Automatic control and optimization of equipment using a wide variety of industrial template.

This motion control system combines servo systems and motion controllers and has functions for controlling positioning, speed, and torque of industrial machines such as factory production facilities and automation machines. The system is used in a wide range of fields, including those using semiconductor manufacturing equipment, machine tools, printing machines, and packaging machines. Our motion control system has the industry's highest level of control performance using the smallest system configuration. In addition, it is possible to configure flexible systems to match various networks and costs, from high-speed motion networks to pulse train control, that will contribute to improved productivity and reduced costs for the customer.

**[Benefits]**

- Reduced machine tact time and increased operating accuracy
- Significant cost reduction by using minimized systems, motion control function blocks and application models
- Flexible system configurations are possible, from electronic cam control to single-axis positioning

**[System features]**

- Speed frequency response of 3.2 kHz and 24-bit encoder achieve the industry's highest level of high-speed control and high accuracy
- Sequence and motion control are operated using a single CPU module, and use of motion function blocks and application models greatly reduces software development labor-hours
- Servo amplifier is equipped with a Safe Torque Off (STO) function as standard. Safe Stop 1 (SS1), Safety-limited Speed (SLS), Safe Brake Control (SBC), and Safe Speed Monitor (SSM) functions are also available as options.

**Various motion function blocks are built-in for:**
- Speed control
- Torque control
- Point to point (PTP) positioning
- Linear interpolation
- Circular interpolation
- Ratio synchronization
- Electronic cam
- Section synchronization (rotation)
- Section synchronization (reciprocating) etc.
### Main specifications

| Servo system ALPHA7 | Applicable motor output | 50 W to 5.0 KW |
| Control functions | Positioning control, speed control, torque control |
| Feedback | Absolute/incremental 24-bit serial encoder |

| Motion controller | Program capacity | 48, 96, 128, 256 K step |
| Motion control function blocks | Point-to-point positioning, 2-axis linear and circular interpolation positioning, ratio synchronization, section synchronization (rotation), section synchronization (reciprocating), electronic cam operation, etc. |

### Introduction example: Printing machine control system

- Machine control model
- Application model
- Virtual spindle function block
- Speed command
- Unwinding/winding application model
- Pulse train
- Feed application model
- Plate cylinder application model
- Plate cylinder application model
- Plate cylinder application model
- Plate cylinder application model

### System configuration example High speed, high accuracy, low cost

- High speed and high accuracy network motion control system
  - Human Machine Interface (HMI)
  - Ladder logic + motion controller
  - SX, E-SX bus
  - EtherCAT (under development)

- Low-cost pulse train motion system
  - Human Machine Interface (HMI)
  - Ladder logic + motion controller
  - Pulse train

- SX bus, EtherCAT
- E-SX bus (under development)