

# 8 Series Pushbutton Switches

## ■ Features

- 1. Contacts**  
Silver or gold-plated contacts.
- 2. Epoxy resin case**  
UL94V-0 self-extinguishing epoxy.
- 3. Actuator style**  
Over 30 actuator variations.
- 4. Insulation between terminal and ground:  
4 mm minimum.**
- 5. Prevention of flux entry**  
The epoxy resin seal on bottom of the switch helps prevent the entry of solder and flux.
- 6. Insulation barrier:**  
Insulation barrier design between poles helps prevent short-circuiting between poles ensuring high reliability.

## ■ Specifications

|   |                       |                              |  |
|---|-----------------------|------------------------------|--|
| Rating  | Max. rating           | 6A 125VAC/3A 250VAC/4A 30VDC |  |
| Initial contact resistance                            | 10mΩmax. (1A 2~4VDC)  |                              |  |
| Initial dielectric strength                           | 1,500VAC 1 minute     |                              |  |
| Initial insulation resistance                         | 1,000MΩ min. (500VDC) |                              |  |
| Electrical life<br>(Excluding <b>8R</b> & <b>8W</b> ) | Alternate type        | 40,000 operations            |  |
|   | Momentary type        | 25,000 operations            |  |
| Operating temperature range                           | -30°C~+85°C           |                              |  |
| Storage temperature range                             | -40°C~+85°C           |                              |  |

(Excluding **8R** & **8W**. Specifications on 8R and 8W series are specified separately on P.264 and P.269.)

## ■ Terminal Styles

| Solder (Style:1) | Straight (Style:2) |
|------------------|--------------------|
| <p>t=0.8</p>     | <p>t=0.8</p>       |

**UL-Recognized, CSA certified Products**  
(Pushbutton type Only)

## ■ Eight Switch Series


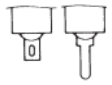





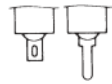

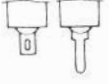
| Poles   | Switching function      | UL (※2.) |    |    | CSA (※3.) |    |    |
|---------|-------------------------|----------|----|----|-----------|----|----|
|         |                         | 8N       | 8P | 8Y | 8N        | 8P | 8Y |
| 1 pole  | <b>1011-Z</b> ON - ON   | ○        | ○  | ○  | ○         | ○  | ○  |
|         | <b>1012-Z</b> ON - ON   | ○        | ○  | ○  | ○         | ○  | ○  |
|         | <b>1021-Z</b> ON - (ON) | ○        | ○  | ○  | ○         | ○  | ○  |
|         | <b>1022-Z</b> ON - (ON) | ○        | ○  | ○  | ○         | ○  | ○  |
| 2 poles | <b>2011-Z</b> ON - ON   | ○        | ○  | ○  | ○         | ○  | ○  |
|         | <b>2012-Z</b> ON - ON   | ○        | ○  | ○  | ○         | ○  | ○  |
|         | <b>2021-Z</b> ON - (ON) | ○        | ○  | ○  | ○         | ○  | ○  |
|         | <b>2022-Z</b> ON - (ON) | ○        | ○  | ○  | ○         | ○  | ○  |
| 3 poles | <b>3011-Z</b> ON - ON   | ○        | ○  | ○  | ○         | ○  | ○  |
|         | <b>3021-Z</b> ON - (ON) | ○        | ○  | ○  | ○         | ○  | ○  |
| 4 poles | <b>4011-Z</b> ON - ON   | ○        | ○  | ○  | ○         | ○  | ○  |
|         | <b>4021-Z</b> ON - (ON) | ○        | ○  | ○  | ○         | ○  | ○  |

(※2.) **UL File No.E43275**

(※3.) **CSA File No.LR38341**

If **UL** or **CSA** marking is required, please specify when ordering.

# 8 Series Pushbutton Switches Selection Table

| Part No.    | Name                    | Actuator shape  | Number of poles | Switching function   | Terminal style  | Page       |
|-------------|-------------------------|---|-----------------|----------------------|---|------------|
| <b>8N</b>   | Standard Pushbutton     |    | 1.2.3.4         | ON — ON<br>ON — (ON) | <br>S/D Solder P/C Straight  | <b>261</b> |
| <b>8P</b>   | Splash Proof Pushbutton |    | 1.2             | ON — ON<br>ON — (ON) | <br>S/D Solder               | <b>263</b> |
| <b>8Y</b>   | Mustang Pushbutton      |    | 1.2.3           | ON — ON<br>ON — (ON) | <br>S/D Solder               | <b>265</b> |
| <b>8R-N</b> | Soft Touch Pushbutton   |    | 1.2             | ON — ON<br>ON — (ON) | <br>S/D Solder P/C Straight  | <b>267</b> |
| <b>8W-N</b> | Snap-in Pushbutton      |  | 1.2             | ON — (ON)            | <br>S/D Solder P/C Straight | <b>269</b> |

## Part Numbering

**8**

Series code

**N**

Actuator shape

**1**

Number of poles

**01**

Switching function

**1**

Terminal style

**B — Z**

(※1) Contact plating and material

| Code     | Actuator     |
|----------|--------------|
| <b>N</b> | Standard     |
| <b>P</b> | Splash proof |
| <b>Y</b> | Mustang      |
| <b>R</b> | Soft Touch   |
| <b>W</b> | Snap-in      |

| Fig.     | Number of poles |
|----------|-----------------|
| <b>1</b> | 1               |
| <b>2</b> | 2               |
| <b>3</b> | 3               |
| <b>4</b> | 4               |

| Fig.      | Switching function |
|-----------|--------------------|
| <b>01</b> | ON — ON            |
| <b>02</b> | ON — (ON)          |

| Fig.     | Terminal style |
|----------|----------------|
| <b>1</b> | Solder         |
| <b>2</b> | PC/Straight    |

| Code     | Contact material | Plating |
|----------|------------------|---------|
| None     | Bs+Ag or Cu+Ag   | Ag      |
| <b>B</b> | Bs or Cu         | Ni+Au   |
| <b>C</b> | Bs+Ag or Cu+Ag   | Ni+Au   |

Note : Some combinations may not be available. Please check the "Table of Part Numbers" for each series.

※1 Bs= Brass  
Cu= Copper  
Ag= Silver  
Ni= Nickel  
Au= Gold

# 8N

## Standard Pushbutton Switches



RoHS Compliant

### Features

The 8N standard pushbutton switch is the basic type of "8" Series. Momentary and alternate functions are available. Color button is available in 8mm, 10mm and 15mm diameter and in 4 colors.

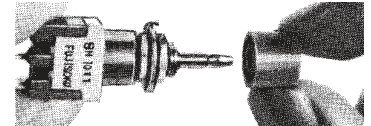
### Table of Part Numbers

| Terminal style | Switching function | No. of pole             |                           |            |            |
|----------------|--------------------|-------------------------|---------------------------|------------|------------|
|                |                    | 1 pole                  | 2 poles                   | 3 poles    | 4 poles    |
| Solder Lug     | ON - ON            | 8N1011-Z                | ☆ 8N2011-Z<br>▲ 8N2011C-Z | ★ 8N3011-Z | ▲ 8N4011-Z |
|                | ON - (ON)          | 8N1021-Z<br>▲ 8N1021C-Z | 8N2021-Z                  | ★ 8N3021-Z | ★ 8N4021-Z |
| Straight PC    | ON - ON            | —                       | ★ 8N2012-Z                | —          | —          |
|                | ON - (ON)          | ☆ 8N1022-Z              | ☆ 8N2022-Z                | —          | —          |

### PC Hole Layouts Page 271.

### Color Button Mounting

Snap in the color button on to the actuator.

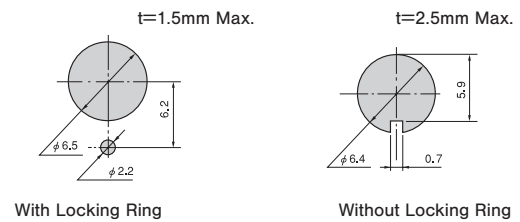


### Standard Accessories

《Supplied with switch》

| Hex Nut       | Lockwasher   | Locking Ring |
|---------------|--------------|--------------|
| 140008010241  | 140008030051 | 140008020062 |
|               |              |              |
| Nickel plated | Zinc plated  | Zinc plated  |

### Panel Cut-Out Dimensions

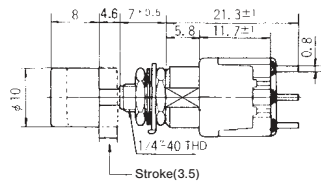


| Part name   |       | Color Button |              |              |
|-------------|-------|--------------|--------------|--------------|
| Dimension A |       | φ 8          | φ 10         | φ 15         |
| Dimension B |       | 7.5          | 8            | 10           |
|             | White | 140000481420 | 140000480082 | 140000480088 |
|             | Red   | 140000481421 | 140000480083 | 140000480089 |
|             | Black | 140000481422 | 140000480081 | 140000480090 |
|             | Gray  | 140000481423 | 140000480084 | 140000480091 |

★ : Made to order products. ☆ : Semi-standard products. ▲ : Inquiry products. (ON) : Momentary.

● Hex Nut (2 pcs), Lockwasher (1 pc), and Locking Ring (1 pc) are supplied with the switch. A Color Button is also supplied with the switch. Please specify the part number from the above table when ordering.

SPDT



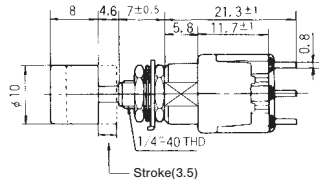
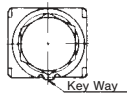
| Switching function   |     |      |
|----------------------|-----|------|
| Part No.             |     |      |
| ※ 8N101■-Z           | ON  | ON   |
| 8N102■-Z             | ON  | (ON) |
| Connecting terminals | 2-3 | 2-1  |

※ : The circuit switches each time the switch button is pressed.

■ : Please refer to "Table of Part Numbers" on P.261 for a list of full part numbers.

Terminal numbers are not shown on the switch.

DPDT



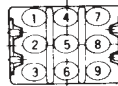
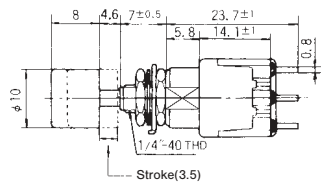
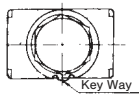
| Switching function   |            |            |
|----------------------|------------|------------|
| Part No.             |            |            |
| ※ 8N201■-Z           | ON         | ON         |
| 8N202■-Z             | ON         | (ON)       |
| Connecting terminals | 2-3<br>5-6 | 2-1<br>5-4 |

※ : The circuit switches each time the switch button is pressed.

■ : Please refer to "Table of Part Numbers" on P.261 for a list of full part numbers.

Terminal numbers are not shown on the switch.

3PDT



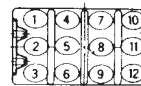
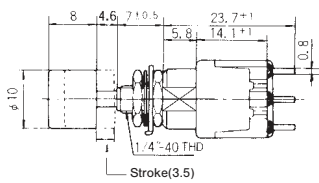
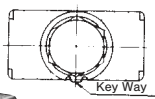
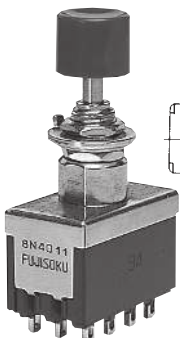
| Switching function   |                |                |
|----------------------|----------------|----------------|
| Part No.             |                |                |
| ※ 8N301■-Z           | ON             | ON             |
| 8N302■-Z             | ON             | (ON)           |
| Connecting terminals | 2-3 5-6<br>8-9 | 2-1 5-4<br>8-7 |

※ : The circuit switches each time the switch button is pressed.

■ : Please refer to "Table of Part Numbers" on P.261 for a list of full part numbers.

Terminal numbers are not shown on the switch.

4PDT



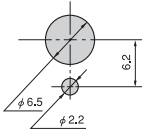
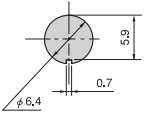
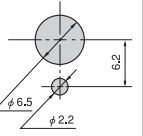
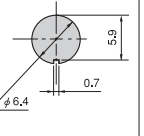
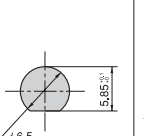
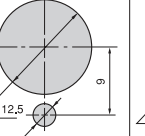
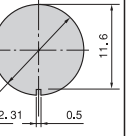
| Switching function   |                      |                      |
|----------------------|----------------------|----------------------|
| Part No.             |                      |                      |
| ※ 8N401■-Z           | ON                   | ON                   |
| 8N402■-Z             | ON                   | (ON)                 |
| Connecting terminals | 2-3 5-6<br>8-9 11-12 | 2-1 5-4<br>8-7 11-10 |

※ : The circuit switches each time the switch button is pressed.

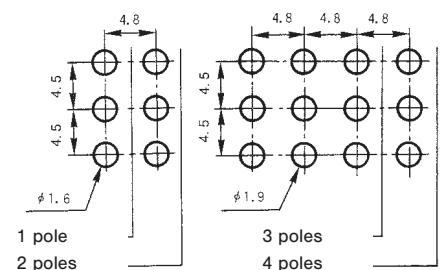
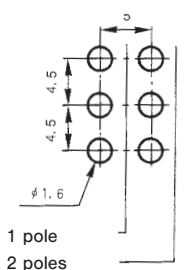
■ : Please refer to "Table of Part Numbers" on P.261 for a list of full part numbers.

Terminal numbers are not shown on the switch.

**Panel Cut-Out Dimensions**

| Series          | 8N   |   | 8R   |  | 8P   | 8Y   |   |
|-----------------|--|---|--|--|--|--|---|
| Panel thickness | 1.5 mm Max.  | 2.5 mm Max.   | 2 mm Max.  | 3 mm Max.  | 4.5 mm Max.  | 5 mm Max.  | 6 mm Max.   |
| Dimensions      | <br>With Locking Ring | <br>Without Locking Ring | <br>With Locking Ring | <br>Without Locking Ring | <br>With Locking Ring | <br>With Locking Ring | <br>Without Locking Ring |

**PC Hole Layouts**

| Series     | 8N • 8P  | 8R • 8W  |
|------------|--|--|
| Dimensions |  <p>1 pole<br/>2 poles</p> <p>3 poles<br/>4 poles</p> |  <p>1 pole<br/>2 poles</p> |

**Precautions (8N•8P•8R•8W•8Y)**

**1. Soldering Specifications**

(1)Manual soldering

Device : Solder iron

①420°C Max. 3 sec. Max.

(2)Auto soldering

②275°C ±10°C 5 sec. Max.

The above-stated soldering conditions shall apply only to switches with straight terminals. Auto soldering is not possible with right-angle terminals. Switches with right-angle terminals should be soldered manually according to the conditions specified in (1) above.

(3)When putting the switches through an aging process after they were soldered onto the printing board or after installed into a complete end product, be sure to remove the buttons ofthe switches.,

**2. Mounting**

- Do not bend the terminals before mounting the switch on the PC board.
- After mounting the switch, do not place the device in such a way that the device weight will be applied on to the actuator of the switch.
- For switches with straight terminals, solder the switch on the PC board after fixing the switch on the panel with a nut.

**3. Flux Cleaning**

(1)Solvent : Fluorine or Alcohol type.

(2)8A/B/C/D/E/F/J/S series are not washable. To wash the PC board, clean the soldering surface of the PC board with a brush so that the switch is not exposed to the cleaning solution.

**Packaging Specification**

