

SMARTSWITCH^{AI}™



NIKK
SWITCHES

OLED & LCD Programmable
Switches & Displays



What is SmartSwitch?

NKK's SmartSwitch products are user-friendly interfaces which combine a pushbutton or rocker switch with a programmable OLED or LCD display in one device. There are three product categories within the SmartSwitch family:

- Pushbutton switch with built-in display
- Rocker switch with built-in display
- Stand-alone display

Why SmartSwitch?

- Smallest off-the-shelf OLED and LCD devices in the industry
- Widest offering of products and development tools
- In-house engineering for design support
- Re-configure switches and entire panels instantly
- Achieve complex designs with fewer devices and less inventory
- Based on NKK customers' ROI: significant reduction of panel space, switches, installation time, and cost
- Display industry specific graphics and moving images
- Use multiple languages without need for language specific labels
- Simplifies complex, multi-decision operations

Three Industry Awards

NKK's OLED SmartSwitch was chosen as Product of the Year by the editors of Electronic Products magazine. The OLED SmartSwitch was also a finalist for the EDN Innovation Award and Design News' "Golden Mousetrap Award" in 2009.



	Special Features	Outer Dimensions	Basic Specifications
OLED Rocker	OLED Rocker Switch, SP3T Momentary	Rocker: 37.9 x 50.7 x 5.6mm	Operating Temperature: -20°C to +70°C
	IP64 Dust & Water Protection		Display Life: 52,000 hrs. at 30% illumination
	Controller on Board/SPI		Mechanical/Electrical Life: 1,000,000 actuations min.
	Largest SmartSwitch Display Area		
OLED Pushbutton	180° Viewing Angle		
	Up to 8 Lines with 16 Characters Each		
	Display Videos	Pushbutton: 23.13 x 20.59 x 23mm	Operating Temperature: -20°C to +70°C
	65K Colors	Display: 17.8 x 17.2 x 9.9mm	Display Life: 15,000 hrs. with 40% pixels on
LCD 64 x 32	Sharp Display of Small Text/Graphics		Mechanical/Electrical Life: 3,000,000 actuations min.
	180° Viewing Angle		
	Controller on Board/SPI		
	Best Contrast in the Market		
LCD 64 x 32	Up to 6 Lines with 10 Characters Each		
	RGB LED Backlight, 64 Colors	Pushbutton: 23.13 x 20.59 x 23mm	Operating Temperature: -15°C to +50°C
	• Controlled via Software	Compact Pushbutton: 19 x 18 x 23mm	Mechanical/Electrical Life: 3,000,000 operations min.
	Controller on Board/SPI	Display: 17.8 x 17.2 x 9.9mm	1,000,000 actuations min. For Compact
LCD 36 x 24	Long Life LCD		
	Up to 4 Lines with 10 Characters Each		
	18 Product Options	Pushbutton: 23.13 x 20.59 x 23mm	Operating Temperature: 0°C to +40°C
	Single, Bicolor or RGB Backlight	Compact Pushbutton: 19 x 18 x 23mm	Mechanical/Electrical Life: 1,000,000 actuations min.
LCD 36 x 24	LCD Driver on Board	Display: 17.8 x 17.2 x 9.9mm	
	Long Life LCD		
	Flexible Control of Backlight and LCD		
	Up to 3 Lines with 6 Characters Each		

All Pushbutton Versions: SPST, Momentary ON, Gold Contacts and Straight PC Terminals.

Visit www.nksmartswitch.com for complete specifications.



OLED Rocker
96 x 64



OLED
Pushbutton 64 x 48
Display 52 x 36



LCD 64 x 32
Pushbutton
Compact Pushbutton
Display



LCD 36 x 24
Pushbutton
Compact Pushbutton
Display



OLED Pushbutton
64RGB x 48 Pixels
ISC15ANP4



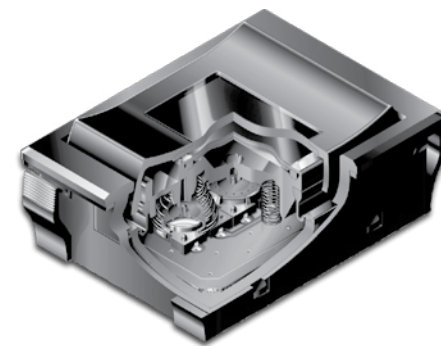
OLED Display
52RGB x 36 Pixels
ISC01P

New OLED Rocker

- All-in-one solution: rocker switch with integrated pushbutton & display
- Scroll up & down with rocker to select, push for activation
- Monochrome long life display (52,000 Hours)
- IP64 dust protected & splashproof (water spray from any direction)
- Snap-in mount

OLED Monochrome Rocker
96 x 64 Pixels

IS18WWC1W



OLED Pushbutton & Display

- 65K colors
- Display videos at 100+ frames per second
- Sharp display of small characters/graphics
- Controller on board
- Stylish design
- Dust protected

OLED Advantages

High resolution

Exceptional contrast

Sharp image from all viewing angles

Lower energy consumption than LCDs



Actual Size

LCD 64 x 32 Pushbutton & Display

- 2 sizes of pushbuttons, compact switch is 28% smaller
- Software control for backlighting
- 64 color backlighting
- Up to 4 lines with 10 characters each
- Graphic display capable of alphanumeric characters & animations
- Low energy consumption
- Dust protected

LCD Pushbutton
64 x 32 Pixels

IS15DBFP4RGB



LCD Compact Pushbutton
64 x 32 Pixels

IS15DSBFP4RGB

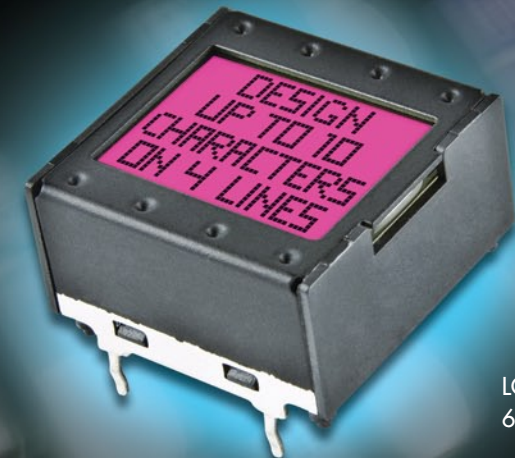


LCD Advantages

Long life display
Sunlight readable
Lower cost than OLED

LCD Pushbutton
64 x 32 Pixels

IS15DBFP4RGB



LCD Display
64 x 32 Pixels

IS01DBFRGB

LCD 36 x 24 Pushbuttons & Displays

- 2 Sizes of pushbuttons, compact switch is 28% smaller
- Graphic display capable of alphanumeric characters & animations
- Full control of backlight
- Single color, bicolor, and RGB backlighting
- Most economical SmartSwitch
- Up to 3 lines with 6 characters each
- Long life LCD

LCD Pushbutton
36 x 24 Pixels

IS15ABFP4RGB

LCD Compact Pushbutton
36 x 24 Pixels

IS15SACP4CF

LCD Display
36 x 24 Pixels

IS01BCCF

LCD 36 x 24 Pushbuttons & Displays

Part Number	Type	LCD Mode	LED Color	LCD/LED Options		
IS15AACP4CF IS15SACP4CF	S C	Yellow STN Positive	* Red/Green Bright			
IS15ABCP4CF IS15SBCP4CF IS01BCCF	S C D	Yellow STN Positive	* Red/Green Super Bright			
IS15ABCP4E IS01BCE	S D	Yellow STN Positive	Yellow Super Bright			
IS15ABCP4EF IS15SBCP4EF IS01BCEF	S C D	Yellow STN Positive	* Yellow/Green Super Bright			
IS15ABDP4E	S	Blue STN Negative	Yellow Super Bright			
IS15ABDP4EG	S	Blue STN Negative	* Yellow/Blue Super Bright			
IS15ABDP4B	S	Blue STN Negative	White Super Bright			
IS15ABFP4B IS15SBFP4B	S C	Black & White FSTN Positive	White Super Bright			
IS15ABFP4RGB IS15SBFP4RGB IS01BFRGB	S C D	Black & White FSTN Positive	** Red/Green/Blue			

S = Standard Pushbutton • C = Compact Pushbutton • D = Display

* Simultaneous illumination can produce whole spectrum between the two colors. ** Simultaneous illumination achieves infinite colors.

Development Kits

- Pre-programmed demo
- Display custom programs and graphics
- Easy creation, testing and display for rapid prototype designs
- Speed up design process
- Serial communication
- Controller on board

Display	Pixels	Description	DEV Kit Number
OLED	96 x 64	Rocker	IS-DEV Kit-8
OLED	64 x 48	Pushbutton	IS-DEV Kit-7
OLED	52 x 36	Display	IS-DEV Kit-7D
LCD	64 x 32	Pushbutton	IS-DEV Kit-6
LCD	64 x 32	Compact Pushbutton	IS-DEV Kit-6C
LCD	64 x 32	Display	IS-DEV Kit-6D
LCD	36 x 24	Pushbutton	IS-DEV Kit-5
LCD	36 x 24	Compact Pushbutton	IS-DEV Kit-5C
LCD	36 x 24	Display	IS-DEV Kit-5D

Rocker monochrome, all other DEV Kits with RGB displays

Plug & Play Single-Switch System

Use the single-switch system in applications that require quick design cycles, easy installation, and low cost.

- Pre-configured to specific application requirements
- LCD 36 x 24 pixels
- Display graphics or 3 lines of 6 characters each
- Red, green, and amber backlight
- Panel mount for easy installation
- 8 configurable inputs/outputs: digital in/out, analog in
- I2C, SPI, or UART configurations available



IS-S0108
Programmable LCD Pushbutton with
snap-in mount and controller on board



Standard controller
Customized controllers available

Visit NKKSmartSwitch.com for:

- Complete product specifications
- Free 3D CAD models
- Engineering documentation, application notes, user manuals
- Free serial communication software



OLED and LCD Pushbutton
DEV Kit



OLED and LCD Display
DEV Kit



OLED Rocker DEV Kit



Applications

View more application photos at: <http://applications.nkksmartswitch.com>

Application Specific Keyboards

Aerospace and Military

Broadcast Panels

Configuration Menus

Emergency Call Dispatch

Factory Automation

Lighting/Stage/Theater Controls

Machine Control/Robotics

Medical

Process Control

Real Time Data Monitoring

Security Systems

Simulation

Test Equipment

Video & Surveillance Systems



NKK Switches – more than 50 years of product innovations

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