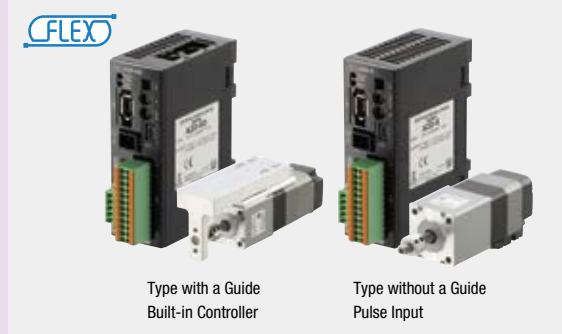


Compact Linear Actuators

DRS2 Series α STEP AZ Equipped

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



The **DRS2** Series actuators use the α STEP AZ Series equipped with Absolute Sensors. The Absolute Sensor is a mechanical and multi-turn, so an external sensor is not required. The **DRS2** Series helps to save space and reduce wiring, as well as offer a more compact and lightweight design.

- Optimized for Providing Micromovements and High Positioning Accuracy
- Reduces Startup Time
- Saves Space and Reduces Wiring with the Absolute Sensor
- Highly Efficient Push-Motion Operation



See Full Product Details Online
www.orientalmotor.com

● Manual

● Specifications

● Dimensions

● CAD

● Characteristics

● Connection and Operation

Features

Perfect for Micromovements and High Positioning Accuracy

● The Product Integrates a Stepper Motor with a Ball Screw

The hollow rotor and ball screw nut have been integrated. Since no connecting parts are necessary, there is less backlash, higher rigidity, and higher positioning accuracy.

● Driven by Ground Ball Screw or Rolled Ball Screw

[Min. Traveling Amount]

0.001 mm

[Repetitive Positioning Accuracy]

Ground ball screw: ± 0.003 mm Rolled ball screw: ± 0.01 mm

● High Transportable Mass and High Speed are Achieved

● Type with a Guide

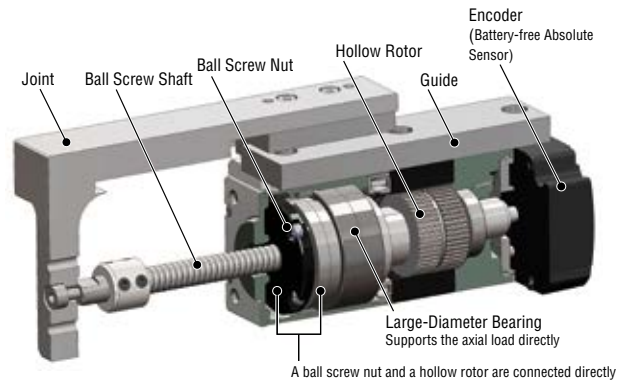
[Maximum Transportable Mass]

● Horizontal direction: **10** kg (Lead 2 mm), **5** kg (Lead 8 mm)

● Vertical direction: **10** kg (Lead 2 mm), **5** kg (Lead 8 mm)

[Maximum Speed]

50 mm/sec (Lead 2 mm), **200** mm/sec (Lead 8 mm)



● Absolute Sensor

This is the battery-free, mechanical multi-turn absolute sensor.

The inclusion of this compact and low cost absolute system saves space and wiring, because a home sensor is not required.

Startup Time Reduced

● Compact Body Houses Entire Linear Motion Mechanism

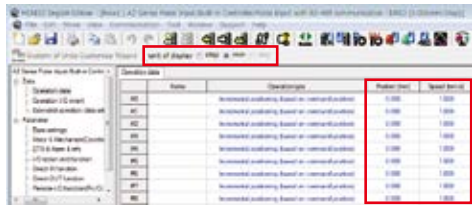
- Since customers do not need to provide parts, the time needed for installing, designing, and selecting parts can be reduced.
- The number of man-hours required for assembly and adjusting the installation accuracy can be reduced, contributing to higher productivity.

● Parameters Set at Operation

[Min. Traveling Amount]
 Built-in Controller Type: 0.001 mm
 Pulse Input Type : 0.001 mm

● Setting in Millimeters

The traveling amount can be set on the millimeter unit.

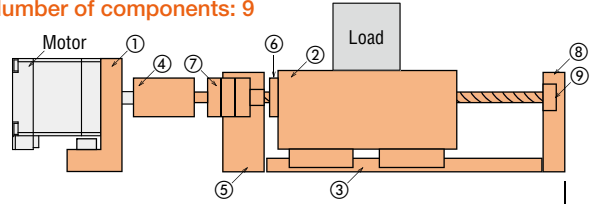


● Comparison of the Number of Components

Configuration examples of cases where the load is driven by the same stroke

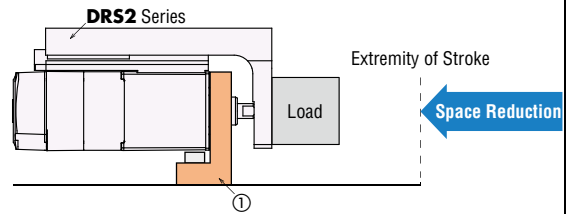
◇ If Made by Customers

Number of components: 9



◇ DRS2 Series, Using the Guide Type

Number of components: 1

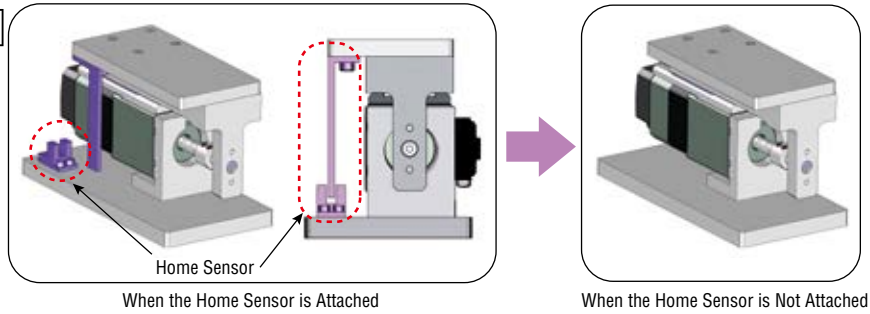


[Parts Used] ① Installation plate ② Transportation table ③ Linear guide
 ④ Coupling ⑤ Fixed-side block ⑥ Ball screw ⑦ Fixed-side bearing
 ⑧ Support-side block ⑨ Support-side bearing

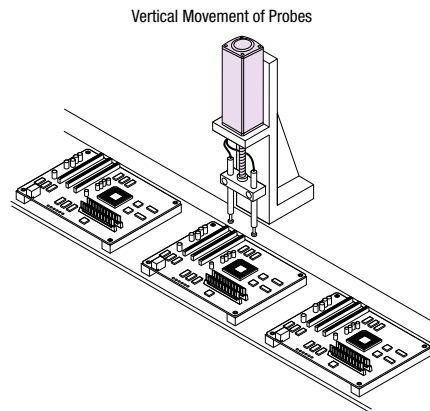
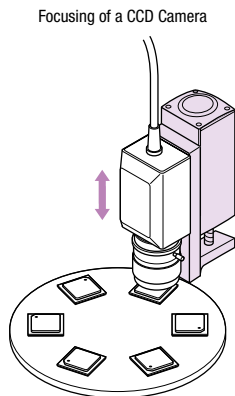
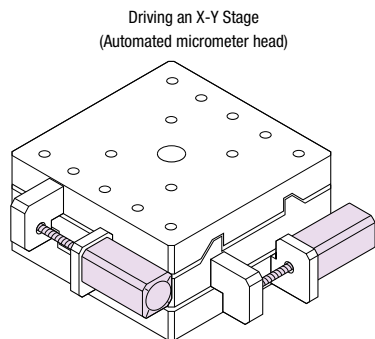
Space Saving and Less Wiring with the Absolute Sensor

In addition to the compact and lightweight body, the motors with absolute sensors do not require a home sensor. This saves space and wiring, and lets you avoid routine maintenance or trouble caused by using a home sensor.

Application Example



Typical Applications



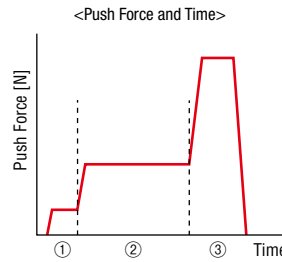
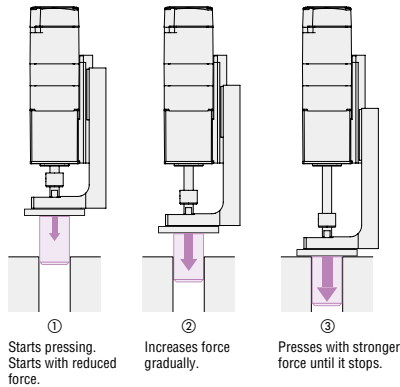
Efficient Push-Motion Operation

● Flexible Push Force and Timing

The **DRS2** Series can easily perform a push-motion operation after a positioning operation. Also, the push force and timing are adjustable.

MERIT

- You can set the push force and push timing to an operation data No., and then select the data No. to operate.
- There are different ways to change the pressing phases, such as dropping the force so that the position does not shift, slowly increasing the force, or rapidly increasing the force.



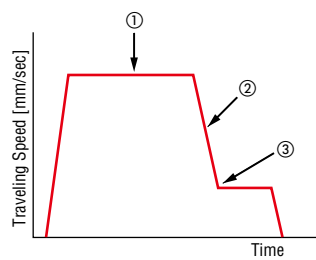
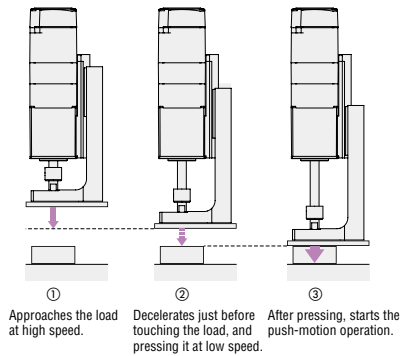
- ① Starts pressing with reduced force.
- ② Increases force gradually.
- ③ Presses with stronger force until it stops.

● Pressing at Low Speed

The motor can approach the load at high speed. The motor can also decelerate just before hitting the load at low speed.

MERIT

- Since the pressing impact is minimal, a mechanism for shock absorption is not required.
- The motor can approach at high speed just before reaching the load, thus reducing the takt time.







- ① Approaches the load at high speed.
- ② Decelerates just before touching the load, and pressing it at low speed.
- ③ After pressing, starts the push-motion operation.

● Push-Motion Operation with Pulse Input Type

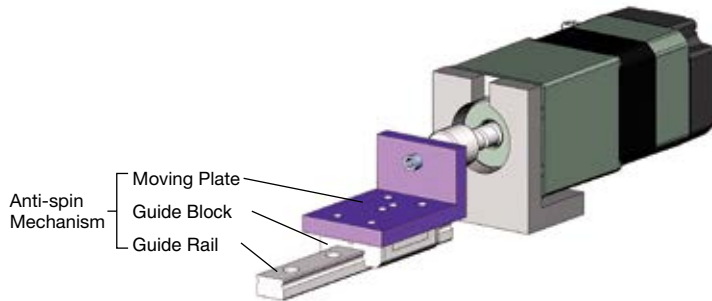
When T-MODE input is set to ON, push-motion operation is possible, without the overload alarm being generated. This is useful for push-motion operation while using pulse signal control.

Product Line

For the **DRS2** Series, compact linear actuators, drivers, and a connection cable sets need to be ordered separately. They can be purchased in various combinations.

Compact Linear Actuators						Driver (24/48 VDC)	Connection Cable Sets
Shape	Frame Size (mm)	Stroke (mm)	Ball Screw Type	Lead (mm)	Cable Direction		
With Guide 	42	40	Rolled	2	Right/Left	<ul style="list-style-type: none"> Built-in Controller Type Pulse Input Type with RS-485 Communication 	<ul style="list-style-type: none"> For Motor/Encoder 
				8			
Without Guide 	60	50	Rolled	2	-	<ul style="list-style-type: none"> Pulse Input Type 	<ul style="list-style-type: none"> For Motor/Encoder/Electromagnetic Brake 
				8			
			Ground	2			
			Rolled	4			<ul style="list-style-type: none"> For Electromagnetic Brake 

● When the guide is not equipped, anti-spin mechanism is necessary for the screw mechanism.



Overview

Electric Linear Slides

*α*STEP AZ EZS

Electric Cylinders

*α*STEP AZ EAC

*α*STEP AZ DRS2

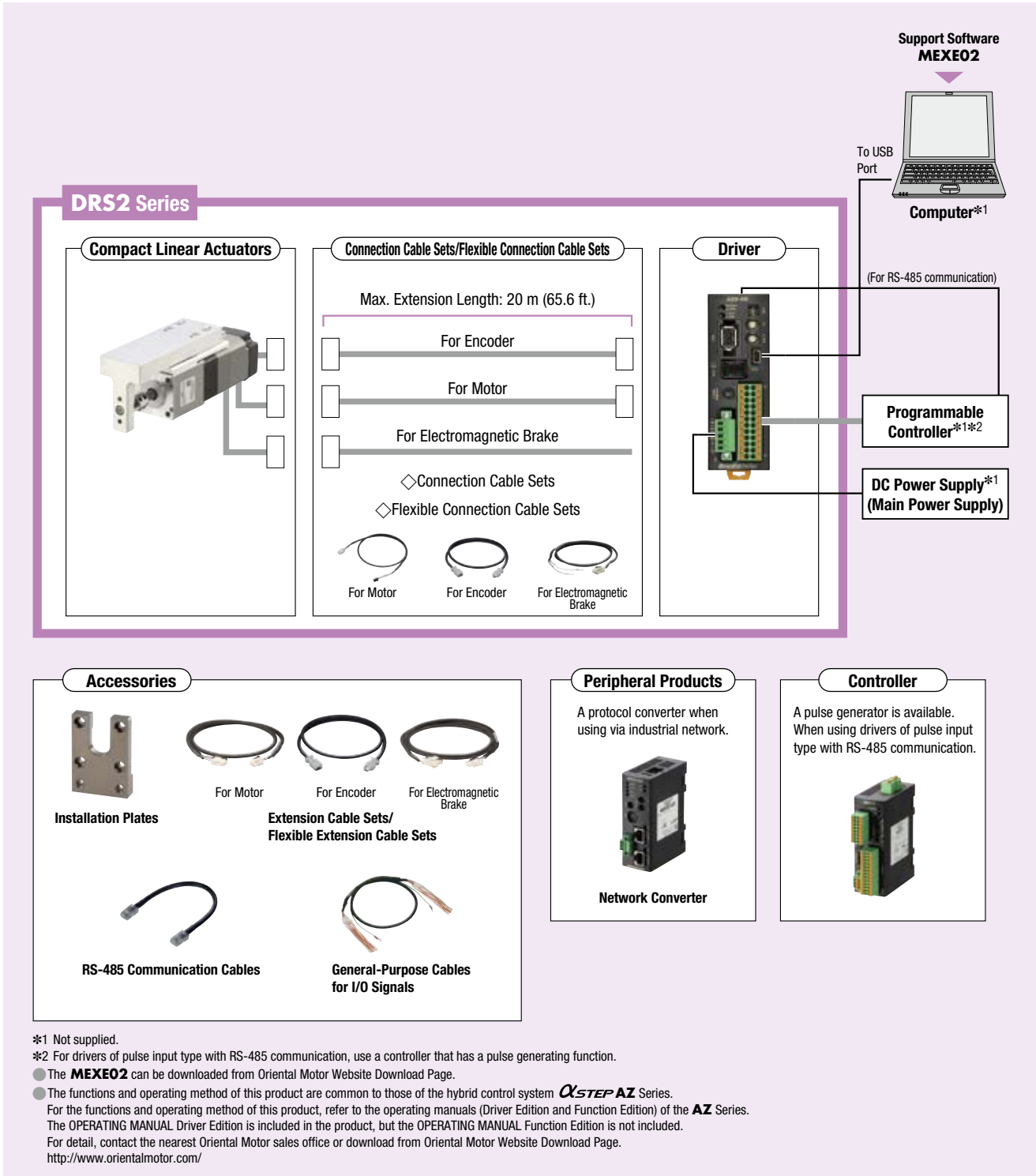
Hollow Rotary Actuators

*α*STEP AZ DGII

System Configuration

- Combination of Linear & Rotary Actuator with Electromagnetic Brake, and either Built-in Controller Type Driver or Pulse Input Type Driver with RS-485 Communication.

This is an example of a configuration using I/O control or RS-485 communication in a built-in controller type driver. Actuators, drivers, and connection cable sets/flexible connection cable sets need to be ordered separately.



- The system configuration shown above is an example. Other combinations are available.

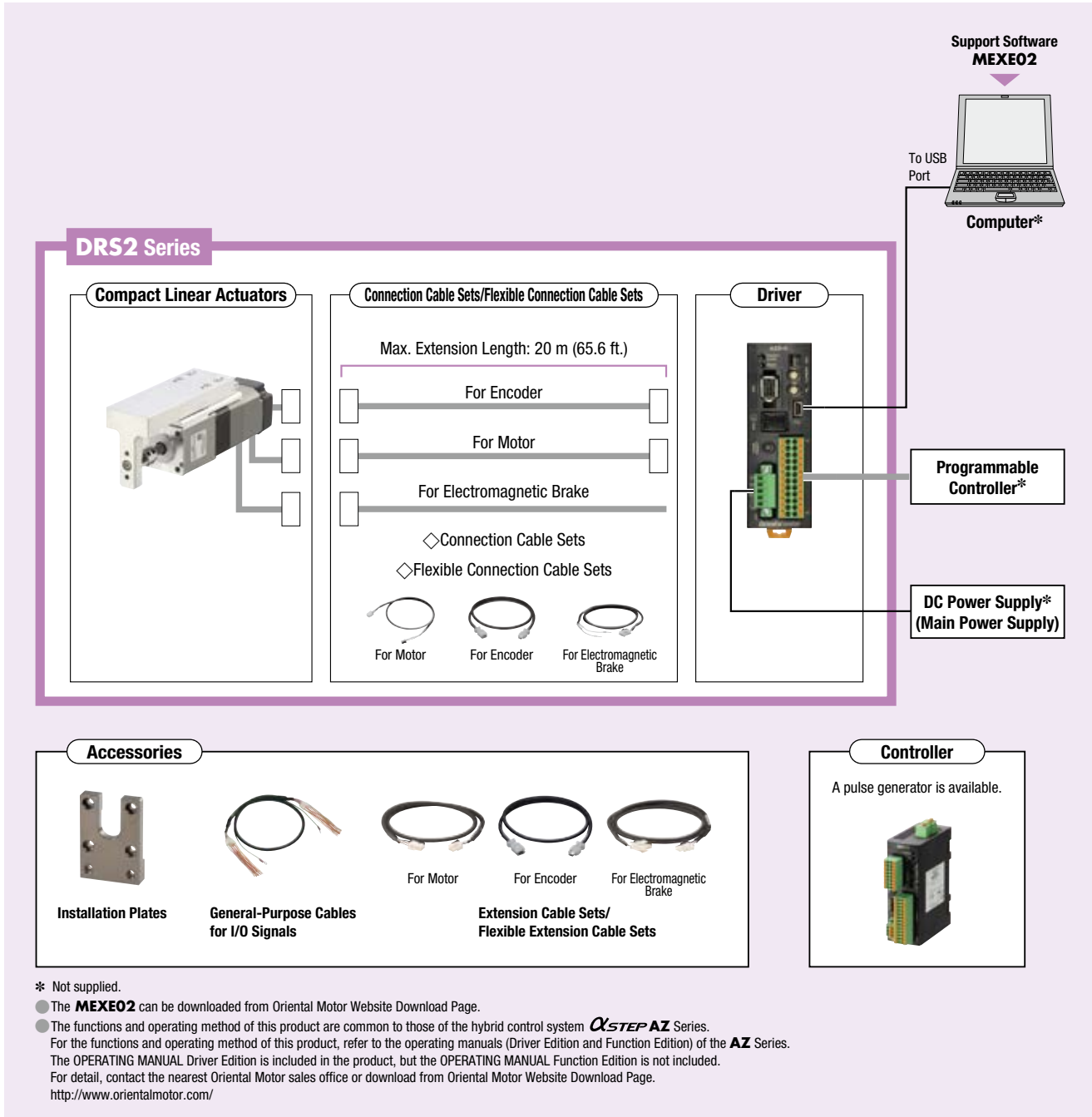
Note

- The motor cable and electromagnetic brake cable from the motor cannot be connected directly to the driver. When connecting to a driver, use a connection cable.

● **Combination of Linear & Rotary Actuator with Electromagnetic Brake and Pulse Input Type Driver**

This is an example of a single-axis system configuration using a programmable controller (with pulse oscillation function).

Actuators, drivers, and connection cable sets/flexible connection cable sets need to be ordered separately.



Overview

Electric Linear Slides

αSTEP AZ EZS

Electric Cylinders

αSTEP AZ EAC

αSTEP AZ DRS2

Hollow Rotary Actuators

αSTEP AZ DGII

● The system configuration shown above is an example. Other combinations are available.

Note

● The motor cable and electromagnetic brake cable from the motor cannot be connected directly to the driver. When connecting to a driver, use a connection cable.

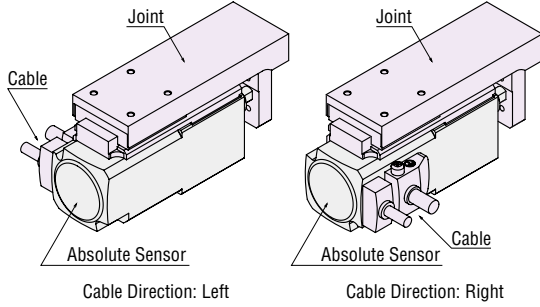
Product Number

● Compact Linear Actuators

DRSM 42 R G - 04 A 2 AZ M K

- ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩

*The cable outlet direction is only available for the type with a guide.
The cable direction is as viewed from the Absolute Sensor with the joint part facing up.



①	Series Name	DRSM: DRS2 Series
②	Frame Size	42: 42 mm 60: 60 mm
③	Cable Direction*	R: Right L: Left Blank: Type without Guide
④	Configuration	G: Type with Guide Blank: Type without Guide
⑤	Stroke	04: 40 mm 05: 50 mm
⑥	Ball Screw Type	A: Rolled Ball Screw B: Ground Ball Screw
⑦	Lead	2: 2 mm 4: 4 mm 8: 8 mm
⑧	Motor Type	AZ: AZ Series
⑨	Electromagnetic Brake	A: Without Electromagnetic Brake M: With Electromagnetic Brake
⑩	Motor Specification	K: DC Input Specification

● Driver

AZD - K D

- ① ② ③

①	Driver Type	AZD: AZ Series Driver
②	Power Supply Input	K: 24/48 VDC
③	Type	D: Built-in Controller Type X: Pulse Input Type with RS-485 Communication Blank: Pulse Input Type

● Connection Cable Sets/Flexible Connection Cable Sets

CC 050 V Z F B 2

- ① ② ③ ④ ⑤ ⑥ ⑦

①		CC: Cables
②	Length	010: 1 m 020: 2 m 030: 3 m 050: 5 m 070: 7 m 100: 10 m 150: 15 m 200: 20 m
③	Reference Number	
④	Applicable Models	Z: AZ Series
⑤	Cable Type	F: Connection Cable Sets R: Flexible Connection Cable Sets
⑥	Electromagnetic Brake	Blank: Without Electromagnetic Brake B: With Electromagnetic Brake
⑦	Cable Specifications	2: DC Power Supply Input

Product Line

● Compact Linear Actuators

- ◇ Type with a Guide
- Rolled Ball Screw



With electromagnetic brake

Electromagnetic Brake	Lead [mm]	Cable Direction	Product Name	List Price
Without Electromagnetic Brake	2	Right	DRSM42RG-04A2AZAK	\$920.00
		Left	DRSM42LG-04A2AZAK	\$920.00
	8	Right	DRSM42RG-04A8AZAK	\$1,024.00
		Left	DRSM42LG-04A8AZAK	\$1,024.00
With Electromagnetic Brake	2	Right	DRSM42RG-04A2AZMK	\$1,127.00
		Left	DRSM42LG-04A2AZMK	\$1,127.00
	8	Right	DRSM42RG-04A8AZMK	\$1,231.00
		Left	DRSM42LG-04A8AZMK	\$1,231.00

- ◇ Type with a Guide
- Ground Ball Screw



With electromagnetic brake

Electromagnetic Brake	Lead [mm]	Cable Direction	Product Name	List Price
Without Electromagnetic Brake	2	Right	DRSM42RG-04B2AZAK	\$1,233.00
		Left	DRSM42LG-04B2AZAK	\$1,233.00
With Electromagnetic Brake		Right	DRSM42RG-04B2AZMK	\$1,440.00
		Left	DRSM42LG-04B2AZMK	\$1,440.00

◇ Type without a Guide
Rolled Ball Screw



With electromagnetic brake

Electromagnetic Brake	Lead [mm]	Product Name	List Price
Without Electromagnetic Brake	2	DRSM42-04A2AZAK	\$667.00
	8	DRSM42-04A8AZAK	\$771.00
	4	DRSM60-05A4AZAK	\$863.00
With Electromagnetic Brake	2	DRSM42-04A2AZMK	\$874.00
	8	DRSM42-04A8AZMK	\$978.00
	4	DRSM60-05A4AZMK	\$1,070.00

◇ Type without a Guide
Ground Ball Screw



With electromagnetic brake

Electromagnetic Brake	Lead [mm]	Product Name	List Price
Without Electromagnetic Brake	2	DRSM42-04B2AZAK	\$980.00
With Electromagnetic Brake		DRSM42-04B2AZMK	\$1,187.00

● Driver

◇ Built-in Controller Type

Product Name	List Price
AZD-KD	\$441.00



◇ Pulse Input Type with RS-485 Communication

Product Name	List Price
AZD-KX	\$441.00



◇ Pulse Input Type

Product Name	List Price
AZD-K	\$384.00



● Connection Cable Sets/Flexible Connection Cable Sets

Use a flexible connection cable set if the cable will be bent.

◇ For Motor/Encoder



Product Line	Length (m)	Product Name	List Price
Connection Cable Sets	1	CC010VZF2	\$35.00
	2	CC020VZF2	\$50.00
	3	CC030VZF2	\$62.00
	5	CC050VZF2	\$110.00
	7	CC070VZF2	\$136.00
	10	CC100VZF2	\$176.00
	15	CC150VZF2	\$243.00
	20	CC200VZF2	\$310.00
Flexible Connection Cable Sets	1	CC010VZR2	\$84.00
	2	CC020VZR2	\$99.00
	3	CC030VZR2	\$111.00
	5	CC050VZR2	\$141.00
	7	CC070VZR2	\$180.00
	10	CC100VZR2	\$236.00
	15	CC150VZR2	\$332.00
	20	CC200VZR2	\$426.00

◇ For Motor/Encoder/
Electromagnetic Brake



Product Line	Length (m)	Product Name	List Price
Connection Cable Sets	1	CC010VZFB2	\$52.00
	2	CC020VZFB2	\$67.00
	3	CC030VZFB2	\$82.00
	5	CC050VZFB2	\$135.00
	7	CC070VZFB2	\$166.00
	10	CC100VZFB2	\$213.00
	15	CC150VZFB2	\$293.00
	20	CC200VZFB2	\$372.00
Flexible Connection Cable Sets	1	CC010VZRB2	\$114.00
	2	CC020VZRB2	\$134.00
	3	CC030VZRB2	\$151.00
	5	CC050VZRB2	\$191.00
	7	CC070VZRB2	\$240.00
	10	CC100VZRB2	\$311.00
	15	CC150VZRB2	\$432.00
	20	CC200VZRB2	\$551.00

Included

● Actuator

Type	Included	Operating Manual
Common to All Types		1 Copy

● Driver

Type	Included	Connector	Operating Manual
Common to All Types		Connector for CN4 (1 piece) Connector for CN1 (1 piece)	1 Copy

● Connection Cable Sets/Flexible Connection Cable Sets

Type	Included	Operating Manual
Connection Cable Sets		—
Flexible Connection Cable Sets		1 Copy

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.

www.orientalmotor.com



