Product designation

• Separate type speed controller

• MGSD type

MGSD B — 2 —

Output Input power

1 : Single phase 100 to 120 VAC
2 : Single phase 200 to 240 VAC

A	100 V	3 to 40 W
B		60 to 90 W
	200 V	6 to 90 W

Series

• EX type

DV 11 — 31

Voltage Code

11 : 100 V
12 : 200 V

Speed controller

Code	Type	Compatible motor output	
		100 V	200 V
31	EX	3 to 10 W	6 to 20 W
32		15 to 40 W	–
34		60 to 90 W	25 to 90 W

	Size	Output (W)	Motor		Voltage (V)	Speed controller			
			Certified	Part No.		MGSD type	EX type	SD48 type	EX48 type
Variable speed / reversible type	60 mm sq. (2.36 inch sq.)	3	—	M6RX4GV4L	100	MGSDA1 ★	DV1131	DVSD48AL	DVEX48AL
		6	—	M6RX6GV4L	100	MGSDA1 ★	DV1131	DVSD48AL	DVEX48AL
			—	M6RX6GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
			○	M6RX6GV4LG(A)	100	MGSDA1 ★	—	—	—
			○	M6RX6GV4DG(A)	110/115	MGSDA1 ★	—	—	—
			○	M6RX6GV4YG(A)	200	MGSDB2 ★	—	—	—
			○	M6RX6GV4GG(A)	220/230	MGSDB2 ★	—	—	—
	70 mm sq. (2.76 inch sq.)	10	—	M7RX10GV4L	100	MGSDA1 ★	DV1131	DVSD48AL	DVEX48AL
			—	M7RX10GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
		15	—	M7RX15GV4L	100	MGSDA1 ★	DV1132	DVSD48AL	DVEX48AL
			—	M7RX15GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
			○	M7RX15GV4LG(A)	100	MGSDA1 ★	—	—	—
			○	M7RX15GV4DG(A)	110/115	MGSDA1 ★	—	—	—
			○	M7RX15GV4YG(A)	200	MGSDB2 ★	—	—	—
			○	M7RX15GV4GG(A)	220/230	MGSDB2 ★	—	—	—
	80 mm sq. (3.15 inch sq.)	15	—	M8RX20GV4L	100	MGSDA1 ★	DV1132	DVSD48AL	DVEX48AL
			—	M8RX20GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
		25	—	M8RX25GV4L	100	MGSDA1 ★	DV1132	DVSD48BL	DVEX48BL
			—	M8RX25GV4Y	200	MGSDB2 ★	DV1234	DVSD48BY	DVEX48BY
			○	M8RX25GV4LG(A)	100	MGSDA1 ★	—	—	—
			○	M8RX25GV4DG(A)	110/115	MGSDA1 ★	—	—	—
			○	M8RX25GV4YG(A)	200	MGSDB2 ★	—	—	—
			○	M8RX25GV4GG(A)	220/230	MGSDB2 ★	—	—	—
	90 mm sq. (3.54 inch sq.)	40	—	M9RX40GV4L	100	MGSDA1 ★	DV1132	DVSD48BL	DVEX48BL
			—	M9RX40GV4Y	200	MGSDB2 ★	DV1234	DVSD48BY	DVEX48BY
			○	M9RX40GV4LG(A)	100	MGSDA1 ★	—	—	—
			○	M9RX40GV4DG(A)	110/115	MGSDA1 ★	—	—	—
			○	M9RX40GV4YG(A)	200	MGSDB2 ★	—	—	—
			○	M9RX40GV4GG(A)	220/230	MGSDB2 ★	—	—	—
		60	—	M9RZ60GV4L	100	MGSDB1 ★	DV1134	DVSD48CL	DVEX48CL
			—	M9RZ60GV4Y	200	MGSDB2 ★	DV1234	DVSD48CY	DVEX48CY
			○	M9RZ60GV4LG(A)	100	MGSDB1 ★	—	—	—
			○	M9RZ60GV4DG(A)	110/115	MGSDB1 ★	—	—	—
			○	M9RZ60GV4YG(A)	200	MGSDB2 ★	—	—	—
			○	M9RZ60GV4GG(A)	220/230	MGSDB2 ★	—	—	—
		90	—	M9RZ90GV4L	100	MGSDB1 ★	DV1134	DVSD48CL	DVEX48CL
			—	M9RZ90GV4Y	200	MGSDB2 ★	DV1234	DVSD48CY	DVEX48CY
			○	M9RZ90GV4LG(A)	100	MGSDB1 ★	—	—	—
			○	M9RZ90GV4DG(A)	110/115	MGSDB1 ★	—	—	—
			○	M9RZ90GV4YG(A)	200	MGSDB2 ★	—	—	—
			○	M9RZ90GV4GG(A)	220/230	MGSDB2 ★	—	—	—
Brushless speed control type with electromagnetic brake	60 mm sq. (2.36 inch sq.)	6	—	M6RX6GBV4L	100	MGSDA1 ★	DV1131	DVSD48AL	DVEX48AL
			—	M6RX6GBV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
	70 mm sq. (2.76 inch sq.)	15	—	M7RX15GBV4L	100	MGSDA1 ★	DV1132	DVSD48AL	DVEX48AL
			—	M7RX15GBV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
	80 mm sq. (3.15 inch sq.)	25	—	M8RX25GBV4L	100	MGSDA1 ★	DV1132	DVSD48BL	DVEX48BL
			—	M8RX25GBV4Y	200	MGSDB2 ★	DV1234	DVSD48BY	DVEX48BY
	90 mm sq. (3.54 inch sq.)	40	—	M9RX40GBV4L	100	MGSDA1 ★	DV1132	DVSD48BL	DVEX48BL
			—	M9RX40GBV4Y	200	MGSDB2 ★	DV1234	DVSD48BY	DVEX48BY

Possible combination of speed controller and motor

	Size	Output (W)	Motor		Voltage (V)	Speed controller			
			Certified	Part No.		MGSD type	EX type	SD48 type	EX48 type
Variable speed induction motor	60 mm sq. (2.38 inch sq.)	3	—	M61X3GV4L	100	MGSDA1 ★	DV1131	DVSD48AL	DVEX48AL
		6	—	M61X6GV4L	100	MGSDA1 ★	DV1131	DVSD48AL	DVEX48AL
			—	M61X6GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
			✪	M61X6GV4LG(A)	100	MGSDA1 ★	—	—	—
			✪	M61X6GV4DG(A)	110/115	MGSDA1 ★	—	—	—
			✪	M61X6GV4YG(A)	200	MGSDB2 ★	—	—	—
			✪	M61X6GV4GG(A)	220/230	MGSDB2 ★	—	—	—
	70 mm sq. (2.78 inch sq.)	10	—	M71X10GV4L	100	MGSDA1 ★	DV1131	DVSD48AL	DVEX48AL
			—	M71X10GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
		15	—	M71X15GV4L	100	MGSDA1 ★	DV1132	DVSD48AL	DVEX48AL
			—	M71X15GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
			✪	M71X15GV4LG(A)	100	MGSDA1 ★	—	—	—
			✪	M71X15GV4DG(A)	110/115	MGSDA1 ★	—	—	—
			✪	M71X15GV4YG(A)	200	MGSDB2 ★	—	—	—
			✪	M71X15GV4GG(A)	220/230	MGSDB2 ★	—	—	—
	80 mm sq. (3.15 inch sq.)	15	—	M81X15GV4L	100	MGSDA1 ★	DV1132	DVSD48AL	DVEX48AL
			—	M81X15GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
		25	—	M81X25GV4L	100	MGSDA1 ★	DV1132	DVSD48BL	DVEX48BL
			—	M81X25GV4Y	200	MGSDB2 ★	DV1234	DVSD48BY	DVEX48BY
			✪	M81X25GV4LG(A)	100	MGSDA1 ★	—	—	—
			✪	M81X25GV4DG(A)	110/115	MGSDA1 ★	—	—	—
			✪	M81X25GV4YG(A)	200	MGSDB2 ★	—	—	—
			✪	M81X25GV4GG(A)	220/230	MGSDB2 ★	—	—	—
	90 mm sq. (3.54 inch sq.)	40	—	M91X40GV4L	100	MGSDA1 ★	DV1132	DVSD48BL	DVEX48BL
			—	M91X40GV4Y	200	MGSDB2 ★	DV1234	DVSD48BY	DVEX48BY
			✪	M91X40GV4LG(A)	100	MGSDA1 ★	—	—	—
			✪	M91X40GV4DG(A)	110/115	MGSDA1 ★	—	—	—
			✪	M91X40GV4YG(A)	200	MGSDB2 ★	—	—	—
			✪	M91X40GV4GG(A)	220/230	MGSDB2 ★	—	—	—
		60	—	M91Z60GV4L	100	MGSDB1 ★	DV1134	DVSD48CL	DVEX48CL
			—	M91Z60GV4Y	200	MGSDB2 ★	DV1234	DVSD48CY	DVEX48CY
			✪	M91Z60GV4LG(A)	100	MGSDB1 ★	—	—	—
			✪	M91Z60GV4DG(A)	110/115	MGSDB1 ★	—	—	—
			✪	M91Z60GV4YG(A)	200	MGSDB2 ★	—	—	—
			✪	M91Z60GV4GG(A)	220/230	MGSDB2 ★	—	—	—
		90	—	M91Z90GV4L	100	MGSDB1 ★	DV1134	DVSD48CL	DVEX48CL
			—	M91Z90GV4Y	200	MGSDB2 ★	DV1234	DVSD48CY	DVEX48CY
			✪	M91Z90GV4LG(A)	100	MGSDB1 ★	—	—	—
			✪	M91Z90GV4DG(A)	110/115	MGSDB1 ★	—	—	—
			✪	M91Z90GV4YG(A)	200	MGSDB2 ★	—	—	—
			✪	M91Z90GV4GG(A)	220/230	MGSDB2 ★	—	—	—

Speed controller

MGSD type

EX type

• 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 Matsushita Electric Works, Ltd.) for panel board can be used.
- Compliant with international standards:

<EX type>

- Soft-start/soft-down
  Time can be adjusted up to 5 seconds.
  Excellent soft-start/soft-down linearity.
- Selectable response
  High-stable and high-response can be selected with the internal changeover switch to meet the characteristic of the application.
  (Factory setting: high-response)
- Excellent instantaneous stop capability
- Parallel operation
  Two or more motors can be controlled from a single control knob.
- Can link with various control systems
  Can control motor(s) in conjunction with different controlling systems such as sequencer. The voltage signal can also be used as control signal.

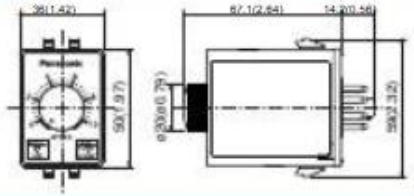
• Standard specification (MGSD type)

	MGSDA1	MGSDB1	MGSDB2
Supply voltage	Single phase 100 to 120 VAC		Single phase 200 to 240 VAC
Supply voltage tolerance	±10% (at rated voltage)		
Power frequency	50/60 Hz		
Rated input current	1.0 A	2.0 A	1.0 A
Compatible motor output	3 to 40 W	60 to 90 W	6 to 90 W
Speed control range	50Hz : 90 to 1400 min^{-1} 60Hz : 90 to 1700 min^{-1}		
Speed regulation (against load)	5% : 1000 min^{-1}, 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 to 3 times the rated current.		
Parallel operation	Not applicable		
Product weight	80 g		

*1 Electric braking has no mechanical holding mechanism.

• Outline drawing

MGSD type



Socket is not supplied with the product.
Use octal pin socket (DV0P4560), option, or Socket (AW68102) recommended by Matsushita Electric Works, Ltd.

Unit: mm (inch)

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

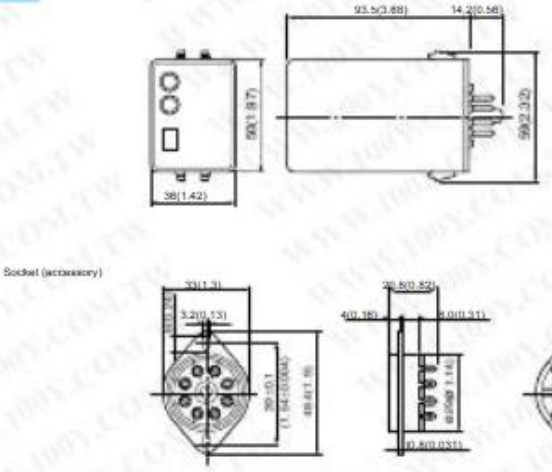
• Standard specification (EX type)

Characteristic \ Part No.	EX type				
	DV1131	DV1132	DV1134	DV1231	DV1234
Rated voltage	Single phase 100 VAC			Single phase 200 VAC	
Operating voltage range	±10% (at rated voltage)				
Power frequency	50/60 Hz				
Rated current	0.4 A	1 A	2.0 A	0.3 A	1 A
Compatible motor output *1	3 to 10 W	15 to 40 W	60 to 0 W	6 to 20 W	25 to 90 W
Operation change	High-response			High-stability	
Speed control range	90 to 1400 min^{-1} / 90 to 1700 min^{-1}			90 to 1400 min^{-1} / 90 to 1700 min^{-1}	
Speed variation	5% or more			3% or less	
Speed setting	From external controller, e.g. external speed changer *3				
Braking*2	Active while electric braking current is flowing.				
Electric braking time	5 sec typ. The braking current will be turned off before the 5-second limit as the motor stops. (Braking current is 2 to 3 times the rated current.)				
Parallel operation	Enabled				
Soft-start/soft-down capability	Available (typically up to 5 sec (0 to max. speed))				
Operating temperature range	–10 to 50°C				
Storage temperature	–20 to 60°C				

*1 Applicable to Matsushita compact speed variable geared motors. Select motors with applicable output.
*2 Electric braking has no mechanical brake holding mechanism.
To provide brake holding, use our C&B motor or variable speed motor containing electromagnetic brake.
When braking a load having excessively high inertia, durability and life expectancy of motor shaft and gear should be taken into consideration. Use the motor within the allowable inertia.
*3 EX type is supplied with the external speed changer.

• Outline drawing

EX type



Unit: mm (inch)

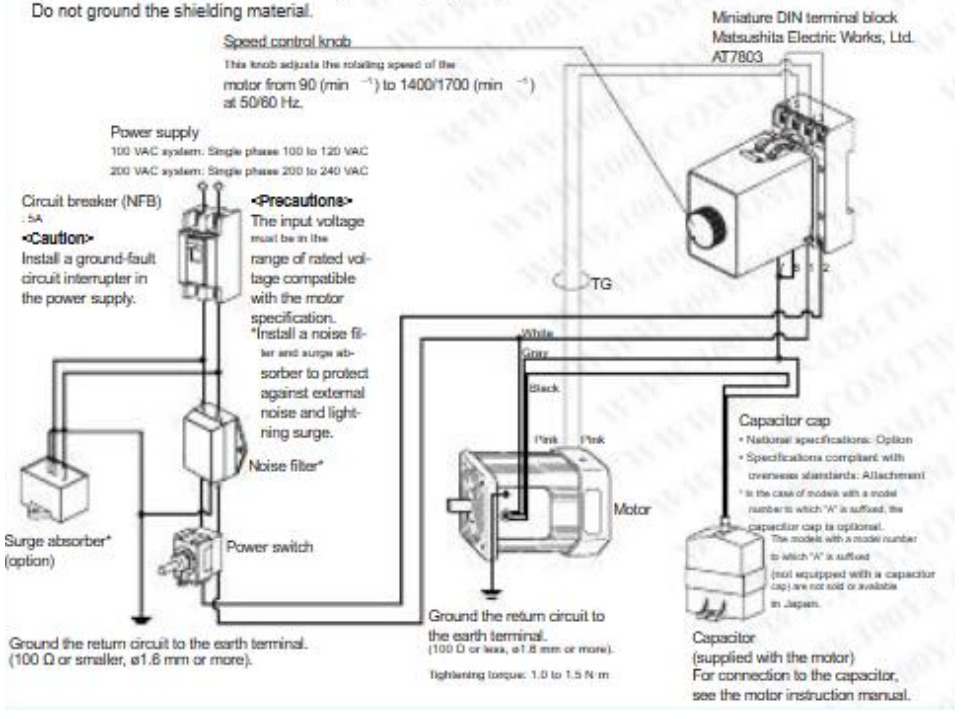
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Connection diagram list

1 Wiring diagram (for unidirectional rotation)

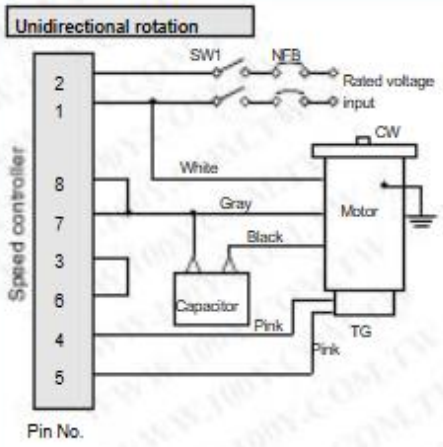
- The motor revolving speed can be set from the speed setting knob on the panel.
- The thick continuous lines represent main circuit. Use conductor of size 0.75 mm^2 or larger for the main line.
- The thin continuous lines represent signal circuit. Use conductor of size 0.3 mm^2 or larger in the signal circuit.

When the distance from the tachometer generator (TG) is long, use shielded twisted pair cable.
Do not ground the shielding material.



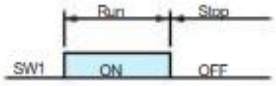
2 Speed change only

Unidirectional rotation

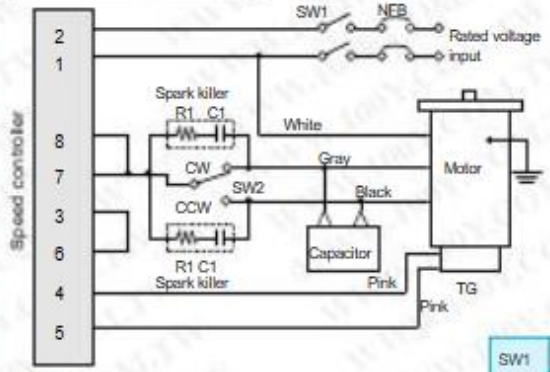


Pin No.

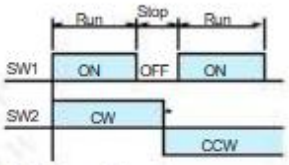
Rotating direction viewed from shaft end	
CW	Clockwise
CCW	Counterclockwise



Normal/reverse rotation



Pin No.



SW1 : Power switch
SW2 : Normal/reverse selector switch

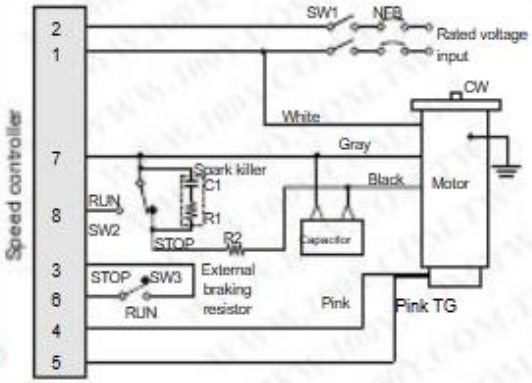
SW1	100 V supply system	5 A or more at 125 VAC
SW2	200 V supply system	5 A or more at 250 VAC
Spark killer R1+C1		DV0P008 (option)

<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. HG/HP relay from Matsushita Electric Works, Ltd.) 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.

3 Unidirectional rotation and electric brake

25 W or smaller

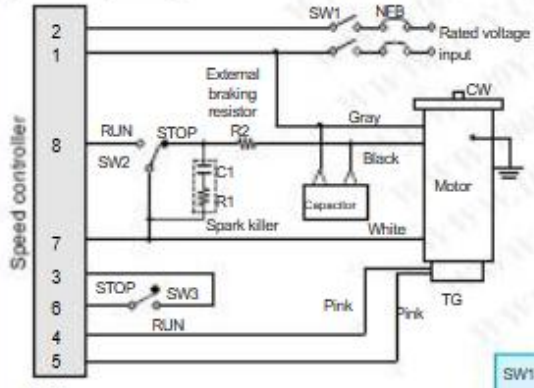


Pin No.

- 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



Pin No.

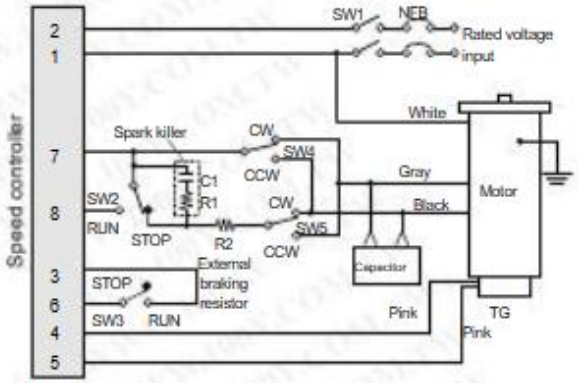
SW1	100 V supply system	5 A or more at 125 VAC
SW2	200 V supply system	5 A or more at 250 VAC
SW3		DC10 V 10 mA
Spark killer R1+C1		DV0P008 (option)
External braking resistor R2		DV0P003 (option)

<Precautions>

1. 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.
2. The number of start/stop operations must be 6/min. or less.
3. For motors for cooling fan and motors with thermal protector, also refer to page C-12.
4. The spark killer consisting of R1 and C1 must be used to protect the relay contacts.
5. R2 limits flow of discharging current upon short-circuiting of the capacitor during braking.

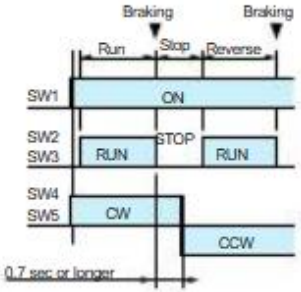
4 Normal/reverse rotation and electric brake

25 W or smaller



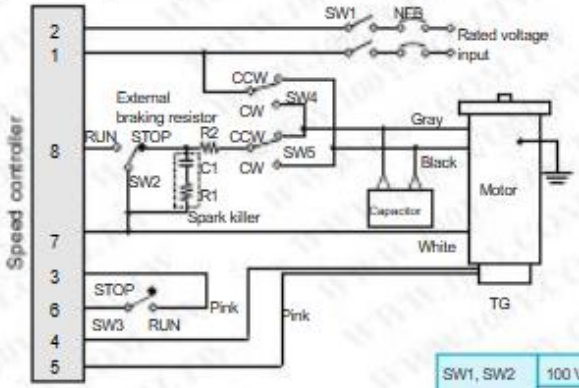
Pin No.

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



Pin No.

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		DV0P008 (option)
External braking resistor R2		DV0P003 (option)

<Precautions>

1. 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.
2. Do not change the motor rotating direction (SW4, SW5) while the motor is running.
3. The number of start/stop operations must be 6/min. or less.
4. For motors for cooling fan and motors with thermal protector, also refer to page C-12.
5. The spark killer consisting of R1 and C1 must be used to protect the relay contacts.