

## Reliable Switch Solutions for the Medical Industry

Turn to the trusted source for reliable switch solutions in the medical field. With over 65 years of proficiency, excellence, and a drive to surpass our customers' expectations, we continue to be the preferred provider for electromechanical switches. NKK Switches has proven to be the supplier of the most dependable products when ON-OFF control functionality and safety is critical. We proudly supply equipment manufacturers with our outstanding products as well as bring peace of mind to health care professionals and patients.

Our selected presentation of medical switch solution devices is a small sampling of our vast line. Our products used in medical electrical equipment meet IEC standards. If you are searching for the highest caliber of performance and quality, we invite you to contact us.

### YB15WCKW01-6F-JB SHORT BODY PUSHBUTTON

## Characteristics & Specifications

### YB Series Illuminated Pushbutton with Panel Seal

- Full face illumination with Super Bright Green LED
- Splashproof, dust- and oil-tight qualities meet IP65 of IEC60529 standards
- Round bushing mount; solder lug/.110" (2.8mm) quick connect terminals with epoxy sealing
- Thermoplastic elastomer seal inside cap plus rolled sleeve of nitrile butadiene rubber at joining of housing and inner case gives added protection to interior mechanism
- Combination bezel-barrier is integral part of switch and prevents accidental actuation
- High density design allows behind panel depth of less than one inch

Power Level: 3A @ 125V AC or 3A @ 250V AC

Contact Resistance: 50 milliohms max

Insulation Resistance: 200 megohms min @ 500V DC

Dielectric Strength: 1,000V AC min between contacts for 1 minute min; 1,500V AC min between contacts & case for 1 minute min

Mechanical Life: 1,000,000 operations min

Electrical Life: 100,000 operations min

Travel: Pretravel .059" (1.5mm); Overtravel .059" (1.5mm); Total Travel .118" (3.0mm)

Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

### M2112TFW01/CUL LED TIPPED TOGGLE

## Characteristics & Specifications

### M2100 Series Toggle with Illumination at Tip

- Green LED operates synchronously with switching operation
- Industry's first LED illumination at tip of toggle switches
- 1/4-40 thread high torque bushing, solder lug terminals
- Anti-jamming feature protects contacts from damage due to excessive downward force on toggle
- High torque bushing prevents from rotating or separating from metal frame during installation
- Stainless steel frame resists corrosion
- Terminals molded in and epoxy sealed to impede entry of flux, dust, contaminants

Power Level: 6A @ 125V AC or 3A @ 250V AC

Contact Resistance: 10 milliohms max

Insulation Resistance: 1,000 megohms min @ 500V DC

Dielectric Strength: 1,000V AC min between contacts for 1 minute min; 1,500V AC min between contacts & case for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 25,000 operations min

Nominal Operating Force: On-to-On Position 3.19N; Off-to-On 3.92N

Angle of Throw: 20°

Operating Temperature Range: -10°C ~ +55°C (+14°F ~ +131°F)

## JWM21RA1A/UCV HIGH INRUSH 10 AMP ROCKER

### Characteristics & Specifications

#### JW Series Molded Rocker with TV-5 Rating

- Horizontally oriented, IEC symbols for ON-OFF inscription on Black cap
- Solder lug/quick connect .110" (2.8mm) terminals
- Handles large inrush current with high electrical capacity
- Prominent external insulating barriers increase insulation resistance and dielectric strength
- Dust resistant construction with interior cover between actuator and contact area
- Heat resistant resin for housing and case meets UL94V-0 standard

Power Level: 10A @ 125/250V AC

Contact Resistance: 10 milliohms max

Insulation Resistance: 1,000 megohms min @ 500V DC

Dielectric Strength: 2,000V AC min between contacts for 1 minute min; 4,000V AC min between contacts & case for 1 minute min

Mechanical Life: 25,000 operations min

Electrical Life: 25,000 operations min

Nominal Operating Force: 3.92N

Angle of Throw: 26°

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

## M2012TXG13-DC MINIATURE ROCKER

### Characteristics & Specifications

#### M Series Bracket PC Mount Rocker

- Narrow mounting frame for .365" (9.27mm) Red actuator
- Straight PC terminals .250" (6.35mm) with .465" (11.8mm) bracket
- Molded case has UL94V-0 flammability rating
- Prominent external insulating barriers increase insulation resistance and dielectric strength
- Bias guard prevents misalignment of contacts; interlocking of actuator block with rocker and internal guide prevents transmission of diagonal force on rocker to reach contact mechanism

Logic Level: 0.4VA max @ 28V AC/DC max

Contact Resistance: 20 milliohms max

Insulation Resistance: 1,000 megohms min @ 500V DC

Dielectric Strength: 1,000V AC min between contacts for 1 minute min; 1,500V AC min between contacts & case for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 50,000 operations min

Angle of Throw: 25°

Operating Temperature Range: -30°C ~ +85°C (-22°F ~ +185°F)

## B12A1P SUBMINIATURE ANTISTATIC TOGGLE

### Characteristics & Specifications

#### B Series Process Sealed Toggle

- Antistatic superstructure of carbon impregnated bushing and support bracket prevent static discharge of contacts
- Threaded 6.0mm diameter bushing for panel seal mounting meets IP65 of IEC60529 specifications
- Sealed body construction prevents contact contamination
- Epoxy sealed terminals lock out flux, other foreign matter
- STC contact mechanism provides smoother, positive detent actuation and increased contact stability
- Designed for logic-level applications

Logic Level: 0.4VA max @ 28V AC/DC max

Contact Resistance: 50 milliohms max

Insulation Resistance: 500 megohms min @ 500V DC

Dielectric Strength: 500V AC min for 1 minute min

Mechanical Life: 100,000 operations min

Electrical Life: 50,000 operations min

Nominal Operating Force: 1.18N

Angle of Throw: 26°

Operating Temperature Range: -30°C ~ +85°C (-22°F ~ +185°F)

## JB15LPE-JE PROCESS SEALED TACTILE

### Characteristics & Specifications

#### JB Series Illuminated Low Profile Tactile

- Bright Yellow full-face illumination
- Dome contact gives crisp, tactile feedback and positively indicates circuit transfer
- High reliability and long life of up to 5,000,000 actuations
- Rubber seal construction prevents contact contamination and allows automated soldering and cleaning
- Slanted terminals ensure secure mounting, prevent dislodging
- Materials for case and base of switch meet flammability standards of UL94V-0 rating

Low/Logic Level: 50mA @ 24V DC max

Contact Resistance: 50 milliohms max

Insulation Resistance: 500 megohms min @ 250V DC

Dielectric Strength: 250V AC min for 1 minute min

Mechanical Life: 5,000,000 operations min

Electrical Life: 5,000,000 operations min

Nominal Operating Force: 1.76N

Total Travel: .010" (.254mm)

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

## M2012WBW01 WATERPROOF MINIATURE TOGGLE

### Characteristics & Specifications

#### M Series Toggle Achieves IP67 of IEC60529 Standards

- Inner o-ring and external rubber washer seal the switch from dust and extend defense against temporary immersion
- Waterproof boot at base of toggle adds further protection against wet environments
- Smooth, sturdy actuation with definitive tactile feel
- Polished, chrome-plated actuator and waterproof boot deliver in terms of reliability as well as sleek design
- Superb construction prohibits entry of harmful particles that may compromise lever operation

Power Level: 6A @ 125V AC & 3A @ 250V AC

Contact Resistance: 10 milliohms max

Insulation Resistance: 1,000 megohms min @ 500V DC

Dielectric Strength: 1,000V AC min between contacts for 1 minute min; 1,500V AC min between contacts & case for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 25,000 operations min for 6A @ 125V AC; 50,000 operations min for 3A @ 250V AC

Angle of Throw: 25°

Operating Temperature Range: -30°C ~ +85°C (-22°F ~ +185°F)

## CKL12AFW01 HIGH SECURITY KEYLOCK

### Characteristics & Specifications

#### CK Series Keylock with 19mm Diameter Bushing

- Rugged, die cast housing designed for higher security
- Vertically rotating switching mechanism and self-cleaning sliding contacts for high reliability and long operating life
- Flat style key is supplied with each switch and is reversible for easier setting
- Interior construction provides seal for contact area
- Solder lug, epoxy sealed terminals prevent entry of flux and other contaminants
- High dielectric strength of 1,500 volts between contacts and case

Power Level: 3A @ 250V AC

Contact Resistance: 20 milliohms max

Insulation Resistance: 1,000 megohms min @ 500V DC

Dielectric Strength: 1,000V AC min between contacts for 1 minute min; 1,500V AC min between contacts & case for 1 minute min

Mechanical Life: 30,000 cycles min

Electrical Life: 10,000 cycles min

Nominal Operating Torque: .05 Nm (7.08 oz-in)

Angle of Throw: 90° (2-position)

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

## WT21T ENVIRONMENTALLY SEALED TOGGLE

### Characteristics & Specifications

#### WT Series Toggle Meets IP67 of IEC60529

- Screw lug model meets IP67 at front panel (dust tight, water protected during temporary immersion). IP60 rating at back panel (dust tight but not water protected)
- Single unit construction of bushing and case gives further protection from environmental elements
- Contact mechanism designed to break light contact welds
- Outer housing construction of heat resistant resin complies with UL94V-0 flammability standard
- Optional boot and o-ring accessories further safeguard against water and external elements

Power Level: 10A @ 125V AC or 6A @ 250V AC

Contact Resistance: 10 milliohms max

Insulation Resistance: 200 megohms min @ 500V DC

Dielectric Strength: 1,500V AC min for 1 minute min

Mechanical Life: 50,000 operations min

Electrical Life: 15,000 operations min

Angle of Throw: 24°

Operating Temperature Range: -30°C ~ +70°C (-22°F ~ +158°F)

## JPL26P INTERNATIONALLY APPROVED PUSHBUTTON

### Characteristics & Specifications

#### JP Series TV-8 Rated Molded Pushbutton

- Designed to handle large inrush current, with high electrical capacity of 16 Amps
- Prominent external insulating barriers increase insulation resistance and dielectric strength
- Constructed for dust resistance with interior seal between actuator and contact area
- Specially designed to break light contact welds
- Snap-action contact mechanism
- Meets IEC 60601-1 Ed. 3.1, 7.4.1 standards when combined with an external actuator with ON-OFF indication symbols

Power Level: 16A @ 125/250V AC

Contact Resistance: 20 milliohms max

Insulation Resistance: 1,000 megohms min @ 500V DC

Dielectric Strength: 2,000V AC min between contacts for 1 minute min; 4,000V AC min between contacts & case for 1 minute min

Mechanical Life: 25,000 operations min

Electrical Life: 25,000 operations min

Nominal Operating Force: 9.02N

Travel: Pretravel .059" (1.5mm); Overtravel .071" (1.8mm); Total Travel .130" (3.3mm)

Operating Temperature Range: -10°C ~ +70°C (+14°F ~ +158°F)

## MB2011SB1W02-DA MINIATURE PUSHBUTTON

### Characteristics & Specifications

#### MB2000 Series Pushbutton with Large 12mm Threaded Bushing

- .520" (13.2mm) diameter screw-on Black cap for plunger
- .472" (12.0mm) diameter threaded bushing with keyway
- Guide interlocked with actuator block prevents window locking and maintains correct plunger alignment
- Employs an over-center actuator mechanism, diminishing sparking and increasing operating life in AC circuits
- Prominent external insulating barriers increase insulation resistance and dielectric strength
- High torque bushing constructions prevents rotation or separation from frame during installation
- Quick connect, epoxy sealed terminals prevent entry of solder flux and other contaminants

Power Level: 6A @ 125V AC or 3A @ 250V AC

Contact Resistance: 10 milliohms max

Insulation Resistance: 1,000 megohms min @ 500V DC

Dielectric Strength: 1,000V AC min between contacts for 1 minute min; 1,500V AC min between contacts & case for 1 minute min

Mechanical Life: 100,000 operations min

Electrical Life: 25,000 operations min

Nominal Operating Force: 9.32N

Travel: Pretravel .028" (0.71mm); Overtravel .043" (1.09mm); Total Travel .071" (1.80mm)

Operating Temperature Range: -30°C ~ +85°C (-22°F ~ +185°F)

## LB26RKW01-5F-JF STANDARD SIZE PUSHBUTTON

### Characteristics & Specifications

#### LB Series Illuminated Pushbutton

- Rectangular snap-in mount with Bright Green LED, cap with clear lens and Green diffuser
- Full surface illumination with front panel relamping
- Stainless steel clips provide secure mounting with a wide range of panel thicknesses
- Smooth and responsive operation with tactile feedback, plus latchdown feature indicating circuit status
- Compact switch design minimizes behind panel depth
- Solder lug/quick connect terminals are epoxy sealed, preventing entry of flux, dust and other contaminants

Power Level: 3A @ 125V AC or 3A @ 250V AC

Contact Resistance: 50 milliohms max

Insulation Resistance: 200 megohms min @ 500V DC

Dielectric Strength: 1,000V AC min between contacts for 1 minute min; 1,500V AC min between contacts & case for 1 minute min

Mechanical Life: 200,000 operations min

Electrical Life: 100,000 operations min

Nominal Operating Force: 4.41N

Travel: Pretravel .059" (1.5mm); Overtravel .059" (1.5mm); Total Travel .118" (3.0mm)

Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

## JPM26B-H INTERNATIONALLY APPROVED PUSHBUTTON

### Characteristics & Specifications

#### JP Series TV-5 Rated Molded Pushbutton

- Designed to handle large inrush current, with high electrical capacity of 10A
- Flat Gray cap with barrier flange. Cap is flush in normal position, .079" (2.0mm) below that in latchdown position.
- Interior seal of polyphenylene sulfide (PPS) between actuator and contact area prohibits entry of dust
- Prominent external insulating barriers increase insulation resistance and dielectric strength
- Snap-action contact mechanism
- JPM switches with ON-OFF indication symbols are available as custom orders

Power Level: 10A @ 125/250V AC

Contact Resistance: 20 milliohms max

Insulation Resistance: 1,000 megohms min @ 500V DC

Dielectric Strength: 2,000V AC min between contacts for 1 minute min; 4,000V AC min between contacts & case for 1 minute min

Mechanical Life: 25,000 operations min

Electrical Life: 25,000 operations min

Nominal Operating Force: 6.47N

Travel: Pretravel .059" (1.5mm); Overtravel .071" (1.8mm); Total Travel .130" (3.3mm)

Operating Temperature Range: -10°C ~ +70°C (+14°F ~ +158°F)

## JWL21RA1A/UCV HIGH INRUSH ROCKER

### Characteristics & Specifications

#### JW Series TV-8 Rated Molded Rocker

- Designed to handle large inrush current, with high electrical capacity of 16A
- Black cap with white horizontal ON-OFF symbols inscription
- Constructed for dust resistance with interior cover between actuator and contact area
- Prominent external insulating barriers increase insulation resistance and dielectric strength
- Specially designed plate minimizes contact bounce, thereby extending electrical life
- Solder lug/quick connect terminals are molded in and epoxy sealed; can be used with connector

Power Level: 16A @ 125/250V AC

Contact Resistance: 20 milliohms max

Insulation Resistance: 1,000 megohms min @ 500V DC

Dielectric Strength: 2,000V AC min between contacts for 1 minute min; 4,000V AC min between contacts & case for 1 minute min

Mechanical Life: 25,000 operations min

Electrical Life: 25,000 operations min

Nominal Operating Force: 10.0N

Angle of Throw: 26°

Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)