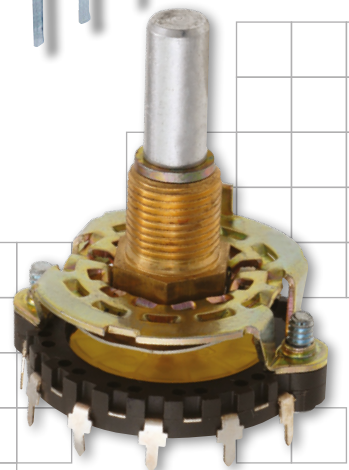
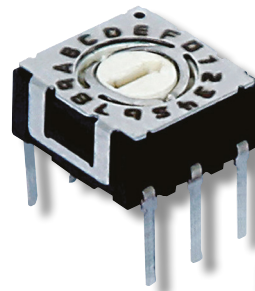
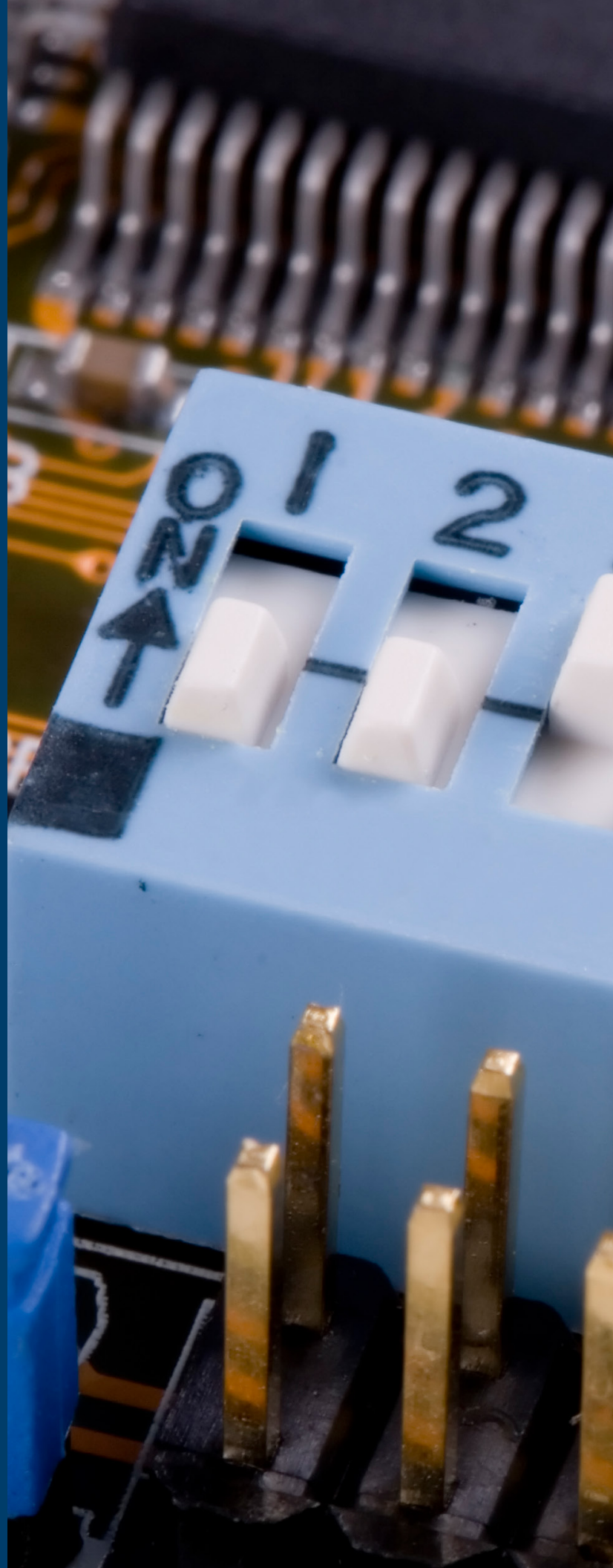


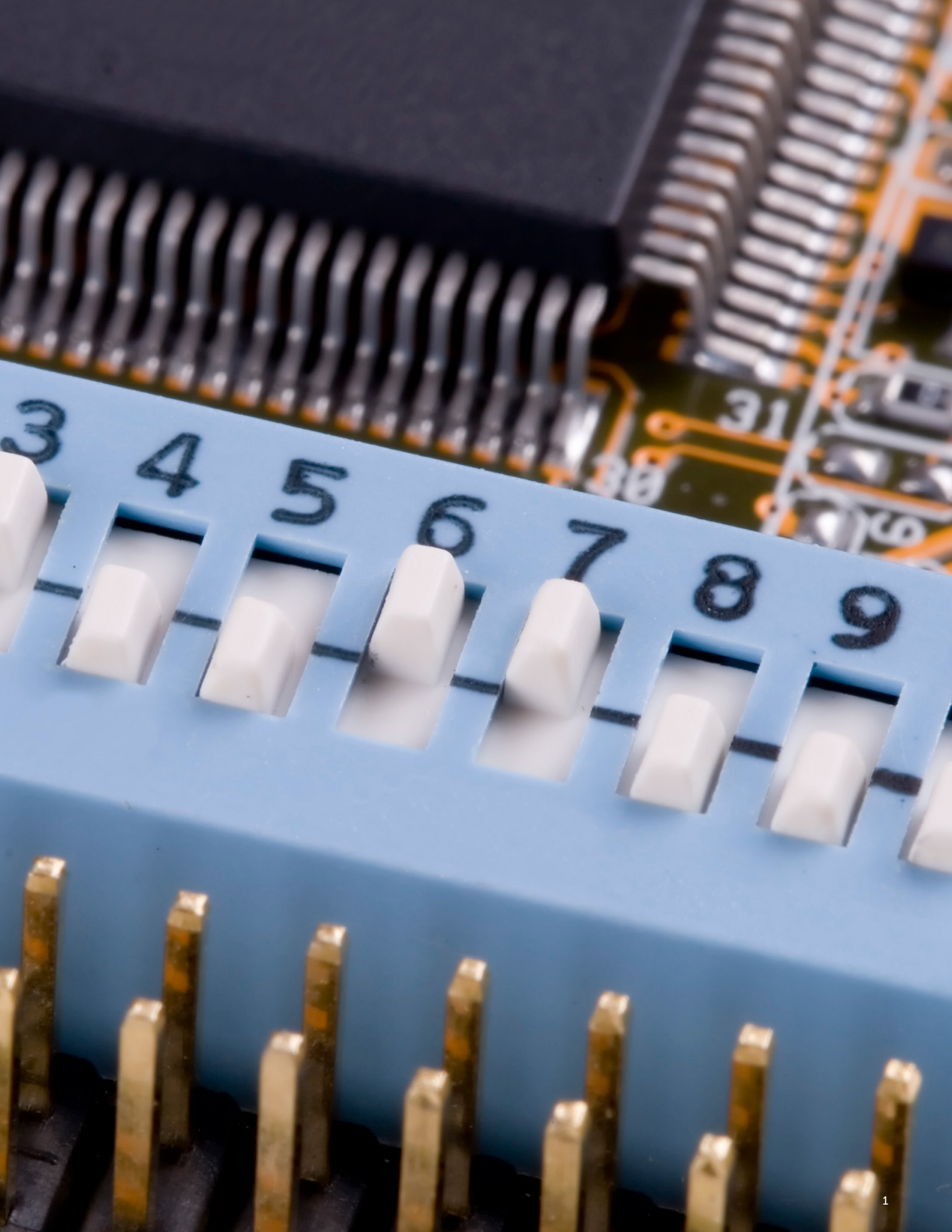
CTS Switch Solutions



Switches

CTS Corporation offers a variety of switches to accommodate the needs of manufacturers in an assortment of industries. These switches include DIP switches, rotary DIP switches, rotary selector switches, tactile switches, and toggle switches. As a pioneer of modern DIP switch technology, CTS provides high quality, affordable products paired with exceptional customer service to remain at the forefront of the industry. CTS aims to offer value beyond the physical product, and is committed to being your partner in smart solutions.







About US

CTS is a leading designer and manufacturer of products that Sense, Connect, and Move. We manufacture sensors, actuators, and electronic components in North America, Europe, and Asia, and provide solutions to OEMs in the aerospace & defense, medical, industrial, communications, information technology, and transportation industries.

Our Markets



Aerospace &
Defence



Automotive &
Electric Solutions



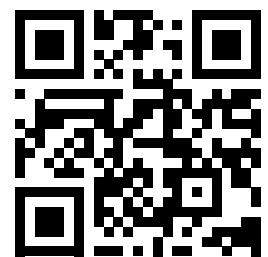
Industrial &
Connectivity



Medical &
Healthcare

Custom Product Designs

As technology continues to move forward, we've been right alongside engineering intelligent ways to meet people's ever-changing needs. Contact us to work on custom product solutions for a variety of complex systems. Our teams of product experts are equipped to develop seamless solutions even under highly stringent conditions.

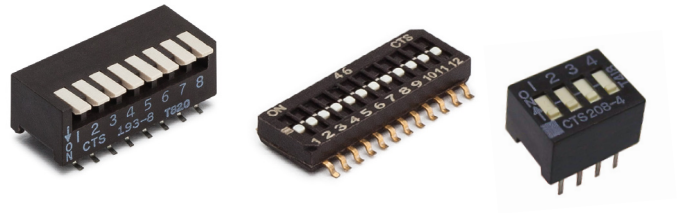


www.ctscorp.com

Our Switch Products

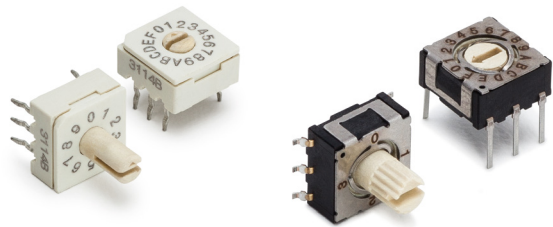
DIP Switches

Dual In-Line Package switches are sets of small manual electronic switches that allow users to change the operating mode of a device by controlling the flow of electricity around a printed circuit board (PCB) or other electronics.



Rotary DIP Switches

For use on PCBs along with other components to customize and/or configure the behavior of an electronic device by rotating the shaft through multiple positions.



Rotary Selector Switches

Used to control one or more circuits with a single switch. These devices have advantages over other switches when a robust product or custom switching pattern is required.



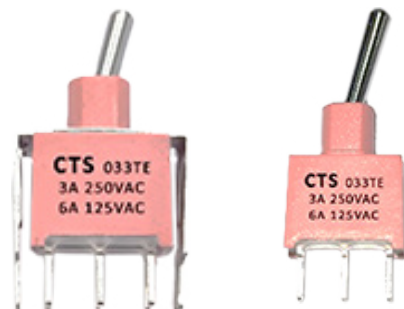
Tactile Switches

A momentary on/off mechanical switch that turns on when the actuator or button is pressed, and off when released.



Toggle Switches

A mechanical switch that controls the flow of electricity to a device by interrupting or resuming the current. It has a lever or handle that can be moved or "toggled" back and forth between two positions.



Our Switch Products

Pushbutton Switches

Pushbutton switches, also known as 'key switches', are built with a robust mechanical structure, making them ideal for harsh environment use. Similarly to tactile switches, they are activated by pressing down on the actuator button.

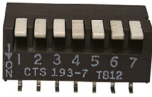

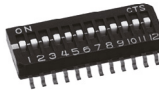
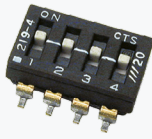
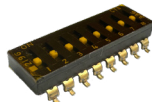


DIP Switches

A dual in-line package switch (or simply “DIP switch”) consists of two parallel rows of switches, each of which can be in either an ‘on’ or ‘off’ position. This allows for a multitude of electrical settings that can be adjusted manually. A broad range of options are available for CTS slide- and lever-style DIP switches, including low-profile, half-pitch (.05 inch), standard-pitch (.1 inch), and through-hole and surface mount options. We offer top, right angle or side actuation styles. Our

unique design and construction allows for superior ESD protection in many of our DIP switch products. The CTS DIP switch product line includes SPST, SPDT, DPST and 3PST circuit switching options. Some styles are available with a choice of gold-plated or economical tin-plated contacts. An optional bottom epoxy seal and removable tape seal on the actuator side protects the switches during soldering and board washing. Custom marking is available.

Surface Mount DIP Switches

	Series	Description	Pitch	Circuits	Materials	Lifecycle
	193	Side actuated Positions: 2-10	.100"	SPST	Contacts: Gold, Terminals: Tin	7,000 Cycles
	204	Top Actuated ESD Protection Positions: 2-10, 12	.100"	SPST, SPDT, DPST, 3PST	Contacts: Gold Terminals: Tin	5,000 Cycles
	218	Top Actuated Low Profile Positions: 2-10, 12	.50"	SPST	Contacts: Gold Terminals: Gold Flash	1,000 Cycles
	219	Top Actuated Low Profile Positions: 2-10, 12	.100"	SPST	Contacts: Gold Terminals: Tin	2,000 Cycles
	219G	Top Actuated Low Profile Positions: 2-10, 12	.100"	SPST	Contacts: Gold Terminals: Gold- Plated	2,000 Cycles

Through-Hole DIP Switches

	Series	Description	Pitch	Circuits	Material	Lifecycle
	194	Side Actuated Positions: 2-10, 12	.100" x .300"	SPST	Contacts: Gold Terminals: Tin	7,000 Cycles
	195	Side Actuated Positions: 2-10, 12	.100" x .300"	SPST	Contacts: Gold Terminals: Tin	2,000 Cycles
	206	Top Actuated ESD Protection Positions: 1-10, 12	.100" x .300"	SPST, SPDT, DPST, 3PST	Contacts: Gold Terminals: Tin	10,000 Cycles
	206RA	Right Angle Actuated ESD Protection Positions: 2-10, 12	.100" x .300"	SPST, SPDT, DPST, 3PST	Contacts: Gold Terminals: Tin	2,000 Cycles
	208RA	Right Angle Actuated ESD Protection Positions: 2-10, 12	.100" x .100"	SPST, SPDT, DPST, 3PST	Contacts: Tin Terminals: Tin	2,000 Cycles
	208	Top Actuated ESD Protection Positions: 1-10, 12	.100" x .300"	SPST, SPDT, DPST, 3PST	Contacts: Tin Terminals: Tin	2,000 Cycles
	209	Top Actuated Auto Insertable Low Profile Positions: 2-10, 12	.100"	SPST	Contacts: Gold Terminals: Tin	2,000 Cycles
	210	Top Actuated Auto Insertable Low Profile Positions: 2-10, 12	.100"	SPST	Contacts: Gold Terminals: Tin Flash	1,000 Cycles

Rotary DIP Switches

A rotary DIP switch functions similarly to a typical DIP switch except the “rotary” part of the switch refers to the actuator. This is adjusted by rotating a wheel/dial rather than moving a piano or slide actuator. CTS’ robust design features precise detents, clockwise or counter-clockwise rotation, binary-coded decimal (BCD) and



hexadecimal output, high-temperature resistance, gold-plated beryllium copper contacts and tin-coated terminals. Rotary DIP switches can be used in many of the same applications that use slide-type DIP switches, as well as those that require less space on the PCB or require simple adjustments.

	Series	Description	Dimensions	Code	Materials	Lifecycle
	220	Clockwise or Counter-Clockwise Metal Bracket Design Rotation: 360° Positions: 4, 10, or 16	7 x 7 mm	BCD Hexadecimal Single Pole	Contacts: Gold Terminals: Tin	10,000 Steps
	221	Clockwise or Counter-Clockwise Rotation: 360° Positions: 10 or 16 IP67	10 x 10 mm	BCD Hexadecimal	Contacts: Gold Terminals: Tin	10,000 Steps

Rotary Selector Switches

Rotary switches are operated by turning a knob or lever, thereby changing the circuit settings of a given system as the the user cycles through the various positions available. These switches offer an intuitive means of circuit control, and our rotary solutions feature a multitude of options for a customized user experience. CTS’ rotary switch product line offers



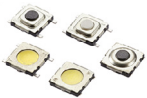



both durable construction and versatility. The robust hill-and-valley detent system of these switches allows crisp and sure connections, while the molded stator prevents solder from flowing into the circuit during the assembly process. This reliable construction combined with an assortment of options provide a product that meets the needs of your application.

	Series	Description	Dimensions	Circuits	Materials	Lifecycle
	212	Steel Construction Hill-and-Valley Detent Glass Thermoset Molded Wafer	1-1/8" Diameter	Up to 12 Positions/ Pole Shorting or Non-Shorting	Plates: Silver Terminals/Contacts: Brass	25,000 Cycles
	227	Die Cast Construction Hill-and-Valley Detent Glass Thermoset Molded Wafer	1-1/8" Diameter	Up to 12 Positions/ Pole Shorting or Non-Shorting	Plates: Silver Terminals/Contacts: Brass	25,000 Cycles



Tactile Switches

A tactile switch provides a physical (tactile) feedback when actuated, typically in form of a click or a bump, indicating that it has been activated. It is usually constructed with a spring mechanism that generates the tactile feedback which in turn helps the users confirm that the input has been recognized. Tactile switches from


CTS combine reliability with superior tactile feedback in multiple sizes, operating forces, actuator heights and life cycles to meet the demands of your application. They are used for human interface applications in which the user applies force to the momentary push button switch for selection and control.

	Series	Description	Dimensions	Actuator Force	Lifecycle
	222A	Vertical and Side Actuation	6.2 x 6.2 mm	100 gf 160 gf 260 gf	200,000 Cycles 1 Million Cycles
	222B	Vertical Actuation IP67	6 x 3.5 mm	160 gf 260 gf	30,000 Cycles 50,000 Cycles
	222C	Vertical Actuation	6.2 x 6.2 mm	160 gf 260 gf	500,000 Cycles 1 Million Cycles
	222D	Vertical Actuation	6.2 x 6.2 mm	160 gf 260 gf 360 gf	200,000 Cycles 500,000 Cycles 1 Million Cycles
	222E	Vertical Actuation	5.0 x 5.0 mm	160 gf 260 gf	200,000 Cycles 1 Million Cycles
	222G	Vertical Actuation	6.0 x 3.8 mm	160 gf 260 gf	100,000 Cycles
	222H	Side Actuation	6.2 x 2.55 mm	120 gf 160 gf 240 gf	500,000 Cycles 1 Million Cycles
	222J	Vertical Actuation IP67	6.2 x 6.2 mm	160 gf 200 gf 350 gf	300,000 Cycles 500,000 Cycles 1 Million Cycles
	222K	Vertical Actuation IP67	6.2 x 6.2 mm	145 gf 200 gf 360 gf	300,000 Cycles 500,000 Cycles 5 Million Cycles
	222L	Vertical Actuation IP67	6.2 x 6.2 mm	225 gf	300,000 Cycles

Tactile Switches (Continued)

	Series	Description	Dimensions	Force	Lifecycle
	222M	Vertical Actuation IP57	6.2 x 6.2 mm	145 gf 200 gf 360 gf	300,000 Cycles 500,000 Cycles 5 Million Cycles
	222P	Vertical Actuation IP67	6.2 x 6.2 mm	200 gf	100,000 Cycles
	222S	Vertical Actuation IP57	6.2 x 3.8 mm	200 gf 300 gf	200,000 Cycles
	222U	Vertical Actuation IP67	6.1 x 6.1 mm	260 gf	50,000 Cycles
	222V	Vertical Actuation	6.0 x 6.0 mm	100 gf 160 gf 260 gf	60,000 Cycles 80,000 Cycles 100,000 Cycles
	222W	Vertical Actuation	6.0 x 6.0 mm	160 gf 230 gf	100,000 Cycles
	223A	Vertical Actuation	4.7 x 3.5 mm	160 gf 260 gf	100,000 Cycles 300,000 Cycles
	223B	Vertical Actuation	4.2 x 4.5 mm	100 gf 160 gf 260 gf	200,000 Cycles 500,000 Cycles 1 Million Cycles
	223C	Vertical Actuation	4.2 x 4.5 mm	160 gf	1 Million Cycles
	223D	Vertical Actuation	5.6 x 4.0 mm	180 gf 220 gf 350 gf	50,000 Cycles
	223E	Vertical Actuation	4.2 x 3.2 mm	160 gf 260 gf	50,000 Cycles 100,000 Cycles
	223G	Side Actuation	4.8 x 2.2 mm	160 gf	200,000 Cycles
	223H		4.7 x 3.5 mm	160 gf 220 gf	100,000 Cycles 200,000 Cycles
	223J	Vertical Actuation IP67	12 x 12 mm	200 gf 300 gf	150,000 Cycles 200,000 Cycles
	223L		5.5 x 3.1 mm	200 gf	100,000 Cycles
	224A	Vertical Actuation	12 x 12 mm	160 gf 260 gf	300,000 Cycles 500,000 Cycles



Tactile Switches (Continued)

	Series	Description	Dimensions	Actuation Force	Lifecycle
	225A	Side Actuation	7.3 x 3.8 mm	180 gf	50,000 Cycles 100,000 Cycles
	225C	Vertical Actuation IP67	7.2 x 7.2 mm	130 gf 200 gf 300 gf 500 gf	100,000 Cycles
	225F	Vertical Actuation IP67	7.2 x 7.2 mm	110 gf	100,000 Cycles
	226A	Vertical Actuation	3.0 x 2.6 mm	160 gf 400 gf	200,000 Cycles 500,000 Cycles
	226B	Vertical Actuation	3.5 x 2.9 mm	100 gf 160 gf 200 gf 350 gf 500 gf	100,000 Cycles 200,000 Cycles 1 Million Cycles
	226E	Side Actuation	3.5 x 2.9 mm	160 gf 220 gf	100,000 Cycles
	226H	Vertical Actuation	3.9 x 2.9 mm	160 gf 250 gf	100,000 Cycles 200,000 Cycles
	228A	Vertical and Side Actuation Single or Bi-LED	6.8 x 7.2 mm 7.2 x 7.0 mm	160 gf	100,000 Cycles
	228B	Vertical Actuation Single or Bi-LED	6.0 x 6.6 mm	160 gf	100,000 Cycles
	228C	Vertical Actuation Single, Bi or Tri LED	7.2x6.8 mm	160 gf	100,000 Cycles
	228D	Vertical and Side Actuation Single or Bi-LED	6.8 x 5.0 mm	220 gf	100,000 Cycles
	228E	Vertical and Side Actuation Single, Bi, or Tri LED IP67	6.8 x 7.2 mm 7.4 x 7.9 mm	200 gf	100,000 Cycles
	228F	Vertical and Side Actuation Single or Tri LED IP67	6.2 x 7.0 mm 7.4 x 8.5 mm	160 gf	100,000 to 500,000 Cycles
	228G	Vertical Actuation Single or Tri LED IP67	5.0 x 6.0 mm	160 gf	100,000 Cycles
	228H	Vertical and Side Actuation Single or Bi-LED IP67	5.2 x 8.0 mm 8.0 x 5.6 mm	160 gf	100,000 Cycles

Toggle Switches

Toggle switches are mechanical devices that control the flow of electricity in devices by opening or closing the circuit. They are operated by moving a lever or handle up/down or left/right. Toggle switches can be used in a wide variety of applications, from controlling lights and appliances to operating machinery and equipment.

Our toggle switch selection provides the user with simple and intuitive means of operation with excellent feedback. All products are built with a robust internal structure which increases their operational life span and come with an IP67 rating that ensures durability and dependable operation even in harsh environments.

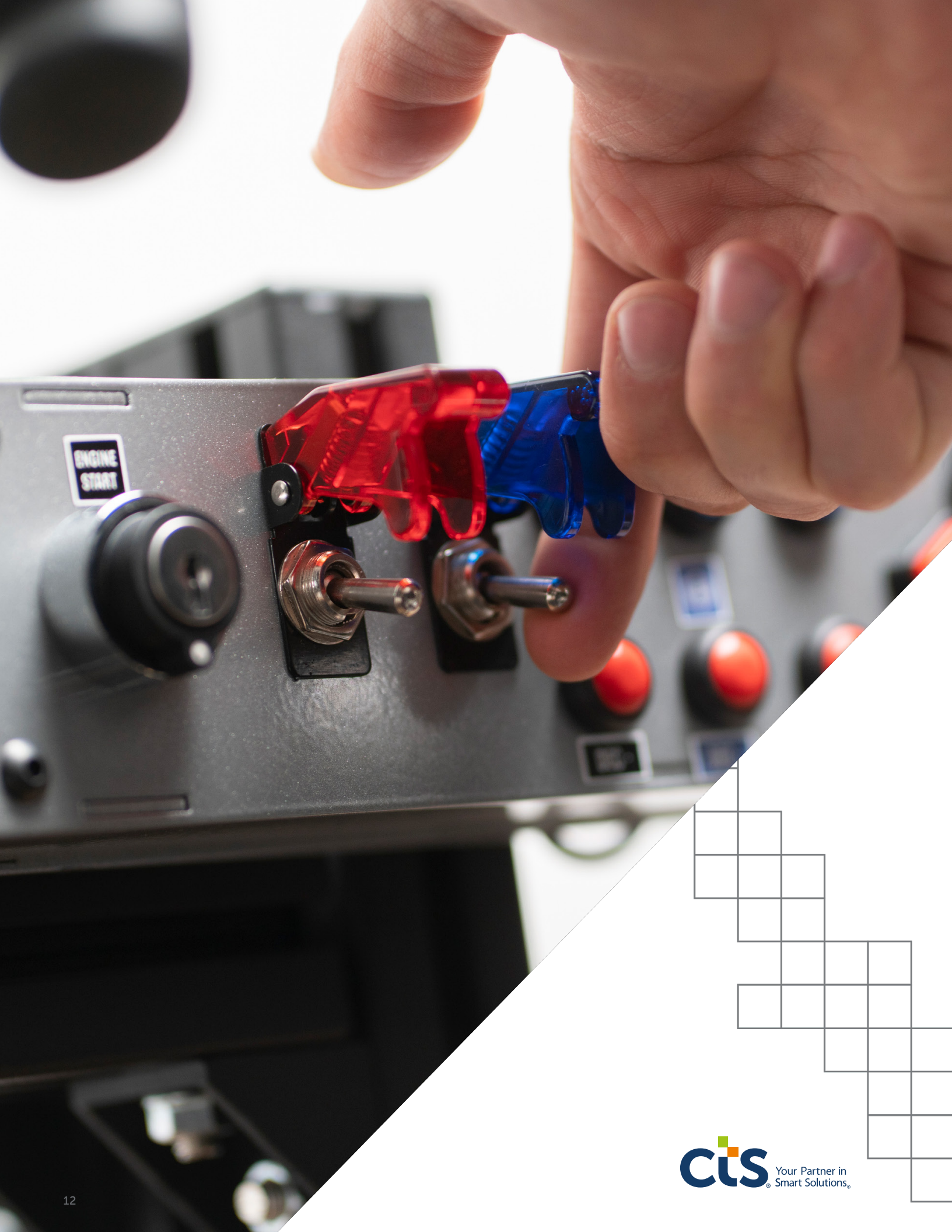
	Series	Description	Dimensions	Circuit	Contact Material	Lifecycle
	033TB	Sub-Miniature Through-Hole Toggle Switch IP67	8.13 x 5.08 mm 8.13 x 9.14 mm	SPDT, DPDT	Silver Plated Gold Plated Gold over Silver Tin Plated	50,000 Cycles
	033TE	Miniature Through-Hole Toggle Switch IP67	12.80 x 6.80 mm 12.80 x 11.70 mm	SPDT, DPDT	Silver Plated Gold Plated Gold over Silver Tin Plated	50,000 Cycles

Pushbutton Switches

Pushbutton switches are robustly designed with a completely mechanical structure for dependable circuit activation. Also known as 'key switches', pushbutton switches are activated similarly to tactile switches by physically pressing the actuator button. Yet, they are a more durable solution and are ideal in applications

that are to operate in harsh environments and under challenging conditions. Pushbutton switches from CTS Corporation come with either a IP40 or IP67 rating and can be customized in terms of actuation force and circuit configuration to ensure user-specific operation.

	Series	Description	Dimensions	Circuit	Actuation Force	Lifecycle
	229	Vertical Actuation Surface Mount IP40, IP67	Height: 9.1 mm Ø: 11 mm, 12 mm	SPST, DPST, SPST w. LED	3N, 6N, 10N	200,000 Cycles 1,000,000 Cycles



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