

SMARTSWITCH™



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

Industry Awards

design
news

EDN

**Electronic
PRODUCTS**
No compromise tools for the busy EE

NKK's OLED SmartSwitch products have won several prestigious industry awards from 2009 through 2011.

	Special Features	Outer Dimensions	Basic Specifications
OLED Rocker	OLED Rocker Switch, SP3T Momentary	Rocker: 37.9 x 50.7 x 5.6mm	Display Luminance Half-life: 52,000 hrs. @ 100cd/m ² with 30% pixels on
	IP64 Dust & Water Protection		Operating Temperature: -20°C to +70°C
	Controller on Board/SPI		Mechanical/Electrical Life: 1,000,000 actuations min.
	Largest SmartSwitch Display Area 180° Viewing Angle Up to 8 Lines with 16 Characters Each		
OLED Pushbutton	Display Videos	Pushbutton: 23.13 x 20.59 x 23mm	Display Luminance Half-life: 60,000 hrs. @ 50cd/m ² with 40% pixels on
	65K Colors	Display: 17.8 x 17.2 x 9.9mm	30,000 hrs. @ 100cd/m ² with 40% pixels on
	Sharp Display of Small Text/Graphics		Operating Temperature: -20°C to +70°C
	180° Viewing Angle Controller on Board/SPI Best Contrast in the Market Up to 6 Lines with 10 Characters Each		Mechanical/Electrical Life: 3,000,000 actuations min.
LCD 64 x 32	RGB LED Backlight, 64 Colors	Pushbutton: 23.13 x 20.59 x 23mm	Operating Temperature: -15°C to +50°C (-20°C to +60°C available)
	• 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
	Long Life LCD Up to 4 Lines with 10 Characters Each		
LCD 36 x 24	18 Product Options	Pushbutton: 23.13 x 20.59 x 23mm	Operating Temperature: 0°C to +40°C (-20°C to +60°C available)
	Single, Bicolor or RGB Backlight	Compact Pushbutton: 19 x 18 x 23mm	Mechanical/Electrical Life: 1,000,000 actuations min.
	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

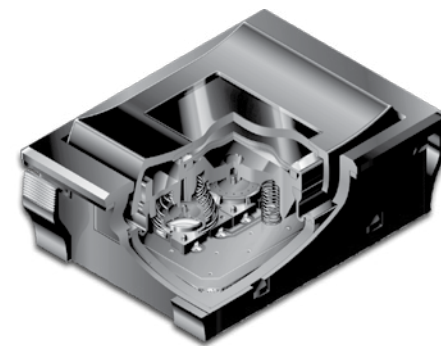


OLED Display
52RGB x 36 Pixels
ISC01P

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
- IP64 dust protected & splashproof (water spray from any direction)
- Snap-in mount
- Compatible with 3D glasses

OLED Monochrome Rocker
96 x 64 Pixels
IS18WWC1W



OLED Pushbutton & Display

- Display videos at 100+ frames per second
- Sharp display of small characters/graphics
- Low power consumption of only 3.8mA
- Compatible with 3D glasses
- 65K colors
- Controller on board
- Stylish design
- Dust protected

OLED Advantages

Fast response - run video
High resolution
Exceptional contrast
Sharp image from all viewing angles
Wide temperature range



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
- Compatible with 3D glasses (add -3D to part number for LCD Pushbutton)

LCD Pushbutton
64 x 32 Pixels

IS15DBFP4RGB



LCD Compact Pushbutton
64 x 32 Pixels

IS15DSBFP4RGB



LCD Advantages

Long life display
Sunlight readable
Low cost

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
- Compatible with 3D glasses (add -3D to part number for LCD Pushbuttons)

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 or user-defined demos
- Display custom programs and graphics (software provided)
- Easy creation, testing and display for rapid prototype designs
- Speed up design process
- RS232 communication
- Battery or AC line power

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

Switches/displays mounted on sockets for re-use in application

Process Indicator & Controller

Use in applications that require a small footprint, quick design cycles, and easy installation.

- Smallest Process Indicator on the market
- Snap-in panel mount for easy installation
- Built-in Micro-controller for decision making and control
- 8 configurable inputs/outputs: digital in/out, analog in, and serial communication
- LCD Display 36 x 24 pixels & 8 backlighting modes
- Display graphics or up to 3 lines of 6 characters
- Controller programmed at NKK per customer's requirements



IS-S0108

Process Indicator & Controller

Visit NKKSmartSwitch.com for:

- Complete product specifications & accessories
- 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



Broadcast Switcher with
OLED Video and LCD Pushbuttons

Applications

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

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