0.4VA, 20V Max. (AC or DC) | 1 Pole: On-On On- (On) On-Off-On (On)- Off-(On) On-Off-(On)Off-On 2 Pole: On-On On- (On) On-Off-On | Metal | Non-Threaded Threaded | Right Angle PCB Pin Solder Lug Vertical PCB Pin | × |
|  | 200A | Electrical Life: 6,000 Cycles Mechanical Life: 30,000 Cycles Operating Temp: -30°C to 85°C Contact Resistance: 20mΩ Max. | Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus] Gold: 0.4VA, 20V Max. (AC or DC) | 1 Pole: On-On On- (On) On-Off-On (On)- Off-(On) On-Off-(On)Off-On 2 Pole: On-On On- (On) On-Off-(On) | Metal Plastic | Non-Threaded | Right Angle PCB Pin Vertical PCB Pin | IP67 |
|  | 200B | Electrical Life: 6,000 Cycles Mechanical Life: 50,000 Cycles Operating Temp: -30°C to 85°C Contact Resistance: 20mΩ Max. | Gold: 0.4VA, 20V Max. (AC or DC) | 1 Pole: On-(On) On-Off-On (On)-Off-(On) On-Off-(On) | Metal Plastic | Non-Threaded | Surface Mount | IP67 |
|  | 200R | Electrical Life: 6,000 Cycles Mechanical Life: 40,000 Cycles Operating Temp: -30°C to 85°C Contact Resistance: 50mΩ Max. | Gold: 0.4VA, 48V Max. (AC or DC) | 1 or 2 Pole: On-None-On On-None-(On) On-Off-On (On)-Off-(On) On-Off-(O n) | Metal | Non-Threaded | Surface Mount Right Angle PCB Pin Verticle Right Angle PCB Pin | × |
|  | 200U | Electrical Life: 40,000 Cycles Mechanical Life: 40,000 Cycles Operating Temp: -30°C to 85°C Contact Resistance: 100mΩ Max. | Gold: 0.4VA, 20V Max. (AC or DC) | 1 or 2 Pole: Off-On On-On On-Off-On | Plastic | Non-Threaded | PCB Pin Right Angle PCB Pin Vertical Right Angle-PCB Pin | IP67 |



| E-SWITCH® | | General Ratings | Electrical Ratings | Poles / Functions | Actuator Options | Bushing Options | Terminal Options | Ingress Protection |
|--|-----|--|---|---|--------------------------|-----------------|--|--------------------|
|  | ST1 | Electrical Life: 6,000 Cycles Mechanical Life: 100,000 Cycles Operating Temp: -20°C to 85°C Contact Resistance: 50mΩ Max. | Maintained Switches: 20A, 125VAC [cURus] 15A, 277VAC [cURus] 2HP, 125-277VAC [cURus] Momentary Switches: 20A, 125VAC [cURus] 15A, 277VAC [cURus] 1.5HP, 125-277VAC [cURus] | 2 Pole: 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 | Electrical Life: 6,000 Cycles Mechanical Life: 100,000 Cycles Operating Temp: -20°C to 85°C Contact Resistance: 50mΩ Max. | Maintained Switches: 20A, 125VAC [cURus] 15A, 277VAC [cURus] 2HP, 125-277VAC [cURus] Momentary Switches: 20A, 125VAC [cURus] 15A, 277VAC [cURus] 1.5HP, 125-277VAC [cURus] | 2 Pole: 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 | Electrical Life: 6,000 Cycles Mechanical Life: 100,000 Cycles Operating Temp: -20°C to 85°C Contact Resistance: 50mΩ Max. | Maintained Switches: 24A, 125VAC [cURus] 15A, 277VAC [cURus] 2HP, 125-277VAC [cURus] | 3 Pole: Off-On On-On On-Off-On | Metal | Threaded | Quick Connect Screw Solder Lug Wire Leads | × |
|  | ST4 | Electrical Life: 10,000 Cycles Operating Temp: -10°C to 55°C Contact Resistance: 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 | Electrical Life: 10,000 Cycles Operating Temp: -10°C to 125°C Contact Resistance: 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



E-SWITCH®

- Multiple Termination Options • Single or Double Pole
- Available in both 2 or 3 Position Circuits • Multiple Actuator Options



CONTACT RATING:

16(8)A 125/250VAC μ T125/55

20(8)A 125/250VAC μ T125/55

20A 6-30VDC μ T125/55

ELECTRICAL LIFE: 10,000 Cycles

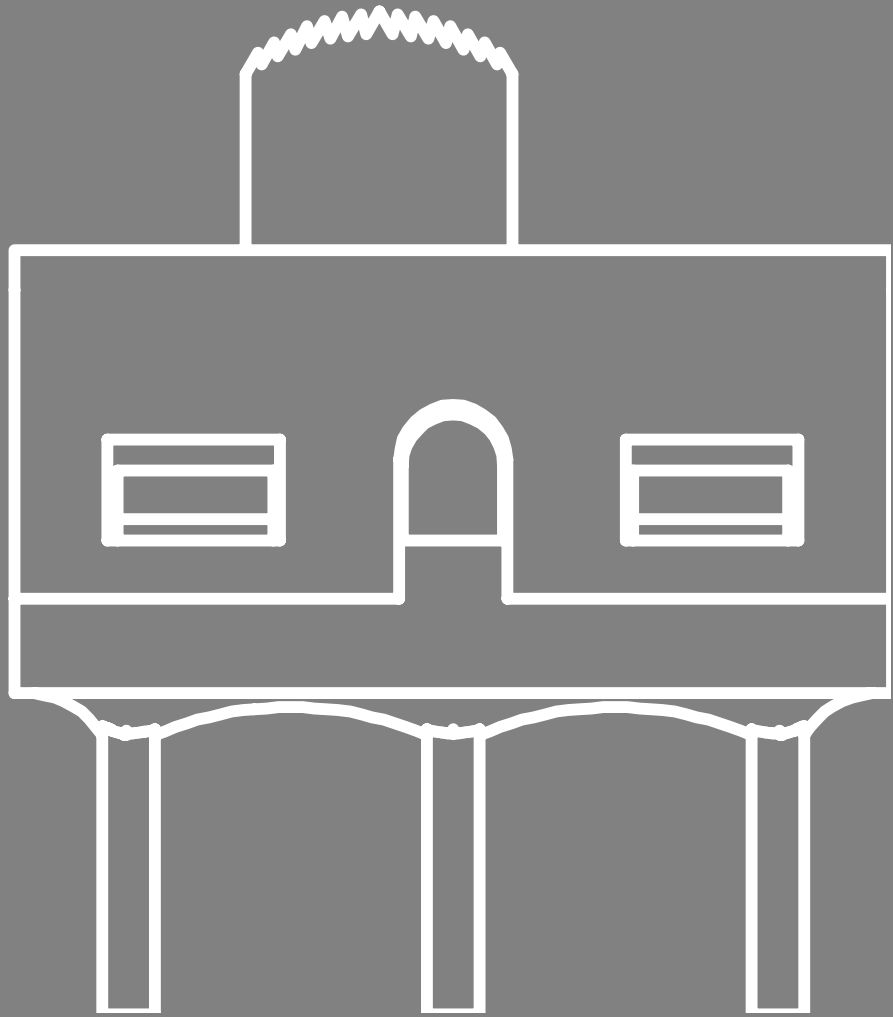
CONTACT RESISTANCE: 50m Ω Max. initial

OPERATING TEMPERATURE: -10°C to 125°C

CIRCUIT FUNCTION:

SP or DP // 2 or 3 Position

SLIDE SWITCHES



A Slide switch utilizes a mechanical lever turning 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 & measurement equipment and consumer electronics and household appliances.

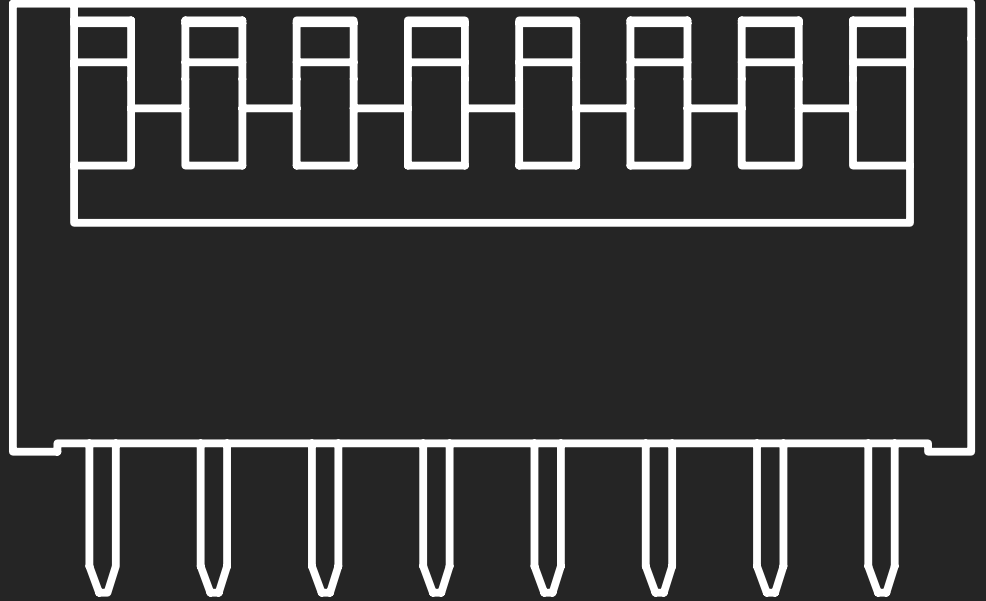




|  E-SWITCH® | | Electrical Ratings | Poles | Positions | Terminal Options | Panel Mount Capable | Ingress Protection |
|---|----------------|---|---------------|-------------------|--|---------------------|--------------------|
|  | 500 | Silver: 5A, 120VAC [cURus] 2A, 250VAC [cURus] Gold: 0.4VA, 20V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

Specifications subject to change without notice

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 & measurement equipment, audio/visual equipment, consumer electronics and medical equipment.





|  E-SWITCH® | | General Ratings | Electrical Ratings | Dimensions (mm) | Positions | Actuator Options | Mounting Options | Packaging | Tape Seal / Washable |
|--|-----|--|---|--|-----------------------------------|-------------------|--|-----------------------|----------------------|
|  | KAE | 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 | ● |
|  | KAC | 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 | ✕ |
|  | KAN | 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 | ● |
|  | KAP | 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 | ● |
|  | KAS | 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 | ● |
|  | DR | 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 | ✕ |
|  | RDM | 3x3 Layout Life Cycles: 25,000 Steps Operating Force: 120gf-cm Max. Operating Temp: -60°C to 125°C | Switch: 100mA, 42VDC Carry: 400mA, 42VDC | Height: 3.65 (Vert) Height: 5.80 (RA) Width: 7.4 Length: 7.4 | 10, 16 | Extended Flush | PCB Pin (Vertical & Right Angle) SMT | Tape and Reel Tube | IP67 |
|  | RDT | 2x3, 3x3 Layout Life Cycles: 10,000 Steps Operating Force: 700gf-cm Max. Operating Temp: -40°C to 85°C (Through Hole), -60°C to 125°C (SMT) | Switch: 150mA, 42VDC Carry: 200mA, 42VDC | Height: 6.50 (Vert) Height: 12.05 (RA) Width: 10.0 Length: 10.0 | 04, 06, 08, 10, 16 | Extended Flush | PCB Pin (Vertical & Right Angle) SMT | Tape and Reel Tube | IP67 |

Specifications subject to change without notice

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

RECOMMENDED SOLDERING GUIDELINES & IP RATINGS

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

HAND SOLDERING AND TEMPERATURES

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

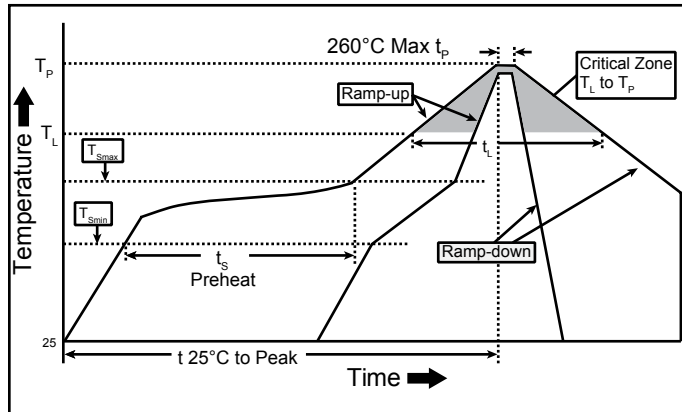
SMT REFLOW (LEAD AND LEAD-FREE)

“TYPICAL” SMT REFLOW (Pb and Pb-Free)

| Profile Feature | Sn-Pb Eutectic Assembly | Pb-Free Assembly |
|--|-------------------------|------------------|
| Average Ramp-Up Rate (T_{Smax} to T_p) | 3°C/second max. | 3°C/second max. |
| Preheat | | |
| -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

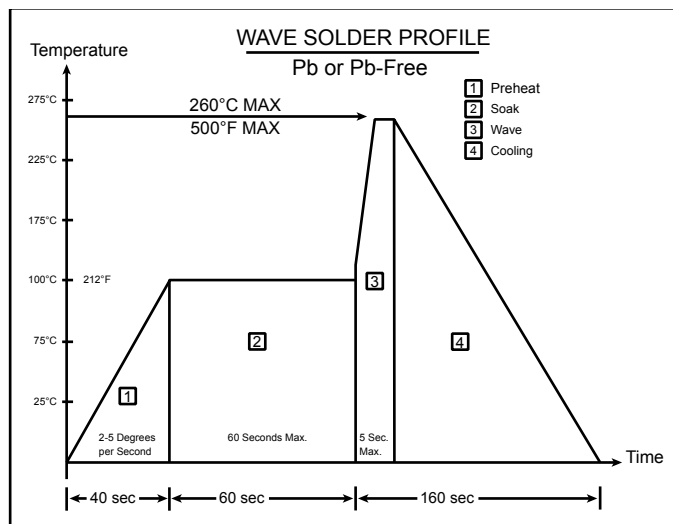


WAVE SOLDER TIME AND TEMPERATURES

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 |
|---|--|-----------------------------------|--|
| <i>Protection against solid objects</i> | | <i>Protection against liquids</i> | |
| 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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