

Safety Precautions

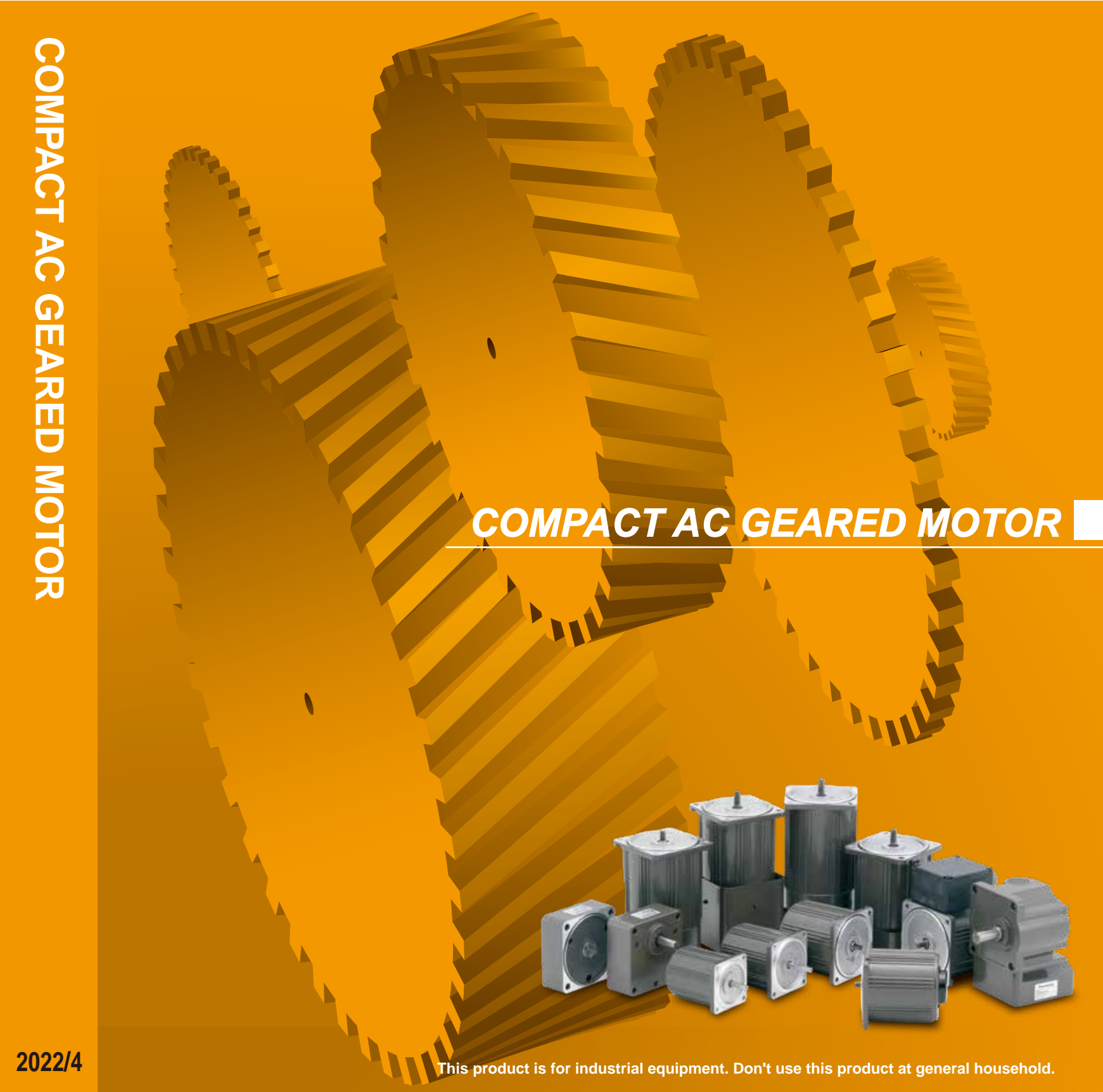
- Important Notes on exporting this product or equipment containing this product;
If the end-user or application of this product is related to military affairs or weapons, its export may be controlled by “Foreign Exchange and Foreign Trade Control Law” of Japan where export license will be required before product can be exported from Japan.
- This product is designed and manufactured for use in General Purpose Industrial Equipment and it is not intended to be used in equipment or system that may cause personal injury or death.
- All servicing such as installation, wiring, operation, maintenance and etc., should be performed by qualified personnel only.
- Tighten mounting screws with an adequate torque by taking into consideration strength of the screws and the characteristics of material to which the product will be mounted. Over tightening can damage the screw and/or material; under tightening can result in loosening.
- Install safety equipment to prevent serious accidents or loss that is expected in case of failure of this product.
- Consult us before using this product under such special conditions and environments as nuclear energy control, aerospace, transportation, medical equipment, various safety equipments or equipments which require a lesser air contamination.
- We have been making the best effort to ensure the highest quality of our products, however, some applications with exceptionally large external noise disturbance and static electricity, or failure in input power, wiring and components may result in unexpected action. It is highly recommended that you make a fail-safe design and secure the safety in the operative range.
- If the motor shaft is not electrically grounded, it may cause an electrolytic corrosion to the bearing, depending on the condition of the machine and its mounting environment, and may result in the bearing noise. Checking and verification by customer is required.
- Failure of this product depending on its content may generate smoke of about one cigarette. Take this into consideration when the application of the machine is clean room related.
- Please be careful when using the product in an environment with high concentrations of sulfur or sulfuric gases, as sulfuration can lead to disconnection from the chip resistor or a poor contact connection.
- Do not input a supply voltage which significantly exceeds the rated range to the power supply of this product. Failure to heed this caution may lead to damage of the internal parts, causing smoke and/or fire and other troubles.
- The user is responsible for matching between machine and components in terms of configuration, dimensions, life expectancy, characteristics, when installing the machine or changing specification of the machine. The user is also responsible for complying with applicable laws and regulations.
- Manufacturer’s warranty will be invalid if the product has been used outside its stated specifications.
- Component parts are subject to minor change to improve performance.
- Read and observe the instruction manual to ensure correct use of the product.

| | |
|--------|---|
| Repair | Consult to the dealer from whom you have purchased this product for details of repair work. When the product is incorporated to the machine you have purchased, consult to the machine manufacturer or its dealer. |
| URL | Electronic data of this product (Instruction Manual, CAD data) can be downloaded from the following web site; industrial.panasonic.com/ac/e/ |

● Contact to : _____

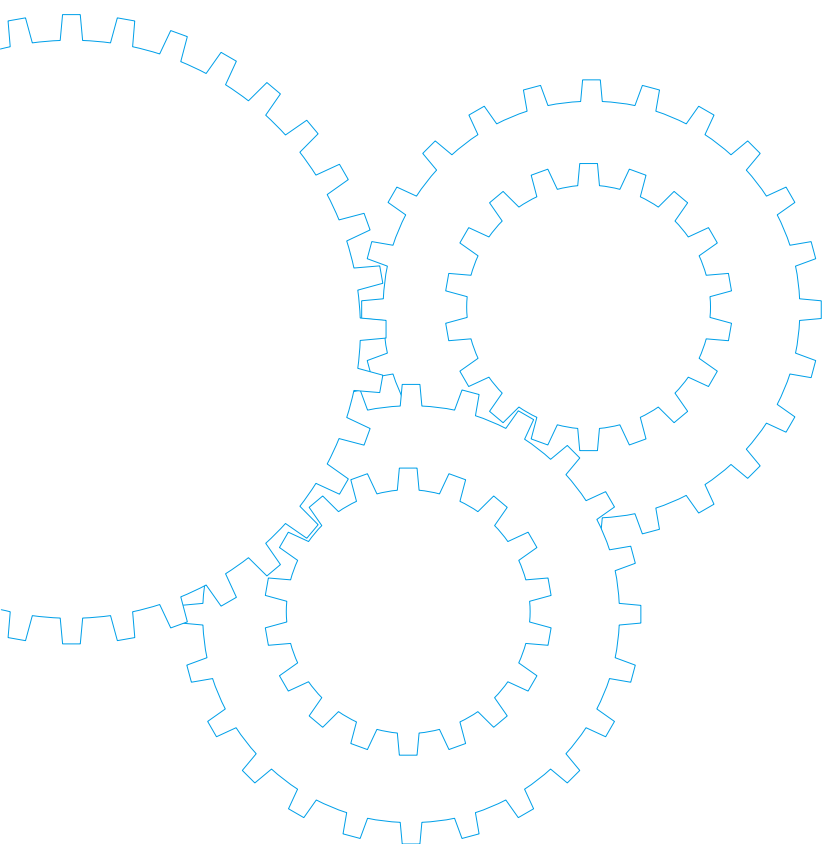
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The contents of this catalog apply to the products as of April 2022.

Compact AC Geared Motor



Discontinued products

Speed Controller



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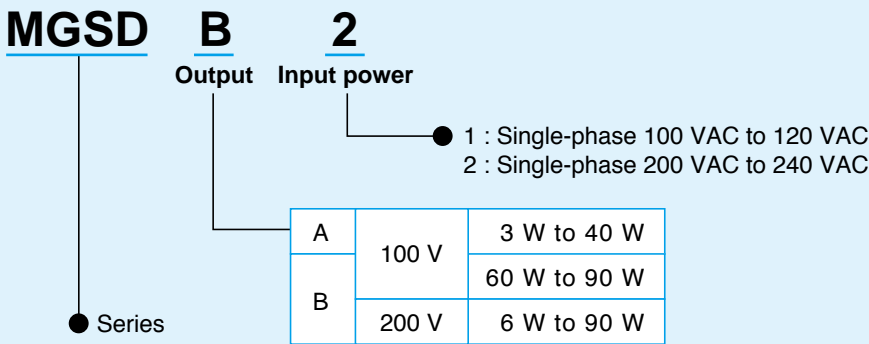
Overview of Speed Controllers

- These controllers vary speed of compact geared motors.

Product designation

- Separate type speed controller

- MGSD type



* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.




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
• Possible combination of speed controller and motor

| | Size | Output (W) | Motor | | | Voltage (V) | Speed controller |
|--------------------------------|------------------------------|---------------|-----------|-------------------|------------------|----------------|------------------|
| | | | Certified | Pinion shaft type | Round shaft type | | MGSD type |
| Variable speed induction motor | 60 mm sq. (2.36 inch sq.) | 3 | ----- | M61X3GV4L | M61X3SV4LS | 100 | MGSDA1 ★ |
| | | 6 | ----- | M61X6GV4L | M61X6SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M61X6GV4Y | M61X6SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M61X6GV4LG(A) | M61X6SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M61X6GV4DG(A) | M61X6SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M61X6GV4YG(A) | M61X6SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ | M61X6GV4GG(A) | M61X6SV4GG(A) | 220/230 | MGSDB2 ★ |
| | 70 mm sq. (2.76 inch sq.) | 10 | ----- | M71X10GV4L | M71X10SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M71X10GV4Y | M71X10SV4YS | 200 | MGSDB2 ★ |
| | | 15 | ----- | M71X15GV4L | M71X15SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M71X15GV4Y | M71X15SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M71X15GV4LG(A) | M71X15SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M71X15GV4DG(A) | M71X15SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M71X15GV4YG(A) | M71X15SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ e | M71X15GV4GG(A) | M71X15SV4GG(A) | 220/230 | MGSDB2 ★ |
| | 80 mm sq. (3.15 inch sq.) | 15 | ----- | M81X15GV4L | M81X15SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M81X15GV4Y | M81X15SV4YS | 200 | MGSDB2 ★ |
| | | 25 | ----- | M81X25GV4L | M81X25SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M81X25GV4Y | M81X25SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M81X25GV4LG(A) | M81X25SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M81X25GV4DG(A) | M81X25SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M81X25GV4YG(A) | M81X25SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ e | M81X25GV4GG(A) | M81X25SV4GG(A) | 220/230 | MGSDB2 ★ |
| | | 40 | ----- | M91X40GV4L | M91X40SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M91X40GV4Y | M91X40SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M91X40GV4LG(A) | M91X40SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M91X40GV4DG(A) | M91X40SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M91X40GV4YG(A) | M91X40SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ e | M91X40GV4GG(A) | M91X40SV4GG(A) | 220/230 | MGSDB2 ★ |
| | | 60 | ----- | M91Z60GV4L | M91Z60SV4LS | 100 | MGSDB1 ★ |
| | | | ----- | M91Z60GV4Y | M91Z60SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M91Z60GV4LG(A) | M91Z60SV4LG(A) | 100 | MGSDB1 ★ |
| | | | ★ | M91Z60GV4DG(A) | M91Z60SV4DG(A) | 110/115 | MGSDB1 ★ |
| | | | ★ | M91Z60GV4YG(A) | M91Z60SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ | M91Z60GV4GG(A) | M91Z60SV4GG(A) | 220/230 | MGSDB2 ★ |
| | | | ★ e | M91Z60GV4GGB | M91Z60SV4GGB | 220/230 | MGSDB2 ★ |
| | | | ★ e | M91Z60GV4GGC | M91Z60SV4GGC | 220/230 | MGSDB2 ★ |
| | | 90 | ----- | M91Z90GV4L | M91Z90SV4LS | 100 | MGSDB1 ★ |
| | | | ----- | M91Z90GV4Y | M91Z90SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M91Z90GV4LG(A) | M91Z90SV4LG(A) | 100 | MGSDB1 ★ |
| | | | ★ | M91Z90GV4DG(A) | M91Z90SV4DG(A) | 110/115 | MGSDB1 ★ |
| | | | ★ | M91Z90GV4YG(A) | M91Z90SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ e | M91Z90GV4GGB | M91Z90SV4GGB | 220/230 | MGSDB2 ★ |
| | | | ★ e | M91Z90GV4GGC | M91Z90SV4GGC | 220/230 | MGSDB2 ★ |

* When using a speed controller operative under a wide range of supply voltage (MGSD), the mating motor should be selected according to the voltage of the power supply to be used.

* For combination of C&B (variable speed induction motor) motor and speed controller please refer to the page B-351.

★ Conforming to international standards e Motor compliant with China efficiency standards : c   

★ MGSD speed controllers are compliant with c  .






* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

| | Size | Output (W) | Motor | | | Voltage (V) | Speed controller |
|--|------------------------------|---------------|-----------|-------------------|------------------|----------------|------------------|
| | | | Certified | Pinion shaft type | Round shaft type | | MGSD type |
| Variable speed reversible motor | 60 mm sq. (2.36 inch sq.) | 4 | ----- | M6RX4GV4L | M6RX4SV4LS | 100 | MGSDA1 ★ |
| | | 6 | ----- | M6RX6GV4L | M6RX6SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M6RX6GV4Y | M6RX6SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M6RX6GV4LG(A) | M6RX6SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M6RX6GV4DG(A) | M6RX6SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M6RX6GV4YG(A) | M6RX6SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ | M6RX6GV4GG(A) | M6RX6SV4GG(A) | 220/230 | MGSDB2 ★ |
| | 70 mm sq. (2.76 inch sq.) | 10 | ----- | M7RX10GV4L | M7RX10SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M7RX10GV4Y | M7RX10SV4YS | 200 | MGSDB2 ★ |
| | | 15 | ----- | M7RX15GV4L | M7RX15SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M7RX15GV4Y | M7RX15SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M7RX15GV4LG(A) | M7RX15SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M7RX15GV4DG(A) | M7RX15SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M7RX15GV4YG(A) | M7RX15SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ | M7RX15GV4GG(A) | M7RX15SV4GG(A) | 220/230 | MGSDB2 ★ |
| | 80 mm sq. (3.15 inch sq.) | 20 | ----- | M8RX20GV4L | M8RX20SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M8RX20GV4Y | M8RX20SV4YS | 200 | MGSDB2 ★ |
| | | 25 | ----- | M8RX25GV4L | M8RX25SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M8RX25GV4Y | M8RX25SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M8RX25GV4LG(A) | M8RX25SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M8RX25GV4DG(A) | M8RX25SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M8RX25GV4YG(A) | M8RX25SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ | M8RX25GV4GG(A) | M8RX25SV4GG(A) | 220/230 | MGSDB2 ★ |
| | | 40 | ----- | M9RX40GV4L | M9RX40SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M9RX40GV4Y | M9RX40SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M9RX40GV4LG(A) | M9RX40SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M9RX40GV4DG(A) | M9RX40SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M9RX40GV4YG(A) | M9RX40SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ | M9RX40GV4GG(A) | M9RX40SV4GG(A) | 220/230 | MGSDB2 ★ |
| | | 60 | ----- | M9RX60GV4L | M9RX60SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M9RX60GV4Y | M9RX60SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M9RX60GV4LG(A) | M9RX60SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M9RX60GV4DG(A) | M9RX60SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M9RX60GV4YG(A) | M9RX60SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ | M9RX60GV4GG(A) | M9RX60SV4GG(A) | 220/230 | MGSDB2 ★ |
| | 90 mm sq. (3.54 inch sq.) | 40 | ----- | M9RX90GV4L | M9RX90SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M9RX90GV4Y | M9RX90SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M9RX90GV4LG(A) | M9RX90SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M9RX90GV4DG(A) | M9RX90SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M9RX90GV4YG(A) | M9RX90SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ | M9RX90GV4GG(A) | M9RX90SV4GG(A) | 220/230 | MGSDB2 ★ |
| | | 90 | ----- | M9RX90GV4L | M9RX90SV4LS | 100 | MGSDA1 ★ |
| | | | ----- | M9RX90GV4Y | M9RX90SV4YS | 200 | MGSDB2 ★ |
| | | | ★ | M9RX90GV4LG(A) | M9RX90SV4LG(A) | 100 | MGSDA1 ★ |
| | | | ★ | M9RX90GV4DG(A) | M9RX90SV4DG(A) | 110/115 | MGSDA1 ★ |
| | | | ★ | M9RX90GV4YG(A) | M9RX90SV4YG(A) | 200 | MGSDB2 ★ |
| | | | ★ | M9RX90GV4GG(A) | M9RX90SV4GG(A) | 220/230 | MGSDB2 ★ |
| Variable speed motor with electromagnetic brake | 60 mm sq. (2.36 inch sq.) | 6 | ----- | M6RX6GBV4L | ----- | 100 | MGSDA1 ★ |
| | | | ----- | M6RX6GBV4Y | ----- | 200 | MGSDB2 ★ |
| | 70 mm sq. (2.76 inch sq.) | 15 | ----- | M7RX15GBV4L | ----- | 100 | MGSDA1 ★ |
| | | | ----- | M7RX15GBV4Y | ----- | 200 | MGSDB2 ★ |
| | 80 mm sq. (3.15 inch sq.) | 25 | ----- | M8RX25GBV4L | ----- | 100 | MGSDA1 ★ |
| | 90 mm sq. (3.54 inch sq.) | 40 | ----- | M9RX40GBV4L | ----- | 100 | MGSDA1 ★ |
| | | | ----- | M9RX40GBV4Y | ----- | 200 | MGSDB2 ★ |

* When using a speed controller operative under a wide range of supply voltage (MGSD), the mating motor should be selected according to the voltage of the power supply to be used.

★ Conforming to international standards : c    ★ MGSD speed controllers are compliant with c  .

* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.



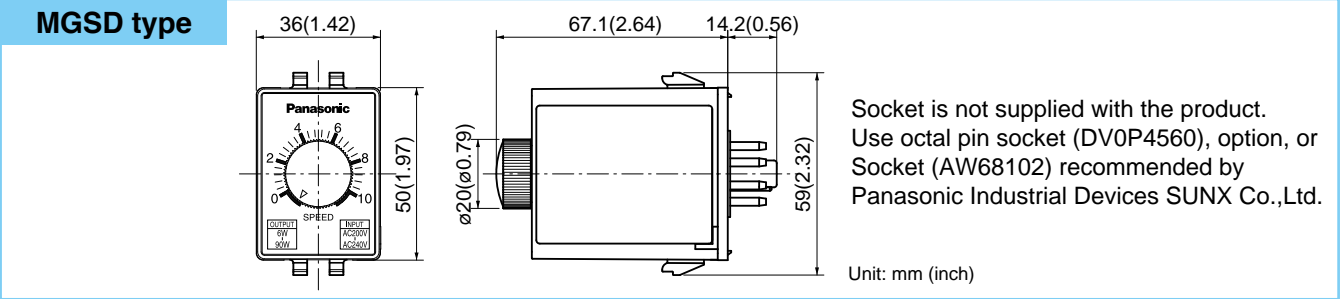
- Features<MGSD type>
 - Internal speed changer
Motor speed can be adjusted from the speed setting knob on the front panel.
Not necessary to install and connect an external speed changer to the controller.
 - Electric brake enables instantaneous stop.
 - Compact 8P plug-in configuration.
 - Variable installation options are available.
Terminal blocks, sockets and other various options (from Panasonic) for panel board can be used.
 - Compliant with international standards:

• Standard specification (MGSD type)

| | MGSDA1 | MGSDDB1 | MGSDDB2 |
|---------------------------------|--|--------------|---------------------------------|
| Supply voltage | Single-phase 100 VAC to 120 VAC | | Single-phase 200 VAC to 240 VAC |
| Supply voltage tolerance | ±10 % (at rated voltage) | | |
| Power frequency | 50 Hz/60 Hz | | |
| Rated input current | 1.0 A | 2.0 A | 1.0 A |
| Compatible motor output | 3 W to 40 W | 60 W to 90 W | 6 W to 90 W |
| Speed control range EX type | 50 Hz : 90 r/min to 1400 r/min 60 Hz : 90 r/min to 1700 r/min | | |
| Speed regulation (against load) | 5 % : 1000 r/min, Typical variation at 80 % rated torque | | |
| Speed setting | Internal | | |
| Braking *1 | Activated while electric braking current is flowing. | | |
| Electric braking time | 0.5 sec (typ.): Amount of braking current is 2 times to 3 times the rated current. | | |
| Parallel operation | Not applicable | | |
| Product weight | 80 g | | |

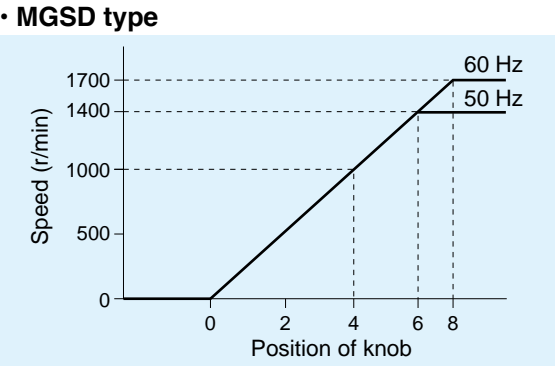
*1 Electric braking has no mechanical holding mechanism.

• Outline drawing



• Setting of Speed

In the case of the MGSD type, the built-in speed reference is used to set the speed. In the case of the EX type, the external speed reference is used to set the speed. The figure below shows an example of the relation between the position of the speed setting knob and the speed of the motor. (Note that there is an approx. 10 % fluctuation due to variations in the voltage generation of the circuit and tachogenerator.)



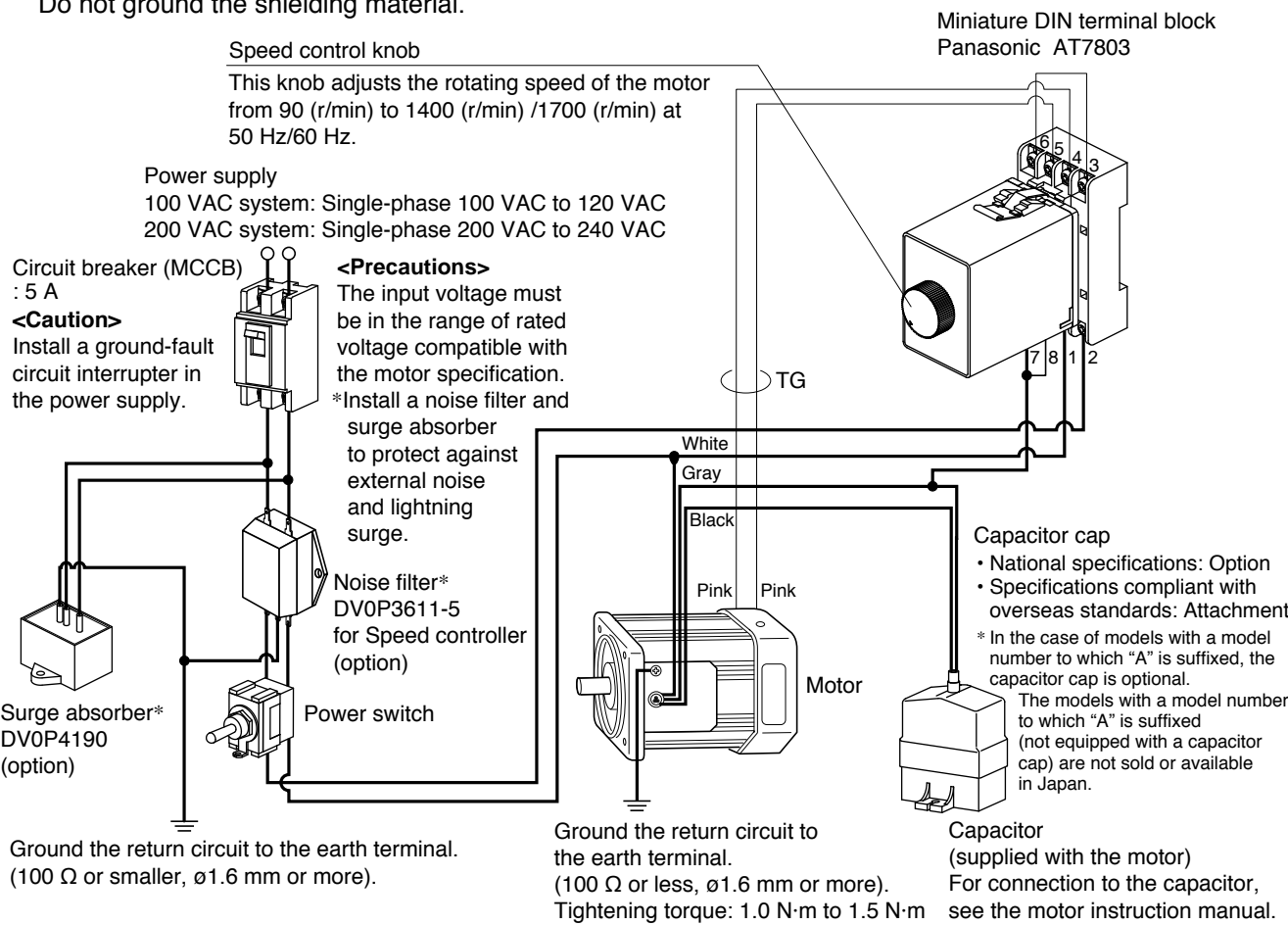
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

• Connection diagram list

| Connection diagram | Function | Speed controller | Page |
|--------------------|---|------------------|------|
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| 3 | Unidirectional rotation and electric brake | MGSD type | C-10 |
| 4 | Normal/reverse rotation and electric brake | MGSD type | C-11 |
| 5 | Wiring of cooling fan motor (F) or motor with thermal protector (TP) | MGSD type | C-12 |
| 6 | Wiring to electromagnetic brake (40 W or smaller) | MGSD type | C-12 |
| 7 | Wiring diagram (for unidirectional rotation) | EX type | C-13 |
| 8 | Speed change only | EX type | C-14 |
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| 10 | Normal/reverse rotation and electric brake | EX type | C-16 |
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| 15 | Parallel operation through analog signal | EX type | C-19 |
| 16 | Soft-operation | EX type | C-19 |
| 17 | Wiring of cooling fan motor (F) and motor with thermal protector (TP) | EX type | C-20 |
| 18 | Wiring to electromagnetic brake | EX type | C-20 |

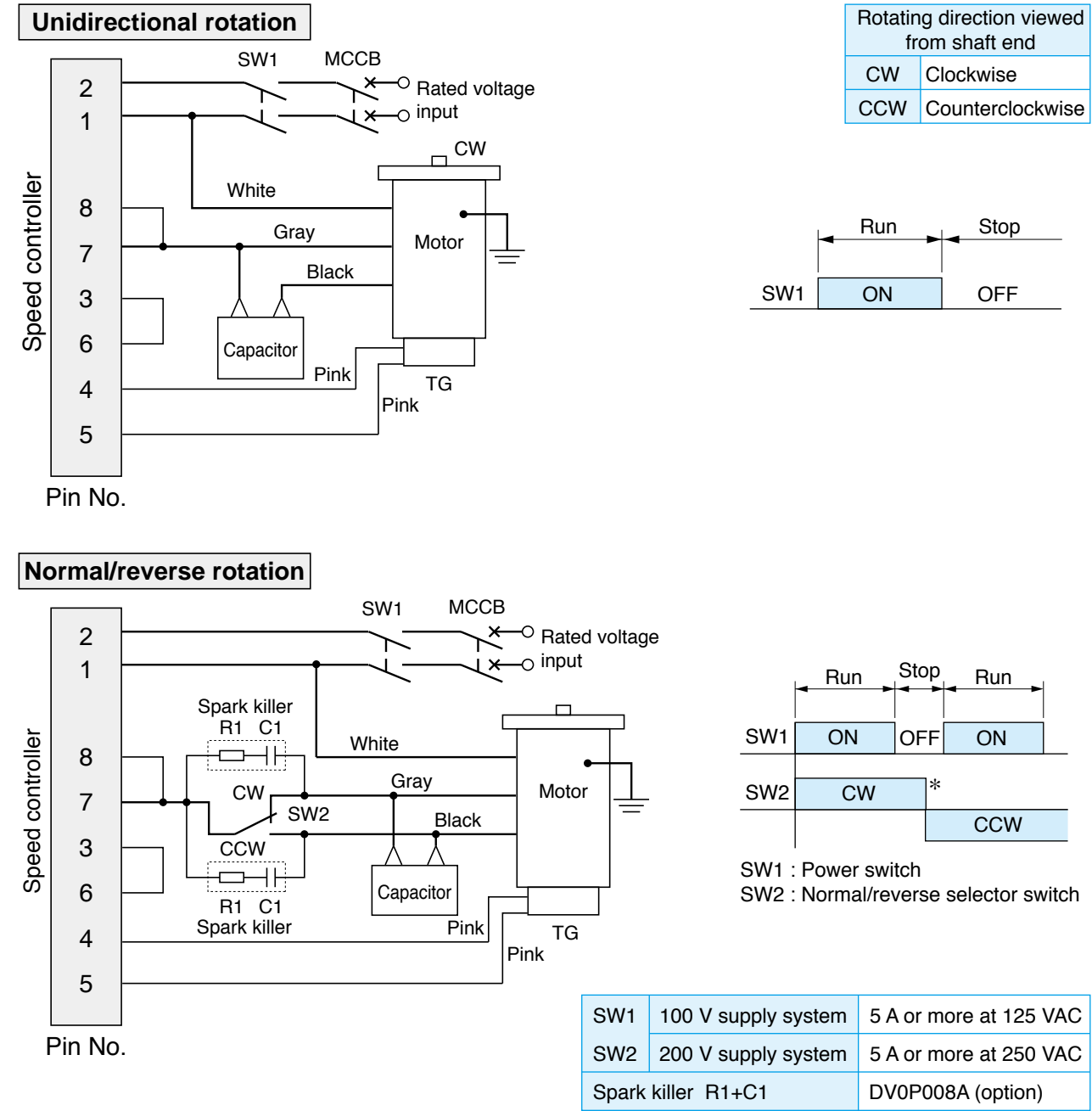
1 Wiring diagram (for unidirectional rotation)

- The motor revolving speed can be set from the speed setting knob on the panel.
- The thick continuous lines represent main circuit. Use conductor of size 0.75 mm² or larger for the main line.
- The thin continuous lines represent signal circuit. Use conductor of size 0.3 mm² or larger in the signal circuit. When the distance from the tachometer generator (TG) is long, use shielded twisted pair cable. Do not ground the shielding material.



* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

2 Speed change only

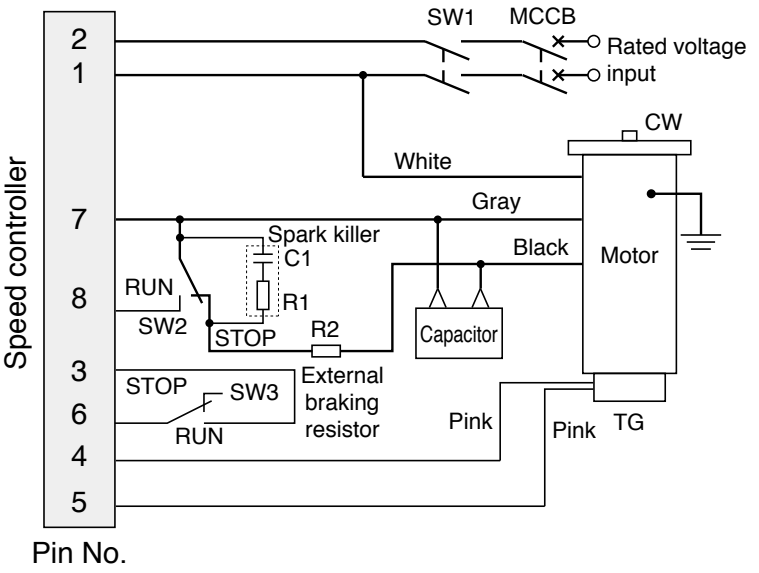


- <Precautions>**
1. To change rotating direction of induction motor:
Provide a motor halt period. Switch over SW2 after complete stop of the motor.
 2. To change rotating direction of reversible motor:
A motor halt period is not necessary. Switch over SW2 while keeping SW1 turned ON. When configuring SW2 with relay contacts, use a relay having large gap between contacts (e.g. HL relay from Panasonic) to prevent malfunction due to short-circuited capacitor.
 3. For motors for cooling fan and motors with thermal protector, also refer to page C-12.
 4. When using independent relay contacts for SW2 to change over normal/reverse, interlock both contacts so that they will not close simultaneously.
 5. The spark killer consisting of R1 and C1 must be used to protect the relay contacts.

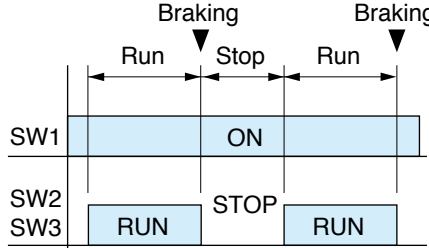
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

3 Unidirectional rotation and electric brake

25 W or smaller

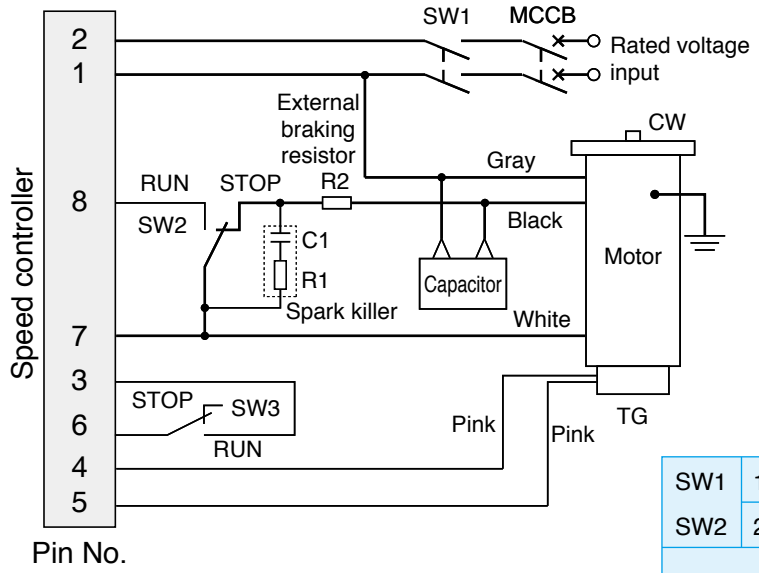


• Connection according to this wiring diagram causes the motor to rotate clockwise when viewed from the motor shaft end. To run the motor counterclockwise, interchange the connecting point of black and gray leads.



SW1 : Power switch
SW2 : RUN/STOP switch
SW3 : Brake start switch

40 W or larger



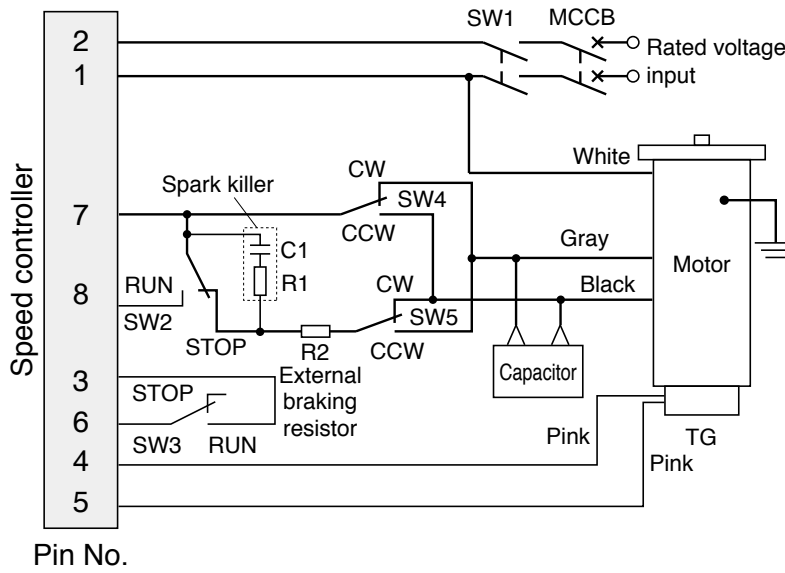
| | | |
|------------------------------|---------------------|------------------------|
| SW1 | 100 V supply system | 5 A or more at 125 VAC |
| SW2 | 200 V supply system | 5 A or more at 250 VAC |
| SW3 | DC10 V 10 mA | |
| Spark killer R1+C1 | | DV0P008A (option) |
| External braking resistor R2 | | DV0P003 (option) |

<Precautions>

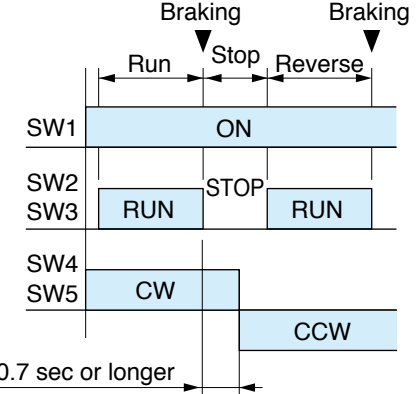
- When SW2 and SW3 are switched from RUN to STOP, electric braking is applied for approx. 0.5 sec, and the motor stops instantly. Difference in switching time between SW2 and SW3 must be 0.1 sec or shorter. If SW2 (SW3) is in RUN position while SW3 (SW2) is in STOP, abnormal operation occurs (full speed rotation for a short time) and motor temperature rises excessively.
- The number of start/stop operations must be 6 times/min or less.
- For motors for cooling fan and motors with thermal protector, also refer to page C-12.
- The spark killer consisting of R1 and C1 must be used to protect the relay contacts.
- R2 limits flow of discharging current upon short-circuiting of the capacitor during braking.

4 Normal/reverse rotation and electric brake

25 W or smaller

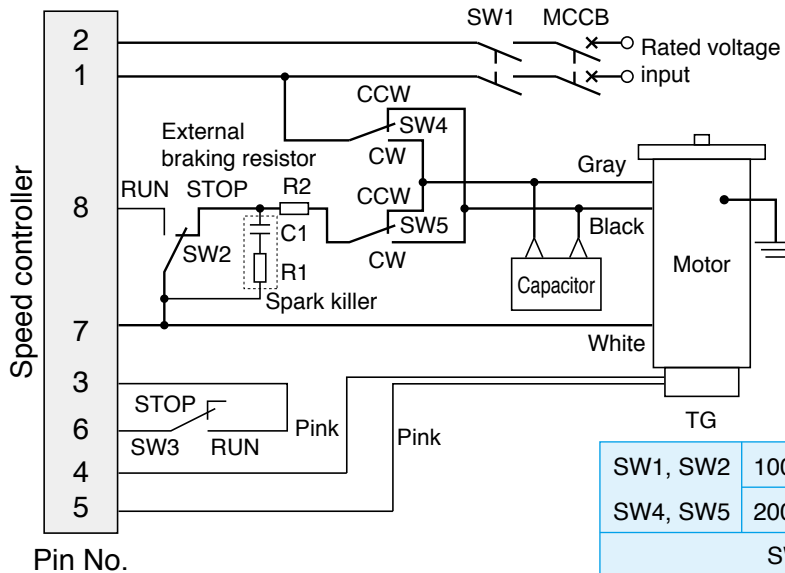


| Rotating direction viewed from shaft end | |
|--|------------------|
| CW | Clockwise |
| CCW | Counterclockwise |



SW1 : Power switch
SW2 : RUN/STOP switch
SW3 : Braking start switch
SW4 : Normal/reverse selector switch

40 W or larger

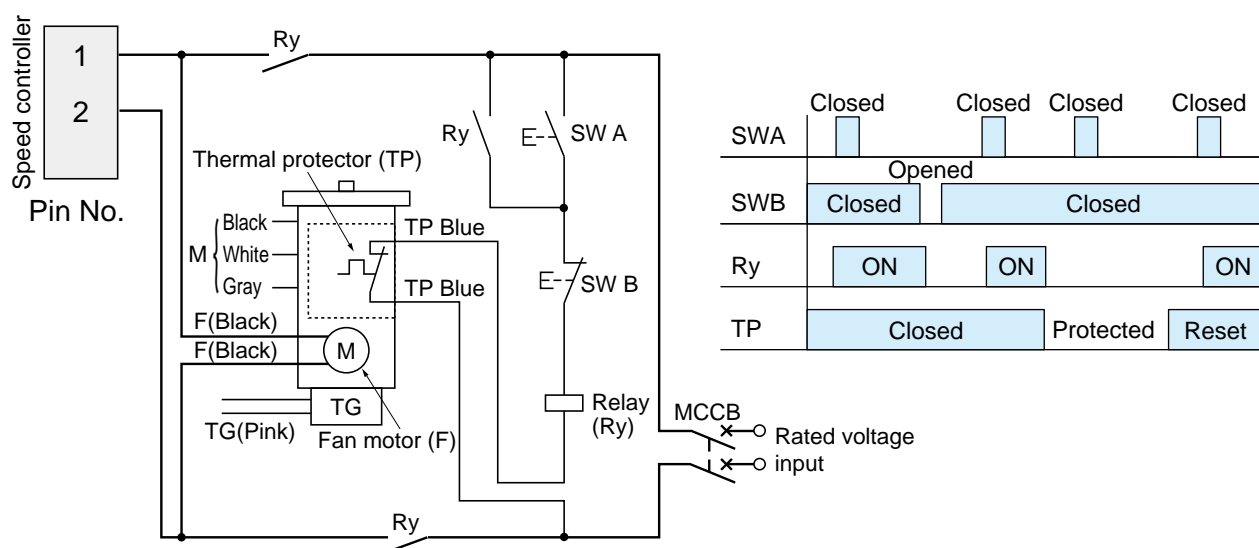


| | | |
|------------------------------|---------------------|------------------------|
| SW1, SW2 | 100 V supply system | 5 A or more at 125 VAC |
| SW4, SW5 | 200 V supply system | 5 A or more at 250 VAC |
| SW3 | DC10 V 10m A | |
| Spark killer R1+C1 | | DV0P008A (option) |
| External braking resistor R2 | | DV0P003 (option) |

<Precautions>

- When SW2 and SW3 are switched from RUN to STOP, electric braking is applied for approx. 0.5 sec, and the motor stops instantly. (Do not operate SW4 and SW5 until the motor stops.) Difference in switching time between SW2 and SW3 must be 0.1 sec or smaller. If SW2 (SW3) is in RUN position while SW3 (SW2) is in STOP, abnormal operation occurs (full speed rotation for a short time) and motor temperature rises excessively.
- Do not change the motor rotating direction (SW4, SW5) while the motor is running.
- The number of start/stop operations must be 6 times/min or less.
- For motors for cooling fan and motors with thermal protector, also refer to page C-12.
- The spark killer consisting of R1 and C1 must be used to protect the relay contacts.
- R2 limits flow of discharging current upon short-circuiting of the capacitor during braking.

5 Wiring of cooling fan motor (F) or motor with thermal protector (TP)



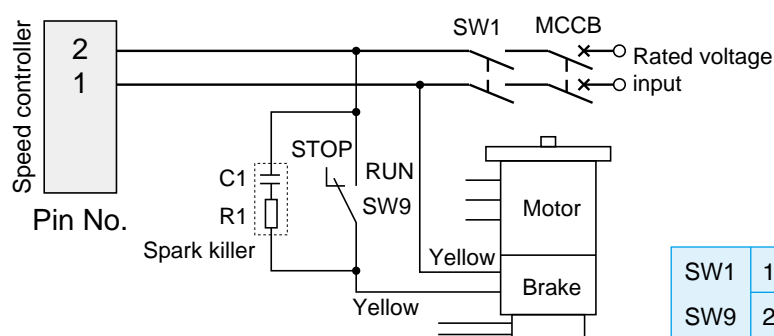
| | | |
|-------------|---------------------|--------------------------------|
| SW A | | Momentary N.O. contact |
| SW B | | Momentary N.C. contact |
| Relay Ry | 100 V supply system | 125 VAC 5 A or more 3a contact |
| | 200 V supply system | 250 VAC 5 A or more 3a contact |

<Precautions>

1. The thermal protector (TP) is an automatic reset type. To prevent hazards caused by restarting, connect the TP as shown above. Don't connect TP directly to the power supply.
2. Once the TP operates, cooling period is required before the operation can restart.
3. Connect the cooling fan motor (F) across pins 1 and 2 on the power terminal.
4. Motor (M) and tachometer generator (TG) should be connected according to corresponding wiring diagram shown on page C-9 to C-11.

6 Wiring to electromagnetic brake (40 W or smaller)

- Variable speed motor with electromagnetic brake should be wired as shown below.



| | | |
|--------------------|---------------------|------------------------|
| SW1 | 100 V supply system | 5 A or more at 125 VAC |
| SW9 | 200 V supply system | 5 A or more at 250 VAC |
| Spark killer R1+C1 | | DV0P008A (option) |

<Precautions>

1. Operate SW9 simultaneously with RUN/STOP switching of other switches, if any.
Placing other switch to RUN position while the brake is active (SW9 at STOP position) causes the motor to generate heat.
2. For remaining wirings, refer to corresponding wiring diagram.

* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.