(12 dia.) Toggle Push-button

Angled hole Rocker

RoHS Directive compatibility information
http://www.nais-e.com/

FEATURES

1. Series now includes rocker and push-button switches.
Based on the well-established T-15 Series switch, the mechanism is kept as is and a rocker type and push-button type have been added to the series. (Note that the push-button type is rated at 10 A.)

2. Sealed type added for use in different environments.
Packing is used where parts join and an O-ring is used to seal moving parts. New to the series, this type can be used in harsh environments such as those with water, oil, dust, and gas.
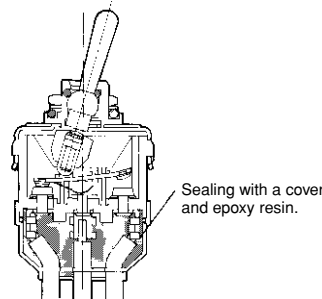
• **Panel-sealed type**
Entry of water, oil, dust and gas from the front of the panel is prevented.
(Panel front: IP67*; Inside of panel: IP40)

Prevention of water, oil, dust, and gases from entering through the panel with O-rings
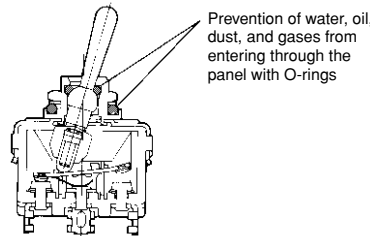
• **Terminal-sealed type**
Both switch body and terminals have been sealed to protect from dust and gas that enters from the panel.
(Panel front: IP67*; Inside of panel: IP60)

Sealing the joint part of switch body with packing rubber.

Terminal area is sealed with epoxy resin.
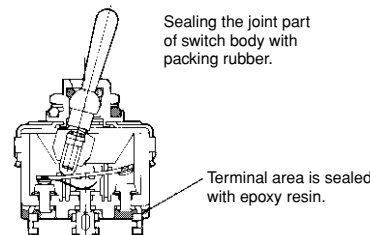
• **Wire lead type**
Furthermore, a cover is provided for the terminals to keep out water and oil that enters from the panel.
(Panel front: IP67*; Inside of panel: IP67)

Sealing with a cover and epoxy resin.

Remark: The asterisk in "Panel front: IP67*" means this only applies to toggle and push-button types.
The panel surface for the rocker type is IP64. Please see NOTES 1 and 2 regarding use of the sealed type.

3. Rubber cap also available in silicon type for excellent weather resistance.
• 5 colors available so you can distinguish switches by purpose.
<Example>
Black: For main power supply
Grey: For setting and switching
Red: For resetting
• With a usable ambient temperature range of –25°C to +85°C, use is possible in environments that require resistance against heat and cold.

PRECAUTIONS WHEN USING CADMIUM-FREE CONTACT TYPE

Models with cadmium-free contacts have been introduced in order to reduce environmentally harmful substances. ("F" is affixed to the end of the part number.) We ask customers who are currently using products with cadmium-containing contacts (no "F" at the end of the part number) to please make the switch to models with cadmium-free contacts. When switching, operating life may differ depending on the load. Please be sure to verify this by conducting an evaluation using actual equipment.

ASSORTMENT

Kind of actuator	Standard type	Sealed type			Number of pole				Shape of terminal			
		Panel-sealed type	Terminal-sealed type	Wire leads type	1P	2P	3P	4P	Solder terminal	Screw terminal	.250 Quick-connect terminal	Wire lead
Toggle type	Available	Available	Available	Available	Available	Available	Available*1	Available*1	Available	Available	Available*1	Available*2
Rocker type	Available	Available	Available	Available	Available	Available	—	—	Available	Available	—	Available*2
Push-button type	Available	Available	—	—	Available	Available	—	—	Available	Available	—	—

Remarks: *1: Only standard type
*2: Only wire leads type

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TOGGLE PRODUCT TYPES

1. Standard type

1) Solder terminal and .250 Quick-connect terminal

Number of poles	Kind of operation < >: Momentary position	Solder terminal Product No.	250 Quick-connect terminal Product No.
1-pole	ON-OFF	T115AF	T115A-AF
	ON-ON	T115DF	T115D-AF
	ON-OFF-ON	T115EF	T115E-AF
	ON-<ON>	T115FF	T115F-AF
	<ON>-OFF-<ON>	T115GF	T115G-AF
	ON-OFF-<ON>	T115HF	T115H-AF
2-pole	ON-OFF	T215KF	T215K-AF
	ON-ON	T215NF	T215N-AF
	ON-OFF-ON	T215PF	T215P-AF
	ON-<ON>	T215RF	T215R-AF
	<ON>-OFF-<ON>	T215SF	T215S-AF
	ON-OFF-<ON>	T215TF	T215T-AF
3-pole	ON-OFF	T315KF	T315K-AF
	ON-ON	T315NF	T315N-AF
	ON-OFF-ON	T315PF	T315P-AF
4-pole	ON-OFF	T415KF	T415K-AF
	ON-ON	T415NF	T415N-AF
	ON-OFF-ON	T415PF	T415P-AF

2) Screw terminal

Number of poles	Kind of operation < >: Momentary position	Screw terminal Product No.
1-pole	ON-OFF	T115A-SF
	ON-ON	T115D-SF
	ON-OFF-ON	T115E-SF
	ON-<ON>	T115F-SF
	<ON>-OFF-<ON>	T115G-SF
	ON-OFF-<ON>	T115H-SF
2-pole	ON-OFF	T215K-SF
	ON-ON	T215N-SF
	ON-OFF-ON	T215P-SF
	ON-<ON>	T215R-SF
	<ON>-OFF-<ON>	T215S-SF
	ON-OFF-<ON>	T215T-SF
3-pole	ON-OFF	T315K-SF
	ON-ON	T315N-SF
	ON-OFF-ON	T315P-SF
4-pole	ON-OFF	T415K-SF
	ON-ON	T415N-SF
	ON-OFF-ON	T415P-SF

Remarks: 1. Standard installation accessories are included with the product.
2. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

2. Panel-sealed type
1) Solder terminal

Number of poles	Kind of operation < >: Momentary position	Solder terminal Product No.
1-pole	ON-OFF	TP115A-F
	ON-ON	TP115D-F
	ON-OFF-ON	TP115E-F
	ON-<ON>	TP115F-F
	<ON>-OFF-<ON>	TP115G-F
	ON-OFF-<ON>	TP115H-F
2-pole	ON-OFF	TP215K-F
	ON-ON	TP215N-F
	ON-OFF-ON	TP215P-F
	ON-<ON>	TP215R-F
	<ON>-OFF-<ON>	TP215S-F
	ON-OFF-<ON>	TP215T-F

2) Screw terminal

Number of poles	Kind of operation < >: Momentary position	Screw terminal Product No.
1-pole	ON-OFF	TP115A-SF
	ON-ON	TP115D-SF
	ON-OFF-ON	TP115E-SF
	ON-<ON>	TP115F-SF
	<ON>-OFF-<ON>	TP115G-SF
	ON-OFF-<ON>	TP115H-SF
2-pole	ON-OFF	TP215K-SF
	ON-ON	TP215N-SF
	ON-OFF-ON	TP215P-SF
	ON-<ON>	TP215R-SF
	<ON>-OFF-<ON>	TP215S-SF
	ON-OFF-<ON>	TP215T-SF

Remarks: 1. Of the standard installation accessories that come with the product, the front hex nut and lock washer are included.
2. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.
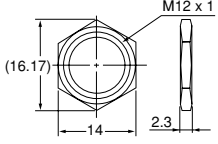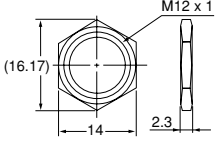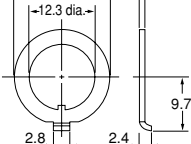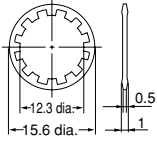
3. Terminal-sealed type
1) Solder terminal

Number of poles	Kind of operation < >: Momentary position	Solder terminal Product No.
1-pole	ON-OFF	TD115A-F
	ON-ON	TD115D-F
	ON-OFF-ON	TD115E-F
	ON-<ON>	TD115F-F
	<ON>-OFF-<ON>	TD115G-F
	ON-OFF-<ON>	TD115H-F
2-pole	ON-OFF	TD215K-F
	ON-ON	TD215N-F
	ON-OFF-ON	TD215P-F
	ON-<ON>	TD215R-F
	<ON>-OFF-<ON>	TD215S-F
	ON-OFF-<ON>	TD215T-F

Remarks: 1. Of the standard installation accessories that come with the product, the front hex nut and lock washer are included.
2. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

2) Screw terminal

Number of poles	Kind of operation < >: Momentary position	Screw terminal
		Product No.
1-pole	ON-OFF	TD115A-SF
	ON-ON	TD115D-SF
	ON-OFF-ON	TD115E-SF
	ON-<ON>	TD115F-SF
	<ON>-OFF-<ON>	TD115G-SF
	ON-OFF-<ON>	TD115H-SF
2-pole	ON-OFF	TD215K-SF
	ON-ON	TD215N-SF
	ON-OFF-ON	TD215P-SF
	ON-<ON>	TD215R-SF
	<ON>-OFF-<ON>	TD215S-SF
	ON-OFF-<ON>	TD215T-SF

Remarks: 1. Of the standard installation accessories that come with the product, the front hex nut and lock washer are included.
2. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.
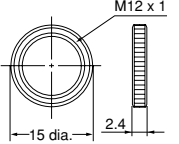
4. Wire lead type

Number of poles	Kind of operation < >: Momentary position	Wire lead type
		Product No.
1-pole	ON-OFF	TC115A-F
	ON-ON	TC115D-F
	ON-OFF-ON	TC115E-F
	ON-<ON>	TC115F-F
	<ON>-OFF-<ON>	TC115G-F
	ON-OFF-<ON>	TC115H-F
2-pole	ON-OFF	TC215K-F
	ON-ON	TC215N-F
	ON-OFF-ON	TC215P-F
	ON-<ON>	TC215R-F
	<ON>-OFF-<ON>	TC215S-F
	ON-OFF-<ON>	TC215T-F

Remarks: 1. Standard installation accessories are included with the product.
2. 600 V vinyl wire (VSF, thick: 2 mm^2, length: 200 mm) is used. Please inquire about type and different length of lead wire.
3. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

5. Accessories
1) Installation accessories (Repair parts)

Product name	Standard installation accessories				Optional installation accessories
	Front hex nut (Nickel plated)	Back hex nut (Uni-chrome plated)	Keying washer	Lock washer	Front Knurl nut (Nickel plated)
Dimensions (mm)	M12 x 1 (16.17) 14 2.3	M12 x 1 (16.17) 14 2.3	18.2 dia. 1 12.3 dia. 9.7 2.8 2.4	12.3 dia. 0.5 15.6 dia. 1	M12 x 1 15 dia. 2.4
Part No.	AJ3081	AJ3082	AJ3083	AJ3084	AJ3080

Remark: A selling unit of each accessory is 10 pieces.

¥ Using the different rubber caps
We recommend silicon rubber and EP rubber caps for the following applications.

1) Silicon rubber caps
• When it is necessary to differentiate by color.
• When using in applications that require resistance to heat and cold. Ambient temperature: –25°C to +85°C (EP rubber type is 0°C to +40°C.)
• When compactness is required.

2) EP rubber type
When cost is the primary consideration.

2) Accessories (Option)

Product name	Indication plate (aluminum)*3		Rubber cap*1, 2, 4	
	ON-OFF	ON-ON	EP rubber type	Silicone rubber type
Dimensions (mm)				
Part No.	WD1901	WD1902	WD1911	WD1811*

Remarks: 1. The asterisk in the part number WD1811* for the silicon rubber type rubber cap is where the letter representing the color should be inserted.
(Standard models: B: black; R: red; Z: grey. Made to order: Y: yellow; G: green.)
2. EP rubber cap is available in black only.
3. Letters on the display panel are aluminum colored and the area surrounding the letters is black.
4. Rubber caps are compatible with the J4 switch, T-15 series switch, T-10 series switch, and T-03/T-06 series switches
(when plate thickness is 2.7 mm or less).

ROCKER PRODUCT TYPES

1. Standard type

1) Solder terminal, without indication on actuator

Number of poles	Kind of operation < >: Momentary position	Solder terminal
		Product No.
1-pole	ON-OFF	TR115A-∗F
	ON-ON	TR115D-∗F
	ON-OFF-ON	TR115E-∗F
	ON-<ON>	TR115F-∗F
	<ON>-OFF-<ON>	TR115G-∗F
	ON-OFF-<ON>	TR115H-∗F
2-pole	ON-OFF	TR215K-∗F
	ON-ON	TR215N-∗F
	ON-OFF-ON	TR215P-∗F
	ON-<ON>	TR215R-∗F
	<ON>-OFF-<ON>	TR215S-∗F
	ON-OFF-<ON>	TR215T-∗F

2) Screw terminal, without indication on actuator

Number of poles	Kind of operation < >: Momentary position	Screw terminal
		Product No.
1-pole	ON-OFF	TR115A-S∗F
	ON-ON	TR115D-S∗F
	ON-OFF-ON	TR115E-S∗F
	ON-<ON>	TR115F-S∗F
	<ON>-OFF-<ON>	TR115G-S∗F
	ON-OFF-<ON>	TR115H-S∗F
2-pole	ON-OFF	TR215K-S∗F
	ON-ON	TR215N-S∗F
	ON-OFF-ON	TR215P-S∗F
	ON-<ON>	TR215R-S∗F
	<ON>-OFF-<ON>	TR215S-S∗F
	ON-OFF-<ON>	TR215T-S∗F

3) Solder terminal, with ON-OFF indication on actuator

Number of poles	Kind of operation < >: Momentary position	Solder terminal
		Product No.
1-pole	ON-OFF	TR115A-∗F
2-pole	ON-OFF	TR215K-∗F

Remark: For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

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4) Screw terminal, with ON-OFF indication on actuator

Number of poles	Kind of operation < >: Momentary position	Screw terminal Product No.
1-pole	ON-OFF	TR115A-S∗F
2-pole	ON-OFF	TR215K-S∗F

Remarks: 1. Please specify the actuator color by replacing the asterisk in the product number and part number with appropriate letter.
B: black; W: white; R: red (custom ordered); Z: dark grey (custom ordered)
2. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

2. Panel-sealed type

1) Solder terminal, without indication on actuator

Number of poles	Kind of operation < >: Momentary position	Solder terminal Product No.
1-pole	ON-OFF	TRP115A-∗F
	ON-ON	TRP115D-∗F
	ON-OFF-ON	TRP115E-∗F
	ON-<ON>	TRP115F-∗F
	<ON>-OFF-<ON>	TRP115G-∗F
	ON-OFF-<ON>	TRP115H-∗F
2-pole	ON-OFF	TRP215K-∗F
	ON-ON	TRP215N-∗F
	ON-OFF-ON	TRP215P-∗F
	ON-<ON>	TRP215R-∗F
	<ON>-OFF-<ON>	TRP215S-∗F
	ON-OFF-<ON>	TRP215T-∗F

2) Screw terminal, without indication on actuator

Number of poles	Kind of operation < >: Momentary position	Screw terminal Product No.
1-pole	ON-OFF	TRP115A-S∗F
	ON-ON	TRP115D-S∗F
	ON-OFF-ON	TRP115E-S∗F
	ON-<ON>	TRP115F-S∗F
	<ON>-OFF-<ON>	TRP115G-S∗F
	ON-OFF-<ON>	TRP115H-S∗F
2-pole	ON-OFF	TRP215K-S∗F
	ON-ON	TRP215N-S∗F
	ON-OFF-ON	TRP215P-S∗F
	ON-<ON>	TRP215R-S∗F
	<ON>-OFF-<ON>	TRP215S-S∗F
	ON-OFF-<ON>	TRP215T-S∗F

3) Solder terminal, with ON-OFF indication on actuator

Number of poles	Kind of operation < >: Momentary position	Solder terminal Product No.
1-pole	ON-OFF	TRP115A-∗F
2-pole	ON-OFF	TRP215K-∗F

4) Screw terminal, with ON-OFF indication on actuator

Number of poles	Kind of operation < >: Momentary position	Screw terminal Product No.
1-pole	ON-OFF	TRP115A-S∗F
2-pole	ON-OFF	TRP215K-S∗F

Remarks: 1. Please specify the actuator color by replacing the asterisk in the product number and part number with appropriate letter.
B: black; W: white; R: red (custom ordered); Z: dark grey (custom ordered)
2. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

3. Terminal-sealed type

1) Solder terminal, without indication on actuator

Number of poles	Kind of operation < >: Momentary position	Solder terminal
		Product No.
1-pole	ON-OFF	TRD115A-∗F
	ON-ON	TRD115D-∗F
	ON-OFF-ON	TRD115E-∗F
	ON-<ON>	TRD115F-∗F
	<ON>-OFF-<ON>	TRD115G-∗F
	ON-OFF-<ON>	TRD115H-∗F
2-pole	ON-OFF	TRD215K-∗F
	ON-ON	TRD215N-∗F
	ON-OFF-ON	TRD215P-∗F
	ON-<ON>	TRD215R-∗F
	<ON>-OFF-<ON>	TRD215S-∗F
	ON-OFF-<ON>	TRD215T-∗F

2) Screw terminal, without indication on actuator

Number of poles	Kind of operation < >: Momentary position	Screw terminal
		Product No.
1-pole	ON-OFF	TRD115A-S∗F
	ON-ON	TRD115D-S∗F
	ON-OFF-ON	TRD115E-S∗F
	ON-<ON>	TRD115F-S∗F
	<ON>-OFF-<ON>	TRD115G-S∗F
	ON-OFF-<ON>	TRD115H-S∗F
2-pole	ON-OFF	TRD215K-S∗F
	ON-ON	TRD215N-S∗F
	ON-OFF-ON	TRD215P-S∗F
	ON-<ON>	TRD215R-S∗F
	<ON>-OFF-<ON>	TRD215S-S∗F
	ON-OFF-<ON>	TRD215T-S∗F

3) Solder terminal, with ON-OFF indication on actuator

Number of poles	Kind of operation < >: Momentary position	Solder terminal
		Product No.
1-pole	ON-OFF	TRD115A-∗F
2-pole	ON-OFF	TRD215K-∗F

4) Screw terminal, with ON-OFF indication on actuator

Number of poles	Kind of operation < >: Momentary position	Screw terminal
		Product No.
1-pole	ON-OFF	TRD115A-S∗F
2-pole	ON-OFF	TRD215K-S∗F

Remarks: 1. Please specify the actuator color by replacing the asterisk in the product number and part number with appropriate letter.
B: black; W: white; R: red (custom ordered); Z: dark grey (custom ordered)
2. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

4. Wire lead type

1) Without indication on actuator

Number of poles	Kind of operation < >: Momentary position	Wire lead type
		Product No.
1-pole	ON-OFF	TRC115A-∗F
	ON-ON	TRC115D-∗F
	ON-OFF-ON	TRC115E-∗F
	ON-<ON>	TRC115F-∗F
	<ON>-OFF-<ON>	TRC115G-∗F
	ON-OFF-<ON>	TRC115H-∗F
2-pole	ON-OFF	TRC215K-∗F
	ON-ON	TRC215N-∗F
	ON-OFF-ON	TRC215P-∗F
	ON-<ON>	TRC215R-∗F
	<ON>-OFF-<ON>	TRC215S-∗F
	ON-OFF-<ON>	TRC215T-∗F

2) With ON-OFF indication on actuator

Number of poles	Kind of operation < >: Momentary position	Wire lead type
		Product No.
1-pole	ON-OFF	TRC115A-∗F
2-pole	ON-OFF	TRC215K-∗F

Remarks: 1. Please specify the actuator color by replacing the asterisk in the product number and part number with appropriate letter.
      B: black; W: white; R: red (custom ordered); Z: dark grey (custom ordered)
     2. 600 V vinyl wire (VSF, thick: 2 mm², length: 200 mm) is used. Please inquire about type and different length of lead wire.
     3. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

PUSH-BUTTON PRODUCT TYPES

1. Standard type

1) Solder terminal

Number of poles	Kind of operation	Solder terminal
		Product No.
1-pole	Momentary	TB110F-F
	Alternate	TB115D-F
2-pole	Momentary	TB210R-F
	Alternate	TB215N-F

2) Screw terminal

Number of poles	Kind of operation	Screw terminal
		Product No.
1-pole	Momentary	TB110F-SF
	Alternate	TB115D-SF
2-pole	Momentary	TB210R-SF
	Alternate	TB215N-SF

Remarks: 1. Please use switch body with a color cap (sold separately).
     2. Standard installation accessories are included with the product.
     3. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

Switch body   +   Color cap (sold separately)   →   With color cap installed
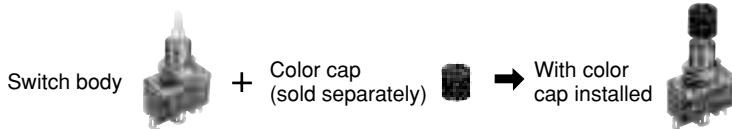
2. Panel-sealed type

1) Solder terminal

Number of poles	Kind of operation	Solder terminal
		Product No.
1-pole	Momentary	TBP110F-F
	Alternate	TBP115D-F
2-pole	Momentary	TBP210R-F
	Alternate	TBP215N-F

2) Screw terminal

Number of poles	Kind of operation	Screw terminal
		Product No.
1-pole	Momentary	TBP110F-SF
	Alternate	TBP115D-SF
2-pole	Momentary	TBP210R-SF
	Alternate	TBP215N-SF

Remarks: 1. Please use switch body with a color cap (sold separately).
2. Standard installation accessories are included with the product.
3. For UL/C-UL certified products, please add "UL" before "F" at the end of part number when ordering.

Switch body + Color cap (sold separately) → With color cap installed
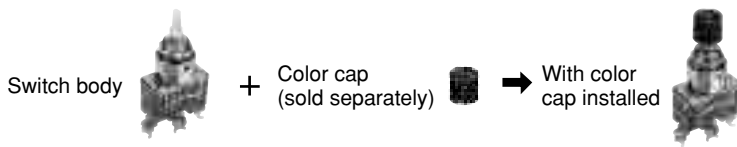
3. Color cap for push-button (Option)

Product name	Color cap (sold separately)
Dimensions (mm)	13.2 dia. 11.2
Part No.	WDB1821∗

Remark: Please specify the color cap color by replacing the asterisk in the part number with appropriate letter
(B: black; W: white; R: red; Z: dark grey; H: light grey; Y: yellow; G: green; L: blue).

4. Installation accessories (Repair parts)

Product name	Standard installation accessories				Standard installation accessories
	Front hex nut (Nickel plated)	Back hex nut (Uni-chrome plated)	Keying washer	Lock washer	Front Knurl nut (Nickel plated)
Dimensions (mm)	M12 x 1 (16.17) 14 2.3	M12 x 1 (16.17) 14 2.3	18.2 dia. 12.3 dia. 1 9.7 2.8 2.4	12.3 dia. 15.6 dia. 0.5 1	M12 x 1 15 dia. 2.4
Part No.	AJ3081	AJ3082	AJ3083	AJ3084	AJ3080

Remark: A selling unit of each accessory is 10 pieces.

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SPECIFICATIONS

1. Contact rating

1) Toggle type and Rocker type

Kind of load	AC	DC
Resistive load	15A 250V	0.5A 250V, 0.9A 125V, 15A 30V
Inductive load	15A 250V (Power factor: 0.6)	0.3A 250V (Time constant: 8 ms), 0.5A 125V (Time constant: 8 ms) 15A 30A (Time constant: 8 ms)
Lamp load (incandescent)	400W 100V, 800W 200V, Inrush current: Max. 40 A	7A 30V
Motor load (single phase)	400 W 125 V (single phase), 550 W 250 V (single phase), 750 W 250 V (three-phase)	—

2) Push-button type (momentary)

Kind of load	AC	DC
Resistive load	10A 250V	0.4A 250V, 0.8A 125V, 8A 30V

3) Push-button type (alternate)

Kind of load	AC	DC
Resistive load	15A 250V	0.5A 250V, 0.9A 125V, 15A 30V

2. Characteristics

Shape of handle	Toggle type		Rocker type	Push-button type
Protection type	Standard type	Panel-sealed type Terminal-sealed type Wire leads type	Standard type Panel-sealed type Terminal-sealed type Wire leads type	Standard type Panel-sealed type
Mechanical expected life	1-pole and 2-pole: Min. 10^5 3-pole and 4-pole: Min. 8.5×10^4	Min. 5×10^4 (20 cpm) ON-OFF, ON-ON, ON-OFF-ON, Min. 3×10^4 (20 cpm) ON-(ON), (ON)-OFF-(ON), ON-OFF-(ON)	Min. 3×10^4 (20 cpm)	
Electrical expected life (10 cpm)	Standard and panel-sealed types: Min. 3×10^4 Terminal-sealed and wire leads types: Min. 1.5×10^4		Standard type: Min. 3×10^4 Panel-sealed, terminal-sealed and wire leads types: Min. 10^4	Min. 10^4
Breakdown voltage	1500 Vrms (at detection current: 10mA)			
Insulation resistance	Min. 100 MΩ (at 500 V DC measured by insulation resistive meter)			
Contact resistance	Wire leads type: Initial, Max. 30 mΩ (By voltage drop at 1 A, 2 to 4 V DC) Other types: Initial, Max. 10 mΩ (By voltage drop at 1 A, 2 to 4 V DC)			
Actuator strength	112.7N for 1 min.			
Vibration resistance	10 to 55 Hz at double amplitude of 1.5 mm (contact opening: Max. 10 ms)			
Terminal strength (static load)	24.5N for 1 min.			
Ambient temperature	−25°C to +70°C (Not freezing below 0°C)			
Contact material	AgZnO alloy			

DATA (Electrical life, For toggle standard type)

Tested condition: 250 V AC, Power factor: 0.6 and 10 cpm
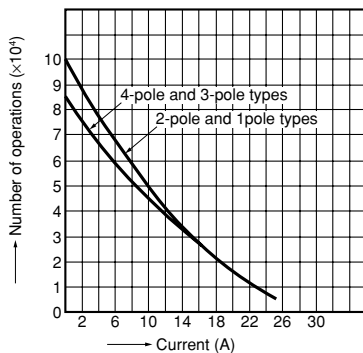
TOGGLE TYPE DIMENSIONS (mm) (General tolerance: ±0.5)

1. Standard type

1) Solder terminal

| | 1-pole | 2-pole | 3-pole | 4-pole |
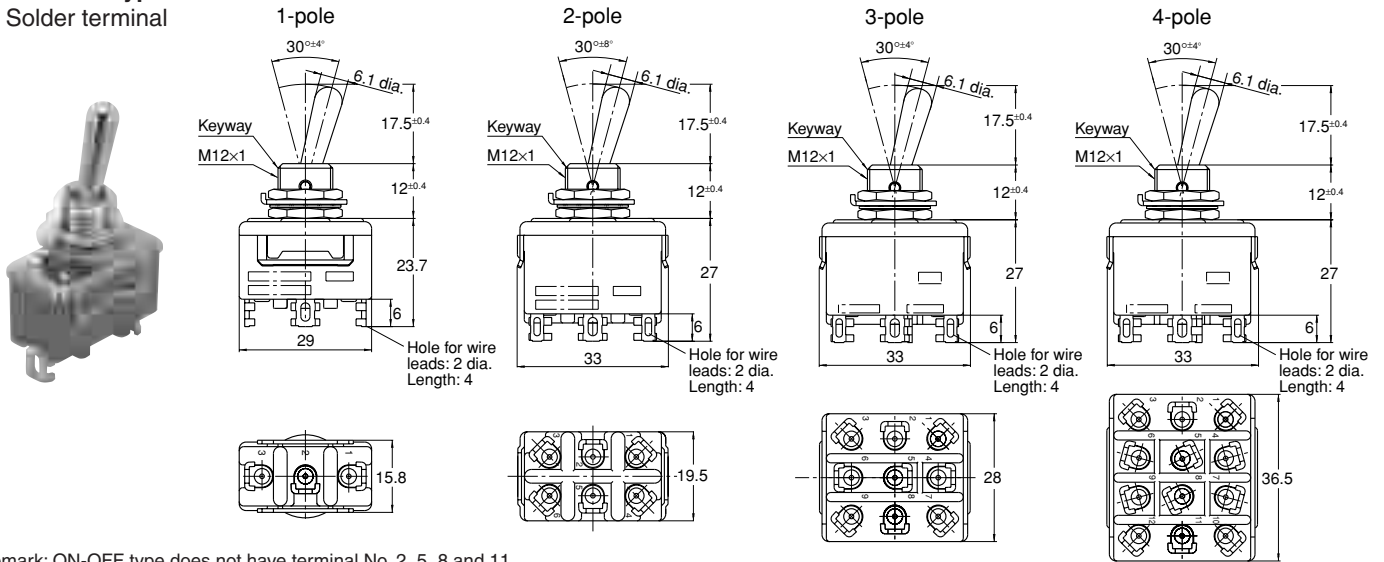
Remark: ON-OFF type does not have terminal No. 2, 5, 8 and 11.

2) Screw terminal (M3.5)
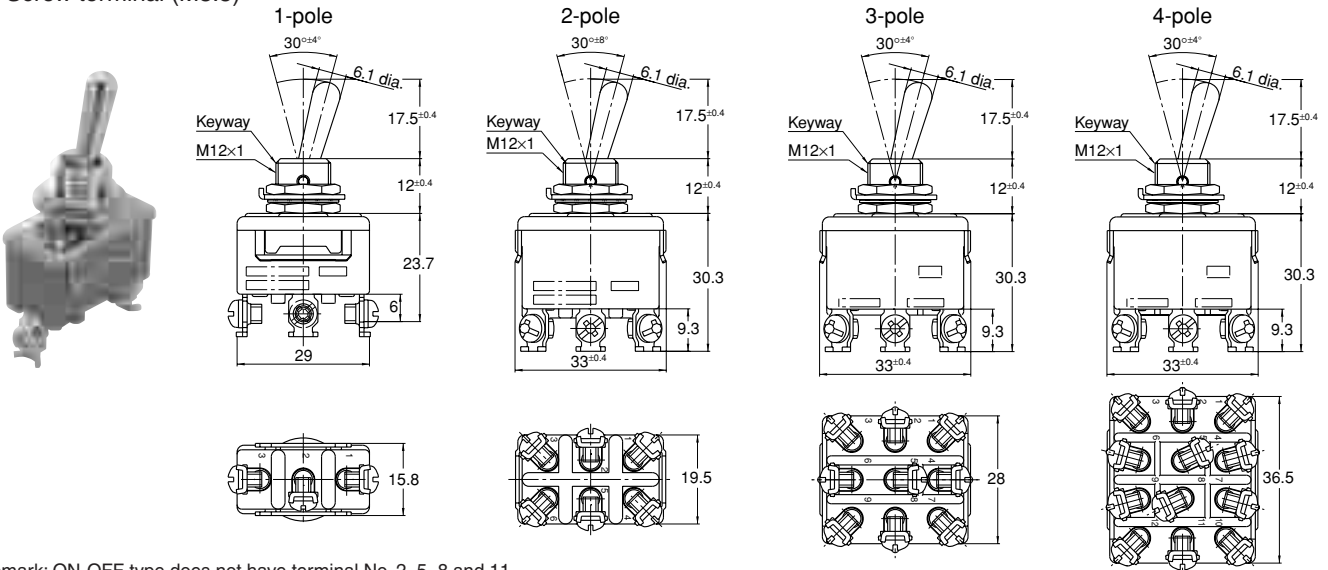
Remark: ON-OFF type does not have terminal No. 2, 5, 8 and 11.

3) .250 Quick-connect terminal
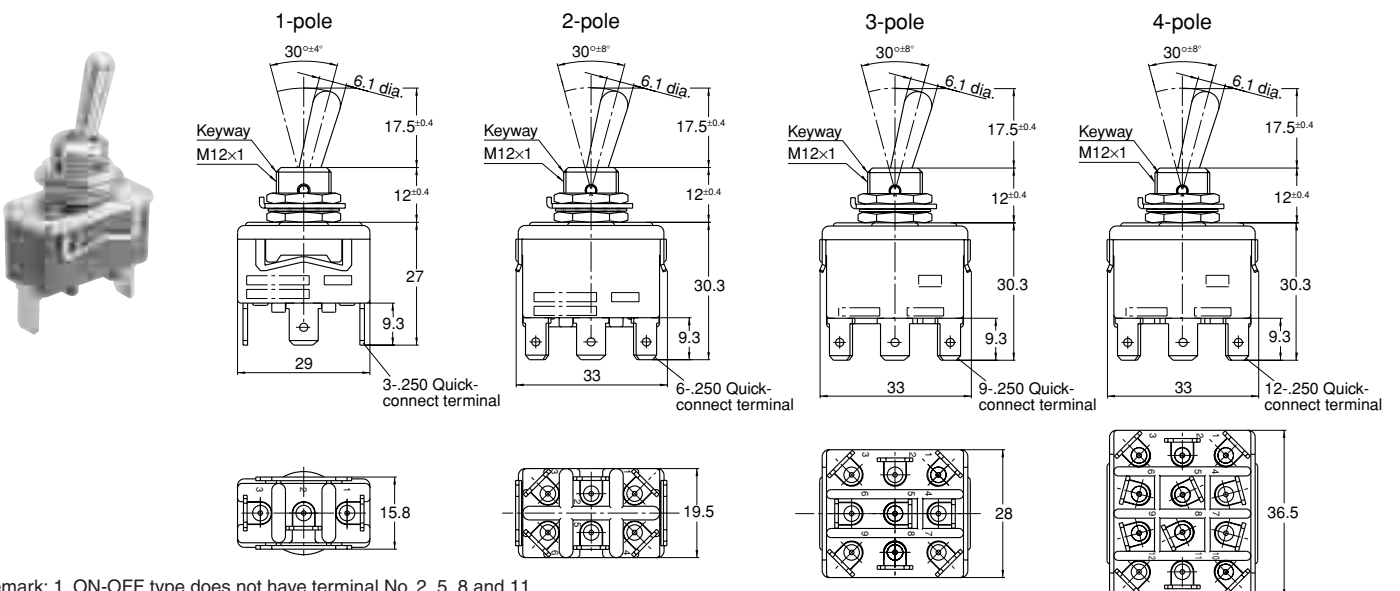
Remark: 1. ON-OFF type does not have terminal No. 2, 5, 8 and 11.
        2. There is no through-hole on .250 Quick-connect terminals.

T15

2. Panel-sealed type
1) Solder terminal

1-pole

30°±4°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10
23.7
6
15.8
29

2-pole

30°±8°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10
26.9
6
19.5
33

2) Screw terminal (M3.5)

1-pole

30°±4°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10
27
9
15.8
29

2-pole

30°±8°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10
30.2
9.3
19.5
33
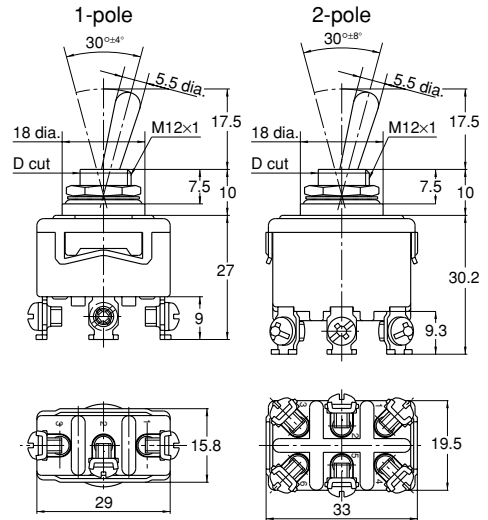
Remark: ON-OFF type does not have terminal No. 2 and 5.

3. Terminal-sealed type
1) Solder terminal

1-pole

30°±4°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10.3
23.7
5
15.8
29

2-pole

30°±8°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10.3
26.9
5
19.5
33

2) Screw terminal (M3.5)

1-pole

30°±4°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10.3
29
10.3
15.8
29

2-pole

30°±8°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10.3
32.2
10.3
19.5
33
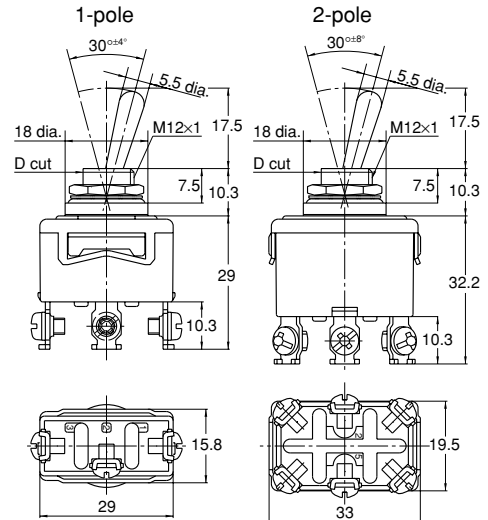
Remark: ON-OFF type does not have terminal No. 2 and 5.

4. Wire leads type
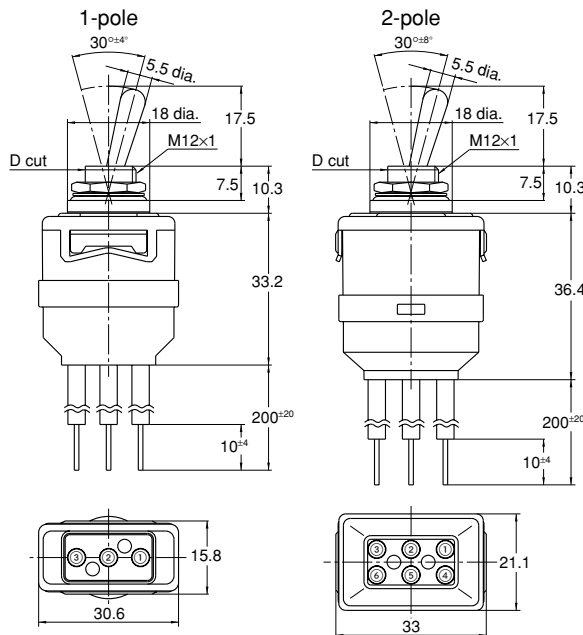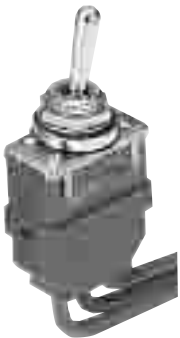
1-pole

30°±4°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10.3
33.2
200±20
10±4
15.8
30.6

2-pole

30°±8°
5.5 dia.
17.5
18 dia.
M12×1
D cut
7.5
10.3
36.4
200±20
10±4
21.1
33

Remarks: 1. ON-OFF type does not have wire lead No. 2 and 5.
2. 600 V vinyl wire (VSF, thick: 2 mm², length: 200 mm) is used. Please inquire about type and different length of lead wire.

Color of wire leads

No.	Color
①	Brown
②	Red
③	Orange
④	Yellow
⑤	Green
⑥	Blue

ROCKER TYPE DIMENSIONS (mm) (General tolerance: ±0.5)

1. Standard type

1) Solder terminal

2) Screw terminal (M3.5)

| 1-pole | 2-pole | 1-pole | 2-pole |
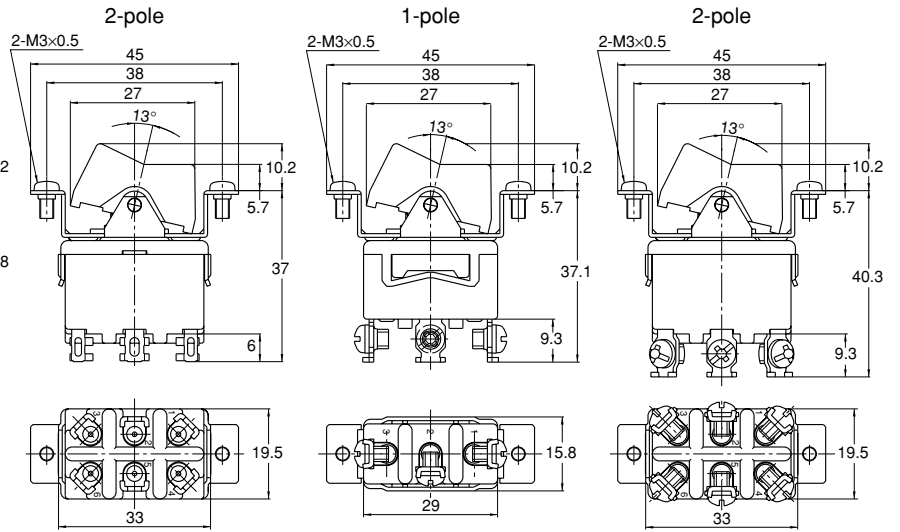
Remarks: 1. ON-OFF type does not have terminal No. 2 and 5.
2. Dimensions of handle: 13.4 × 27

2. Panel-sealed type
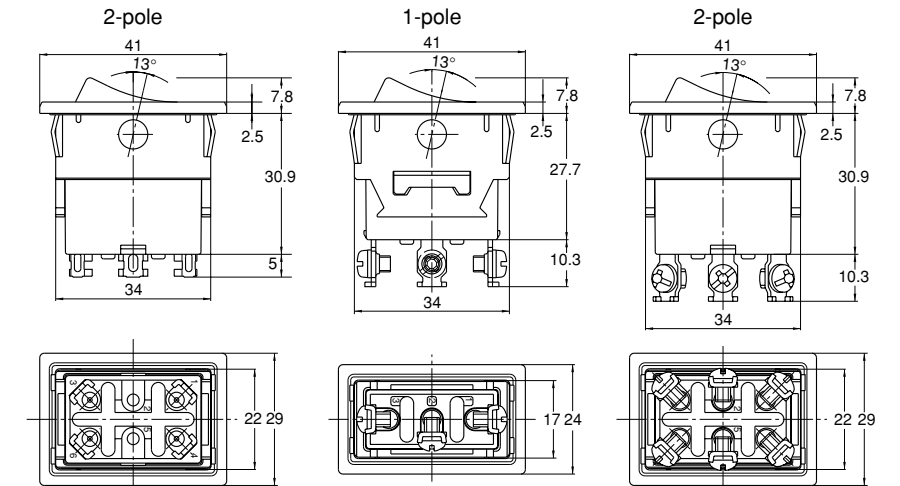
1) Solder terminal

2) Screw terminal (M3.5)

| 1-pole | 2-pole | 1-pole | 2-pole |

Remarks: 1. ON-OFF type does not have terminal No. 2 and 5.
2. Dimensions of handle: 1-pole: 12.6 × 29, 2-pole: 17.4 × 29

3. Terminal-sealed type
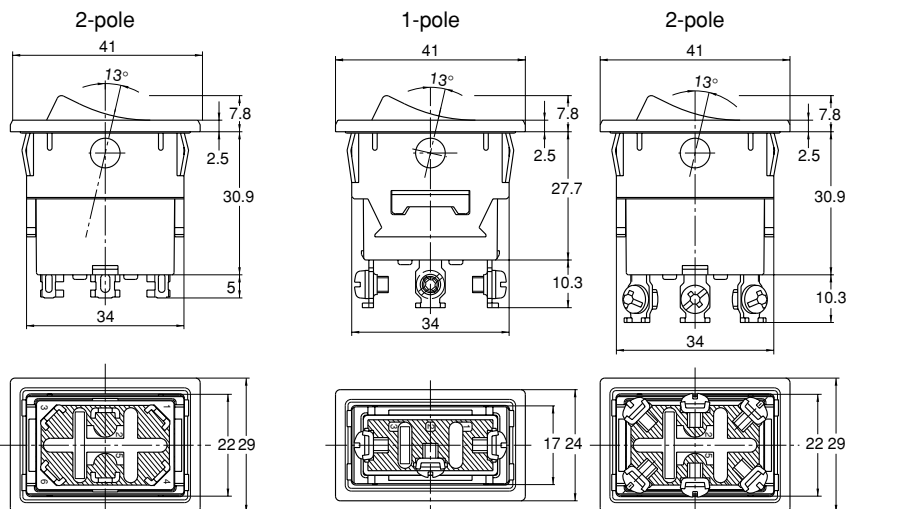
1) Solder terminal

2) Screw terminal (M3.5)

| 1-pole | 2-pole | 1-pole | 2-pole |

Remarks: 1. ON-OFF type does not have terminal No. 2 and 5.
2. Dimensions of handle: 1-pole: 12.6 × 29, 2-pole: 17.4 × 29

4. Wire leads type

1-pole

41
13°
7.8
2.5
42.2
200±20
10±4
34

17 24

2-pole

41
13°
7.8
2.5
45.4
200±20
10±4
34

22 29

Remarks: 1. ON-OFF type does not have terminal No. 2 and 5.
2. Dimensions of handle: 1-pole: 12.6 × 29, 2-pole: 17.4 × 29
3. 600 V vinyl wire (VSF, thick: 2 mm², length: 200 mm) is used. Please inquire about type and different length of lead wire.

Color of wire leads

No.	Color
①	Brown
②	Red
③	Orange
④	Yellow
⑤	Green
⑥	Blue

PUSH-BUTTON TYPE DIMENSIONS (mm) (General tolerance: ±0.5)

1. Standard type

• Solder terminal, Momentary
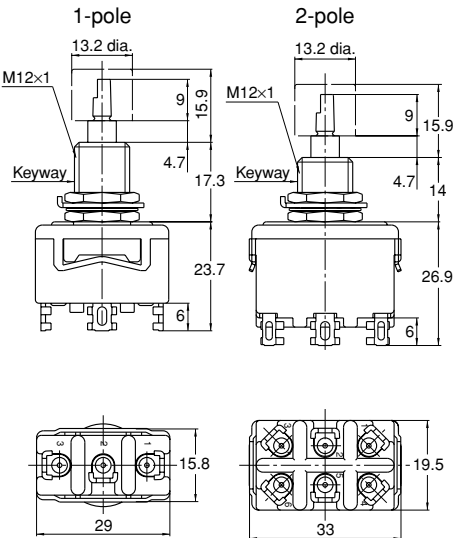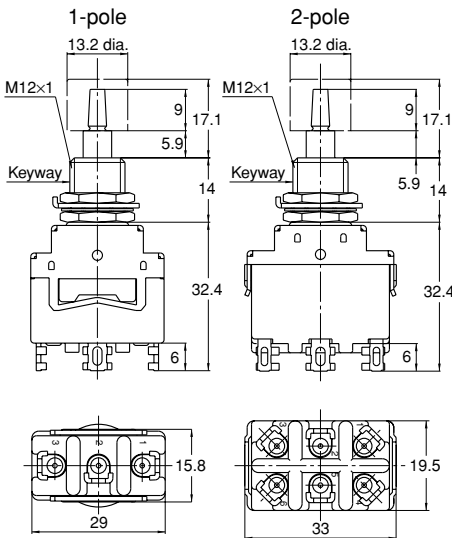
1-pole
13.2 dia.
M12×1
15.9
9
4.7
Keyway
17.3
23.7
6

2-pole
13.2 dia.
M12×1
15.9
9
4.7
Keyway
14
26.9
6

15.8
29

19.5
33

• Solder terminal, Alternate

1-pole
13.2 dia.
M12×1
9
17.1
5.9
Keyway
14
32.4
6

2-pole
13.2 dia.
M12×1
9
17.1
Keyway
5.9
14
32.4
6

15.8
29

19.5
33

• Screw terminal (M3.5)
Dimensions other than listed below are same as those of solder terminal type.

1-pole
9.3

2-pole
9.3

15.8
29

19.5
33
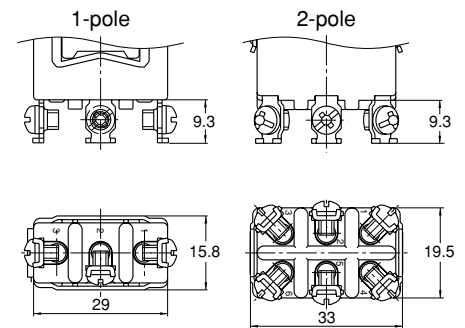
2. Panel-sealed type

• Solder terminal, Momentary
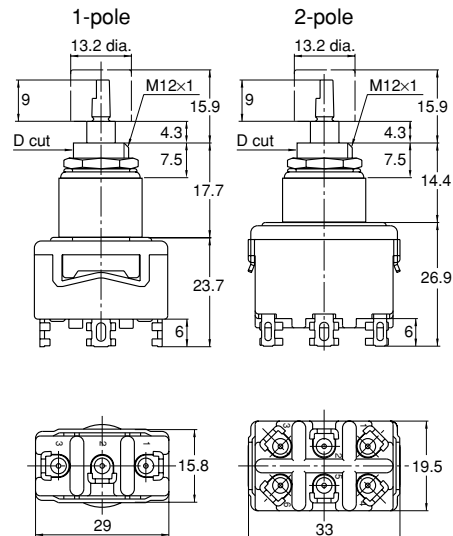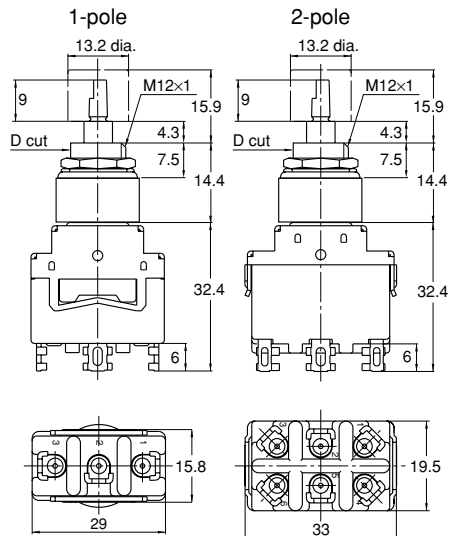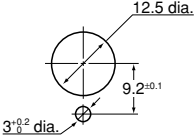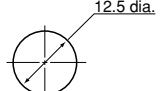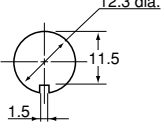
1-pole
13.2 dia.
9
M12×1
15.9
4.3
D cut
7.5
17.7
23.7
6

2-pole
13.2 dia.
9
M12×1
15.9
4.3
D cut
7.5
14.4
26.9
6

15.8
29

19.5
33

• Solder terminal, Alternate

1-pole
13.2 dia.
9
M12×1
15.9
4.3
D cut
7.5
14.4
32.4
6

2-pole
13.2 dia.
9
M12×1
15.9
4.3
D cut
7.5
14.4
32.4
6

15.8
29

19.5
33

• Screw terminal (M3.5)
Dimensions other than listed below are same as those of solder terminal type.

1-pole
9.3

2-pole
9.3

15.8
29

19.5
33
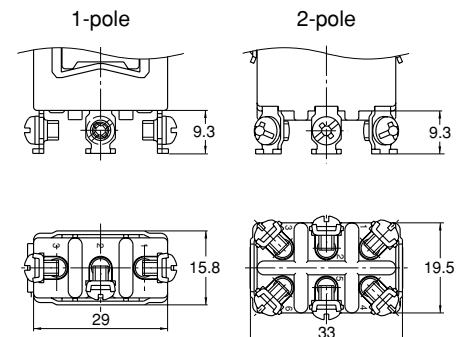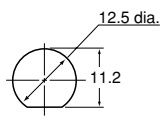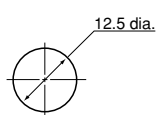
MOUNTING DIMENSIONS

1. Toggle type
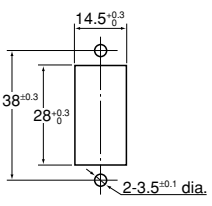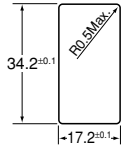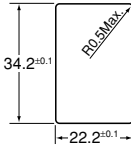
Type	Standard type		
Panel cutout (mm)	12.5 dia. / 9.2±0.1 / 3+0.2,0 dia.	12.5 dia.	12.3 dia. / 11.5 / 1.5
Panel thickness	Max. 4.6 mm	Max. 5.6 mm (without keying washer)	Max. 5.6 mm (without keying washer)
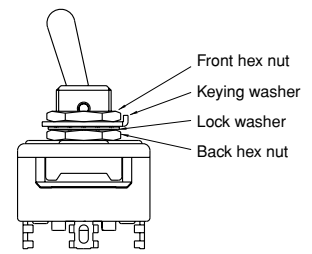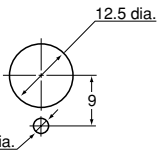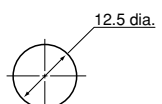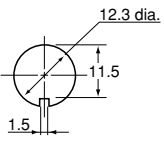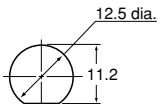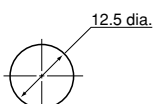
Front hex nut
Keying washer
Lock washer
Back hex nut

Type	Panel-sealed, Terminal-sealed and Wire leads types	
Panel cutout (mm)	12.5 dia. / 11.2	12.5 dia.
Panel thickness	Max. 4 mm	Max. 4 mm (without keying washer)

Remark: For panel installations of standard type, be use to use the back hex nut.

2. Rocker type

| Type	Standard type	Panel-sealed, Terminal-sealed and Wire leads types	
Panel cutout (mm)	14.5+0.3,0 / 38±0.3 / 28+0.3,0 / 2-3.5±0.1 dia.	1 pole 34.2±0.1 / R0.5Max. / 17.2±0.1	2-pole 34.2±0.1 / R0.5Max. / 22.2±0.1
Panel thickness	Max. 4.5 mm	1.2 to 3.2 mm	
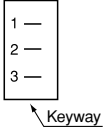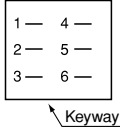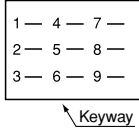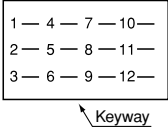
3. Push-button type

Type	Standard type		Panel-sealed type		
Panel cutout (mm)	12.5 dia. / 9 / 3 dia.	12.5 dia.	12.3 dia. / 11.5 / 1.5	12.5 dia. / 11.2	12.5 dia.
Panel thickness	Momentary, 1-pole: Max. 10 mm Momentary, 2-pole: Max. 6.5 mm Alternate: Max. 6.5 mm	Momentary, 1-pole: Max. 10 mm Momentary, 2-pole: Max. 7.5 mm Alternate: Max. 7.5 mm (without keying washer)	Momentary, 1-pole: Max. 11 mm Momentary, 2-pole: Max. 7.5 mm Alternate: Max. 7.5 mm (without keying washer)	Max. 4 mm	Max. 4 mm (without keying washer)

Remark: For panel installations of standard type, be use to use the back hex nut.

ELECTRICAL CIRCUIT DIAGRAM
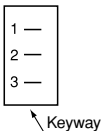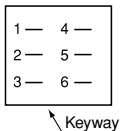
1. Toggle type and Rocker type

Number of pole			1-pole	2-pole	3-pole	4-pole
Toggle type			Available	Available	Available *3	Available *3
Rocker type			Available	Available	—	—
Terminal arrangement (As seen from terminal side)			1— 2— 3— Keyway	1— 4— 2— 5— 3— 6— Keyway	1— 4— 7— 2— 5— 8— 3— 6— 9— Keyway	1— 4— 7—10— 2— 5— 8—11— 3— 6— 9—12— Keyway
Handle position and contact terminal number	Handle shape	Toggle type / Rocker type				
	ON-OFF	Keyway / Right Part No.	1-3	1-3, 4-6	1-3, 4-6, 7-9	1-3, 4-6, 7-9, 10-12
		— / —	—	—	—	—
		Keyway / Left	—	—	—	—
	ON-ON ON-<ON> *1	Keyway / Right Part No.	2-3	2-3, 5-6	2-3, 5-6, 8-9	2-3, 5-6, 8-9, 11-12
		— / —	—	—	—	—
		Keyway / Left *2	1-2	1-2, 4-5	1-2, 4-5, 7-8	1-2, 4-5, 7-8, 10-11
	ON-OFF-ON <ON>-OFF-<ON> ON-OFF-<ON> *1	Keyway / Right Part No.	2-3	2-3, 5-6	2-3, 5-6, 8-9	2-3, 5-6, 8-9, 11-12
		Keyway / Center	—	—	—	—
		Keyway / Left	1-2	1-2, 4-5	1-2, 4-5, 7-8	1-2, 4-5, 7-8, 10-11
Remarks			ON-OFF type does not have a terminal No. 2.	ON-OFF type does not have terminal No. 2 and 5.	ON-OFF type does not have terminal No. 2, 5 and 8.	ON-OFF type does not have terminal No. 2, 5, 8 and 11.

Remarks: *1. For ON-<ON>, ON-OFF-<ON> type of toggle, if the lever turns to the keyway side, it takes momentary position.
　　　　*2. For the rocker type, if the actuator turns to the left side in view of the side where a part number is marked, it takes momentary position.
　　　　*3. Only standard type

2. Push-button type

		1-pole	2-pole
Terminal arrangement (As seen from terminal side)		1— 2— 3— Keyway	1— 4— 2— 5— 3— 6— Keyway
Push-button position and contact terminal number		2-3	2-3, 5-6
	Operated	1-2	1-2, 4-5

NOTES

## 1. Dustproof, waterproof, anticorrosive gas, and oil-proof designs

The panel-sealed type/terminal-sealed type/wire lead type switch has a protection level of IP67 on the outer side of the mounting panel and a level of IP40, IP60, or IP67 on the inner side of the panel.

For actual application, note the following points:

1) Avoid immersion in water or oil during installation.

2) Avoid immersion in water or oil during operation.

3) Oils or gases impose varying degrees of impact on the switch's sealing performance depending on type or quantity.

4) While the switch has a immersion and dust-protected design, its sealing performance or operabillity may be adversely affected in an environment where in the switch's movable parts can be contaminated with dust, oil, or other foreign objects. For the toggle type, use of a rubber cap is recommended.

5) The standard toggle switch, when used with a rubber cap, provides a protection level of IP54.

It should be used in an environment where it will not be subject to frequent water splashes.

6) As the sealing performance of the rocker type switch is affected by the panel processing accuracy or mounted panel thickness, check the switch under actual loading conditions. (While water or dust will not enter the switch's internal structure, it may enter the panel.)

7) Do not operate the rocker type switch when water accumulates in the switch handle.

2. Installation

1) For the toggle and push-button type
a. When installing the standard type switch, be sure to use a hex nut.
b. For the panel-sealed, terminal-sealed and wire lead types, use a lock washer on the front side of the panel, and an O-ring on the back side of it.
c. Do not install the switch by rotating it.
2) Rubber cap installation
a. The washer should be used on the back side of the panel.
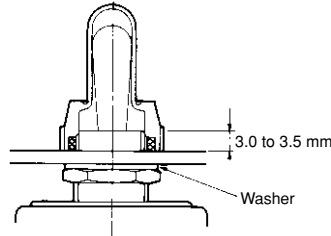
3.0 to 3.5 mm
Washer

b. Enough screw pitch should be obtained being adjusted within 3 to 3.5mm (See Fig.2)
c. Install a rubber cap on the switch knob before securing the switch with the hex nut.
d. The mounting hole in the panel should preferably be provided with an anti-rotation projection.

Mounting hole
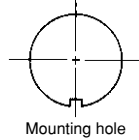
e. If the rubber cap is installed over the hex nut, the waterproof performance will be impaired although the dustproof performance will not be affected.

Hexagonal nut
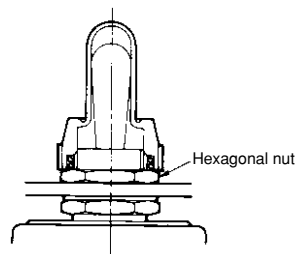
3. Soldering

1) By using 350°C soldering iron, soldering should be completed within 5 seconds.
2) Exercise care so as not to touch the switch body with a soldering iron.

4. Load type and ratings

1) When the switch is loaded with a lamp, motor or capacitive load, a surge current higher than the stationary current passes through the switch contacts.
Measure the surge with the actual load and, if needed, take necessory action so that the surge will not exceed the switch's rated current.
2) When the switch is loaded with an inductive load (relay, solenoid, buzzer, etc.), a contact failure may result from arc discharge caused by a counterelectromotive force. It is advisable that you use an adequate anti-spark circuit across the switch contacts.

5. Others

1) Do not apply an excessive static load exceeding 112.7N {11.5kgf} perpendicular to the direction of operation.
2) Operate the switch knob by hand.
3) Take care not to drop the product as it may impair performance.