Oriental motor

Item # DHM28PAK2, 1.10 in. (28 mm) DH Series Hollow Rotary Actuator

The DH Series is a line of products that combine a hollow flange with 5-phase stepper motor for applications that are sensitive to vibration or noise. It retains the ease of use of an open loop stepper motor while also allowing for precise positioning in a compact and lightweight design.

Reduce design time

Parts cost reduction

Reduce assembly man-hours

Reduced time for precision adjustment

Reduce maintenance time

- Requires CVD 5-Phase Stepper Motor Drivers

Specifications

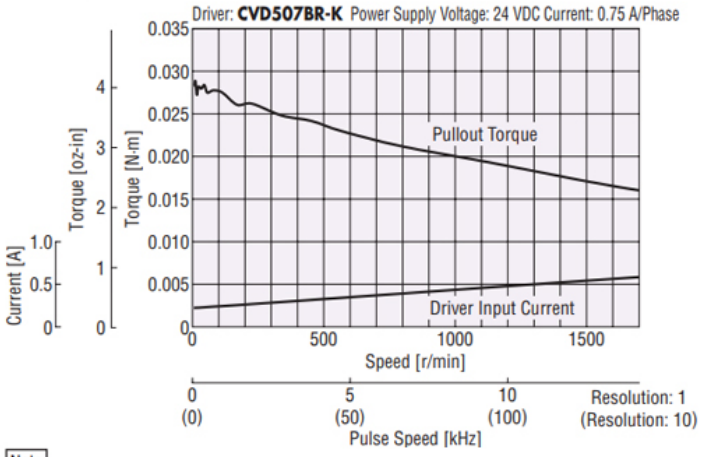
Lead Time[1]	Contact your local sales office for more information
Frame Size	1.1 in
Diameter of Hollow Section	0.2 in
Power Supply	24 VDC
Electromagnetic Brake	Not Equipped
Max. Holding Torque	0.26 lb-in
Holding Torque at Standstill	1.98 oz-in
Rotor Inertia	0.191 oz-in²

Rated Current	0.75 A/phase
Basic Step Angle	0.72°
Stop Position Accuracy	±0.33˚
Repetitive Positioning Accuracy (arc sec)	±0.15˚
Permissible Axial Load	8.99 lb
Permissible Moment Load	14.2 oz-in
Runout of Output Table Surface	0.00197 in.
Runout of Output Table Inner (Outer) Diameter	0.00197 in.
Thermal Class	130(B)
Insulation Resistance	The measured value is 100 MΩ or more when a 500 VDC megger is applied between the following locations: Between case and motor windings
Dielectric Strength	Sufficient to withstand the following for 1 minute: Between case and motor windings: 0.5 kVAC, 50 Hz or 60 Hz
Ambient Temperature Range	0 to +40˚C (+32 to +104 °F) (Non-freezing)
Ambient Humidity	85% or less (Non-condensing)
Operating Atmosphere	No corrosive gas or dust. No water or oil.
Degree of Protection	IP20
California Proposition 65	⚠ **CA WARNING** Cancer risk from exposure to Nickel. See www.P65Warnings.ca.gov Risk of reproductive harm from exposure to Di-n-hexyl phthalate (DnHP). See www.P65Warnings.ca.gov Risk of cancer and reproductive harm from exposure to Di(2-ethylhexyl phthalate (DEHP). See www.P65Warnings.ca.gov *See "?" or copy/paste www.P65Warnings.ca.gov in your browser.*

Performance

Speed - Torque Characteristics (Reference Value)

DHM28PAK2

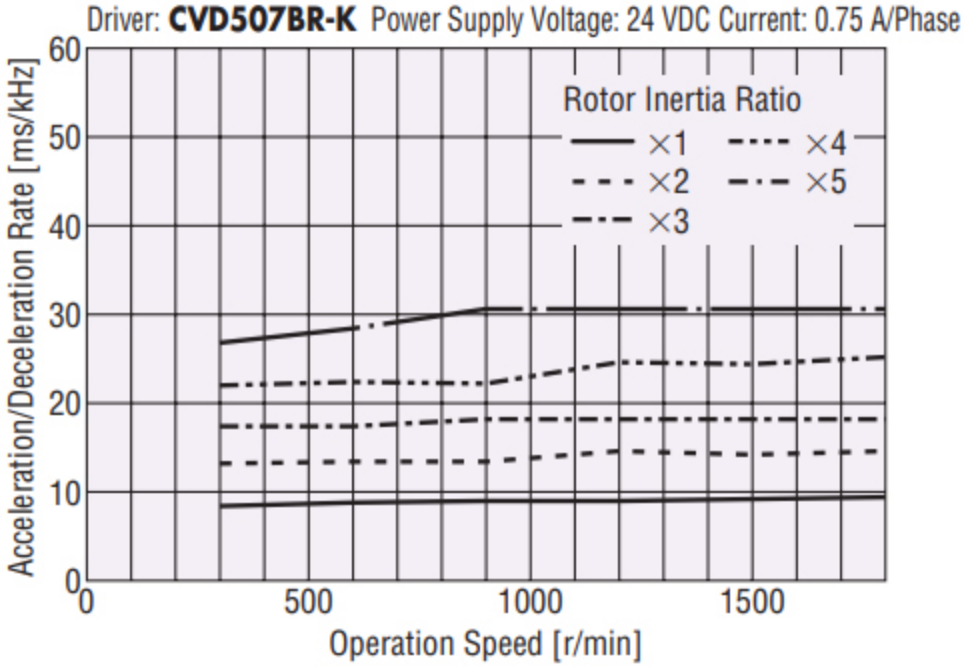


Note

- Data for the speed – torque characteristics is based on Oriental Motor's internal measurement conditions. If the conditions are changed, the characteristics may also change as a result.
- Depending on the driving conditions, a considerable amount of heat may be generated by the actuator. Be sure to keep the motor case temperature at 100°C (212 °F) max.
- The characteristics are the same when RS-485 communication type driver is used in combination.

Operation Speed - Acceleration/Deceleration Rate (Reference Value)

DHM28PAK2



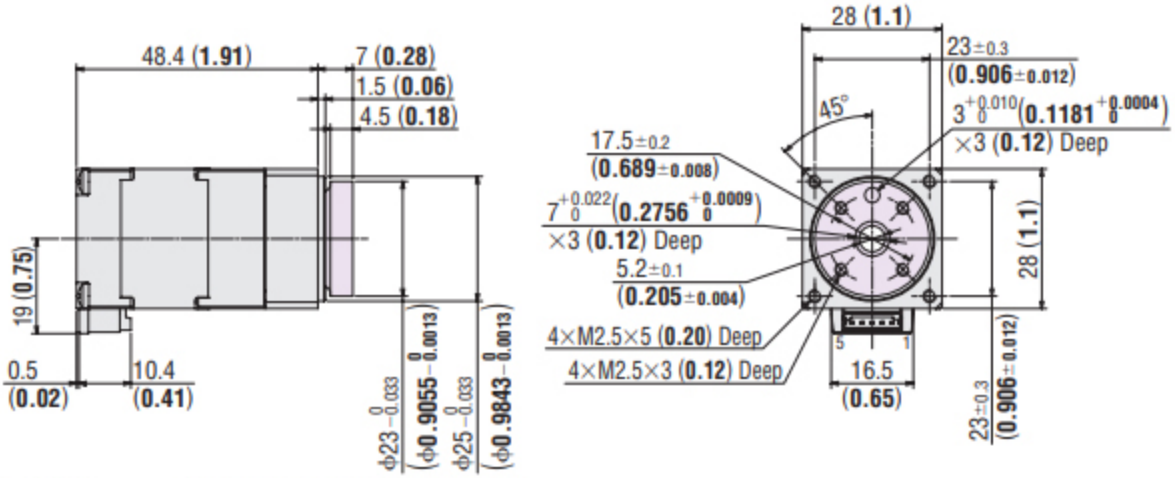
- These diagrams show the inertia ratio of the load inertia to the rotor inertia.

Dimensions

Dimensions [Unit: mm (in.)]

Frame Size 28 mm (1.1 in.) 2D & 3D CAD

Product Name	Mass kg (lb.)	2D CAD
DHM28PAK2	0.17 (0.37)	D7909



The shaded areas are rotating parts.

Product Number

Product Number

DHM 28 P A K 2

① ② ③ ④ ⑤ ⑥

①	Series Name	**DHM**: **DH** Series
②	Frame Size	**28**: 28 mm (1.1 in.) **42**: 42 mm (1.65 in.)
③	Equipped Motor	**P**: 5-Phase Stepper Motor
④	Motor Type	**A**: Standard
⑤	Motor Specifications	**K**: DC Power Supply Input
⑥	Reference Number	

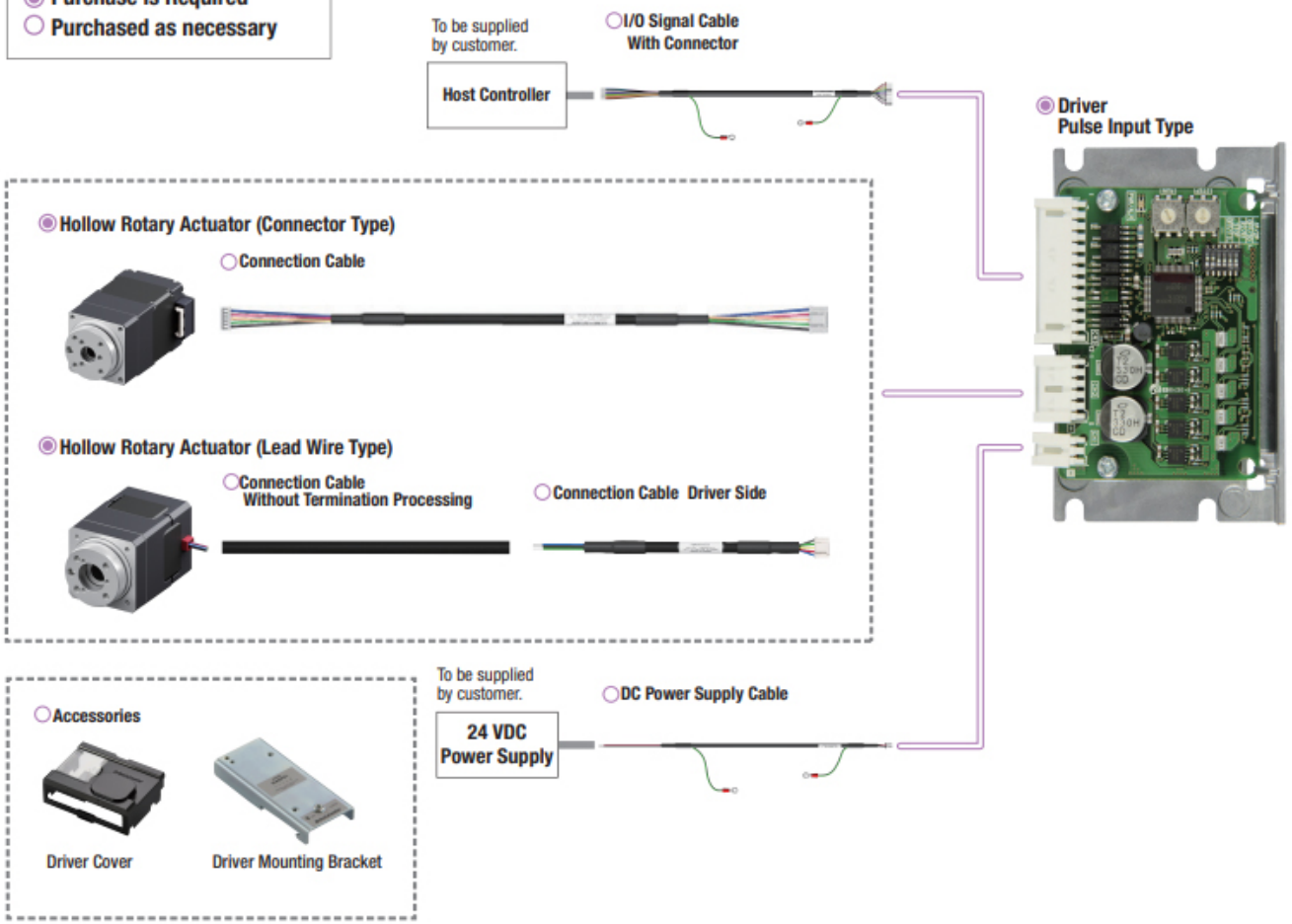
System

System Configuration

Combination of Hollow Rotary Actuator and **CVD** Series Pulse Input Type Driver

This is an example of system configuration using a programmable controller (with pulse oscillation function).
Hollow rotary actuators, drivers, and connection cables need to be ordered separately.

● Purchase is Required
○ Purchased as necessary



●Example of System Configuration

Hollow Rotary Actuator		Driver		Cable		
				Connection Cables [1 m (3.3 ft.)]	I/O Signal Cable Connector Type [1 m (3.3 ft.)]	DC Power Supply Cable [1 m (3.3 ft.)]
DHM28PAK2	+	CVD507BR-K	+	CCM010V5AAF	CC12D010-2	CC02D010-2
●		●		○	○	○

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

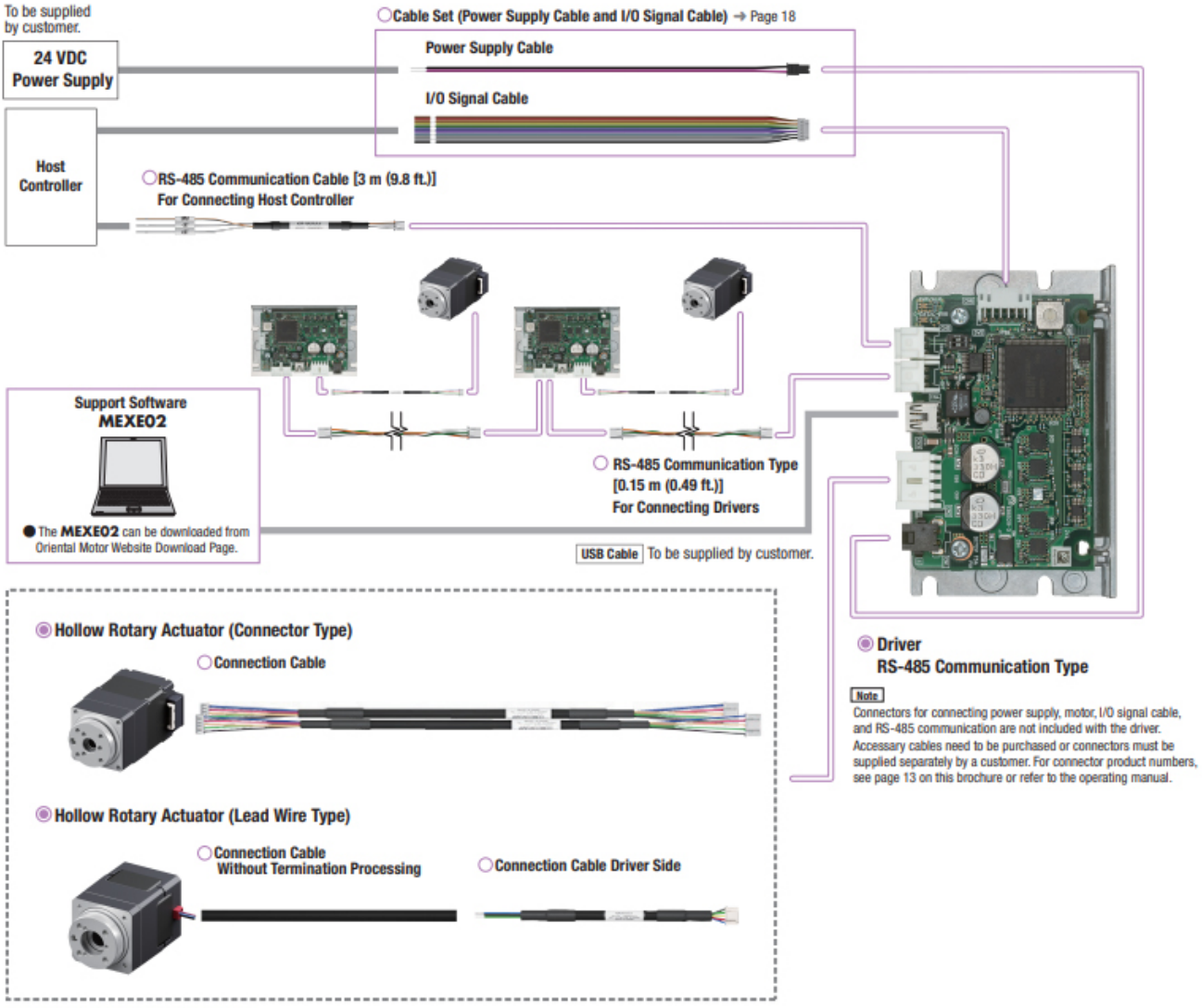
Note

●The driver cover can be used for a pulse input type driver right-angle type with installation plate.

Combination of Hollow Rotary Actuator and **CVD** Series RS-485 Communication Type Driver

An example of three-axis system configuration when controlled with RS-485 communication is shown below.
The hollow rotary actuators, drivers, and connection cables must be ordered separately.

◉ Purchase is required
○ Purchased as necessary



Note
Connectors for connecting power supply, motor, I/O signal cable, and RS-485 communication are not included with the driver. Accessary cables need to be purchased or connectors must be supplied separately by a customer. For connector product numbers, see page 13 on this brochure or refer to the operating manual.

●Example of System Configuration

Hollow Rotary Actuator		Driver		Cable		
				Connection Cable [1 m (3.3 ft.)]	RS-485 Communication Cable [3 m (9.8 ft.)]	Cable Set [0.3 m (1 ft.)]
DHM28PAK2	+	CVD5BR-KR	+	CCM010V5AAF	CC030-RS	LH5003CC
◉		◉		○	○	○

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