8 Series

Toggle Switches

■Introduction

The 8 Series Toggles is our high-reliability miniature switch product offering. This product line meets and exceeds all basic international switch standards.
With 8 toggle options, PC and solder lug terminals, power and logic level current ratings, 1-4 pole and many circuit offerings these switches can be used in many industries and various applications within these industries.
Four of the 8 Series lines are washable. Specifically designed for PC applications with automated solder and cleaning methods.

■Features of 8 Series Toggles

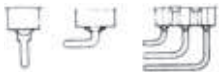
1. **Terminal style :**
   Solder, Straight, Right angle and vertical mount PC terminals.
2. **Contacts :**
   Silver or gold.
3. **Epoxy resin case :**
   UL94V-0 self-extinguishing epoxy.
4. **Actuator styles :**
   Over 30 actuator variations.
5. **Insulation between terminal and ground :**
   4 mm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

■Applications

- ●Communication equipment
- ●Computer peripheral equipment
- ●Measuring instruments
- ●Medical equipment
- ●Automotive diagnosis

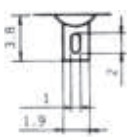
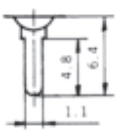
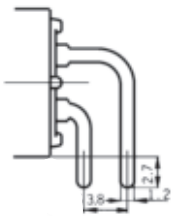
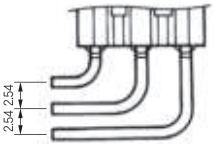
The switches can be used in a wide range of fields from industrial to consumer equipment.

8 Series Toggles Selection Table

Part No.	Name	Actuator shape	Number of poles	Switching function	Terminals	Page
8A	Standard toggle		1・2・3・4	ON – ON ON – OFF – ON ※1/2 Poles ON – ON ON – OFF – ON ※3/4 Poles ON – ON – ON ※8A Type 4 Poles only	 Solder Lug Straight PC	341 〜 343
8B	Mustang Toggle		1・2・3・4		 Solder Lug Straight PC	344 〜 345
8C	Flatted Toggle		1・2・3		 Solder Lug Straight PC	346 〜 347
8E	Lever Lock Toggle		1・2・3・4		 Solder Lug Straight PC	348 〜 349
8F	Splash Proof Toggle		1・2・4		 Solder Lug Straight PC	350 〜 351
8J	Short Toggle		1・2・3・4		 Solder Lug Straight PC	352 〜 353
Board mounting washable **8G**	Short Toggle Washable		1・2	ON – ON ON – OFF – ON (ON) – OFF – (ON) ON – (ON)	 Straight PC Right Angle Vertical	354 〜 355
8GA	Standard Toggle Washable		1・2		 Straight PC Right Angle Vertical	356
Board mounting **8K**	Short Toggle		1・2	ON – ON	 Straight PC Right Angle Vertical	357 〜 358
8KA	Standard Toggle		1・2		 Straight PC Right Angle Vertical	359

( ) indicates momentary actuation

■Terminals

Solder Lug (Style:1)	PC Straight (Style:2)	Right Angle (Style:4)	Vertical Mounting (Style:6)
t=0.8 	t=0.8 PC 	t=0.8 R/A 	t=0.8 w=1.2 V/M 

■Part Numbering

8 A 1 01 1 C – Z

Series code | Actuator shape | Number of poles | Switching function | Terminals | Contact material and plating

Code	Type
A	Standard Toggle
B	Mustang Toggle
C	Flatted Toggle
E	Lever-lock Toggle
F	Splash Proof Toggle
J	Short Toggle
G	Board mounting washable
K	Board mounting

Fig.	Number of poles
1	1 pole
2	2 poles
3	3 poles
4	4 poles

Code	Switching function
01	ON — ON
02	ON — OFF — ON
04	(ON) — OFF — (ON)
06	ON — (ON)
※**10**	ON — ON — ON

※ 8A Type only.

Fig.	Terminals
1	Solder Lug
2	PC Straight
4	Right Angle
6	Vertical Mounting

(※1)

Code	Contact material	Plating
None	Bs+Ag or Cu+Ag	Ag
C	Bs+Ag or Cu+Ag	Ni+Au

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

(※1) : Switches with gold-plated contacts ("C") are made-to order products. MOQ is 25 pcs.

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

■8 Series Toggles Common Specifications

Contact specs.		Silver	Gold
Rating	Max.	AC125 V 6 A AC250 V 3 A DC30 V 4 A	AC125 V 6 A AC250 V 3 A DC30 V 4 A DC20V 25mA
Initial contact resistance		10 mΩ Max. (DC2～4 V 1 A)	20 mΩ Max. (AC200 μV 1.5 mA)
Initial dielectric strength		AC1500 V /1 minute	
Initial insulation resistance		1000 MΩ Min. (DC500 V)	
Electrical life	Alternate type	50,000/cycles	
	Momentary type	25,000/cycles	
Operating temperature range		−30～+85°C	
Storage temperature range		−40～+85°C	

8E

Locking Lever Toggle Switches



RoHS Compliant

■Features

The 8E Locking Lever Toggle Switch features a locking device to prevent accidental switch operation. Caps are available in 3 colors.

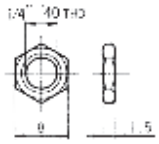
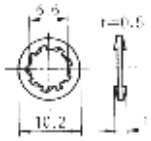
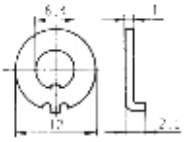
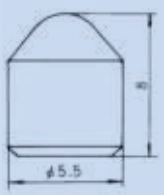
Please refer to "Operation Method" on the next page on instructions on how to operate.

■Table of Part Numbers

Terminal Style	Switching Function \ Number of poles	1 pole	2 poles	3 poles	4 poles
Solder Lug	ON – ON	**8E1011–Z** ★ **8E1011C–Z**	**8E2011–Z** ☆ **8E2011C–Z**	★ **8E3011–Z**	★ **8E4011–Z**
	ON – OFF – ON	☆ **8E1021–Z** ★ **8E1021C–Z**	★ **8E2021–Z**	——	——
PC Straight	ON – ON	★ **8E1012–Z**	★ **8E2012C–Z**	——	——

■ Standard Accessories

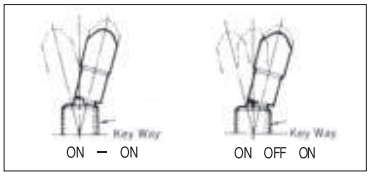
《Supplied with switch》

Part Name	Hex Nut	Lockwasher	Locking Ring	Color Cap		
Part No.	**140008010241**	**140008030051**	**140008020062**	Dimensions	Color	Part. No.
Dimensions				Aluimite finish  Aluminum alloy	Silver	**140000470058**
					Black	**140000470059**
Finish	Nickel plated	Zinc plated	Zinc plated		Red	**140000470060**

A Silver cap is attached to the switch. If a different color (Black or Red) is required, please order separately.

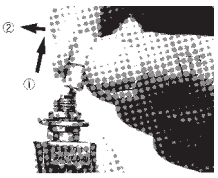
■PC Hole Layouts Page 360.
■Panel Cut-Out Dimensions Page 360.
■Terminal Style Page 339.
■Soldering,Flux Cleaning and Packaging Spec. Page 359.
■Optional Accessories. Page 361.

■Lock Types By Function

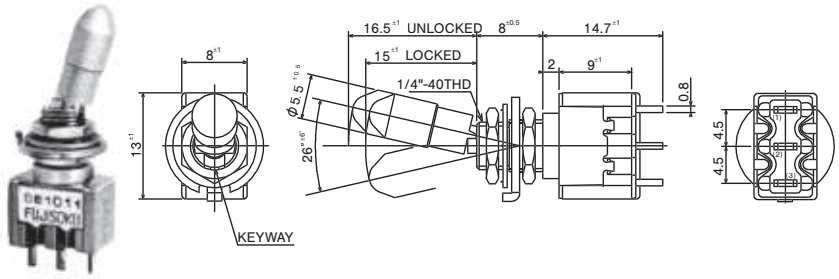


■Operation Method

Pull up the lever to unlock and move the actuator to the desired position.



SPDT

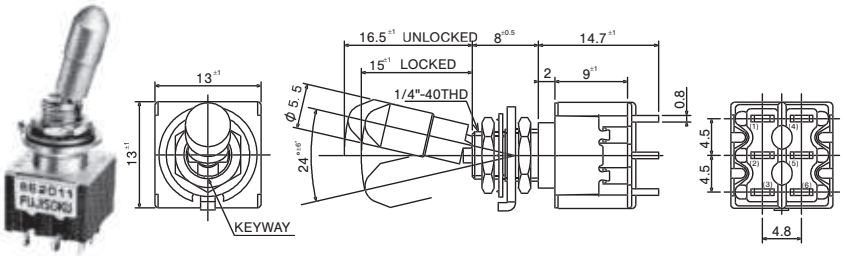


Terminal numbers are not shown on the switch.

Part No. \ Switching function	Key way	Key way	Key way
8E101■-Z	ON	–	ON
8E102■-Z	ON	OFF	ON
Connecting terminals	2–3	–	2–1

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

DPDT

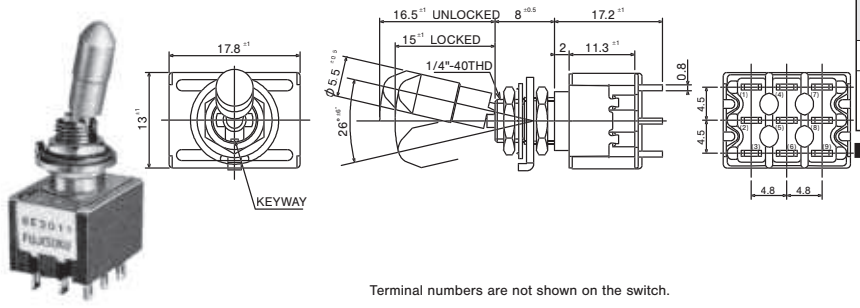


Terminal numbers are not shown on the switch.

Part No. \ Switching function	Key way	Key way	Key way
8E201■-Z	ON	–	ON
8E202■-Z	ON	OFF	ON
Connecting terminals	2–3 5–6	–	2–1 5–4

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

3PDT

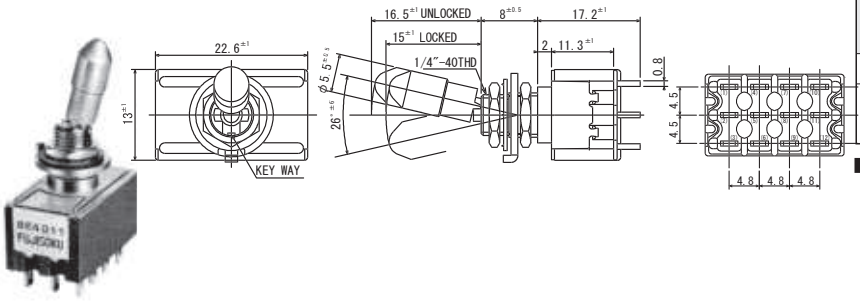


Terminal numbers are not shown on the switch.

Part No. \ Switching function	Key way	Key way	Key way
8E301■-Z	ON	–	ON
Connecting terminals	2–3 5–6 8–9	–	2–1 5–4 8–7

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

4PDT



Terminal numbers are not shown on the switch.

Part No. \ Switching function	Key way	Key way	Key way
8E401■-Z	ON	–	ON
Connecting terminals	2–3 5–6 8–9 11–12	–	2–1 5–4 8–7 11–10

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

■Precautions (8A·8B·8C·8E·8F·8J)

1. Soldering Specifications

(1)Manual soldering

Device : Solder iron

①420℃ Max. 3 sec. Max.

(2)Auto soldering

②275℃ Max. 6 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 soldering two or more terminals to the common land, use the solder resist to isolate the terminals.

2. Flux Cleaning

(1)Solvent : Fluorine or Alcohol type.

(2)8A/B/C/E/F/J 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.

(3)Cleaning after soldering should be done after the terminal temperature falls to 90℃ or below, or after leaving the switch for five minutes or longer at room temperature.

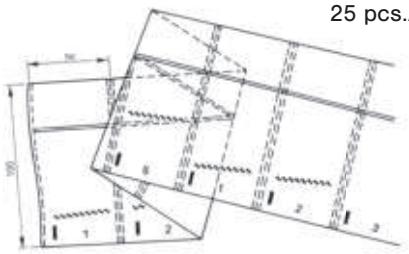
3. Mounting

- 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.

■Packaging Specification

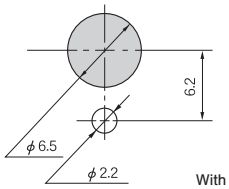
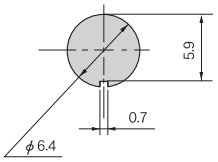
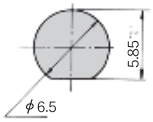
Perforated Plastic Bags

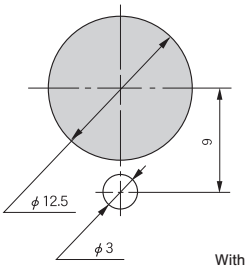
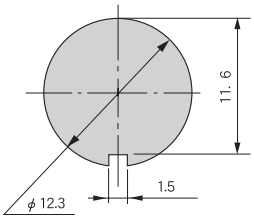
25 pcs./pack



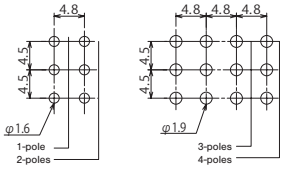
8 Series Toggles

■Panel Cut-Out Dimensions

Series	8A·8J	8C	8E	8A·8J	8C	8E	8F
Panel thickness	2.5 mm Max.	2.4 mm Max.	1.5 mm Max.	3.5 mm Max.	3.4 mm Max.	2.5 mm Max.	5 mm Max.
Dimensions	 With Locking Ring			 Without Locking Ring			

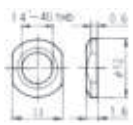
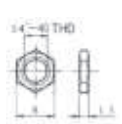
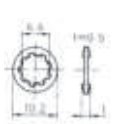
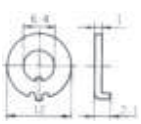
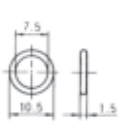
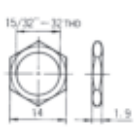
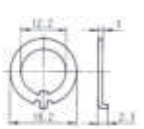
Series	8B	
Panel thickness	5.9 mm Max.	6.9 mm Max.
Dimensions	 With Locking Ring	 Without Locking Ring

■PC Hole Layouts

Series	8A・8B・8C・8E・8F・8J
Dimensions	

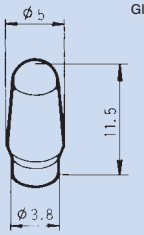
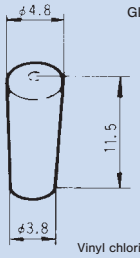
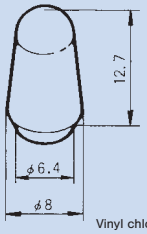
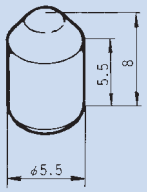
■Standard Accessories

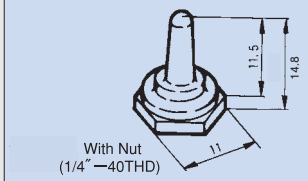
《Q'ty／switch》

Part Name	Dress Nut	Hex Nut	Lockwasher	Locking Ring	O-Ring	Hex Nut	Lockwasher	Locking Ring
Part No.	140008010253	140008010241	140008030051	140008020062	140000610076	140008010243	140008030055	140008020065
Dimensions								
Finish	Nickel plated		Zinc plated		Nitrile rubber (Black)	Nickel plated	Zinc plated	
8A		2	1	1				
8B						2	1	1
8C	1	1	1	1				
8D		2	1	1				
8E		2	1	1				
8F		1	1		1			
8J		2	1	1				

● Numbers in the above chart show the quantities of each accessories enclosed with the switch.

■Optional Accessories 《Sold separately》

Type	8A・8F・8GA・8KA	8A・8F・8GA・8KA	8B	8E
Part Name	Color Cap			
Dimensions	Gloss finish  Vinyl chloride resin	Gloss finish  Vinyl chloride resin	Gloss finish  Vinyl chloride resin	Alumite finish  Aluminum alloy
Silver	–	–	–	140000470058
White	140000470030	140000470038	140000470063	–
Red	140000470098	140000470100	140000470108	140000470060
Black	140000470031	–	140000470064	140000470059
Gray	140000470037	140000470077	–	–

Type	8A
Part Name	Waterproof boot
Part No.	140000470422
Dimensions	

: Optional Accessories.