

ScanMaster 1000 Scan Control Module

The Ultimate Integrated Scan Control Module



SM1000 Integrated Scan Control Module

Key Features

Supported Lasers

- IPG YLP Series Fiber Laser
- SPI G3 Series Fiber Laser
- CO2 (with tickle pulses)
- YAG (with first pulse suppression)
- Optional IPG YLS Series Fiber Laser

Scanner Configurations

- 2-Axis Systems
- 3-Axis Systems

Scanner Power Options

- +/-15V
- +/-24V

The SM1000 Scan Control module from General Scanning Solutions (a Cambridge Technology business) is the next generation in galvo-steered laser control system integration.

This compact, fully integrated control module is ideal for deployment into modern factory environments with distributed automation. In this environment, a single host computer can supervise a factory of networked laser marking appliances. The SM1000 is designed to be easily integrated into a scanning system and does not require a nearby physical host computer for operation. Remote Access, Remote Control, and Remote Monitoring are fully supported for tether-less operation in a distributed laser marking environment.

Factory reliability and EMI immunity are ensured through the use of optically isolated digital control ports.

Reconfigurations or job changes are done easily either by downloading via 10/100 base-T Ethernet, temporary connection to a laptop or USB memory stick, or via the optional pendant.

Based on the proven EC1000 Scan Controller card, the SM1000 includes a complete library of control features for today's lasers as well as direct 3-axis dynamic galvanometer servo driver control without the need for intermediate interface boards such as XY2-100.

The Microsoft compatible Win32 DLL, COM, and .NET interfaces to third-party or user software packages, further simplifies integration into existing automated scanning systems.

Specifications

Galvanometer Control Ports

- Dual XY2-100 3-axis ports for two-head operation
- Optional 3-axis analog differential command signaling
- Optional choice of $\pm 15V$ or $\pm 24V$ scan-head power

Laser Control Ports

- IPG YLP series compatible laser control port
 - 8-bit digital laser power control
 - Laser enable, gate and modulation
- SPI G3 series compatible laser control port
 - Waveform selection support
 - Analog control of laser power and simmer current
 - Global enable, gate and modulation
 - CW mode control
- General purpose laser interfacing
 - 8-bit digital power port
 - Dual 12-bit 0-10V analog ports
 - Laser enable, gate, modulation and FPS signals

Automation Interface Ports

- Global synchronization and status signals
 - Start-mark, Busy, Ready/Error, Mark-in-progress
- General purpose digital I/O
 - 4 + 16 bits optically isolated outputs
 - 4 + 16 bits optically isolated inputs
 - 4 optically isolated interlock sensing bits
- Mark-on-the-Fly encoder port
 - RS-422 differential quadrature input, A & B phase
 - +5V for encoder power
 - Digital I/O for part sensing and execution control
- Shutter control
 - Integrated 15-24V relay driver
 - Key-switch and shutter open state detection
- Laser DC power control
 - Integrated 15-24V relay driver
 - Key-switch state detection

Computer and Peripheral Interface Ports

- DB-9 host port for optional serial pendant
- Two RJ11 host ports for laser and / or automation communications
- Two USB 2.0 full speed Type A ports for Flash storage expansion
- 10/100 Base-T Ethernet LAN port

Operational Environment

- Ethernet connected
 - Scan-job load-and-go or streaming from GUI application
 - Remote control and monitoring of stand-alone configurations
- Stand-alone
 - Local Flash-based job storage and execution with USB expansion
 - Integrated touch-panel based operator interface
 - Optional serial-port based pendant operator interface

Software Environment

- XML based programming API
 - COM, Win32, and .NET interfaces
 - All HW features accessible
- RTC™ compatible Win32 API with extensions
- Administrative tools and programming examples
 - Configuration file editing, firmware updating, etc.
- Simple graphical editor for quick-start applications
 - HPGL file importing
 - Full control over all features
 - Integrated correction table editor
- Optional ScanMaster .NET vector object and scripting API
 - vector and bitmap image patterning
 - TTF text, laser fonts, and image hatching
 - Barcode and data-matrix code generation
 - Customizable embedded scripting engine
- Optional ScanMaster Designer marking-system editor
 - Fully featured editing package
 - Vector and bit-map file import capability
 - Customizable user interface
 - Integrated on-line help
 - Suitable for off-line job preparation

Front and Back Views



Dimensions

Length: 410mm / 16.15 Inch (Panel-to-Panel)
Width: 221mm / 8.70 Inch
Height: 100mm / 3.45 Inch (without legs)

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