

# ***Motion Dynamics All Products Line-up***

## ***Direct Drive Motor***

Positioning solutions for leading edge manufacturing equipment

***DYNASERV***

***LINEARSERV***


***INTELLIGENT DRIVE***

***Cables***

***DrvX3 Support Tool***

***Accessories***

***DD STAGE***



[www.yokogawa.com/ddm/](http://www.yokogawa.com/ddm/)

# DYNASERV LINEARSERV

## Motion Dynamics Direct Drive Motor

		Maximum Output Torque(N·m)										Encoder Resolution (pulse/rev)	Absolute Accuracy (arc sec)	Repeatable Accuracy (arc sec)	Maximum Velocity (rps)	Diameter (mm)	Aperture Diameter (mm)	Compatible Driver Unit	
Model Code		5	10	20	40	50	100	200	300	400	500								
DYNASERV (Circular motor)	DM1A					50 113   14.5	100 138   19	150 163   24	200 188   29			4,096,000	±15	±1	1.2	φ264	φ58	UD1AG3 UD1AP3	
	DM1B		6 F 65   5	15 92.5   5.5	30 118   7.5	45 143   9.5	60 168   12					2,621,440	±15 ±20 ±60	±1 ±3	2.4 2.5	φ158 φ160	φ25	UD1BG3 UD1BP3	
	DM1C	4 F 77   3										2,621,440	±20 ±60	±3	2.5	φ116	φ25	UD1CG3 UD1CP3	
	DR5H00		10 F 42   10	20 F 42   10	40 F 62   13							3,407,872	±80	±0.4	3.6	φ224	φ50	UR5HG3 UR5HP3	
	DR1A					50 158   26	100 185   31	150 212   36	200 250   45	300 304   55	400 358   65	1,638,400	±30	±3	0.8/1.0 1.2/1.8	φ264	φ150	UR1AG3 UR1AP3	
	DR1E				30 156   18		70 183   22	100 210   26	130 243   32	160 271   36	220 327   44	250 355   48	1,228,800	±45	±3	1.2 2.4	φ205	φ76	UR1EG3 UR1EP3
	DR1B		8 85   6.0	15 123   9.0	30 151   11.0	45 179   13.0	60 207   15.5						1,015,808	±45	±3	2.4	φ145 φ150	φ56	UR1BG3 UR1BP3
	DR5A									300 309   55	400 363   65	500 417   75	851,968	±45	±3	2.0	φ264	φ150	UR5AG3 UR5AP3
	DR5E						70 210   26	100 243   32					638,976	±90	±4	4.0	φ205	φ76	UR5EG3 UR5EP3
	DR5B				30 184   13.5		50 212   16.0	70 240   18.0					557,056	±90	±5	5.0	φ150	φ56	UR5BG3 UR5BP3
DR5C		5 113   5.5	10 140   6.5	15 167   7.5								425,984	±150	±5	6.0	φ107	φ26	UR5CG3 UR5CP3	
DB5C		5 128   5.5	10 155   6.5	15 182   7.5								425,984	±150	±5	6.0	φ107	φ26	UB5CP3	

Model Code		Maximum Thrust (N)		40		50		100		200		300		400		500		Encoder Resolution (μm)	Absolute Accuracy (μm)	Repeatable Accuracy (μm)	Maximum Velocity (m/s)	Width (mm)	Height (mm)	Compatible Driver Unit
LINEARSERV (Linear motor)	LM105					50 1.0   12												0.05 0.25		±0.1 ±0.5	0.16 0.83	136	47	UM1LG3 UM1LP3
	LM110							100 1.4   15														157	47	
	LM130											300 5.0   25										222	65	
	LM205			50 1.4   15																		164	54	
	LM210					100 1.8   18																185	54	
	LM230									300 8.7   45												257	88	
	LM240											400 10.0   50						281	88					
	LM305			40 1.4   15														0.5	5+5/1000LS LS: Stroke Length (mm)	±1	2.0	164	54	
	LM310					90 1.8   18																185	54	
	LM330							270 8.7   45														257	88	
	LM505			40 1.0   12																		136	47	
	LM510					90 1.4   15																157	47	
LM530									270 5.0   25								222					65		

How to use this diagramm

Maximum Output Torque (N·m)

Wattage Class

500W class

2kW class

4kW class

F: With Base

Height (mm)

Weight (kg)

DYNASERV

20 F

42

10

Maximum Thrust (N)

Wattage Class

500W class

Slider Weight (kg)

Rail Weight (kg/m)

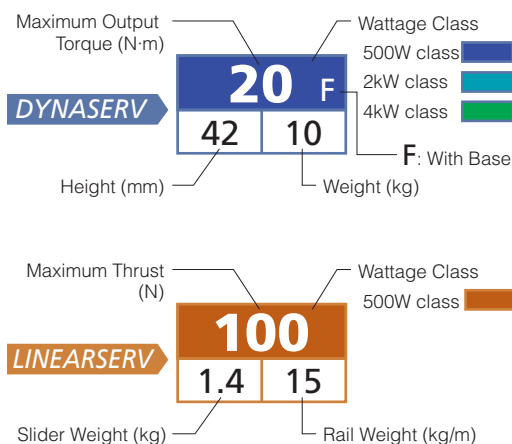
LINEARSERV

100

1.4

15

### How to use this diagramm



## DYNASERV

DYNASERV is Outer-rotor Direct Drive Motor with High in Accuracy, Torque and Strength, as well as low in Heat-Generation and Energy Consumption.



DM1A (100N·m)

### ■ Features

- High-accuracy, High-resolution
- Excellent Torque-to-weight Ratio
- Aluminum-based Chassis Type
- Absolute Accuracy ±15 arc sec: DM1A
- Flat Shape with Low Height: DM1B (6N·m)
- Small Profile Motor: DM1C

### ■ Specifications

- Built-in Optical Encoder
- Maximum Output Torque: 4-200 N·m
- Diameter: φ116-φ264mm
- Height: 65-188mm
- Weight: 3-29 kg

### ■ Applications

- LED Manufacturing & Inspection System
- Solar Cell Production Line & Inspection System
- Battery Production & Inspection System
- Wafer Dicing Machine
- BGA Dicing Machine
- LCD Circuit Inspection System
- Robot, Label Printing Machine
- Tip Mounter



DR5H00 (20N·m)

### ■ Features

- Large Centre Aperture
- High-speed Type: DR5□
- Flat Shape with Low Height: DR5H00
- A Wide Choice in Torque: e.g. from 50 to 400N·m with DR1A
- Large Varieties of Combinations: e.g. 7 types of DR1E



DR1A (50N·m)

### ■ Specifications

- Built-in Magnetic Encoder
- Maximum Output Torque: 5-500 N·m
- Diameter: φ107-φ264mm
- Height: 42-417mm
- Weight: 5.5-75 kg



DR5A (500N·m)

### ■ Applications

- LED Manufacturing & Inspection System
- Solar Cell Production Line & Inspection System
- Battery Production & Inspection System
- BD/DVD/CD Sputtering System
- BD/DVD/CD Manufacturing
- Label Printing Machine
- Crank Shaft Machining System
- High-speed Placement Machine
- Automatic Assembly Machine
- Astronomical Telescope



DB5C (15N·m)

### ■ Features

- Built-in Absolute Encoder
- High-speed Type

### ■ Specifications

- Maximum Output Torque: 5-15 N·m
- Weight: 5.5-7.5 kg

### ■ Applications

- LED Manufacturing & Inspection System
- Battery Production & Inspection System
- BD/DVD/CD Sputtering System

## LINEARSERV

LINEARSERV is a Linear Direct Drive Motor with unique glass scale encoder.



Standard Model (LM1□□□) High-stiffness model (LM2□□□)  
High-speed & High-stiffness Model (LM3□□□) High-speed Model (LM5□□□)

### ■ Features

- Maximum mountable slider: 4
- Smooth motion and All-in-One construction
- Independent Positioning for each slider
- Low Vibration, Force-weight Ratio: 7G

### ■ Specifications

- Maximum Thrust: 40-400 N
- Built-in Linear Encoder
- Stroke Length: 50-1800mm

### ■ Applications

- Thin Film Photovoltaic Manufacturing System
- Laser Scriber
- LCD Rubbing Machine
- Colour Filter Spraying Machine
- Semiconductor Manufacturing & Inspection System
- LCD Manufacturing & Inspection System
- X-Y Stage

### INTELLIGENT DRIVE

It enables not only 4 million pulse/rev accuracy but also improve settle time and tact time. Auto-Tuning function changes servo parameter according to change in loading inertia. It is compatible with various Interfaces and field network protocols. Compatible with CE and UL standards.



#### ■ DrvGIII □□□□G3

Compatible with various interfaces, such as PLS-SIGN, UP-DOWN, A-to-B position command, and Speed, Torque, Thrust Command. Interface: MECHATROLINK-II, Contact I/O



#### ■ DrvPIII □□□□P3

Compatible with DB5C's Absolute Encoder. Interface: PROFIBUS-DP, CC-Link, Contact I/O

### Cables

Cables that link between Motor and Driver

#### ■ Motor Cables

C1M-N□□-□□□□-□□□□  
C3M-□□□-□□□□, C3MJ-□□□-□□□□ (for DR5H00)

#### ■ Encoder Cables

C1E-□□□-□□□□-□□□□  
C3E-□□□-□□□□, C3EJ-□□□-□□□□ (for DR5H00)

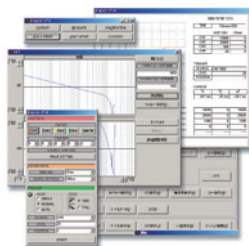
Cables that link between Driver and upper controller

#### ■ Controller Cable

C1P-ENN-4202-□□□□

### DrvX3 Support Tool

Software that enables to establish operation table and servo setting. Easy to alter servo parameter and filter setting. Useful functions include, Oscilloscope, Virtual (without motor) operation, Error recording, connection attribution, etc. The software can be downloaded Free from our website.



- DYNASERV & LINEARSERV are registered trademarks of Yokogawa Electric Corporation.
- Every proper name in this catalogue may be a registered trade mark.
- All values are standard target values. Actual value may change according to condition and setting of motor and driver.
- Actual products may differ from the catalogue.

### Accessories

#### ■ Operation Display Panel PC100G3

This unit can be used mainly for monitoring and for some setting changes. It displays parameter, setting and error message. Easier than using PC for monitoring at factory floor.



PC100G3

#### ■ Operation Display Pendant PC000G3

This unit can be used for altering various parameter, setting and maintain error messages. This is suitable for maintenance and setting work. It can be store setting data of up to 16 driver units.



PC000G3

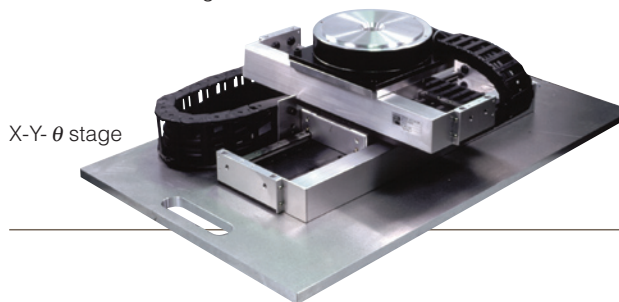
#### ■ RS232C cable C1P-ENN-2276-020

Cable that connect PC with Driver in order to use DrvX3 Support Tool.

### DD STAGE

The combination of DYNASERV and LINEARSERV enables X-Y- $\theta$  stage that is not only High in accuracy and speed but also compact.

Please contact Yokogawa for detail.



X-Y- $\theta$  stage

#### Caution



For safety, please read Instruction manual before using any Yokogawa products.  
Depending on specification and purpose of its usage, exporting the products may require approval from Japanese government.  
If the product is used in where health and safety of human life is directly affected, please contact Yokogawa, before the implementation.

# YOKOGAWA

## YOKOGAWA ELECTRIC CORPORATION

Motion Control Center

4-1-55 Oyama, Chuo-ku, Sagami-hara-shi, Kanagawa,  
252-5207, Japan

TEL:+81-42-770-6925 FAX:+81-42-770-6924

URL : <http://www.yokogawa.com/ddm/>

E-mail : [ddm-global@cs.jp.yokogawa.com](mailto:ddm-global@cs.jp.yokogawa.com)

Represented by :