

SENSORLESS SERVO

New Product RELEASE No.16-1E

Release of the FR-D740-G drive unit and the 400 V compatible S-PM geared motor

The FR-D740-G drive unit and the 400 V compatible S-PM geared motor are now available in the highly valued Mitsubishi sensorless servo series.

Lineup

•Drive unit model

FR - D740 - 1.5K - G

Symbol	Voltage class	Symbol	Description	
D740	Three-phase 400V class	0.4K to 3.7K	Drive unit capacity (kW)	Represents the S-PM geared motor drive

•S-PM geared motor model

Series	Output	Voltage	Speed	Voltage
GV-S	0.4kW	150r/min	400V	
GV-S (parallel shaft, fixed load)	0.2 to 2.2kW	400V class	Speed at output shaft (3000r/min / nominal reduction ratio)	400V class
GV-SSY (right-angled shaft, fixed load)				
GV-SHY (right-angled shaft, medium load)				



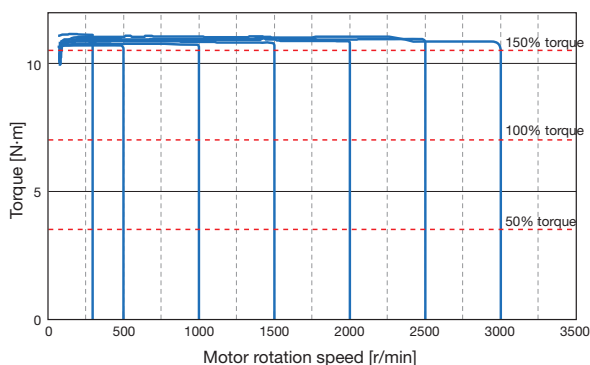
Features

Speed control approaching that of the servo motor

Highly precise speed control with small fluctuations can be performed regardless of changes in the load condition.

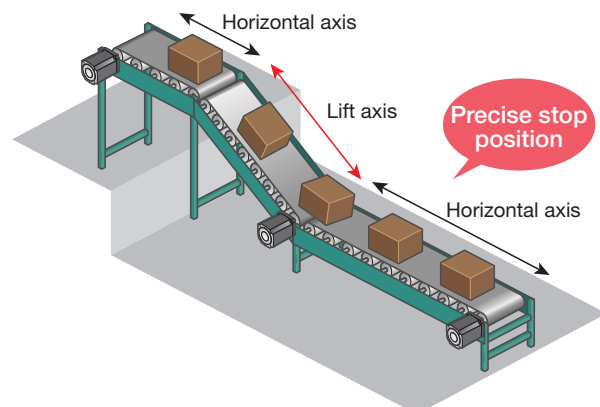
[Torque characteristics at different rotation speed]

* Actual data measured with the 2.2 kW motor



Simple position retention function

By using the pre-excitation function, the stop position can be retained simply.



Specifications

Drive unit

Model FR-D740-□K-G		0.4	0.75	1.5	2.2	3.7
Applicable motor capacity (kW) ^{*1}		0.2	0.4	0.75	1.5	2.2
Output	Rated capacity (kVA) ^{*2}	0.4	0.9	1.7	2.7	3.8
	Rated current (A)	1.2	2.2	3.6	5.0	8.0
	Overload current rating	150% 60s, 200% 0.5s (Rated motor current, inverse-time characteristics)				
Power supply	Rated input AC voltage/frequency	Three-phase 380 to 480V 50Hz/60Hz				
	Permissible AC voltage fluctuation	325 to 528V 50Hz/60Hz				
	Permissible frequency fluctuation	±5%				
	Power supply capacity (kVA) ^{*3}	0.9	1.5	2.5	5.5	9.5
Protective structure (JEM1030)		Enclosed type (IP20)				
Cooling system		Self-cooling			Forced air cooling	
Approximate mass (kg)		1.3	1.3	1.4	1.5	1.5

*1 Only the S-PM series motors are compatible. Use an S-PM motor with the capacity one rank lower than the drive unit capacity.

*2 The rated output capacity assumes 440V.

*3 The power supply capacity varies with the value of the power supply side drive unit impedance (including those of the input reactor and cables).

Motor

Motor model		GV-□ □kW	0.2	0.4	0.75	1.5	2.2
Compatible drive unit		FR-D740-□K-G	0.4	0.75	1.5	2.2	3.7
Continuous characteristic ^{*1}	Rated output (kW)		0.2	0.4	0.75	1.5	2.2
	Rated torque (N·m) ^{*2}		0.64	1.27	2.39	4.78	7.00
Rated speed (r/min) ^{*3}			3000				
Maximum speed (r/min) ^{*3}			3000				
Number of poles			4				6
Maximum torque			150% 60s				
Rated current (A)			0.5	0.75	1.4	2.8	4.7
Structure			Totally enclosed self-cooling ^{*4}			Totally-enclosed fan-cooled	
Protective structure			IP44 (indoors), IP44 (outdoors) for semi-standard models				
Environment	Surrounding air temperature and humidity		0°C to +40°C (non-freezing), 90RH or less (non-condensing)				
	Vibration		4.9m/s ² (0.5G) for continuous operation, 9.8m/s ² (1G) for instantaneous operation				

*1 The above characteristics apply when the rated AC voltage is input from the drive unit.

Output and rated motor speed are not guaranteed when the power supply voltage drops.

*2 The value at the motor shaft. The torque at the output shaft changes according to the reduction ratio and the reduction gear efficiency.

*3 The value at the motor shaft. The speed of the output shaft changes according to the reduction ratio.

*4 The 0.75 kW motor with a brake has the totally enclosed fan-cooled type structure.

MITSUBISHI ELECTRIC CORPORATION

HEAD OFFICE: TOKYO BLDG., 2-7-3, MARUNOUCHI, CHIYODA-KU, TOKYO 100-8310, JAPAN