

Small size

AJ7 switch 10A type
Standard actuator



AJ7 switch 10A type
Wide actuator



AJ7 switch 6A type



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

FEATURES

1. Power rocker switches for safety requirements.

- All versions comply with ClassII EN61058-1 insulation grade.
- Insulation distance: 8mm Min.
- Contact gap: 3mm Min.

• International Standard-approved status

| | | Already approved |
|---------------------|------------------------|---|
| AJ7 switch 10A type | Standard actuator type | UL, CSA, VDE, TÜV, ÖVE, KEMA, SEMKO, NEMKO, DEMKO, FIMKO, SEV |
| | Wide actuator type | UL, CSA, VDE, TÜV, SEMKO, NEMKO, DEMKO, FIMKO, SEV, KEMA, ÖVE |
| AJ7 switch 6A type | | UL, CSA, TÜV |

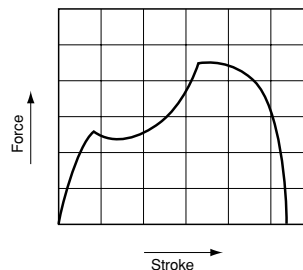
2. High inrush current resistance is ideal for office automation equipment.

| Type | Inrush | Contact rating | Expected life |
|----------|--------|----------------|----------------------|
| 10A type | 100A | 10A 250V AC | Min. 10 ⁴ |
| 6A type | 60A | 6A 250V AC | |

3. Operation that only requires a light touch

The best operation characteristics were sought by analyzing touch data gathered by monitoring 1,500 people.

- Power Rocker Switch touch curve



4. A broad product line

The AJ7 switches are available with five different types of terminals: quick-connect terminals, soldering terminals, PC board terminals, right angle terminals and left angle terminals.

5. Eight standard actuator colors

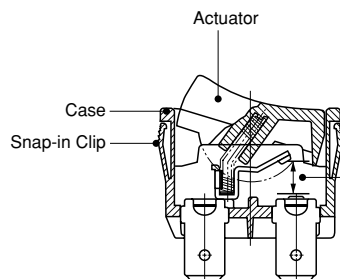
White, black, red, dark gray, light gray, blue, green, yellow

6. Cadmium-free contact compatibility.

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.

CONSTRUCTION



Contact gap (more than 3mm)

The EN60950 (intended for office automation equipment) conforms with a 3mm gap. When directly opening or closing the primary power supply side, a contact gap of at least 3mm is required in order to ensure safety.

AJ7 (J7)

ORDERING INFORMATION

AJ **7** **F**

7: AJ7 switch

Rating & size of actuator

Nil: 10A standard size

W: 10A wide size

6: 6A standard size

Number of poles and Operation

1: 1-pole, single throw (ON-OFF)

2: 2-pole, single throw (ON-OFF)

Terminal shape

0: .187 Quick-connect terminal

1: Soldering terminal


2: PC board terminal


3: PC board right angle terminal (for standard actuator only)


4: PC board left angle terminal (for standard actuator only)


Actuator indication


0: No indication

3:  indication (Side indication)

1:  indication (Indication on top)

4:  indication (Indication on top)

2:  indication (Indication on top)

5:  indication (Side indication)

Actuator color Remark 1)

W: White B: Black R: Red Z: Dark gray H: Light gray L: Blue G: Green Y: Yellow

Flange color

Nil: Black (standard color)

(Custom ordered color: W: White, R: Red, Z: Dark gray, H: Light gray, L: Blue, G: Green, Y: Yellow) Remark 1, 5)

Insulation guard

Nil: Short guard type

T: Long guard type (.187 Quick-connect terminal and soldering terminal only)

F: Cadmium-free product

Remarks: 1. The 10A type has indication on the actuator.

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.

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  and  symbols are located on each side, respectively.

With  indications:

The  symbols is located on the side.

PRODUCT TYPES

1. 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 | |

- Remarks: 1. A letter indicating the actuator color is entered in place of asterisk. (W: White, B: Black, R: Red, Z: Dark gray, H: Light gray, L: Blue, G: Green, and Y: Yellow). Standard flange color is black. For other colors type, they are custom ordered. For requests of other flange color, please enter the following letter before the "F" in the part number. (W: White, R: Red, Z: Dark gray, H: Light gray, L: Blue, G: Green and Y: Yellow)
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 international standards without your request.
5. Note that the position of the I 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 I O indication | With - O 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 |

- Remarks: 1. A letter indicating the actuator color is entered in place of asterisk. (W: White, B: Black, R: Red, Z: Dark gray, H: Light gray, L: Blue, G: Green, and Y: Yellow). Standard flange color is black. For other colors type, they are custom ordered. For requests of other flange color, please enter the following letter before the "F" in the part number. (W: White, R: Red, Z: Dark gray, H: Light gray, L: Blue, G: Green and Y: Yellow)
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 international standards without your request.
5. Note that the position of the I 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

AJ7 (J7)

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 |

- Remarks: 1. A letter indicating the actuator color is entered in place of asterisk. (W: White, B: Black, R: Red, Z: Dark gray, H: Light gray, L: Blue, G: Green, and Y: Yellow). Standard flange color is black. For other colors type, they are custom ordered. For requests of other flange color, please enter the following letter before the "F" in the part number. (W: White, R: Red, Z: Dark gray, H: Light gray, L: Blue, G: Green and Y: Yellow)
2. The color of indication on the actuator:
- For white actuator: black
 - For others: white
3. They come with a stamp indicating international standards without your request.

2.6 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 color is black. For other color type, they are custom ordered.)

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

B: Black (standard), W: White (custom ordered), R: Red (custom ordered), Z: Dark gray (custom ordered), H: Light gray (custom ordered)

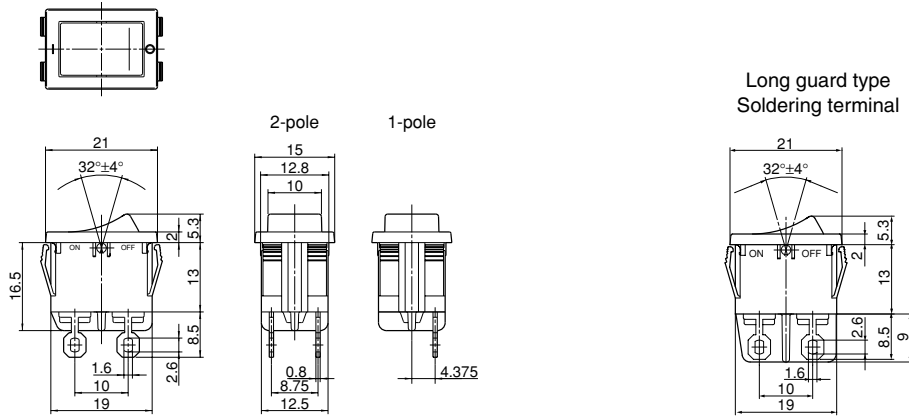
2. The color of | ○ indication on the actuator: White actuator: black Others: white

3. They come with a stamp indicating international standards without your request.

AJ7 (J7)

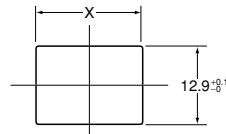
2. Soldering terminal

mm General tolerance: ± 0.5



Long guard type
Soldering terminal

Diagram of recommended locations
for panel mounting holes



| Panel thickness | X |
|-----------------|--------------------|
| 0.75 to 1.25 | $19.2^{+0}_{-0.1}$ |
| 1.25 to 2 | $19.4^{+0}_{-0.1}$ |
| 2 to 3 | $19.8^{+0}_{-0.1}$ |

3. PC board terminal

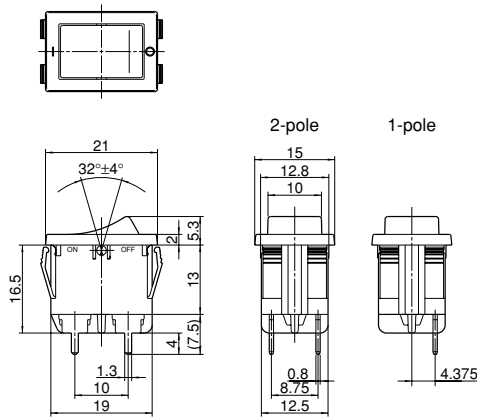
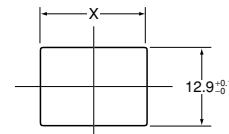
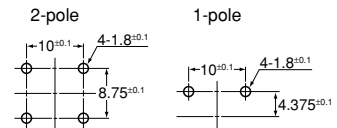


Diagram of recommended locations
for panel mounting holes



PC board pattern



| Panel thickness | X |
|-----------------|--------------------|
| 0.75 to 1.25 | $19.2^{+0}_{-0.1}$ |
| 1.25 to 2 | $19.4^{+0}_{-0.1}$ |
| 2 to 3 | $19.8^{+0}_{-0.1}$ |

4. PC board right angle terminal

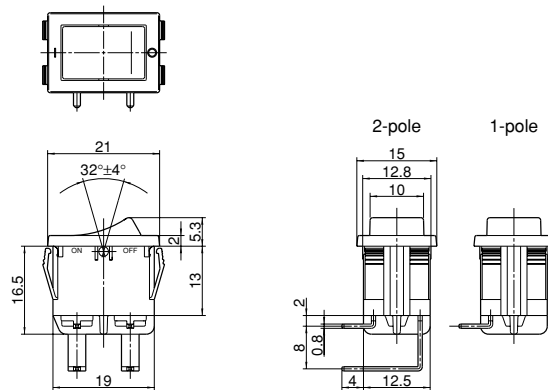
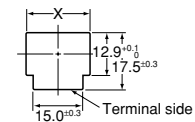
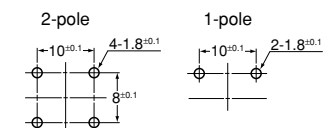


Diagram of recommended locations
for panel mounting holes



PC board pattern



| Panel thickness | X |
|-----------------|--------------------|
| 0.75 to 1.25 | $19.2^{+0}_{-0.1}$ |
| 1.25 to 2 | $19.4^{+0}_{-0.1}$ |
| 2 to 3 | $19.8^{+0}_{-0.1}$ |

Remark: A type left angle terminals is also available.

5. Wide actuator type

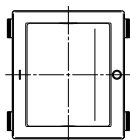
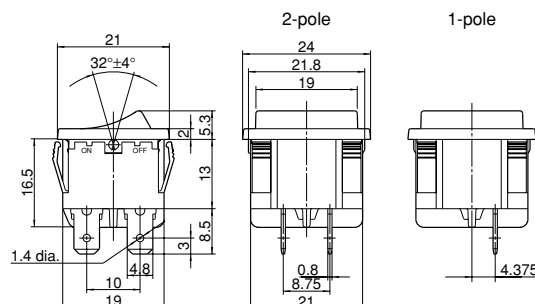
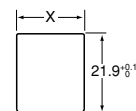
mm General tolerance: ± 0.5 

Diagram of recommended locations for panel mounting holes



| Panel thickness | X |
|--------------------|----------------------|
| 1 to less than 1.8 | 19.2 ^{+0.1} |
| 1.8 to 2.3 | 19.9 ^{+0.1} |

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

NOTES

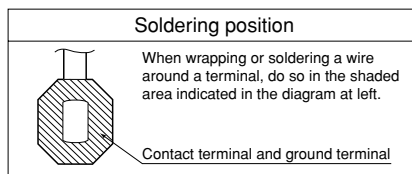
1. Switch mounting

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

2. 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 (60W 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 s at 270°C soldering bath or within 3 s 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.

3. 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.

4. 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.

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

REFERENCE

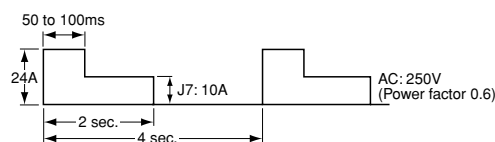
1. Outline of UL1054 test

Overload test AJ7: 12.5A 250V AC
(Power factor 0.75 to 0.8)
50 operation
Endurance test AJ7: 10A 250V 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.

2. 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.



AJ7 (J7)

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



Suitable switches: AJ7 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

Notes) This AJ7 switch connector is not available from Matsushita Electric Works. Contact us for further details on this connector.