

YASKAWA

SIGMA-7 SERVO SYSTEMS

THE NEXT REVOLUTION IN MOTION AUTOMATION



MORE FROM YOUR MACHINE

Seven advances that give Sigma-7 greater automation effectiveness

Sigma-7 is engineered to bring new responsiveness, reliability and effectiveness to the automation that powers your productivity. The Sigma-7 family of rotary, direct drive and linear servo products continue the legacy of the Sigma series, which has set the standard in innovation and reliability for a quarter century.

IMPROVED PERFORMANCE

Nearly double the servo bandwidth of the Sigma-5 series, with increased feedback resolution and improved vibration suppression functions that maximize your machine's speed and accuracy.

EASIER APPLICATION

Automatic servo tuning right out of the box, plus software that makes automation commissioning faster and easier.

MORE CHOICES

A full range of standard, direct drive and linear servos from 50W to 15kW, ready to interface with the most in-demand motion networks.

ENVIRONMENTALLY FRIENDLY

Able to withstand more rigorous environmental conditions, with features that conserve energy without compromising performance.



SMALLER SIZE

Dual-axis SERVOPACKs and smaller motor sizes to meet end-user demands for a more compact machine footprint.

SAFETY AND SECURITY

New designs which improve machine safety, temperature performance and servo motor life, simplifying machine design and maintenance.

EASY COMPATIBILITY

Sigma-7 directly replaces Sigma-5, offering a performance boost without the need to change any element of your system design.



PERFORMANCE FACTS

3.1 KHZ FREQUENCY RESPONSE

Nearly double the servo bandwidth of the Sigma-5 systems that set the industry standard in performance

NEW TUNING FUNCTIONS

Vibration suppression, anti-resonance compensation, friction model compensation and ripple compensation improve machine speed, accuracy and smoothness

IMPROVED TUNING-LESS MODE

Delivers reliable stability with inertia ratios up to 30:1. Tuning gains adjust automatically and continually to provide consistent motion despite load changes

24-BIT ABSOLUTE ENCODER FEEDBACK

Provides 16 times better resolution than the industry-leading Sigma-5

20% REDUCTION

Motor size and motor heating reduced for better efficiency and easier implementation

NEW DUAL-AXIS SERVOPACKS

Save space and reduce enclosure size

COMPANION GEARMOTORS

Five different sizes and six gear ratios, all factory tested for guaranteed performance.



SIGMA-5 COMPATIBILITY

Interchangeable mounting dimensions, parameters convert to Sigma-7 with SigmaWin+ software (included at no charge)

NETWORK COMPATIBILITY

Includes built-in MECHATROLINK-III, EtherCAT and analog interfaces

BUILT-IN SAFETY

Features with IEC 61508, SIL 3 Safe Torque Off in Sigma-7 SERVOPACKs

NEW THERMAL SENSORS

Thermal sensors on servo motors and SERVOPACKs directly monitor machine temperatures

BETTER RATINGS

At higher temperature environments (60°C ambient), at higher altitudes (>2,000 meters) or in harsh motor environments (IP67 rated)

REGENERATIVE POWER SHARING

Available for dual-axis SERVOPACKs or DC-Bus connections with single-axis SERVOPACKs

SERVICE LIFE MONITORING

Offers preventive maintenance data on key SERVOPACK components





PRODUCT PORTFOLIO

STANDARD ROTARY

The world's largest manufacturer of servo motors brings 25 years of design innovation into each Sigma-7 rotary servo. Choose from a wide range of sizes, speeds and torque ratings, then add an amplifier and an MPIec controller to create a complete motion automation system.

100/200 V Servo Motors			
Low Inertia ▼		Medium Inertia ▼	
	SGMMV 3 W - 30 W		SGM7P 100 W - 1.5 kW
	SGM7A 50 W - 7 kW		SGM7J 50 W - 750 W
			SGM7G 300 W - 15 kW

400 V Servo Motors			
Low Inertia ▼		Medium Inertia ▼	
	SGM7A 200 W - 5 kW		SGM7J 200 W - 1.5 kW
			SGM7G 300 W - 5 kW
			SGMVV 22 kW - 55 kW

SERVOPACKs			
1 Axis ▼		2 Axis ▼	
	SGD7S 50 W - 15 kW		SGD7W 200 W - 1 kW per axis

Control Interface Options: EtherCAT, MECHATROLINK
(Analog 100 V SERVOPACKs available from 50-400W)

SERVOPACKs			
1 Axis ▼		2 Axis ▼	
	SGD7S 500 W - 15 kW		SGD7W 750 W - 1.5 kW per axis

Control Interface Options: EtherCAT, MECHATROLINK

DIRECT DRIVE ROTARY

Direct drive products save space, eliminate backlash and cut component costs, adding extra mechanical strength to stiffen dynamic applications.


200 V	
SGM7F	
	(Iron Core) 4.0–25 Nm rated torque, 600 rpm max speed
SGMCS	
	(Coreless) 2.0–200 Nm rated torque, 500 rpm max speed
SGM7D	
	(Iron Core) 1.30–240 Nm rated torque, 30–240 rpm

DIRECT DRIVE LINEAR

Maximum speed and acceleration for linear motion. Choose from four designs to reduce compliance, replace mechanical linkages and create a better fit for your application.

200 V and 400 V	
SGLG	
	(Coreless) 40–3000 N peak force, 5 m/s max speed
SGLF	
	(Iron Core) 86–2400 N peak force, 5 m/s max speed
SGLT	
	(DoubleTrac) 380–7500 N peak force, 5 m/s max speed
Sigma Trac II	
	(Complete Linear Stage) 540 N peak force, 5 m/s max speed

SERVOPACKs

1 Axis ▼		2 Axis ▼	
			
SGD7S	50W–15kW	SGD7W	200W–1kW/axis

Control Interface Options: EtherCAT, MECHATROLINK

YASKAWA.COM



Yaskawa is the leading global manufacturer of low and medium voltage variable frequency drives, servo systems, machine controllers and industrial robots. Our standard products, as well as tailor-made solutions, are well known and have a high reputation for outstanding quality and reliability.

YASKAWA

Yaskawa America, Inc. | Drives & Motion Division

1-800-YASKAWA | Email: info@yaskawa.com | yaskawa.com

Document No. BL.SIGMA-7.01 | 06/04/2021 | © 2021 Yaskawa America, Inc.