



6A, 10A Type Power Rocker Switches with a 3 mm Contact gap Secured

AJ7 (J7) SWITCHES

FEATURES

- High inrush current resistance is ideal for power switches of office automation equipment.
- Operation that only requires a light touch
- A broad product line (TV-5 rating type available)



AJ7 switch 10A type
Standard actuator



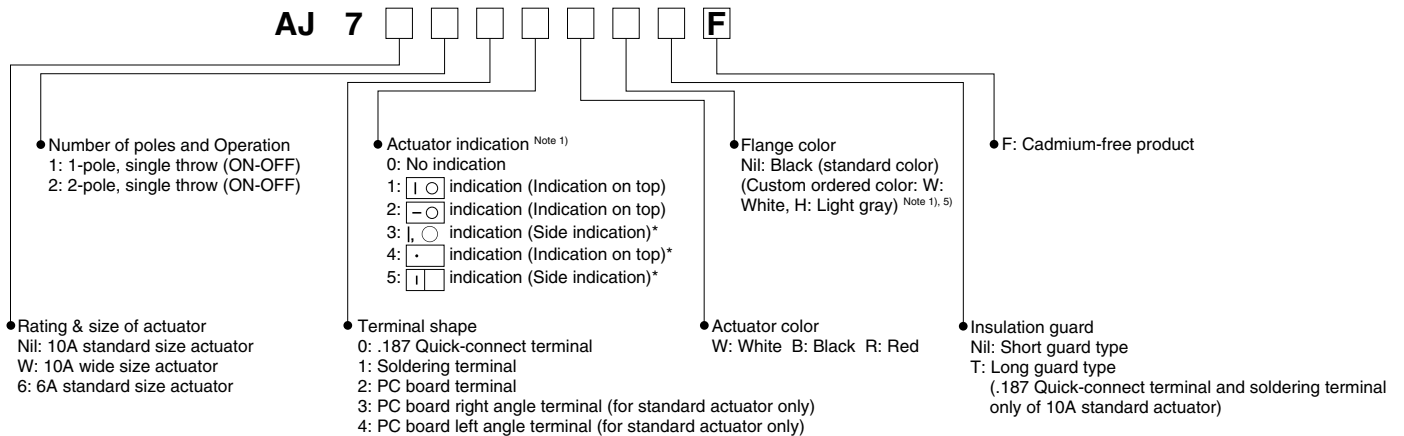
AJ7 switch 10A type
Wide actuator



AJ7 switch 6A type

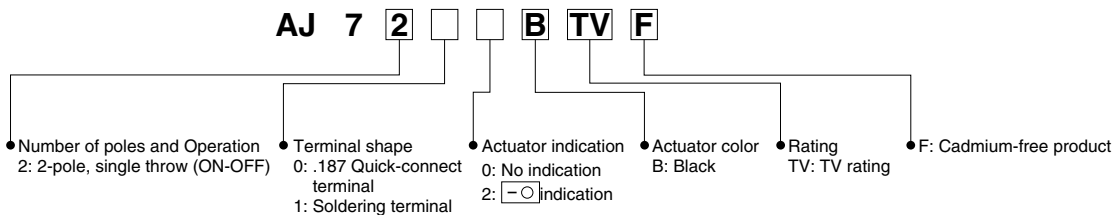
RoHS compliant

ORDERING INFORMATION



Notes: 1. For actuator indication products of asterisk "*", they are custom ordered products. Available only for 10A types.
 2. The correspondence between actuator colors and flange colors marked with an asterisk differs according to the type; refer to the remark for the PRODUCT TYPES.
 3. "I O" is engraved on all flanges.
 4. The color of indication on the actuator:
 • White actuator: black
 • Others: white
 5. The flange color of 6A type is black only.
 6. They come with a stamp indicating agency standards.

■ TV rating type



PRODUCT TYPES

■ 10 A type

1) Standard actuator type

(1) Without indication on actuators

Terminal shape	Poles	Operating types	Part No.	
			Without indication	
.187 Quick-connect terminal	1-pole	ON-OFF	AJ7100*F	
	2-pole		AJ7200*F	
Soldering terminal	1-pole		AJ7110*F	
	2-pole		AJ7210*F	
PC board terminal	1-pole		AJ7120*F	
	2-pole		AJ7220*F	
PC board right angle terminal	1-pole		AJ7130*F	
	2-pole		AJ7230*F	
PC board left angle terminal	1-pole		AJ7140*F	
	2-pole		AJ7240*F	

(Standard flange color is black.)

Notes: 1. A letter indicating the actuator color is entered in place of asterisk. (W: White, B: Black, R: Red)

For other flange colors type, black is the standard. For requests of other flange color, please refer to ORDERING INFORMATION.

2. Long guard type is available for .187 Quick-connect terminal and soldering terminal type. When ordering, please add a "T" before the "F" at the end of the part number.

3. The color of indication on the actuator:

- For white actuator: black
- For others: white

4. They come with a stamp indicating agency standards.

5. Note that the position of the | mark on the flange is used as a reference for left angle and right angle terminals as shown in the diagram below. This also applies to the 6A type.



Right angle terminal



Left angle terminal

(2) With indication on actuators

Terminal shape	Poles	Operating types	Part No.	
			With ○ indication	With —○ indication
.187 Quick-connect terminal	1-pole	ON-OFF	AJ7101*F	AJ7102*F
	2-pole		AJ7201*F	AJ7202*F
Soldering terminal	1-pole		AJ7111*F	AJ7112*F
	2-pole		AJ7211*F	AJ7212*F
PC board terminal	1-pole		AJ7121*F	AJ7122*F
	2-pole		AJ7221*F	AJ7222*F
PC board right angle terminal	1-pole		AJ7131*F	AJ7132*F
	2-pole		AJ7231*F	AJ7232*F
PC board left angle terminal	1-pole		AJ7141*F	AJ7142*F
	2-pole		AJ7241*F	AJ7242*F

(Standard flange color is black.)

Notes: 1. A letter indicating the actuator color is entered in place of asterisk. (W: White, B: Black, R: Red)

For other flange colors type, black is the standard. For requests of other flange color, please refer to ORDERING INFORMATION.

2. Long guard type is available for .187 Quick-connect terminal and soldering terminal type. When ordering, please add a "T" before the "F" at the end of the part number.

3. The color of indication on the actuator:

- For white actuator: black
- For others: white

4. They come with a stamp indicating agency standards.

5. Note that the position of the | mark on the flange is used as a reference for left angle and right angle terminals as shown in the diagram below. This also applies to the 6A type.



Right angle terminal



Left angle terminal

2) Wide actuator type**(1) Without indication on actuators**

Terminal shape	Poles	Operating types	Part No.	
			Without indication	
.187 Quick-connect terminal	1-pole	ON-OFF	AJ7W100*F	
	2-pole		AJ7W200*F	
Soldering terminal	1-pole		AJ7W110*F	
	2-pole		AJ7W210*F	
PC board terminal	1-pole		AJ7W120*F	
	2-pole		AJ7W220*F	

(2) With indication on actuators

Terminal shape	Poles	Operating types	Part No.	
			With ○ indication	With -○ indication
.187 Quick-connect terminal	1-pole	ON-OFF	AJ7W101*F	AJ7W102*F
	2-pole		AJ7W201*F	AJ7W202*F
Soldering terminal	1-pole		AJ7W111*F	AJ7W112*F
	2-pole		AJ7W211*F	AJ7W212*F
PC board terminal	1-pole		AJ7W121*F	AJ7W122*F
	2-pole		AJ7W221*F	AJ7W222*F

(Standard flange color is black.)

Notes: 1. A letter indicating the actuator color is entered in place of asterisk. (W: White, B: Black, R: Red)

For other colors type, black is the standard. For requests of other flange color, please refer to ORDERING INFORMATION.

2. The color of indication on the actuator:

- For white actuator: black
- For others: white

3. They come with a stamp indicating agency standards.

■ 6 A type**1) Standard actuator type****(1) Without indication on actuators**

Terminal shape	Poles	Operating types	Part No.	
			Without indication	
.187 Quick-connect terminal	1-pole	ON-OFF	AJ76100*F	
	2-pole		AJ76200*F	
Soldering terminal	1-pole		AJ76110*F	
	2-pole		AJ76210*F	
PC board terminal	1-pole		AJ76120*F	
	2-pole		AJ76220*F	
PC board right angle terminal	1-pole		AJ76130*F	
	2-pole		AJ76230*F	
PC board left angle terminal	1-pole		AJ76140*F	
	2-pole		AJ76240*F	

(2) With indication on actuators

Terminal shape	Poles	Operating types	Part No.	
			With ○ indication	With -○ indication
.187 Quick-connect terminal	1-pole	ON-OFF	AJ76101*F	AJ76102*F
	2-pole		AJ76201*F	AJ76202*F
Soldering terminal	1-pole		AJ76111*F	AJ76112*F
	2-pole		AJ76211*F	AJ76212*F
PC board terminal	1-pole		AJ76121*F	AJ76122*F
	2-pole		AJ76221*F	AJ76222*F
PC board right angle terminal	1-pole		AJ76131*F	AJ76132*F
	2-pole		AJ76231*F	AJ76232*F
PC board left angle terminal	1-pole		AJ76141*F	AJ76142*F
	2-pole		AJ76241*F	AJ76242*F

(Standard flange color is black.)

Notes: 1. Replace the asterisk with a code that indicates the actuator color.

B: Black (standard), W: White (custom ordered), R: Red (custom ordered)

2. The color of -○ indication on the actuator: white (In case white actuator: black)

3. They come with a stamp indicating agency standards.

AJ7 (J7) Switches

■ TV rating type

Terminal shape	Poles	Operating types	Part No.	
			Without indication	With —○ indication
.187 Quick-connect terminal	2-pole	ON-OFF	AJ7200BTVF	—
Soldering terminal			—	AJ7202BTVF
			AJ7210BTVF	—
			—	AJ7212BTVF

SPECIFICATIONS

■ Contact rating

Type	Contact voltage	Resistive load (Power factor = 1)	Motor load* (EN61058-1) (Power factor = 0.6)	Inrush load
10A	250V AC	10A	4A	100A (8.3ms)
6A		6A	3A	—

Note: * The motor load is in accordance with EN61058-1. Inrush current can be switched up to the value of 6 times the indicated rating.

■ TV rating

Contact voltage	Resistive load	Motor load (EN6105801)	Capacitor load (EN61058-1)	Lamp load (UL1054)	Expected electrical life
	(Power factor = 1)	(Power factor = 0.6)	(Inrush load)	(TV-5)	(at 7 cpm)
120V AC	—	—	—	5/78A	Min. 2.5×10^4
250V AC	10A	4A	100A (8.3ms)	—	Min. 10^4

■ Characteristics

Item		Specifications (common to 10A and 6A types)
Expected life (Min. operations)	Mechanical	Min. 5×10^4 (at 20 cpm.)
	Electrical (at rated load)*	Min. 10^4 (at 7 cpm.)
Insulation resistance		Min. 100 MΩ (at 500V DC measured by insulation resistive meter) (Between terminals)
Dielectric strength		Initial, 2,000 Vrms (detection current: 10 mA) (Between terminals)
Contact resistance		Initial, Max. 100mΩ (By voltage drop at 1A, 2 to 4V DC)
Temperature rise (terminal section)		Max. 30°C at 6×10^3 ope. or less (UL1054), Max. 55°C from 6×10^3 ope. to 10^4 (EN61058-1)
Vibration resistance		10 to 55 Hz at double amplitude of 1.5mm (Contact opening Max. 1 msec.)
Shock resistance		Min. 490m/s ²
Actuator strength		40 N for 1 minute (operating direction)
Tensile terminal strength		100 N for 1 minute or more (Pull & push direction)
Ambient temperature		-25°C to +85°C (no freezing and condensing)
Flame retardancy		UL94V-0
Tracking resistance		Min. 175
Operating force (reference characteristics)	1-pole	2.2 ± 1.2 N
	2-pole	4 ± 2.5 N
Contact material		AgSnO ₂ alloy

Note: Test conditions and are complying with NECA C 6571, EN61058-1 and UL1054.

* Except TV rating type

ACTUATOR INDICATIONS ON PRODUCTS MADE TO ORDER

With indication on top




With side indication

(When the “I” indication is visible on the side of the actuator, it indicates that the switch is in the “ON” state.)



With   indications: The I and O symbols are located on each side, respectively.

With  indications: The I symbols is located on the side.

DIMENSIONS

(Unit: mm) General tolerance: ± 0.5

The CAD data of the products with a **CAD Data** mark can be downloaded from: <http://industrial.panasonic.com/ac/e/>

The dimension diagram for the standard actuator types is common to both the 10A type and the 6A type.

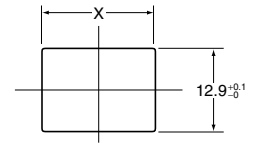
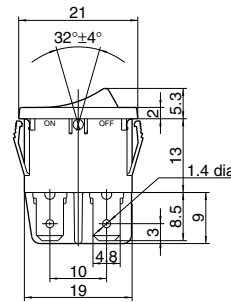
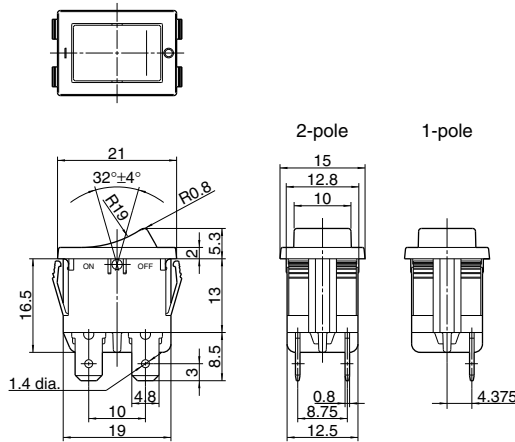
■ .187 Quick-connect terminal/Long guard type

CAD Data

External dimensions

Long guard type
.187 Quick-connect terminal

Diagram of recommended
for panel mounting holes



Panel thickness	X
0.75 to less than 1.25	19.2 ⁺⁰ _{-0.1}
1.25 or more to less than 2	19.4 ⁺⁰ _{-0.1}
2 or more to 3	19.8 ⁺⁰ _{-0.1}

Note: As for soldering type, only terminal is different.

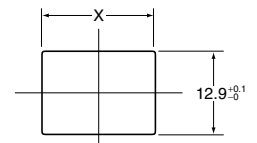
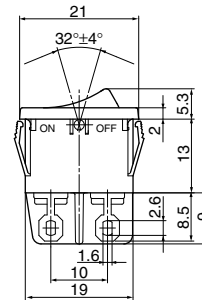
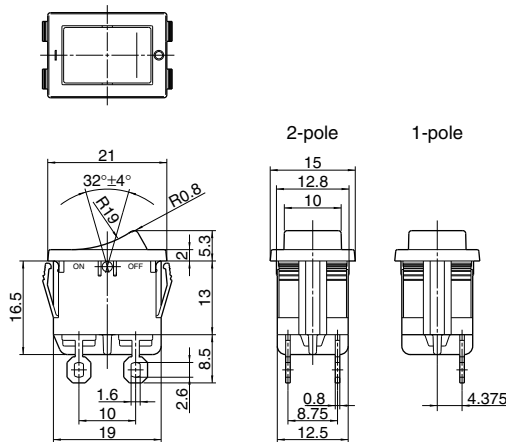
■ Soldering terminal

CAD Data

External dimensions

Long guard type
Soldering terminal

Diagram of recommended
for panel mounting holes



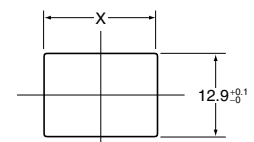
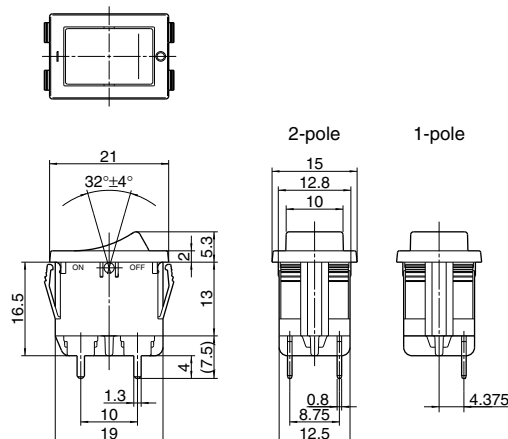
Panel thickness	X
0.75 to less than 1.25	19.2 ⁺⁰ _{-0.1}
1.25 or more to less than 2	19.4 ⁺⁰ _{-0.1}
2 or more to 3	19.8 ⁺⁰ _{-0.1}

■ PC board terminal

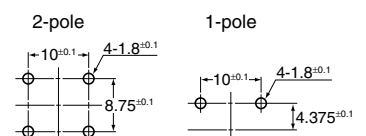
CAD Data

External dimensions

Diagram of recommended
for panel mounting holes



PC board pattern



Panel thickness	X
0.75 to less than 1.25	19.2 ⁺⁰ _{-0.1}
1.25 or more to less than 2	19.4 ⁺⁰ _{-0.1}
2 or more to 3	19.8 ⁺⁰ _{-0.1}

AJ7 (J7) Switches

■ PC board right angle terminal

CAD Data



External dimensions

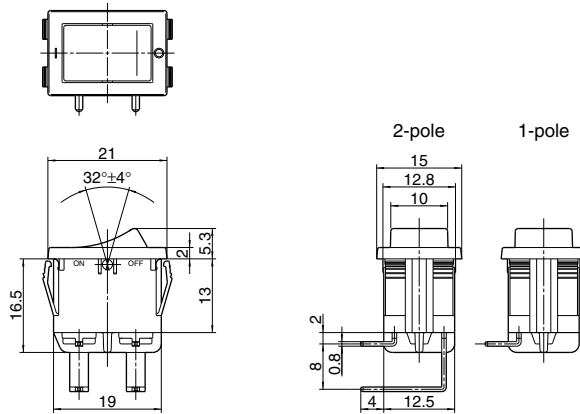
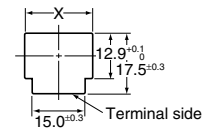
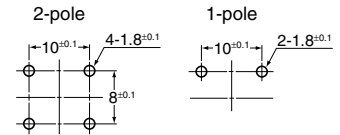


Diagram of recommended for panel mounting holes



PC board pattern



Panel thickness	X
0.75 to less than 1.25	19.2 ⁺⁰ _{-0.1}
1.25 or more to less than 2	19.4 ⁺⁰ _{-0.1}
2 or more to 3	19.8 ⁺⁰ _{-0.1}

Note: A type left angle terminals is also available.

■ Wide actuator type

CAD Data



External dimensions

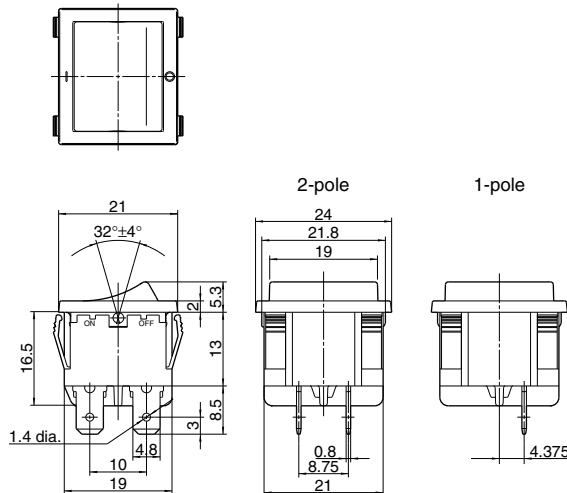
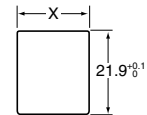


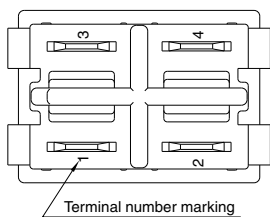
Diagram of recommended for panel mounting holes



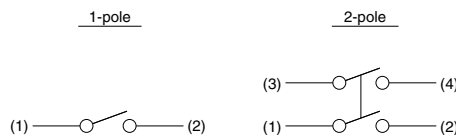
Panel thickness	X
1 to less than 1.8	19.2 ⁺⁰ _{-0.1}
1.8 or more to 2.3	19.9 ⁺⁰ _{-0.1}

Note: Dimensions for the terminals of soldering terminal type and PC board terminal type are the same as those of standard size type.

■ Terminal circuit diagram (common)



Terminal circuit diagram



* .187 Quick-connect terminal/Long guard type

CAUTIONS FOR USE

■ Switch mounting

Mount the switch with the hole cutting dimensions shown in the dimensions. Please contact us if you are considering using a panel of other than the recommended size and shape.

■ Regarding fastening lead wires to terminals

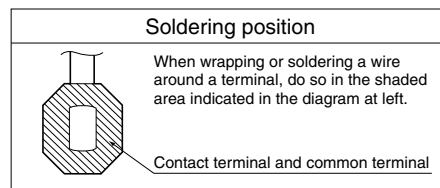
1) When connecting the tab terminals, use a .187 Quick-connect and insert the terminals straight in. If they are skewed, the terminals will require excessive insertion force.

In addition, there is some variation in the insertion force required for different receptacles from different manufacturers, so confirm how much force is needed under actual conditions.

Do not solder wires onto tab terminals.

2) With manual soldering: Complete the soldering connection work within 3 seconds with the tip of the soldering iron at a temperature of 420°C or lower, and take care not to apply any force to the terminal area.

Avoid touching the switch with soldering iron.



Refer to the diagram above, "soldering position," for details on the position where a wire should be soldered to a terminal.

When soldering PC board terminals, keep soldering time to within 5 seconds at 270°C soldering bath or within 3 seconds at 350°C soldering bath.

3) The terminals should be connected in such a way that they are not under constant stress from the connecting wires.

4) Terminal material is copper alloy which may discolor due to finger's oil or after a long time. But that discoloration does not effect actual performance.

■ Resistance to chemicals

To clean the switch unit, use a neutral detergent diluted with water. Do not use acidic or alkaline solvents as they may damage the switch.

Furthermore, be careful not to get any of the detergent solution inside of the switch while cleaning it.

■ Environment

Avoid using and storing these switches in a location where they will be exposed to corrosive gases, silicon, or high dust levels, all of which can have an adverse effect on the contacts.

■ **Take care not to drop the product as it may impair performance.**

REFERENCE

■ Outline of UL1054 test

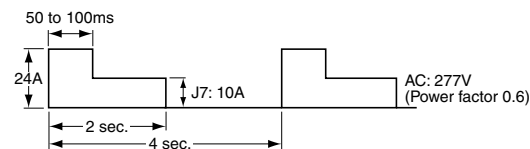
Overload test AJ7 (J7): 15A 277V AC (Power factor 0.75 to 0.8)
50 operation

Endurance test AJ7 (J7): 10A 277V AC (Power factor 0.75 to 0.8)
6×10³ operation

After testing, temperature rise of terminals should be less than 30°C and no abnormality should be observed in characteristics.

■ Outline of EN61058-1 test

After switching 5×10^3 times on the below load condition at both 85⁺⁵°C and 25±10°C, temperature rise of terminals should be less than 55°C and no abnormality should be observed in characteristics.



INTRODUCTION TO 4P CONNECTORS FOR THE AJ7 (J7) SWITCH (produced by Nippon Tanshi Co., Ltd)



Note: This AJ7 switch connector is not available from Panasonic.

Suitable switches: AJ7 (J7) switch, .187 Quick-connect terminal

(Note: Terminal guard long type switches are not suitable for this connector.)

• Housing

Product number: 4120-4204

• Receptacle

Product number: 171901-M2

• If you have any questions, please directly contact:

Nippon Tanshi Co., Ltd.