



## Guidance™ 1000 Motion/Vision/Drive System

Precise Automation, Inc.

The Precise Guidance™ 1000 Series of Motion/Vision Controllers integrate motion control, drives, IO, network communications and machine vision in an extremely compact package that can be scaled to support up to 4 axes. The controller is based on a distributed architecture implemented over Ethernet. This permits multiple controllers to be networked together to control up to 32 axes. The result is a scalable architecture that allows drives to be placed at the point of use and can eliminate hundreds of wires and large, expensive controller cabinets.



Guidance 1000 Series is designed to significantly reduce costs for lower power applications. The integrated motor drives up to 5 amps peak at 42 VDC delivers Precise's advanced motion capabilities and integrated vision in a smaller package and at a lower price than ever before.

These controllers provide the complete functionality necessary to control multi-axis, articulated machines in the electronics assembly, semiconductor, robotics, packaging, and material handling industries, at a fraction of the size and cost of current controllers.

### Features

- Robotic machine controller
- Distributed Motion Architecture
- 1-4 integrated motor drives operated at 12 VDC to 42VDC, up to 470W power
- Motion, I/O, Vision, Communications
- Web browser based GUI
- Standalone operation or PC controlled

### Target Mechanisms and Applications

- Articulated mechanisms with up to 32 axes where cost and space are critical
  - Controller with drives can be hidden in the structure of the machine
  - Uncompromising performance with high-level resident intelligence
  - Ideal for semiconductor wafer handling, material handling, packaging or assembly robots
- Semiconductor tools requiring integrated motion, vision and peripherals
- Packaging and material handling machines
- Custom X/Y/Z/θ mechanisms where reduced cost and simple wiring are important
- Vision guided motion control applications including conveyor belt tracking with optical parts finding
- General motion control applications including electronic gearing

## Scalable Motion Controller

- Single module contains up to 4 drives
  - Drive voltages from 12 VDC to 42 VDC, 2.8A continuous current, 15A peak
  - Supports absolute encoders and incremental encoders
  - Controls AC, DC, linear, and induction motors
  - Multiple Series 1000 modules can be networked for high-speed remote coordinated motion
- Extremely Compact – 4 axis controller in 83mm x 133mm x 44mm footprint

## Powerful Software

- Embedded Web Server provides local or remote user interface
- Multi-tasking operating system with 32 simultaneous tasks integrates I/O with motion
- Powerful on board programming language for embedded applications
  - Object oriented language with math functions, data objects and control structures based on Visual Basic .NET syntax
  - Motion features: continuous path, vision guidance, pallet coordinates, conveyor tracking, velocity control, s-curve profiling, real-time path generation
  - Kinematics Library allows Cartesian control of complex machines, including articulated, parallel, and redundant axes robots
  - Machine calibration for improved accuracy
- PC Integration for PC system applications
  - ActiveX support and Ethernet allow high speed integration with PC environment
  - Application programs can be written in any standard PC language such as Visual Basic .NET, C#, etc.
- RS-232 for simple serial interfaces
- 10/100 Mbit Ethernet with TCP/IP for ease of integration to PC's and other equipment
- Digital and analog I/O control
  - Base system includes 4 digital inputs and 4 digital outputs
  - I/O can be expanded through DeviceNet, CANopen, additional I/O expansion modules
  - 2 high-speed position latches with 1µsec response

