PreciseFlex™ Guidance Motion Controllers

Guidance 5000 and 6000 Series

The Guidance family of intelligent multi-axis motion controllers incorporates a distributed control architecture that utilizes Ethernet for real-time communication. Each controller on the network includes a motion/vision processor and one or more optional motor drives. Up to 16 motion controllers can be placed on a single network.

Guidance 5000 Series

The third generation of the smallest, most economical family of PreciseFlex motion controllers. Supports motors up to 200W. Designed to save cost and space for lower power servo applications.

Can be used in combination with Guidance 6000 controllers for applications requiring low and high power motors.

Requires external 24VDC supply for logic and IO and an external motor power supply. Motor power supply voltage can range from 12VDC to 48VDC.

Guidance 6000 Series

These devices integrate motion control, kinematics, motor drives, I/O signals, networking communications and machine vision in an extremely compact and cost-effective design.

Can drive from 1 to 6 motors and includes features to control robotic mechanisms such as a general purpose 6-axis articulated robot, wafer handlers for the semi-conductor industry, plate handlers for the Life Sciences, Delta robots for packaging, and Cartesian mechanisms for dispensing.

Multiple controllers can be integrated in a distributed network to operate more complex robots or simultaneously coordinate multiple robots.

Guidance Programming Language (GPL)

GPL is full-featured object-oriented application programming language, with a full suite of programming, math, communications, and multi-axis motion control functions.

Advanced Motion-Control Functions

- Linear and Circular Interpolation
- S-curve acceleration profiling
- End-point positions specified in joint or Cartesian coordinates
- Cartesian coordinates specify tool point orientation and position
- All joints compensated along the path for tool offsets
- Built-in homogeneous transformation operations and reference frames allow simple specification of compound relative positions
- Moving frames of reference including conveyor belt tracking
- Encoder position latching

Guidance 5000 Controller

For low power applications

- 4 or 6 integrated motor drives
- Up to 16 controllers on a network
- Daisy-chain or star topology support
- Supports 12-48VDC motors up to 200W
- RS-232 and RS-485 interfaces
- 2x 10/ 100 Mbit Ethernet ports
- Digital IO: 4 IN and 4 OUT
- Base controller dimensions (W, L): 87 x 150 mm

Guidance 6000 Controller

For low and high power applications

- 4 or 6 integrated motor drives
- Up to 16 controllers on a network
- Daisy-chain or star topology support
- Supports 24-340VDC motors
- 10A, 20A or 30A drives (various combinations)
- 2x 10/100 Mbit Ethernet ports
- RS-232 and RS-485 interfaces
- Digital IO: 12 IN and 8 OUT
- EC CAT-3 interface with redundant E-stop circuits
- Base controller dimensions (W, L, H): 151.4 x 294 x 55 mm
- UL Certified to UL 61800-5-1

Key Benefits

- Compact size designed for embedding into manipulators
- Integrated CPU with amplifiers
- Configurable for a wide range of applications
- 20+ robot kinematics configurations are supported. Custom kinematics development is available
- Advanced motion-control functions for complex applications
- Full-featured object-oriented programming language, Guidance Development Language (GPL)