Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

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We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
Email & Skype: info@chipsmall.com Web: www.chipsmall.com
Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China

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

AJ7 (J7) Switches

AJ7 switch 10A type
Standard actuator

AJ7 switch 10A type
Wide actuator

AJ7 switch 6A type

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)**

RoHS compliant

ORDERING INFORMATION

AJ 7 □ □ □ □ □ □ □ F

- Number of poles and Operation
  1: 1-pole, single throw (ON-OFF)
  2: 2-pole, single throw (ON-OFF)
- Actuator indication Note 1)
  0: No indication
  1: |○ indication (Indication on top)
  2: –○ indication (Indication on top)
  3: |, ○ indication (Side indication)*
  4: · indication (Indication on top)*
  5: | indication (Side indication)*
- Flange color
  Nil: Black (standard color)
  (Custom ordered color: W: White, H: Light gray) Note 1), 5)
- F: Cadmium-free product
- Rating & size of actuator
  Nil: 10A standard size actuator
  W: 10A wide size actuator
  6: 6A standard size actuator
- 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 color
  W: White B: Black R: Red
- Insulation guard
  Nil: Short guard type
  T: Long guard type
  (.187 Quick-connect terminal and soldering terminal only of 10A standard actuator)

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. "| ○" 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 safety standards.

■ TV rating type

AJ 7 2 □ □ B TV F

- Number of poles and Operation
  2: 2-pole, single throw (ON-OFF)
- Terminal shape
  0: .187 Quick-connect terminal
  1: Soldering terminal
- Actuator indication
  0: No indication
  2: –○ indication
- Actuator color
  B: Black
- Rating
  TV: TV rating
- F: Cadmium-free product

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 safety 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 safety 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 safety 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 safety standards.

■ TV rating type

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

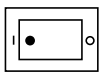
■ Characteristics

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/s²
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 ± 1.2N
	2-pole	4 ± 2.5N
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 [I|○] indications: The I and ○ symbols are located on each side, respectively.
With [I|] indications: The I symbols is located on the side.

DIMENSIONS

(Unit: mm) General tolerance: ±0.5

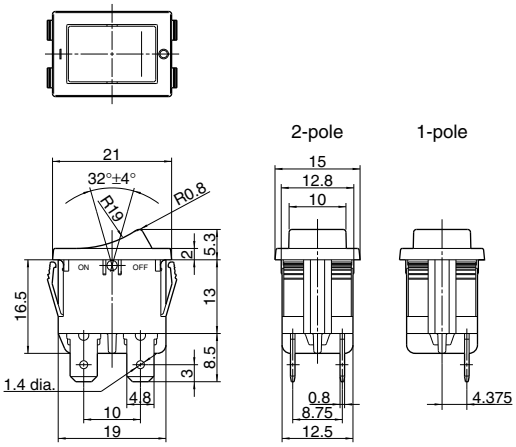
The CAD data of the products with a **CAD Data** mark can be downloaded from: http://industrial.panasonic.com/ac/e/

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

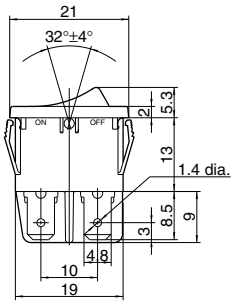
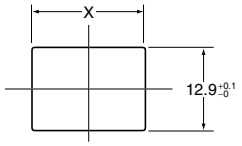


Diagram of recommended for panel mounting holes



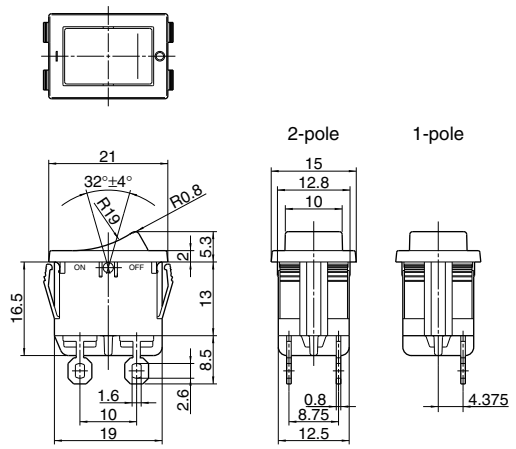
Panel thickness	X
0.75 to less than 1.25	$19.2^{+0}_{-0.1}$
1.25 or more to less than 2	$19.4^{+0}_{-0.1}$
2 or more to 3	$19.8^{+0}_{-0.1}$

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

■ Soldering terminal

CAD Data

External dimensions



Long guard type
Soldering terminal

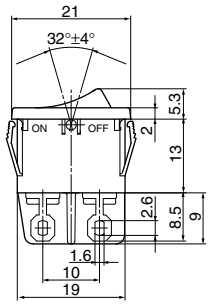
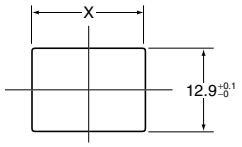


Diagram of recommended for panel mounting holes



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

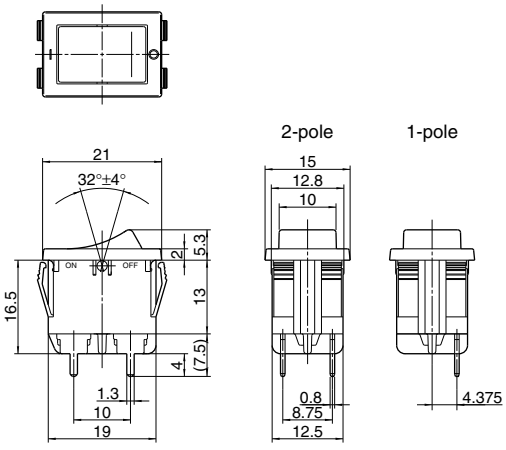
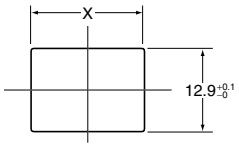
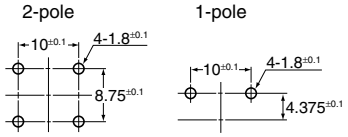


Diagram of recommended for panel mounting holes



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	$19.8^{+0}_{-0.1}$

■ PC board right angle terminal

CAD Data

External dimensions

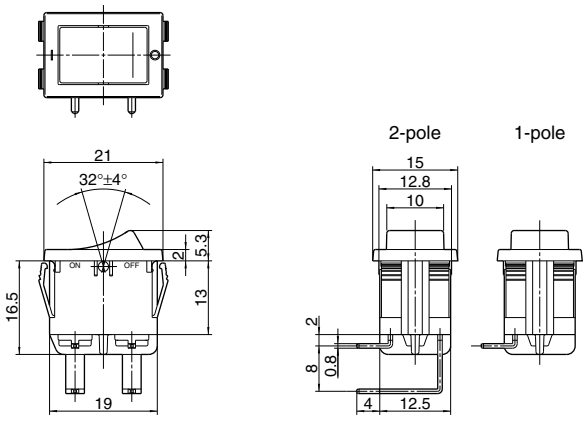
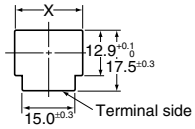
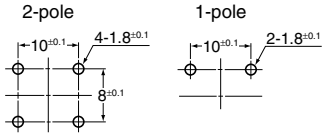


Diagram of recommended for panel mounting holes



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

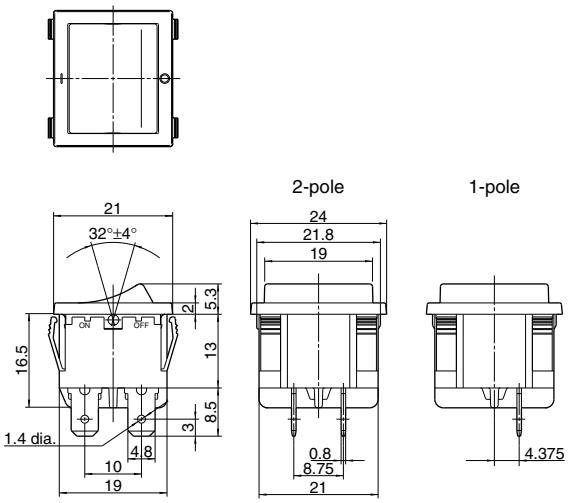
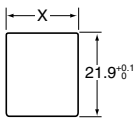


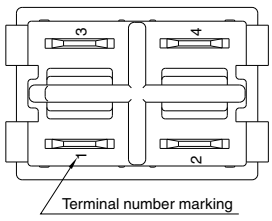
Diagram of recommended for panel mounting holes



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

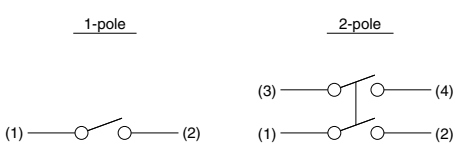
Note: Dimensions for the terminals of soldering terminal type and PC board terminal type are the same as those of standard size type.

■ Terminal circuit diagram (common)



* .187 Quick-connect terminal/Long guard type

Terminal circuit diagram



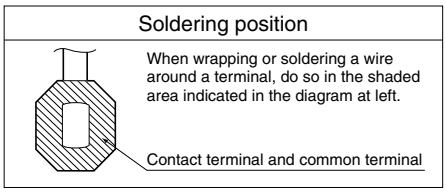
CAUTIONS FOR USE

■ 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 perfomance.

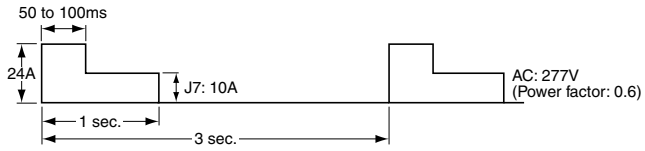
REFERENCE

■ 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)
6×10^3 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}_{0}°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.

Technical Terminology & Cautions for Use

(Operation Switches)

TECHNICAL TERMINOLOGY

■ Rated values
Values indicating the characteristics and performance guarantee standards of the switches. The rated current and rated voltage, for instance, assume specific conditions.

■ Electrical life
The service life when the rated load is connected to the contact and switching operations are performed.

■ Mechanical life
The service life when operated at a preset operating frequency without passing electricity through the contacts.

■ Dielectric strength
Threshold limit value that a high voltage can be applied to a predetermined measuring location for one minute without causing damage to the insulation.

■ Insulation resistance
This is the resistance value at the same place the dielectric strength is measured.

■ Contact resistance
This indicates the electrical resistance at the contact part. Generally, this resistance includes the conductor resistance of the spring and terminal portions.

■ Vibration resistance
Vibration range where a closed contact does not open for longer than a specified time due to vibrations during use of the snap-action switches.

■ Shock resistance
Max. shock value where a closed contact does not open for longer than a specified time due to shocks during use of the switches.

■ Allowable switching frequency
This is the maximum switching frequency required to reach the end of mechanical life (or electrical life).

■ Temperature rise value
This is the maximum temperature rise value that heats the terminal portion when the rated current is flowing through the contacts.

■ Actuator strength
When applying a static load for a certain period on the actuator in the operation direction, this is the maximum load it can withstand before the switch loses functionality.

■ Terminal strength
When applying a static load for a certain period (in all directions if not stipulated) on a terminal, this is the maximum load it can withstand before the terminal loses functionality (except when the terminal is deformed).

TYPES OF LOAD

■ Resistance load

Resistance load is a power factor of 1 ($\cos\phi$ = 1) where the load is only for the resistance portion. The displayed switch rating indicates the current capacity when using AC current.

■ DC load

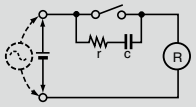
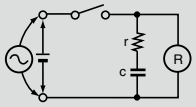
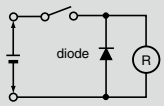
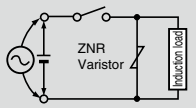
Differing from AC, since the direction of current is fixed for DC, the continuous arc time lengthens when the same voltage is applied.

■ Incandescent lamp load

Since an inrush current of 10 to 15 times the rated current flows for an instant when the switch is turned on for the lamp, adhesion of the contacts may occur. Therefore, please take into consideration this transient current when selecting a switch.

■ Induction load

Since arc generation due to reverse voltage can cause contact failure to occur when there is an induction load (in relays, solenoids and buzzers, etc.), we recommend you insert a suitable spark quenching circuit (see figure below).

Circuit example	Notes
Switch contact 	(1) r = more than 10 Ω (2) In an AC circuit, impedance of R is to be slightly smaller than impedance of r and c.
Switch contact 	Can be used for both AC and DC circuits. r = R C: 0.1 μF
Switch contact 	For DC circuits only.
Switch contact 	Can be used for both AC and DC circuits.

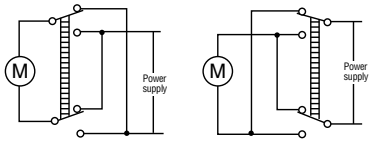
■ Motor load

Contacts may adhere due to the starting current at the start of motor operation which is three to eight times the steady-state current. Although it differs depending on the motor, since a current flows that is several times that of the nominal current, please select a switch taking into consideration the values in the table below. To make the motor rotate in reverse, use an ON-OFF-ON switch and take measures to prevent a multiplier current (starting current + reverse current) from flowing.

Motor type	Type	Starting current
Three-phase induction motor	Squirrel-cage	Approx. 5 to 8 times current listed on nameplate
Single-phase induction motor	Split-phase-start	Approx. 6 times current listed on nameplate
	Capacitor-start	Approx. 4 to 5 times current listed on nameplate
	Repulsion-start	Approx. 3 times current listed on nameplate

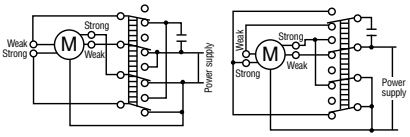
A current that is approximately two times that of the starting current will flow when reverse rotation is caused during operation. Also, when using for a load that will cause transient phenomena such as when operating the motor in reverse rotation or switching the poles, an arc short (circuit short) may occur due to the time lag between poles when switching. Please be careful.

Example of 1-pole motor reverse rotation circuit



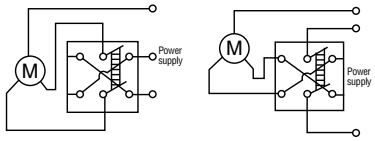
Good wiring Bad wiring

Example of single-phase induction motor (capacitor) strong-weak switching circuit



Good wiring Bad wiring

Example of three-phase motor reverse rotation circuit



Good wiring Bad wiring

■ Capacitor load

In the case of mercury lamps, florescent lamps and the capacitor loads of capacitor circuits, since an extremely large inrush current flows when the switch is turned on, please measure that transient value with the actual load and then either use the product keeping within the range of the rated current or after verifying the actual load.

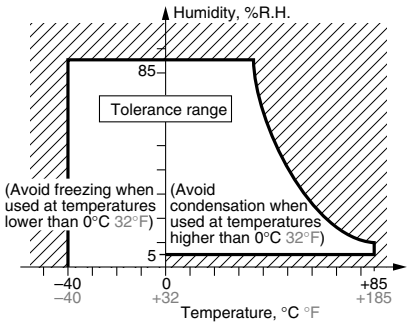
CAUTIONS FOR USE

■ Environment of use

1) Please consult us when using under the following conditions:
• Environments where hydrogen sulfide or other corrosive gases are present.
• Environments where gasoline, thinner or other flammable, explosive gases are present.
• Dusty environments (for non-seal type snap action switches).
• Use in environments not in the prescribed temperature or humidity range.
• Places with low air pressure.
2) Unless specified the product will not be constructed to withstand water, oil or explosions. Please inquire if you intend to use the product in special applications.

■ Usage, storage, and transport conditions

1) During usage, storage, or transportation, avoid locations subject to direct sunlight and maintain normal temperature, humidity, and pressure conditions.
2) The allowable specifications for environments suitable for usage, storage, and transportation are given below.
(1) Temperature: The allowable temperature range differs for each switch, so refer to the switch's individual specifications.
(2) Humidity: 5 to 85% R.H.
(3) Pressure: 86 to 106 kPa
The humidity range varies with the temperature. Use within the range indicated in the graph below.
(The allowable temperature depends on the switch.)



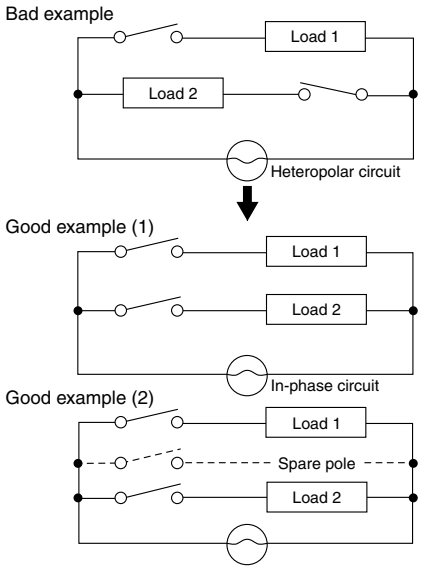
• Condensation will occur inside the switch if there is a sudden change in ambient temperature when used in an atmosphere of high temperature and high humidity. This is particularly likely to happen when being transported by ship, so please be careful of the atmosphere when shipping. Condensation is the phenomenon whereby steam condenses to cause water droplets that adhere to the switch when an atmosphere of high temperature and humidity rapidly changes from a high to low temperature or when the switch is quickly moved from a low humidity location to one of high temperature and humidity. Please be careful because condensation can cause adverse conditions such as deterioration of insulation, coil cutoff, and rust.
• Condensation or other moisture may freeze on the switch when the temperatures is lower than 0°C 32°F. This causes problems such as sticking of movable parts or operational time lags.
• The plastic becomes brittle if the switch is exposed to a low temperature, low humidity environment for long periods of time.
• Storage for extended periods of time (including transportation periods) at high temperatures or high humidity levels or in atmospheres with organic gases or sulfide gases may cause a sulfide film or oxide film to form on the surfaces of the contacts and/or it may interfere with the functions. Check out the atmosphere in which the units are to be stored and transported.
• In terms of the packing format used, make every effort to keep the effects of moisture, organic gases and sulfide gases to the absolute minimum.

■ Wiring

1) When using a PC board terminal switch as soldering terminals, use thin lead wires and be sure to wind them on the terminals before soldering.
2) Cautions when soldering
Perform soldering quickly in accordance with the specified conditions. Be careful not to let flux flow into the product. When no instruction is specified, use a 60 W soldering iron (350°C) and complete soldering within five seconds. Do not pull on the lead wires immediately after soldering. Wait some time before verifying.

■ Others

1) Failure modes of switches include short-circuiting, open-circuiting and temperature rises. If this switch is to be used in equipment where safety is a prime consideration, examine the possible effects of these failures on the equipment concerned, and ensure safety by providing protection circuits or protection devices. In terms of the systems involved, make provision for redundancy in the design and take steps to achieve safety design.
2) The ambient operating temperature (and humidity) range quoted is the range in which the switch can be operated on a continuous basis: it does not mean that using the switch within the rating guarantees the durability performance and environment withstanding performance of the switch. For details on the performance guarantee, check the specifications of each product concerned.
3) Even if 2-pole, 3-pole or 4-pole switches are used as single-pole switches in order to increase contact reliability, please keep the maximum current no higher than the rated value.
4) If there is the possibility of a short between poles, please use an in-phase circuit as shown below or provide a spare pole.



5) Be careful not to drop the product as this may cause loss of functionality.
6) Do not apply an unreasonable vertical force against the direction of operation of the product.
7) Use your hand to operate the actuator.
(Operation using a tool such as a screwdriver or hammer can cause breakdown.)

Please contact .....

Panasonic Corporation
Electromechanical Control Business Division
■ 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
industrial.panasonic.com/ac/e/

Panasonic®

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Please contact .....

Panasonic Corporation
Electromechanical Control Business Division
■ 1006, Oaza Kadoma, Kadoma-shi, Osaka 571-8506, Japan
industrial.panasonic.com/ac/e/

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