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 Panasonic) for panel board can be used.
- Compliant with international standards: cULus CE

<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 PLC (Programmable Logic Controller). The voltage signal can also be used as control signal.

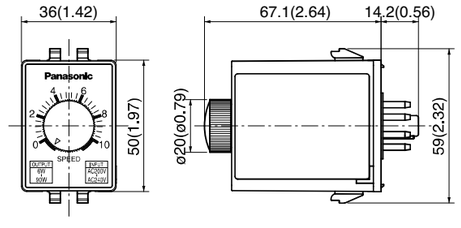
• Standard specification (MGSD type)

	MGSDA1	MGSDB1	MGSDB2
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	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

MGSD type



Socket is not supplied with the product.
Use octal pin socket (DV0P4560), option, or Socket (AW68102) recommended by Panasonic Industrial Devices SUNX Co.,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.

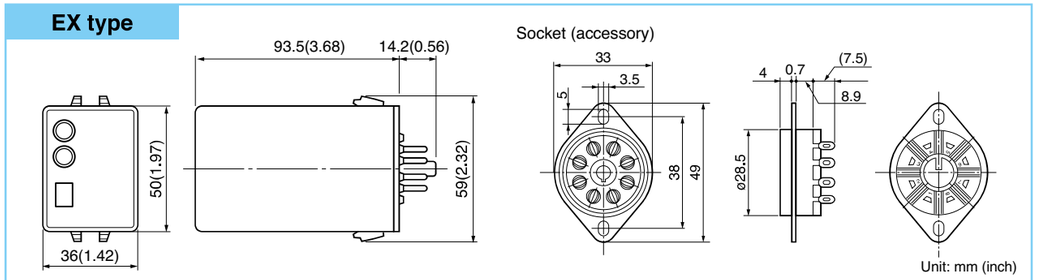
• Standard specification (EX type)

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 Hz/60 Hz				
Rated current	0.4 A	1 A	2.0 A	0.3 A	1 A
Compatible motor output *1	3 W to 10 W	15 W to 40 W	60 W to 90 W	6 W to 20 W	25 W to 90 W
Operation change	High-response			High-stability	
Speed control range	90 r/min to 1400 r/min / 90 r/min to 1700 r/min			50 r/min to 1400 r/min / 50 r/min to 1700 r/min	
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-sceond 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 ˚C to 50 ˚C				
Storage temperature	–20 ˚C to 60 ˚C				

*1 Applicable to Panasonic 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

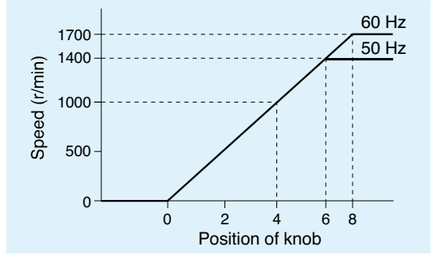


Unit: mm (inch)

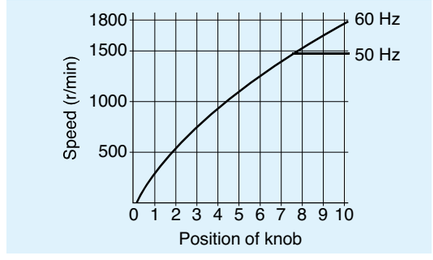
• Setting of Speed

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 tacho-generator.)

• MGSD type



• EX type



* 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 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.

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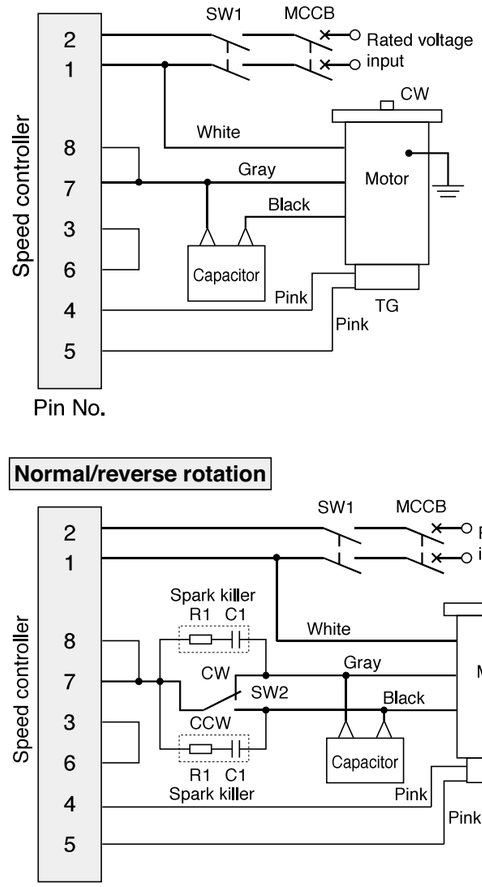
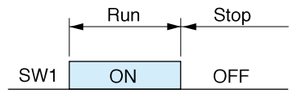
2 Speed change only

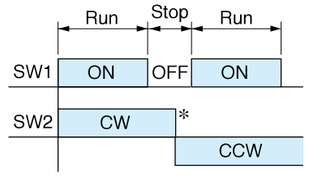
Unidirectional rotation



Rotating direction viewed from shaft end	
CW	Clockwise
CCW	Counterclockwise



Normal/reverse rotation



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		DV0P008A (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. 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.

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