



2023

Product Matrix



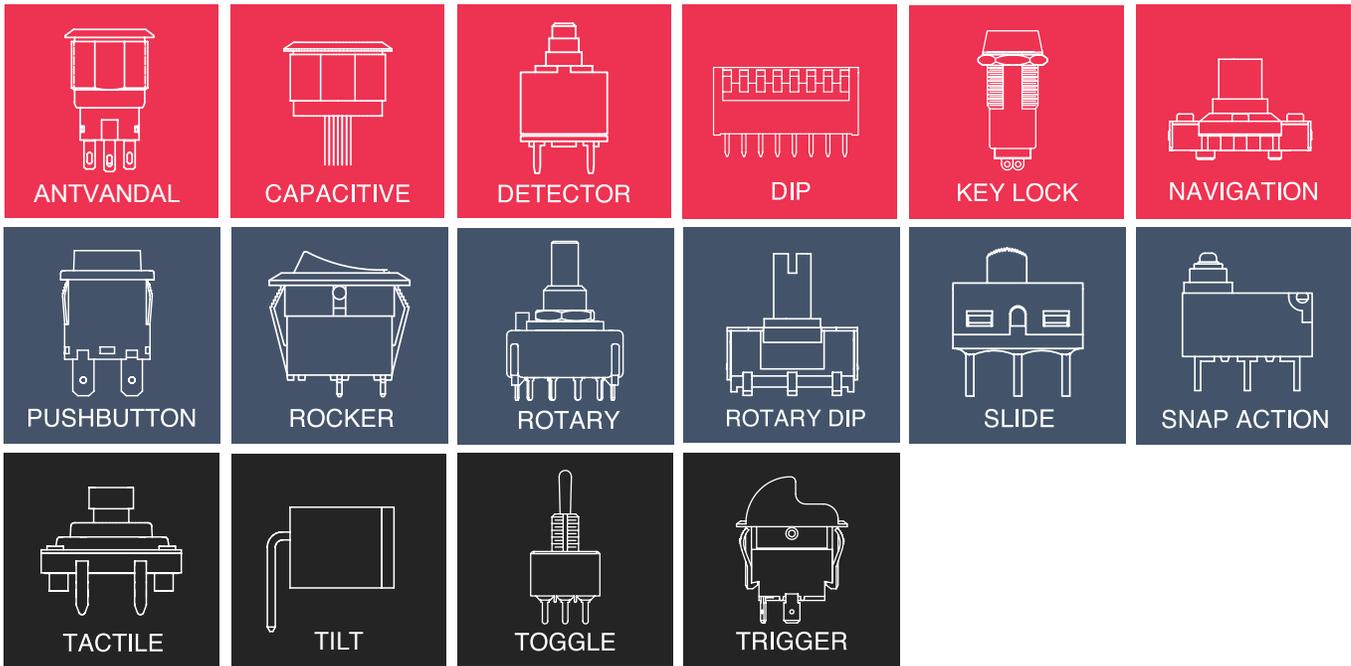
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WITH A SWITCH...

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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?

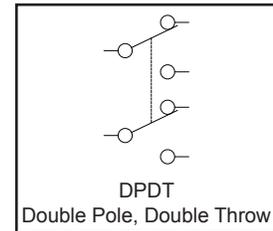
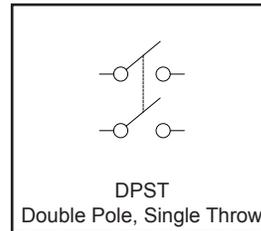
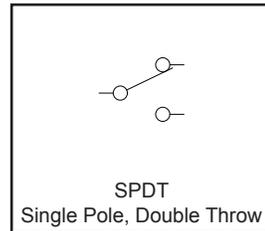
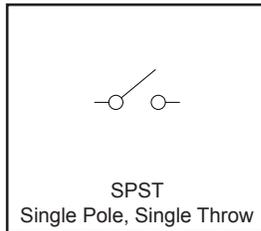
1. Is the product AC or DC?
 - Common Voltages for AC: 125VAC, 250VAC
 - Common Voltages for DC: 3, 6, 12, 24 and 48VDC
2. How many amperes does the switch need to handle?
 - Low Power is in the milliamps
 - Medium Power is from 2 amps to 5 amps
 - High Power is greater than 6 amps
3. If you're looking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

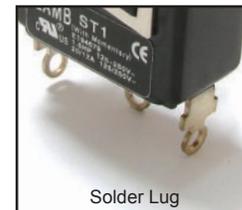
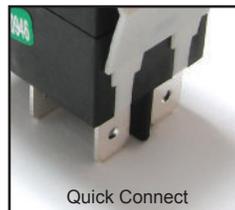
DPST - Air Conditioner: 1 pole controls the chiller, 1 pole controls the fan.

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?

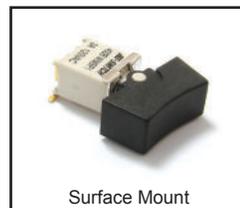
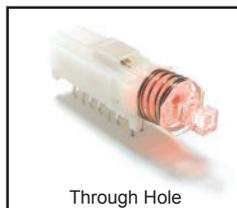
1. Panel Mount

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



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.

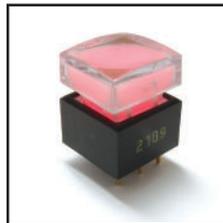


6. ARE THERE ANY ADDITIONAL REQUIREMENTS?

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:

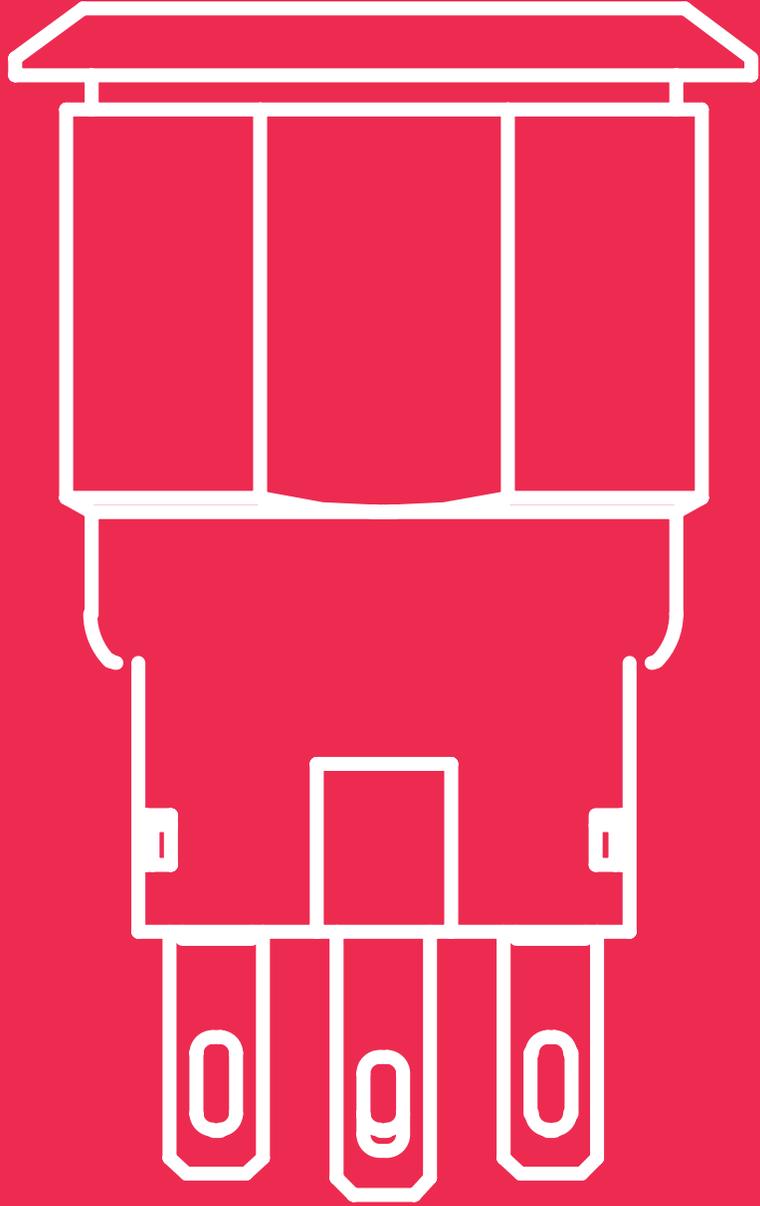
- Momentary or Latching
- Illumination
- Sealed Protection (IP Rating)
- Custom Cap Options
 - » Colors
 - » Graphics
 - » Styles
- Long Life Expectancy
- High Inrush or Horse Power Rating
- Extreme Temperature Rating
- Custom User Requirements



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.

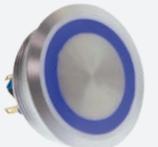
ANTI-VANDAL SWITCHES



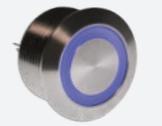
E-Switch offers a large selection of Anti-Vandal switches in the marketplace. Diameter sizes range from 6mm to 40mm, depending on the switch series. The Anti-Vandal series offer an esthetically pleasing switch due the quality housing materials and multi-illumination options in pattern style – ring, dot, 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.





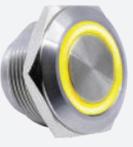
E-SWITCH®		Electrical Ratings	Cutout / Panel Depth	Functions Available	Terminal Options	Actuator Options	Material Options	Illumination	IP Rating	Wire Options
	PV0	2A, 36VDC	Diameter: 12mm Max. Depth: 6mm	1 Pole: Off-(On)	Solder Lug	High	Stainless Steel Black Anodized	Dot Ring	IP65	✗
	PV1	2A, 36VDC	Diameter: 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	×

NEW



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 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	●

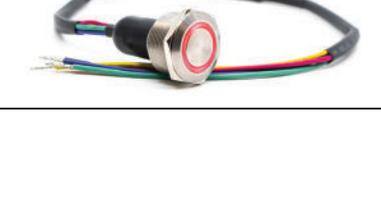
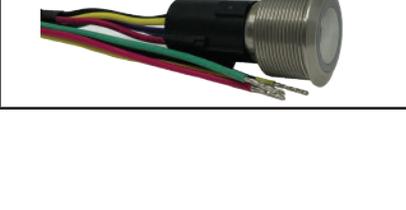
Get Wired! with E-Switch

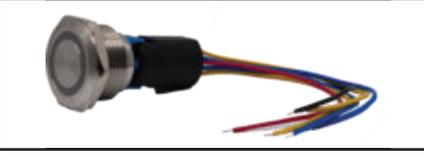
E-Switch offers several terminal options which will enhance your production line and your bottom line. Selecting the right terminal option for your product assembly process will provide time and costs savings from:

- 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.

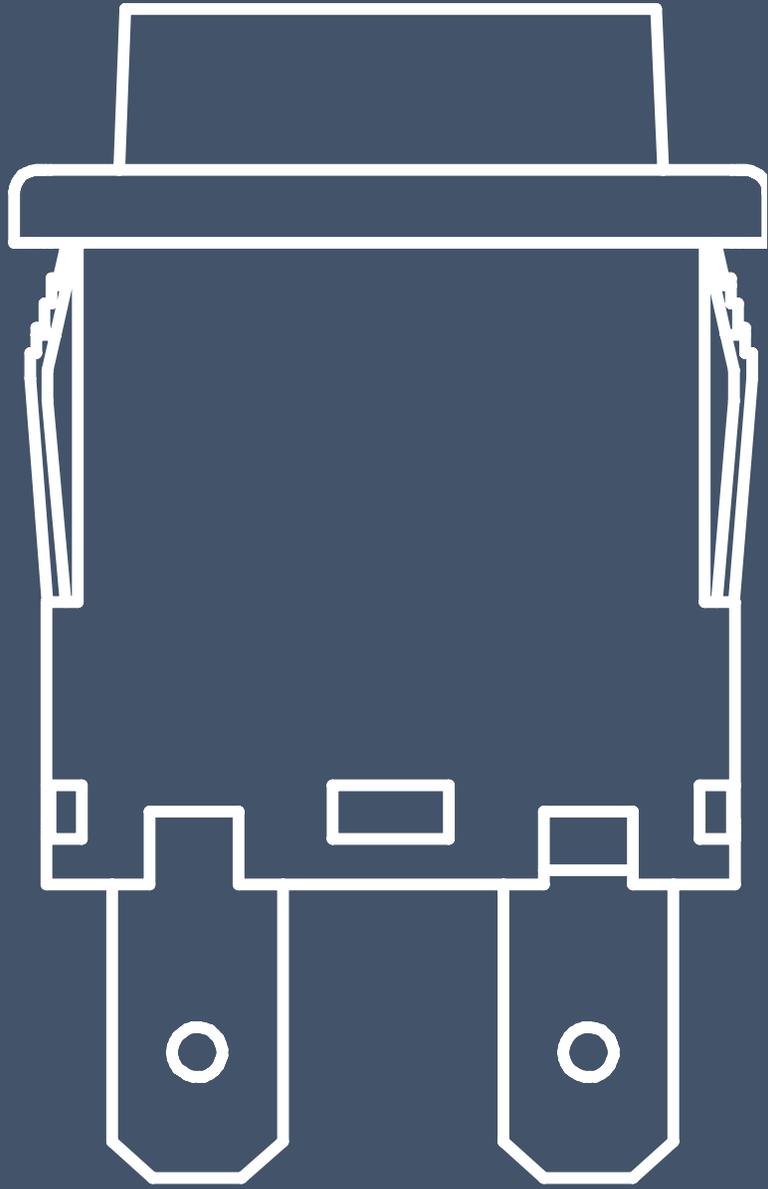
Head to e-switch.com/get-wired-with-e-switch to find out more about our wired options.

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 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 3000gf	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 On ₂ -On ₁ -(-On) ₂ 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.	<i>Rating Option 1:</i> 10R(4)A 277VAC 5E4 [UL] <i>Rating Option 2:</i> 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 On ₂ -On ₁ -(-On) ₂ 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

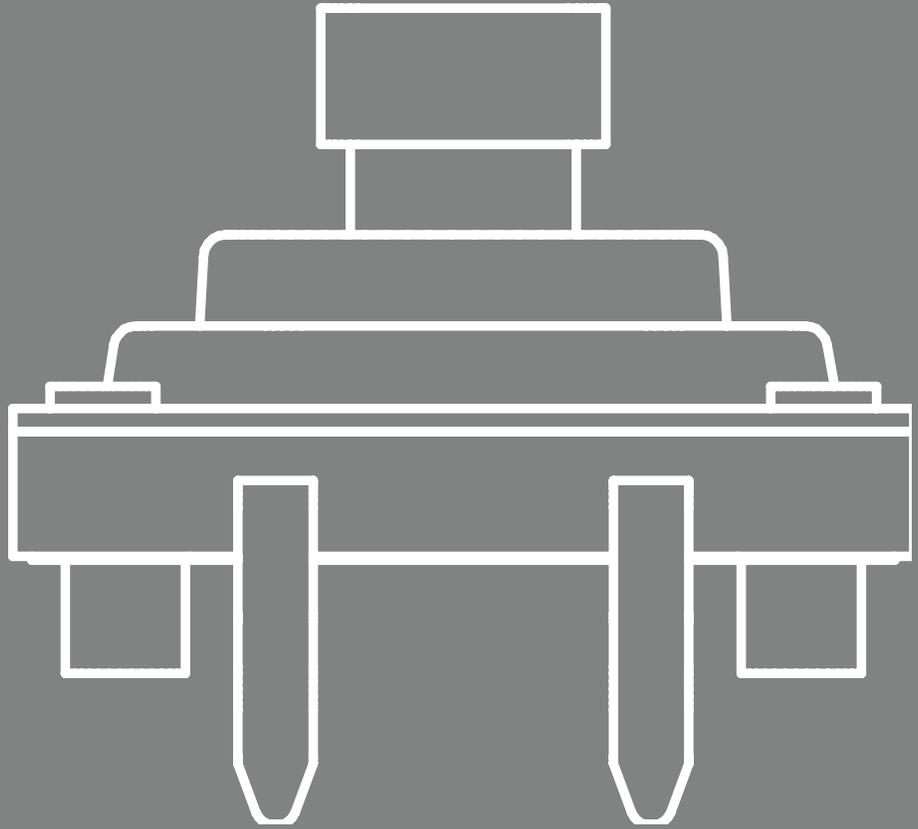
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E-SWITCH®		General Ratings	Electrical Ratings	Operating Force	Travel	Poles / Throws / Functions	Panel Cutout Dimensions	Terminal Options	Illumination	Ingress Protection
	RP8200	Electrical / Mechanical Life: 200,000 Cycles Operating Temperature: -30°C 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
	ULP	Electrical / Mechanical Life: 200,000 / 1,000,000 Cycles Operating Temperature: -20°C to 70°C Contact Resistance: 50mΩ Max. (Silver) 100mΩ Max. (Gold) Insulation Resistance: 100MΩ Min.	Silver: 500mA, 25VDC Gold: 0.4VA, Max. at 28V (AC or DC)	SPDT 200gf DPDT 300gf	2.2mm	SPDT On-On On-(On) DPST 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

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	✗

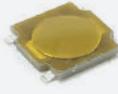
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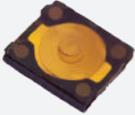
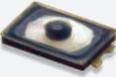
 E-SWITCH®		General Ratings	Electrical Ratings	Travel	Dimensions	Operating Force (gf)	Mounting Options	Ingress Protection
	TL1250	Life Cycles: 50,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. Insulation Resistance: 100MΩ Min.	50mA, 12VDC	0.2mm	7.0mm x 8.3mm	120, 180, 280	PCB Pin	✗
	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)	×



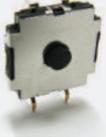
E-SWITCH®		General Ratings	Electrical Ratings	Travel	Dimensions	Operating Force (gf)	Mounting Options	Ingress Protection
	TL3336	Life Cycles: 100,000 Operating Temp: -20°C to 70°C Contact Resistance: 100mΩ Max. (Initial) Insulation Resistance: 100mΩ Max. (Initial)	12VDC, 50mA	0.35mm	7mm x 7.10mm	160gf ± 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

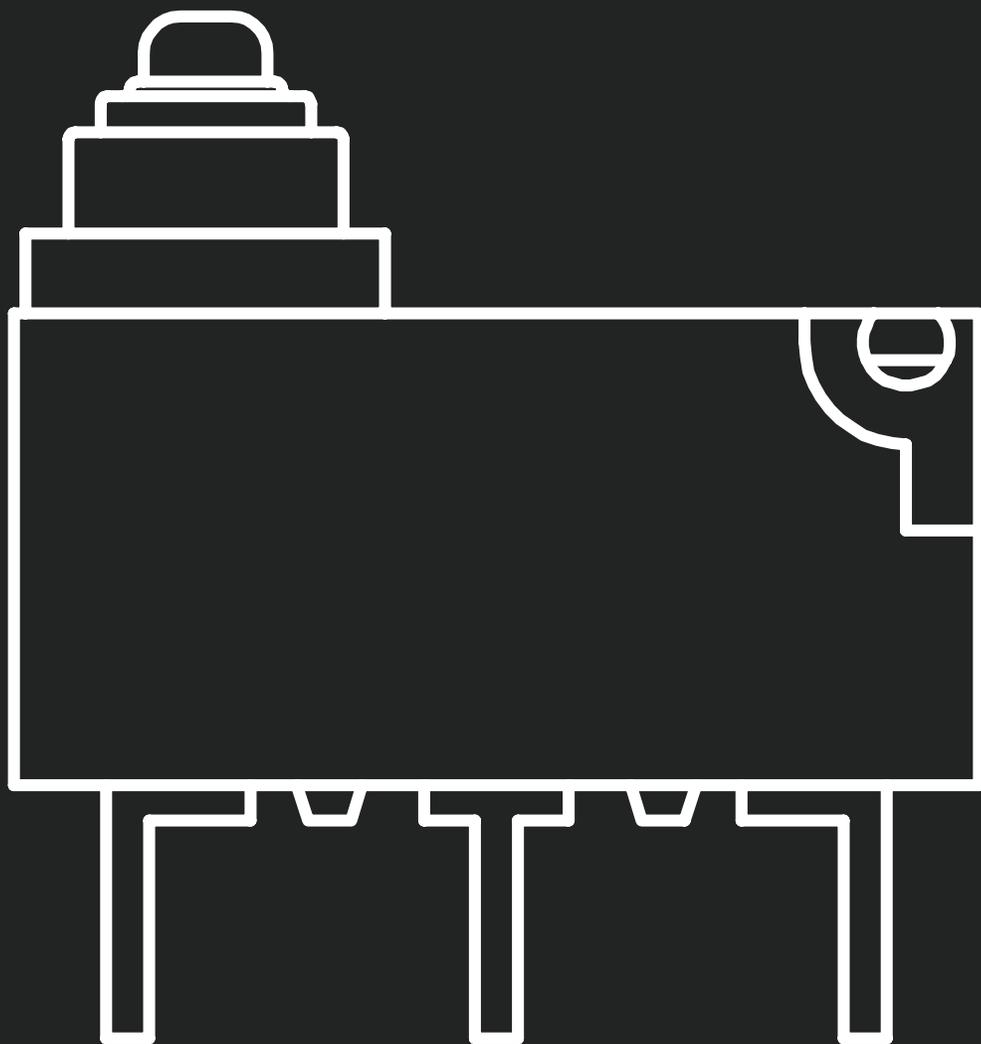
Specifications subject to change without notice



 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.

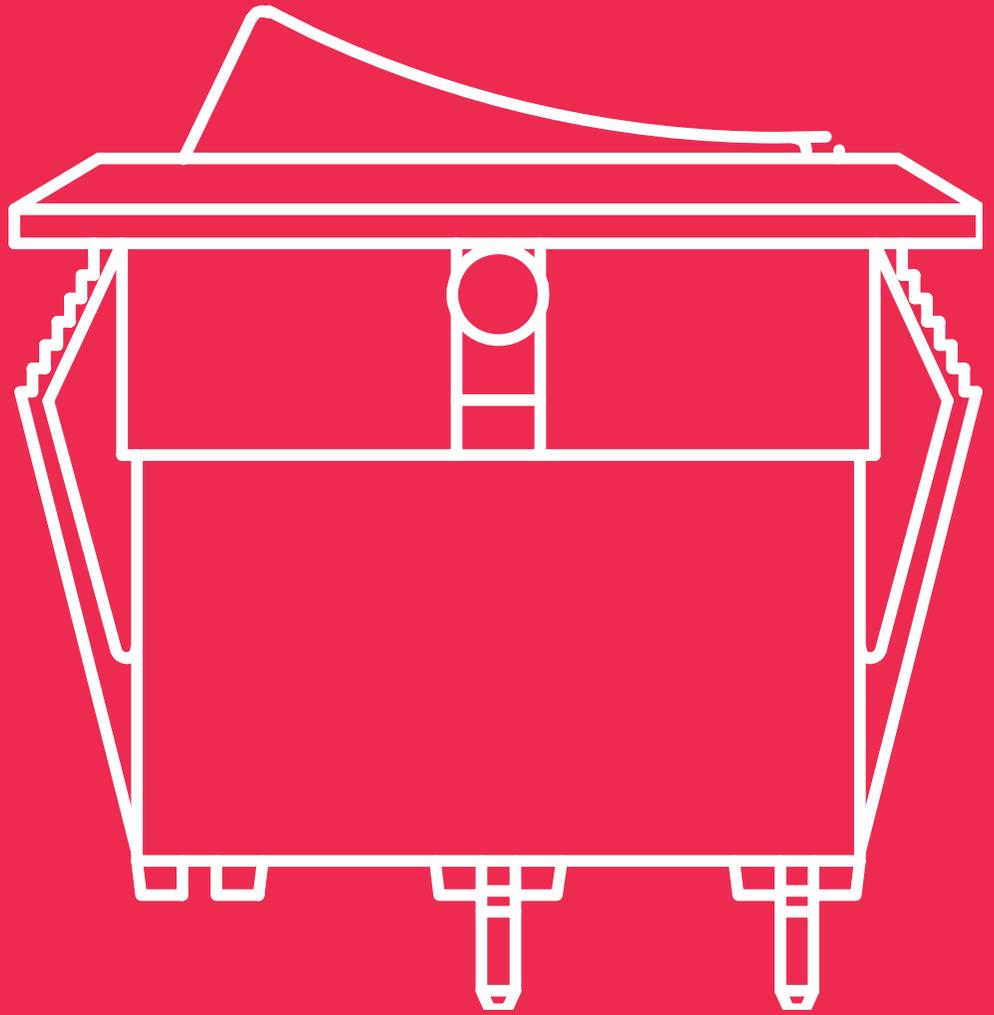




E-SWITCH®		General Ratings	Electrical Ratings	Functions	Operating Force	Actuator Options	Terminal Options	Body Options
	LS	Electrical Life: 50,000 Cycles Mechanical Life: 1,000,000 Cycles Operating Temp: -25°C to 85°C Contact Resistance: 100mΩ Max.	Silver cURus, 15A, 125/250VAC Gold: 0.4VA, 20V (AC or DC)	SPST N.O. SPST N.C. SPDT	25-250 <i>(*Depending upon actuator)</i>	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 <i>(*Depending upon actuator)</i>	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 <i>(*Depending upon actuator)</i>	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 <i>(*Depending upon actuator)</i>	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

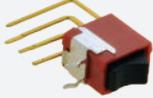
ROCKER SWITCHES



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	<p>Silver: 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus]</p> <p>Gold: 0.4VA, 20V (AC or DC)</p>	<p>1, 2, 3, or 4 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On)</p> <p>2 Pole: On-On-On On-On-(On) (On)-On-(On)</p> <p>4 Pole: On-On-On</p>	Paddle Rocker	<p>Panel Mount: Quick Connect Vertical Solder Lug</p> <p>PC Mount: Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical with Bracket</p>	PCB Pin Quick Connect Solder Lug	✗
	300A	<p>Silver: 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [cURus]</p> <p>Gold: 0.4VA, 20V (AC or DC)</p>	<p>1 or 2 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On)</p>	Paddle Rocker	<p>Panel Mount: Quick Connect Vertical Solder Lug</p> <p>PC Mount: Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical with Bracket</p>	PCB Pin Quick Connect Solder Lug	IP67
	400	<p>Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p>Gold: 0.4VA, 20V (AC or DC)</p>	<p>1 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) Off-On</p> <p>2 Pole: On-On On-(On) On-Off-On</p>	Rocker	<p>Panel Mount: Vertical Solder Lug</p> <p>PC Mount: Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Vertical Right Angle Vertical Right Angle with Bracket Vertical with Bracket</p>	PCB Pin Solder Lug	✗
	400A	<p>Silver: 3A, 120VAC [cURus] 3A, 28VDC 1A, 250VAC [cURus]</p> <p>Gold: 0.4VA, 20V (AC or DC)</p>	<p>1 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On) Off-On</p> <p>2 Pole: On-On On-(On) On-Off-On</p>	Rocker	<p>Panel Mount: Vertical Solder Lug</p> <p>PC Mount: Horizontal Right Angle Horizontal Right Angle with Bracket Vertical Right Angle Vertical Right Angle with Bracket Vertical with Bracket</p>	PCB Pin Solder Lug	IP67
	400B	<p>Silver: 3A, 120VAC [cURus] 1A, 250VAC [cURus]</p>	<p>1 Pole: On-On On-(On) On-Off-On (On)-Off-(On) On-Off-(On)</p>	Rocker	PC Mount: Surface Mount	SMT	IP67
	400U	<p>Gold: 0.4VA@ 24V AC or DC</p>	<p>2 Pole: On-None-On</p>	Rocker Lever	<p>PC Mount: Vertical Right Angle, PC thru-hole Right Angle, PC thru-hole PC thru-hole</p>	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-(On) Off-(On) On-Off-On On-(Off) On-Off-(On) On-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-Off-On (On)-Off-(On) 2 Pole Only: Off-(On) On-On On-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 Off-(On) On-On	28.6mm x 13.9mm 27.2mm x 12.1mm 27.2mm x 13.9mm 28.6mm x 12.1mm	Bi-Color Curved Flat	Full Signal Light	N/A
	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	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	15mm	Paddle	×	×

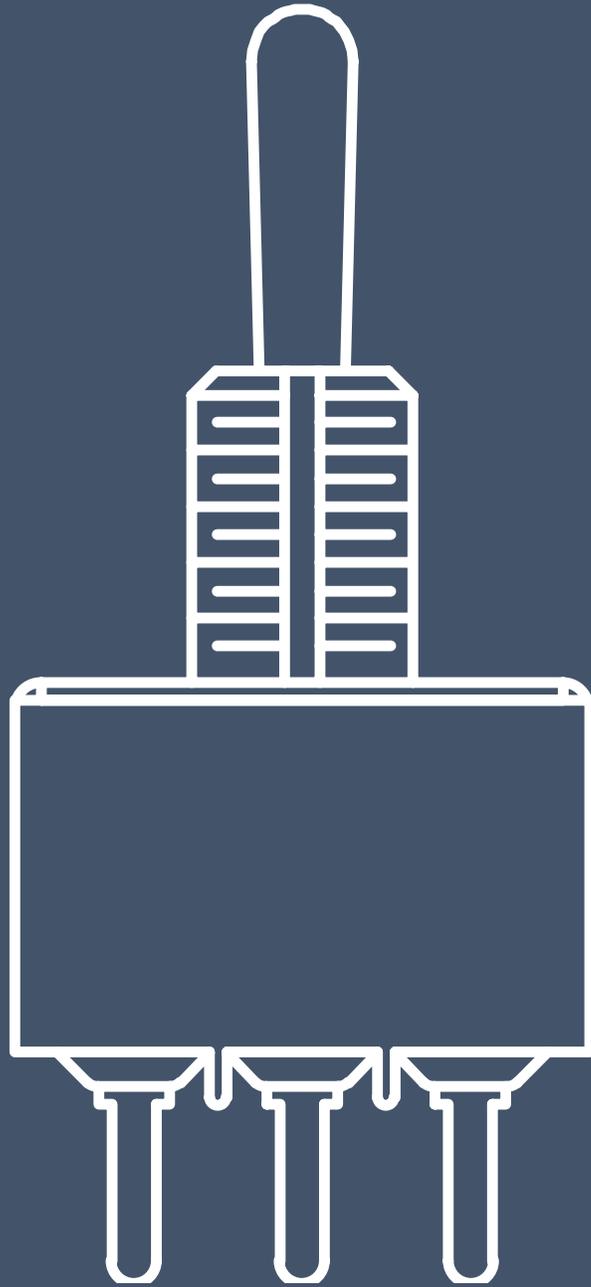
Specifications subject to change without notice



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.





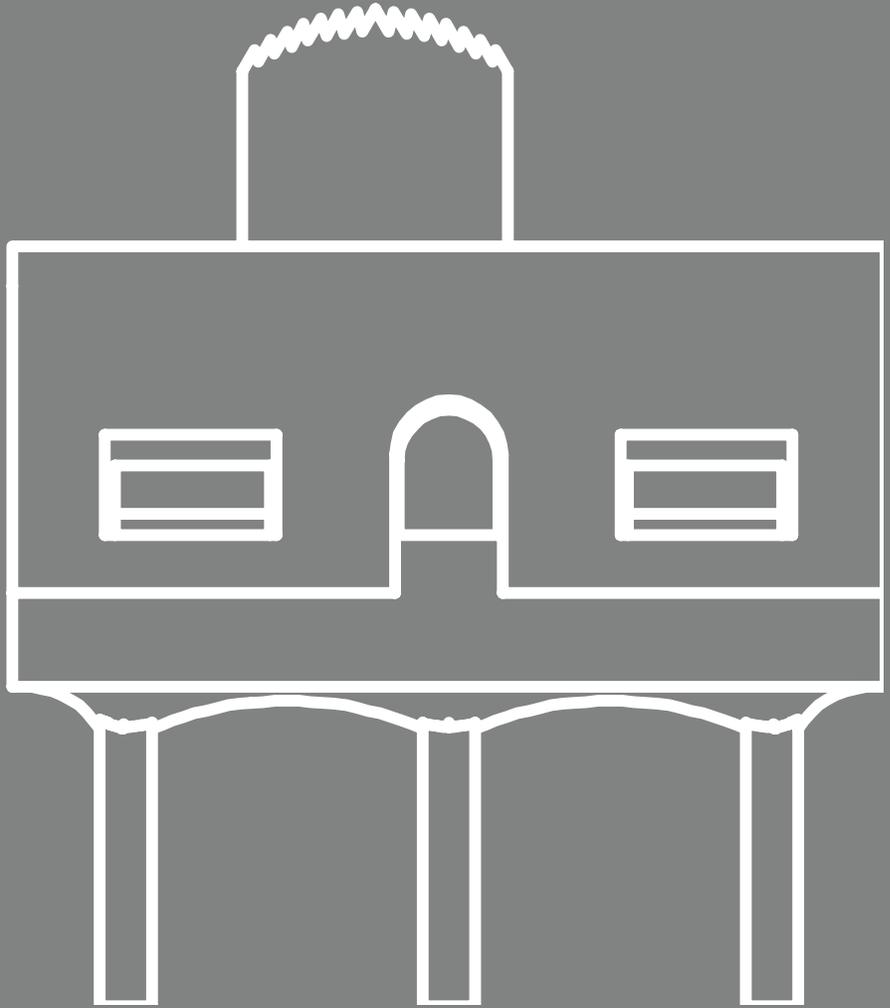
E-SWITCH®		General Ratings	Electrical Ratings	Poles / Functions	Actuator Options	Bushing Options	Terminal Options	Ingress Protection
	100	Electrical Life: 6,000 Cycles Mechanical Life: 40,000 Cycles Operating Temp: -30°C to 85°C Contact Resistance: 10mΩ Max.	Silver: 5A, 120VAC [cURus] 5A, 28VDC 2A, 250VAC [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) 2 or 4 Pole: 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-(On)	Metal	Non-Threaded	Surface Mount Right Angle PCB Pin Vertical 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: On-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

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.

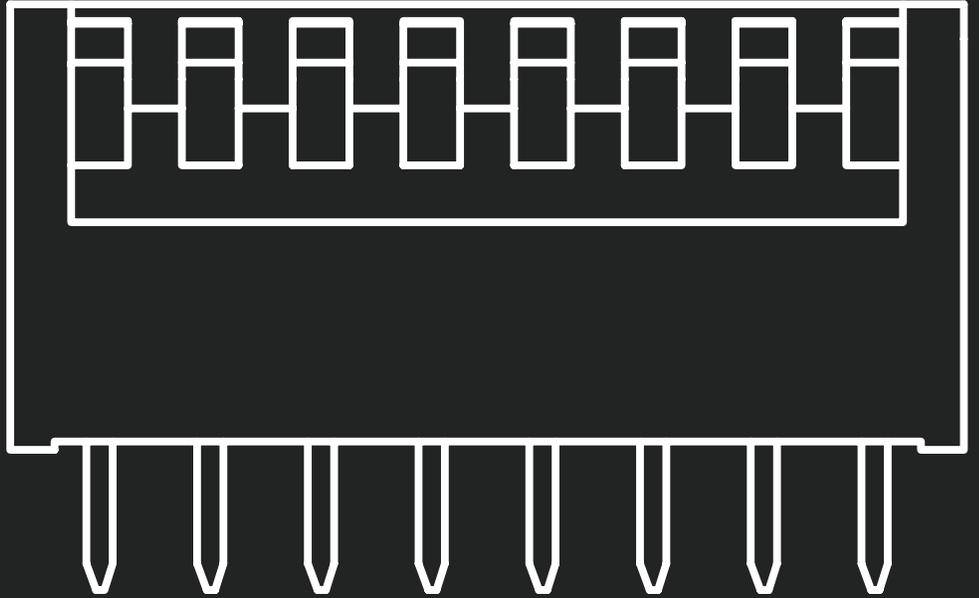




 E-SWITCH®	Electrical Ratings	Poles	Positions	Terminal Options	Panel Mount Capable	Ingress Protection
	500 Silver: 5A, 120VAC [cURus] 2A, 250VAC [cURus] Gold: 0.4VA, 20V (AC or DC)	Up to 2 Poles	Up to 3 Positions	PCB Pin Solder Lug Quick Connect Wire Wrap	●	×
	500A Silver: 3A, 120VAC [cURus] 1A, 250VAC [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

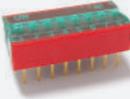
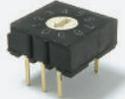


DIP switch refers to a set of electrical switches packaged in a small box or housing, which are arranged in a line or circle (rotary DIP). The function is to provide a range of electrical inputs to an electronic device based on the position of the individual switches within the line or circle. The main 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



DIP Switches



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

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.

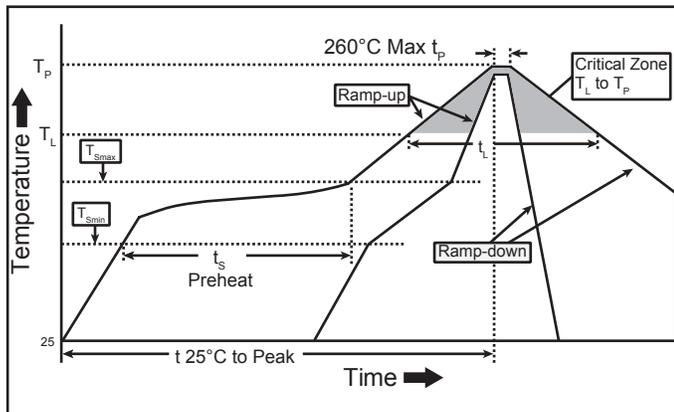
SMT REFLOW (LEAD AND LEAD-FREE)

"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.
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

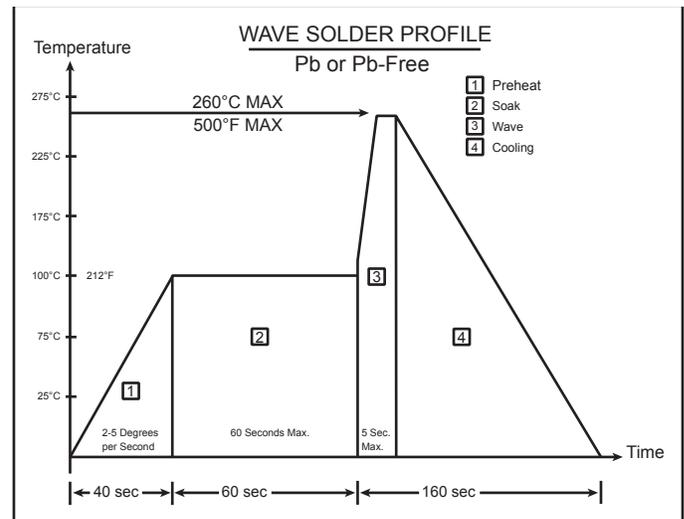


WAVE SOLDER TIME AND TEMPERATURES

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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