

Human Machine Interfaces

IP-RATED AND POWER SWITCHES



everything starts here.

NIKK
SWITCHES

Everything You Need and More

NKK Switches provides reliability, functionality and selection, with innovative switch devices for every application. In addition to a wide range of toggle, rocker, pushbutton and programmable switches including illuminated, non-illuminated, and IP-rated devices you'll find:

- Electrical ratings from logic level to 50A
- IP-rating from IP50 to IP67

3D CAD Models:

With a single keystroke, you can download part number-specific 3D switch models directly from NKK's website for free! We have thousands of configurable 3D models to kick-start your designs today!

Custom Switches and Value-Added Capabilities

If we don't have it, we'll create it. Our expert team works closely with you to develop solutions for your specific applications including laser etching, screen and pad printing, and custom cable and wire assembly.

For every industry, for every environment, and your most innovative applications. Come to NKK Switches.

Panel Seal Boots

NKK offers a variety of boots compatible with toggles and pushbuttons to seal switches to achieve IP65 rating at the front panel.

PN	AT401 Half Boot	AT402, AT402S Full Boots	AT428 Full Boot	AT4041, AT4042 Full Boots	AT4043 Full Boot	AT4181 Full Boot
Material	 AT401A: Nitrile butadiene rubber AT401H: Ethylene propylene rubber AT401S: Silicone rubber	 Silicone rubber	 Silicone rubber	 Silicone rubber	 Silicone rubber	 Silicone rubber
Color	Black for AT401A Gray for AT401H Black for AT401S	Black, Red, Yellow, Green, and Gray	Black	Black	Black	Black
Bushing	12mm	12mm	M6 or 1/4-40 Thd	M6 or 1/4-40 Thd	12mm	12mm

IP Code for Degrees of Protection for Enclosures

The IP code is part of the IEC 60529 (EN 60529) standard specifying the degree of protection. The first number designates protection against solid objects or materials (e.g. fingers and dust) and the second number indicates the level of liquid (water) protection.

- | | |
|------|---|
| IP50 | Dust protected but not against water |
| IP60 | Dust tight but not protected against water |
| IP64 | Dust tight and protected against splashing water from any direction |
| IP65 | Dust tight and protected against water jets from any direction |
| IP67 | Dust tight and protected against effects of temporary immersion |

OLED and LCD Programmable Switches and Displays

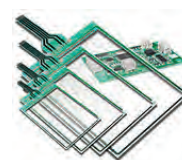
SmartSwitch Development Kits and a wide variety of accessories, including splashproof overlays, are available to assist engineers with rapid prototyping.

LCD 36 x 24		- Product Options: 18 - Single, Bicolor or RGB Backlight - LCD Driver on Board - Long Life LCD - Flexible Control of Backlight and LCD - Up to 3 Lines, 6 Characters Each	Pushbutton: 23.13 x 20.59 x 23 mm Compact Pushbutton: 19 x 18 x 23mm Display: 17.8 x 17.2 x 9.9 mm	Operating Temperature: -20°C to +60°C; -4°F to +140°F Mechanical/Electrical Life: 1,000,000 actuations min.
LCD 64 x 32		- RGB Backlight, 64 Colors, 8 Brightness Levels - Controller on Board - Control Only 2 or 3 Pins - Long Life LCD - Easy to Control - Up to 4 Lines, 10 Characters Each	Pushbutton: 23.13 x 20.59 x 23 mm Compact Pushbutton: 19 x 18 x 23mm Display: 17.8 x 17.2 x 9.9 mm	Operating Temperature: -15°C to +50°C; +5°F to +122°F Mechanical/Electrical Life: 3,000,000 actuations min. 1,000,000 actuations min. (Compact)
OLED COLOR		- Display Videos 65K Colors - Sharp Display of Text/Graphics 180 Degree Viewing Angle - Controller on Board/SPI - Up to 6 Lines, 10 Characters Each	Pushbutton: 23.13 x 20.59 x 23 mm Display: 17.8 x 17.2 x 9.9 mm Pixels: 64RGB x 48	Display Life: 60,000 hrs. @ 50cd/m ² with 40% pixels on 30,000 hrs @100cd/m ² with 40% pixels on Operating Temperature: -20°C to +70°C; -4°F to +158°F Mechanical/Electrical Life: 3,000,000 actuations min.
OLED MONO		- SP3T Momentary - IP64 Dust and Water Protection - Controller on Board/SPI - Largest Display Area 180 Degree Viewing Angle - Up to 8 Lines, 16 Characters Each	Rocker: 37.9 x 50.7 x 5.6 mm (Above Panel) 37.9 x 50.7 x 14.6 mm (Behind Panel) Pixels: 96 x 64 Monochrome	Display Life: 52,000 hrs. @ 100cd/m ² with 30% pixels on Operating Temperature: -20°C to +70°C; -4°F to +158°F Mechanical/Electrical Life: 1,000,000 actuations min.
DEVELOPMENT KITS		- Pre-programmed or User-defined - Display Custom Programs and Graphics - Easy Creation and Testing for Rapid Prototyping - RS232 Communication - Battery or AC Line Power	LCD 36 x 24 Pushbutton Compact Display LCD 64 x 32 Pushbutton Compact Display OLED Pushbutton Display OLED Rocker	IS-DEV KIT-5 IS-DEV KIT-5C IS-DEV KIT-5D IS-DEV KIT-6 IS-DEV KIT-6C IS-DEV KIT-6D IS-DEV KIT-7 IS-DEV KIT-7D IS-DEV KIT-8

Resistive Touch Screen Products

Non-Glare and Hard Coated Surfaces

- Anti-Newton Ring (ANR) Technology
- Contact Reliability with Connector



Analog



Digital

	Minimum Screen	Maximum Screen	Standard Screen Sizes	Features
5-Wire	10.4	19*	10.4, 12.1, 15	Finger, Glove Finger, Stylus
4-Wire	2.5*	19*	5.7, 6.5, 8.4, 10.4, 12.1, 15	Finger, Glove Finger, Stylus
Digital	2.2*	12.1*	5.7	Finger, Glove Finger, Stylus

Note: Dimensions are in inches

* Indicates Custom Sizes

Toggles	IP-Rating	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
B Series 	IP65 Panel Seal Models with A1 Bushing	Logic Level: 0.4VA Max @ 28V AC/DC max	-30 ~ +85°C -22 ~ +185°F	PC	6mm Bushing Cutout: 6mm with Double Flat	Subminiature Antistatic
M Series   AT401  AT4181  AT402S  AT402  AT428	IP67 with Bushings D3 D8 B3 L3 L8	Power Level: 6A @ 125V AC; 3A @ 250V AC; 3 ~ 4A @ 30V DC Logic Level: 0.4VA Max @ 28V AC/DC Max	-30 ~ +85°C -22 ~ +185°F	Quick Connect PC Wirewrap Solder Lug	6mm, 1/4-40 Thd or 12mm Bushing Cutouts: 6.5mm with D Flat 12.5mm with D Flat	Miniature Wire Assembly Available 
P Series   AT401  AT402  AT4181	IP65 with Boots AT401 AT402 AT4181	Power Level: 10A @ 125V AC; 6A @ 250V AC Motor Load: 400W @ 125V AC Lamp Load: 2 ~ 3A @ 125V AC	-10 ~ +85°C +14 ~ +185°F	Quick Connect PC Solder Lug	6mm or 12mm Bushing Cutouts: 6.35mm with Keyway or Locking Ring 12.5mm with Keyway or Locking Ring	Standard Wire Assembly Available 
S Series   AT401  AT402  AT4181	IP65 with Boots AT401 AT402 AT4181	2 ~ 5A Low Capacity Power Level: 5A @ 125V AC; 2A @ 250V AC; 5A @ 30V DC	-10 ~ +70°C +14 ~ +158°F	Solder Lug	12mm Bushing Cutout: 12.5mm with Keyway	Standard Wire Assembly Available 

Toggles

	IP-Rating	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
S Series     AT401 AT402 AT4181	IP67 Panel Seal Models with AW or AL Bushing for Locking Lever	6 ~ 25A Medium/Medium High Capacity Power Level: 15 ~ 25A @ 125V AC or 30V DC; 6 ~ 25A @ 250V AC Motor Load: 750W @ 125V AC	-10 ~ +70°C +14 ~ +158°F IP-Rated Models: -30 ~ +70°C -22 ~ +158°F	Screw Lug Quick Connect Solder Lug	12mm Bushing Cutout: 12.5mm with D Flat	Standard Wire Assembly Available 
S Series   AT401	IP65 with AT401 Boot 15 ~ 30A Models Only	15 ~ 50A High Capacity Power Level: 30 ~ 50A @ 125V AC or 30V DC; 15 ~ 30A @ 250V AC; 30A @ 48V DC Motor Load: 400 ~ 750W @ 125V AC	-10 ~ +70°C +14 ~ +158°F	Screw Lug	12mm Bushing Cutout: 12.5mm with or without Keyway	Standard 
WT Series    AT401 AT4181	Front Panel IP67 Behind Panel IP60 for Screw Lug and Solder Lug Behind Panel IP67 for Wire Lead	Power Level: 10A @ 125V AC; 6A @ 250V AC; 10A @ 30V DC	-30 ~ +70°C -22 ~ +158°F	Screw Lug Wire Lead Solder Lug	12mm Bushing Cutout: 12.5mm with D flat	Standard Wire Assembly Available
TL Series 	IP65 with AT401P O-ring	Power Level: 6A @ 125V AC; 3A @ 250V AC; 6A @ 12V DC	-10 ~ +55°C +14 ~ +131°F	Solder Lug	12mm Bushing Cutout: 12.5mm with Keyway	Miniature Fully Illuminated Wire Assembly Available

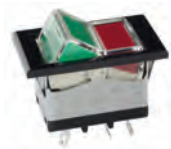
Rockers		IP-Rating	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
JWL and JWLW Series 		JWL: IP50 with AT4126 Dust Cover JWLW: IP67	Power Level: 16A @ 125/250V AC; 5A @ 72V DC JWL: TV-8 Rated High Inrush (117A)	JWL: -25 ~ +70°C -13 ~ +158°F JWLW: -25 ~ +85°C -13 ~ +185°F	Solder Lug .187" (4.75mm) Quick Connect	Snap-in Cutout JWL: 29.5 x 20.5mm Cutout JWLW: 30.7 x 20.5mm	Standard Wire Assembly Available 
JWMW Series 		IP67	Power Level: 10A @ 125/250V AC; 10A @ 30V DC	-25 ~ +85°C -13 ~ +185°F	Solder Lug .110" (2.8mm) Quick Connect	Snap-in Cutout: 25.0 x 15.4mm	Standard Wire Assembly Available 
WR Series 		Front Panel IP67 Behind Panel IP60 for Screw Lug, Quick Connect and Solder Lug Behind Panel IP67 for Wire Lead	Power Level: 15A @ 125/250V AC or 30V DC	-25 ~ +85°C -13 ~ +185°F	Screw Lug Quick Connect Wire Lead Solder Lug	Snap-in Cutout: 34.2 x 17.2mm	Standard Wire Assembly Available 
Rotaries		IP-Rating	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
MRB and MRK Series 		MRB: IP67 with AT535 O-ring MRK: IP67	Logic Level: 0.4VA max @ 28V AC/DC max	-10 ~ +70°C +14 ~ +158°F	PC	6mm Bushing Cutout: 6.2mm with Double Flat	Miniature
Optional Knobs for Metal Shaft							
AT433 Plain Black Knob Black with white indicator line 		AT4103 Small Color Tipped Knob Black with white indicator line 		AT4104 Large Color Tipped Knob Black with white indicator line 			

Pushbuttons

	IP-Rating	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
MB2000 Series 	IP67 with Bushings B3 D3 IP65 with Boots AT4041 AT4042 AT4043	Power Level: 6A @ 125V AC; 3A @ 250V AC or 30V DC Logic Level: 0.4VA max @ 28V AC/DC max	-30 ~ +85°C -22 ~ +185°F	Quick Connect PC Wirewrap Solder Lug	Bushing Cutouts: 6.5mm without Keyway 12.5mm without Keyway	Miniature Wire Assembly Available 
WB Series 	Front Panel IP67 Behind Panel IP60 for Screw Lug and Solder Lug Behind Panel IP67 for Wire Lead	Power Level: 6A @ 125V AC or 30V DC; 3A @ 250V AC	-30 ~ +70°C -22 ~ +158°F	Screw Lug Wire Lead Solder Lug	12mm Bushing Cutout: 12.5mm with D flat	Standard Wire Assembly Available
LB Series 	IP65 Panel Seal Models IP60 with Dust Covers AT4001 AT4002 AT4011	Power Level: 3A @ 125/250V AC or 30V DC Logic Level: 0.4VA max @ 28V AC/DC Max	Nonilluminated: -25 ~ +70°C -13 ~ +158°F Illuminated: -25 ~ +50°C -13 ~ +122°F	Solder Lug .110" (2.8mm) Quick Connect PCB Adaptors Available	Bushing Cutouts Panel Seal: 22.0mm with Keyway Square: 16.2mm Round: 22.0mm Rectangular: 16.2 x 22.4mm with Dust Cover	Standard Incandescent, Neon, LED; LED Spot Illumination Wire Assembly Available 
YB Series 	IP65 with Panel Seal Bushing Mount IP60 with AT4115 Dust Cover	Power Level: 3A @ 125/250V AC or 30V DC Logic Level: 0.4VA max @ 28V AC/DC max	Nonilluminated: -25 ~ +70°C -13 ~ +158°F Illuminated: -25 ~ +50°C -13 ~ +122°F	Solder Lug .110" (2.8mm) Quick Connect	Bushing Snap-in Cutout: 16.0mm without Keyway	Miniature Round, Square and Rectangular Models LED Illumination Wire Assembly Available 
YB2 Series 	IP65 Panel Seal Flush Mount	Power Level: 3A @ 125/250V AC or 30V DC Logic Level: 0.4VA max @ 28V AC/DC max	Nonilluminated: -25 ~ +70°C -13 ~ +158°F Illuminated: -25 ~ +50°C -13 ~ +122°F	Solder Lug .110" (2.8mm) Quick Connect	Bushing Cutouts: Round: 22.0mm with Keyway Square: 21.0mm	Standard Round and Square Models LED Illumination Wire Assembly Available 

Toggles

	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
S821D and S822D 	4 ~ 30A DC High Capacity Power Level: 20A @ 125V DC; 15A @ 250V DC; 30A @ 30V or 48V DC; 4A @ 400V DC; (10A @ 400V DC) () Capacity due to series Wiring	-10 ~ +70°C +14 ~ +158°F	Screw Lug	12mm Bushing Cutout: 12.5mm Dia, 12.5mm Dia with Locking Ring or Keyway	Standard  30A @ 30V DC, 15A @ 125V DC
	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
CWS Series 	Power Level: 6A @ 250V AC	-10 ~ +70°C +14 ~ +158°F	Quick Connect PC Solder Lug	Snap-in Cutout: 19.2 x 12.9mm	Miniature Wire Assembly Available 
CWT Series 	Power Level: 6A @ 125V AC; 3A @ 250V AC; 4A @ 30V DC	-25 ~ +70°C -13 ~ +158°F	Solder Lug	Snap-in Cutout: 19.2 x 6.8mm	Miniature Wire Assembly Available 
P Series 	Power Level: 10A @ 125V AC; 6A @ 250V AC Motor Load: 400W @ 125V AC Lamp Load: 2 ~ 3A @ 125V AC	-10 ~ +85°C +14 ~ +185°F	Quick Connect PC Solder Lug	Frame Mount Cutouts: Small Actuator: 17.8 x 10.1mm Large Actuator: 28.5 x 16.0mm	Standard Wire Assembly Available 
SW Series 	Medium Capacity Power Level: 15 ~ 20A @ 125V AC or 30V DC 6 ~ 10A @ 250V AC	-10 ~ +70°C +14 ~ +158°F	Solder Lug	2-screw Panel or Subpanel Mount Cutout: 28.0 x 14.5mm	Standard Wire Assembly Available 
SW Series 	High Capacity Power Level: 30A @ 125/250V AC or 30V DC	-10 ~ +70°C +14 ~ +158°F	Screw Lug	2-screw Panel or Subpanel Mount Cutout: 37.0 x 23.0mm	Standard 

Rockers	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
SW3821D SW3822D 	DC High Capacity Power Level: 20A @ 125V DC; 15A @ 250V DC; 30A @ 30V or 48V DC 4A @ 400V DC; (10A @ 400V DC) () Capacity due to Series Wiring	-10 ~ +70°C +14 ~ +158°F	Screw Lug	2-screw Panel or Subpanel Mount Cutout: 37.0 x 23.0mm	Standard  30A @ 30V DC, 15A @ 125V DC
CWSB and CWSC Series 	Power Level: 9A @ 125V AC 6A @ 250V AC for CWSC Only	CWSB: -20 ~ +85°C -4 ~ +185°F CWSC: -10 ~ +50°C +14 ~ +122°F	CWSB: Solder Lug .187" (4.75mm) Quick Connect CWSC: Solder Lug .110" (2.79mm) Quick Connect	Snap-in Cutout: CWSB or CWSC: 19.2 x 12.9mm	Miniature CWSB: Full Face Neon CWSC: Full Face LED Wire Assembly Available 
JWS Series 	Power Level: 5 ~ 10A @ 125/250V AC	Nonilluminated: -25 ~ +70°C -13 ~ +158°F Illuminated : -25 ~ +50°C -13 ~ +122°F	Solder Lug .187" (4.75mm) Quick Connect	Snap-in Cutout: 19.2 x 12.9mm	Miniature LED Spot Illumination Wire Assembly Available 
LW3021A 	Power Level: 20A @ 110V AC	-10 ~ +50°C +14 ~ +122°F	Solder Lug	2-screw Panel or Subpanel Mount Cutout: 28.0 x 14.0mm	Standard/High Capacity Neon Spot Illumination Wire Assembly Available
LW Series 	Power Level: 10A @ 125V AC; 6A @ 250V AC or 12V DC	-20 ~ +50°C -4 ~ +122°F	Solder Lug	Snap-in Cutout: 32.0 x 19.8mm	Standard/High Capacity Incandescent or Neon Illumination Wire Assembly Available

Pushbuttons	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
JPL Series 	Power Level: 16A @ 125/250V AC TV-8 Rated High Inrush (117A)	-10 ~ +70°C +14 ~ +158°F	Solder Lug .187" (4.75mm) Quick Connect	Snap-in Cutout: 28.0 x 21.2mm	Standard Wire Assembly Available 
JPM Series 	Power Level: 10A @ 125/250V AC TV-5 Rated High Inrush (78A)	-10 ~ +70°C +14 ~ +158°F	Solder Lug .187" (4.75mm) Quick Connect	Snap-in Cutout: 28.0 x 21.2mm	Standard Wire Assembly Available 
SB Series 	Power Level: 3 ~ 15A @ 125V; 1.5 ~ 9A @ 250V AC	-10 ~ +70°C +14 ~ +158°F	Solder Lug	12mm Bushing Cutout: 12.5mm with Keyway	Standard Wire Assembly Available 
SCB Series 	Power Level: 15A and 0.5HP @ 125/250V AC Lamp Load: 5A @125V AC	-40 ~ +85°C -40 ~ +185°F	Quick Connect	12mm Bushing Cutout: 12.5mm with Keyway	Standard 
UB Series 	Power Level: 5A @ 125/250V AC; 5A @ 30V DC Logic Level: 0.4VA Max @ 28V AC/ DC Max	Nonilluminated: -20 ~ +70°C -4 ~ +158°F Illuminated: -25 ~ +50°C -13 ~ +122°F	PC Solder Lug	Snap-in Cutouts: Square: 16.2mm Rectangular: 16.2 x 22.4mm	Miniature LED Illumination Wire Assembly Available 
UB2 Series 	Power Level: 5A @ 125/250V AC or 30V DC Logic Level: 0.4VA max @ 28V AC/ DC max	Nonilluminated: -25 ~ +70°C -13 ~ +158°F Illuminated: -25 ~ +50°C -13 ~ +122°F	PC Solder Lug	Snap-in Cutout: 17.4mm Square	Miniature LED Illumination Wire Assembly Available 

Rotaries	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
HS13 and HS16 Series 	HS13 Power Level: 6A @ 125V AC; 3A @ 250V AC; 5A @ 30V DC HS16 Power Level: 12A @ 125V AC; 6A @ 250V AC	-10 ~ +70°C +14 ~ +158°F	Solder Lug	10mm Bushing Cutouts: 10.3mm Dia with Keyway 10.5mm Dia with Locking Ring	Standard Wire Assembly Available HS16: 
PS Series 	Power Level: 30A @ 125/250V AC	-10 ~ +70°C +14 ~ +158°F	Screw Lug	10mm Bushing Cutout: 20.0mm Radius without Locking Ring	Standard
TS Series 	Power Level: 6A @ 125/250V AC	-10 ~ +70°C +14 ~ +158°F	Screw Lug	10mm Bushing Cutouts: 10.3mm Dia with Keyway 10.5mm Dia with Locking Ring	Standard
Optional Knobs for Rotary Switches (Only Models with D Flat Shaft)					
AT431 Large Rotary Knob Black with white indicator line			AT432 Small Rotary Knob Black with white indicator line		
Keylocks	Electrical Rating	Operating Temperature	Terminal Options	Mounting Type & Panel Cutout	Size/Features
CK Series 	High Security Power Level: 3A @ 250V AC	-25 ~ +70°C -13 ~ +158°F	Solder Lug	Bushing Cutout CKM: 16.0mm with Double Flat Cutout CKL: 19.0mm with Double Flat	Standard Wire Assembly Available
SK Series 	Low and Medium Security Power Level: 1 ~ 3A @ 250V AC	-25 ~ +70°C -13 ~ +158°F	Solder Lug	12mm Bushing Cutout: 12.0mm with Double Flat	Miniature Wire Assembly Available 



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