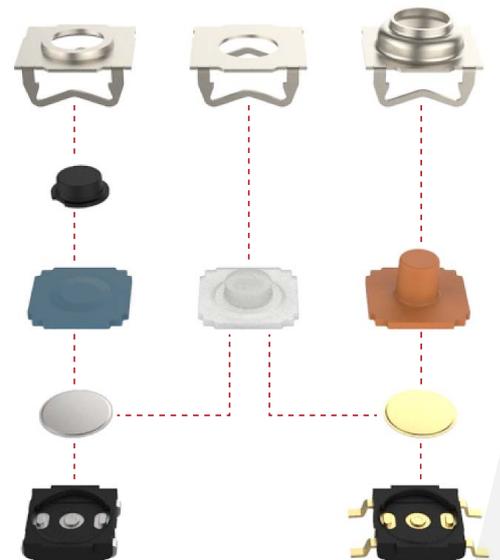


KSC SERIES - HIGH PERFORMANCE TACT SWITCHES



The Concept

The KSC Series tactile switch offers important customization options to meet most application requirements. For more than 25 years, C&K Components has improved performance, quality and expanded product options and variations for the KSC family. The KSC Series is more than a product series with defined characteristics, it is a system where configurations can be combined to deliver a complete switch solution. Actuators, domes, and housings can be mixed in order to obtain the right dimension, haptics and resistance to meet environmental requirements. By offering the right mix, the KSC Series can match specific customer requirements in terms of haptics and durability.



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Flexibility for Possibilities

The function of the frame is to maintain the switch closed by crimping on the housing. The raised version is used to protect the switch from an actuation overload.



Domes are considered the heart of a tactile switch. It gives the necessary force for actuation, up to 9.6N and haptic feedback. C&K is able to offer various force and tactile configurations based on more than 20 dome types. Quality designs and manufacturing processes also deliver a long operating life. From standard operating life rating of 300K cycles, up to long life cycles of 10 000K, the KSC Series is able to withstand the toughest operating conditions.



Actuator is not only adjusting the switch height, but has a major contribution for the tactile effect. C&K offers several different actuator types to match various tactile feeling and acoustic responses. Various materials and heights are used to match all possible customer requirements.



Housing is integrating all the electrical functions necessary for a tactile switch. Silver plated versions are the most common and can carry a few micro amperes, while gold versions offer the highest resistance against corrosion. The fine overmolding offers the highest sealing rating in the market with IP67 minimum*. Providing even more design flexibility, the KSC Series can be either top or side actuated.



The switch assembly leads to the final result based on the components choice. To ensure performance and quality, C&K tests every switch in production according to force/travel features. Switch tolerances are also predicted by making and testing switches with domes at their tolerances edges. This process control, from design to manufacturing leads to predictable behavior.



Common features

- Sealing:* IP67 (IP50 for KSC5 & IP40 for KSC SLT)
- Voltage: 0.02 V DC – 32V DC
- Current: 0.001 mA to 50 mA for silver / 0.01 mA to 10 mA for gold, except ultra low current version
- Max. Power: 1.2 VA silver contacts / 0.2 VA gold contacts
- Operating life of 300K cycles except for long life versions
- Dielectric strength > 250V rms
- Contact resistance < 0.1 Ohm
- Insulation resistance > 10M Ohm
- Bounce time < 1 ms
- Packaged in tape and reel

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Combination Overview

Sub-family	KSC1	KSC2	KSC3	KSC4	KSC4	KSC4	KSC4	KSC5	KSC6	KSC7	KSC8
Actuator	No actuator	Soft silicon	Hard	Soft silicon	Soft silicon	Soft EPDM	Soft EPDM	Hard	Hard	Soft silicon	Hard
Switch height (mm)	2.5	3.5	3.5	5.2 50SH	5.2 70SH	5.2	5.2 Conic	5.6	7.7	4.3	4.9
Top actuated J/G terminals	•	•	•	J	•	•	J	•	•	•	•
Side actuated	•	•		•	•	•	•			•	
Detect	•	•									
Force	1.85N to 5.5N	1.5N to 6.25N	2N to 5N	1.45N	1N to 4N	1.85N to 5.5N	3N to 3.5N	1.7N to 5.5N	1.7N to 3.5N	4N to 5.5N	1.7N to 4N
Silver (-40°C/+85°C)	•	•	•	•	•	•	•	•	•	•	•
Gold (-40°C/+125°C)	•	•	•	•	•	•	•	•	•	•	•
Acoustic control		•			•	•	•				
Button compatible											
Rocker actuation								•			
Ultra low current	•	•	•	•	•	•	•		•	•	•
Potting compatible											
Overload protection											
Life cycle	100 000 to 200 000	100 000 to 5 000 000	100 000 to 300 000	5,000,000	300 000 to 1 000 000	300 000 to 5 000 000	300 000 to 5 000 000	10 000 to 100 000	300,000	300 000 to 7 000 000	300,000
IP	67	67	67	67	67	67	67	50	67	67	67
Electrical function	SPST NO	SPST NO	SPST NO	SPST NO	SPST NO	SPST NO	SPST NO	SPST NO	SPST NO	SPST NO	SPST NO

Sub-family	KSC9	KSC10	KSC11	KSC XA	KSC DCT	KSC SLT	KSC OF	KSC PF	KSC2 TE	KSC4 TE
Actuator	Hard	Soft silicon	Hard	Hard	Soft silicon	Soft silicon	Soft silicon	Soft silicon	Soft silicon	Soft silicon
Switch height (mm)	7.7	4.9	3.9	4.9	5.2	5	5.1	5.1	3.5	5.2
Top actuated J/G terminals	•	•	J	J	•	•	J	•	J	J
Side actuated										
Detect										
Force	1.7N to 4N	1.5N to 2.5N	1.6N to 5N	3.5N to 9.6N	4.75N	2.4N to 3.5N	1.65N to 4N	1.8N to 4N	1.6N to 4N	1.6N to 4N
Silver (-40°C/+85°C)	•	•	•	•	•	•	•	•	•	•
Gold (-40°C/+125°C)	•					•				
Acoustic control				Soft sound		Silent				
Button compatible	•									
Rocker actuation										
Ultra low current	•									
Potting compatible								•		
Overload protection							•			
Life cycle	300,000	5,000,000	1 000 000 to 3 000 000	500 000 to 1 000 000	300,000	200,000	300,000	300 000 to 1 000 000	5 000 000 to 10 000 000	5 000 000 to 10 000 000
IP	67	67	67	67	67	40	67	67	67	67
Electrical function	SPST NO	SPST NO	SPST NO	SPST NO	SPDT NC-NO	SPST NO	SPST NO	SPST NO	SPST NO	SPST NO

• Available • Available on request

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Typical Applications

Automotive: For the interior of a vehicle, C&K tunes the KSC Series switch's haptic and acoustic response to perfectly fit any OEM requirements. The flexibility of integration, the precise tolerance, the robustness, and the variety of haptic makes the KSC Series an ideal switch for interior controls. In addition, the KSC Series switch's IP67-rating and durability make the switch well suited for use on and outside the vehicle body, such as door handles, trunk opener and various mechatronics applications.



Industrial: Rugged sealing and resistance against corrosive agents make the KSC Series the perfect fit for applications subjected to harsh environments. Durability is proven for applications, such as lift buttons, where ultra-long life up to 5 million cycles is critical. The importance of IP67 sealing is highlighted by applications such as industrial sensors. Fire alarm detectors are now integrating KSC Series switches for their anti-corrosive traits and long operating life. Detect versions are also used in anti-tampering applications.



Medical: Advanced medical systems are requiring high reliability for switching functions. Due to high sealing, reliability and testing, KSC Series switches can perform several functions for various medical systems. Steam cleaning resistance and excellent tactile feedback make the KSC Series a unique solution for surgery tools.



Aircraft: High reliability is required in the aircraft industry. KSC Series switches are used for pilot control units where specific haptic and long life are required. Such performance is offered on different heights to be easily integrated inside any unit.



Consumer: All products designed for and used by consumers need to be reliable and able to withstand both harsh conditions and regular, repeated usage. The reliability and performance expectations that accompany the latest consumer products are high. C&K has a large selection of KSC switches available to ensure consumer product designers that they will find the correct switch for their particular innovation.



How Do I Get It?

Main versions characteristics are available on our website. C&K recommends contacting your local sales representative to confirm product availability. Please note that for some applications, especially automotive, some versions are dedicated to typical versions. Technical specifications are available on request.