

NIKK SWITCHES

Illuminated Switches



CONTENTS

	Toggles.....	3
	Rockers.....	4
	Pushbuttons.....	6
	Illuminated Pushbuttons.....	6
	SmartDisplay™ Programmable.....	10
	Slides.....	13
	Tactiles.....	14
	Indicators.....	15

Switches with Illumination

NKK has been designing and manufacturing switches for over 70 years, and one of the most prominent categories is illuminated switches. No wonder, as illuminated switches are a focus in applications for all types of industries. Designers and engineers have come to expect a standard of impeccable quality and endurance in illuminated products, and NKK has a record of delivering. Additionally, it is our goal to offer diverse choices in actuation, power levels, terminations, mounting preferences, shapes and sizes, as well as a wide array of illumination types and colors. Turn to NKK's illuminated switches when you want to highlight your best projects.

TOGGLES

Characteristics & Specifications

B Series Subminiature Fully Illuminated Toggle



- Single or bicolor LED radiates bushing and actuator
- Highly visible actuator status in green, red, amber, or bicolor in red/green LED
- Totally sealed body construction (process sealed)
- Straight, right angle or vertical PC terminals
- Standard PC board terminal spacing of .100" x .100" (2.54mm x 2.54mm)

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
Angle of throw: 26°
Operating Temperature Range: -25°C ~ +55°C (-13°F ~ +131°F)

Characteristics & Specifications

G Series Ultra-Miniature Fully Illuminated Toggle



- Single or bicolor LED illuminates entire actuator
- Highly visible actuator status in green, red, or amber single colors, or bicolor in red/green LED
- Small, compact size facilitates high density mounting
 - Totally sealed body construction (process sealed)
- Straight, right angle or vertical PC terminals
- Standard PC board terminal spacing of .100" x .100" (2.54mm x 2.54mm)

Logic Level: 0.4VA max @ 28V AC/DC max
Contact Resistance: 80 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: 100,000 operations min; 10,000 operations min @ 0.1A @ 28V AC/DC
Angle of throw: 28°
Operating Temperature Range: -25°C ~ +55°C (-13°F ~ +131°F)

Characteristics & Specifications

MNL Series Miniature LED Tipped Toggle



- Options for single color LEDs in red, yellow or green, plus bicolor in red/green
 - LEDs can operate independently from or synchronously with switching operation
- Stainless steel frame and high torque bushing
- 1/4-40 threaded (inch) or 6mm threaded (metric) bushing; with solder lug terminals; molded in, epoxy sealed solder lug terminals
- 1,500V dielectric strength between switch contacts and case achieved by clinching frame away from terminals

Power Level (silver): 6A @ 125V AC or 3A @ 250V AC
Logic Level (gold): 0.4VA max @ 28V AC/DC max
Contact Resistance: 10 milliohms for silver; 20 milliohms for gold
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
Angle of throw: 20°
Operating Temperature Range: -10°C ~ +55°C (+14°F ~ +131°F)

ROCKERS

Characteristics & Specifications

CWSB Series Miniature Power Rocker

- Full face neon illumination in red, amber or green choices
- 9-amp electrical capacity in compact, low cost, molded body
- Front panel, snap-in mounting for simple installation
- On Off (I O) symbols molded on the bezel
- Offset terminal alignment provides outstanding resistance and dielectric strength
- .187" (4.75mm) quick connect terminals



Power Level: 9A @ 125V AC
Contact Resistance: 20 milliohms max
Insulation Resistance: 500 megohms min @ 500V DC
Dielectric Strength: 1,500V AC min between contacts for 1 minute min; 3,000V AC min between contacts & case for 1 minute min
Mechanical Life: 30,000 operations min
Electrical Life: 10,000 operations min
Angle of throw: 30°
Operating Temperature Range: -20°C ~ +85°C (-4°F ~ +185°F)

Characteristics & Specifications

GW Series Ultra-Thin Fully Illuminated Paddle

- Highly visible LED status indication in red, green or amber for single color and red/green for bicolor
- Crisp actuation feedback positively indicates circuit transfer
- STC contact mechanism delivers smooth, positive detent actuation, increased contact stability, and unparalleled logic-level reliability
- .100" x .100" (2.54mm x 2.54mm) terminal spacing conforms to standard PC board grid spacing for straight and angle mounting



Logic Level: 0.4VA max @ 28V AC/DC max
Contact Resistance: 80 milliohms max
Insulation Resistance: 500 megohms min @ 500V DC
Dielectric Strength: 500V AC min for 1 minute min
Mechanical Life: 50,000 operations min
Electrical Life: 50,000 operations min
Angle of throw: 28°
Operating Temperature Range: -25°C ~ +55°C (-13°F ~ +131°F)

Characteristics & Specifications

JWS Series Miniature Internationally Approved Rocker

- Spot illumination options in red, amber or green LEDs
- Protective barrier available; helps prevent accidental actuation
- Designed for dust resistance with polyamide interior cover between actuator and contact area
- Terminals are molded in to lock out flux, dust and other contaminants
- Heat resistant resin for outer case meets UL94V-0 flammability standard



Power Level: 10A @ 125/250V AC; 6A @ 125/250V AC
Contact Resistance: 10 milliohms max
Insulation Resistance: 500 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: 30,000 operations min
Electrical Life: 10,000 operations min
Angle of throw: 30°
Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

Characteristics & Specifications

LW Series Standard Size High Capacity Rocker

- LW3021A with translucent red spot illumination window
- Neon lamp with built-in ballast resistor is an integral part of switch
- Screws supplied for flush panel mounting
- Firm, crisp actuation
- Mounting frame of steel with chrome plating
- Solder lug terminals



Resistive Load: 20A @ 110V AC
Contact Resistance: 10 milliohms max
Insulation Resistance: 1,000 megohms min @ 500V DC
Dielectric Strength: 2,000V AC min for 1 minute min
Mechanical Life: 30,000 operations min
Electrical Life: 10,000 operations min
Angle of throw: 22°
Operating Temperature Range: -10°C ~ +50°C (+14°F ~ +122°F)

Characteristics & Specifications

MN Series Miniature Snap-in Mount Rocker

- Bezel with LED illumination in red, yellow or green
- Rockers or paddles in a variety of colors
- Molded diallyl phalate case has UL94V-0 flammability rating
 - Prominent external insulating barriers increase insulation resistance and dielectric strength
- Solder lug or straight PC terminal options
- Terminals are epoxy sealed to prevent entry of solder flux and other contaminants
- Clinching of frame to case well above base and terminals provides 1,500V dielectric strength



Power Level (silver): 3~6A @ 125V AC or 2~3A @ 250V AC or 2~4A @ 125V

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

Contact Resistance: 10 milliohms for silver; 20 milliohms for gold

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 for silver; 50,000 operations for gold

Angle of throw: 25°

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

Characteristics & Specifications

MNL Series Miniature LED Tipped Rocker & Paddle

- Options for single color LEDs in red, yellow or green, plus bicolor in red/green
- LEDs operate independently from switching operation
- Paddle option has snap-in frame and solder lug terminals; rocker option has flat frame with solder lug terminals
- Optional bezel in multiple colors for snap-in frame
 - Epoxy sealed terminals prevent entry of solder flux and other contaminants
- 1,500V dielectric strength between switch contacts and case by clinching frame away from terminals
- Molded diallyl phalate case has UL94V-0 flammability rating



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

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

Contact Resistance: 10 milliohms for silver; 20 milliohms for gold

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

Angle of throw: 20°

Operating Temperature Range: -10°C ~ +55°C (+14°F ~ +131°F) for rockers; -25°C ~ +70°C (-13°F ~ +158°F) for paddles

PUSHBUTTONS

Characteristics & Specifications

EB Series Miniature Light Touch Pushbutton

- Snap-in mount versions with multiple style and color options for bezels and LEDs to enhance panel appearance
- Case of heat resistant resin meets UL94V-0 flammability rating
- Stainless steel frame resistant to corrosion
- 1,500V dielectric strength between contacts and case accomplished by clinching the frame away from the terminals
- Epoxy sealed terminals prevent entry of contaminants



Power Level (silver): 3A @ 125V AC
Logic Level (gold): 0.4VA max @ 28V AC/DC max
Contact Resistance: 10 milliohms for silver; 20 milliohms for gold
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 for silver; 50,000 min for gold
Operating Temperature Range: -10°C ~ +70°C (+14°F ~ +158°F)

Characteristics & Specifications

MBNR Series Miniature Snap-in Mount Pushbutton

- Optional bezels with LED illumination in red, yellow or green
- Smooth actuation, short stroke, light touch, audible feedback due to snap-acting mechanism, which also provides long mechanical life
- Guide, case meet UL94V-0 flammability standards
- Epoxy sealed solder lug terminals
- Stainless steel frame resists corrosion
- Prominent external insulating barriers increase insulation resistance and dielectric strength
- Longer center terminal simplifies wiring, soldering



Power Level (silver): 2A @ 125V AC
Logic Level (gold): 0.4VA max @ 28V AC/DC max
Contact Resistance: 20 milliohms for silver; 30 milliohms for gold
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: 200,000 operations min
Electrical Life: 25,000 operations min for silver; 100,000 min for gold
Operating Temperature Range: -30°C ~ +85°C (-22°F ~ +185°F)

Note: NKK also offers the MBNF Series. It is much like MBNR Series except it is metric rather than inch. MBNF Series features the same snap-in mount illuminated options. Contact NKK Switches for more information.

ILLUMINATED PUSHBUTTONS

Characteristics & Specifications

GB Series Ultra-Miniature Fully Illuminated Plungers

- Highly visible status indication with single color LED in red, green or amber
- High density mounting and extremely light weight qualities are ideal for handheld equipment applications
- Totally sealed body construction (process sealed)
- STC contact mechanism administers smooth, positive detent actuation, increased contact stability, unparalleled logic-level reliability
- PC terminals in straight, right angle, vertical



Logic Level: 0.4VA max @ 28V AC/DC max
Contact Resistance: 80 milliohms max
Insulation Resistance: 500 megohms min @ 500V DC
Dielectric Strength: 500V AC min for 1 minute min
Mechanical Life: 50,000 operations min
Electrical Life: 50,000 operations min
Operating Temperature Range: -25°C ~ +55°C (-13°F ~ +131°F)

Characteristics & Specifications

HB Series Subminiature Pushbutton

- Full face or spot illumination; bright or super bright LEDs
- Compact front panel design with 9mm square or round bezels
- Rear panel threaded mounting with behind panel depth of less than one inch. 8mm diameter body
- Dual, sliding contacts with self-cleaning action contribute to contact stability, high reliability and increased operating life
- Molded-in solder lug terminals with .100" spacing



Power Level: 0.1A max @ 30V AC/DC
Contact Resistance: 50 milliohms max
Insulation Resistance: 100 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
Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

Characteristics & Specifications

HB2 Series Subminiature Audio/Video Pushbutton

- Full face illumination with red/green bicolor LEDs
- Quiet actuation with crisp tactile feedback
- Compact design with short body and square cap
- Sliding twin crossbar mechanism provides unequaled logic-level reliability, contact stability, smooth positive detent actuation and long life
- Option of legends on cap or film insert
- Gold contacts and crimped PC terminals



Logic Level: 0.4VA max @ 28V AC/DC max
Contact Resistance: 80 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: 100,000 operations min
Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

Characteristics & Specifications

KP Series Miniature Compact Pushbutton

- RGB super bright LEDs with 4-pin termination
- Compact switch solution for all control panel needs, plus a variety of cap styles and sizes for design flexibility
- Long or shorter travel options; tactile, nontactile, tactile/audible actuation choices
- Height .906" (23mm) from PC board to top of cap
- Twin contacts with gold plating assure outstanding reliability and long life
- Cap surface options or film insert for legends



Power Level: 100mA max @ 12V DC
Contact Resistance: 200 milliohms max
Insulation Resistance: 100 megohms min @ 250V 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: 5,000,000 operations min; 1,000,000 operations min for Rectangular Switch/Cap Assembly
Electrical Life: 5,000,000 operations min; 1,000,000 for Rectangular
Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

Characteristics & Specifications

KP04 Series Miniature Compact SMT Pushbutton

- RGB LED for full color spectrum in unlimited combinations, or RGBW (RGB plus white) LED assists in reducing variations of color tones for white illumination
- Surface mount technology in brilliant compact design, contributing to diminished board and material handling costs
 - Nontactile or tactile/audible actuation options
 - Three cap sizes in flat, sculptured or home key; perfect for custom legends on cap or film insert
 - Distinct, total travel of .138" (3.5mm) with height of .906" (23.0mm) from PC board to top of cap
 - Twin contacts with gold plating deliver excellent reliability and long life



Power Level: 100mA max @ 12V DC
Contact Resistance: 200 milliohms max
Insulation Resistance: 100 megohms min @ 250V DC
Dielectric Strength: 500V AC min between contacts for 1 minute min; 500V AC min between contacts & case for 1 minute min
Mechanical Life: 3,000,000 operations min
Electrical Life: 3,000,000 operations min
Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

Characteristics & Specifications

LB Series Standard Size Pushbutton

- Light diffusion and filtering system produces bright, full surface illumination with front panel relamping
- White, green or blue super bright LEDs; standard or bright in red, amber or green; spot illuminated in single color or bicolor
- Compact switch design contributes to minimal behind-panel depth
- Square, round, rectangular body shapes available
 - Panel seal version meets IP65 specifications
 - Snap-action contact mechanism for long electrical life and sensitivity of actuation
 - Epoxy sealed solder lug/quick connect terminals
 - Matching indicators available
 - Optional accessories include PCB adaptors, barriers, protective guards and dust covers



Power Level (silver): 3A @ 125V AC or 3A @ 250V AC Logic Level (gold): 0.4VA max @ 28V AC/DC max
Contact Resistance: 50 milliohms for silver; 100 milliohms for gold
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 for momentary circuit; 200,000 operations min for maintained circuit
Electrical Life: 100,000 operations min
Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

Characteristics & Specifications

LP01 Series Miniature Short Body Pushbutton

- Bright LED illumination in red, green or amber through smooth, slightly concave, translucent white cap designed to prevent removal and prohibit tampering
- Highly visible spot illumination or nonilluminated options
- Bushing or snap-in mounting types
- Compact body of only .551" (14.0mm) behind-panel space
 - Crisp actuation, clear circuit status from snap-action contact mechanism. Protection against crossover provided by arc barrier between movable contacts.
 - Environmentally friendly components and packaging materials; suited for lead-free soldering due to heat resistant resin materials
 - Combination solder lug/quick connect terminals



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: 500,000 operations min
Electrical Life: 50,000 operations min
Operating Temperature Range: -10°C ~ +50°C (+14°F ~ +122°F)

Characteristics & Specifications

UB Series Miniature Low Profile Pushbutton

- Bright or super bright LED illumination offered in multiple options
- Bicolor in red/green or amber/blue for alternating legends
- Compact applications simplified with PCB mountability, short body
- Small behind panel dimension for snap-in mounting in tight spaces
- Latchdown mechanism, independent of switching mechanism, provides visible and tactile indication of circuit status
- Sensitive actuation and audible feedback supported by snap-acting contact mechanism; quick-make, quick-break attribute limits arcing and extends electrical life
 - Both momentary and alternate action circuits available
 - Solder lug or straight PC epoxy sealed terminals
 - Matching indicators available

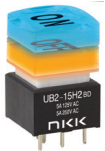


Power Level (silver): 5A @ 125V AC or 5A @ 250V AC Logic Level (gold): 0.4VA max @ 28V AC/DC max
Contact Resistance: 50 milliohms for silver; 100 milliohms for gold
Insulation Resistance: 200 megohms min @ 500V DC
Dielectric Strength: 1,000V AC min between contacts for 1 minute min; 1,500V AC min between contacts & case for 1 minute min
Mechanical Life: 1,000,000 operations min for momentary; 200,000 operations min for alternate action
Electrical Life: 10,000 operations min for silver; 200,000 operations min for gold
Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

Characteristics & Specifications

UB2 Series Miniature Low Profile Pushbutton

- Wide selection of illumination effects with single or bicolor LEDs and flat, beveled or sculptured caps
- Super bright bicolor LEDs in red/green or amber/blue enhance standard or custom alternating legends
- PCB or snap-in mounting and short body dimensions accommodate compact applications
- Snap-acting contact mechanism provides sensitive actuation and audible feedback; quick-make, quick-break characteristic limits arcing and prolongs electrical life



- Latchdown mechanism, independent of switching mechanism, delivers excellent stability and reliability plus visible and tactile indication of circuit status
- Epoxy sealed solder lug or straight PC terminals
- Matching indicators available

Power Level (silver): 5A @ 125V AC or 5A @ 250V AC
Logic Level (gold): 0.4VA max @ 28V AC/DC max

Contact Resistance: 50 milliohms for silver; 100 milliohms for gold

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 for momentary; 200,000 operations min for alternate action

Electrical Life: 10,000 operations min for silver; 200,000 operations min for gold

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

Characteristics & Specifications

YB Series Miniature Short Body Pushbutton

- Full face illumination with multi-element LEDs
- Super bright LEDs in white, green or blue, and bright LEDs in red, amber or green
- Splashproof, dust and oil tight panel seal model is rated IP65 and supplied with an exterior o-ring
- Available in square, round or rectangular shapes in both bushing or snap-in mounting
- Combination bezel-barrier is an integral part of the switch and prevents accidental actuation



- Less than one inch behind panel depth
- Distinctive design of snap-action contacts for shock resistance, long life and sensitive actuation
- Epoxy sealed straight PC or solder lug/.110" (2.8mm) quick connect terminals
- Matching indicators available

Power Level: 3A @ 125V AC or 3A @ 250V AC
Logic Level (gold): 0.4VA max @ 28V AC/DC max

Contact Resistance: 50 milliohms for silver; 100 milliohms for gold

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 for momentary circuit; 200,000 operations min for maintained circuit

Electrical Life: 100,000 operations min

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

Characteristics & Specifications

YB2 Series Standard Size Panel Seal Pushbutton

- Brilliant illumination options in bright and super bright LEDs
- Multiple illuminating effects with various lens/diffuser caps for enhanced panel appearance. Caps include metallic silver with clear ring illumination, bezels in black or brushed chrome.
- 24mm square and 25mm diameter pushbuttons with tamper resistant 18mm square and 19mm diameter actuators



- Meets IP65 of IEC 60529 Standards for dust tight and splashproof panel seal protection
- Short body conserves behind panel space
- Solder lug/.110" quick connect terminals are epoxy sealed to prohibit entry of contaminants
- Standard and custom legends available for actuator or inserts

Power Level: 3A @ 125V AC or 3A @ 250V AC
Logic Level (gold): 0.4VA max @ 28V AC/DC max

Contact Resistance: 50 milliohms for silver; 100 milliohms for gold

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 for momentary circuit; 200,000 operations min for maintained circuit

Electrical Life: 100,000 operations min

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

SMARTDISPLAY PROGRAMMABLE

Characteristics & Specifications

IS Series Standard Size OLED Frameless Pushbutton

- High definition, contrast, and resolution in OLED display module with range of 65,536 colors; pixel format 96RGB x 64 (h x v)
 - Maximum use of display lens with ultra-thin frame provides full screen capacity
 - Multiple units easily combine to form one borderless screen, offering flexibility in size and layout
 - Operated by commands and data supplied via serial communications protocol (SPI)
 - Dust tight construction; low energy consumption
 - Snap-in standoff, epoxy sealed straight PC terminals



Electrical Capacity (Resistive Load): 100mA @ 12V DC
Contact Resistance: 200 milliohms max @ 20mV 10mA
Insulation Resistance: 100 megohms min @ 100V DC
Dielectric Strength: 125V AC for 1 minute min
Mechanical Life: 1,000,000 operations min
Electrical Life: 1,000,000 operations min
Operating Life (Display): 50,000 hours @ 100cd/m ² (based on 40% pixels ON; Ta = 77°F)
Viewing Area H x V: Display: 21.28mm x 18.74mm (0.838" x 0.738")
Operating Temperature Range: -20°C ~ +70°C (-4°F ~ +158°F)

Characteristics & Specifications

IS Series Standard Size OLED Pushbutton

- Range of 65,536 colors in 16 bit mode, 256 colors in 8 bit mode
- Exceptional contrast: 50 times greater than LCD products
 - Enhanced resolution of 64RGB x 48 pixels, producing sharp, clear images of very small characters
 - Operated by commands and data supplied via serial communications protocol (SPI)
 - Stylish, translucent black housing design; snap-in standoff for easy, secure mounting and alignment
 - Epoxy sealed straight PC terminals



Electrical Capacity (Resistive Load): 100mA @ 12V DC
Contact Resistance: 200 milliohms max @ 20mV 10mA
Insulation Resistance: 100 megohms min @ 100V DC
Dielectric Strength: 125V AC for 1 minute min
Mechanical Life: 3,000,000 operations min
Electrical Life: 3,000,000 operations min
Operating Life (Display): 30,000 hours @ 100cd/m ² (based on 40% pixels ON); 60,000 hours @ 50cd/m ² (based on 40% pixels ON)
Viewing Area H x V: Display: 15.5mm x 11.6mm (0.610" x 0.457")
Operating Temperature Range: -20°C ~ +70°C (-4°F ~ +158°F)

Characteristics & Specifications

IS Series Standard Size OLED Display

- Range of 65,536 colors in 16 bit mode, 256 colors in 8 bit mode
 - Vivid colors with 52RGB x 36 pixel resolution
 - Bracket with crimped legs ensures secure PC mounting and prevents dislodging during wave soldering
 - Low energy consumption



Display: Color OLED display module; 30,000/60,000 hours @ 40%
Viewing Area H x V: Display: 12.9mm x 9.9mm (0.508" x 0.390")
Operating Temperature Range: -20°C ~ +70°C (-4°F ~ +158°F)

Characteristics & Specifications

IS Series Standard Size OLED Rocker

- Organic LED technology in monochrome display rocker features sharp contrast and resolution of 96 x 64 pixels
- Multi-function programmable device replaces multiple switches
 - Conforms to IP64 of IEC 60529 Standards on panel surface; dust tight construction prevents entry of dust, improves contact reliability
 - Large 0.92" display; wide viewing angle of 180°
 - Short, behind panel depth of .575" (14.6mm)
 - Panel mount with easy, snap-in installation



Electrical Capacity (Resistive Load): 3VA max @ 24V DC max
Contact Resistance: 200 milliohms max
Insulation Resistance: 500 megohms min @ 250V DC
Dielectric Strength: 250V AC for 1 minute min
Mechanical Life: 1,000,000 operations min
Electrical Life: 1,000,000 operations min
Display: Monochrome OLED; white/black; 52,000 hours @ 30%
Viewing Area H x V: Display: 19.16mm x 13.22mm (0.754" x 0.520")
Operating Temperature Range: -20°C ~ +70°C (-4°F ~ +158°F)

Characteristics & Specifications

IS Series Standard Size LCD Pushbutton • Standard Travel

- Programmable to display graphics for alphanumeric characters and animated sequences. Dynamically control 64 colors of backlighting.
- Operated by commands and data supplied via serial communications protocol (SPI)



- Crisp, vivid resolution in 64 x 32 pixel format
- Operated by commands and data supplied via serial communications protocol (SPI)
- Dual image VRAM quickly changes displayed images
- Dust tight construction; low energy consumption
- Snap-in standoff legs, straight PC terminals

Total Travel: 1.8mm (0.071")

Electrical Capacity (Resistive Load): 100mA @ 12V DC

Contact Resistance: 200 milliohms max @ 20mV 10mA

Insulation Resistance: 100 megohms min @ 100V DC

Dielectric Strength: 125V AC for 1 minute min

Mechanical Life: 1,000,000 operations min

Electrical Life: 1,000,000 operations min

Viewing Area H x V: 17.0mm x 13.0mm (0.669" x 0.512")

Operating Temperature Range: -15°C ~ +50°C (+5°F ~ +122°F)

Characteristics & Specifications

IS Series Standard Size LCD Pushbutton • Long Travel

- Programmable to display graphics for alphanumeric characters and animated sequences. Dynamically control 64 colors of backlighting.
- Operated by commands and data supplied via serial communications protocol (SPI)



- Crisp, vivid resolution in 64 x 32 pixel format
- Operated by commands and data supplied via serial communications protocol (SPI)
- Dual image VRAM quickly changes displayed images
- Dust tight construction; low energy consumption
- Snap-in standoff legs, straight PC terminals

Total Travel: 4.5mm (0.177")

Electrical Capacity (Resistive Load): 100mA @ 12V DC

Contact Resistance: 200 milliohms max @ 20mV 10mA

Insulation Resistance: 100 megohms min @ 100V DC

Dielectric Strength: 125V AC for 1 minute min

Mechanical Life: 3,000,000 operations min

Electrical Life: 3,000,000 operations min

Viewing Area H x V: 17.0mm x 13.0mm (0.669" x 0.512")

Operating Temperature Range: -15°C ~ +50°C (+5°F ~ +122°F)

Characteristics & Specifications

IS Series Compact LCD Pushbutton

- Programmable to display graphics for alphanumeric characters and animated sequences. Dynamically control 64 colors of backlighting.
- Operated by commands and data supplied via serial communications protocol (SPI)



- Crisp, vivid resolution in 64 x 32 pixel format
- Operated by commands and data supplied via serial communications protocol (SPI)
- Dual image VRAM quickly changes displayed images
- Dust tight construction; low energy consumption
- Snap-in standoff legs, straight PC terminals

Electrical Capacity (Resistive Load): 100mA @ 12V DC

Contact Resistance: 200 milliohms max @ 20mV 10mA

Insulation Resistance: 100 megohms min @ 100V DC

Dielectric Strength: 125V AC for 1 minute min

Mechanical Life: 1,000,000 operations min

Electrical Life: 1,000,000 operations min

Viewing Area H x V: 14.5mm x 11.8mm (0.571" x 0.465")

Operating Temperature Range: -15°C ~ +50°C (+5°F ~ +122°F)

Characteristics & Specifications

IS Series Standard Size LCD Display

- 64 colors of backlighting can be dynamically controlled
- Crisp, vivid resolution in 64 x 32 pixel format
- Bracket with crimped legs ensures secure PC mounting and prevents dislodging during wave soldering
- Controllable in three software commands
- Low energy consumption



Display: LCD with RGB backlight

Viewing Area H x V: Display: 14.4mm x 11.8mm (0.567" x 0.465")

Operating Temperature Range: -15°C ~ +50°C (+5°F ~ +122°F)

Characteristics & Specifications

IS Series Standard Size LCD Pushbutton

- Programmable to display graphics for alphanumeric characters and animated sequences; broad and even light diffusion
- Consistent RGB backlighting and 36 x 24 pixel format
 - Wide viewing angle with high contrast and clarity
 - Daisy chain capability; sunlight readable display
 - High reliability and long life with a tactile touch
 - Low energy consumption
 - Snap-in standoff, epoxy sealed straight PC terminals
 - Optional accessories available to enhance panel design and simplify production process



Electrical Capacity (Resistive Load): 100mA @ 12V DC

Contact Resistance: 200 milliohms max @ 20mV 10mA

Insulation Resistance: 100 megohms min @ 100V DC

Dielectric Strength: 125V AC for 1 minute min

Mechanical Life: 1,000,000 operations min

Electrical Life: 1,000,000 operations min

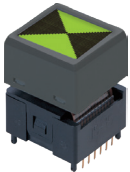
Viewing Area H x V: 17.0mm x 13.0mm (0.669" x 0.512")

Operating Temperature Range: -20°C ~ +60°C (-4°F ~ +140°F)

Characteristics & Specifications

IS Series Compact LCD Pushbutton

- Programmable to display graphics for alphanumeric characters and animated sequences; variety of LED backlighting colors
- Perfect for rack mount router, other applications with space restraints
 - Vibrant illumination with 36 x 24 pixel format
 - Daisy chain capability; sunlight readable display
 - High reliability and long life with a tactile touch
 - User controlled backlight; low energy consumption
 - Snap-in standoff for secure mounting and alignment
 - Epoxy sealed, straight PC terminals prevent entry of solder flux and other contaminants



Electrical Capacity (Resistive Load): 100mA @ 12V DC

Contact Resistance: 200 milliohms max @ 20mV 10mA

Insulation Resistance: 100 megohms min @ 100V DC

Dielectric Strength: 125V AC for 1 minute min

Mechanical Life: 1,000,000 operations min

Electrical Life: 1,000,000 operations min

Viewing Area H x V: 14.5mm x 11.8mm (0.571" x 0.465")

Operating Temperature Range: -20°C ~ +60°C (-4°F ~ +140°F)

Characteristics & Specifications

IS Series Standard Size LCD Display

- Programmable to display graphics for alphanumeric characters and animated sequences. RGB LED provides numerous color variations.
- Integrated liquid crystal display enables wide viewing angle with high contrast and clarity; 36 x 24 pixel format
- Can be used alone or in conjunction with electromechanical switches
 - Daisy chain capability; sunlight readable display
 - User controlled backlight; low energy consumption
 - Bracket with crimped legs ensures secure PC mounting and prevents dislodging during wave soldering
 - Low energy consumption



Display: LCD with RGB backlight

Viewing Area H x V: Display: 14.4mm x 11.8mm (0.567" x 0.465")

Operating Temperature Range: -20°C ~ +60°C (-4°F ~ +140°F)

SLIDES

Characteristics & Specifications

MSN Series Miniature Illuminated Slide

- Bright LED illumination in red, yellow or green at tip of actuator
- Over-center actuator block and plunger design gives crisp actuation, diminishes sparking and increases operating life
- Guide interlocked with actuator block prevents window locking and maintains correct plunger alignment, assuring contact stability
- Antijamming design protects contacts from damage due to excessive downward force on actuator
- High internal barriers between poles and insulating sheet between case and actuator block add protection to contacts
- Prominent external insulating barriers increase insulation resistance and dielectric strength
- Epoxy sealed solder lug (with 2-screw flange) or straight PC terminals



Power Level: 3A @ 125V AC or 2A @ 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

Operating Temperature Range: -15°C ~ +60°C (+5°F ~ +140°F)

TACTILES

Characteristics & Specifications

JB Series Subminiature Low Profile Tactile

- Bright, full face illumination with red, green or yellow LED
- Choice of multiple caps and colors, with flat, flat with lens and diffuser, or framed cap options
- Low profile, process sealed and high reliability with long life of up to 5,000,000 operations
- Rubber seal construction plus molded-in terminals prevent contact contamination and allow automated soldering and cleaning
- Actuators in short or extended options, with extended for high operating force model. Higher operating force option administers more pronounced operating feel.



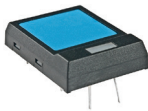
- Dome contact gives crisp tactile feedback, positively indicating circuit transfer
- Molded-in straight PC terminals conform to standard .100" (2.54mm) PCB grid

Operating Force	Standard	High
Low/Logic Level	50mA @ 24V DC max	125mA @ 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	1,000,000 operations
Electrical Life	5,000,000 operations	1,000,000 operations
Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)		

Characteristics & Specifications

JF Series Subminiature Ultra-Thin Tactile

- Red, green or yellow LED with spot illumination
- Extremely low profile of .224" (5.7mm) from PCB to top of switch; compact body dimensions for side-by-side mounting on standard .100" (2.54mm) PCB grid
- Process sealed; rubber seal construction aids in preventing contact contamination and allows for automated soldering and cleaning
- Crisp, tactile and audible feedback from dome contact positively indicates circuit transfer, assures high reliability and long life of 500,000 operations minimum



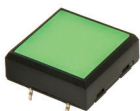
- Minimal operating force and short stroke enable light touch operation
- Crimped PC terminals ensure secure mounting and prevent dislodging during wave soldering

Low/Logic Level: 50mA @ 24V DC
Contact Resistance: 50 milliohms max
Insulation Resistance: 500 megohms min @ 250V DC
Dielectric Strength: 250V AC min for 1 minute min
Mechanical Life: 500,000 operations min
Electrical Life: 500,000 operations min
Operating Temperature Range: -25°C ~ +70°C (-13°F ~ +158°F)

Characteristics & Specifications

JL Series Subminiature Ultra-Thin Tactile

- Bright, full face illumination with red, amber or green LED
- Multiple LED arrays and interior reflectors enhance illumination of large, 0.75" (19mm) square actuator surface
- Distinctive design achieves full face illumination in extra low profile of 0.31" (7.85mm) from PCB to top of switch
- Streamlined housing dimensions accommodate compact, side-by-side mounting on a standard PCB grid



- Dome contact gives crisp tactile and audible feedback with short stroke, assuring high reliability and long life of at least 1,000,000 operations
- Crimped PC terminals ensure secure mounting and prevent dislodging during the soldering process. Standard .100" (2.54mm) PCB grid spacing.

Low/Logic Level: 50mA @ 24V DC
Contact Resistance: 50 milliohms max
Insulation Resistance: 500 megohms min @ 250V DC
Dielectric Strength: 250V AC min for 1 minute min
Mechanical Life: 1,000,000 operations min
Electrical Life: 1,000,000 operations min
Operating Temperature Range: -25°C ~ +50°C (-13°F ~ +122°F)

INDICATORS

Characteristics

A Indicators - Complement to A Switches



- Red, yellow or green LED color options
- Low .079" (2.0mm) profile
- Subminiature size and compact body contributes to design flexibility
- Variety of PC terminal configurations: straight PC, straight PC with bracket, right angle or vertical PC

Characteristics

UB Indicators - Complement to UB Switches



- Red, amber or green bright LEDs; white, green or blue super bright LEDs; super bright bicolor LEDs in red/green or amber/blue for alternating legends (square or rectangular shapes)
- Compact black housing, with full face or spot illumination options
- Straight PC terminals for PCB mounting in square or rectangular shapes
- Solder lug terminals with snap-in mounting in square, rectangular or rectangular with side barriers

Characteristics

G Indicators - Complement to G Switches



- LED choices in red, yellow or green
- Ultra-miniature, space conserving body
- Straight or vertical PC terminals; vertical PC model has anode and cathode terminals in addition to two support pins
- Partner with G Series toggles, rockers or pushbuttons

Characteristics

UB2 Indicators - Complement to UB2 Switches



- Red, amber or green bright LEDs; white, green or blue super bright LEDs; super bright bicolor LEDs in red/green or amber/blue; compact black housing
- Sculptured, beveled and flat caps
- Square bodies with PCB or snap-in mounting
- Standard and custom legends available
- Silver PC/turret terminals

Characteristics

HB Indicators - Complement to HB Switches



- Bright LEDs in red, amber or green; super bright LEDs in white, green or blue
- Multiple cap options with lens/diffuser combinations, plus square or round shapes
- 8mm threaded bushing
- Solder lug terminals

Characteristics

YB Indicators - Complement to YB Switches



- Red, amber or green bright LEDs; white, green or blue super bright LEDs; bicolor LED in red/green
- Square, round or rectangular shapes with bushing or snap-in mounting choices
- Panel seal model, available in bushing mount, qualifies to IP65 of IEC 60529 Standards
- Combination bezel-barrier is an integral part of the indicator body
- Solder lug/.110" (2.8mm) quick connect terminals

Characteristics

LB Indicators - Complement to LB Switches



- Neon, bright or super bright illumination in variety of colors
- Insert caps with lens/filter or LED caps with lens/diffuser combination
- Square, round and rectangular body shapes with black or gray housing
- Secure mounting supported by stainless steel clips
- Solder lug/quick connect terminals



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