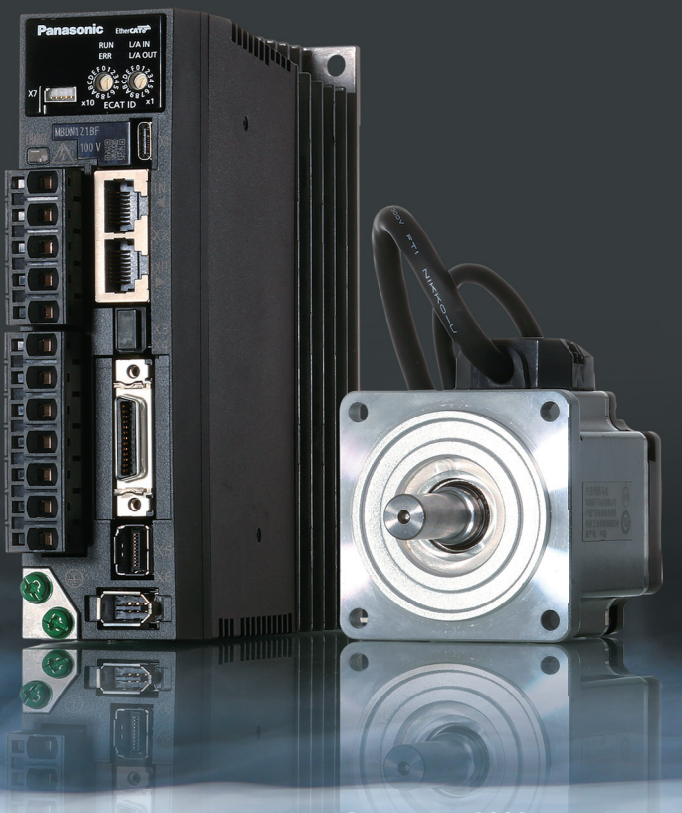
Panasonic
INDUSTRY

Your Committed Enabler

Agile Adaptability

Industry-leading motion performance*
for quick and intuitive adaptation to demanding situations



Servo System MINAS A7

*As of September 2023 according to in-house research.

Agile machines & concepts

React faster and more flexibly to input commands and operational disruptions

Precision, compactness, and speed for high-performance and competitive machines

4.0kHz
Frequency response
+25% more sensitive

7150r/min
Max. rotational speed
+10% faster

27bit
Encoder resolution
16x smoother & more accurate

A guarantee for highest processing quality & speed

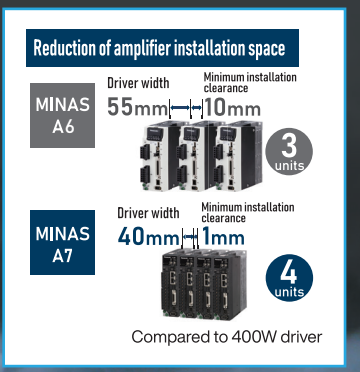
- Smoother and more precise movements are possible thanks to fast response of the speed control loop
- Highest positioning accuracy is achieved: on the one hand through the improved algorithm against resonances and vibrations and on the other hand through the higher encoder resolution and the reduced cycle time.

Extremely stable operation and longer service life of machine components

The reduced heat generation of the MINAS A7 motor is a significant advantage during long operating times in high-load areas and ensures stable operation.

Compact machine designs save space & costs

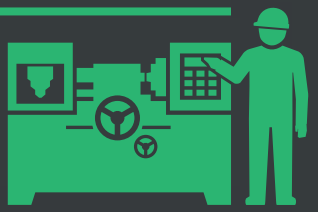
- The MINAS A7 series impresses with its small and lightweight high-speed motors.
- The MINAS A7 drivers offer more flexible installation options and shorter installation distances.



Agile people & tools

React faster and more flexibly during commissioning as well as when operation is disrupted

Tuning simplified and shortened thanks to artificial intelligence, reduction of maintenance costs



PrecAIse tuning
Ultra-high precision

One-minute tuning
High precision

Monitoring tools
Intelligent

Reduces installation time and maintenance costs

The customer can choose between three different levels of auto-tuning complexity, depending on whether a quick intervention or a demanding optimization of the machine is required:

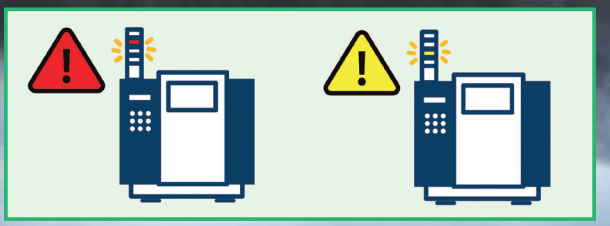
Tuning-free: The drive controller performs a preset real-time tuning during operation to quickly achieve a stable operating state (e.g. for initial commissioning).

One-minute tuning: In the middle tuning level, the setting process runs through three steps in which the MINAS A7 measures and optimizes the device properties and confirms the improved parameters within minutes (e.g. for adapting to changed conditions in an existing system).

PrecAIse tuning: This is an innovative high-level tuning function based on artificial intelligence that significantly shortens the time-consuming and tedious parameterization for ultra-precise applications.

Extended life cycle of machines thanks to the intelligent monitoring tools

- With the help of the data logging function, the MINAS A7 itself can react quickly to errors and analyze them in detail without a host system.
- The motor status is monitored and evaluated in real time to detect early signs of deterioration in the device characteristics and to warn maintenance staff.



Agile applications & methods

One device to solve complex requirements quickly and flexibly

Integrated gantry functions, direct feedback, and connectivity for applications with maximum productivity

Application example:

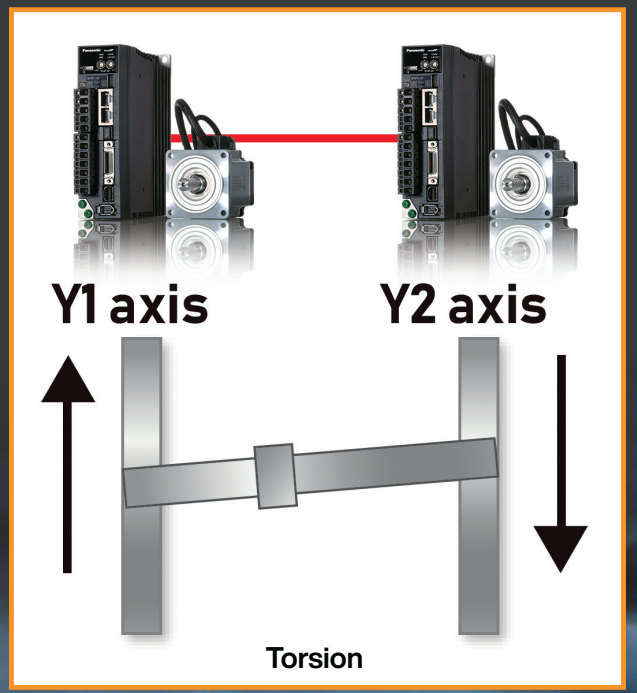
High-precision gantry control

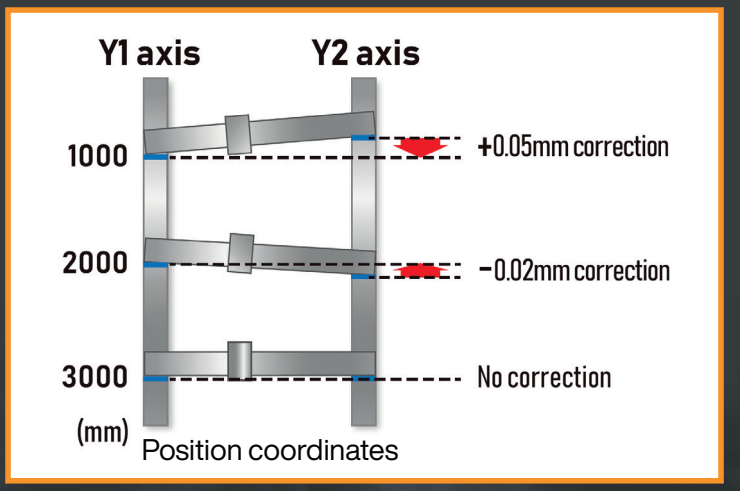
Precise: Creating a position correction table to avoid torsion and improve positioning accuracy

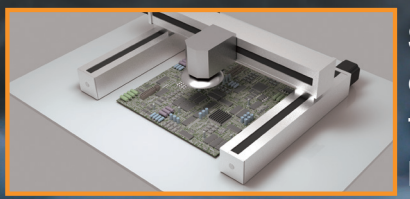
Faster: Real-time detection and correction of torque interferences for high-speed operation

Simpler: Control loop optimization makes complex tasks easier

Safer: Coordinated communication between the axes protects machines from mechanical damage.







Substrate inspection on a circuit board in the semiconductor production

MINAS A7 Line-up

Your servo system for various system configurations

SERVO DRIVER

Rotation types

Open network

MINAS A7B

- Standard type A7BE
- Multifunction type A7BF
- Application-optimized type A7BR

High-speed communication

MINAS A7N

- Standard type A7NE
- Multifunction type A7NF
- Application-optimized type A7NR

EtherCAT®

RTEX Realtime Express

SERVO MOTOR

Rotation types

High inertia

MHMG

- 50 W
- 100 W
- 200 W
- 400 W
- 750 W
- 850 W
- 1000 W

EtherCAT/RTEX Master

EtherCAT®

RTEX Realtime Express

Motion Controller

GM1

Programming according to international standards

> Conforms with IEC61131-3 and PLCopen

> 6 programming languages available: LD, ST, FBD, SFC, IL, CFC

Integration of PLC and motor

> Fastest cycle 500 µs, multi-task control

Expansive communication interface

> RTEX, EtherCAT

> OPC UA server, FTP server

> Ethernet/IP, Modbus, CODESYS V3 communication

Software and Tools

Setup software for servo drivers

Configuration software for servo drivers and motors with fully-featured tuning functions. The software supports setup, test operation, checking the operating status, maintenance, and troubleshooting.

PANATERM

Selection tool for servo motors

This is a tool for selecting motor capacity by combining machine elements. The selection tool also contains accessories.

MINAS A7 Specifications

Technical data for our available* motors & drivers

SERVO MOTOR

Model	MHMG High inertia	
Rated power	100 V	200 V
50 W	□40	
	3000 (7150)	
100 W	□40	
	3000 (7150)	
200 W	□60*	
	3000 (7150)*	
400 W	□60*	
	3000 (6700)*	
750 W		□80
		3000 (6000)
850 W		
1000 W		□80 □130
		3000 (6700) 2000 (3000)

Explanation of table:

Rated power	□ = Flange size [mm]
	Rated rotational speed (max.) [r/min]

SERVO DRIVER

Open network

EtherCAT®

	Rotation type		
	A7BE Standard	A7BF Multifunction	A7BR Application-optimized
Position/Velocity/Torque control	X	X	X
Full-closed control	–	X	X
External scale	–	X	X
Safety connector	–	X	X
Sensor feedback	–	–	X

High-speed communication

RTEX Realtime Express

	Rotation type		
	A7NE Standard	A7NF Multifunction	A7NR Application-optimized
Position/Velocity/Torque control	X	X	X
Full-closed control	–	X	X
External scale	–	X	X
Safety connector	–	X	X
Sensor feedback	–	–	X

*As of October 2024

Panasonic
INDUSTRY

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Customers from other countries may contact our European headquarters

We are dedicated to the highest standards of global sustainability as **Your Committed Enabler**. Find out more on our website.

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