

I/O Command Type Servo Motor Inherits Strongest Servo Core

# MINAS A4P Series



## Achieves System Simplification and Cost Reduction

### 1. Built-in NC Functions

- NC functions allow positioning by I/O command only.
- A target can be positioned (by teaching) without complicated pulse calculations.
- In addition to travel distances, point tables combine 16 types of preset speeds, linear acceleration/deceleration or S-shaped acceleration/deceleration, and 4 types of acceleration and deceleration.
- Two types of continuous operations are available depending on required machine specifications; continuous positioning with a temporary stop at any point and a combined block operation without a temporary stop.
- Sequential operation can be set to execute a maximum of 60 positioning points automatically.
- 8 types of homing operation modes are available. If a bumping homing is selected, simplified return-to-origin can be executed without any origin sensor.

### 2. Neither a positioning unit nor a pulse generator is required

- A maximum of 60 positioning points can be stored. No complicated programming is required as before.
- Positioning points can be specified as absolute positions or relative positions.
- Positioning can be performed directly at an absolute position without requiring homing operation by using the MINAS A4P as an absolute encoder in combination with a motor equipped with a 17-bit absolute/incremental encoder.

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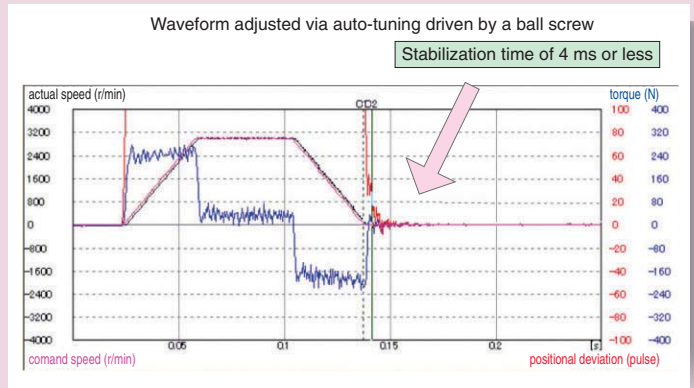
# Details of Features

Inherits high performance and advanced functioning

## 1. Further Adjustment-Free Operation

### High-functionality Real-Time Auto-Gain Tuning

- Corresponds to even variation of load inertia. Offers real automatic gain tuning to low and high stiffness machines with a combination of an adaptive filter.
- Supports the vertical axis application where the load torque is different in rotational direction.
- Prevents the machine from over-traveling during automatic gain tuning with software limit protective function.

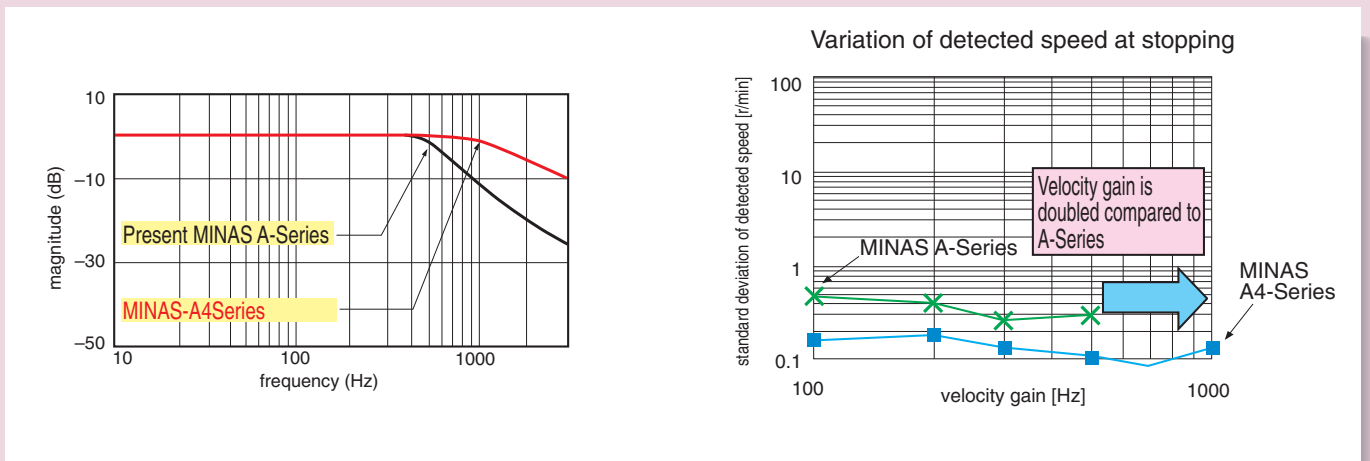


## 2. Further High-Speed and High-Response

### Velocity response (bandwidth) of 1kHz

- Implementation of Instantaneous Velocity Observer realizes a detection of motor speed with higher speed and higher resolution.

\*) In case of high stiffness machine



### High-functionality Real-Time Auto-Gain Tuning

- Supports the low stiffness machine of belt-driven and the high stiffness machine of short stroke ball screw driven, and enables to realize high-speed positioning with high-functionality real-time auto-gain tuning.