Sigma-7 Series

AC Servo Drives

Quick. Fast. Reliable.

The development of the new Sigma-7 series focused on three main goals: consistently fast commissioning, high production output and maximum operational reliability. The series offers a powerful response to today's market requirements for both machine constructors and final customers in the production industry. Sigma-7 offers particularly great potential for packaging plants, semiconductor manufacturing, wood processing and digital printing machines.

200 V Series

400 V Series

Quick setup in just 3 minutes

Presets in the amplifier software simplify commissioning. A ‚tuning-less' function allows immediate use of the Sigma-7 without the need for complex parametrisation or special knowledge of control equipment, while an auto-tuning function ensures quick adjustment.

Space savings

New book-style housing supports gap-free, side-by-side installation of amplifiers even in small spaces. This makes it possible to realize a high performance density inside a cabinet. The needed space is reduced to a minimum, allowing it and the drive electronics to be integrated in the machine.

Eco friendly

Sigma-7 motor efficiency reduces heat generation by up to 20 %. The possible DC Power coupling of axes allows energy sharing and energy savings of up to 30 %.

Cost savings

Sigma-7 reduces the overall costs by providing faster machine setup, higher throughput with more products in less time and reduced machine downtimes due to the high reliability of our products.

Seven reasons for Sigma-7

The Sigma Series of Servo Drives has evolved into the Sigma-7 Servo Drives, which provides you with the ultimate experience in seven key areas and delivers the optimal solution that only YASKAWA can offer.

① Comprehensive motor and amplifier power range

Wide power range
- Very compact motors from 50 W to 15 kW
- Linear motors iron core and ironless with a peak force up to 7,560 N

② Savings through performance

Lower production costs
- Speed loop bandwidth of 3.1 kHz
- Shorter settling time, reduced positioning time, higher throughput

Energy savings and higher productivity
- High peak torque, fast acceleration, no amplifier oversizing
- Lightweight mechanics

No additional cooling necessary
- Ambient temperature -5 – 55 °C (max. 60 °C with derating)

Higher performance
- Overload 350 % for 3 – 5 seconds
- High peak torque, fast acceleration

③ Safety features

Smooth integration of mandatory legal safety standards

- The STO function is implemented by default in all Sigma-7 series servo amplifiers
- Build safer machines - Sigma-7 satisfies the requirements of SIL 3 and PL-e
- The safety functions SS1, SS2 and SLS can be integrated by using the safety module

④ High efficiency

Very low heat generation

- Optimized magnetic circuit improves motor efficiency
- Improved motor efficiency reduces heat generation by about 20 %

⑤ High accuracy

Next level 24-bit absolute encoder for maximum accuracy

- Resolution of 16 million pulses per revolution for extremely precise positioning

⑥ Impressive system performance

Very high precision teamed up with fast, smooth operation

- Ripple compensation for highest demands in smoothness and dynamics
- Even for machines for which speed loop gains cannot be set high

⑦ Outstanding reliability

Even more reliability for your production

- More than 12 million servo systems in the field
- Improved machine reliability, reduced service and maintenance costs, less downtime

Next generation servo systems

With more than 9 million servo systems in the field, YASKAWA has a lot of experience and technical know-how in motion and control. The Result: Excellent performance and an extremely low fault rate. With the new Sigma-7 series, YASKAWA has managed to create a masterpiece in reliable precision performance. Thanks to its new features, start-up is possible in just a few minutes. Quick, application specific drive adjustments and maximised product output are guaranteed.

SERVOPACKs

- Single & dual axis amplifier
- One amplifier for linear & rotary motors
- SIL 3 for STO, PL-e CAT 3
- Speed frequency response: 3.1 kHz
- Advanced safety functions SS1, SS2, SLS
- Feedback options
- Ripple compensation, vibration suppression, etc.

Servomotors

- 24-bit high-resolution encoder installed
- High efficiency, low heat generation
- Downsizing by up to 20 %
- Flange compatible with Sigma-5
- Three motor models available
    - » Low inertia SMG7A up to 7 kW
    - » Medium inertia SGM7J up to 750 W
    - » Medium inertia SGM7G up to 15 kW

HMI

Remote Maintenance

Modbus TCP

Controller

VIPA SLIO CPU iMC7

EtherCAT.

I/O

I/O-Components

DRIVES & MOTION

Inverter Drives

Servo Systems 200 V

Servo Systems 400 V
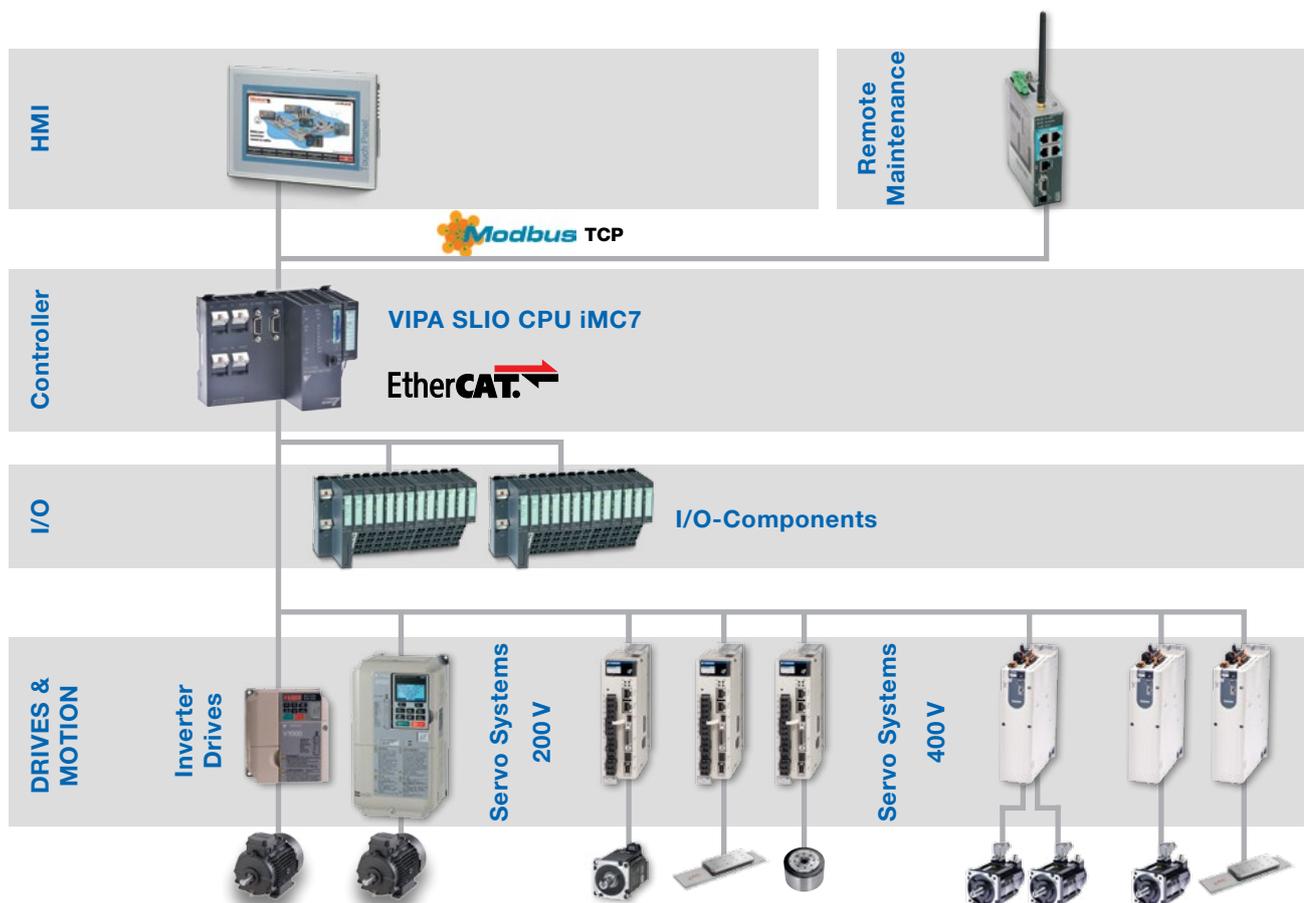
Bundles and individual components

We can offer our customers bundles as well as individual components for many applications in the automation industry.

Machine controllers –
MP 3200 IEC & MP 3300 IEC

High performance machine controller for automation technology. YASKAWA machine controllers manage complex systems with servo and inverter drives. High-speed communication provides high-performance and high-accuracy motion control, even for complex movements.

- Up to 62 axes
- Communication: Modbus TCP/IP, MECHATROLINK-III, Ethernet (100 Mbps)
- PLCOpen function blocks
- Reusable code library

iMC7 + SPEED7 Studio + Sigma-7 –
High performance motion control system

YASKAWA's experience in motion control, combined with VIPA's experience in PLC technology, is the foundation for a new standard in automation technology. SLIO CPU iMC7, a PLC with integrated motion control functions.

- High performance PLC combined with High performance drive technology
- Programmable with SPEED7 Studio by VIPA: Hardware configuration, Communication, PLC programming, Motion control, Visualisation, etc.
- Real time Ethernet-Communication Interface EtherCAT
- Connection with I/Os, Sigma-7 Servo Drives and Inverter Drives
- Control and Drive Technology solutions from one source

VIPA touch panels

VIPA professional touch panels with display sizes from 4.3" to 12.1", operating system Windows Embedded CE 6.0 and Runtime Movicon 11 can be used universally. VIPA eco panels in 4 different display sizes from 4.3" to 15" are designed for maximum reliability and flexibility, as well as longevity and quality.

Savings through performance

With a best in class frequency response of 3.1 kHz, Sigma-7 SERVOPACKS can reduce settling time to less than 4 ms. Compared to a standard system with for example 50 ms settling time, a pick & place unit based on Sigma-7 components can save a significant amount of money.

Servo adjustment example

0

Reference speed

Positioning error

Positioning completed

Settling time 0 to 4 ms! (Sigma-7)
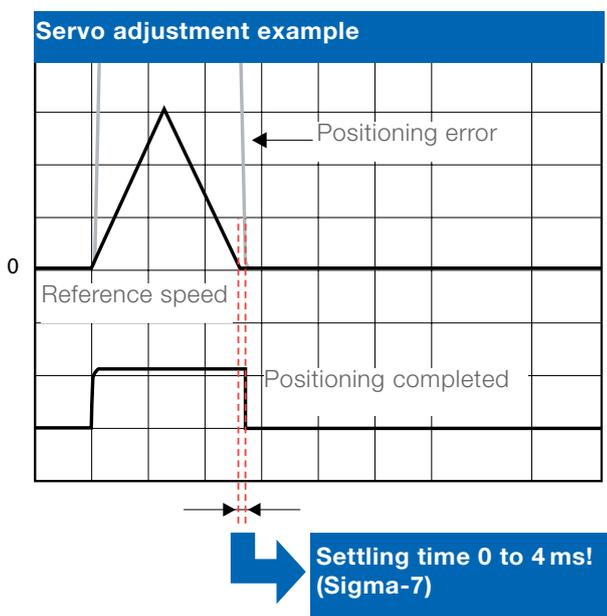
Shorter settling time increases your revenue

Pick & place example with 50 ms settling time

Axis length	Move	Settle	Move	Settle	Time per part	Parts per minute	Parts per hour	Price per part	Revenue per hour
X = 200 mm	0.5 s	0.05 s	0.5 s	0.05 s					
X = 200 mm	0.2 s	0.05 s	0.2 s	0.05 s	1.6 s	37.5	2,250	€ 0.1	225.00 €
Total	0.7 s	0.1 s	0.7 s	0.1 s					

Pick & place example with 4 ms settling time

Axis length	Move	Settle	Move	Settle	Time per part	Parts per minute	Parts per hour	Price per part	Revenue per hour
X = 200 mm	0.5 s	0.004 s	0.5 s	0.004 s					
X = 200 mm	0.2 s	0.004 s	0.2 s	0.004 s	1.416 s	42.37	2,542	€ 0.1	254.24 €
Total	0.7 s	0.008 s	0.7 s	0.008 s					

Revenue per Hour: 29.24 €

Revenue per 16 Hours: 467.84 €

Revenue per 5 Days: 2,339.20 €

Revenue per Year: 116,690.00 €

Safety in motion

Machine movements represent a major source of hazard for operators and personnel carrying out maintenance tasks. Typical situations requiring safe machine states occur during commissioning, in setup mode, troubleshooting and when operating or maintenance personnel are required to approach the machine.

- The optional Safety module allows the expansion of SS1, SS2 and SLS safety functions (SIL2, PLd)
- Sigma-7 servo drive functionality allows smooth integration of the mandatory legal safety standards
- The STO function is implemented by default in all Sigma-7 series servo amplifiers to achieve SIL3, PL-e CAT3, Stop Category 0

With the coming into effect of the standard EN ISO 13849 1:2008 "Safety of machinery – Safety-related parts of control systems", the construction of safe machines will now be assessed either according to the performance level (PL a – e) or according to the safety integrity level (SIL 1 – 4).
The safety relevant functions for variable speed drives are defined in the standard IEC 61800-5-2.

	Safety standards	Performance Level & Category
Safety of machinery	EN ISO 13849-1	PL-e CAT3
	IEC 60204-1	Stop Category 0
Functional safety	IEC 61508	SIL 3
	IEC 62061	SIL CL3
	IEC 61800-5-2	STO

SIL3

Safe Torque Off - STO

Safe Stop 1 (SS1)

Speed monitoring

Safe Stop 2 (SS2)

Speed monitoring

Position monitoring

Safely Limited Speed (SLS)

Speed monitoring

Enhanced vibration suppression

Existing functions to minimize vibration have been enhanced and new ones added, thus improving tracking and further improving settling time. Vibration and noise during operation have also been reduced, along with vibration when stopping, resulting in very smooth edges of machined parts.

Without vibration suppression

Resulting machined part

With vibration suppression

Resulting machined part
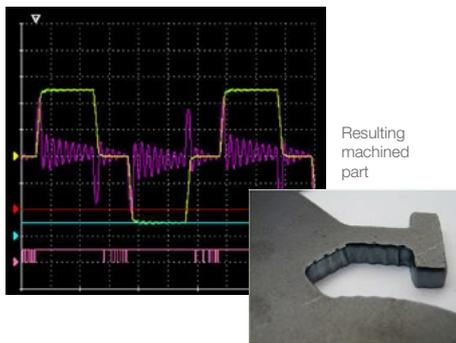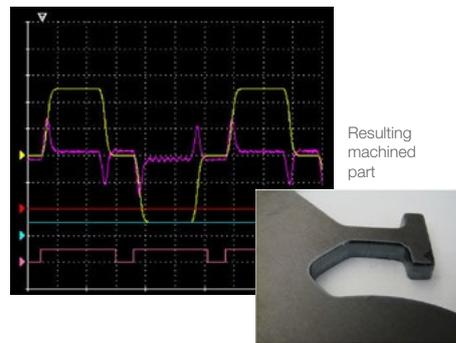
Tuning-less function
"Get up and run" quickly after connecting the motor

Even without servo adjustment and with load changes, an oscillation- and vibration-free drive is possible with up to 30 times the load moment of inertia.

• Settling time: 100 to 150 ms

Advanced autotuning
Minimize settling time with less vibration

The reference filter and feedback gain adjustment functions have a new automatic feed forward gain adjustment for optimal adjustment performance. The friction compensation function automatically cancels out the effect of friction on machine characteristics.

• Settling time: 10 ms

"One-Parameter Tuning"
Fine tuning made easy

Fine tuning can tweak machine performance to the max.

• Settling time: 0 to 4 ms
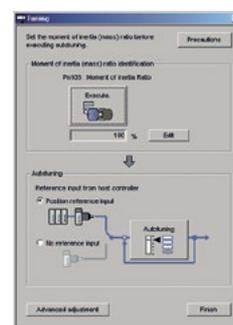
Simplify your life

The Sigma-7 Series provides an easy and quick adjustment for your servo solution. That saves time and money.

Software Setup Wizard

Simple parameter setup with wizard guided input.

Wiring check function

The SigmaWin+ wiring check function checks your wiring in a single operation.
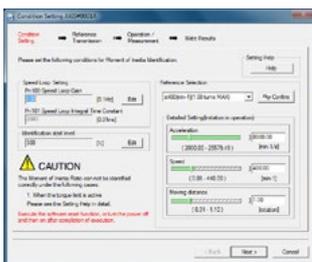
Trace function

Real-time trace of adjustment state facilitates instantaneous monitoring.

Full of handy functions for startup and more effective operation

Optimal selection for your application with consideration of moment of inertia, dynamic braking resistance, etc.
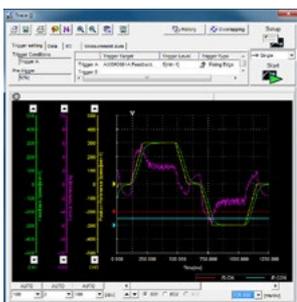
Maintenance

Faster troubleshooting with alarm diagnostic function – presumes possible causes of alarm and immediately displays suggested corrective actions.

Unpacking

Installation and wiring

Basic parameter setting

Trial operation

Gain and filter adjustment (Tuning)

Operation

Open for challenging applications

YASKAWA provides equipment for a broad range of applications and offers support in all engineering tasks. This way YASKAWA will find the perfect solution for common tasks and complex automation challenges.

- Quick and easy set-up and no configuration effort - these are the benefits of the YASKAWA out-of-the-box solutions.
- In case you want to upgrade a solution, the whole Sigma-7 system can easily be used for any new task.

Complete Solutions

YASKAWA offers comprehensive customized automation solutions with powerful hardware, including controller, visualization, drive concept and industrial robots.

Our motion control products are developed to control all functions in machine process control including motion control, PLC functionality, I/O, sequential logic and process algorithms. Controller integration lowers system cost, increases performance, reduces required panel space and unifies programming.

Process monitoring and diagnostics are inherent features of our platform. These advancements increase product throughput and reduce machine downtime. With our systems in the field, productivity increases by more than 200 % have been achieved. Smoother running and e-stop recovery routines lessen mechanical wear and reduce down time.
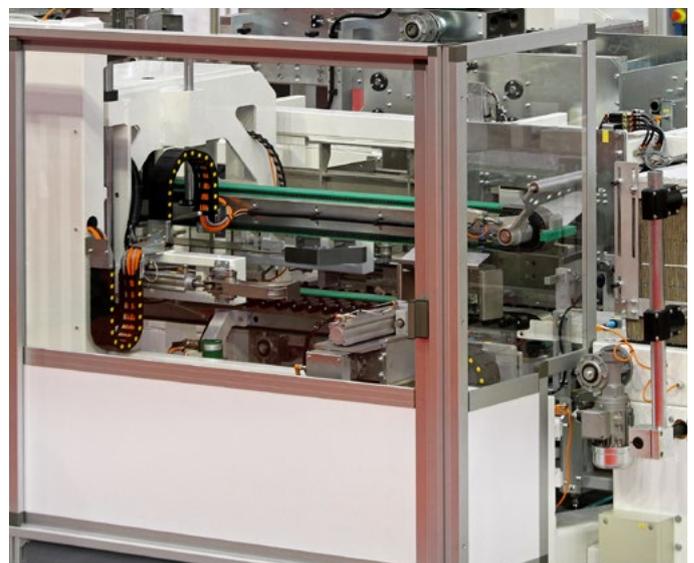
The 200 V series

Amplifiers

- Single & three-phase input
- Embedded fieldbus
  - » Pulse train / analog input
  - » MECHATROLINK-II
  - » MECHATROLINK-III
  - » EtherCAT
- Single & dual axis amplifier

Motors

- Very compact design
- Available from 50 W to 15 kW

Product overview 200 V

Servomotors

Rotary

SGM7A
- Low inertia, high speed
- 50 W - 7 kW

SGM7J
- Medium inertia, high speed
- 50 W - 750 W

SGM7G
- Medium inertia, large torque
- 300 W - 15 kW

Direct Drive

SGMCS
- Small capacity, coreless
- Rated: 2 Nm - 35 Nm
  Peak: 6 Nm - 105 Nm

SGMCV
- Small capacity, with iron core
- Rated: 4 Nm - 25 Nm
  Peak: 12 Nm - 75 Nm

SGMCS
- Medium capacity, with iron core
- Rated: 45 Nm - 200 Nm
  Peak: 135 Nm - 600 Nm

Linear

SGLG
- Coreless model
- Rated: 12.5 N - 750 N
  Peak: 40 N - 3,000 N

SGLFW2
- Model with F-type iron core
- Rated: 45 N - 2,520 N
  Peak: 135 N - 7,560 N

SGLFW
- Model with F-type iron core
- Rated: 25 N - 1,120 N
  Peak: 86 N - 2,400 N

SGLT
- Model with T-type iron core
- Rated: 130 N - 2,000 N
  Peak: 380 N - 7,500 N

SERVOPACKs

SGD7S- ☐☐☐A00A

Analog voltage / pulse train reference

SGD7S- ☐☐☐A10A

MECHATROLINK-II communication reference

SGD7S- ☐☐☐A20A

Single axis MECHATROLINK-III communication reference

SGD7W- ☐☐☐A20A

Dual axis MECHATROLINK-III communication reference

SGD7S- ☐☐☐AA0A

EtherCAT communication reference

SGD7S- ☐☐☐AE0A

Command option attachable type

Option modules

SGDV- OSA01A

Safety module

SGDV- OCA03A

INDEXER module

SGDV- OCA04A

DeviceNet module

SGDV-OFA01A

Fully closed loop module

Additional feedback option cards

Additional feedback option cards for the Sigma-7 series are currently available on request.

Combination of rotary servomotors and SERVOPACKs

Rotary servomotor model		Rated output	SERVOPACK model	
			SGD7S-□□□□	SGD7W-□□□□
SGM7J (Medium inertia, high speed) 3,000 min^{-1}	SGM7J-A5A	50 W	R70A	1R6A[*1], 2R8A[*1]
	SGM7J-01A	100 W	R90A	
	SGM7J-C2A	150 W	1R6A	1R6A, 2R8A[*1]
	SGM7J-02A	200 W		
	SGM7J-04A	400 W	2R8A	2R8A, 5R5A[*1], 7R6A[*1]
	SGM7J-06A	600 W	5R5A	5R5A, 7R6A
	SGM7J-08A	750 W		
SGM7A (Low inertia, high speed) 3,000 min-1	SGM7A-A5A	50 W	R70A	1R6A[*1], 2R8A[*1]
	SGM7A-01A	100 W	R90A	
	SGM7A-C2A	150 W	1R6A	1R6A[*1], 2R8A[*1]
	SGM7A-02A	200 W		
	SGM7A-04A	400 W	2R8A	2R8A, 5R5A[*1], 7R6A[*1]
	SGM7A-06A	600 W	5R5A	5R5A, 7R6A
	SGM7A-08A	750 W		
	SGM7A-10A	1.0 kW	120A	–
	SGM7A-15A	1.5 kW		
	SGM7A-20A	2.0 kW	180A	
	SGM7A-25A	2.5 kW	200A	
	SGM7A-30A	3.0 kW		
	SGM7A-40A	4.0 kW	330A	
	SGM7A-50A	5.0 kW		
	SGM7A-70A	7.0 kW	550A	
SGM7G (Medium inertia, large torque) 1,500 min-1	SGM7G-03A	300 W	3R8A	5R5A[*1], 7R6A[*1]
	SGM7G-05A	450 W		
	SGM7G-09A	850 W	7R6A	7R6A
	SGM7G-13A	1.3 kW	120A	–
	SGM7G-20A	1.8 kW	180A	
	SGM7G-30A	2.9 kW[*2]	330A	
	SGM7G-44A	4.4 kW		
	SGM7G-55A	5.5 kW	470A	
	SGM7G-75A	7.5 kW	550A	
	SGM7G-1AA	11.0 kW	590A	
	SGM7G-1EA	15.0 kW	780A	

*1 If you use this combination, performance may not be as good, e.g., the control gain may not increase, in comparison with using a Sigma-7 SERVOPACK.
*2 The rated output is 2.4 kW if you combine the SGM7G-30A with the SGD7S-200A.

Rotary servomotors

SGM7J - 01 A 7 A 2 1

| | 1st + 2nd | 3rd | 4th | 5th | 6th | 7th | digit |

Sigma-7 series
Servomotors:
SGM7J

1st + 2nd digit - Rated output	
Code	Specification
A5	50 W
01	100 W
C2	150 W
02	200 W
04	400 W
06	600 W
08	750 W

3rd digit - Power supply voltage	
Code	Specification
A	200 V AC

4th digit - Serial encoder	
Code	Specification
7	24-bit absolute
F	24-bit incremental

5th digit - Design revision order	
Code	Specification
A	Standard model

6th digit - Shaft end	
Code	Specification
2	Straight without key
6	Straight with key and tap
B	With two flat seats

7th digit - Options	
Code	Specification
1	Without options
C	With holding brake (24 VDC)
E	With oil seal and holding brake (24 VDC)
S	With oil seal

SGM7A - 01 A 7 A 2 1

| | 1st + 2nd | 3rd | 4th | 5th | 6th | 7th | digit |

Sigma-7 series
Servomotors:
SGM7A

1st + 2nd digit - Rated output	
Code	Specification
A5	50 W
01	100 W
C2	150 W
02	200 W
04	400 W
06	600 W
08	750 kW
10	1.0 kW
15	1.5 kW
20	2.0 kW
30	3.0 kW
40	4.0 kW
50	5.0 kW
70	7.0 kW

3rd digit - Power supply voltage	
Code	Specification
A	200 V AC

4th digit - Serial encoder	
Code	Specification
7	24-bit absolute
F	24-bit incremental

5th digit - Design revision order	
Code	Specification
A	Standard model

6th digit - Shaft end	
Code	Specification
2	Straight without key
6	Straight with key and tap
B	With two flat seats

7th digit - Options	
Code	Specification
1	Without options
C*	With holding brake (24 VDC)
E	With oil seal and holding brake (24 VDC)
S	With oil seal

SGM7G - 03 A 7 A 2 1

| | 1st + 2nd | 3rd | 4th | 5th | 6th | 7th | digit |

Sigma-7 series
Servomotors:
SGM7G

1st + 2nd digit - Rated output	
Code	Specification
03	300 W
05	450 W
09	850 W
13	1.3 kW
20	1.8 kW
30	2.9 kW*
44	4.4 kW
55	5.5 kW
75	7.5 kW
1A	11.0 kW
1E	15.0 kW

3rd digit - Power supply voltage	
Code	Specification
A	200 V AC

4th digit - Serial encoder	
Code	Specification
7	24-bit absolute
F	24-bit incremental

5th digit - Design revision order	
Code	Specification
A	Standard model

6th digit - Shaft end		
Code	Specification	
2	Straight without key	0.45 kW
		1.8 kW
		2.9 kW
6	Straight shaft with key and tap	0.85 kW
		1.3 kW

7th digit - Options	
Code	Specification
1	Without options
C	With holding brake (24 VDC)
E	With oil seal and holding brake (24 VDC)
S	With oil seal

* The rated output is 2.4 kW if you combine the SGM7G-30A with the SGD7S-200A.

SERVOPACKs

Single axis amplifier

SGD7S	-	R70	A	00	A	001	
Sigma-7 series Sigma-7S models		1st ... 3rd	4th	5th + 6th	7th	8th ... 10th	digit

1st ... 3rd digit - Maximum applicable motor capacity	
Code	**Specification**
Three-phase, 200 V	
R70*1	0.05 kW
R90*1	0.1 kW
1R6*1	0.2 kW
2R8*1	0.4 kW
3R8	0.5 kW
5R5*1	0.75 kW
7R6	1.0 kW
120	1.5 kW
180	2.0 kW
200	3.0 kW
330	5.0 kW
470	6.0 kW
550	7.5 kW
590	11.0 kW
780	15.0 kW

4th digit - Voltage	
Code	**Specification**
A	200 V AC

5th + 6th digit - Interface	
Code	**Specification**
00	Analog voltage/ pulse train reference
10	MECHATROLINK-II communication reference
20	MECHATROLINK-III communication reference
A0	EtherCAT communication reference
E0	Command option attachable type

7th digit - Design revision order	
Code	**Specification**
A	Standard model

8th ... 10th digit - Hardware options specifications		
Code	**Specification**	**Applicable models**
-	Without options	All models
001	Rack-mounted	SGD7S-R70A to -330A
	Duct-mounted	SGD7S-470A to -780A
002	Varnished	All models
008	Single-phase, 200 V power input	1.5 kW
00A	Varnished and single-phase power input	All models

Note: The same SERVOPACKs are used for both rotary servomotors and linear servomotors.

*1 You can use these models with either a single-phase or three-phase input.

Dual axis amplifier

SGD7W	-	1R6	A	20	A	001	
Sigma-7 series Sigma-7W models		1st ... 3rd	4th	5th + 6th	7th	8th ... 10th	digit

1st ... 3rd digit - Maximum applicable motor capacity	
Code	**Specification**
Three-phase, 200 V	
1R6*1	2 × 0.2 kW
2R8*1	2 × 0.4 kW
5R5*1	2 × 0.75 kW
7R6	2 × 1.0 kW

4th digit - Voltage	
Code	**Specification**
A	200 V AC

5th + 6th digit - Interface	
Code	**Specification**
20	MECHATROLINK-III communication reference

7th digit - Design Revision Order	
Code	**Specification**
A	Standard model

8th ... 10th digit - Hardware options specifications		
Code	**Specification**	**Applicable models**
-	Without options	
001	Rack-mounted	All models
002	Varnished	
700	With STO (safe torque off)	

Note: The same SERVOPACKs are used for both rotary servomotors and linear servomotors.

*1 You can use these models with either a single-phase or three-phase input.

The 400 V series

Amplifier

- Space saving bookstyle for side-by-side mounting
- Embedded fieldbus
  - » EtherCAT
  - » MECHATROLINK-III
- Single & dual axis amplifier
- European connectors
- Daisy-chain-connection

Motors

- Plug-and-turn connectors according to european standards (M12, M17, M23 and M40)
- Available from 200 W - 15 kW

- Connectors for power supply, EtherCAT, I/O, encoder, USB, etc.

- Option units for advanced safety, encoder

- Connector for digital operator

- Power connectors for motor, brake, braking resistor
- Metal sheet for motor cable shielding

Product overview 400 V

Servomotors

Rotary

SGM7J

- Medium inertia, high speed
- 200 W - 1.5 kW

SGM7A

- Low inertia, high speed
- 200 W - 7.0 kW

SGM7G

- Medium inertia, high torque, low speed or high speed models
- 450 W - 15 kW

Linear

SGLFW2

- Model with F-type iron core
- Rated: 45 N - 2,520 N
  Peak: 135 N - 7,560 N

SERVOPACKs

Single Axis

SGD7S-□□□DA0

EtherCAT communication reference

SGD7S-□□□D30

MECHATROLINK-III communication reference

Dual Axis

SGD7W-□□□DA0A

EtherCAT communication reference

SGD7W-□□□D30A

MECHATROLINK-III communication reference

Option Modules

SGDV-OSA01A000FT900

Safety module

SGDV-OFA01A

Fully closed loop module

Additional feedback option cards

Additional feedback option cards for the Sigma-7 series are currently available on request.

Combination of rotary servomotors and SERVOPACKs

Rotary servomotor model		Rated output	SERVOPACK model	
			SGD7S-	SGD7W-
SGM7J (Medium inertia, high speed) 3,000 min⁻¹	SGM7J-02D☐F	200 W	1R9D	2R6D*
	SGM7J-04D☐F	400 W		2R6D* oder 5R4D*
	SGM7J-08D☐F	750 W	3R5D	2R6D oder 5R4D*
	SGM7J-15D☐F	1.5 kW	5R4D	5R4D
SGM7A (Low inertia, high speed) 3,000 min⁻¹	SGM7A-02D☐F	200 W	1R9D	2R6D*
	SGM7A-04D☐F	400 W		2R6D* oder 5R4D*
	SGM7A-08D☐F	750 W	3R5D	2R6D oder 5R4D*
	SGM7A-10D☐F	1.0 kW	5R4D	5R4D*
	SGM7A-15D☐F	1.5 kW		5R4D
	SGM7A-20D☐F	2.0 kW	8R4D	–
	SGM7A-25D☐F	2.5 kW	120D	
	SGM7A-30D☐F	3.0 kW		
	SGM7A-40D☐F	4.0 kW	170D	
	SGM7A-50D☐F	5.0 kW		
	SGM7A-70D☐F	7.0 kW	260D	
SGM7G Standard models (Medium inertia, Low speed, high torque) 1,500 min⁻¹	SGM7G-05D☐F	450 W	1R9D	2R6D* oder 5R4D*
	SGM7G-09D☐F	850 W	3R5D	5R4D*
	SGM7G-13D☐F	1.3 kW	5R4D	5R4D
	SGM7G-20D☐F	1.8 kW	8R4D	–
	SGM7G-30D☐F	2.9 kW	120D	
	SGM7G-44D☐F	4.4 kW	170D	
	SGM7G-55D☐F	5.5 kW	210D	
	SGM7G-75D☐F	7.5 kW	260D	
	SGM7G-1AD☐F	11.0 kW	280D	
	SGM7G-1ED☐F	15.0 kW	370D	
SGM7G High-speed models (Medium inertia, High speed, high torque) 1,500 min⁻¹	SGM7G-05D☐R	450 W	3R5D	2R6D oder 5R4D*
	SGM7G-09D☐R	850 W	5R4D	5R4D
	SGM7G-13D☐R	1.3 kW	8R4D	–
	SGM7G-20D☐R	1.8 kW	120D	
	SGM7G-30D☐R	2.9 kW	170D	
	SGM7G-44D☐R	4.4 kW	210D	

* If you use this combination, performance may not be as good, e.g., the control gain may not increase, in comparison with using a Sigma-7 single axis SERVOPACK.

Combination of linear servomotors and SERVOPACKs

Linear servomotor model		Rated output force	SERVOPACK model
			SGD7S-☐☐☐D
SGLFW2 F-Type with iron core	SGLFW2-30D070A	45 N	1R9D
	SGLFW2-30D120A	90 N	1R9D
	SGLFW2-30D230A	180 N	1R9D
	SGLFW2-45D200A	280 N	3R5D
	SGLFW2-45D380A	560 N	8R4D
			5R4D
	SGLFW2-90D200A	560 N	5R4D
	SGLFW2-90D380A	1,120 N	120D
	SGLFW2-90D560A	1,680 N	170D
	SGLFW2-1DD380A	1,680 N	170D

Model designations 400V

Rotary servomotors

SGM7J - 02 D 7 F 2 1

| | 1st + 2nd | 3rd | 4th | 5th | 6th | 7th | digit |

Sigma-7 series
Servomotors:
SGM7J

1st + 2nd digit - Rated output	
Code	Specification
02	200 W
04	400 W
08	750 W
15	1.5 kW

3rd digit - Power supply voltage	
Code	Specification
D	400 V AC

4th digit - Serial rncoder	
Code	Specification
7	24-bit absolute
F	24-bit incremental

5th digit - Design revision order	
Code	Specification
F	Standard model

6th digit - Shaft end	
Code	Specification
2	Straight without key
6	Straight with key and tap

7th digit - Options	
Code	Specification
1	Without options
C	With holding brake (24 V DC)

SGM7A - 02 D 7 F 2 1

| | 1st + 2nd | 3rd | 4th | 5th | 6th | 7th | digit |

Sigma-7 series
Servomotors:
SGM7A

1st + 2nd digit - Rated output	
Code	Specification
02	200 W
04	400 W
08	750 W
10	1.0 kW
15	1.5 kW
20	2.0 kW
25	2.5 kW
30	3.0 kW
40	4.0 kW
50	5.0 kW
70	7.0 kW

3rd digit - Power supply voltage	
Code	Specification
D	400 V AC

4th digit - Serial Encoder	
Code	Specification
7	24-bit absolute
F	24-bit incremental

5th digit - Design revision order	
Code	Specification
F	Standard model

6th digit - Shaft end	
Code	Specification
2	Straight without key
6	Straight with key and tap

7th digit - Options	
Code	Specification
1	Without options
C	With holding brake (24 V DC)
F*	With dust seal
H*	With dust seal and holding brake (24 V DC)

* This option is supported only for SGM7A-10 to -50 servomotors.

SGM7G - 13 D 7 F 2 1

| | 1st + 2nd | 3rd | 4th | 5th | 6th | 7th | digit |

Sigma-7 series
Servomotors:
SGM7G

1st + 2nd digit - Rated output	
Code	Specification
05	450 W
09	850 W
13	1.3 kW
20	1.8 kW
30	2.9 kW
44	4.4 kW
55	5.5 kW
75	7.5 kW
1A	11.0 kW
1E	15.0 kW

3rd digit - Power supply voltage	
Code	Specification
D	400 V AC

4th digit - Serial encoder	
Code	Specification
7	24-bit absolute
F	24-bit incremental

5th digit - Design revision order	
Code	Specification
F	Standard model
R*2	High-speed model

6th digit - Shaft end	
Code	Specification
2	Straight without key (450 W, 1.8 kW, 2.9 kW)
6	Straight with key and tap (450 W, 1.8 kW, 2.9 kW)
S*1	Straight without key (850 W, 1.3 kW)
K*1	Straight with key and tap (850 W, 1.3 kW)

7th digit - Options	
Code	Specification
1	Without options
C	With holding brake (24 V DC)
F	With dust seal
H	With dust seal and holding brake (24 V DC)

*1 This option is supported only for 1.0 kW to 3.0 kW servomotors.
The shaft end codes are different for 850 kW and 1.3 kW Sservomotors.
The shaft diameter for 850 W servomotors is 19 mm.
The shaft diameter for 1.3 kW servomotors is 22 mm.
*2 Available up to 4.4 kW.

SERVOPACKs

Single axis amplifier

SGD7S	-	1R9	D	A0	B	026	F64	
Sigma-7 series Sigma-7S models		1st ... 3rd	4th	5th + 6th	7th	8th ... 10th	11th ... 13th	digit

1st ... 3rd digit - Maximum applicable motor capacity	
Code	Specification
Three-phase, 400 V	
1R9	0.5 kW
3R5	1.0 kW
5R4	1.5 kW
8R4	2.0 kW
120	3.0 kW
170	5.0 kW
210	6.0 kW
260	7.5 kW
280	11.0 kW
370	15.0 kW

4th digit - Voltage	
Code	Specification
D	400 V AC

5th + 6th digit - Interface	
Code	Specification
A0	EtherCAT communication reference
30	MECHATROLINK-III, RJ45 communication reference

7th digit - Design revision order	
Code	Specification
B	Standard model

8th ... 10th digit - Hardware options specifications		
Code	Specification	Applicable models
-	Without options	All models
026	With relay for holding brake	

11th ... 13th digit - FT/EX specification	
Code	Specification
F64	Zone table function

Dual axis amplifier

SGD7W	-	2R6	D	A0	B	026	
Sigma-7 Series Sigma-7W Models		1st ... 3rd	4th	5th + 6th	7th	8th ... 10th	digit

1st ... 3rd digit - Maximum applicable motor capacity	
Code	Specification
Three-phase, 400 V	
2R6	2 × 0.75 kW
5R4	2 × 1.5 kW

4th digit - Voltage	
Code	Specification
D	400 V AC

5th + 6th digit - Interface	
Code	Specification
A0	EtherCAT communication reference
30	MECHATROLINK-III, RJ45 communication reference

7th digit - Design revision order	
Code	Specification
B	Standard model

8th ... 10th digit - Hardware options specifications		
Code	Specification	Applicable models
-	Without options	All models
026	With relay for holding brake	

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