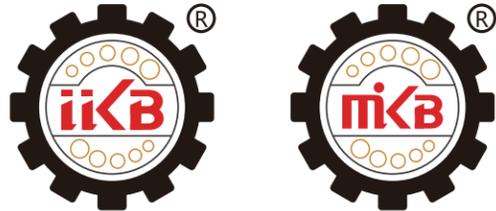


# Rugged Joystick with Single/Dual/Multi-Axis

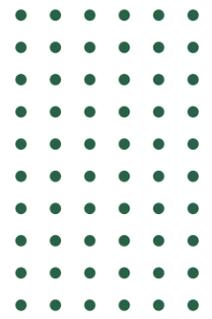


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# Company Profile

Established in 2006, Key Technology China Limited is an ISO9001-2015 and GJB9001C-2017 registered enterprise engaged in research, development, sale and service of all kinds of rugged keyboards/pointing devices for harsh environments covering industrial/military/marine/medical/coal and mine/oil and gas/chemical industry/transportation/finance/aerospace/public access/food and beverage/vehicle etc. applications. We have excellent and experienced teams who focus on product development & design, quality control and company running, dedicated to strict quality control and thoughtful customer service, our experienced staff are always available to provide ideal solutions to customers. Besides, our products have obtained many professional certificates/testing reports including but not limited to CE, RoHS, FCC, ESD, REACH, IEC60945-2002, MIL-STD-461G-EMC-EMI-EMS-ESD, MIL-STD-810H, IP67, IP68, Medical, Explosive-proof, high and low temperature testing as well as patent certificates.

**CUSTOMER FIRST**

**INNOVATION TECHNOLOGY**

**CONTINUOUS IMPROVEMENT**

**QUALITY PRIORITY**

**TEAM WORK**

**CREDIT-BASED**

**LEADING MANUFACTURER**

## ★ Feature and Reliability ★

EMC SPEC	MIL-STD-461G (EMC, EMI, EMS, ESD)
01	CE101 25Hz - 10kHz Conducted Emissions, Audio Frequency Currents, Power leads
02	CE102 10kHz -10MHz Conducted Emissions, Radio Frequency Potentials, Power leads
03	CS101 25Hz - 150kHz Conducted Susceptibility, Power Leads
04	CS106 Conducted Susceptibility, Transients, Power Leads
05	CS112 Electrostatic Discharge Susceptibility
06	CS114 4kHz -400MHz Conducted Susceptibility, Bulk Cable injection
07	CS115 Conducted Susceptibility, Bulk Cable injection, Impulse Excitation
08	CS116 10kHz - 100MHz Conducted Susceptibility, Damped Sinusoidal Transients, Cables and Power Leads
09	RE101 25Hz -100kHz Radiated Emissions, Magnetic Field
1 0	RE102 10kHz - 18GHz Radiated Emissions, Electric Field
1 1	RS101 25HZ - 100kHz Radiated Susceptibility, Magnetic Field
1 2	RS103 10kHz - 40GHz Radiated Susceptibility, Electric Field

Environmental Adaptability	MIL-STD-810H (high and low wide temperature, low pressure, humidity, vibration, shock, temperature shock, rain, fungus etc.)
01	Low Pressure (57kPa - 106kPa)
02	High Temperature (+75 ℃)
03	Low Temperature (-40 ℃)
04	Temperature Shock (-55 ℃ to +75 ℃)
05	Rain Test (Wind velocity: no less than 18m/s, test duration: 3h)
06	Humidity (-30 ℃ to +60 ℃, 95%RH)
07	Fungus (Test period: 28 days (672h))
08	Salt Spray (Test period: 96h, IEC60512-6)
09	Low Frequency Vibration
1 0	Dust Test (10.6g/m <sup>3</sup> ±7g/m <sup>3</sup> )
1 1	Vibration (Frequency: 0-2000Hz, Displacement: 1mm, Acceleration:70m/s <sup>2</sup> )
1 2	Shock (40g, 11ms)
1 3	Drop Test (Drop height: 122cm)

**Designed to meet the critical military standards in these 10 aspects:**  
Reliability, Safety, Maintainability, Testability, Supportability, Environmental adaptability, Stability, Compatibility, Consistency, And continuity.



### Feature



IP65 ruggedized joystick with stainless steel plate and 2 sealed stainless steel mouse buttons (optional) for right and left clicking, the whole electronic controllers protected and shielded by stainless steel housing. The joystick provides users with a 3-axis joystick function, and can control the output of X (left and right) and Y axis (front and rear) by moving the handle in any direction by  $(25^\circ \pm 2^\circ)$ ; and surely control the Z axis output by rotating  $(40^\circ \pm 3^\circ)$ . Mouse function or joystick function optional. With one button on the top of the joystick (2 buttons optional), it can be set as left mouse button or right button before ex-factory. USB interface, top panel mounted solution with threaded bolts.

Part Number: K-TEK-B100-JS

### Mechanical Data

Mechanical Lifespan:	>200,000 cycles
X, Y axis operation strength:	0~5 N, Ultimate damage strength 12 N
Z axis rotation torque:	0~4 N, Maximum torque must not exceed 8 N
Dimension:	100.0mm x 116.0mm x 41.5mm (L x W x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Current Rating:	100mA

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +70°C
Storage Temperature:	-45°C ~ +75°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation controls etc.

### Feature



IP65 ruggedized joystick with stainless steel plate and 2 sealed stainless steel mouse buttons (optional) for right and left clicking, the whole electronic controllers protected and shielded by stainless steel housing. The joystick provides users with a 3-axis joystick function, and can control the output of X (left and right) and Y axis (front and rear) by moving the handle in any direction by  $(25^\circ \pm 2^\circ)$ ; and surely control the Z axis output by rotating  $(40^\circ \pm 3^\circ)$ . High quality durable black titanium electroplated on the top stainless steel plate. Mouse function or joystick function optional. With one button on the top of the joystick (2 buttons optional), it can be set as left mouse button or right button before ex-factory. USB interface, top panel mounted solution with threaded bolts.

Part Number: K-TEK-B100-JS-BT

### Mechanical Data

Mechanical Lifespan:	>200,000 cycles
X, Y axis operation strength:	0~5 N, Ultimate damage strength 12 N
Z axis rotation torque:	0~4 N, Maximum torque must not exceed 8 N
Dimension:	100.0mm x 116.0mm x 41.5mm (L x W x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Current Rating:	100mA

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +70°C
Storage Temperature:	-45°C ~ +75°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation control etc.



### Feature

IP65 ruggedized joystick with stainless steel plate and 2 sealed stainless steel mouse buttons (optional) for right and left clicking, the whole electronic controllers protected and shielded by stainless steel housing. The joystick provides users with a 3-axis joystick function, and can control the output of X (left and right) and Y axis (front and rear) by moving the handle in any direction by  $(25^\circ \pm 2^\circ)$ ; and surely control the Z axis output by rotating  $(40^\circ \pm 3^\circ)$ . Mouse function or joystick function optional. With one button on the top of the joystick (2 buttons optional), it can be set as left mouse button or right button before ex-factory. USB interface, top panel mounted solution with threaded bolts.

Part Number: K-TEK-B100-JS-DT

### Mechanical Data

Mechanical Lifespan:	>200,000 cycles
X, Y axis operation strength:	0~5 N, Ultimate damage strength 12 N
Z axis rotation torque:	0~4 N, Maximum torque must not exceed 8 N
Dimension:	100.0mm x 116.0mm x 41.5mm (L x W x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Current Rating:	100mA

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +70°C
Storage Temperature:	-45°C ~ +75°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation control setc.



### Feature

K-TEK-CB-4U5 is made of high-quality aviation aluminum alloy and ruggedized industrial plastic, and the panel is equipped with various high quality switches and operating components. Interface aviation plug with model J14A-9ZJ. USB is available. Operating temperature: -40°C to +70°C.

Part Number: K-TEK-CB-4U5

### Mechanical Data

Mechanical Lifespan:	>500,000 cycles
X, Y axis operation strength:	0~3.0N, Ultimate damage strength 40.0N
Dimension:	168.6mmx147.5mm(LXW)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	Interface aviation plug with model J14A-9ZJ. USB
Buttons:	S1, S3, S6, S7, S8, S9: self-reset button switch, red operation cap S2: 4-ways switch, self-reset, black operation cap S4, S5, S10, S11: self-reset button switch, black operation cap S12 and S13: HC-2A2 Hall operating joystick (Matt black)

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +70°C
Storage Temperature:	-45°C ~ +75°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation control setc.



### Feature

K-TEK-GBC4-C2U2T--ZK industrial joystick is made of high-quality aviation aluminum alloy material, equipped with 2 button switches, USB 2.0, output signals through physically swing the handle, which can be operated by the thumb to achieve specific functions as per requirements through relevant switch buttons. It is suitable for industry applications that have certain requirements for product control experience and performance, as well as functionality

Part Number: K-TEK-GBC4-C2U2T-ZK

### Mechanical Data

Mechanical Lifespan:	500,000 cycles
X, Y axis operation strength:	0~10 N, Ultimate damage strength 30 N
Dimension:	85.0mm x 228.0mm (L x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Buttons:	S1/S2: Black self-reset push button switch, Normal-open, 400mA@28VDC T1: self-reset thumb wheel. Rotation angle: 18°± 2°from center position

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	0°C ~ +40°C
Storage Temperature:	-10°C ~ +45°C
APPLICATION:	Vehicle,aerospace,navy,maritime,Radar,console,navigationcontrolsetc.



### Feature

K-TEK-GBC4-L2U3F industrial hall joystick is made of high-quality stainless steel, aluminum alloy (baked black paint) material, equipped with 1 trigger switch, 2 button switches, 1 high-precision and high-reliability two-dimensional force-sensitive control device, USB2.0 output, physical shaking by holding the handle and output signals to achieve specific functions through related switch buttons according to specific needs. Suitable for industry applications that have certain requirements on product control, performance, and functions.

Part Number: K-TEK-GBC4-L2U3F

### Mechanical Data

Mechanical Lifespan:	> 500,000 cycles
X, Y axis operation strength:	0~10N,Ultimate damage strength100N Rotation angle: 20°±2°from every direction to center
Dimension:	120.0mm x 274.6mm (L x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Buttons:	S3: grey self-reset switch, S1/S2: black self-reset button switch

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +70°C
Storage Temperature:	-45°C ~ +75°C
APPLICATION:	Vehicle,aerospace,navy,maritime,Radar,console,navigationcontrolsetc.



### Feature

IP54 sealed hall joystick provides the user with a 3-axis joystick function. It can control the output of X (left and right) and Y axis (front and rear) by moving the handle in any direction by  $(25^\circ \pm 2^\circ)$ ; and surely control the Z axis output by rotating  $(40^\circ \pm 3^\circ)$ . Mouse function optional. With 2 buttons on the top Switch (S1, S2), its' function can be set to mouse left button and right button at the factory. USB 2.0 interface is available.

Part Number: K-TEK-HC1U-360

### Mechanical Data

Mechanical Lifespan:	200,000 cycles
X, Y axis operation strength:	0~5 N, Ultimate damage strength 12 N
Z axis rotation torque:	0~4 N, Maximum torque must not exceed 12 N
Dimension:	48.5mm x 48.5mm x 115.0mm (L x W x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Current Rating:	100mA

### Reliability

CE/FCC/ROHS	
Protection Level:	IP54
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +75°C
Storage Temperature:	-45°C ~ +85°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation controls etc.



### Feature

IP54 hall joystick provides the user with a 3-axis joystick function. It can control the output of X (left and right) and Y axis (front and rear) by moving the handle in any direction by  $(25^\circ \pm 2^\circ)$ ; and surely control the Z axis output by rotating  $(40^\circ \pm 3^\circ)$ . Mouse function optional. With a button sits on top of the joystick, its function can be set to mouse left button or right button at the factory. USB 2.0 interface is available. Meet MIL-STD-810H (high and low wide temperature, low pressure, humidity, vibration, shock, salt spray, temperature shock, rain, dust, fungus, solar radiation etc.)

Part Number: K-TEK-HC1U-360-V02

### Mechanical Data

Mechanical Lifespan:	200,000 cycles
X, Y axis operation strength:	0~5 N, Ultimate damage strength 12 N
Z axis rotation torque:	0~4 N, Maximum torque must not exceed 12 N
Dimension:	48.5mm x 48.5mm x 115.0mm (L x W x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Current Rating:	100mA

### Reliability

CE/FCC/ROHS	
Protection Level:	IP54
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +75°C
Storage Temperature:	-45°C ~ +85°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation controls etc.



### Feature

K-TEK-HC-5A2O is made of high-quality aluminum alloy for thumb operation, non-contact Hall sensing anti-interference design, compact and exquisite design make it suitable for installation on portable control panels to achieve physical multi signal transmission through thumb operation for self resetting or friction positioning. It has the advantages of flexible operation, long lifespan, and excellent protective performance.

Part Number: K-TEK-HC-5A2O

### Mechanical Data

Mechanical Lifespan:	500,000 cycles
X, Y axis operation strength:	1~5 N
Dimension:	52.0mm x 91.0mm (L x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Power Consumption:	≤0.1W·h

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +70°C
Storage Temperature:	-45°C ~ +75°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation controls etc.



### Feature

K-TEK-HC-5A3O is made of high-quality aluminum alloy for thumb operation, non-contact Hall sensing anti-interference design, compact and exquisite design make it suitable for installation on portable control panels to achieve physical multi signal transmission through thumb operation for self resetting or friction positioning. It has the advantages of flexible operation, long lifespan, and excellent protective performance.

Part Number: K-TEK-HC-5A3O

### Mechanical Data

Mechanical Lifespan:	>500,000 cycles
X, Y axis operation strength:	1~5 N
Dimension:	52.0mm x 86.0mm (L x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Power Consumption:	≤0.1W·h

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +75°C
Storage Temperature:	-45°C ~ +85°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation controls etc.



### Feature

K-TEK-HC-5U2E is made of high-quality aluminum alloy, non-contact Hall sensing wrist operation design. It has the advantages of solidity, light appearance, convenient and flexible operation, long life, and good protective performance, which can be used by physically hand swing operation to achieve physical multi-axis signal output, and the top is equipped with 2 high-quality buttons controlled by thumbs to realize customization function.

Part Number: K-TEK-HC-5U2E

### Mechanical Data

Mechanical Lifespan:	100,000 cycles
X, Y axis operation strength:	0~5 N, Ultimate damage strength 12 N
Dimension:	50.0mm x 119.5mm (L x H)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB 2.0
Button:	S1/S2: Black self-reset switch, Normal-open

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +75°C
Storage Temperature:	-45°C ~ +85°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation controls etc.



### Feature

K-TEK-SMC30 Hall Joystick Series provides user with 2-axis or 3-axis configurations, made by stainless steel and aluminum alloy materials, featuring a spring return mechanism. Equipped with high-precision Hall-effect sensors, full-temperature-range linear compensation, and IP65 or higher protection level, with smoother operation feeling, and ergonomic mechanical design, as well as panel mounting solution.

Part Number: K-TEK-SMC30

### Mechanical Data

Mechanical Lifespan:	> 500,000 cycles
Operating Angle:	Main joystick ±20 degrees, Square boundary (Circular Angle)
Operating range:	360°
Dimension:	38.0mm x 38.0mm x 31.5mm (L x W x H)

### Electrical Data

Supply Voltage:	DC5V, DC12-24V
Signal output:	Analog voltage, RS485, RS422, RS232, USB
Power consumption:	<9-25MA (5V power supply), varies from signal output and the number of axis

### Reliability

CE/FCC/ROHS	
Protection Level:	IP65
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +70°C
Storage Temperature:	-55°C ~ +85°C
APPLICATION:	Vehicle, aerospace, navy, maritime, Radar, console, navigation controls etc.



### Feature

IPX6 rated ergonomic military joystick mouse with non-contact Hall sensor design, to achieve the physical signal output through fingers, with 3 mouse buttons for right/left clicking, as well as middle buttons, with good tactile feeling and extreme smooth operation without any noise. With CNC aluminum black titanium electroplated rugged plate, 4 M4 sinking holes for top panel mount solution, USB output or aviation plug optional. Designed to meet MIL-STD-461G (EMC, EMI, EMS, ESD) and MIL-STD-810H (high and low wide temperature, low pressure, humidity, vibration, shock, temperature shock, rain, salt mist, dust, fungus, solar radiation etc.), with strong anti-interference and low radiation ability. Which can also meet the critical military standards in these 10 aspects: reliability, safety, maintainability, testability, supportability, environmental adaptability, stability, compatibility, consistency, and continuity.

Part Number: K-TEK-M129-JS-2A2E-3B-NV-151B

### Mechanical Data

Key Lifespan:	>1 million actuations
Actuation Force:	2.5N±0.2N
Dimension:	129.0mm x 172.0mm(top panel)

### Electrical Data

Supply Voltage:	DC +5V±5%
Connect Interface:	USB
Current Rating:	30mA

### Reliability

CE/FCC/ROHS, MIL-STD-461G-EMC-EMI-EMS-ESD, and MIL-STD-810H (high and low wide temperature, low pressure, humidity, vibration, shock, salt spray, temperature shock, rain, dust, fungus, solar radiation etc.)	
Protection Level:	IPX6
MTBF:	>20000H
MTTR:	<30min
Operating Temperature:	-40°C ~ +70°C
Storage Temperature:	-45°C to +75°C
APPLICATION:	Vehicle, aerospace, naval, defense, maritime, Radar, console, portable rugged laptop, UAV ground station etc.