

AC Speed Control Motors

AC Speed Control Motors

Overview

Three-Phase Induction Motors

Induction Motors

Reversible Motors

Electromagnetic Brake Motors

Clutch & Brake Motors

Low-Speed Synchronous Motors

Torque Motors

IP67 Watertight, Dust-Resistant Motors

Brake Pack

AC Speed Control Motors

AC input DSC

DSC Series

Speed Control Motor and Controller

DSC Series



For detailed information about regulations and standards, please see the Oriental Motor website.



- A high-reliability closed loop control speed control package.
- High performance, with easy installation and simple data setting. The display and digital setting features are built-in, making it even easier to use.
- An entry level speed control package that is both reasonably priced and compact.
- The electromagnetic brake type can be operated vertically.

The **DSC** Series features are AC motors and speed controllers that utilize Oriental Motor's exclusive technology. They provide high reliability with closed loop control, and because the phase control circuit has been digitized, the size of the speed controller has been reduced.



See Full Product Details Online
www.orientalmotor.com

● Manual

● Specifications

● Dimensions

● CAD

● Characteristics

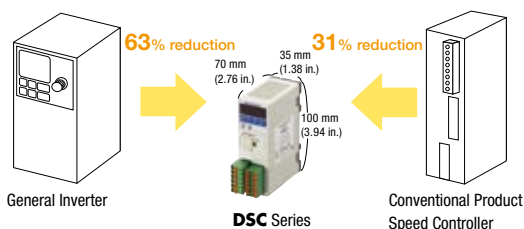
● Connection and Operation

Features

Easy Setting, More Control, Less Space

● Compact

The volume is 63% smaller than a general inverter.



● Side-by-Side Installation Saves Space

The body width is 35 mm (1.38 in.), and even when using multiple speed controllers, the installation is compact because they can be installed side by side.



● Slim Body Control Box

Depth is 90 mm (3.54 in.). Can be installed in slim body control cabinets.



● Connecting the Motor and Driver is Easy Using a Connector

Wiring the speed controller and motor together uses a connector, so installation and removal are easy.



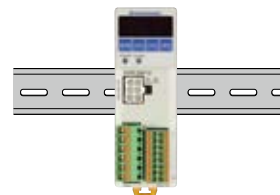
● Screwless I/O Wiring Requires No Crimping or Screwing

No need for soldering or crimping tools, and no torque management for screws necessary. Reduces wiring time and maintenance.



● Easy DIN Rail Installation

The speed controller can be installed directly on the DIN rail.



Simple User Interface

Speed and Other Settings are Shown and can be Entered Directly



Monitoring Mode

Real-time monitor for speed (Motor, gear shaft, conveyor speed), alarms, warnings, I/O status monitor

Data Mode

Speed setting

Parameter Mode

Set I/O assignments and parameters

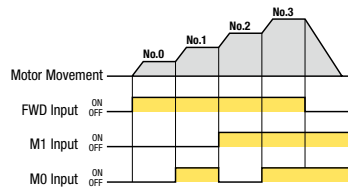
Test Mode

Test operation without data setting is possible.

● An operation lock can prevent accidental operation.

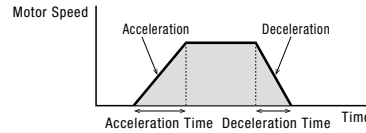
Speed Control (4 speeds)

4 units of operating data can be set, and can be switched with I/O during operation.



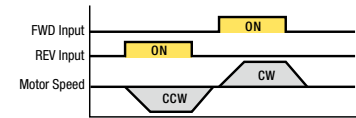
Acceleration/Deceleration

Makes the motor movement at start/stop smoother. It is possible to set acceleration/ deceleration differently for each of the 4-speed data units.



Bi-Directional Operation

Performs the operation according to the command for rotation direction.



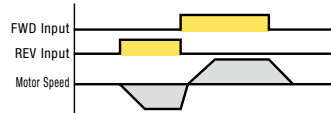
Instantaneous Stop

Stops the operating motor instantaneously. (Short cycle run/stop conditions can be created)

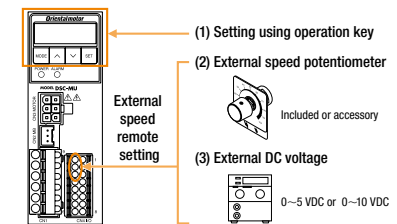


Instantaneous Bi-Directional Operation

Instantaneously switches the rotation direction of the motor while operating. (Short cycle change conditions can be created)

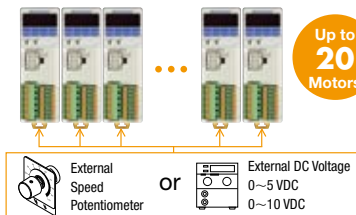


External Speed Setting Input is Possible



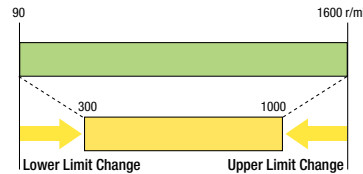
Parallel-Motor Operation (20 Units Max.)

A single external speed potentiometer can operate a maximum of 20 units in parallel. Fine adjustment of each motor's speed can be performed by changing the controller's parameters.



Speed Range Control

It is possible to limit the speed setting in advance with the speed range.



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Brake Pack

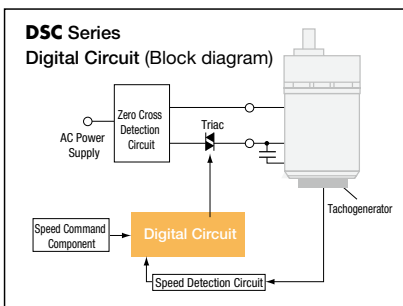
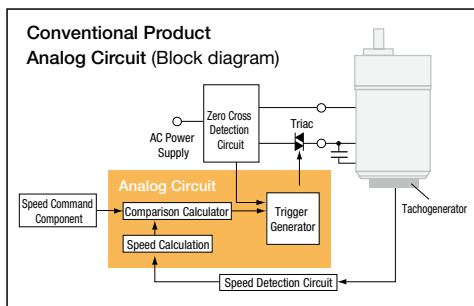
AC Speed Control Motors

AC input DSC

Speed Control Using Closed Loop Control

Speed is always monitored by the tachogenerator built into the AC motor.

The actual speed is controlled to match the speed setting, even when the load fluctuates.



● Speed regulation $\pm 1\%$ (Reference value)

Digitalization of Circuits

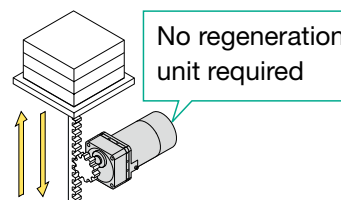
Most of the analog circuits that were used in the past have been replaced with software, which is now run by the CPU, and circuit components have been vastly reduced. This has drastically reduced the size as well as the number of circuit components. In addition, due to this switch to digital processing, it is possible to make the deviation for the speed command and speed detection values almost 0, and speed regulation has been improved from -5% to $\pm 1\%$ *.

*0~permissible torque when at 1000 r/min

Vertical Operation is Possible with Electromagnetic Brake Type

Speed control in vertical operation is possible through deceleration control. (For details on deceleration control and driving conditions while using deceleration control, refer to page E-98.)

Speed Control Range
[50 Hz]
300~1400 r/min
[60 Hz]
300~1600 r/min



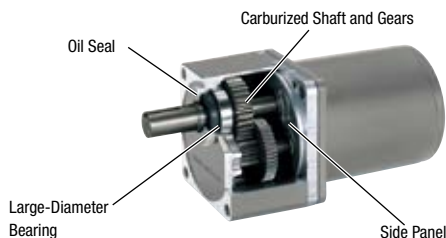
Use of a High Permissible Torque, High Strength Gearhead

Utilizes a gearhead that excels in both permissible torque and strength.

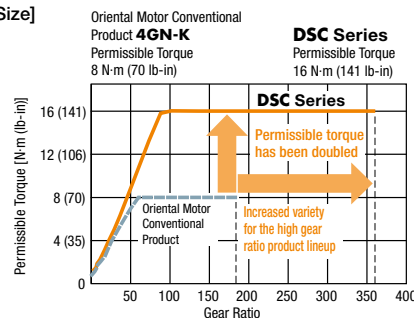
Special side panels in the gearhead have increased case rigidity, and heat processing (carburization) has increased the strength of the gears.

Parallel Shaft Combination Type

[Internal Gearhead Structure]

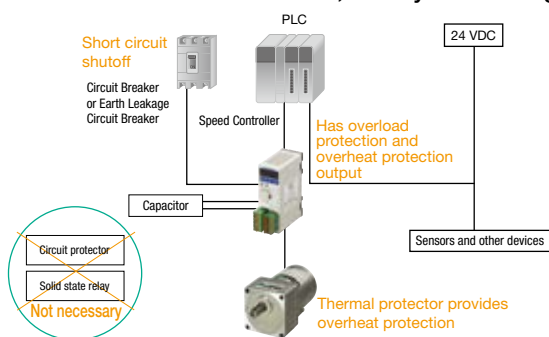


[For Geared Type with 80 mm (3.15 in.) Frame Size]



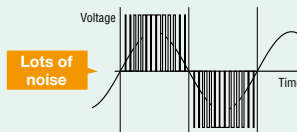
High Reliability

Low Noise Gives Peace of Mind, and System Configuration is Simple



Inverter + Three-Phase Motor

[PWM control]



Controls the voltage and frequency

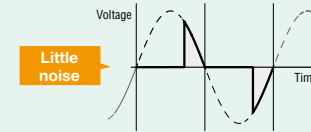
1 cycle performs 300 switchings

[Condition] ● Carrier frequency: 15 kHz

● Setting frequency: 50 Hz

DSC Series

[Phase control]



Controls the voltage

1 cycle performs 2 switchings

[Conditions] ● Power supply frequency: 50 Hz

Alarm Output Increases Reliability

Thanks to the closed loop control, feedback on the motor status is provided to the controller in real-time. An alarm signal is output when an abnormality, such as motor lock due to overload, occurs and the supply of power to the motor is stopped.



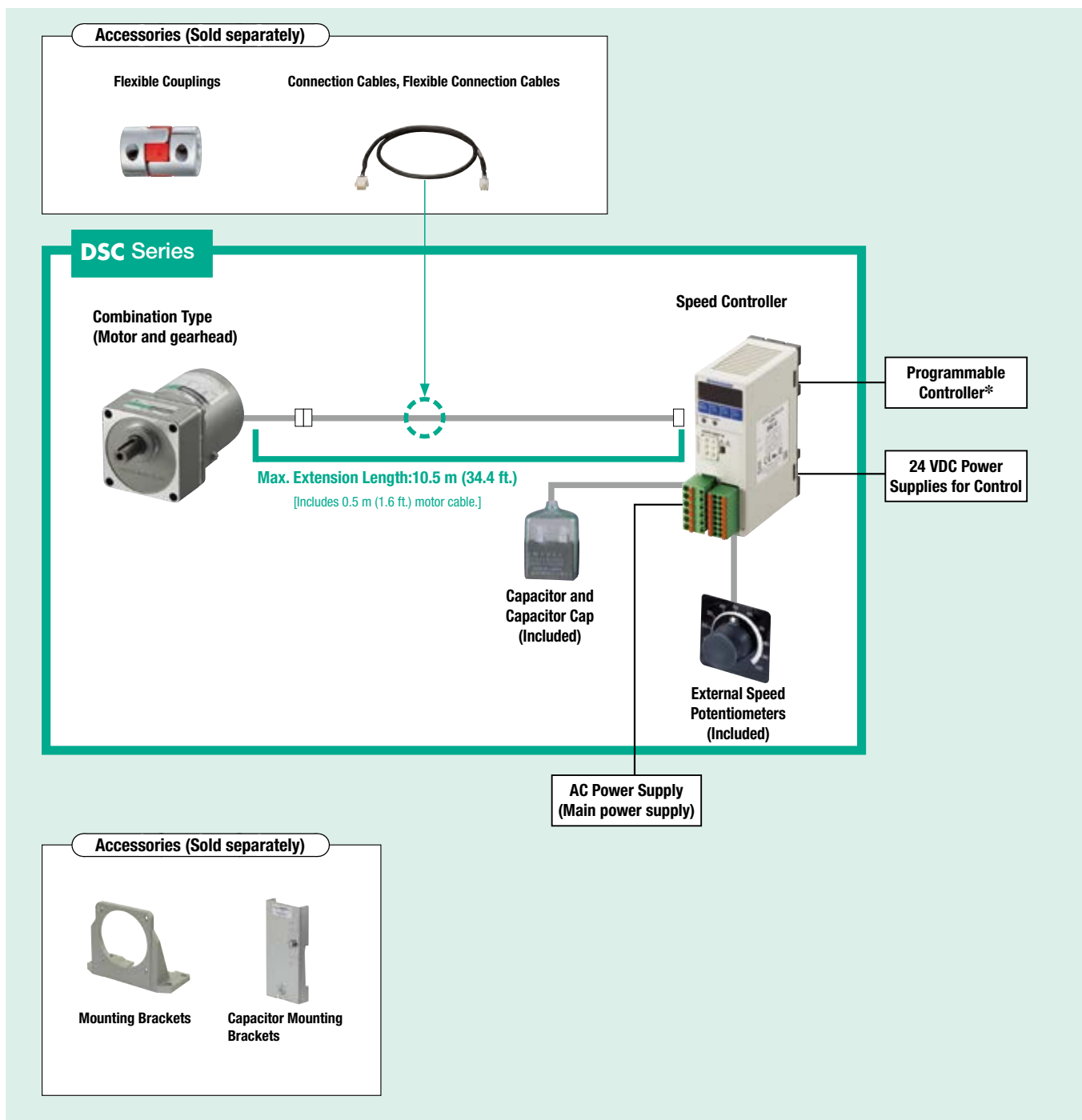
Product Line

The motor, gearhead, speed controller and external speed potentiometers are delivered as one package.

Motor and Speed Controller					Connection Cable
Motor	Output Power	Speed Controller	Power Supply Voltage	External Speed Potentiometer	
Standard Type Parallel Shaft Combination Type → Page E-95	6 W (1/125 HP) 15 W (1/50 HP) 25 W (1/30 HP) 40 W (1/19 HP) 60 W (1/12 HP) 90 W (1/8 HP)		Single-Phase 110/115 VAC Single-Phase 220/230 VAC		 1 m~10 m (3.3 ft.~32.8 ft.)
Standard Type Round Shaft Type → Page E-95					
Electromagnetic Brake Type Parallel Shaft Combination Type → Page E-97					

System Configuration

Parallel Shaft Combination Type



*Not supplied.

Standard Type

Parallel Shaft Combination Type
Round Shaft Type



Parallel Shaft Combination Type

Product Line

Combination Type

Delivered with the motor and gearhead pre-assembled.

The combination of motor and gearhead can be changed, or purchased separately. In addition, the gearhead can be removed and the assembly position can be changed in 90° increments.

Parallel Shaft Combination Type

Output Power	Power Supply Voltage	Product Name	Gear Ratio	List Price
6 W (1/125 HP)	Single-Phase 110/115 VAC	DSCI26UA-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$269.00
			25, 30, 36	\$275.00
			50, 60, 75, 90, 100, 120, 150, 180	\$282.00
			250, 300, 360	\$328.00
	Single-Phase 220/230 VAC	DSCI26EC-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$272.00
			25, 30, 36	\$278.00
			50, 60, 75, 90, 100, 120, 150, 180	\$285.00
			250, 300, 360	\$331.00
15 W (1/50 HP)	Single-Phase 110/115 VAC	DSCI315UA-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$280.00
			25, 30, 36	\$286.00
			50, 60, 75, 90, 100, 120, 150, 180	\$293.00
			250, 300, 360	\$337.00
	Single-Phase 220/230 VAC	DSCI315EC-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$283.00
			25, 30, 36	\$289.00
			50, 60, 75, 90, 100, 120, 150, 180	\$296.00
			250, 300, 360	\$340.00
25 W (1/30 HP)	Single-Phase 110/115 VAC	DSCI425UA-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$290.00
			25, 30, 36	\$296.00
			50, 60, 75, 90, 100, 120, 150, 180	\$303.00
			250, 300, 360	\$350.00
	Single-Phase 220/230 VAC	DSCI425EC-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$294.00
			25, 30, 36	\$300.00
			50, 60, 75, 90, 100, 120, 150, 180	\$307.00
			250, 300, 360	\$354.00
40 W (1/19 HP)	Single-Phase 110/115 VAC	DSCI540UA-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$320.00
			25, 30, 36	\$327.00
			50, 60, 75, 90, 100, 120, 150, 180	\$334.00
			250, 300	\$412.00
	Single-Phase 220/230 VAC	DSCI540EC-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$324.00
			25, 30, 36	\$331.00
			50, 60, 75, 90, 100, 120, 150, 180	\$338.00
			250, 300	\$416.00
60 W (1/12 HP)	Single-Phase 110/115 VAC	DSCI560UA-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$375.00
			25, 30, 36, 50, 60, 75, 90, 100	\$386.00
			120, 150, 180	\$396.00
			250, 300	\$430.00
	Single-Phase 220/230 VAC	DSCI560EC-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$380.00
			25, 30, 36, 50, 60, 75, 90, 100	\$391.00
			120, 150, 180	\$401.00
			250, 300	\$435.00
90 W (1/8 HP)	Single-Phase 110/115 VAC	DSCI590UA-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$395.00
			25, 30, 36, 50, 60	\$415.00
			75, 90, 100, 120, 150, 180	\$425.00
			250, 300	\$430.00
	Single-Phase 220/230 VAC	DSCI590EC-□AV	5, 6, 7.5, 9, 12.5, 15, 18	\$400.00
			25, 30, 36, 50, 60	\$420.00
			75, 90, 100, 120, 150, 180	\$430.00
			250, 300	\$430.00

The following items are included with each product.

Motor, Gearhead, Speed Controller, Capacitor, Capacitor Cap, Installation Screws, Parallel Key, External Speed Potentiometer, Operating Manual

● A number indicating the gear ratio is entered where the box □ is located within the product name.

See Full Product
Details Online

www.orientalmotor.com

Technical
Support

TEL: (800) 468-3982 Live Chat: www.orientalmotor.com
E-mail: techsupport@orientalmotor.com

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Low-Speed
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IP67 Watertight,
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Brake Pack

AC Speed
Control
Motors

AC input
DSC

● Round Shaft Type

Output Power	Power Supply Voltage	Product Name	List Price
6 W (1/125 HP)	Single-Phase 110/115 VAC	DSCI26UA-AV	\$212.00
	Single-Phase 220/230 VAC	DSCI26EC-AV	\$215.00
15 W (1/50 HP)	Single-Phase 110/115 VAC	DSCI315UA-AV	\$218.00
	Single-Phase 220/230 VAC	DSCI315EC-AV	\$221.00
25 W (1/30 HP)	Single-Phase 110/115 VAC	DSCI425UA-AV	\$227.00
	Single-Phase 220/230 VAC	DSCI425EC-AV	\$231.00
40 W (1/19 HP)	Single-Phase 110/115 VAC	DSCI540UA-AV	\$245.00
	Single-Phase 220/230 VAC	DSCI540EC-AV	\$249.00
60 W (1/12 HP)	Single-Phase 110/115 VAC	DSCI560UA-AV	\$263.00
	Single-Phase 220/230 VAC	DSCI560EC-AV	\$268.00
90 W (1/8 HP)	Single-Phase 110/115 VAC	DSCI590UA-AV	\$282.00
	Single-Phase 220/230 VAC	DSCI590EC-AV	\$287.00

The following items are included with each product.

Motor, Speed Controller, Capacitor, Capacitor Cap, External Speed Potentiometer, Operating Manual

■ Product Number

DSC I 4 25 UA - 50A V

① ② ③ ④ ⑤ ⑥ ⑦

①	Series Name	DSC: DSC Series
②	Motor Type	I: Induction Motor
③	Motor Frame Size	2: 60 mm (2.36 in.) 3: 70 mm (2.76 in.) 4: 80 mm (3.15 in.) 5: 90 mm (3.54 in.)
④	Output Power (W)	(Example) 25: 25 W (1/30 HP)
⑤	Power Supply Voltage	UA: Single-Phase 110/115 VAC EC: Single-Phase 220/230 VAC
⑥	Gear Ratio/Shaft Type	Number: Gear Ratio for Combination Types A: Round Shaft Type
⑦	External Speed Potentiometer (Included)	V: Includes external speed potentiometer

Electromagnetic Brake Type

Parallel Shaft Combination Type



Parallel Shaft Combination Type

Product Line

Combination Type

Delivered with the motor and gearhead pre-assembled.

The combination of motor and gearhead can be changed or purchased separately. In addition, the gearhead can be removed and the assembly position can be changed in 90° increments.

Parallel Shaft Combination Type

Output Power	Power Supply Voltage	Product Name	Gear Ratio	List Price
6 W (1/125 HP)	Single-Phase 110/115 VAC	DSCI26UAM-□AV	7.5, 9, 12.5, 15, 18	\$354.00
			25, 30, 36	\$360.00
			50, 60, 75, 90, 100, 120, 150, 180	\$367.00
	Single-Phase 220/230 VAC	DSCI26ECM-□AV	250, 300, 360	\$413.00
			7.5, 9, 12.5, 15, 18	\$356.00
			25, 30, 36	\$362.00
15 W (1/50 HP)	Single-Phase 110/115 VAC	DSCI315UAM-□AV	50, 60, 75, 90, 100, 120, 150, 180	\$369.00
			250, 300, 360	\$415.00
			7.5, 9, 12.5, 15, 18	\$365.00
	Single-Phase 220/230 VAC	DSCI315ECM-□AV	25, 30, 36	\$371.00
			50, 60, 75, 90, 100, 120, 150, 180	\$378.00
			250, 300, 360	\$422.00
25 W (1/30 HP)	Single-Phase 110/115 VAC	DSCI425UAM-□AV	7.5, 9, 12.5, 15, 18	\$367.00
			25, 30, 36	\$373.00
			50, 60, 75, 90, 100, 120, 150, 180	\$380.00
	Single-Phase 220/230 VAC	DSCI425ECM-□AV	250, 300, 360	\$424.00
			7.5, 9, 12.5, 15, 18	\$399.00
			25, 30, 36	\$405.00
40 W (1/19 HP)	Single-Phase 110/115 VAC	DSCI540UAM-□AV	50, 60, 75, 90, 100, 120, 150, 180	\$412.00
			250, 300, 360	\$459.00
			7.5, 9, 12.5, 15, 18	\$402.00
	Single-Phase 220/230 VAC	DSCI540ECM-□AV	25, 30, 36	\$408.00
			50, 60, 75, 90, 100, 120, 150, 180	\$415.00
			250, 300, 360	\$462.00
60 W (1/12 HP)	Single-Phase 110/115 VAC	DSCI560UAM-□AV	7.5, 9, 12.5, 15, 18	\$441.00
			25, 30, 36	\$448.00
			50, 60, 75, 90, 100, 120, 150, 180	\$455.00
	Single-Phase 220/230 VAC	DSCI560ECM-□AV	250, 300	\$533.00
			7.5, 9, 12.5, 15, 18	\$445.00
			25, 30, 36	\$452.00
90 W (1/8 HP)	Single-Phase 110/115 VAC	DSCI590UAM-□AV	50, 60, 75, 90, 100, 120, 150, 180	\$459.00
			250, 300	\$537.00
			7.5, 9, 12.5, 15, 18	\$515.00
	Single-Phase 220/230 VAC	DSCI590ECM-□AV	25, 30, 36, 50, 60, 75, 90, 100	\$526.00
			120, 150, 180	\$536.00
			250, 300	\$570.00
90 W (1/8 HP)	Single-Phase 110/115 VAC	DSCI590UAM-□AV	7.5, 9, 12.5, 15, 18	\$520.00
			25, 30, 36, 50, 60, 75, 90, 100	\$531.00
			120, 150, 180	\$541.00
	Single-Phase 220/230 VAC	DSCI590ECM-□AV	250, 300	\$575.00
			7.5, 9, 12.5, 15, 18	\$535.00
			25, 30, 36, 50, 60	\$555.00
90 W (1/8 HP)	Single-Phase 110/115 VAC	DSCI590UAM-□AV	75, 90, 100, 120, 150, 180	\$565.00
			7.5, 9, 12.5, 15, 18	\$539.00
	Single-Phase 220/230 VAC	DSCI590ECM-□AV	25, 30, 36, 50, 60	\$559.00
			75, 90, 100, 120, 150, 180	\$569.00

The following items are included with each product.

Motor, Gearhead, Speed Controller, Capacitor, Capacitor Cap, Installation Screws, Parallel Key, External Speed Potentiometer, Operating Manual

● A number indicating the gear ratio is entered where the box □ is located within the product name.

Product Number

DSC I 4 25 UA M - 50A V

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

①	Series Name	DSC: DSC Series
②	Motor Type	I: Induction Motor
③	Motor Frame Size	2: 60 mm (2.36 in.) 3: 70 mm (2.76 in.) 4: 80 mm (3.15 in.) 5: 90 mm (3.54 in.)
④	Output Power (W)	(Example) 25: 25 W (1/30 HP)
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/Shaft Type	Number: Gear ratio for combination types
⑧	External Speed Potentiometer (Included)	V: External speed potentiometer included

Deceleration Control Function Integrated with the Electromagnetic Brake Type Package

The electromagnetic brake type features a deceleration control function which allows speed control during vertical operation and gravitational operation.

"What is the Deceleration Control Function?"

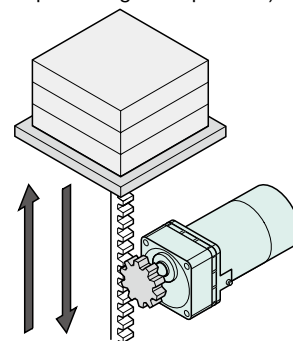
It is a function that applies brake current automatically to regulate the speed when the motor rotates faster than the setting speed. Even when force is applied in the direction of the motor output shaft's rotation due to vertical operation or an inertial load, the motor can be controlled to meet the setting speed.

"Deceleration Control" ON (Factory setting): Applicable for vertical operation, gravitational operation, horizontal operation, position holding.

"Deceleration Control" OFF : Applicable for horizontal operation, position holding. (Variable speed range is expanded.)

● Specification values and permissible torque values will differ based on whether the deceleration control is ON or OFF.

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



For details (specifications, characteristics, dimensions and more) on these products, please either refer to our website or contact technical support or your nearest Oriental Motor sales office.

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