

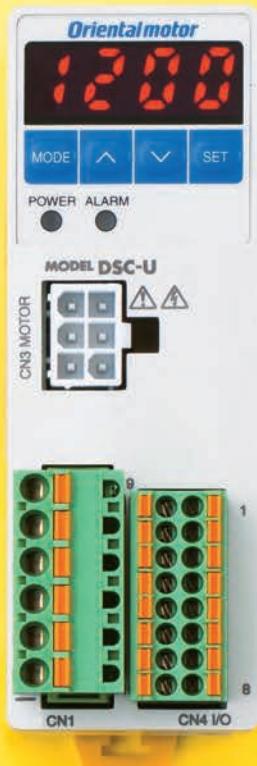
Orientalmotor

Speed Control Motor and Controller Package

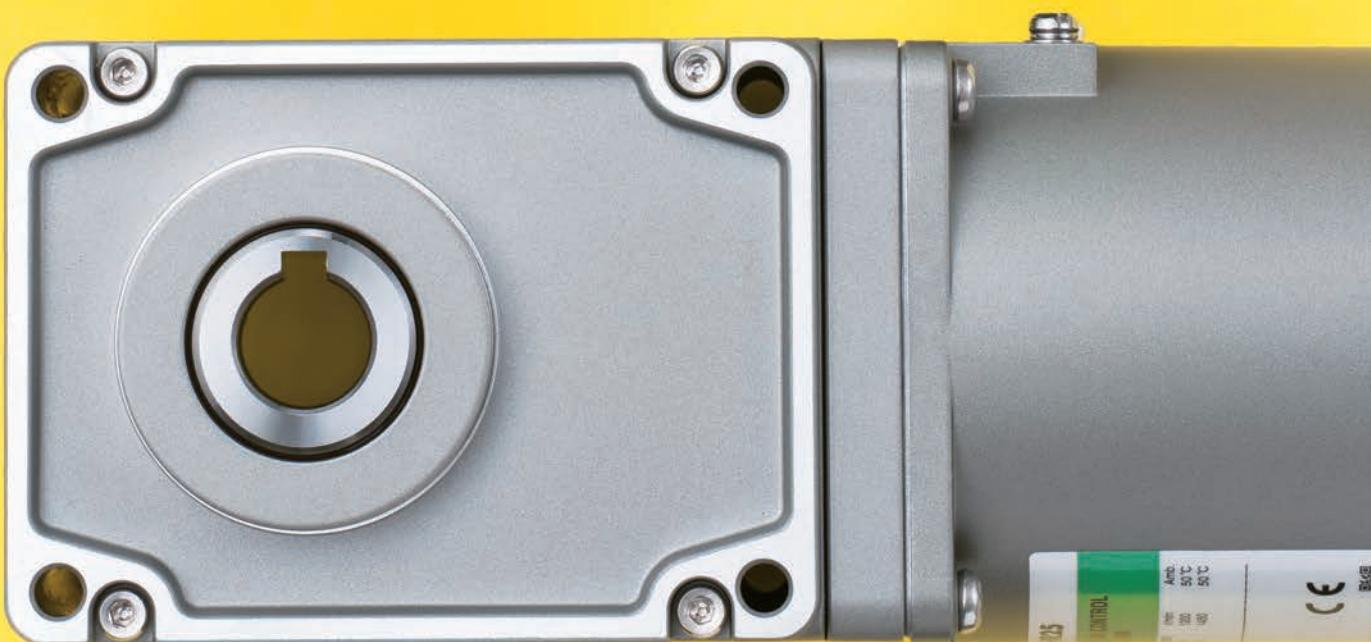
DSC Series



Entry Model of Speed Control Motors



Actual size



36 Taunton Drive Cheltenham VIC 3192
info@idyna.com.au 03 9585 2739
www.industrialdynamics.com.au

High performance without adjustment. Entry model of speed control motors, affordable and compact in size.

Oriental Motor will meet your needs: To shift gears without taking much time to make installation and setting.

For the speed control of an AC motor, first consider this unit.

Speed Control Motor and Controller Package

DSC Series

Recommendation

- Speed control with an inexpensive system configuration
- Speed control by vertical driving (With electromagnetic brake)
- 4-speed transmission setting
- Usage requiring no emphasis on high-speed performance
- Speed stability
- Compact equipment



[Overview of DSC Series]

- Speed Control Range
50 Hz : 90° to 1400 r/min
60 Hz : 90° to 1600 r/min
*For vertical driving, 300 r/min
- 4-speed setting available using the control panel of the main body
- Enhanced operational functions
Multi-speed; Instantaneous bi-directional operation; Instantaneous stop
Acceleration and Deceleration/Test operation
External speed input (Analog volume, voltage)/Test operation/
Parallel operation of up to 20 units/Vertical driving (with electromagnetic
brake)

- Speed regulation ±1% (Reference value)
- Monitoring function
Speed (motor shaft, gear output shaft, conveyor speed display)/
Alarm/Warning, I/O Monitor
- High torque Using motor with high-intensity gear (KII Series)
- Affordable unit of speed controller, motor and gear head



D-loop uses the AC motor for speed control and the speed controller implementing the technology unique to ORIENTAL MOTOR. D-loop provides high reliability by the closed loop control and compactness of the speed controller by the digitized phase control circuit.

Lineup

Package includes of Motor, speed controller and connecting cables (available with or without) are provided in sets.

Standard Type/Right-Angle Shaft Faced Type

For saving of installation space and cost reduction

Maximum Permissible Torque: 70 N·m
Output Power: 25 W, 40 W, 90 W



Hollow Shaft Type



Solid Shaft (L shaft) Type



Solid Shaft (R shaft) Type

● For more detail, kindly contact with Oriental Motor Sales office.

Quick and Easy Setting

Connection



Easy wiring by using the screwless connectors between the motor and the controller.

Operation Speed Setting/ Test Operation



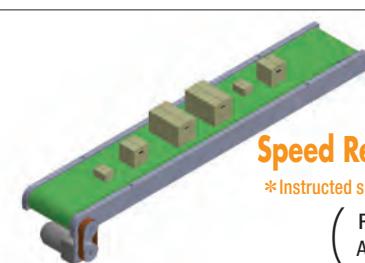
Direct setting and test operation is available.



- Gear shaft speed: r/min
- Conveyor speed: m/min

Extensive operation functions are provided. Work type can be immediately changed by switching the data through the I/O. Convenient for monitoring the actual speed.

High performance with the instructed speed

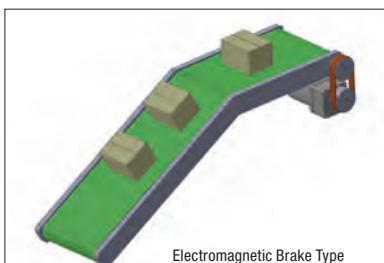


Speed Regulation (For load) $\pm 1\%$ * (Reference value)

*Instructed speed is 1000 r/min under the permissible torque

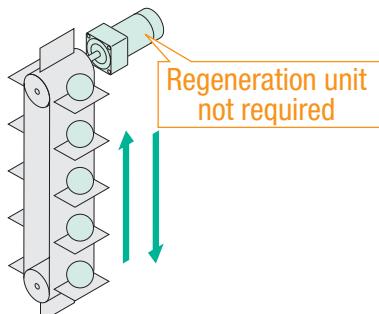
(Reference value of the inverter
Around between -6 and -10%)

For usage with variable loads.



Speed maintain stable even with a tilted conveyor or vertical driving.

Vertical driving available with an electromagnetic brake



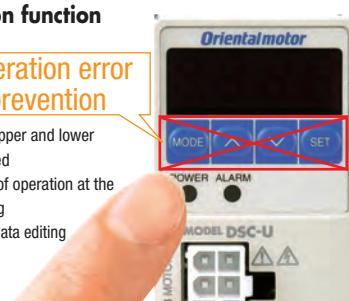
For the electromagnetic brake type, speed control is possible even if the unit is used for vertical driving or a tilted conveyor.

Useful function in the field

Operation error prevention function

Operation error prevention

- Setting of upper and lower limit of speed
- Prohibition of operation at the initial setting
- Locking of data editing



This limits the data that can be changed in the filed or prevents unintended operations immediately after power-up.

Various monitor functions Alarm/Warning functions



I/O monitoring and alarm/warning functions identify the cause of troubles.

Affordable Entry Models of Speed Control Motor

For price and leadtime, kindly contact with Oriental Motor sales office.

Standard Type/Parallel Shaft Combination Type

Maximum Permissible Torque: 40 N·m

Output Power: 6 W to 90 W

Power Source: Single-Phase 110/115 VAC

Single-Phase 220/230 VAC



Standard Type/Round Shaft Type

Rated Torque: 0.73 N·m

Output Power: 6 W to 90 W

Power Source: Single-Phase 110/115 VAC

Single-Phase 220/230 VAC



Electromagnetic Brake Type/Parallel Shaft Combination Type

The electromagnetic brake enables position keeping and vertical speed control.

Maximum Permissible Torque: 40 N·m

Output Power: 6 W to 90 W

Power Source: Single-Phase 110/115 VAC

Single-Phase 220/230 VAC



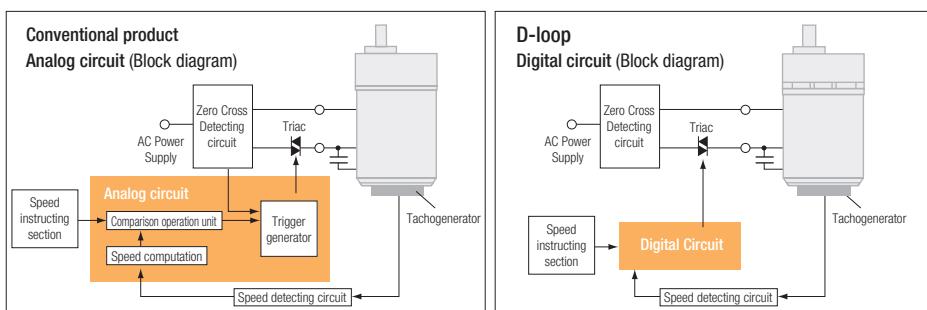
Features of Speed Controller

Features	
Configuration	
Lineup	Standard Type/Parallel Shaft Combination Type/Round Shaft Type
Specifications and Characteristics	
Dimensions	
Combination List	
Lineup	Electromagnetic Brake Type/Parallel Shaft Combination Type
Specifications and Characteristics	
Dimensions	
Combination List	Connection and Operation
Accessories	

Speed control by the closed loop control

The rate generator installed in the AC motor will monitor the rotation speed.

This speed controller controls the rotation speed kept at the set speed even if the load changes.

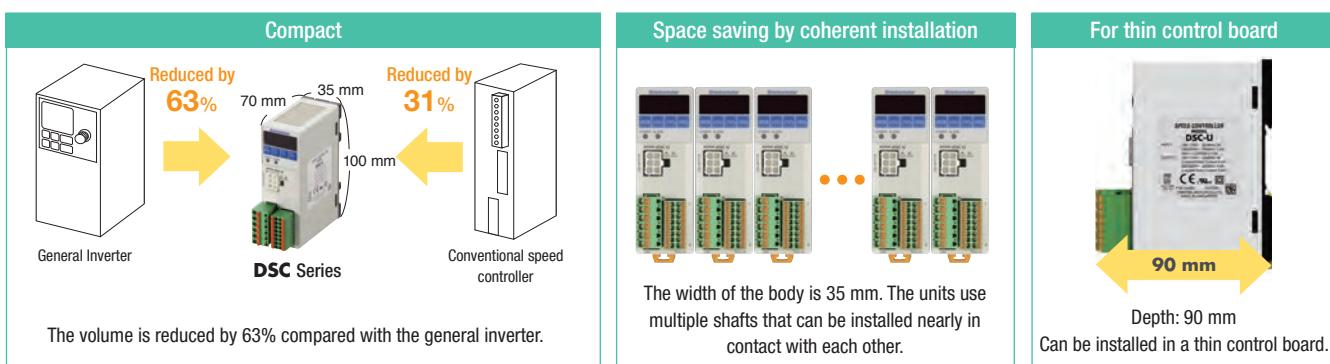


Digitization of circuit

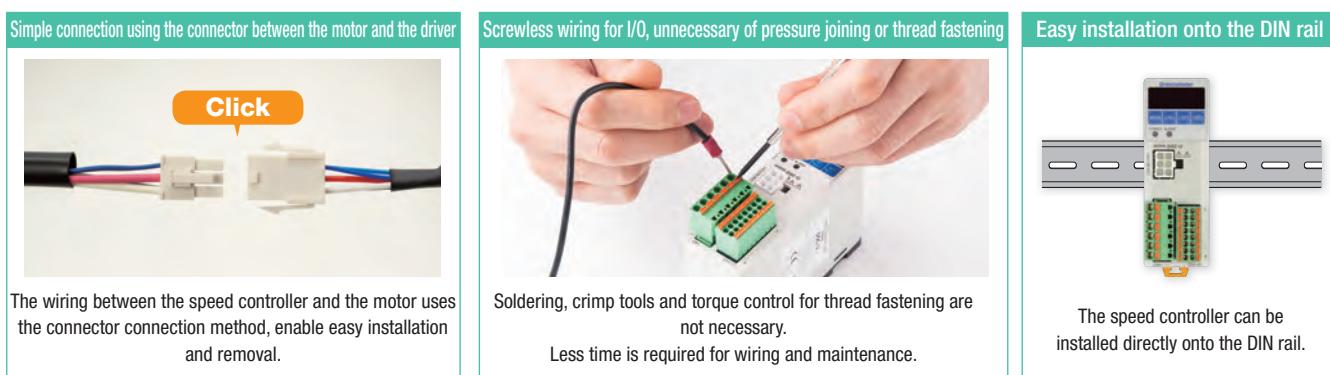
Most of the conventional analog circuits have been replaced with software, which are now run by the CPU. This has drastically reduced the number of circuit components and has produced the smallest circuit ever offered at low prices. In addition, by the digitization, the deviation between the speed command value and the speed detection value can become closer to zero, improving the speed variation from -5% to ±1% (reference)*.

*Instructed speed is 1000 r/min under the permissible torque

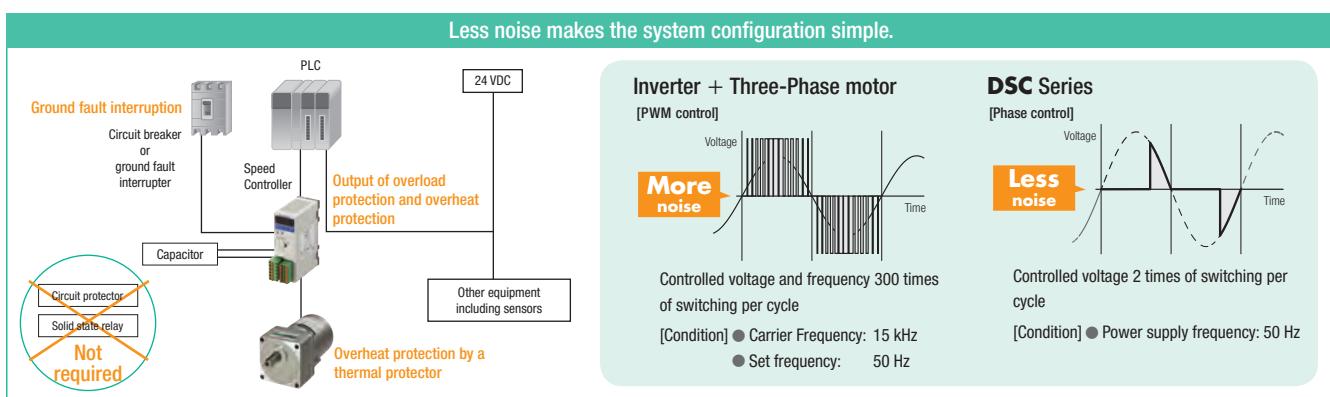
Space Saving



Easy Installation at Lower Costs

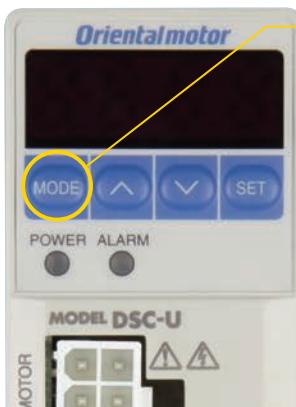


Low Noise, Less Time and Cost for Installing Peripherals



Extensive Functions in Compact Body

Direct display/input of speed and settings



Monitoring mode

Real-time monitoring of speed (motor, gear axis, conveyor speed); Monitoring of alarm, warning and I/O status

Data mode

Speed Setting

Parameter mode

I/O Allocation, Parameters Setting

Test Mode

Test operation available without data setting

- The operation lock can prevent wrong operations.

Reliability enhanced by alarm output

The closed loop control feedback the status of the motor to the controller in real time. If an error occurs, such as motor lock due to overloading, the unit output will trigger an alarm signal and stops the power supply to the motor.

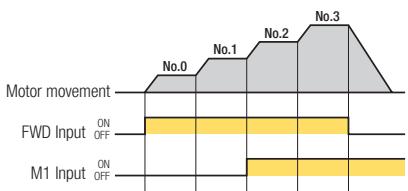


Alarm Contents

- Motor overheating
- Motor Lock
- Overspeed
- EEPROM (Saved data error)
- Prohibition of operation at the initial setting
- External Stop

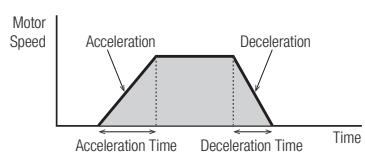
Main Functions

Speed Control (4-speed)



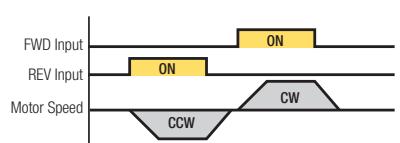
Four operation data can be set and switched among each other by I/O during operation.

Acceleration/Deceleration



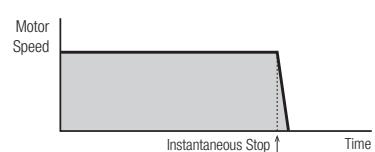
Makes the motor movement at start/stop smoother. Different acceleration/deceleration rates can be set for each of the 4-speed data.

Bi-directional Operation



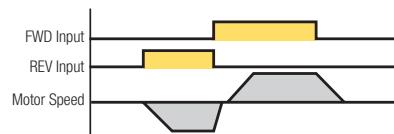
Performs the operation according to the command for rotation direction.

Instantaneous Stop



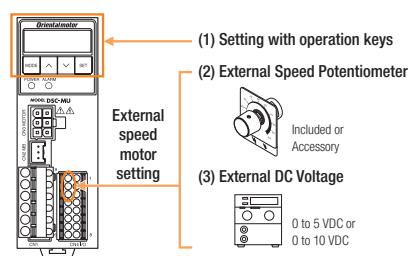
Stops the operating motor instantaneously. (Operation/stop in a short time is conditionally possible.)

Instantaneous bi-directional operation



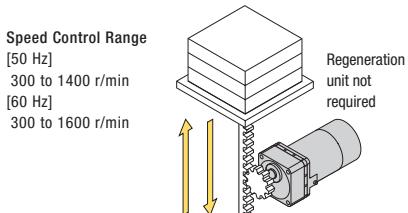
Switch instantaneously for rotation direction of the motor during operation. (Switching in a short time is conditionally possible.)

Settable External Speed



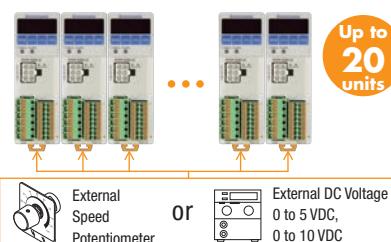
Other Functions

Vertical Driving (Electromagnetic brake type only)



The speed control in vertical driving is possible for deceleration control. (For details on the deceleration control and the driving condition on the deceleration control, → page 20.)

Parallel Operation (Up to 20 units)



For one external speed potentiometer, up to 20 units can be operated in parallel. The speed of each motor can be finely adjusted by changing the parameter of the controller.

Limitation of Rotation Speed Range



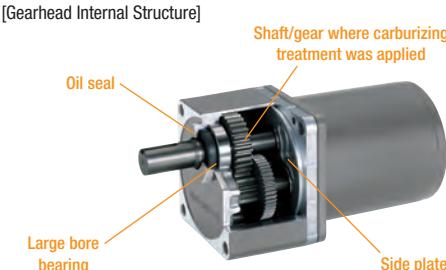
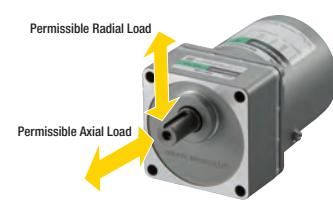
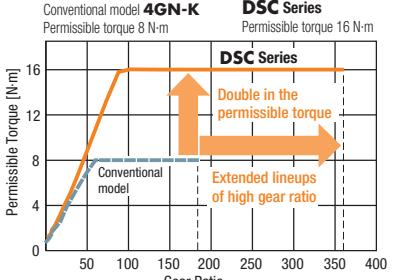
Speed range for speed setting can be limited in advance.

Motor Features

Gearhead with High Permissible Torque and High Strength

DSC Series adopts the motor gearhead with high permissible torque and high strength, which is used in the **KII** Series.

This gearhead uses our unique side plate, increasing the case rigidity. The gear is also strengthened by heat treatment (carburizing and quenching).

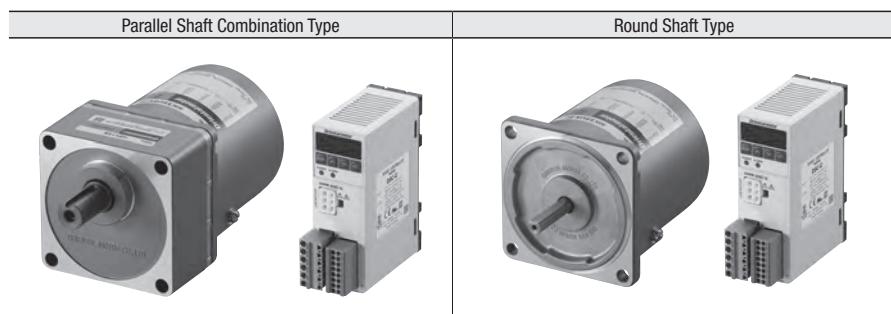
Features																					
System Configuration																					
Lineup																					
Standard Type/Parallel Shaft Combination Type/Round Shaft Type	<p>Parallel Shaft Combination Type</p>  <p>[Gearhead Internal Structure]</p> <p>Oil seal Large bore bearing Shaft/gear where carburizing treatment was applied Side plate</p>  <p>[For Gearhead with holding angle of 80 mm]</p> <p>Permissible Radial Load Permissible Axial Load</p> <p>Permissible Radial Load 450 N (10 mm from the tip of the output shaft) Permissible Radial Load 100 N</p>																				
Electromagnetic Brake Type/Parallel Shaft Combination Type	 <p>Conventional model 4GN-K Permissible torque 8 N·m</p> <p>DSC Series Permissible torque 16 N·m</p> <p>Double in the permissible torque Extended lineups of high gear ratio</p> <table border="1"> <caption>Data extracted from the graph</caption> <thead> <tr> <th>Gear Ratio</th> <th>Conventional model (4GN-K) [Nm]</th> <th>DSC Series [Nm]</th> </tr> </thead> <tbody> <tr> <td>50</td> <td>8</td> <td>8</td> </tr> <tr> <td>100</td> <td>8</td> <td>16</td> </tr> <tr> <td>200</td> <td>8</td> <td>16</td> </tr> <tr> <td>350</td> <td>8</td> <td>16</td> </tr> </tbody> </table>						Gear Ratio	Conventional model (4GN-K) [Nm]	DSC Series [Nm]	50	8	8	100	8	16	200	8	16	350	8	16
Gear Ratio	Conventional model (4GN-K) [Nm]	DSC Series [Nm]																			
50	8	8																			
100	8	16																			
200	8	16																			
350	8	16																			
Connection and Operation Accessories																					

Standard Type

Parallel Shaft Combination Type

Round Shaft Type

Lineup



Output Power [W]	Output Shaft Type	Power Supply Voltage [VAC]	Gear Ratio for Parallel Shaft Combination Type																	
			5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
6			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
15			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
25	Parallel Shaft Combination Type	Single-Phase 110/115 VAC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
40	Round Shaft Type	Single-Phase 220/230 VAC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
60			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
90			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Product Number Code

DSC I 4 25 JA - 50 -1 V

(1) (2) (3) (4) (5) (6) (7) (8)

(1)	Series Name	DSC: DSC Series
(2)	Motor Type	I: Induction Motors
(3)	Motor Frame Size	2: 60 mm, 3: 70 mm, 4: 80 mm, 5: 90 mm
(4)	Output Power (W)	(e.g.) 25: 25 W
(5)	Power Supply Voltage	UA: Single-Phase 110/115 VAC, EC: Single-Phase 220/230 VAC
(6)	Gear Ratio/Shelf Configuration	Number: Gear Ratio for Combination Type A: Round Shaft Type
(7)	Connection Cable (Included)	Number: Included Cable Length -1: 1 m, -2: 2 m, -3: 3 m None: Connection cable not included
(8)	External Speed Potentiometer (Included)	V: Included external speed potentiometer None: External speed potentiometer is not included.

Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Specifications and Characteristics	Dimensions	Combination List	Connection and Operation	Accessories
Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Electromagnetic Brake Type/Parallel Shaft Combination Type										

Types

Features	The combination type comes with a motor and a gearhead pre-assembled. The combination of the motor and the gearhead can be changed. They are also available separately. You can remove the gearhead to change the installation position by 90°.			
System Configuration	<ul style="list-style-type: none"> Connection cable included: The price includes the prices of the motor, geared, speed controller, connection cable (1 m, 2 m and 3 m). No connection cable included: The price includes the prices of the motor, gearhead and speed controller. 			
Lineup	Parallel Shaft Combination Type			
Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Output Power	Power Supply Voltage	Product Name	
Lineup Specifications and Characteristics Dimensions Combination List	6 W	Single-Phase 110/115 VAC	DSCI26UA- □■	5, 6, 7.5, 9, 12.5, 15, 18
				25, 30, 36
				50, 60, 75, 90, 100, 120, 150, 180
	15 W	Single-Phase 220/230 VAC	DSCI26EC- □■	250, 300, 360
				5, 6, 7.5, 9, 12.5, 15, 18
				25, 30, 36
Lineup Electromagnetic Brake Type/Parallel Shaft Combination Type Specifications and Characteristics Dimensions Combination List	25 W	Single-Phase 110/115 VAC	DSCI315UA- □■	50, 60, 75, 90, 100, 120, 150, 180
				250, 300, 360
				5, 6, 7.5, 9, 12.5, 15, 18
	40 W	Single-Phase 220/230 VAC	DSCI315EC- □■	25, 30, 36
				50, 60, 75, 90, 100, 120, 150, 180
				250, 300, 360
Lineup Connection and Operation Accessories	60 W	Single-Phase 110/115 VAC	DSCI540UA- □■	5, 6, 7.5, 9, 12.5, 15, 18
				25, 30, 36
				50, 60, 75, 90, 100, 120, 150, 180
	90 W	Single-Phase 220/230 VAC	DSCI540EC- □■	250, 300
				5, 6, 7.5, 9, 12.5, 15, 18
				25, 30, 36
<p>The following items are included in each product.</p> <p>Motor, Gearhead, Speed controller, Capacitor, Capacitor cap, Installation screws, Parallel key, Connection cable*1, External speed potentiometer*2, Operating manual</p> <p>*1 Only with products supplied with a connection cable.</p> <p>*2 Only with products supplied with an external speed potentiometer.</p>				

A number in the box □ in the product name indicates the gear ratio.

When the accessory connection cable is supplied, a number indicating the length of the cable, -1 (1 m), -2 (2 m), -3 (3 m) is specified in the box ■ in the product name.

The products supplied with an external speed potentiometer is shown with "V" at the end of the product name.

● Round Shaft Type

Output Power	Power Supply Voltage	Product Name
6 W	Single-Phase 110/115 VAC	DSCI26UA-A
	Single-Phase 220/230 VAC	DSCI26EC-A
15 W	Single-Phase 110/115 VAC	DSCI315UA-A
	Single-Phase 220/230 VAC	DSCI315EC-A
25 W	Single-Phase 110/115 VAC	DSCI425UA-A
	Single-Phase 220/230 VAC	DSCI425EC-A
40 W	Single-Phase 110/115 VAC	DSCI540UA-A
	Single-Phase 220/230 VAC	DSCI540EC-A
60 W	Single-Phase 110/115 VAC	DSCI560UA-A
	Single-Phase 220/230 VAC	DSCI560EC-A
90 W	Single-Phase 110/115 VAC	DSCI590UA-A
	Single-Phase 220/230 VAC	DSCI590EC-A

The following items are included in each product.

Motor, Speed controller, Capacitor, Capacitor cap, Connection cable*1, External speed potentiometer*2, Operating manual

*1 Only with products supplied with a connection cable.

*2 Only with products supplied with an external speed potentiometer.

When the accessory connection cable is supplied, a number indicating the length of the cable, **-1** (1 m), **-2** (2 m), **-3** (3 m) is specified in the box **■** in the product name.

The products supplied with an external speed potentiometer is shown with "V" at the end of the product name.

■ Specifications Continuous Rating

● Single-Phase 110/115 VAC, Single-Phase 220/230 VAC



Product Name	Maximum Output Power W	Voltage VAC	Frequency Hz	Variable Speed Range r/min	Permissible Torque		Starting Torque mN·m	Current A	Power Consumption W	Capacitor μF	Motor Overheat Protection Device
					1200 r/min (50Hz)	90 r/min					
					1450 r/min (60Hz)	mN·m					
DSCI26UA-□■	6	Single-Phase 110	60	90~1600	50	38	40	0.28	29	2.5	ZP
		Single-Phase 115									
		Single-Phase 220	50	90~1400	42		40	44			
			60	90~1600	46						
		Single-Phase 230	50	90~1400	46	37	44				
DSCI26EC-□■	6	Single-Phase 110	60	90~1600	50	39	50				
		Single-Phase 115									
		Single-Phase 220	50	90~1400	125						
			60	90~1600	110						
		Single-Phase 230	50	90~1400	125						
DSCI315UA-□■	15	Single-Phase 110	60	90~1600	120		45	84			
		Single-Phase 115			125			90			
		Single-Phase 220	50	90~1400	125						
			60	90~1600	110						
		Single-Phase 230	50	90~1400	125						
DSCI315EC-□■	15	Single-Phase 110	60	90~1600	120						
		Single-Phase 115									
		Single-Phase 220	50	90~1400	125						
			60	90~1600	110						
		Single-Phase 230	50	90~1400	125						
DSCI425UA-□■	25	Single-Phase 110	60	90~1600	205		45	125			
		Single-Phase 115			205			135			
		Single-Phase 220	50	90~1400							
			60	90~1600							
		Single-Phase 230	50	90~1400							
DSCI425EC-□■	25	Single-Phase 110	60	90~1600							
		Single-Phase 115									
		Single-Phase 220	50	90~1400							
			60	90~1600							
		Single-Phase 230	50	90~1400							
DSCI540UA-□■	40	Single-Phase 110	60	90~1600							
		Single-Phase 115									
		Single-Phase 220	50	90~1400							
			60	90~1600							
		Single-Phase 230	50	90~1400							
DSCI540EC-□■	40	Single-Phase 110	60	90~1600							
		Single-Phase 115									
		Single-Phase 220	50	90~1400							
			60	90~1600							
		Single-Phase 230	50	90~1600							
DSCI560UA-□■	60	Single-Phase 110	60	90~1600	320		70	180			
		Single-Phase 115			320			190			
		Single-Phase 220	50	90~1400							
			60	90~1600							
		Single-Phase 230	50	90~1400							
DSCI560EC-□■	60	Single-Phase 110	60	90~1600							
		Single-Phase 115									
		Single-Phase 220	50	90~1400							
			60	90~1600							
		Single-Phase 230	50	90~1400							
DSCI590UA-□■	90	Single-Phase 110	60	90~1600							
		Single-Phase 115									
		Single-Phase 220	50	90~1400							
			60	90~1600							
		Single-Phase 230	50	90~1400							
DSCI590EC-□■	90	Single-Phase 110	60	90~1600							
		Single-Phase 115									
		Single-Phase 220	50	90~1400							
			60	90~1600							
		Single-Phase 230	50	90~1600							

● The specifications apply to the motor only. The variable speed ranges shown are under no load conditions.

ZP: These products are impedance protected.

TP: This indicates that there is a built-in thermal protector (automatic return type).

● A number in the box □ in the combination type product name indicates the gear ratio. For the Round Shaft Type, **A** is entered.

When the accessory connection cable is supplied, a number indicating the length of the cable, **-1** (1 m), **-2** (2 m), **-3** (3 m) is specified in the box ■ in the product name.

The products supplied with an external speed potentiometer is shown with "V" at the end of the product name.

Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Electromagnetic Brake Type/Parallel Shaft Combination Type

Common Specifications

Features		Item	Specifications
System Configuration		Speed Setting Methods	<p>Set in either of the following methods.</p> <ul style="list-style-type: none"> Setting using the control panel Up to 4 patterns of operation data can be set. External speed potentiometer: PAVR-20KZ (20 kΩ, 1/4 WW) ... Included or Optional (Sold separately) External DC voltage: 0 to 5 VDC or 0 to 10 VDC
Lineup		Acceleration and Deceleration Time Setting Range	0.0 to 15.0 seconds Acceleration time/deceleration time varies with the load condition of the motor.
Function	Monitoring Mode	Rotation speed, Operation data No., Alarm code, Warning code, I/O monitor	
	Data Mode	Rotation speed, Acceleration time, Deceleration time, Initialization	
	Parameter Mode	Gear ratio, Speed up ratio, Fixed display of the lower first digit, Prohibition alarm of operation at the initial setting, External speed instruction input, External speed instruction voltage selection, External speed instruction offset, Upper and lower limits of speed, Input function selection, Output function selection, Motor lock detection time, Motor rotation direction, Initialization	
Control Power Source	Test Mode	JOG Operation	
	Others	Locking of data editing	
Input Signals	Photocoupler Input	Input Resistance 4.7 kΩ	
	Signals	Signals can be optionally allocated to IN0 to IN5 inputs (6 points) []: Default [FWD], [REV], [M0], [M1], [ALARM-RESET], [FREE], EXT-ERROR Sink Input/Source Input ... Switchable by the selection switch: The factory setting is Sync Input.	
Output Signals	Photocoupler and Open Collector Output	External power source: 4.5 to 30 VDC 40 mA or less	
	Signals	Signals can be optionally allocated to OUT0 or OUT1 (2 points) []: Default [SPEED-OUT], [ALARM-OUT], TH-OUT, WNG Sink output/Source output ... Supplied through external wiring	
Protective Functions	When the following protective functions are activated, the motor will coast to a stop and the ALARM output will be turned OFF.		
	At the same time, the alarm code is indicated in the operating panel and ALARM LED lights.		
Maximum Extension Length	Alarm types: Motor overheat, Motor lock, Overspeed, EEPROM error, Prohibition of operation at the initial setting, External stop		
	Motor and Speed Controller Distance	10.5 m (When an accessory connection cable is used)	

General Specifications

Lineup		Item	Motor	Speed Controller
Dimensions		Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the case after continuous operation under normal ambient temperature and humidity.	The value is 100 MΩ or more when measured by a 500 VDC megger between the main circuit terminal and the control circuit terminal, between the main circuit terminal and the case and between the main circuit and FG after continuous operation under normal ambient temperature and humidity.
Combination List		Dielectric Strength	No abnormality is judged even with application of 1.5 kVAC at 50 Hz or 60 Hz between the windings and the case for 1 minute after continuous operation under normal ambient temperature and humidity.	No abnormality is judged even with application of 1.9 kVAC at 50 Hz or 60 Hz between the main circuit terminal and the control circuit terminal and between the main circuit terminal and the case and 1.1 kVAC at 50 Hz or 60 Hz between the main circuit terminal and FG for 1 minute after continuous operation under normal ambient temperature and humidity.
Dimensions		Temperature Rise	A gearhead or equivalent heat sink* is connected to the motor and the winding temperature rise is measured at 80°C or less using the resistance change method after continuous operation with no load under normal ambient temperature and humidity.	—
Combination List		Overheat Protection Device	The 6 W type is impedance protected. All other motors have a built-in thermal protector (automatic return type).	—
Operating Environment	Operating Environment	Single-Phase 110/115 VAC, Single-Phase 220/230 VAC: -10 to +40°C (non-freezing)	0 to +50°C (non-freezing)	
	Ambient Temperature	85% or less (non-condensing)		
	Altitude	Up to 1000 m above sea level		
Heat-resistant Class		130 (B)	—	
Degree of Protection		IP20	IP20	

*Heat sink size (Material: Aluminum)

Motor Output Power	Size (mm)	Thickness (mm)
6 W	115×115	
15 W	125×125	
25 W	135×135	
40 W	165×165	
60 W	200×200	
90 W	200×200	

5

Note

- Do not measure insulation resistance or perform the dielectric strength test while the motor and speed controller are connected.

Output Shaft Speed of the Combination Type

● Motor Shaft Speed

Low speed: 90 r/min, High speed 50 Hz: r/min, High speed 60 Hz: 1600 r/min

Unit: r/min

Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
High Speed 50 Hz	280	233	186	155	112	93	77	56	46	38	28	23	18.6	15.5	14	11.6	9.3	7.7	5.6	4.6	3.8
Speed 60 Hz	320	266	213	177	128	106	88	64	53	44	32	26	21	17.7	16	13.3	10.6	8.8	6.4	5.3	4.4
Low Speed	18	15	12	10	7.2	6	5	3.6	3	2.5	1.8	1.5	1.2	1	0.9	0.75	0.6	0.5	0.36	0.3	0.25

Combination Type Permissible Torque

● A colored background indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.

Single-Phase 110/115 VAC

Unit: N·m

Product Name	Gear Ratio		5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360	
	Motor Shaft Speed r/min																							
DSCI26UA	1450	0.23	0.27	0.34	0.41	0.56	0.68	0.81	1.1	1.3	1.5	2.2	2.6	3.2	3.9	4.3	5.2	6	6	6	6	6	6	
	90	0.17	0.21	0.26	0.31	0.43	0.51	0.62	0.86	0.98	1.2	1.6	2.0	2.5	2.9	3.3	3.9	4.6	5.5	6	6	6	6	
DSCI31UA	1450	0.54	0.65	0.81	0.97	1.4	1.6	1.9	2.7	3.1	3.7	5.2	6.2	7.7	9.3	10	10	10	10	10	10	10	10	10
		0.56	0.68	0.84	1.0	1.4	1.7	2.0	2.8	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10	10	10	10	10	10
	90	0.20	0.24	0.30	0.36	0.51	0.61	0.73	1.0	1.2	1.4	1.9	2.3	2.9	3.5	3.9	4.6	5.5	6.6	9.1	10	10	10	10
DSCI425UA	1450	0.92	1.1	1.4	1.7	2.3	2.8	3.3	4.6	5.3	6.3	8.8	10.6	13.2	15.9	16	16	16	16	16	16	16	16	16
	90	0.20	0.24	0.30	0.36	0.51	0.61	0.73	1.0	1.2	1.4	1.9	2.3	2.9	3.5	3.9	4.6	5.5	6.6	9.1	10.9	13.1	—	—
DSCI540UA	1450	1.4	1.7	2.2	2.6	3.6	4.3	5.2	6.9	8.3	9.9	13.8	16.5	20.6	24.8	27.5	30	30	30	30	30	30	30	30
	90	0.32	0.38	0.47	0.57	0.79	0.95	1.1	1.5	1.8	2.2	3.0	3.6	4.5	5.4	6.0	6.8	8.5	10.2	14.2	17.0	—	—	
DSCI560UA	1450	2.1	2.5	3.1	3.7	5.2	6.2	7.5	9.9	11.9	14.2	19.8	23.7	29.7	30	30	30	30	30	30	30	30	30	30
		2.2	2.6	3.3	4.0	5.5	6.6	7.9	10.5	12.6	15.2	21.1	25.3	30	30	30	30	30	30	30	30	30	30	30
DSCI590UA	90	0.36	0.43	0.54	0.65	0.90	1.1	1.3	1.7	2.1	2.5	3.4	4.1	5.2	6.2	6.9	7.8	9.7	11.7	16.2	19.4	—	—	—
	1450	3.3	3.9	4.9	5.9	8.2	9.9	11.3	15.7	18.8	22.6	31.4	37.7	40	40	40	40	40	40	40	—	—	—	—

Single-Phase 220/230 VAC

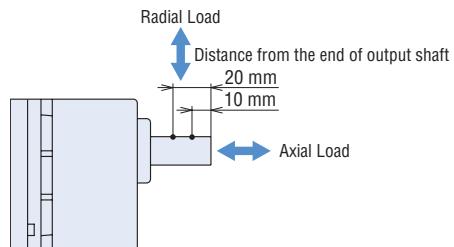
Unit: N·m

Product Name	Gear Ratio		5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360	
	Motor Shaft Speed r/min																							
DSCI26EC	1200	0.19	0.23	0.28	0.34	0.47	0.57	0.68	0.95	1.1	1.3	1.8	2.2	2.7	3.3	3.6	4.3	5.1	6	6	6	6	6	6
		0.21	0.25	0.31	0.37	0.52	0.62	0.75	1.0	1.2	1.4	2.0	2.4	3.0	3.6	4.0	4.7	5.6	6	6	6	6	6	6
	1450	0.21	0.25	0.31	0.37	0.52	0.62	0.75	1.0	1.2	1.4	2.0	2.4	3.0	3.6	4.0	4.7	5.6	6	6	6	6	6	6
		0.23	0.27	0.34	0.41	0.56	0.68	0.81	1.1	1.3	1.5	2.2	2.6	3.2	3.9	4.3	5.2	6	6	6	6	6	6	6
	90	0.18	0.22	0.27	0.32	0.45	0.54	0.65	0.90	1.0	1.2	1.7	2.1	2.6	3.1	3.4	4.1	4.9	5.8	6	6	6	6	6
		0.18	0.20	0.25	0.30	0.42	0.50	0.60	0.83	0.95	1.1	1.6	1.9	2.4	2.9	3.2	3.8	4.5	5.4	6	6	6	6	6
DSCI315EC	1200	0.56	0.68	0.84	1.0	1.4	1.7	2.0	2.8	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10	10	10	10	10	10
	1450	0.50	0.59	0.74	0.89	1.2	1.5	1.8	2.5	2.8	3.4	4.7	5.7	7.1	8.5	9.5	10	10	10	10	10	10	10	10
	90	0.18	0.22	0.27	0.32	0.45	0.54	0.65	0.90	1.0	1.2	1.7	2.1	2.6	3.1	3.4	4.1	4.9	5.8	8.1	9.7	10	10	10
DSCI425EC	1200	0.56	0.68	0.84	1.0	1.4	1.7	2.3	2.8	3.3	4.6	5.3	6.3	8.8	10.6	13.2	15.9	16	16	16	16	16	16	16
	1450	0.92	1.1	1.4	1.7	2.3	2.8	3.3	4.6	5.3	6.3	8.8	10.6	13.2	15.9	16	16	16	16	16	16	16	16	16
DSCI540EC	1200	1.4	1.7	2.2	2.6	3.6	4.3	5.2	6.9	8.3	9.9	13.8	16.5	20.6	24.8	27.5	30	30	30	30	30	30	30	30
	1450	1.4	1.7	2.2	2.6	3.3	4.0	5.5	6.6	7.9	10.5	12.6	15.2	21.1	25.3	30	30	30	30	30	30	30	30	30
	90	0.29	0.35	0.44	0.53	0.73	0.88	1.1	1.4	1.7	2.0	2.8	3.4	4.2	5.0	5.6	6.3	7.9	9.5	13.2	15.8	—	—	—
	60 Hz	0.32	0.38	0.47	0.57	0.79	0.95	1.1	1.5	1.8	2.2	3.0	3.6	4.5	5.4	6.0	6.8	8.5	10.2	14.2	17.0	—	—	—
DSCI560EC	1200	2.2	2.6	3.3	4.0	5.5	6.6	7.9	10.5	12.6	15.2	21.1	25.3	30	30	30	30	30	30	30	30	30	30	30
	1450	2.1	2.5	3.1	3.7	5.2	6.2	7.5	9.9	11.9	14.2	19.8	23.7	29.7	30	30	30	30	30	30	30	30	30	30
	90	0.36	0.43	0.54	0.65	0.90	1.1	1.3	1.7	2.1	2.5	3.4	4.1	5.2	6.2	6.9	7.8	9.7	11.7	16.2	19.4	—	—	—
	60 Hz	0.34	0.41	0.51	0.61	0.84	1.0	1.2	1.6	1.9	2.3	3.2	3.9	4.8	5.8	6.5	7.3	9.1	10.9	15.2	18.2	—	—	—
	50 Hz	0.38	0.46	0.57	0.69	0.96	1.1	1.4	1.8	2.2	2.6	3.7	4.4	5.5	6.6	7.3	8.3	10.3	12.4	17.2	20.7	—	—	—
DSCI590EC	1200	3.3	3.9	4.9	5.9	8.2	9.9	11.3	15.7	18.8	22.6	31.4	37.7	40	40	40	40	40	40	40	40	—	—	—
	1450	3.3	3.9	4.9	5.9	8.2	9.9	11.3	15.7	18.8	22.6	31.4	37.7	40	40	40	40	40	40	40	40	—	—	—
	90	0.43	0.51	0.64	0.77	1.1	1.3	1.5	2.0	2.5	2.9	4.1	4.9	5.8	6.9	7.7	9.2	11.5	13.9	—				

■ Permissible Radial Load/Permissible Axial Load

● Combination Type

Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Electromagnetic Brake Type/Parallel Shaft Combination Type	Permissible Radial Load N				Permissible Axial Load N			
								Distance from the end of the gearhead output shaft		10 mm	20 mm	Distance from the end of the gearhead output shaft		10 mm	20 mm
DSCI26		5~25		150		200								40	
		30~360		200		300									
DSCI315		5~25		200		300								80	
		30~360		300		400									
DSCI425		5~25		300		350								100	
		30~360		450		550									
DSCI540		5~9		400		500								150	
		12.5~18		450		600									
DSCI560		25~300		500		700								150	
		5~9		400		500									
DSCI590		12.5~18		450		600								150	
		25~180		500		700									



● Round Shaft Type

Product Name	Permissible Radial Load N		Permissible Axial Load
	10 mm	20 mm	
DSCI26	50	110	
DSCI315	40	60	
DSCI425	90	140	
DSCI540	140	200	
DSCI560	240	270	
DSCI590			

*Avoid axial loads as much as possible.

If axial load is unavoidable, keep it at half or less of the motor mass.

■ Gearhead Transmission Efficiency

Product Name	Gear Ratio	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
		2GV□B, 3GV□B, 4GV□B	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%
5GV□B, 5GVH□B																				
5GVR□B																				
		90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%

■ Permissible Inertia of Combination Types J

Unit: $\times 10^{-4} \text{kg}\cdot\text{m}^2$

Product Name	Gear Ratio	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
		When instantaneous stop or instantaneous bi-directional operation	1.55	2.23	3.49	5.02	9.69	14	20.1	38.8	55.8	80.4	155	155	155	155	155	155	155	155	155	155
DSCI26		When instantaneous stop or instantaneous bi-directional operation	12	18	28	40	78	110	160	260	370	540	920	1300	1700	2000	2500	3600	5000	5000	5000	5000
			1.55	2.23	3.49	5.02	9.69	14	20.1	38.8	55.8	80.4	155	155	155	155	155	155	155	155	155	155
DSCI315		When instantaneous stop or instantaneous bi-directional operation	20	28	45	65	120	180	260	440	630	900	1500	2100	2800	3200	4000	5700	8000	8000	8000	8000
			3.5	5.04	7.88	11.3	21.9	31.5	45.4	87.5	126	181	350	350	350	350	350	350	350	350	350	350
DSCI425		When instantaneous stop or instantaneous bi-directional operation	22	32	50	72	150	220	310	550	800	1100	2200	3200	4000	5000	6200	8900	12000	12000	12000	12000
			7.75	11.2	17.4	25.1	48.4	69.8	100	194	279	402	775	775	775	775	775	775	775	775	775	775
DSCI540		When instantaneous stop or instantaneous bi-directional operation	45	65	100	150	300	420	620	1100	1600	2300	4500	6000	8000	10000	12000	17000	25000	25000	25000	—
			27.5	39.6	61.9	89.1	172	248	356	688	990	1426	2750	2750	2750	2750	2750	2750	2750	2750	2750	—
DSCI560		When instantaneous stop or instantaneous bi-directional operation	45	65	100	150	300	420	620	1100	1600	2300	4500	6000	8000	10000	12000	17000	25000	25000	25000	—
			27.5	39.6	61.9	89.1	172	248	356	688	990	1426	2750	2750	2750	2750	2750	2750	2750	2750	2750	—
DSCI590		When instantaneous stop or instantaneous bi-directional operation	45	65	100	150	300	420	620	1100	1600	2300	4500	6000	8000	10000	12000	17000	25000	25000	25000	—
			27.5	39.6	61.9	89.1	172	248	356	688	990	1426	2750	2750	2750	2750	2750	2750	2750	2750	2750	—

How to Read Speed – Torque Characteristics

The characteristics diagram on the right shows the relationship between each setting speed and torque when a speed control motor is operated.

- ① 50 Hz Safe-Operation Line
- ② 60 Hz Safe-Operation Line

The safe-operation line is the permissible line of the torque that is limited according to the permissible temperature.

Motors can be operated at a continuous rating within the safe-operation line.

The safe-operation line is determined under the most severe condition where there is no heat conduction. Therefore, the motor can be operated depending on installation conditions of the motor.

Note

When operating beyond the safe-operation line, make sure the motor case temperature is kept at 90°C or less.

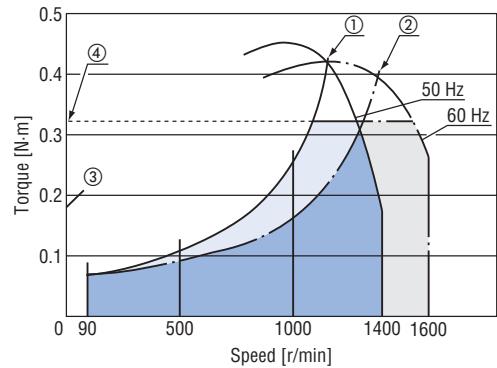
- ③ Starting Torque

This refers to the size of torque with which the motor can start.

- ④ Combination Type Permissible Torque

This refers to the permissible value of the motor torque when operating with the gearhead installed.

The permissible torque of the combination type varies according to the gear ratio. Use the motor without exceeding the value on the list of permissible torques.

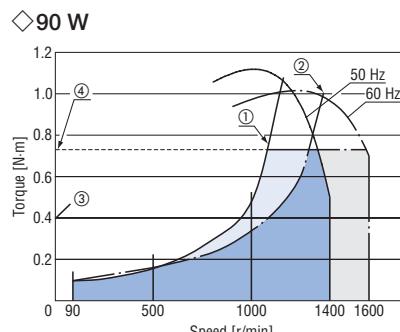
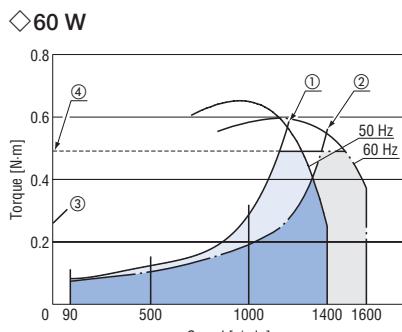
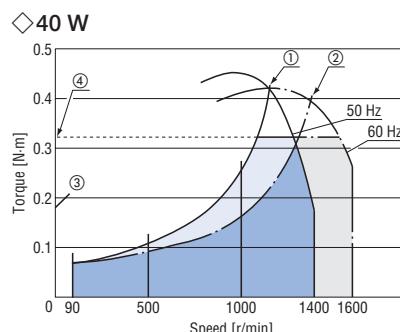
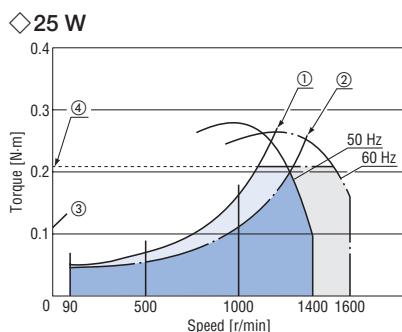
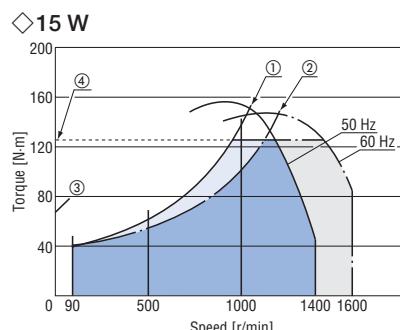
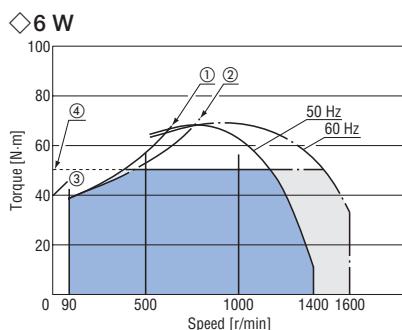


Speed – Torque Characteristics (Reference)

① 50 Hz Safe-Operation Line ② 60 Hz Safe-Operation Line ③ Starting Torque ④ Permissible Torque

The characteristics of each output are their representatives. (For motor only)

The permissible torque and starting torque of the motor vary according to the voltage. Check the specifications and the permissible torque of the combination type when using the motor.



Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Specifications and Characteristics	Dimensions	Combination List	Connection and Operation	Accessories
Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Electromagnetic Brake Type/Parallel Shaft Combination Type										

Dimensions (Unit = mm)

● "Installation Screws" are included with the combination type. Dimensions of installation screws → Page 32

A number in the box in the product name indicates the gear ratio.

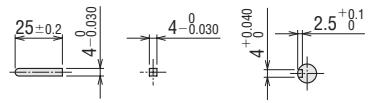
When the accessory connection cable is supplied, a number indicating the length of the cable, **-1** (1 m), **-2** (2 m), **-3** (3 m) is specified in the box ■ in the product name.

The products supplied with an external speed potentiometer is shown with "V" at the end of the product name.

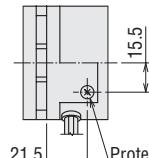
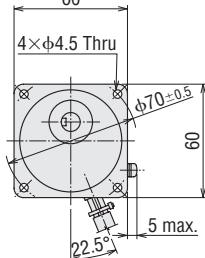
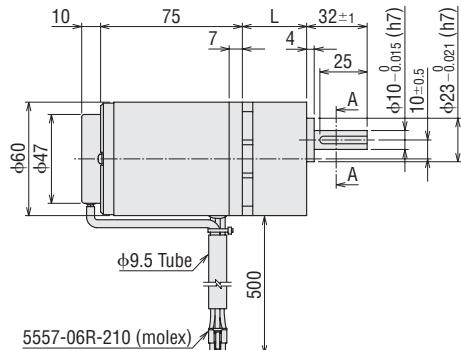
● Combination Type

◇ 6 W

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg	2D CAD
DSCI26UA-□■ DSCI26EC-□■	2IK6UGV-UA 2IK6UGV-EC	2GV□B	5~25	34	1.3	A1214A
			30~120	38		A1214B
			150~360	43		A1214C



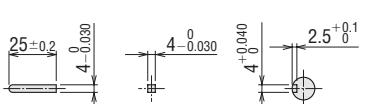
Parallel Key (Included) Cross Section A-A



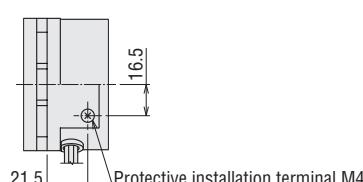
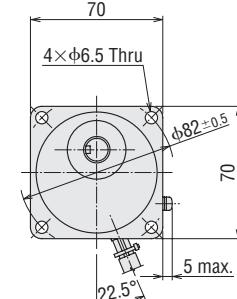
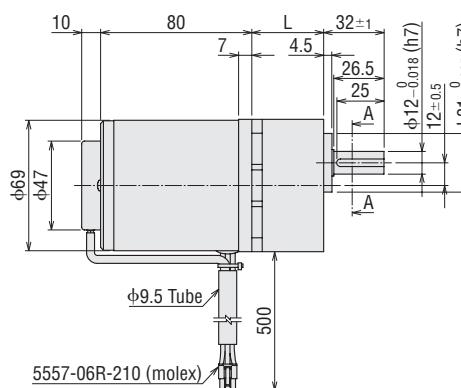
Detail drawing of protective installation terminal

◇15W

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg	2D CAD
DSCI315UA-□■■ DSCI315EC-□■■	3IK15UGV-UA 3IK15UGV-EC	3GV□B	5~25	38	1.8	A1215A
			30~120	43		A1215B
			150~360	48		A1215C



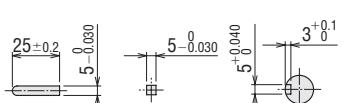
Parallel Key (Included) Cross Section A-A



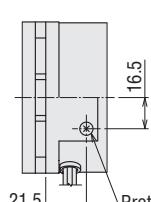
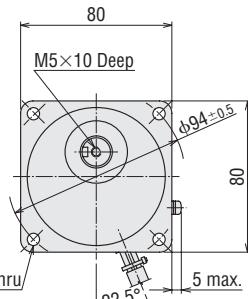
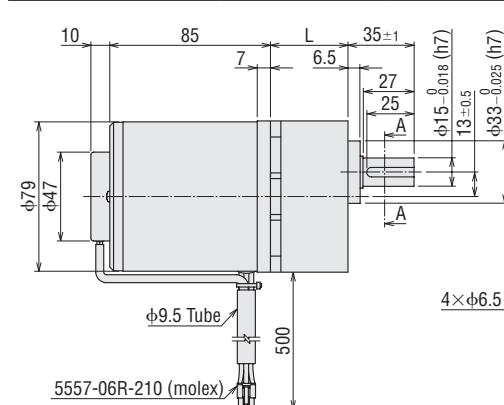
Detail drawing of protective installation terminal

◇ 25 W

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg	2D CAD
DSCI425UA-□■	4IK25UGV-UA 4IK25UGV-EC	4GV□B	5~25	41	2.55	A1216A
DSCI425EC-□■			30~120	46		A1216B
			150~360	51		A1216C



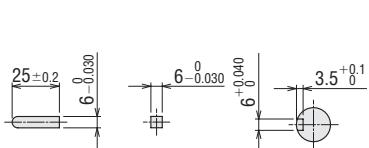
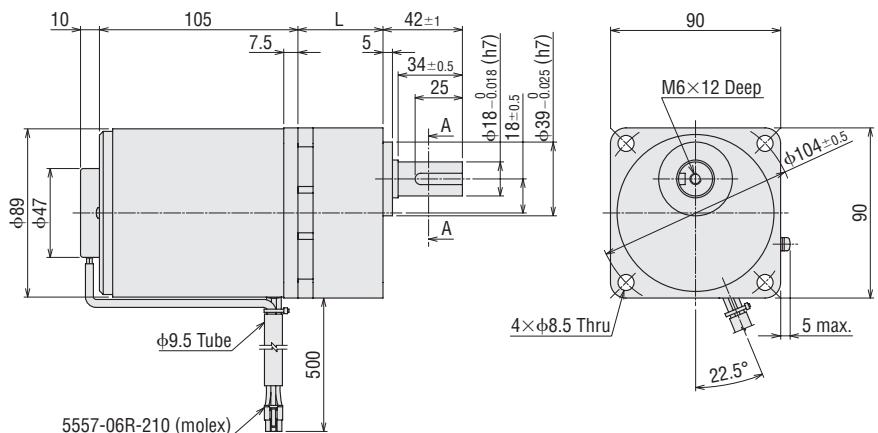
Parallel Key (Included) Cross Section A-A



Detail drawing of protective installation terminal

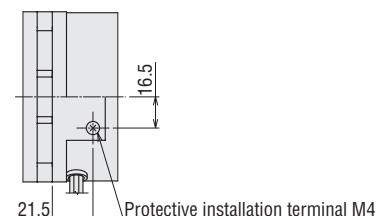
◇ 40 W

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg	2D CAD
DSCI540UA-□■■ DSCI540EC-□■■	5IK40UGV-UA 5IK40UGV-EC	5GV□B	5~18	45	4.1	A1217A
			25~100	58		A1217B
			120~300	64		A1217C



Parallel Key (Included)

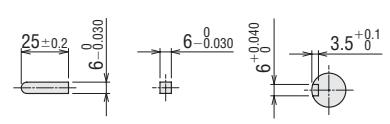
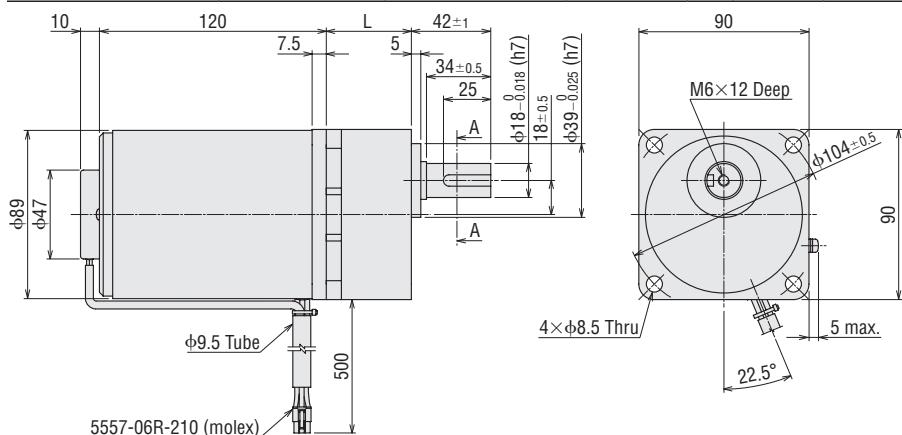
Cross Section A-A



Detail drawing of protective installation terminal

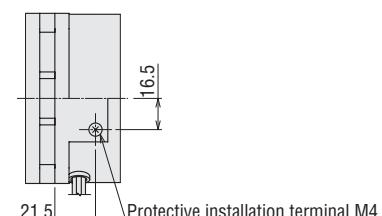
◇ 60 W

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg	2D CAD
DSCI560UA-□■■ DSCI560EC-□■■	5IK60UGVH-UA 5IK60UGVH-EC	5GVH□B	5~18	45	4.6	A1218A
			25~100	58		A1218B
			120~300	64		A1218C



Parallel Key (Included)

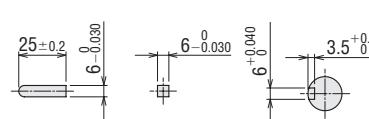
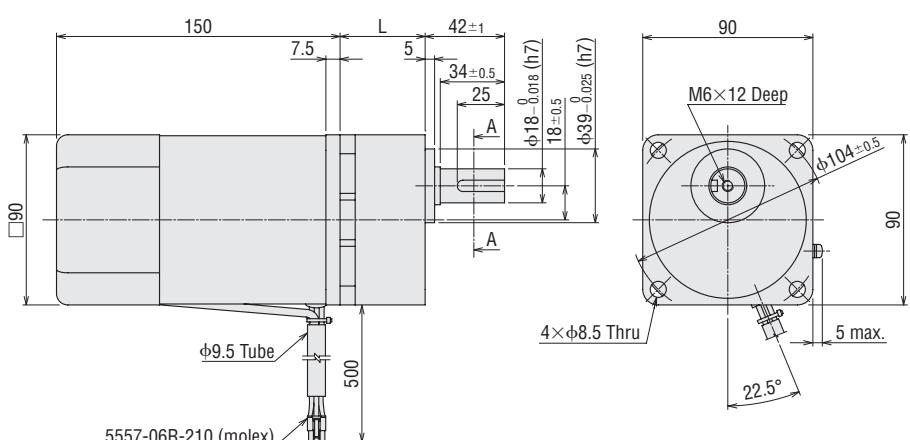
Cross Section A-A



Detail drawing of protective installation terminal

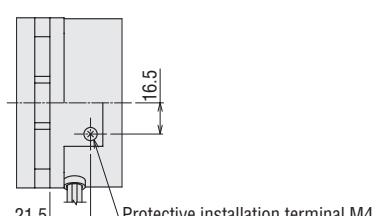
◇ 90 W

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg	2D CAD
DSCI590UA-□■■ DSCI590EC-□■■	5IK90UGVR-UA 5IK90UGVR-EC	5GVR□B	5~15	45	4.8	A1219A
			18~36	58		A1219B
			50~180	70		A1219C



Parallel Key (Included)

Cross Section A-A



Detail drawing of protective installation terminal

Features	System Configuration	Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Specifications and Characteristics	Dimensions	Combination List	Connection and Operation	Accessories
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● Round Shaft Type

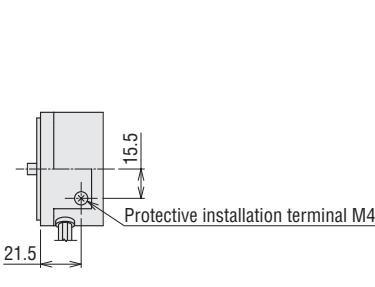
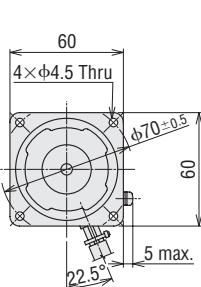
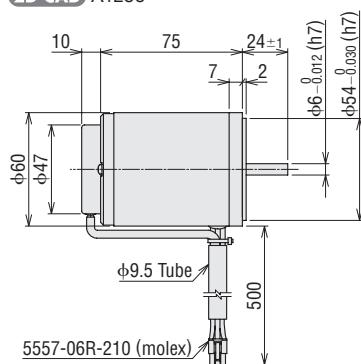
◇ 6 W

DSCI26UA-A■, DSCI26EC-A■

Motor: 2IK6UA-UA, 2IK6UA-EC

Mass: 0.8 kg

2D CAD A1256



Detail drawing of protective installation terminal

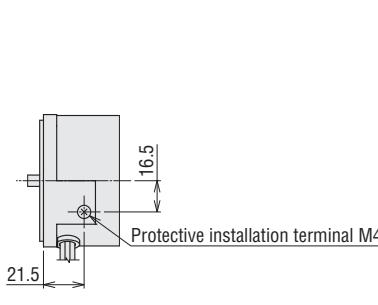
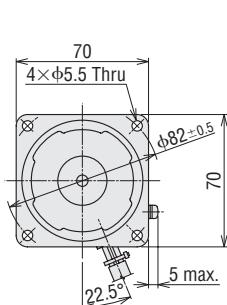
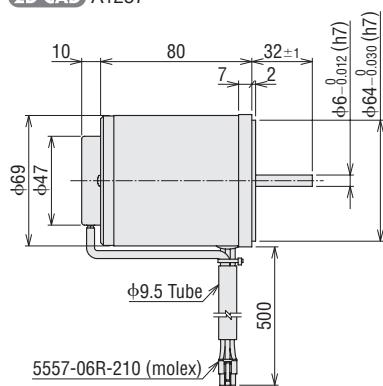
◇ 15 W

DSCI315UA-A■, DSCI315EC-A■

Motor: 3IK15UA-UA, 3IK15UA-EC

Mass: 1.2 kg

2D CAD A1257



Detail drawing of protective installation terminal

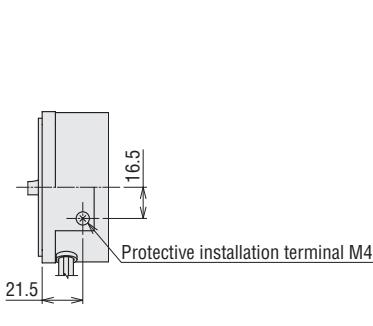
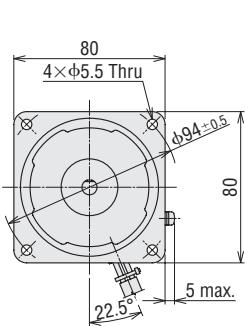
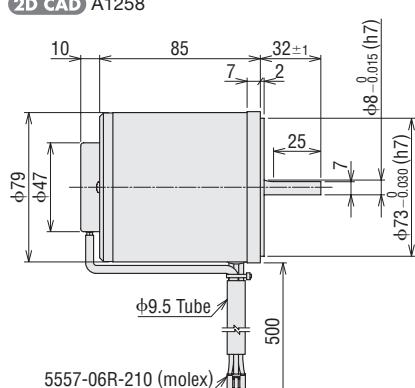
◇ 25 W

DSCI425UA-A■, DSCI425EC-A■

Motor: 4IK25UA-UA, 4IK25UA-EC

Mass: 1.6 kg

2D CAD A1258



Detail drawing of protective installation terminal

Features

System Configuration

Standard Type/Parallel Shaft Combination Type/Round Shaft Type

Lineup Specifications and Characteristics

Dimensions

Combination List

Electromagnetic Brake Type/Parallel Shaft Combination Type

Lineup Specifications and Characteristics

Dimensions

Combination List

Connection and Operation

Accessories

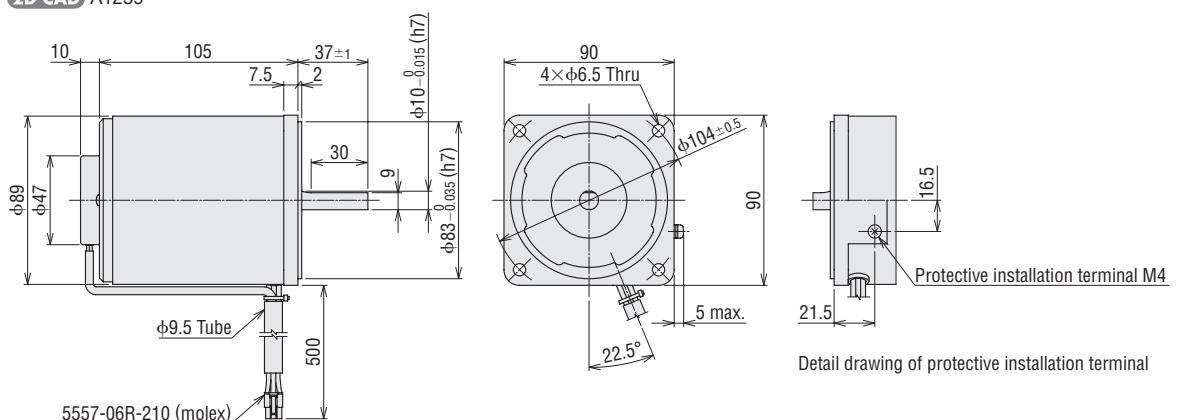
◇40 W

DSCI540UA-A■, DSCI540EC-A■

Motor: 5IK40UA-UA, 5IK40UA-EC

Mass: 2.6 kg

2D CAD A1259



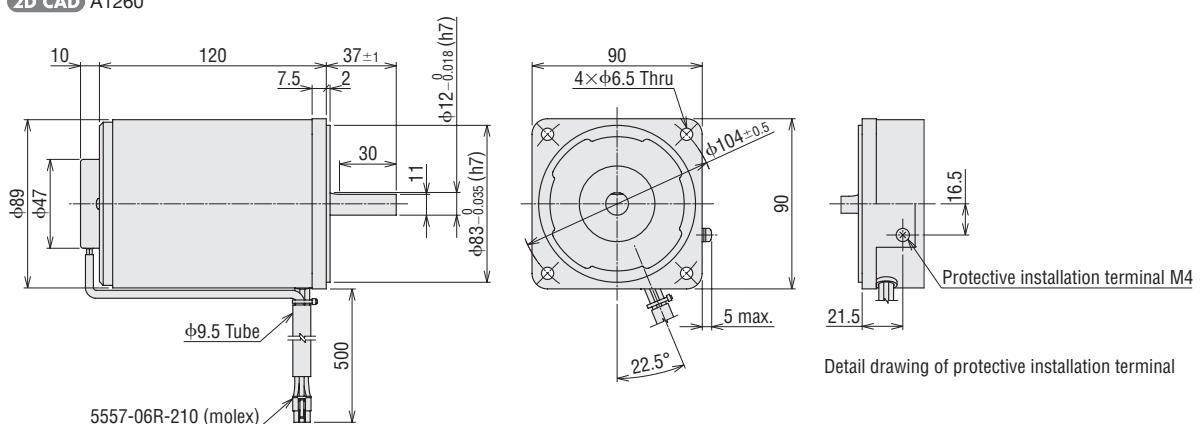
◇60 W

DSCI560UA-A■, DSCI560EC-A■

Motor: 5IK60UA-UA, 5IK60UA-EC

Mass: 3.1 kg

2D CAD A1260



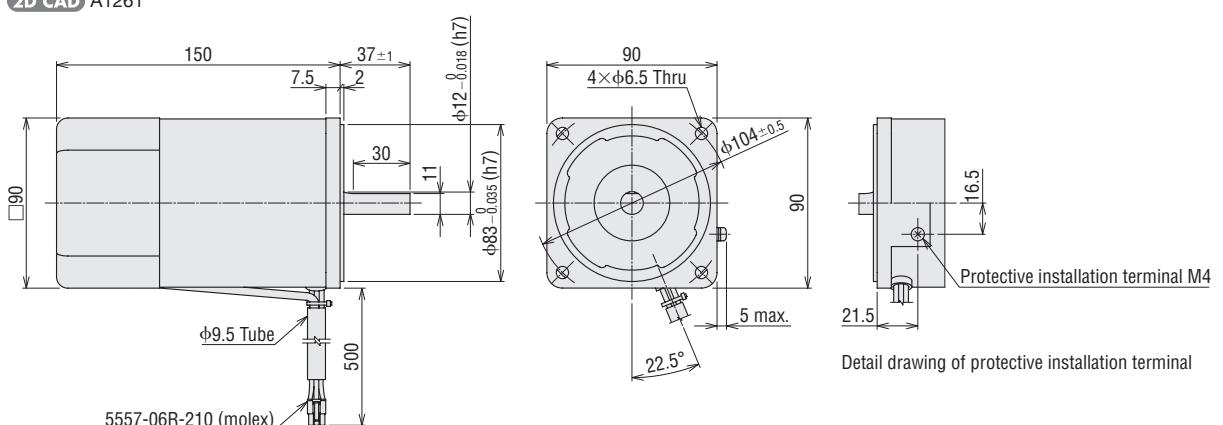
◇90 W

DSCI590UA-A■, DSCI590EC-A■

Motor: 5IK90UA-UA, 5IK90UA-EC

Mass: 3.3 kg

2D CAD A1261



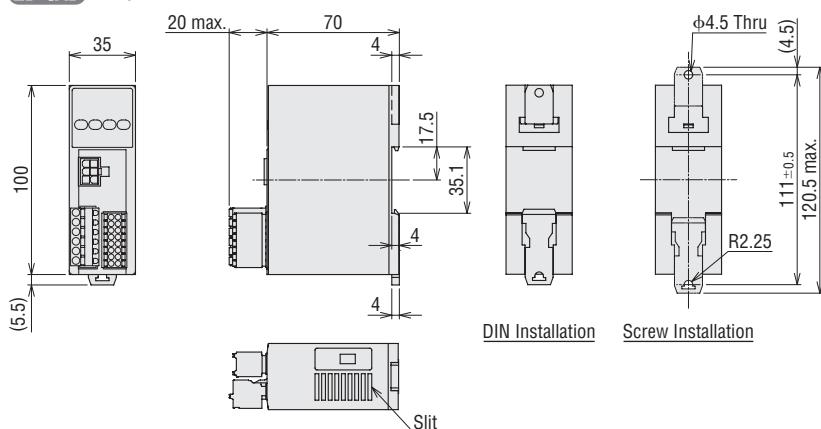
Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Specifications and Characteristics	Dimensions	Combination List	Electromagnetic Brake Type/Parallel Shaft Combination Type

Speed Controller

DSC-U

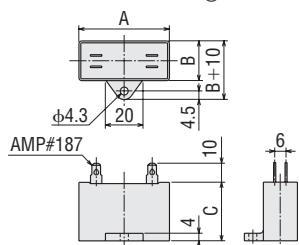
Mass: 0.2 kg

2D CAD A1262

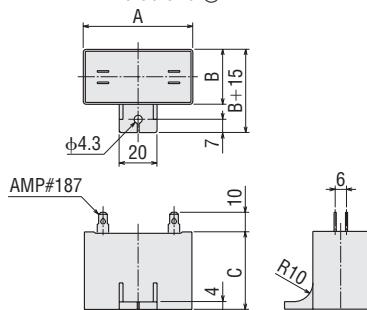


Capacitor (Included)

Dimensions No. ①



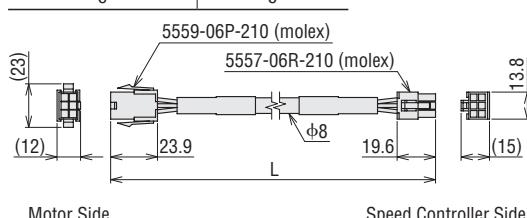
Dimensions No. ②



Connection Cable (Included)

Only with types supplied with a connection cable

Cable Type	Length L (m)
1	1
2	2
3	3



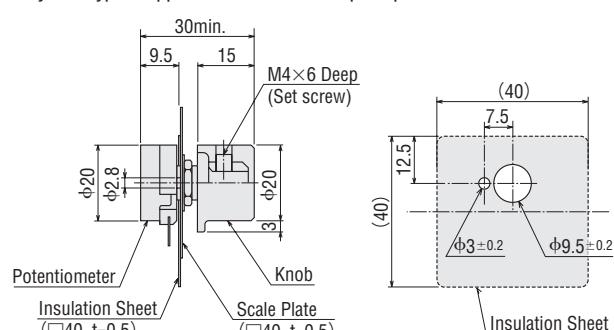
Capacitor Dimensions (Unit = mm)

Product Name	Capacitor Product Name	A	B	C	Mass g	Dimensions No.
Combination Type	Round Shaft Type					
DSCI26UA-□	DSCI26UA-A	CH25FAUL2	31	17	27	21
DSCI26EC-□	DSCI26EC-A	CH06BFAUL	31	14.5	23.5	18
DSCI315UA-□	DSCI315UA-A	CH45FAUL2	37	18	27	26
DSCI315EC-□	DSCI315EC-A	CH10BFAUL	37	18	27	27
DSCI425UA-□	DSCI425UA-A	CH65CFAUL2	48	19	29	35
DSCI425EC-□	DSCI425EC-A	CH15BFAUL	38	21	31	37
DSCI540UA-□	DSCI540UA-A	CH90CFAUL2	48	22.5	31.5	45
DSCI540EC-□	DSCI540EC-A	CH23BFAUL	48	21	31	43
DSCI560UA-□	DSCI560UA-A	CH120CFAUL2	58	22	35	60
DSCI560EC-□	DSCI560EC-A	CH30BFAUL	58	21	31	50
DSCI590UA-□	DSCI590UA-A	CH200CFAUL2	58	29	41	91
DSCI590EC-□	DSCI590EC-A	CH60BFAUL	58	29	41	92

● A capacitor cap is included with the capacitor.

External Speed Potentiometer (Included)

Only with types supplied with an external speed potentiometer



Recommended installation plate thickness is 4.5 mm max.

Dimensions of Installation Screws

→ Page 32

Combination List

Parallel Shaft Combination Type

Output Power	Product Name	Combination Motor Product Name*	Motor Product Name	Gearhead Product Name	Speed Controller Product Name	
6 W	DSCI26UA-□■	2IK6UUA-□	2IK6UGV-UA	2GV□B	DSC-U	
	DSCI26EC-□■	2IK6UEC-□	2IK6UGV-EC			
15 W	DSCI315UA-□■	3IK15UUA-□	3IK15UGV-UA	3GV□B		
	DSCI315EC-□■	3IK15UEC-□	3IK15UGV-EC			
25 W	DSCI425UA-□■	4IK25UUA-□	4IK25UGV-UA	4GV□B		
	DSCI425EC-□■	4IK25UEC-□	4IK25UGV-EC			
40 W	DSCI540UA-□■	5IK40UUA-□	5IK40UGV-UA	5GV□B		
	DSCI540EC-□■	5IK40UEC-□	5IK40UGV-EC			
60 W	DSCI560UA-□■	5IK60UUA-□	5IK60UGVH-UA	5GVH□B		
	DSCI560EC-□■	5IK60UEC-□	5IK60UGVH-EC			
90 W	DSCI590UA-□■	5IK90UUA-□	5IK90UGVR-UA	5GVR□B		
	DSCI590EC-□■	5IK90UEC-□	5IK90UGVR-EC			

*For combination motors, the product name applies to the motor and gearhead combination.

Round Shaft Type

Output Power	Product Name	Motor Product Name	Speed Controller Product Name
6 W	DSCI26UA-A■	2IK6UA-UA	DSC-U
	DSCI26EC-A■	2IK6UA-EC	
15 W	DSCI315UA-A■	3IK15UA-UA	DSC-U
	DSCI315EC-A■	3IK15UA-EC	
25 W	DSCI425UA-A■	4IK25UA-UA	DSC-U
	DSCI425EC-A■	4IK25UA-EC	
40 W	DSCI540UA-A■	5IK40UA-UA	DSC-U
	DSCI540EC-A■	5IK40UA-EC	
60 W	DSCI560UA-A■	5IK60UA-UA	DSC-U
	DSCI560EC-A■	5IK60UA-EC	
90 W	DSCI590UA-A■	5IK90UA-UA	DSC-U
	DSCI590EC-A■	5IK90UA-EC	

● A number in the box □ in the product name indicates the gear ratio.

When the accessory connection cable is supplied, a number indicating the length of the cable, -1 (1 m), -2 (2 m), -3 (3 m) is specified in the box ■ in the product name.

The products supplied with an external speed potentiometer is shown with "V" at the end of the product name.

Features	System Configuration	Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Electromagnetic Brake Type/Parallel Shaft Combination Type	Connection and Operation	Accessories
Lineup	Specifications and Characteristics	Dimensions	Dimensions	Combination List	Lineup
Lineup	Specifications and Characteristics	Dimensions	Dimensions	Combination List	Lineup

Electromagnetic Brake Type

Parallel Shaft Combination Type

Features

System Configuration

Lineup

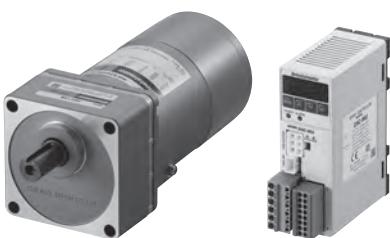
Specifications and Characteristics

Dimensions

Combination List

Lineup

Parallel Shaft Combination Type



Output Power [W]	Output Shaft Type	Power Supply Voltage [VAC]	Gear Ratio																
			7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250
6	Parallel Shaft Combination Type	Single-Phase 110/115 VAC Single-Phase 220/230 VAC	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
15			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
25			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
40			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—
60			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—
90			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	—

Product Number Code

DSC I 4 25 JA M - 50 - 1 V

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①	Series Name	DSC: DSC Series
②	Motor Type	I: Induction Motors
③	Motor Frame Size	2: 60 mm, 3: 70 mm, 4: 80 mm, 5: 90 mm
④	Output Power (W)	(e.g.) 25: 25 W
⑤	Power Supply Voltage	UA: Single-Phase 110/115 VAC, EC: Single-Phase 220/230 VAC
⑥	M: Power Off Activated Type Electromagnetic Brake	
⑦	Gear Ratio/Shft Configuration	Number: Gear Ratio for Combination Types
⑧	Connection Cable (Included)	Number: Included Cable Length -1: 1 m, -2: 2 m, -3: 3 m None: Connection cable not included
⑨	External Speed Potentiometer (Included)	V: Included external speed potentiometer None: External speed potentiometer is not included.

The deceleration control function implemented in the electromagnetic brake type

The electromagnetic brake type has the deceleration control function implemented. This enables speed control at the time of vertical driving or lowering operation.

"What is the deceleration control function?"

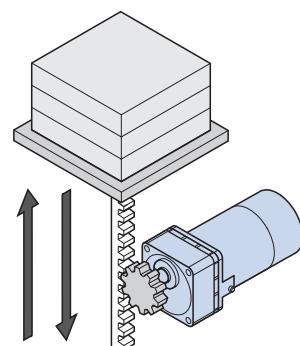
This is the function that adjusts the speed by applying the brake current automatically to the motor when it rotates at a speed faster than the set speed. For operation by vertical driving or even when force is applied to the direction where the motor output shaft rotates due to the inertial load, this function controls the motor to rotate at the set speed.

"Deceleration Control" ON (Factory setting): For vertical driving, lowering operation, horizontal driving and position keeping

"Deceleration Control" OFF: For horizontal driving and position keeping (Variable speed range is extended.)

● The specification values and permissible torque differ between the "Deceleration Control" ON and OFF.

Item	"Deceleration Control" parameter ON (Factory setting)	"Deceleration Control" parameter OFF
Deceleration Control Function	Enabled	Disabled
Variable Speed Range	300 to 1400 r/min (50 Hz) 300 to 1600 r/min (60 Hz)	90 to 1400 r/min (50 Hz) 90 to 1400 r/min (60 Hz)
Acceleration Time/Deceleration Time Range	0.2 to 15.0 seconds	0.0 to 15.0 seconds



Types

Combination Type

The combination type comes with a motor and a gearhead pre-assembled.

The combination of the motor and the gearhead can be changed. They are also available separately. You can remove the gearhead to change the installation position by 90°.

● Connection cable included: The price includes the prices of the motor, geared, speed controller, connection cable (1 m, 2 m and 3 m).

● No connection cable included: The price includes the prices of the motor, gearhead and speed controller.

Parallel Shaft Combination Type

Output Power	Power Supply Voltage	Product Name	Gear Ratio
6 W	Single-Phase 110/115 VAC	DSCI26UAM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
	Single-Phase 220/230 VAC	DSCI26ECM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
15 W	Single-Phase 110/115 VAC	DSCI315UAM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
	Single-Phase 220/230 VAC	DSCI315ECM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
25 W	Single-Phase 110/115 VAC	DSCI425UAM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
	Single-Phase 220/230 VAC	DSCI425ECM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300, 360
40 W	Single-Phase 110/115 VAC	DSCI540UAM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300
	Single-Phase 220/230 VAC	DSCI540ECM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36 50, 60, 75, 90, 100, 120, 150, 180 250, 300
60 W	Single-Phase 110/115 VAC	DSCI560UAM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60, 75, 90, 100 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60, 75, 90, 100 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60, 75, 90, 100 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60, 75, 90, 100 120, 150, 180 250, 300
	Single-Phase 220/230 VAC	DSCI560ECM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60, 75, 90, 100 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60, 75, 90, 100 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60, 75, 90, 100 120, 150, 180 250, 300
			7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60, 75, 90, 100 120, 150, 180 250, 300
90 W	Single-Phase 110/115 VAC	DSCI590UAM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60 75, 90, 100, 120, 150, 180
			7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60 75, 90, 100, 120, 150, 180
	Single-Phase 220/230 VAC	DSCI590ECM- □■	7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60 75, 90, 100, 120, 150, 180
			7.5, 9, 12.5, 15, 18 25, 30, 36, 50, 60 75, 90, 100, 120, 150, 180

The following items are included in each product.

Motor, Gearhead, Speed controller, Capacitor, Capacitor cap, Installation screws, Parallel key, Connection cable*1, External speed potentiometer*2, Operating manual

*1 Only with products supplied with a connection cable.

*2 Only with products supplied with an external speed potentiometer.

● A number in the box □ in the product name indicates the gear ratio.

When the accessory connection cable is supplied, a number indicating the length of the cable, -1 (1 m), -2 (2 m), -3 (3 m) is specified in the box ■ in the product name.

The products supplied with an external speed potentiometer is shown with "V" at the end of the product name.

Features	System Configuration	Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Electromagnetic Brake Type/Parallel Shaft Combination Type
Lineup	Specifications and Characteristics	Dimensions	Combination List
Lineup	Specifications and Characteristics	Dimensions	Combination List
Accessories	Connection and Operation		

■ Specifications Continuous Rating^{*1}

● Single-Phase 110/115 VAC, Single-Phase 220/230 VAC



Features	System Configuration	Lineup	Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Product Name	Maximum Output Power W	Voltage VAC	Frequency Hz	Variable Speed Range ^{*2} r/min	Current A	Power Consumption W	Capacitor μF	Motor Overheat Protection Device	Electromagnetic Brake (Power off activated type)
													Static Friction Torque mN·m
DSCI26UAM-□■	6	Single-Phase 110	60	300 (90) ~1600	0.28	29	2.5	ZP	30	80	100	200	500
		Single-Phase 115											
DSCI26ECM-□■	6	Single-Phase 220	50	300 (90) ~1400	0.135	29	0.6	ZP	30	80	100	200	500
		60	300 (90) ~1600										
DSCI315UAM-□■	15	Single-Phase 230	50	300 (90) ~1400	0.48	46	4.5	TP	80	100	200	500	
		60	300 (90) ~1600										
DSCI315ECM-□■	15	Single-Phase 220	50	300 (90) ~1400	0.23	43	1.0	TP	80	100	200	500	
		60	300 (90) ~1600										
DSCI425UAM-□■	25	Single-Phase 230	50	300 (90) ~1400	0.75	58	6.5	TP	100	200	500		
		60	300 (90) ~1600										
DSCI425ECM-□■	25	Single-Phase 220	50	300 (90) ~1400	0.37	70	1.5	TP	100	200	500		
		60	300 (90) ~1600										
DSCI540UAM-□■	40	Single-Phase 110	50	300 (90) ~1400	1.1	107	9.0	TP	200	500			
		60	300 (90) ~1600										
DSCI540ECM-□■	40	Single-Phase 220	50	300 (90) ~1400	0.55	96	2.3	TP	200	500			
		60	300 (90) ~1600										
DSCI560UAM-□■	60	Single-Phase 230	50	300 (90) ~1400	1.5	144	12	TP	500				
		60	300 (90) ~1600										
DSCI560ECM-□■	60	Single-Phase 115	50	300 (90) ~1400	0.71	129	3.0	TP	500				
		60	300 (90) ~1600										
DSCI590UAM-□■	90	Single-Phase 220	50	300 (90) ~1400	0.72	143	20	TP	500				
		60	300 (90) ~1600										
DSCI590ECM-□■	90	Single-Phase 230	50	300 (90) ~1400	1.2	201	6.0	TP	500				
		60	300 (90) ~1600										

*1 When the deceleration control is ON, the rated specification is different. For details, see "Continuous Operation Time with Deceleration Control ON" under Common Specifications (→ Page 23).

*2 The value in the bracket can be specified when using the motor with the deceleration control OFF.

● The specifications apply to the motor only. The variable speed ranges shown are under no load conditions.

ZP: These products are impedance protected. TP: This indicates that there is a built-in thermal protector (automatic return type).

● A number in the box □ in the product name indicates the gear ratio.

When the accessory connection cable is supplied, a number indicating the length of the cable, -1 (1 m), -2 (2 m), -3 (3 m) is specified in the box ■ in the product name.

The products supplied with an external speed potentiometer is shown with "V" at the end of the product name.

Common Specifications

Item	Specifications										
Speed Setting Methods	Set in either of the following methods. <ul style="list-style-type: none">• Setting using the control panel Up to 4 patterns of operation data can be set.• External speed potentiometer: PAVR-20KZ (20 KΩ, 1/4 W) ... Included or Accessory (Sold separately)• External DC voltage: 0 to 5 VDC or 0 to 10 VDC										
Acceleration and Deceleration Time Setting Range	0.2 to 15.0 seconds (0.0 to 15.0 seconds: This value can be set when using the motor with the deceleration control OFF.) Acceleration time/deceleration time varies with the load condition of the motor.										
Function	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Monitoring Mode</td><td>Rotation speed, Operation data No., Alarm code, Warning code, I/O monitor</td></tr> <tr> <td>Data Mode</td><td>Rotation speed, Acceleration time, Deceleration time, Initialization</td></tr> <tr> <td>Parameter Mode</td><td>Gear ratio, Speed up ratio, Fixed display of the lower first digit, Prohibition alarm of operation at the initial setting, External speed instruction input, External speed instruction voltage selection, External speed instruction offset, Upper and lower limits of speed, Deceleration control, Brake type, Input function selection, Output function selection, Motor lock detection time, Motor rotation direction, Initialization</td></tr> <tr> <td>Test Mode</td><td>JOG operation, Release of the electromagnetic brake</td></tr> <tr> <td>Others</td><td>Locking of data editing</td></tr> </table>	Monitoring Mode	Rotation speed, Operation data No., Alarm code, Warning code, I/O monitor	Data Mode	Rotation speed, Acceleration time, Deceleration time, Initialization	Parameter Mode	Gear ratio, Speed up ratio, Fixed display of the lower first digit, Prohibition alarm of operation at the initial setting, External speed instruction input, External speed instruction voltage selection, External speed instruction offset, Upper and lower limits of speed, Deceleration control, Brake type, Input function selection, Output function selection, Motor lock detection time, Motor rotation direction, Initialization	Test Mode	JOG operation, Release of the electromagnetic brake	Others	Locking of data editing
Monitoring Mode	Rotation speed, Operation data No., Alarm code, Warning code, I/O monitor										
Data Mode	Rotation speed, Acceleration time, Deceleration time, Initialization										
Parameter Mode	Gear ratio, Speed up ratio, Fixed display of the lower first digit, Prohibition alarm of operation at the initial setting, External speed instruction input, External speed instruction voltage selection, External speed instruction offset, Upper and lower limits of speed, Deceleration control, Brake type, Input function selection, Output function selection, Motor lock detection time, Motor rotation direction, Initialization										
Test Mode	JOG operation, Release of the electromagnetic brake										
Others	Locking of data editing										
Control Power Source	24 VDC ±10% 0.15 A or more										
Input Signals	Photocoupler Input Input Resistance 4.7 kΩ Signals can be optionally allocated to IN0 to IN5 inputs (6 points) []: Default [FWD], [REV], [M0], [M1], [ALARM-RESET], [FREE], EXT-ERROR Sink Input/Source Input ... Switchable by the selection switch: The factory setting is Sync Input.										
Output Signals	Photocoupler and Open Collector Output External power source: 4.5 to 30 VDC 40 mA or less Signals can be optionally allocated to OUT0 or OUT1 (2 points) []: Default [SPEED-OUT], [ALARM-OUT], TH-OUT, WNG Sink Output/Source Output ... Supplied through external wiring										
Protective Functions	When the following protective function is activated, the output to the motor is blocked and the electromagnetic brake operates to stop the motor. The alarm output is turned OFF. At the same time, the alarm code is indicated in the operating panel and ALARM LED lights. Alarm types: Motor overheat, Motor lock, Overspeed, EEPROM error, Prohibition of operation at the initial setting, External stop										
Continuous Operation Time with Deceleration Control ON	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">6 W</td><td>Continuous Operation Time: Continuous Operating Duty: Continuous</td></tr> <tr> <td>15 W, 25 W, 40 W</td><td>Continuous Operation Time: 1 minute Operating Duty: 50% or less (e.g.: Operation for 1 minute, Stop for 1 minute)</td></tr> <tr> <td>60 W, 90 W</td><td>Continuous Operation Time: 1 minute Operating Duty: 33% or less (e.g.: Operation for 1 minute, Stop for 2 minutes)</td></tr> </table>	6 W	Continuous Operation Time: Continuous Operating Duty: Continuous	15 W, 25 W, 40 W	Continuous Operation Time: 1 minute Operating Duty: 50% or less (e.g.: Operation for 1 minute, Stop for 1 minute)	60 W, 90 W	Continuous Operation Time: 1 minute Operating Duty: 33% or less (e.g.: Operation for 1 minute, Stop for 2 minutes)				
6 W	Continuous Operation Time: Continuous Operating Duty: Continuous										
15 W, 25 W, 40 W	Continuous Operation Time: 1 minute Operating Duty: 50% or less (e.g.: Operation for 1 minute, Stop for 1 minute)										
60 W, 90 W	Continuous Operation Time: 1 minute Operating Duty: 33% or less (e.g.: Operation for 1 minute, Stop for 2 minutes)										
Maximum Extension Length	Motor and Speed Controller Distance 10.5 m (When an accessory connection cable is used)										

General Specifications

Item	Motor	Speed Controller									
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the windings and the case after continuous operation under normal ambient temperature and humidity.	The value is 100 MΩ or more when measured by a 500 VDC megger between the main circuit terminal and the control circuit terminal, between the main circuit terminal and the case and between the main circuit and FG after continuous operation under normal ambient temperature and humidity.									
Dielectric Strength	After continuous operation under normal ambient temperature and humidity, no abnormality is judged even with application of 1.5 kVAC at 50 Hz or 60 Hz between the windings and the case for 1 minute.	After continuous operation under normal ambient temperature and humidity, no abnormality is judged even with application of the following voltage for 1 minute: 1.9 kVAC at 50 Hz or 60 Hz between the main circuit terminal and the control circuit terminal and between the main circuit terminal and the case; and 1.1 kVAC at 50 Hz or 60 Hz between the main circuit terminal and FG.									
Temperature Rise	The measurement of the coil temperature rise in the resistance method is 80°C or less after no-load continuous operation under normal ambient temperature and humidity.	—									
Overheat Protection Device	The 6 W type is impedance protected. All other motors have a built-in thermal protector (automatic return type).	—									
Operating Environment	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">Operating Environment</td><td>Single-Phase 110/115 VAC, Single-Phase 220/230 VAC: -10 to +40°C (non-freezing)</td><td>0 to +40°C (non-freezing)</td></tr> <tr> <td>Ambient Temperature</td><td>85% or less (non-condensing)</td><td></td></tr> <tr> <td>Altitude</td><td>Up to 1000 m above sea level</td><td></td></tr> </table>	Operating Environment	Single-Phase 110/115 VAC, Single-Phase 220/230 VAC: -10 to +40°C (non-freezing)	0 to +40°C (non-freezing)	Ambient Temperature	85% or less (non-condensing)		Altitude	Up to 1000 m above sea level		
Operating Environment	Single-Phase 110/115 VAC, Single-Phase 220/230 VAC: -10 to +40°C (non-freezing)	0 to +40°C (non-freezing)									
Ambient Temperature	85% or less (non-condensing)										
Altitude	Up to 1000 m above sea level										
Heat-resistant Class	130 (B)	—									
Degree of Protection	IP20	IP20									

Note

● Do not measure insulation resistance or perform the dielectric strength test while the motor and speed controller are connected.

Features	System Configuration	Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Electromagnetic Brake Type/Parallel Shaft Combination Type	Connection and Operation	Accessories
Lineup	Specifications and Characteristics	Dimensions	Dimensions	Combination List	Lineup
Lineup	Specifications and Characteristics	Dimensions	Dimensions	Combination List	Lineup
Lineup	Specifications and Characteristics	Dimensions	Dimensions	Combination List	Lineup

Output Shaft Speed with Deceleration Control ON (Factory Setting), Permissible Torque, Starting Torque

Description on the deceleration control → Page 20

Output Shaft Rotation Speed

● Motor Shaft Speed

Low speed: 300 r/min, High speed 50 Hz: 1400 r/min, High speed 60 Hz: 1600 r/min

Unit: r/min

Gear Ratio		7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360	
High Speed		50 Hz	186	155	112	93	77	56	46	38	28	23	18.6	15.5	14	11.6	9.3	7.7	5.6	4.6	3.8
Speed		60 Hz	213	177	128	106	88	64	53	44	32	26	21	17.7	16	13.3	10.6	8.8	6.4	5.3	4.4
Low Speed			40	33	24	20	16	12	10	8.3	6	5	4	3.3	3	2.5	2	1.6	1.2	1	0.83

Permissible Torque and Starting Torque

- Permissible torque and Starting Torque are fixed within the variable speed range (50 Hz: 300 to 1400 r/min, 60 Hz: 300 to 1600 r/min).
- In the case of horizontal driving, even if the deceleration control is ON, the torques with the deceleration control OFF are available. Permissible torque and starting torque when deceleration control is OFF → Page 25
- A colored  background indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.

Unit: N·m

Product Name		Gear Ratio	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
Permissible Torque Starting Torque	DSCI26UAM DSCI26ECM	0.20	0.24	0.34	0.41	0.49	0.68	0.77	0.93	1.3	1.5	1.9	2.3	2.6	3.1	3.6	4.4	6	6	6	
	DSCI315UAM DSCI315ECM	0.34	0.41	0.56	0.68	0.81	1.1	1.3	1.5	2.2	2.6	3.2	3.9	4.3	5.2	6.1	7.3	10	10	10	
	DSCI425UAM DSCI425ECM	0.54	0.65	0.90	1.1	1.3	1.8	2.1	2.5	3.4	4.1	5.2	6.2	6.9	8.3	9.7	11.7	16	16	16	
	DSCI540UAM DSCI540ECM	0.95	1.1	1.6	1.9	2.3	3.0	3.6	4.3	6.0	7.2	9.0	10.8	12.0	13.6	17.0	20.4	28.4	30	—	
	DSCI560UAM DSCI560ECM	1.4	1.7	2.4	2.8	3.4	4.5	5.4	6.5	9.0	10.8	13.5	16.3	18.1	20.4	25.5	30	30	30	—	
	DSCI590UAM DSCI590ECM	2.2	2.6	3.6	4.3	5.0	6.9	8.3	9.9	13.8	16.5	19.4	23.3	25.9	31.1	38.9	40	—	—	—	

Features

System Configuration

Lineup

Specifications and Characteristics

Dimensions

Combination List

Lineup

Specifications and Characteristics

Dimensions

Combination List

Connection and Operation

Accessories

Output Shaft Speed with Deceleration Control OFF, Permissible Torque, Starting Torque

Description on the deceleration control → Page 20

Output Shaft Rotation Speed

Motor Shaft Speed

Low speed: 90 r/min, High speed 50 Hz: 1400 r/min, High speed 60 Hz: 1600 r/min

Features

Gear Ratio		7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360	
High Speed		50 Hz	186	155	112	93	77	56	46	38	28	23	18.6	15.5	14	11.6	9.3	7.7	5.6	4.6	3.8
Speed		60 Hz	213	177	128	106	88	64	53	44	32	26	21	17.7	16	13.3	10.6	8.8	6.4	5.3	4.4
Low Speed			12	10	7.2	6	5	3.6	3	2.5	1.8	1.5	1.2	1	0.9	0.75	0.6	0.5	0.36	0.3	0.25

Unit: r/min

Permissible Torque and Starting Torque

A colored background indicates gear shaft rotation in the same direction as the motor shaft. Others rotate in the opposite direction.

Single-Phase 110/115 VAC

System Configuration

Product Name	Gear Ratio		7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
	Motor Shaft Speed r/min	Permissible																			
DSCI26UAM	1450	Permissible	0.34	0.41	0.56	0.68	0.81	1.1	1.3	1.5	2.2	2.6	3.2	3.9	4.3	5.2	6	6	6	6	6
	90	Permissible	0.26	0.31	0.43	0.51	0.62	0.86	0.98	1.2	1.6	2.0	2.5	2.9	3.3	3.9	4.6	5.5	6	6	6
	Starting	Permissible	0.27	0.32	0.45	0.54	0.65	0.90	1.0	1.2	1.7	2.1	2.6	3.1	3.4	4.1	4.9	5.8	6	6	6
DSC315UAM	1450	110 V	0.81	0.97	1.4	1.6	1.9	2.7	3.1	3.7	5.2	6.2	7.7	9.3	10	10	10	10	10	10	10
		115 V	0.84	1.0	1.4	1.7	2.0	2.8	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10	10	10	10
	90	110 V	0.30	0.36	0.51	0.61	0.73	1.0	1.2	1.4	1.9	2.3	2.9	3.5	3.9	4.6	5.5	6.6	9.1	10	10
		115 V	0.61	0.73	1.0	1.2	1.5	2.0	2.3	2.8	3.9	4.6	5.8	7.0	7.7	9.3	10	10	10	10	10
DSCI425UAM	1450	1.4	1.7	2.3	2.8	3.3	4.6	5.3	6.3	8.8	10.6	13.2	15.9	16	16	16	16	16	16	16	16
		90	0.30	0.36	0.51	0.61	0.73	1.0	1.2	1.4	1.9	2.3	2.9	3.5	3.9	4.6	5.5	6.6	9.1	10.9	13.1
	Starting	110 V	0.84	1.0	1.4	1.7	2.0	2.8	3.2	3.9	5.4	6.5	8.1	9.7	10.8	12.9	15.2	16	16	16	16
		115 V	0.91	1.1	1.5	1.8	2.2	3.0	3.5	4.2	5.8	7.0	8.7	10.4	11.6	13.9	16	16	16	16	16
DSCI540UAM	1450	2.2	2.6	3.6	4.3	5.2	6.9	8.3	9.9	13.8	16.5	20.6	24.8	27.5	30	30	30	30	—	—	—
		90	0.47	0.57	0.79	0.95	1.1	1.5	1.8	2.2	3.0	3.6	4.5	5.4	6.0	6.8	8.5	10.2	14.2	17	—
	Starting	110 V	1.2	1.5	2.0	2.4	2.9	3.9	4.6	5.6	7.7	9.3	11.6	13.9	15.5	17.5	21.9	26.2	30	30	—
		115 V	1.3	1.5	2.1	2.6	3.1	4.1	4.9	5.9	8.2	9.8	12.3	14.7	16.3	18.5	23.1	27.7	30	30	—
DSCI560UAM	1450	3.1	3.7	5.2	6.2	7.5	9.9	11.9	14.2	19.8	23.7	29.7	30	30	30	30	30	30	30	30	30
		115 V	3.3	4.0	5.5	6.6	7.9	10.5	12.6	15.2	21.1	25.3	30	30	30	30	30	30	30	30	30
	90	0.54	0.65	0.90	1.1	1.3	1.7	2.1	2.5	3.4	4.1	5.2	6.2	6.9	7.8	9.7	11.7	16.2	19.4	—	—
		110 V	1.8	2.1	2.9	3.5	4.2	5.6	6.7	8.0	11.2	13.4	16.8	20.1	22.4	25.3	30	30	30	30	—
DSCI590UAM	1450	1.9	2.3	3.2	3.8	4.5	6.0	7.2	8.7	12.0	14.4	18.1	21.7	24.1	27.2	30	30	30	30	—	—
		90	0.57	0.69	0.96	1.1	1.3	1.8	2.2	2.6	3.7	4.4	5.2	6.2	6.9	8.3	10.3	12.4	—	—	—
	Starting	110 V	2.7	3.2	4.5	5.4	6.2	8.6	10.3	12.4	17.2	20.6	24.3	29.2	32.4	38.9	40	40	—	—	—
		115 V	3.0	3.6	5.0	5.9	6.8	9.5	11.4	13.6	18.9	22.7	26.7	32.1	35.6	40	40	—	—	—	—

Unit: N·m

Features

Configuration

Lineup

Specifications and Characteristics

Dimensions

Combination List

Electromagnetic Brake Type/Parallel Shaft Combination Type

Lineup

Specifications and Characteristics

Dimensions

Combination List

Connection and Operation

Accessories

Output Shaft Speed with Deceleration Control OFF, Permissible Torque, Starting Torque

Description on the deceleration control → Page 20

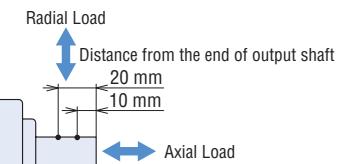
Single-Phase 220/230 VAC

Unit: N·m

Features	System Configuration	Product Name	Gear Ratio		7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360	
			Motor Shaft Speed r/min																					
Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Permissible	DSCI26ECM	1200	220 V 50 Hz	0.28	0.34	0.47	0.57	0.68	0.95	1.1	1.3	1.8	2.2	2.7	3.3	3.6	4.3	5.1	6	6	6	6	6
				230 V 50 Hz	0.31	0.37	0.52	0.62	0.75	1.0	1.2	1.4	2.0	2.4	3.0	3.6	4.0	4.7	5.6	6	6	6	6	6
				220 V 60 Hz	0.31	0.37	0.52	0.62	0.75	1.0	1.2	1.4	2.0	2.4	3.0	3.6	4.0	4.7	5.6	6	6	6	6	6
				230 V 60 Hz	0.34	0.41	0.56	0.68	0.81	1.1	1.3	1.5	2.2	2.6	3.2	3.9	4.3	5.2	6	6	6	6	6	6
			90	220 V 50/60 Hz	0.27	0.32	0.45	0.54	0.65	0.90	1.0	1.2	1.7	2.1	2.6	3.1	3.4	4.1	4.9	5.8	6	6	6	6
				230 V 50 Hz	0.25	0.30	0.42	0.50	0.60	0.83	0.95	1.1	1.6	1.9	2.4	2.9	3.2	3.8	4.5	5.4	6	6	6	6
				230 V 60 Hz	0.26	0.32	0.44	0.53	0.63	0.88	1.0	1.2	1.7	2.0	2.5	3.0	3.4	4.0	4.7	5.7	6	6	6	6
				220 V 50/60 Hz	0.30	0.36	0.50	0.59	0.71	0.99	1.1	1.4	1.9	2.3	2.8	3.4	3.8	4.5	5.3	6	6	6	6	
			Starting	230 V 50 Hz	0.30	0.36	0.50	0.59	0.71	0.99	1.1	1.4	1.9	2.3	2.8	3.4	3.8	4.5	5.3	6	6	6	6	
				230 V 60 Hz	0.34	0.41	0.56	0.68	0.81	1.1	1.3	1.5	2.2	2.6	3.2	3.9	4.3	5.2	6	6	6	6	6	
				1200	50 Hz	0.84	1.0	1.4	1.7	2.0	2.8	3.2	3.9	5.4	6.5	8.1	9.7	10	10	10	10	10	10	10
				1450	220 V 60 Hz	0.74	0.89	1.2	1.5	1.8	2.5	2.8	3.4	4.7	5.7	7.1	8.5	9.5	10	10	10	10	10	10
Electromagnetic Brake Type/Parallel Shaft Combination Type	Permissible	DSCI315ECM	90	230 V 60 Hz	0.81	0.97	1.4	1.6	1.9	2.7	3.1	3.7	5.2	6.2	7.7	9.3	10	10	10	10	10	10	10	10
				1200	50 Hz	0.27	0.32	0.45	0.54	0.65	0.90	1.0	1.2	1.7	2.1	2.6	3.1	3.4	4.1	4.9	5.8	8.1	9.7	10
				1450	220 V 60 Hz	0.45	0.54	0.75	0.90	1.1	1.5	1.7	2.1	2.9	3.5	4.3	5.2	5.8	6.9	8.1	9.8	10	10	10
				90	230 V 60 Hz	0.49	0.58	0.81	0.97	1.2	1.6	1.9	2.2	3.1	3.7	4.6	5.6	6.2	7.4	8.7	10	10	10	10
			Starting	220 V 50/60 Hz	0.45	0.54	0.75	0.90	1.1	1.5	1.7	2.1	2.9	3.5	4.3	5.2	5.8	6.9	8.1	9.8	10	10	10	
				230 V 50 Hz	0.49	0.58	0.81	0.97	1.2	1.6	1.9	2.2	3.1	3.7	4.6	5.6	6.2	7.4	8.7	10	10	10	10	
				230 V 60 Hz	0.55	0.66	0.91	1.1	1.3	1.8	2.1	2.5	3.5	4.2	5.2	6.3	7.0	8.4	9.8	10	10	10	10	
				1200	50 Hz	1.4	1.7	2.3	2.8	3.3	4.6	5.3	6.3	8.8	10.6	13.2	15.9	16	16	16	16	16	16	
			90	1450	60 Hz	1.4	1.7	2.3	2.8	3.3	4.6	5.3	6.3	8.8	10.6	13.2	15.9	16	16	16	16	16	16	
				90	220 V 50/60 Hz	0.27	0.32	0.45	0.54	0.65	0.90	1.0	1.2	1.7	2.1	2.6	3.1	3.4	4.1	4.9	5.8	8.1	9.7	11.7
				90	230 V 50/60 Hz	0.74	0.89	1.2	1.5	1.8	2.5	2.8	3.4	4.7	5.7	7.1	8.5	9.5	11.4	13.4	16	16	16	16
				90	230 V 50/60 Hz	0.81	0.97	1.4	1.6	1.9	2.7	3.1	3.7	5.2	6.2	7.7	9.3	10.3	12.4	14.6	16	16	16	16
Connection and Operation Accessories	Permissible	DSCI540ECM	90	1200	50 Hz	2.2	2.6	3.6	4.3	5.2	6.9	8.3	9.9	13.8	16.5	20.6	24.8	27.5	30	30	30	30	30	—
				1450	60 Hz	2.2	2.6	3.6	4.3	5.2	6.9	8.3	9.9	13.8	16.5	20.6	24.8	27.5	30	30	30	30	30	—
				90	50 Hz	0.44	0.53	0.73	0.88	1.1	1.4	1.7	2.0	2.8	3.4	4.2	5.0	5.6	6.3	7.9	9.5	13.2	15.8	—
				90	60 Hz	0.47	0.57	0.79	0.95	1.1	1.5	1.8	2.2	3.0	3.6	4.5	5.4	6.0	6.8	8.5	10.2	14.2	17	—
			Starting	90	1.3	1.5	2.1	2.6	3.1	4.1	4.9	5.9	8.2	9.8	12.3	14.7	16.3	18.5	23.1	27.7	30	30	—	
				1200	50 Hz	3.3	4.0	5.5	6.6	7.9	10.5	12.6	15.2	21.1	25.3	30	30	30	30	30	30	30	30	
				1450	220 V 60 Hz	3.1	3.7	5.2	6.2	7.5	9.9	11.9	14.2	19.8	23.7	29.7	30	30	30	30	30	30	30	
				90	230 V 60 Hz	3.3	4.0	5.5	6.6	7.9	10.5	12.6	15.2	21.1	25.3	30	30	30	30	30	30	30	30	
Accessories	Permissible	DSCI560ECM	90	220 V 50 Hz	0.54	0.65	0.90	1.1	1.3	1.7	2.1	2.5	3.4	4.1	5.2	6.2	6.9	7.8	9.7	11.7	16.2	19.4	—	
				220 V 60 Hz	0.51	0.61	0.84	1.0	1.2	1.6	1.9	2.3	3.2	3.9	4.8	5.8	6.5	7.3	9.1	10.9	15.2	18.2	—	
				230 V 50 Hz	0.57	0.69	0.96	1.1	1.4	1.8	2.2	2.6	3.7	4.4	5.5	6.6	7.3	8.3	10.3	12.4	17.2	20.7	—	
				230 V 60 Hz	0.54	0.65	0.90	1.1	1.3	1.7	2.1	2.5	3.4	4.1	5.2	6.2	6.9	7.8	9.7	11.7	16.2	19.4	—	
			Starting	220 V 50 Hz	1.9	2.3	3.2	3.8	4.5	6.0	7.2	8.7	12.0	14.4	18.1	21.7	24.1	27.2	30	30	30	30	—	
				220 V 60 Hz	2.0	2.3	3.3	3.9	4.7	6.2	7.5	9.0	12.5	15.0	18.7	22.4	24.9	28.2	30	30	30	30	—	
				230 V 50 Hz	2.0	2.3	3.3	3.9	4.7	6.2	7.5	9.0	12.5	15.0	18.7	22.4	24.9	28.2	30	30	30	30	—	
				230 V 60 Hz	2.0	2.4	3.4	4.1	4.9	6.5	7.7	9.3	12.9	15.5	19.4	23.2	25.8	29.2	30	30	30	30	—	
Accessories	Permissible	DSCI590ECM	90	1200	50 Hz	4.9	5.9	8.2	9.9	11.3	15.7	18.8	22.6	31.4	37.7	40	40	40	40	40	40	40	—	
				1450	60 Hz	4.9	5.9	8.2	9.9	11.3	15.7	18.8	22.6	31.4	37.7	40	40	40	40	40	40	40	—	
				90	0.64	0.77	1.1	1.3	1.5	2.0	2.5	2.9	4.1	4.9	5.8	6.9	7.7	9.2	11.5	13.9	—	—	—	
				90	220 V 50 Hz	3.3	4.0	5.5	6.6	7.6	10.5	12.6	15.2	21.1	25.3	29.8	35.7	39.7	40	40	40	40	40	—
			Starting	220 V 60 Hz	3.4	4.1	5.6	6.8	7.7	10.8	12.9	15.5	21.5	25.8	30.4	36.5	40	40	40	40	40	40	40	
				230 V 50 Hz	3.5	4.2	5.9	7.0	8.0	11.2	13.4	16.1	22.4	26.8	31.6	37.9	40	40	40	40	40	40	40	
				230 V 60 Hz	3.6	4.3	6.0	7.2	8.2	11.4	13.7	16.4	22.8	27.3	32.2	38.6	40	40	40	40	40	40	40	

Permissible Radial Load/Permissible Axial Load

Product Name	Gear Ratio	Permissible Radial Load N		Permissible Axial Load N
		10 mm	20 mm	
DSCI26	7.5~25	150	200	40
	30~360	200	300	
DSCI315	7.5~25	200	300	80
	30~360	300	400	
DSCI425	7.5~25	300	350	100
	30~360	450	550	
DSCI540 DSCI560	7.5~9	400	500	150
	12.5~18	450	600	
DSCI590	25~300	500	700	150
	7.5~9	400	500	
DSCI590	12.5~18	450	600	150
	25~180	500	700	



Gearhead Transmission Efficiency

Product Name	Gear Ratio	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
		2GV□B, 3GV□B, 4GV□B	90%	86%	81%															
5GV□B, 5GVH□B		90%		86%													81%			
5GVR□B		90%		86%														81%		

Permissible Load Inertia J

Product Name	Gear Ratio	Unit: $\times 10^{-4} \text{kg}\cdot\text{m}^2$																		
		7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	250	300	360
DSCI26	When instantaneous stop or instantaneous bi-directional operation*	28	40	78	110	160	260	370	540	920	1300	1700	2000	2500	3600	5000	5000	5000	5000	5000
		3.49	5.02	9.69	14	20.1	38.8	55.8	80.4	155	155	155	155	155	155	155	155	155	155	155
DSCI315	When instantaneous stop or instantaneous bi-directional operation*	45	65	120	180	260	440	630	900	1500	2100	2800	3200	4000	5700	8000	8000	8000	8000	8000
		7.88	11.3	21.9	31.5	45.4	87.5	126	181	350	350	350	350	350	350	350	350	350	350	350
DSCI425	When instantaneous stop or instantaneous bi-directional operation*	50	72	150	220	310	550	800	1100	2200	3200	4000	5000	6200	8900	12000	12000	12000	12000	12000
		17.4	25.1	48.4	69.8	100	194	279	402	775	775	775	775	775	775	775	775	775	775	775
DSCI540 DSCI560	When instantaneous stop or instantaneous bi-directional operation*	100	150	300	420	620	1100	1600	2300	4500	6000	8000	10000	12000	17000	25000	25000	25000	25000	—
		61.9	89.1	172	248	356	688	990	1426	2750	2750	2750	2750	2750	2750	2750	2750	2750	2750	2750
DSCI590	When instantaneous stop or instantaneous bi-directional operation*	100	150	300	420	620	1100	1600	2300	4500	6000	8000	10000	12000	17000	25000	25000	—	—	—
		61.9	89.1	172	248	356	688	990	1426	2750	2750	2750	2750	2750	2750	2750	2750	2750	2750	—

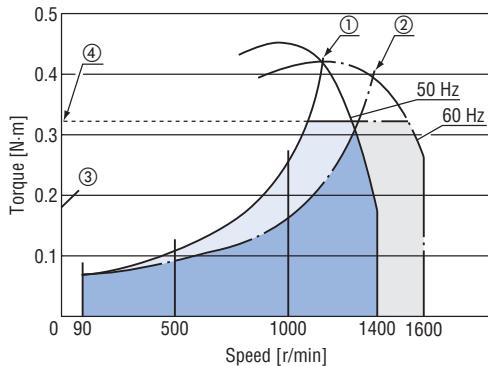
*These are the values when the deceleration control is ON.

Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Electromagnetic Brake Type/Parallel Shaft Combination Type
Lineup	Dimensions	Combination List	Electromagnetic Brake Type/Parallel Shaft Combination Type	Connection and Operation	Accessories	

How to Read Speed – Torque Characteristics

The characteristics diagram on the right shows the relationship between each setting speed and torque when a speed control motor is operated.

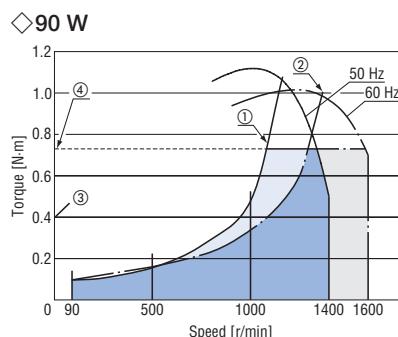
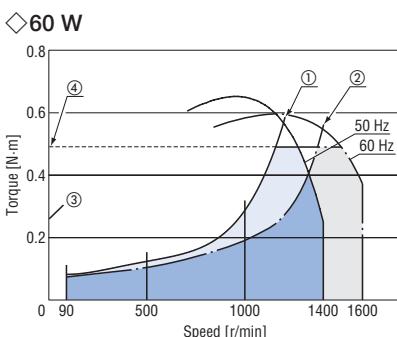
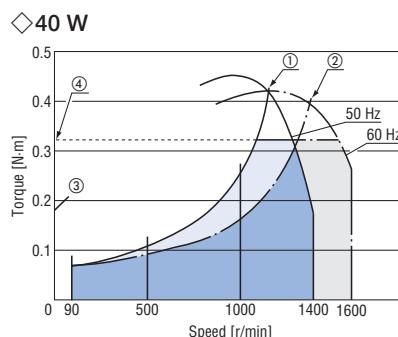
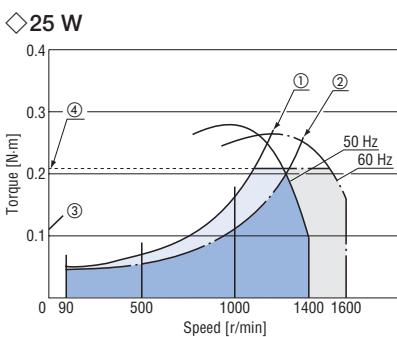
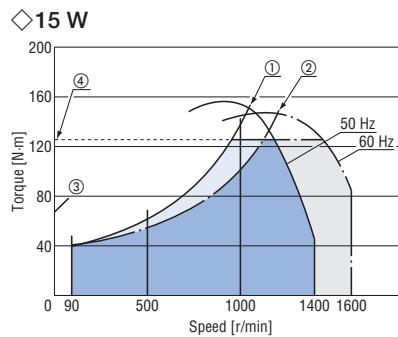
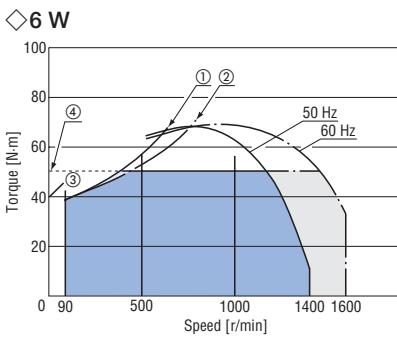
Features	
Configuration	① 50 Hz Safe-Operation Line ② 60 Hz Safe-Operation Line The safe-operation line is the permissible line of the torque that is limited according to the permissible temperature.
Lineup	Motors can be operated at a continuous rating within the safe-operation line. The safe-operation line is determined under the most severe condition where there is no heat conduction. Therefore, the motor can be operated depending on installation conditions of the motor. Note When operating beyond the safe-operation line, make sure the motor case temperature is kept at 90°C or less.
Specifications and Characteristics	③ Starting Torque This refers to the size of torque with which the motor can start.
Dimensions	④ Combination Type Permissible Torque This refers to the permissible value of the motor torque when operating with the gearhead installed. The permissible torque of the combination type varies according to the gear ratio. Use the motor without exceeding the value on the list of permissible torques.
Combination List	



Speed – Torque Characteristics (Reference)

① 50 Hz Safe-Operation Line ② 60 Hz Safe-Operation Line ③ Starting Torque ④ Permissible Torque

- The characteristics of each output are their representatives. (For motor only)
The permissible torque and starting torque of the motor vary according to the voltage. Check the specifications and the permissible torque of the combination type when using the motor.
- The following are characteristic diagrams when the motor is used with the deceleration control OFF.
When using the motor with the deceleration control ON, check the permissible torque values. Permissible torque → Page 24



Dimensions (Unit = mm)

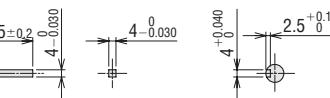
● "Installation Screws" are included with the combination type. Dimensions of installation screws (→ Page 32)

● A number in the box □ in the product name indicates the gear ratio. When the accessory connection cable is supplied, a number indicating the length of the cable, -1 (1 m), -2 (2 m), -3 (3 m) is specified in the box □ in the product name. The products supplied with an external speed potentiometer is shown with "V" at the end of the product name.

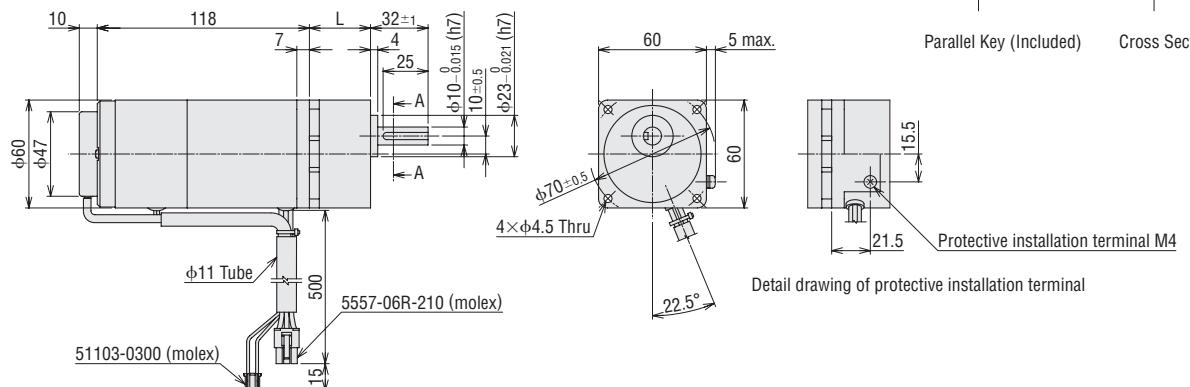
Combination Type

◇ 6 W

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg	2D CAD
DSCI26UAM-□■ DSCI26ECM-□■	2IK6UGV-UAM 2IK6UGV-ECM	2GV□B	7.5~25	34	1.7	A1297A
			30~120	38		A1297B
			150~360	43		A1297C



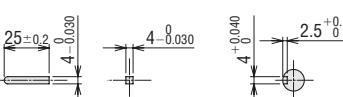
Parallel Key (Included) Cross Section A-A



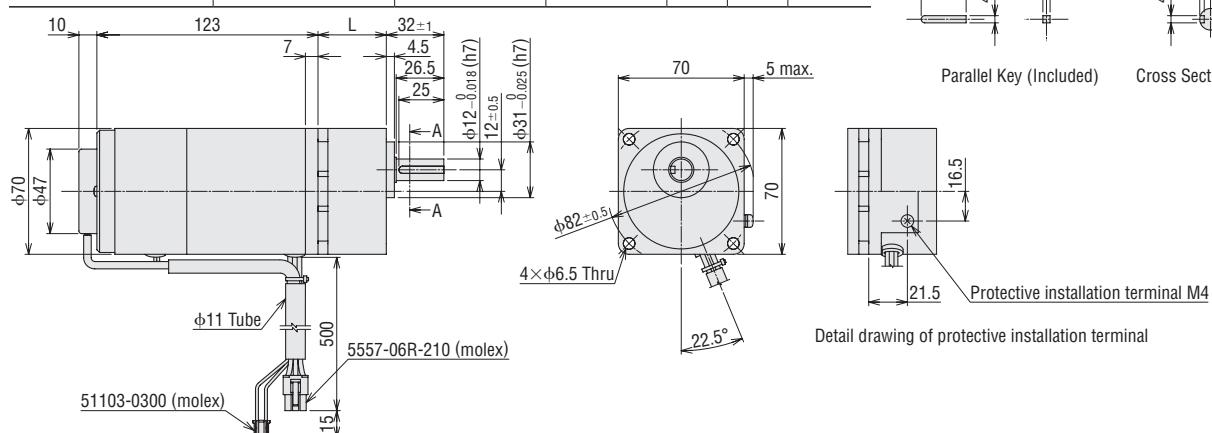
Detail drawing of protective installation terminal

◇ 15 W

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg	2D CAD
DSCI15UAM-□■ DSCI15ECM-□■	3IK15UGV-UAM 3IK15UGV-ECM	3GV□B	7.5~25	38	2.2	A1298A
			30~120	43		A1298B
			150~360	48		A1298C



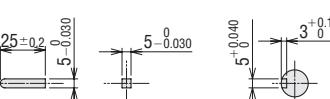
Parallel Key (Included) Cross Section A-A



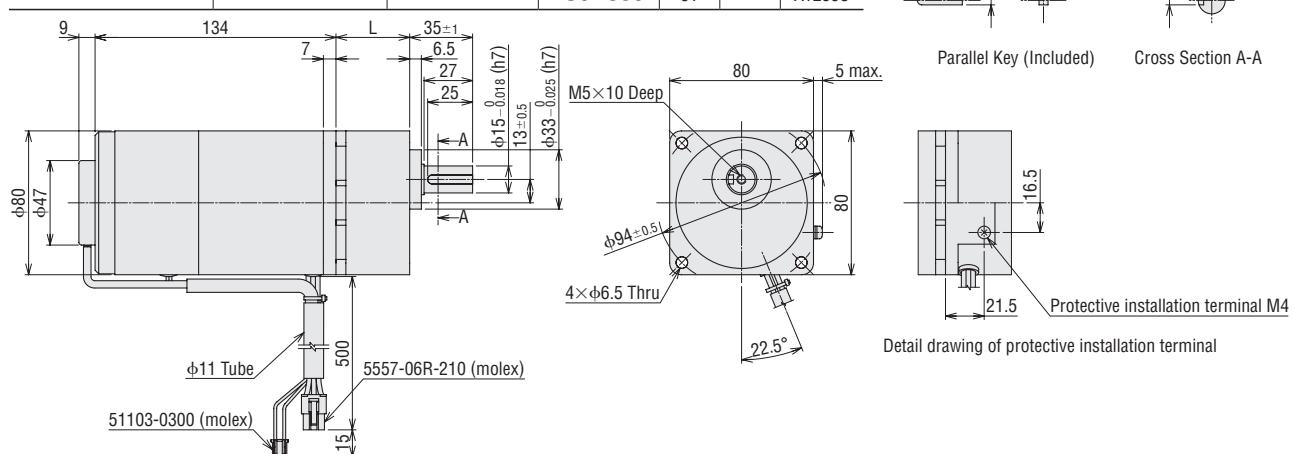
Detail drawing of protective installation terminal

◇ 25 W

Product Name	Motor Product Name	Gearhead Product Name	Gear Ratio	L	Mass kg	2D CAD
DSCI425UAM-□■ DSCI425ECM-□■	4IK25UGV-UAM 4IK25UGV-ECM	4GV□B	7.5~25	41	3.25	A1299A
			30~120	46		A1299B
			150~360	51		A1299C



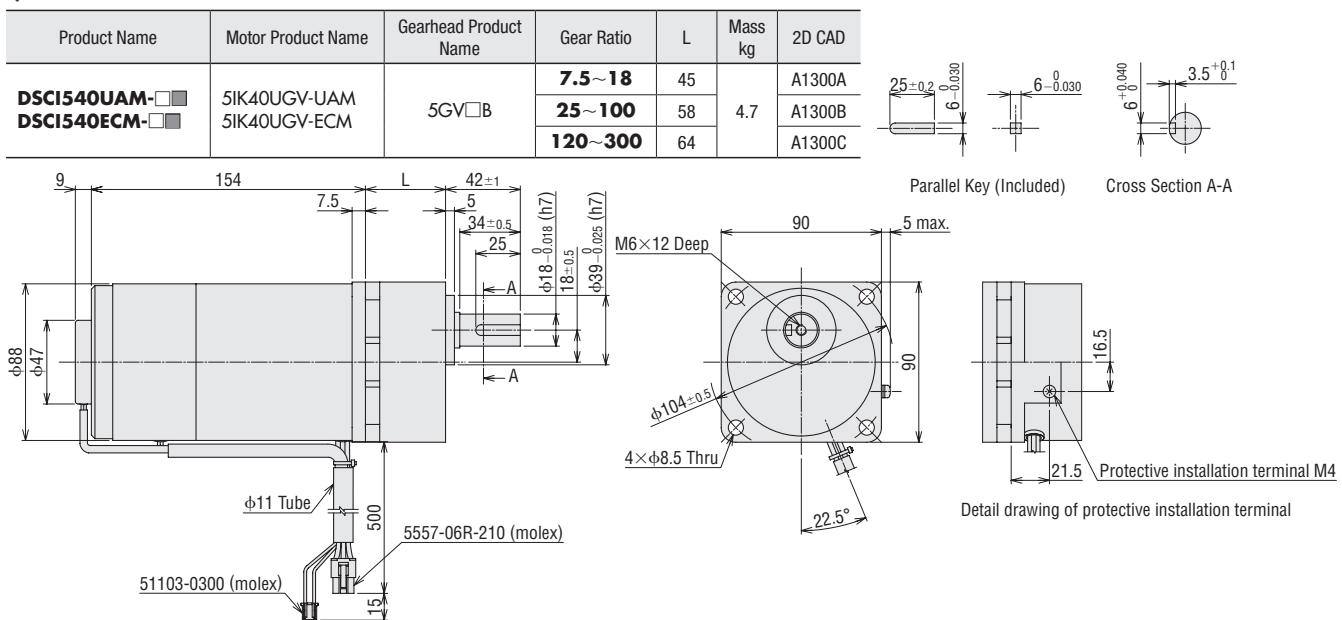
Parallel Key (Included) Cross Section A-A



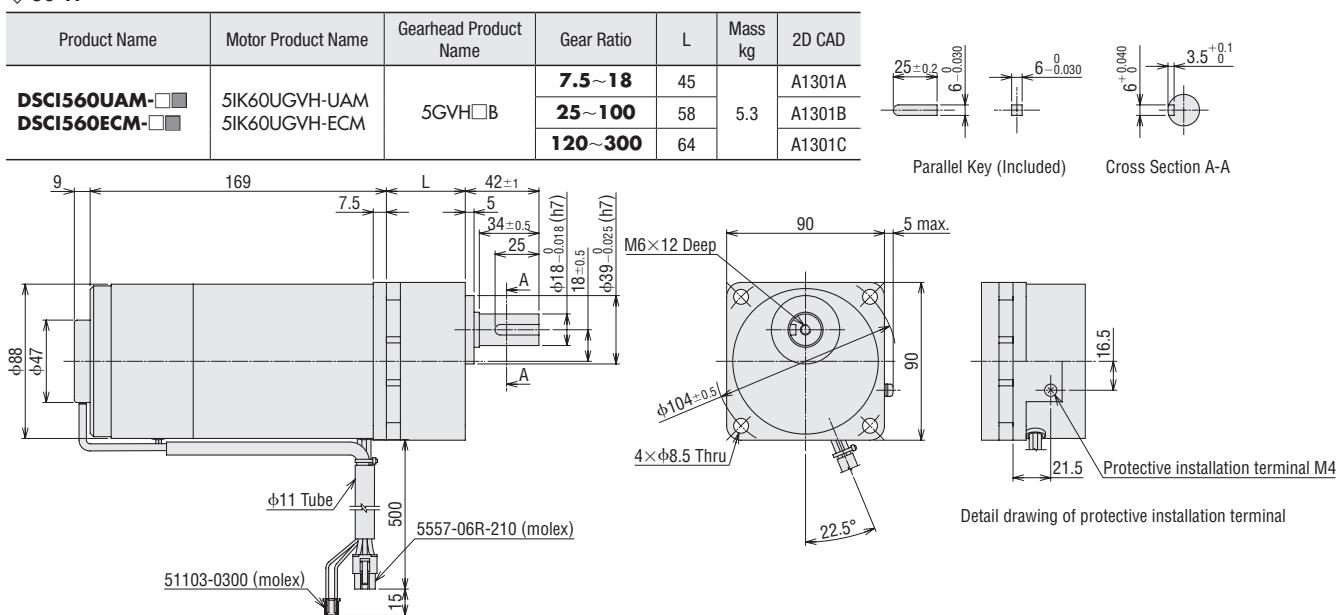
Detail drawing of protective installation terminal

Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Electromagnetic Brake Type/Parallel Shaft Combination Type	Dimensions	Combination List	Connection and Operation	Accessories

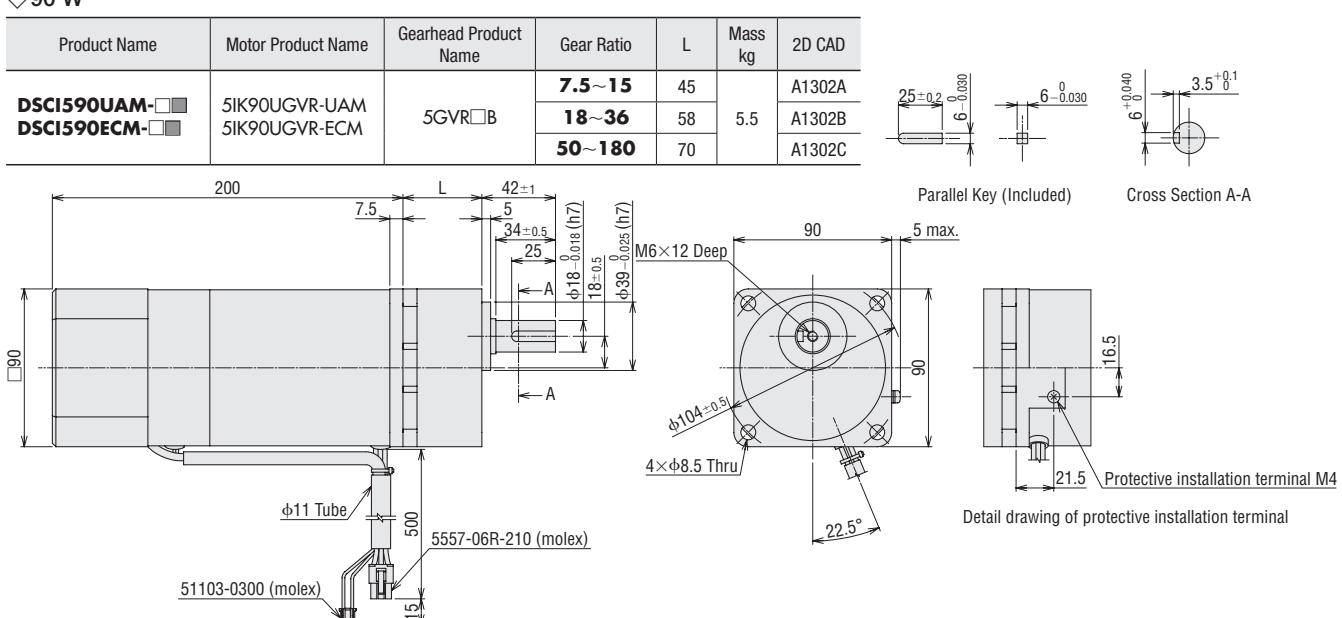
◇40 W



◇60 W



◇90 W



Features

System Configuration

Standard Type/Parallel Shaft Combination Type/Round Shaft Type

Dimensions

Lineup

Specifications and Characteristics

Dimensions

Combination Type

Connection and Operation

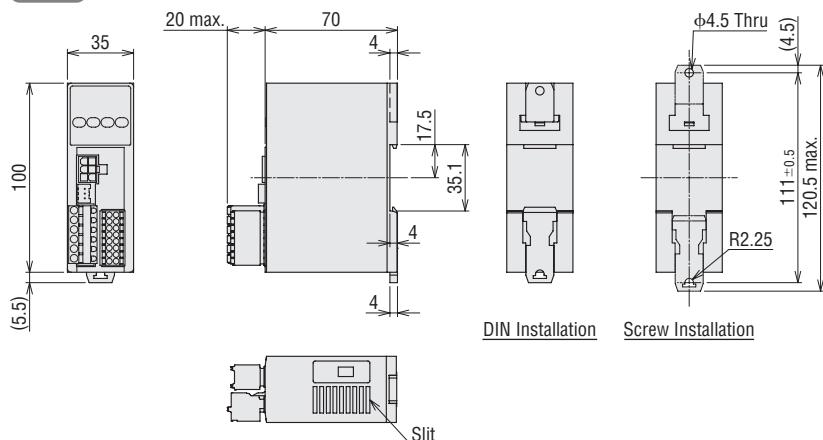
Accessories

● Speed Controller

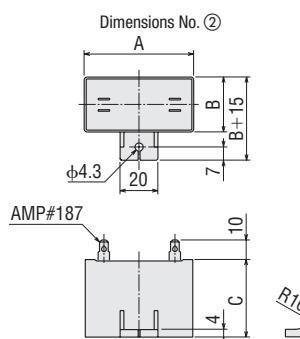
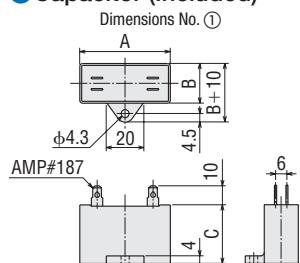
DSC-MU

Mass: 0.2 kg

2D CAD A1303



● Capacitor (Included)



● Capacitor Dimensions (Unit = mm)

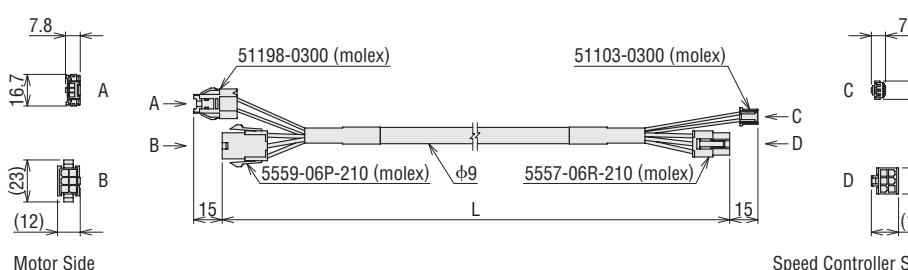
Product Name	Capacitor Product Name	A	B	C	Mass g	Dimensions No.
DSCI26UAM- □	CH25FAUL2	31	17	27	21	①
DSCI26ECM- □	CH06BFAUL	31	14.5	23.5	18	
DSCI315UAM- □	CH45FAUL2	37	18	27	26	
DSCI315ECM- □	CH10BFAUL	37	18	27	27	
DSCI425UAM- □	CH65CFAUL2	48	19	29	35	
DSCI425ECM- □	CH15BFAUL	38	21	31	37	
DSCI540UAM- □	CH90CFAUL2	48	22.5	31.5	45	
DSCI540ECM- □	CH23BFAUL	48	21	31	43	
DSCI560UAM- □	CH120CFAUL2	58	22	35	60	
DSCI560ECM- □	CH30BFAUL	58	21	31	50	
DSCI590UAM- □	CH200CFAUL2	58	29	41	91	②
DSCI590ECM- □	CH60BFAUL	58	29	41	92	

● A capacitor cap is included with the capacitor.

● Connection Cable (Included)

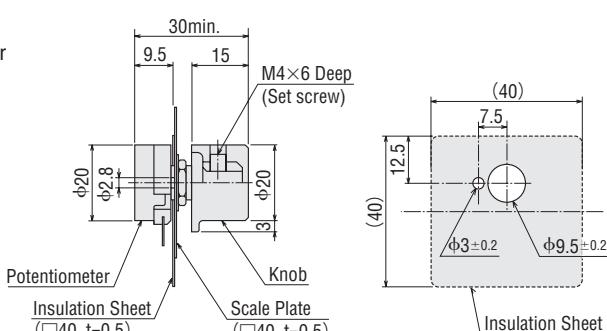
Only with types supplied with a connection cable

Cable Type	Length L (m)
1	1
2	2
3	3



● External Speed Potentiometer (Included)

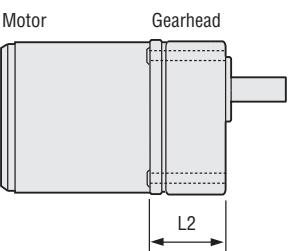
Only with types supplied with an external speed potentiometer



Recommended installation plate thickness is 4.5 mm max.

Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Electromagnetic Brake Type/Parallel Shaft Combination Type

Dimensions of Installation Screws



Product Name	Installation Screws		L2 (mm)
	L1 (mm)	Screw Size	
2GV5B~25B	50	M4 P0.7	41
2GV30B~120B	55		45
2GV150B~360B	60		50
3GV5B~25B	60		45
3GV30B~120B	65		50
3GV150B~360B	70		55
4GV5B~25B	60		48
4GV30B~120B	65		53
4GV150B~360B	70		58
5GV5B~18B, 5GVH5B~18B	70		52.5
5GV25B~100B, 5GVH25B~100B	85	M6 P1.0	65.5
5GV120B~300B, 5GVH120B~300B	90		71.5
5GVR5B~15B	70		52.5
5GVR18B~36B	85		65.5
5GVR50B~180B	95		77.5

● Installation screws: 4 plain washers and 4 spring washers are included.

● The installation screw material is stainless steel.

Combination List

Output Power	Product Name	Combination Motor Product Name*	Motor Product Name	Gearhead Product Name	Speed Controller Product Name
6 W	DSCI26UAM-□■	2IK6UUAM-□	2IK6UGV-UAM	DSC-MU	
	DSCI26ECM-□■	2IK6UECM-□	2IK6UGV-ECM		
15 W	DSCI315UAM-□■	3IK15UUAM-□	3IK15UGV-UAM		
	DSCI315ECM-□■	3IK15UECM-□	3IK15UGV-ECM		
25 W	DSCI425UAM-□■	4IK25UUAM-□	4IK25UGV-UAM		
	DSCI425ECM-□■	4IK25UECM-□	4IK25UGV-ECM		
40 W	DSCI540UAM-□■	5IK40UUAM-□	5IK40UGV-UAM		
	DSCI540ECM-□■	5IK40UECM-□	5IK40UGV-ECM		
60 W	DSCI560UAM-□■	5IK60UUAM-□	5IK60UGVH-UAM		
	DSCI560ECM-□■	5IK60UECM-□	5IK60UGVH-ECM		
90 W	DSCI590UAM-□■	5IK90UUAM-□	5IK90UGVR-UAM		
	DSCI590ECM-□■	5IK90UECM-□	5IK90UGVR-ECM		

*For combination motors, the product name applies to the motor and gearhead combination.

● A number in the box □ in the product name indicates the gear ratio.

When the accessory connection cable is supplied, a number indicating the length of the cable, -1 (1 m), -2 (2 m), -3 (3 m) is specified in the box ■ in the product name.

The products supplied with an external speed potentiometer is shown with "V" at the end of the product name.

Features

System Configuration

Standard Type/Parallel Shaft Combination Type

Lineup Specifications and Characteristics

Dimensions

Combination List

Lineup

Electromagnetic Brake Type/Parallel Shaft Combination Type

Dimensions

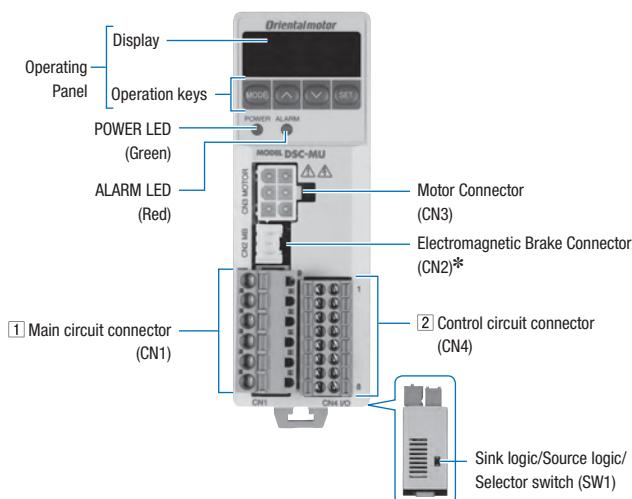
Combination List

Connection and Operation

Accessories

■ Connection and Operation

● Names and Functions of Speed Controller Parts



Name		Overview
Operating Panel	Display (4-digit LED)	Displays speed, parameter, alarm, etc.
	Operation keys	Switches the operation mode or changes the setting or parameter of the operation data.
POWER LED (Green)	POWER LED (Green)	Lights while the AC power supply is provided to the speed controller.
ALARM LED (Red)	ALARM LED (Red)	Lights when the alarm is generated.
Motor Connector (CN3)	Motor Connector (CN3)	Connects the connector of the motor.
Electromagnetic Brake Connector (CN2)*	Electromagnetic Brake Connector (CN2)*	Connects the connector of the electromagnetic brake.
Main circuit connector (CN1)	Main circuit connector (CN1)	Connects the AC power source, capacitor and FG.
Control circuit connector (CN4)	Control circuit connector (CN4)	Connects the DC power supply for control and I/O signals.
Sink logic/Source logic/ Selector switch (SW1)	Sink logic/Source logic/ Selector switch (SW1)	Switches between the sink logic and source logic for the input signals.

*Only the electromagnetic brake type is connected.

① Main circuit connector (CN1)

Pin No.	Description	Description
1	Capacitor	Connects the capacitor.
2	N.C.	No connection.
4	AC Power Supply	Connects the live side.
5		Connects the neutral side.
6	FG	Connects the ground wire.

② Control circuit connector (CN4)

Pin No.	Signal Name	Function*1	Description
1	+24 V	DC Power Supply for Control	Connects the 24 VDC power supply for control.
2	0 V (GND)		
3	IN0	[FWD]	The motor rotates in the FWD direction when "ON." *2
4	IN1	[REV]	The motor rotates in the REV direction when "ON." *2
5	IN2	[M0]	
6	IN3	[M1]	Select the operating data.
7	IN4	[ALARM-RESET]	Alarms are reset.
8	IN5	[FREE]	When turning the FREE Input to "ON" during the motor operation, the motor automatically stops. With the FREE Input "ON", even if the FWD Input or REV Input is turned "ON", the motor does not rotate. For electromagnetic brake types, turn the FREE Input to "ON" to release the electromagnetic brake.
9	VH	External Speed Setting Input	Connects this to externally set the speed by using an external speed potentiometer or external DC voltage.
10	VM		
11	VL		
12	N.C.	—	No connection.
13	OUT0+	[SPEED-OUT]	For every rotation of the motor output shaft, 12 pulses are output.
14	OUT0-		
15	OUT1+	[ALARM-OUT]	This signal is output when an alarm is generated. (Normally closed)
16	OUT1-		

*1 The [] indicates the functions assigned in the factory. From the following signals, necessary signals can be assigned to any of the 6 input signal terminals (IN0 to IN5) and 2 output signal terminals (OUT0, OUT1).

6 points for any of the 7 input signals (FWD, REV, M0, M1, ALARM-RESET, FREE, EXT-ERROR)

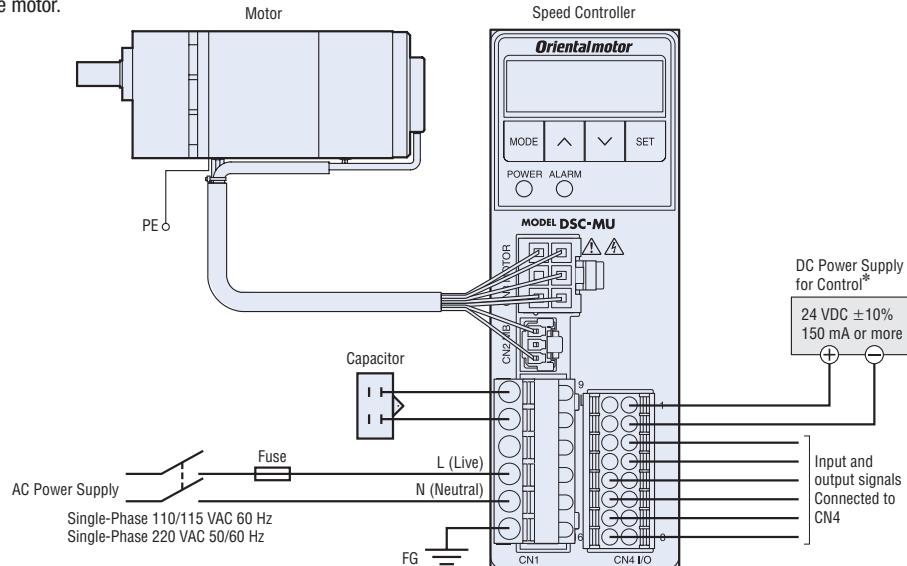
2 points for any of the 4 output signals (SPEED-OUT, ALARM-OUT, TH-OUT, WNG)

*2 The rotation direction varies depending on the gear ratio of the gearhead or parameter setting.

Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Specifications and Characteristics	Dimensions	Combination List	Connection and Operation	Accessories

● Connection Diagram

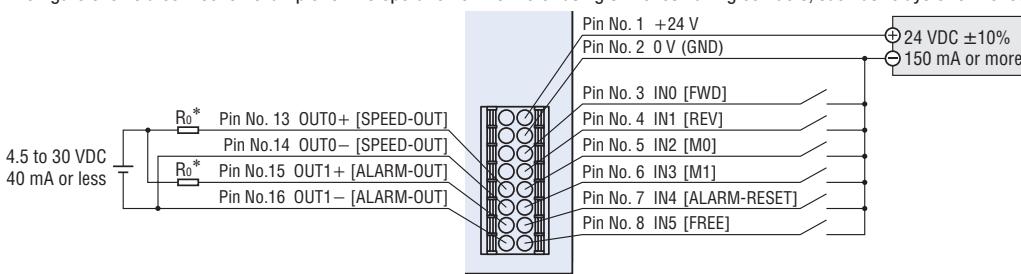
The figure shows an connection example of a motor with an electromagnetic brake. Be sure to connect the DC power supply for control in addition to the AC power supply when operating the motor.



*For the DC power supply for control, use the power supply with reinforced insulation provided on the primary and secondary sides.

◇ Connection example of Input and output signals (CN4)

The figure shows a connection example for the operation of the motor using switches having contacts, such as relays or switches, in the sink logic setting.



*Recommended special value

For 24 VDC: 680 Ω to 4.7 kΩ (2 W) For 5 VDC: 150 Ω to 1 kΩ (0.5 W)

Note

● Connect the controlling resistance R_o according to the power supply voltage to use so that the current applied to the output signals does not exceed 40 mA.

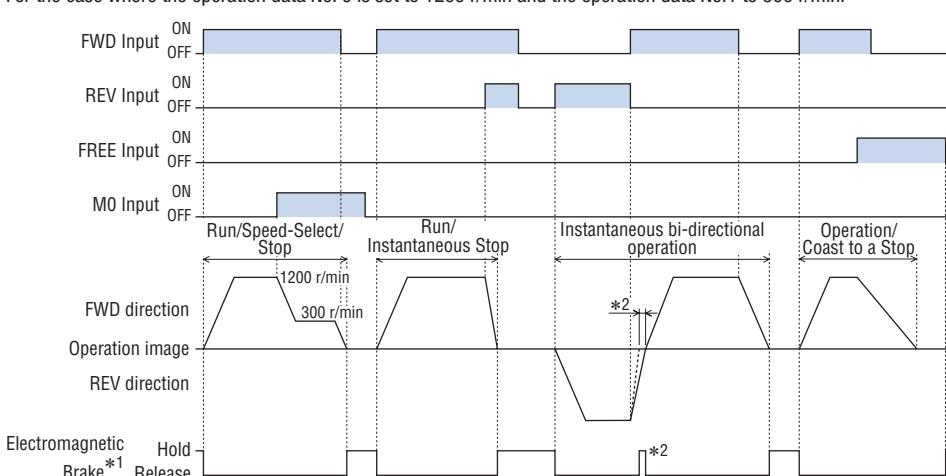
◇ Rating of Fuse

For overcurrent protection, be sure to insert a fuse into the AC power supply line.

Rating of Fuse	Single-Phase 110/115 VAC	216 Series (Littelfuse, Inc.) 10 A or equivalent
	Single-Phase 220/230 VAC	216 Series (Littelfuse, Inc.) 6.3 A or equivalent

● Timing Chart

For the case where the operation data No. 0 is set to 1200 r/min and the operation data No. 1 to 300 r/min.



*1 Only for electromagnetic brake types.

*2 Only for electromagnetic brake types. This is retained when the "Deceleration Control" parameter is ON and a time lag (around 0.1 seconds) occurs due to the stop of the motor. When the "Deceleration Control" parameter is OFF, this is not retained. There is no time lag either.

Note

● The duration of ON for each signal must be 10 ms or more.

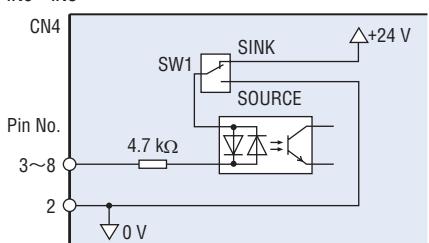
- After setting the speed, when turning the FWD or REV input to ON, the motor rotates at the set speed.
- During the motor operation, when turning OFF the signal that is ON (FWD or REV input), the motor stops with deceleration according to the set deceleration time.
- When both the FWD and REV inputs are turned ON simultaneously, the motor stops instantaneously.
- For electromagnetic brake types, the motor stops and the brake is activated.

I/O Signal Circuits

Select sink logic or source logic according to the external control device you will be using.

Input Circuit

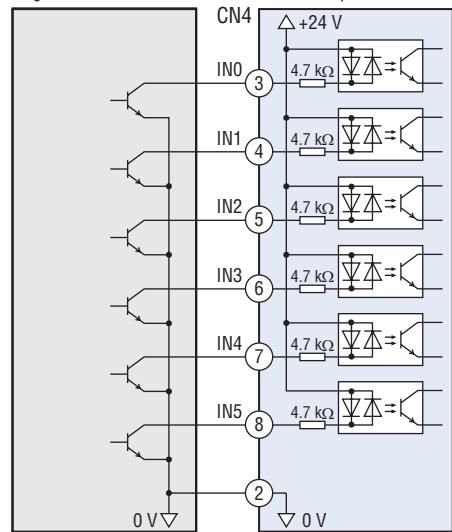
IN0~IN5



Connection to Programmable Controller

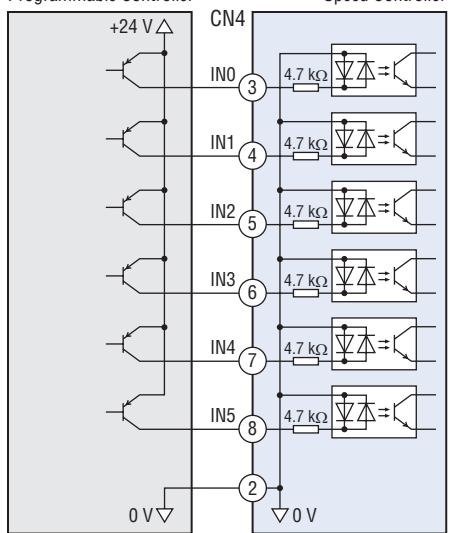
Sink Logic

Programmable Controller



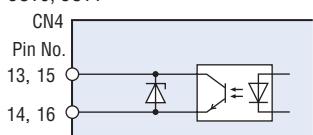
Source Logic

Programmable Controller



Output Circuit

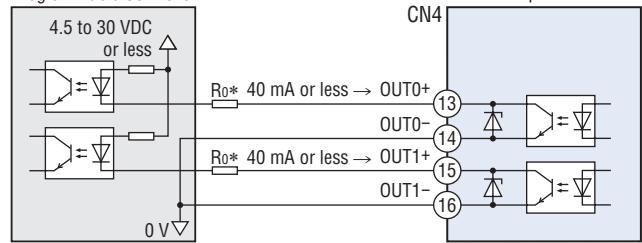
OUT0, OUT1



Connection to Programmable Controller

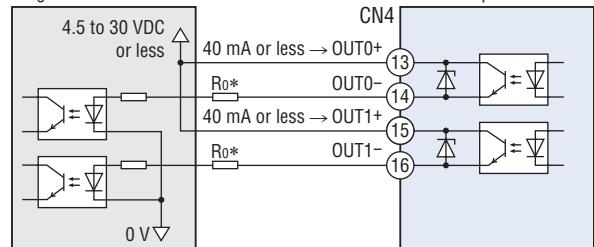
Sink Logic

Programmable Controller



Source Logic

Programmable Controller



*Recommended resistance value

For 24 VDC: 680 Ω to 4.7 kΩ (2 W) For 5 VDC: 150 Ω to 1 kΩ (0.5 W)

Note

The current applied to OUT0 and OUT1 must be 40 mA or less. If this value is exceeded, connect the limiting resistor Ro.

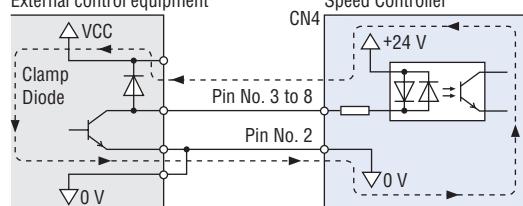
When an External Control Device with a Built-In Clamp Diode is Used

With external control equipment with built-in clamping diodes connected, if the power of the external control equipment is turned off with the speed controller turned on, the motor may rotate due to current flowing around. Also, depending on the speed controller and the external control equipment used, the motor may rotate even if the power is simultaneously turned ON or OFF. To turn ON or OFF the power, follow the procedure below.

To turn OFF: Speed controller → External control equipment

To turn ON: External control equipment → Speed controller

External control equipment



Speed Output (SPEED-OUT)

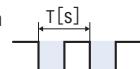
Pulse signals of 12 pulses are output at every rotation of the motor output shaft in synchronization with the motor rotation.

You can measure the speed output frequency and calculate the motor speed.

$$\text{Motor Shaft Speed [r/min]} = \frac{\text{Speed Output Frequency [Hz]}}{12} \times 60$$

$$\text{Speed Output Frequency [Hz]} = \frac{1}{T[\text{s}]}$$

Speed Output Waveform

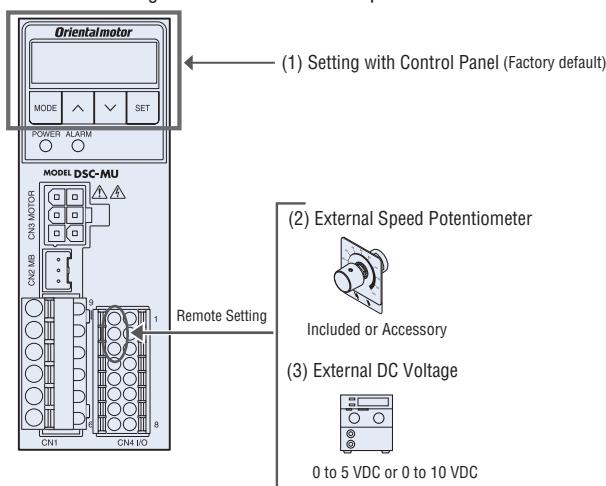


Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Specifications and Characteristics	Dimensions	Combination List	Connection and Operation	Accessories

Features
Configuration
Lineup
Standard Type/Parallel Shaft Combination Type/Round Shaft Type
Electromagnetic Brake Type/Parallel Shaft Combination Type
Specifications and Characteristics
Dimensions
Combination List
Lineup
Electromagnetic Brake Type/Parallel Shaft Combination Type
Specifications and Characteristics
Dimensions
Combination List
Connection and Operation
Accessories

Speed Setting Method

There are following three methods to set the speed.



Setting with Control Panel

Up to four patterns of operating data can be set.

Select a pattern by switching the ON/OFF of the M0 and M1 inputs for operation.

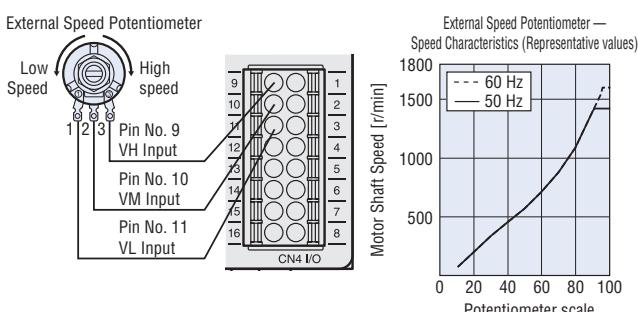
Operating Data No.	M1	M0	Description
0	OFF	OFF	Setting with Control Panel/Remote Setting*
1	OFF	ON	
2	ON	OFF	Setting with Control Panel
3	ON	ON	

*When the "External Speed Instruction Input" parameter is "ON (enabled)" (Default: OFF), the speed can be set with an external speed potentiometer or external DC voltage.

Setting with External Speed Potentiometer (Included or Accessory)

Connect an external speed potentiometer to CN4.

Setting of the "External Speed Instruction Voltage Selection" parameter: "0 to 5" (Default)



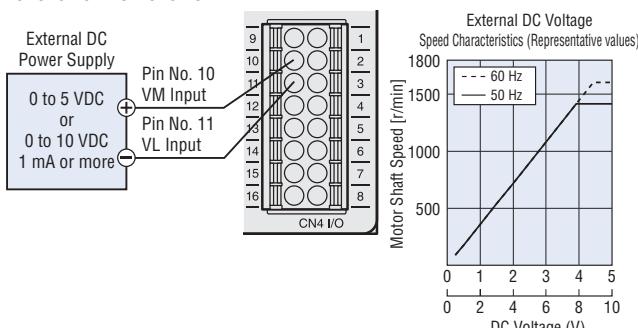
Setting with External DC Voltage

Connect an external DC power (0 to 5 VDC or 0 to 10 VDC) to CN4.

Setting of the "External Speed Instruction Voltage Selection" parameter:

For 0 to 5 VDC: "0 to 5" (Default)

For 0 to 10 VDC: "0 to 10"



Note

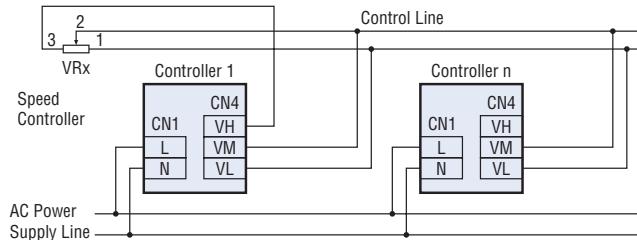
The external DC voltage must be 10 VDC or less. Also, when connecting the external DC voltage, make sure not to connect to the wrong polarity. This may damage the speed controllers.

Multi-Motor Control

Multiple motors can be operated at the same speed by using one external speed potentiometer or an external DC voltage.

When Using an External Speed Potentiometer

Parallel-motor operation using the external speed potentiometer (VRx) should be performed with 20 speed controllers or less.



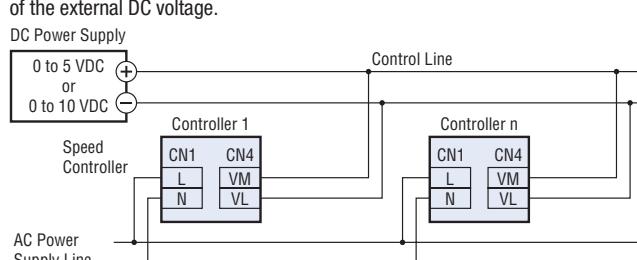
• The calculation method of the resistance value (VRx) when the number of speed controllers connected is n
Resistance value (VRx) = $20/n$ (kΩ), Allowable dissipation = $n/4$ (W)

Example: When connecting two speed controllers

Resistance value = $20/2 = 10$ (kΩ), Allowable dissipation = $2/4 = 1/2$ (W)

Using External DC Voltage

The number of connected controllers is limited according to the current capacity of the external DC voltage.



• The calculation method of the current capacity of the external DC power supply (I) when the number of speed controllers connected is n
Current Capacity (I) = $1 \times n$ (mA)

Example: When connecting two speed controllers

Current Capacity (I) = $1 \times 2 = 2$ (mA)

Repeated Operation Cycle

When repeating the motor operation in a short cycle, refer to the following cycle to set the motor housing temperature to 90°C or less.

Instantaneous Stop	6 W to 40 W	For repetition of operation and instantaneous stop 2 seconds or more, 50% or less of operation duty (e.g.: Run for 1 sec., Stop for 1 sec.)
	60 W to 90 W	For repetition of operation and instantaneous stop 4 seconds or more, 50% or less of operation duty (e.g.: Run for 2 secs, Stop for 2secs)
Instantaneous bi-directional operation	6 W to 40 W	For repetition of switching of rotation direction during operation Switching every 2 seconds or more
	60 W to 90 W	For repetition of switching of rotation direction during operation Switching every 4seconds or more

● When using a motor having electromagnetic brake with the "Deceleration Control" parameter ON, the conditions on the continuous operation are applied. See also "Continuous Operation Time with Deceleration Control ON" under Common Specifications for the electromagnetic brake type (→ Page 23)

Braking Current

For instantaneous stop, instantaneous bi-directional operation and operation by vertical driving*, a large half-wave rectified braking current flows in the AC power supply line for around 0.4 seconds.

For this sort of operation, consider the braking current (peak value) in the following table when selecting the capacity of the breaker and AC power supply for the equipment.

Motor Output Power	Braking Current (Peak value)	
	Single-Phase 100/110/115 VAC	Single-Phase 200/220/230 VAC
6 W	2 A	1 A
15 W	4 A	3 A
25 W	8 A	4 A
40 W	12 A	7 A
60 W	21 A	10 A
90 W	29 A	13 A

*Only for an electromagnetic brake type.

Accessories (Sold separately)

Connection Cables

Flexible Connection Cables

This is a connection cable for connecting the motor and the speed controller.
Use the flexible connection cable in applications where the cable is bent and flexed.



For Standard Type For Electromagnetic Brake Type

Note

When connecting the included cable with connection cables, the total length of these cables must be within 10.5 m (Up to 3 cables connected).

For Standard Type

Product Line

Connection Cables

Product Name	Length L (m)
CC01SC	1
CC02SC	2
CC03SC	3
CC05SC	5
CC10SC	10

Flexible Connection Cables

Product Name	Length L (m)
CC01SCR	1
CC02SCR	2
CC03SCR	3
CC05SCR	5
CC10SCR	10

For Electromagnetic Brake Type

Product Line

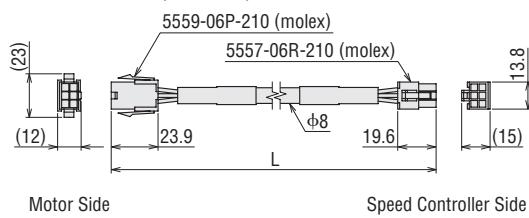
Connection Cables

Product Name	Length L (m)
CC01SCM	1
CC02SCM	2
CC03SCM	3
CC05SCM	5
CC10SCM	10

Flexible Connection Cables

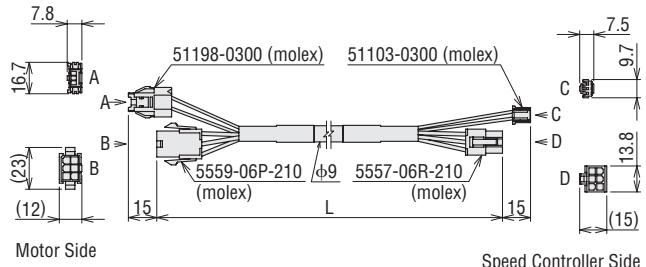
Product Name	Length L (m)
CC01SCMR	1
CC02SCMR	2
CC03SCMR	3
CC05SCMR	5
CC10SCMR	10

Dimensions (Unit = mm)



Motor Side Speed Controller Side

Dimensions (Unit = mm)



Motor Side Speed Controller Side

Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Specifications and Characteristics	Dimensions	Combination List	Connection and Operation	Accessories

Torque Arms

A torque arm acts as an anti-spin mechanism when a right-angle shaft, hollow shaft geared type gearhead is installed to prevent gearheads from rotating due to reactive force from the shaft being loaded.



Motor and Gearhead Mounting Brackets

These dedicated mounting brackets are for mounting motors and gearheads.



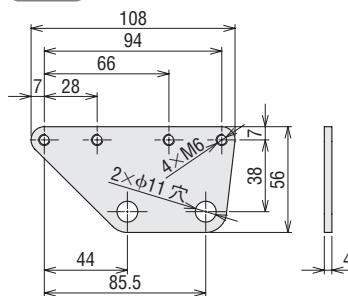
Product Name		Applicable Product
SOT4A	DSCI425	Hollow Shaft Geared
SOT5A	DSCI540	Hollow Shaft Geared
	DSCI590	Hollow Shaft Geared

Dimensions (Unit = mm)

◇ SOT4A

Mass: 140 g

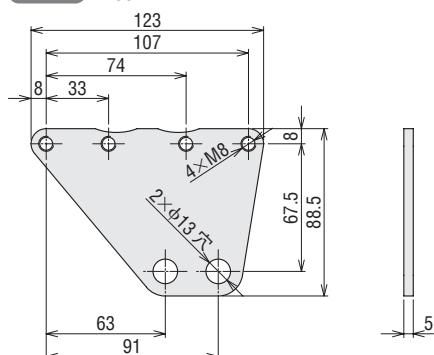
2D CAD A1330



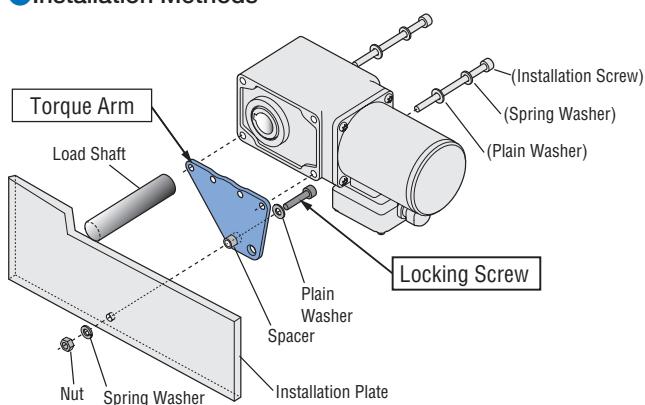
◇ SOT5A

Mass: 275 g

2D CAD A1331



Installation Methods



●The items shown in () come with the motor.

Product Name		Applicable Product
SOL2M4F	DSCI26	Round Shaft Type
	DSCI26	Parallel Shaft Combination Type
SOL3M5F	DSCI315	Round Shaft Type
SOL3M6F	DSCI315	Parallel Shaft Combination Type
SOL4M5F	DSCI425	Round Shaft Type
SOL4M6F	DSCI425	Parallel Shaft Combination Type
SOL5M6F	DSCI540, DSCI560, DSCI590	Round Shaft Type
SOL5M8F	DSCI540, DSCI560, DSCI590	Parallel Shaft Combination Type

Flexible Couplings

These are clamp type couplings for connecting the motor and gearbox shaft with the driven shaft.

Once the gearbox is determined, the coupling can be selected.

● Couplings can also be used with round shaft types. Select a coupling with the same inner diameter size as the motor shaft diameter.

Parallel Shaft Combination Type

Motor			Flexible Couplings		
Uniform Load	Shock Load	Shaft Diameter mm	Type	Product Name	
DSCI26		φ10	MCL30	MCL300810	
DSCI315	—	φ12		MCL301010	
—	DSCI315	φ12		MCL301012	
DSCI425	—	φ15	MCL40	MCL300812	
—	DSCI425	φ15		MCL301012	
DSCI540 DSCI560 DSCI590		φ18		MCL401012	
			MCL55	MCL401212	
				MCL401214	
				MCL401215	
				MCL401216	
				MCL401015	
				MCL401215	
				MCL401415	
				MCL401515	
				MCL401516	
				MCL551515	
				MCL551516	
				MCL551518	
				MCL551520	
				MCL551525	
				MCL551518	
				MCL551618	
				MCL551818	
				MCL551820	
				MCL551825	

General-Purpose Cables for I/O Signals

This cable is useful for connecting the input and output signals of the speed controller.

Up to 2 m is available.

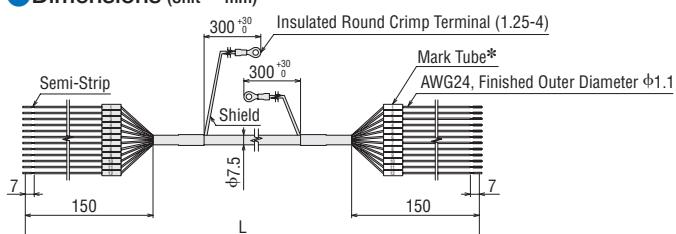


Product Name	Length L (m)
CC16D005B-1	0.5
CC16D010B-1	1
CC16D015B-1	1.5
CC16D020B-1	2

● The available general-purpose cable for I/O signals are those with 6 cores (CC06D□B-1), 10 cores (CC10D□B-1) and 12 cores (CC12D□B-1). Select the cable with most suitable number of cores according to the function you will use. For details on the products contact with Oriental Motor sales office.

● A cable for 24 DVC power supply (2 cores, CC02D□-3) is also provided. For details on the products contact with Oriental Motor sales office.

Dimensions (Unit = mm)



*Mark tubes with numbers printed are attached.

External Speed Potentiometer

Set and adjust the motor speed.

Product Name
PAVR-20KZ

(20 kΩ, 1/4 W, Type B Characteristics)

● Also available with a cable (0.5 to 2 m).



Features	System Configuration	Lineup	Specifications and Characteristics	Dimensions	Combination List	Lineup	Specifications and Characteristics	Dimensions	Combination List	Connection and Operation	Accessories
Standard Type/Parallel Shaft Combination Type/Round Shaft Type	Electromagnetic Brake Type/Parallel Shaft Combination Type										



Safety Precautions

- To ensure correct operation, carefully read the Operating Manual before using it.
- The products listed in this catalogue are for industrial use and for built-in component. Do not use for any other applications.

- The factories which manufacture the products listed in this catalogue have obtained Quality Management Systems ISO9001 and Environment Management Systems ISO14001.
- The content listed in this catalogue such as performance and specifications of the products are subject to change without notice for improvements.
- The price of all products listed in this catalogue does not include the consumption tax etc.
- For details of the products, please contact the nearest dealer, sales office or the following "Order Support Center" or "Customer Support Center".
- **Orientalmotor** is registered trademark or trademark of Oriental Motor in Japan and other countries.

Orientalmotor

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