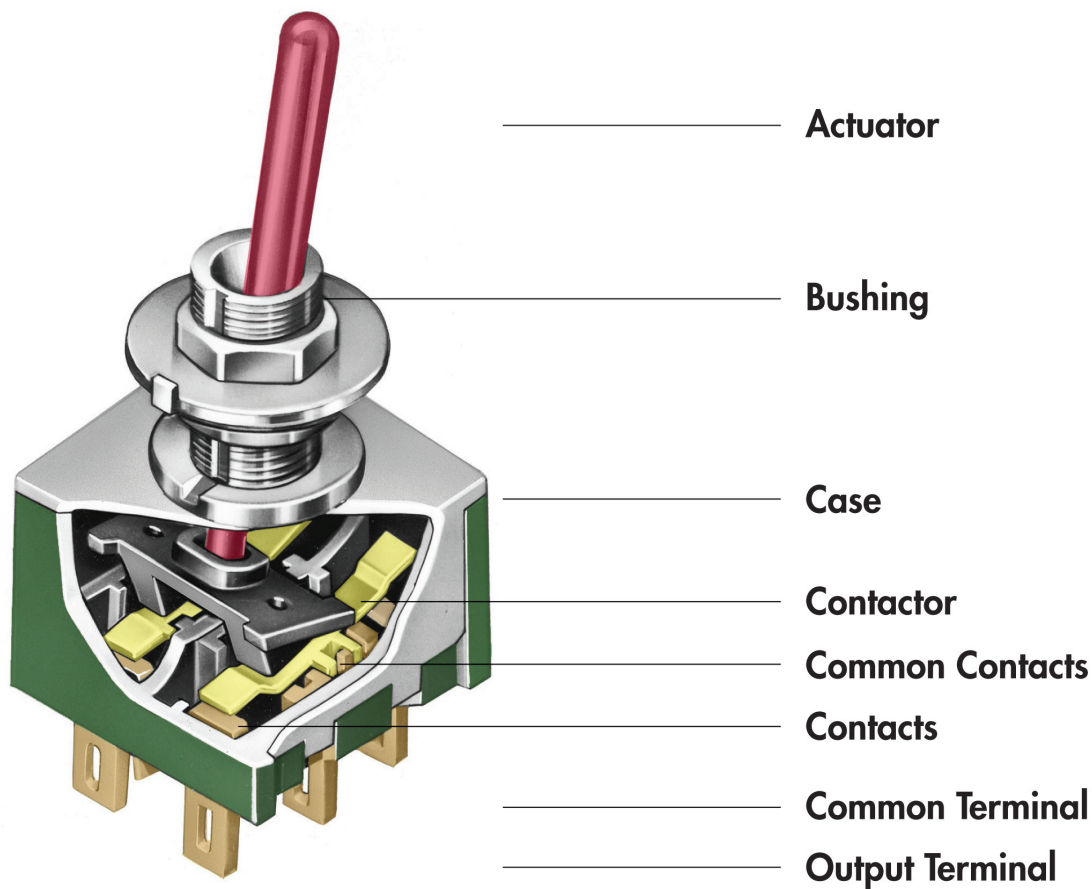


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SWITCHES 101

BASIC TRAINING

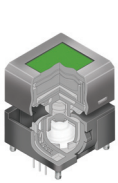


NIKK
SWITCHES

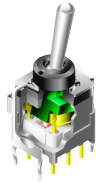
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SEVEN QUESTIONS TO SPECIFY A SWITCH

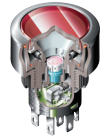
1. What type of switch (actuator)?



Programmable



Toggle



Pushbutton



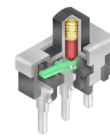
Rocker



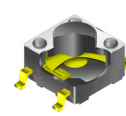
Keylock



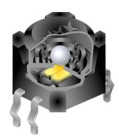
Rotary



Slide



Tactile



Tilt

2. What are the electrical requirements?

- Voltage
- Current (6A @ 125V AC)
- Logic Level
- Number of Poles/Throws
- Illumination
- Power Circuit
- Loads:
 - Resistive
 - Inductive
 - Motor

3. What size switch?

- Ultra-Miniature
- Subminiature
- Miniature
- Standard

4. What type of terminations?

- Solder Lug (wire harness)
- Screw Terminals
- PCB
- SMT
- Quick Connect

5. How is switch mounted into device?

- Panel Bushing Mount (threads)
- Snap-In Panel Mount
- PCB Mount
- SMT

6. What is the industry? For example:

- Broadcast
- Audio
- Automation
- Medical
- Telecom
- Security
- Computer

7. Are there any unique requirements? For example:

- Sealed
- IP Ratings
- Illuminated
- Standards
- Approvals
- Value-Added Services
 - Custom Printing
 - Legends
 - Wire Assembly

everything starts here.

TOGGLES

Maximum Rating	Size	MOUNTING				TERMINALS							Series
		PC Board	Bushing	Snap-In	Two Screw	Solder Lug	PC	Quick Connect	Wire Wrap	Screw	SMT Gull Wing	Process Seal	
0.4VA @ 28V AC/DC	ultra-mini	•					•					•	G
0.4VA @ 28V AC/DC	ultra-mini	•					•					•	G Illum
0.4VA @ 28V AC/DC	ultra-mini										•	•	G3T
0.4VA @ 28V AC/DC	submini	•					•					•	A
0.4VA @ 28V AC/DC	submini	•					•					•	B
0.4VA @ 28V AC/DC	submini	•					•					•	B Illum
0.4VA @ 28V AC/DC	miniature	•	•			•	•	•	•				M
0.4VA @ 28V AC/DC	miniature	•					•					•	M2T
0.4VA @ 28V AC/DC	miniature	•	•			•	•	•					M2100
0.4VA @ 28V AC/DC	miniature		•			•							TL
6A @ 125V AC	miniature	•	•			•	•	•	•				M
6A @ 125V AC	miniature	•					•					•	M2T
6A @ 125V AC	miniature	•	•			•	•	•					M2100
6A @ 125V AC	miniature		•			•							TL
10A @ 125V AC	standard	•	•			•	•	•					P
10A @ 125V AC	standard		•			•			wire lead	•			WT
5A @ 125 V AC	standard		•			•							S Low Cap
15-20A @ 125V AC	standard		•			•		•					S Med Cap
15-25A @ 125V AC	standard		•			•		•		•			S Med/Hi
30-50A @ 125V AC	standard		•							•			S Hi Cap
30A @ 125V AC/DC	standard		•							•			S AC/DC

everything starts here.

ROCKERS

Maximum Rating	Size	MOUNTING				TERMINALS						Series
		PC Board	Bushing	Snap-In	Two Screw	Solder Lug	PC	Quick Connect	Wire Wrap	Screw	Process Seal	
0.4VA @ 28V AC/DC	ultra-mini	•					•				•	G
0.4VA @ 28V AC/DC	ultra-mini	•					•					GW
0.4VA @ 28V AC/DC	ultra-mini	•					•					GW Illum
0.4VA @ 28V AC/DC	submini	•					•				•	A
0.4VA @ 28V AC/DC	miniature	•		•	•	•	•	•	•			M
0.4VA @ 28V AC/DC	miniature	•					•				•	M2T
0.4VA @ 28V AC/DC	miniature	•		•	•	•	•	•				M2100
3A @ 250V AC	miniature			•		•						CWT
5A @ 125V AC	miniature			•		•						MLW
6A @ 125V AC	miniature			•		•						CWT
6A @ 125V AC	miniature	•		•	•	•	•	•	•			M
6A @ 125V AC	miniature	•					•				•	M2T
6A @ 125V AC	miniature	•		•	•	•	•	•				M2100
6A @ 125/250V AC	miniature			•		•		•				JWS
6A @ 250V AC	miniature	•		•		•	•	•				CWS
9A @ 125V AC	miniature			•		•		•				CWSB Illum
9A @ 125V AC	miniature			•		•		•				CWSC Illum
10A @ 125V AC	standard				•	•	•	•				P
10A @ 125V AC	standard			•		•						LW
10A @ 125/250V AC	miniature			•		•		•				JWS
10A @ 125/250V AC	standard			•		•		•				JWM
15A @ 125/250V AC	standard			•		•		•	wire lead	•		WR
16A @ 125/250V AC	standard			•		•		•				JWL
20A @ 110V AC	standard				•	•						LW
15-20A @ 125V AC	standard				•	•						SW Med
30A @ 125V AC/DC	standard				•					•		SW Hi Cap

everything starts here.

PUSHBUTTONS

Maximum Rating	Size	MOUNTING				TERMINALS							Series
		PC Board	Bushing	Snap-In	Two Screw	Solder Lug	PC	Quick Connect	Wire Wrap	Screw	SMT Gull Wing	Process Seal	
0.4VA @ 28V AC/DC	ultra-mini	•					•					•	GB
0.4VA @ 28V AC/DC	ultra-mini	•					•						GB2
0.4VA @ 28V AC/DC	ultra-mini											•	G3B
0.4VA @ 28V AC/DC	submini	•					•					•	AB
0.4VA @ 28V AC/DC	submini	•					•					•	BB
0.4VA @ 28V AC/DC	miniature	•	•	•		•	•						EB
0.4VA @ 28V AC/DC	submini		•				turret						FB
0.4VA @ 28V AC/DC	miniature	•					•					•	M2B
0.4VA @ 28V AC/DC	miniature	•	•	•		•	•	•	•				MB2000
0.4VA @ 28V AC/DC	miniature	•	•	•		•	•		•				MB2400
0.4VA @ 28V AC/DC	miniature		•			•							SB4011
500mA @ 125V AC	submini		•				turret						FB
1A @ 125V AC	miniature	•					•					•	M2B
3A @ 125V AC	miniature	•	•	•		•	•						EB
3A @ 125V AC	miniature	•	•	•		•	•		•				MB2400
3A @ 125V AC	miniature		•			•							SB4011
6A @ 125V AC	miniature	•	•	•		•	•	•	•				MB2000
6A @ 125V AC	standard		•			•			wire lead	•			WB
10A @ 125/250V AC	standard			•		•		•					JPM
15A @ 125V AC	standard		•			•				•			SB
15A @ 125V AC	standard		•					•					SCB
16A @ 125/250V AC	standard			•		•		•					JPL

everything starts here.

ILLUMINATED PUSHBUTTONS

		MOUNTING				TERMINALS						
Maximum Rating	Size	PC Board	Bushing	Snap-In	Two Screw	Solder Lug	PC	Quick Connect	Wire Wrap	Screw	Process Seal	Series
0.4VA @ 28V AC/DC	ultra-mini	•					•					GB
0.4VA @ 28V AC/DC	submini	•					•					HB2
0.4VA @ 28V AC/DC	submini	•					•					NP01
0.4VA @ 28V AC/DC	miniature	•	•	•		•	•					KB
0.4VA @ 28V AC/DC	miniature	•		•		•	•					UB
0.4VA @ 28V AC/DC	miniature	•		•		•	•					UB2
0.4VA @ 28V AC/DC	miniature		•	•		•	•	•				YB
0.4VA @ 28V AC/DC	standard	•	•	•		•	•	•				LB
0.4VA @ 28V AC/DC	standard		•			•		•			•	YB2
0.1VA @30V AC/DC	submini		•			•						HB
100mA @ 12V DC	miniature	•					•					KP
1A @ 125/250V AC	miniature	•	•	•		•	•					KB
3A @ 125/250V AC	miniature		•	•		•	•	•				YB
3A @ 125/250V AC	miniature		•	•		•		•				LP01
3A @ 125/250V AC	standard	•	•	•		•	•	•				LB
3A @ 125/250V AC	standard		•			•		•			•	YB2
5A @ 125/250V AC	miniature	•		•		•	•					UB
5A @ 125/250V AC	miniature	•		•		•	•					UB2
5V Photo Interrupter	standard			•								FP01

KEYLOCKS

Maximum Rating	Size	Mounting	Indexing	Terminals	Positions	Process Seal	Series
0.4VA @ 28V AC/DC	submini	PC Board	45°	PC	3	•	SK
0.4VA @ 28V AC/DC	submini	PC Board	45°	PC	5	•	SK
0.4VA @ 28V AC/DC	miniature	PC Board	90°	PC	2	•	SK
0.4VA @ 28V AC/DC	miniature	PC Board	45°	PC	3	•	SK
3A @ 125V DC	miniature	Bushing	45°	Solder Lug	3		SK
3A @ 125V DC	miniature	Bushing	90°	Solder Lug	2		SK
3A @ 250V DC	standard	Bushing	90°	Solder Lug	2		CK
3A @ 250V DC	standard	Bushing	45°	Solder Lug	3		CK

everything starts here.

TILT SWITCH

Maximum Rating	Size	MOUNTING				TERMINALS						Series
		PC Board	Bushing	Snap-In	Two Screw	Solder Lug	PC	Quick Connect	Wire Wrap	Screw	Process Seal	
0.1VA @ 12V DC	miniature	•					•					DSA
5V Photo Interrupter	submini	•					•				•	DSB

ROTARIES

		MOUNTING		INDEXING	TERMINALS					
Maximum Rating	Size	PC Board	Bushing	Step Size	Solder Lug	PC	Screw	SMT Gull Wing	Process Seal	Series
0.4VA @ 28V AC/DC	miniature	•		30°		•			•	MRF
0.4VA @ 28V AC/DC	miniature	•	•	30°		•			•	MRK
0.4VA @ 28V AC/DC	miniature	•	•	45° & 90°		•			•	MRB
0.4VA @ 28V AC/DC	miniature		•	60°		turret				MRY
100mA @ 5/50V DC	ultra-mini	•		22.5° & 36°		•			•	ND
100mA @ 5/50V DC	ultra-mini			22.5° & 36°				•	•	ND3
100mA @ 5/50V DC	submini	•	•	22.5° & 36°		•				FR01
100mA @ 5/50V DC	submini			22.5° & 36°				•		FR02
250mA @ 125V AC	miniature	•	•	30°		•			•	MRA
1A @ 30V DC	miniature		•	45°		turret				MRX
2A @ 30V DC	miniature		•	60°		turret				MRY
2A @ 125V DC	miniature		•	45°		turret				MRX
3A @ 30V DC	miniature		•	60°	•					MRT23
3A @ 125V DC	miniature		•	60°		turret				MRY
4A @ 30V DC	miniature		•	120°	•					MRT22
5A @ 125V DC	miniature		•	60°	•					MRT23
6A @ 125V DC	standard		•	45°			•			HS13
6A @ 125/250V AC	standard		•	30°			•			TS
10A @ 125V DC	miniature		•	120°	•					MRT22
12A @ 125V DC	standard		•	30°			•			HS16
30A @ 125/250V AC	standard		•	30°			•			PS

everything starts here.

SLIDES

Maximum Rating	Size	MOUNTING				TERMINALS							Series
		PC Board	Bushing	Snap-In	Two Screw	Solder Lug	PC	Quick Connect	Wire Wrap	Screw	SMT Gull Wing	Process Seal	
0.4VA @ 28V AC/DC	ultra-mini	•					•						SS
0.4VA @ 28V AC/DC	ultra-mini										•		SS3
0.4VA @ 28V AC/DC	submini	•					•						AS
0.4VA @ 28V AC/DC	miniature	•					•						FS
0.4VA @ 28V AC/DC	miniature	•			•	•	•						MS
1.0mA @ 10mV AC/DC	ultra-mini	•					•						SM
25mA @ 24V DC	ultra-mini	•					•						JS01, JS03
25mA @ 24V DC	ultra-mini										•		JS02, JS04
0.1A @ 12V DC	ultra-mini										•		SS3
0.1A @ 30V DC	ultra-mini	•					•						SS
0.1A @ 30V DC	ultra-mini	•					•						SS Illum
0.1A @ 50V DC	ultra-mini	•					•						JS01, JS03
0.1A @ 50V DC	ultra-mini										•		JS02, JS04
500mA @ 12V DC	ultra-mini	•					•						SM
3A @ 125V AC	miniature	•					•						CS
6A @ 125V AC	miniature	•			•	•	•						MS
6A @ 125V AC	miniature	•			•	•	•						MS Illum

TACTILES

Maximum Rating	Size	MOUNTING				TERMINALS							Series
		PC Board	Bushing	Snap-In	Two Screw	Solder Lug	PC	Quick Connect	Wire Wrap	Screw	SMT Gull Wing	Process Seal	
0.4VA @ 28V AC/DC	ultra-mini	•					•						HP02
0.4VA @ 28V AC/DC	ultra-mini										•		HP03
3VA @ 28V DC	ultra-mini	•					•						HP02
3VA @ 28V DC	ultra-mini										•		HP03
50mA @ 24V DC	ultra-mini	•					•					•	CB
50mA @ 24V DC	ultra-mini										•	•	CB3
50mA @ 24V DC	submini	•					•					•	JF
50mA @ 24V DC	submini	•					•						JF Illum
50mA @ 24V DC	submini	•					•					•	JB
50mA @ 24V DC	submini	•					•					•	JB Illum
50mA @ 24V DC	submini	•					•						JL
125mA @ 24V DC	submini	•					•					•	JB
125mA @ 24V DC	submini	•					•					•	JB Illum

everything starts here.

SMARTSWITCH PROGRAMMABLE

Maximum Rating	Size	LCD	OLED	Resolution (Pixels)	MOUNTING		TERMINALS	
					PC Board	Snap-In	PC	Series
PUSHBUTTON								
100mA @ 12V DC	standard		•	64 x 48	•		•	IS
100mA @ 12V DC	standard	•		64 x 32	•		•	IS
100mA @ 12V DC	compact	•		64 x 32	•		•	IS
100mA @ 12V DC	standard	•		36 x 24	•	•	•	IS
100mA @ 12V DC	compact	•		36 x 24	•		•	IS
DISPLAY								
	standard		•	52 x 36				IS
	standard	•		64 x 32				IS
	standard	•		36 x 24				IS
ROCKER								
3VA maximum DC			•	96 x 64		•		IS

TOUCH SCREENS

Maximum Rating	Technology	Input Method	Standard Screen Sizes	Series
5.5V DC	5-Wire Resistive	Finger, Gloved Finger or Stylus	10.4" - 15.0"	FT
1mA @ 5V DC (resistive load)	4-Wire Resistive		5.7" - 15.0"	FT
1mA @ 5V DC (resistive load)	Digital	Finger	5.7"	FT

MEMBRANE SWITCH KEYPADS

Maximum Rating	Illumination	Number of Keys	SURFACE SHEET		Overlay	Series
			Black	Gray		
20mA @ 24V DC	Nonilluminated	4	•			FM
20mA @ 24V DC	Nonilluminated	4		•		FM
20mA @ 24V DC	Nonilluminated	16	•			FM
20mA @ 24V DC	Nonilluminated	16		•		FM
20mA @ 24V DC	Dot Illuminated with Overlay	12			Gray surface sheet with embossed white keypad and gray legends	FM
20mA @ 24V DC	Dot Illuminated with Overlay	16				FM

everything starts here.

TOGGLES



A SERIES SUBMINIATURE

- Single and double pole
- Logic level
- 11 circuit options
- STC contact mechanism
- Process sealed



B SERIES SUBMINIATURE

- Single and double pole
- Logic level
- Antistatic
- Locking lever option
- STC contact mechanism
- Illuminated option available
- Process sealed



G SERIES ULTRA-MINIATURE

- Single and double pole
- Straight, right angle, vertical options
- STC contact mechanism
- Process sealed
- Illuminated option available



M SERIES MINIATURE

- 1-4 pole
- Antijamming actuator design
- 1/4-40, 6mm and 12mm bushing options
- Multiple actuator, cap and color choices



M2T SERIES MINIATURE

- Single and double pole
- 5 circuit options
- Antijamming actuator design
- Smooth, double flatted bushing
- Process sealed



P SERIES STANDARD

- Single and double pole
- 6mm or 12mm bushing
- Solder lug, straight PC or quick connect
- Actuator, cap and color choices
- Internationally approved



S SERIES STANDARD AND HIGH CAPACITY

- 1-4 pole
- Solder lug, screw or quick connect
- Low, medium, medium/high or high capacity
- Locking lever or panel seal options
- Inductive ratings



WT SERIES STANDARD

- Single and double pole
- 6 circuit choices
- Solder lug, screw lug or wire leads
- IP60 and IP67 of IEC60529

everything starts here.

ROCKERS



A SERIES SUBMINIATURE

- Single and double pole
- Logic level
- Ten circuit options
- STC contact mechanism
- Process sealed



CW SERIES MINIATURE

- Single and double pole
- Molded snap-in rocker
- Solder lug, quick connect or right angle PC
- CWT: dust proof construction
- CWS: inscription options, illuminated models available



G AND GW SERIES ULTRA-MINIATURE

- Single and double pole
- G: process sealed, optional actuator colors
- GW: rocker or paddle option, illuminated models available



JW SERIES JW STANDARD; JWS MINIATURE

- Single and double pole
- JWM TV-5 rated; JWL TV-8
- Internationally approved
- Optional barrier and rocker colors



M SERIES MINIATURE

- 1-2 pole (straight mount), 1-3 pole (right angle), 1-4 pole (vertical)
- Stainless steel frame
- Snap-in mount, bracket PC or flat frame
- Solder lug, straight PC (bracket option), right or vertical PC, quick connect
- Optional caps, colors, bezels with LEDs



M2T SERIES STANDARD

- Single and double pole
- Straight, right angle or vertical PC
- Process sealed
- Optional actuators, caps and colors



P SERIES STANDARD

- Single and double pole
- Solder lug, straight PC or quick connect
- Internationally approved
- Optional actuators and colors



SW SERIES STANDARD AND HIGH CAPACITY

- Single, double and three pole
- Solder lug or screw
- Two screw mounting
- Low/medium and high capacity ratings



WR SERIES STANDARD

- Single and double pole
- Solder lug, screw lug, quick connect or wire lead
- IP60 and IP67 of IEC60529

everything starts here.

PUSHBUTTONS



AB AND BB SERIES SUBMINIATURE

- Single and double pole
- Logic level
- STC contact mechanism
- Process sealed
- BB: antistatic



FB AND SB4011 SERIES MINIATURE

- Single pole
- Power and logic level
- SB40 inch or metric bushings
- Rear panel bushing mount
- Optional cap colors



JP SERIES STANDARD AND HIGH CAPACITY

- Single and double pole
- TV-5 and TV-8 ratings
- Optional actuators and cap colors
- Solder lug/quick connect terminals
- Internationally approved



M2B SERIES MINIATURE

- Single and double pole
- Momentary circuit
- Snap-acting contacts
- Plunger length options
- Optional caps and colors
- Process sealed



SB AND SCB SERIES STANDARD

- Single and double pole
- 12mm bushing
- Options for caps and shrouds
- Low/medium/high capacity
- SB: solder lug
- SCB: solder lug, screw lug or quick connect



EB SERIES MINIATURE

- Single and double pole
- Power and logic level
- Solder lug or straight PC
- Bushing and snap-in mount
- Case meets UL94V-0
- Optional actuators, caps, bezels, LEDs and colors



GB AND GB2 SERIES ULTRA-MINIATURE

- Momentary circuit
- PC terminals
- High density mounting
- Optional caps and colors
- GB: process sealed, illuminated available



MB20 SERIES MINIATURE

- Single, double and four pole
- Momentary and alternate action
- Antijamming actuator design
- Optional actuators, caps, shrouds and colors
- Splashproof option



MB24 SERIES MINIATURE

- Single and double pole
- Smooth actuation
- Stainless steel frame
- Snap-in frame, caps, bezels, LEDs and colors



WB SERIES STANDARD

- Single pole
- 12mm bushing
- Solder lug, screw lug or wire lead
- Optional caps and colors
- Internationally approved
- IP60 and IP67 of IEC60529

everything starts here.

SLIDES



AS SERIES SUBMINIATURE

- Single and double pole
- Logic level
- STC contact mechanism



CS SERIES MINIATURE

- Single and double pole
- Power rated
- Antistatic
- Cover and case UL94V-0 flammability rated



FS SERIES MINIATURE

- Double pole
- Logic level
- High frequency applications
- Actuator length options
- Straight PC terminals



JS01 SERIES ULTRA-MINIATURE

- Single pole
- Through hole mounting
- Gold plated contacts
- Slide actuator
- Four or eight positions
- Stick-tube packaging



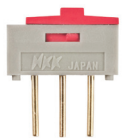
JS03 SERIES ULTRA-MINIATURE

- Single pole
- Through hole mounting
- Gold plated contacts
- Piano actuator
- Four or eight positions
- Stick-tube packaging



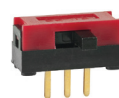
MS SERIES MINIATURE

- Single and double pole
- Panel, PCB and bracket mount options
- Solder lug, straight PC (bracket option), right angle or vertical PC
- Two actuator sizes
- Illuminated models available



SM SERIES ULTRA-MINIATURE

- Single pole
- STC contact mechanism
- High density mounting
- Through hole



SS SERIES ULTRA-MINIATURE

- Single and double pole
- Top or side actuation
- STC contact mechanism
- 3-ON and illuminated models available
- Metric or inch terminal spacing

everything starts here.

TACTILES



CB SERIES FLAT BUTTON

- 6mm
- Nonilluminated
- Process sealed



HP02 SERIES FLAT BUTTON

- 6mm
- Nonilluminated



JB SERIES FLAT BLUE BUTTON

- 10mm
- Nonilluminated
- Process sealed



JB SERIES FRAMED CAP

- 10mm
- Extended actuator,
high operating force
- Illuminated
- Process sealed



JB SERIES FLAT CAP

- 10mm
- Short actuator, std.
operating force
- Illuminated
- Process sealed



JB SERIES RIGHT ANGLE FLAT BUTTON OR CAP

- 10mm
- Nonilluminated
- Process sealed



JB SERIES SCULPTURED, FRAMED OR FLAT CAPS

- 10mm
- Nonilluminated
- Process sealed



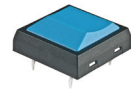
JF SERIES PIANO ACTUATOR

- 18mm
- Nonilluminated
- Process sealed



JF SERIES ROUND OR SQUARE ACTUATORS, ROUND ACTUATOR/SQUARE BODY

- 18mm
- Nonilluminated
- Process sealed



JF SERIES SCULPTURED ACTUATOR

- 18mm
- Nonilluminated
- Process sealed



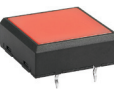
JF SERIES SQUARE, ROUND OR SCULPTURED ACTUATORS

- 18mm
- Spot illuminated
- Process sealed



JF SERIES SQUARE ACTUATOR

- 18mm
- Full face illuminated
- Process sealed

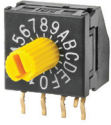


JL SERIES SQUARE ACTUATOR

- 22mm
- Full face illuminated

everything starts here.

ROTARIES



FR01 SERIES SUBMINIATURE

- 10mm binary coded DIP rotary
- Screwdriver, plastic shaft, dial or metal shaft actuation
- Straight or right angle PC
- Decimal or hexadecimal positions
- Stick-tube packaging



MR SERIES MINIATURE - PROCESS SEALED

- Single, double and four pole
- Self-cleaning contact mechanism
- MRF: low profile
- MFA and MRK: metal bushing and housing
- MRK: IP67 of IEC60529



MR SERIES MINIATURE - POWER LEVEL

- Single, double and four pole
- 2-8 position settings
- PC turret, turret or solder lug
- Plain or color tipped knobs



MRB SERIES MINIATURE

- Single or double pole
- Straight or right angle with bracket PC
- Double flatted bushing
- Self-cleaning contact mechanism
- Process sealed
- Optional knobs



ND SERIES ULTRA-MINIATURE

- 8mm binary coded DIP rotary
- Screwdriver or shaft actuated
- Decimal or hexadecimal positions
- Real or complement coded
- Straight or right angle PC
- SMT model available
- Process sealed



HS SERIES STANDARD

- 6A or 12A @ 125V AC
- 1-6 poles
- 30° or 45° indexing
- Round, D-flat or knurled shaft
- 2-11 position settings



PS SERIES STANDARD - HIGH CAPACITY

- 30A @ 125/250V AC
- 1-5 poles
- 30° indexing
- Knurled or D-flat shaft
- 2-11 position settings



TS SERIES STANDARD

- 6A @ 125/250V AC
- 1-5 poles
- 30° indexing
- D-flat shaft
- 2-11 position settings

everything starts here.

KEYLOCKS

CKM SERIES FLAT KEY



- High security
- 16mm threaded bushing
- Insulated key and switch housing
- Epoxy sealed solder lug terminals
- 2 or 3 lock positions
- Single pole
- Antistatic



CKM SERIES TUBULAR KEY

- High security
- 16mm threaded bushing
- Insulated key and switch housing
- Epoxy sealed solder lug terminals
- 2 or 3 lock positions
- Single pole
- Antistatic



CKL SERIES FLAT KEY

- High security
- 19mm threaded bushing
- Rugged, die cast housing
- Epoxy sealed solder lug terminals
- 2 or 3 lock positions
- Single pole

CKL SERIES TUBULAR KEY



- High security
- 19mm threaded bushing
- Rugged, die cast housing
- Epoxy sealed solder lug terminals
- 2 or 3 lock positions
- Single pole



SK SERIES LOW SECURITY

- 12mm threaded bushing
- 2 or 3 lock positions
- Single pole
- Epoxy sealed solder lug terminals
- Dust resistant interior



SK SERIES MEDIUM SECURITY

- 12mm threaded bushing
- 2 or 3 lock positions
- Single pole
- Epoxy sealed solder lug terminals
- Dust resistant interior



SK SERIES SUBMINIATURE - ANTISTATIC PROCESS SEALED

- 9mm smooth bushing
- High density mounting
- Molded-in terminals
- 3 or 5 lock positions
- Single pole
- Straight or right angle PC



SK SERIES MINIATURE - PROCESS SEALED

- 12mm smooth bushing
- Insulated key
- Low security
- Logic level
- Molded-in terminals
- Disposable boot
- 2 or 3 lock positions
- Single and double pole
- Straight or right angle PC

everything starts here.

SURFACE MOUNT DEVICES



CB3 SERIES **TACTILES - PROCESS SEALED**

- Single pole
- Dome contact
- Insert molded terminals
- Common bus and X-Y matrix
- Tape-reel and tray packaging



FR02 SERIES **ROTARIES - PROCESS COMPATIBLE**

- Real or complement coded
- Decimal or hexadecimal
- Screwdriver actuated
- Upright mounting
- Tape-reel and stick-tube packaging



G3T SERIES **ULTRA-MINIATURE TOGGLES - PROCESS SEALED**

- Single and double pole
- STC contact mechanism
- Upright (bracket option) and right angle mounting
- Molded-in, epoxy sealed terminals
- Tape-reel, stick-tube and tray packaging



G3B SERIES **ULTRA-MINIATURE PUSHBUTTONS - PROCESS SEALED**

- Single and double pole
- STC contact mechanism
- Momentary action
- Upright (bracket option) and right angle mounting
- Molded-in, epoxy sealed terminals
- Tape-reel, stick-tube and tray packaging



HP03 SERIES **TACTILES - PROCESS COMPATIBLE**

- Single pole
- Common bus and X-Y matrix
- Tape-reel and stick-tube packaging



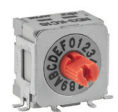
JS02 SERIES **ULTRA-MINIATURE SLIDES - PROCESS COMPATIBLE**

- 4 or 8 positions
- Extended actuator
- Tape-reel and stick-tube packaging



JS04 SERIES **ULTRA-MINIATURE SLIDES - PROCESS COMPATIBLE**

- 4 or 8 positions
- Flush actuator
- Tape-reel and stick-tube packaging



ND3 SERIES **ULTRA-MINIATURE DIP ROTARIES - PROCESS SEALED**

- Real or complement coded
- Decimal or hexadecimal
- Screwdriver or shaft actuated
- Upright (bracket option) and right angle mounting
- Epoxy sealed terminals
- Tape-reel and tray packaging



SS3 SERIES **ULTRA-MINIATURE SLIDES - PROCESS COMPATIBLE**

- Single pole, double pole and three throw
- 3-on model
- Side actuated
- Tape-reel and tray packaging

everything starts here.

ILLUMINATED PUSHBUTTONS



FP01 SERIES MINIATURE

- LED illumination
- Photo interrupter
- Rugged construction
- Snap-in
- Connector socket available



GB SERIES ULTRA-MINIATURE

- Single pole
- Logic level
- Full face illumination
- Bicolor LEDs
- STC contact mechanism



HB SERIES SUBMINIATURE

- Single pole
- Round or square
- Front panel relamping
- LED, cap and color options



HB2 SERIES SUBMINIATURE

- Single pole
- Logic level
- Full face illumination
- Bicolor LEDs
- Compact, square body



KB SERIES MINIATURE

- Single and double pole
- Bright or super bright LEDs
- Bushing or snap-in
- Square, round or rectangular



KP SERIES MINIATURE

- Single pole
- Bicolor or RGB LEDs
- Flat, sculptured and home key caps in 3 sizes
- Tactile, nontactile, tactile/audible
- Silent actuation



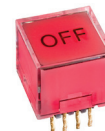
LB SERIES STANDARD

- Single and double pole
- LED, neon and incandescent
- Round, square or rectangular
- Panel seal option
- Cap, protective guard, dust cover and splash cover options



LP SERIES MINIATURE

- Single and double pole
- Snap-acting
- LED color options
- Solder lug/quick connect terminals
- Bushing or snap-in



NP01 SERIES SUBMINIATURE

- Single pole
- Full-face LED illumination
- Smooth actuation
- Single or bicolor LEDs
- Standard or high operating force
- Alternating legends
- Stick-tube packaging



UB SERIES MINIATURE

- Single and double pole
- Bright or super bright LEDs
- Full face or spot illumination
- Square or rectangular, PCB or snap-in
- Solder lug or straight PC



UB2 SERIES MINIATURE

- Single and double pole
- PCB or snap-in
- Flat, beveled or sculptured caps
- Alternating legends
- Cap, protective guard, dust cover and barrier options
- Bright or super bright, LED bicolor options



YB SERIES MINIATURE

- Single and double pole
- Bushing or snap-in
- Full face or spot illumination
- Bright or super bright, LED bicolor options
- Round, square or rectangular



YB2 SERIES MINIATURE

- Single and double pole
- IP65 rated
- Bright or super bright LEDs
- Solder lug/quick connect terminals
- 22mm round or 24mm square
- Black or silver bezel
- Tamper resistant

everything starts here.

ILLUMINATED TOGGLES, ROCKERS AND SLIDES



B SERIES **SUBMINIATURE**

- Single pole
- Fully illuminated clear toggle and bushing
- Single or bicolor LEDs
- Straight, right angle or vertical PC
- Isolated LED terminals



G SERIES **ULTRA-MINIATURE**

- Single pole
- Logic level
- Full face illumination
- Bicolor LED options
- STC contact mechanism



LW SERIES **STANDARD**

- Power rated
- Double pole
- Dual incandescent or neon lamps
- Cap, lamp cover, filter, bezel and color options
- Snap-in



MLW SERIES **MINIATURE**

- Single and Double pole
- Rugged stainless steel housing
- Snap-in
- Front panel relamping
- Incandescent, neon or LEDs



SS SERIES **ULTRA-MINIATURE**

- Single and double pole
- Compact dimensions
- Sliding twin contact mechanism
- Top or side actuation
- LED color options
- Optional slide cap



CWSB AND CWSC SERIES **MINIATURE**

- Single and double pole
- Power level
- Full face, neon or LED
- Snap-in
- Offset terminals



GW SERIES **ULTRA-MINIATURE**

- Single pole
- Fully illuminated paddle
- Single or bicolor LEDs
- Crisp actuation
- Straight, right angle or vertical PC
- STC contact mechanism



M2100 SERIES **MINIATURE**

- Single and double pole
- Toggle, rocker and paddle
- Single and bicolor LEDs
- Solder lug, quick connect, straight PC (bracket option) or right angle PC
- Optional bezels and colors



MS SERIES **MINIATURE**

- Power level
- Single pole
- LED color options
- 2-screw flange or PC mounting
- Solder lug or straight PC
- Antijamming design



TL SERIES **MINIATURE**

- Double pole
- Antistatic, fully illuminated toggle
- Short or long toggle
- Bright or super bright LEDs
- UL94V-0 flammability rated base
- Interior o-ring protects contacts

everything starts here.

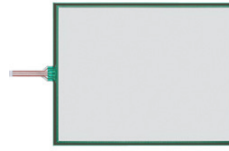
SMARTSWITCH



PROGRAMMABLE SWITCHES OLED AND LCD

- Smallest off-the-shelf devices in the industry
- Re-configure switches and panel functions instantly
- Display industry specific graphics and moving images
- Simplifies complex, multi-decision operations
- In-house design engineering support

TOUCH SCREEN



FT SERIES RESISTIVE TOUCHSCREENS

- Superior durability & flexibility
- 4 and 5 wire analog
- Digital
- Contact reliability with connector
- ANR film
- Non-glare and hard coated surface

TILT SWITCHES



DSA SERIES MINIATURE

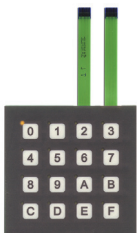
- Ball contacts
- Sealed body
- Triggered when tilted beyond +/- 10° of the horizontal
- Contains no mercury
- PC adaptor accessory option



DSB SERIES SUBMINIATURE

- Normally closed (on) status
- Photo interrupter
- Straight and right angle PC terminals
- Totally sealed construction
- Triggered when tilted beyond +/- 30° of the horizontal

MEMBRANE



FM SERIES MEMBRANE

- Easy integration
- Crisp actuation
- Adhesive backing for easy mounting
- Nonilluminated options: 4 or 16 keys
- Illuminated options: 12 or 16 keys, legends on embossed keypads