

Ultimate Single Station Monitoring For All Machines

Spectra™ Silver covers a wide array of single station machine tool and special purpose machine applications. **Spectra™** Silver is available in configurations that cover tool and process applications requiring multiple sensors, tools, and workholding fixtures. **Spectra™** Silver reliably detects collisions, "empty cuts", damaged and excessively worn tooling, and delivers process diagnostic and optimization capability via user-friendly visualization software.

Because customers have different requirements, three **Spectra™** Silver models are available to match any manufacturing requirements with the perfect **Spectra™** controller. **Spectra™** Silver SL-1 can be economically applied to any machine tool where an operation such as a missing tool requirement exists. **Spectra™** Silver SL-2 can be configured to work with special purpose machines or transfer lines where high speeds and single tool conditions exist and tool breakage or collision detection are required. In the SL-3 version, **Spectra™** Silver can handle up to 127 different workpieces and tools and provide protection for the machine and process, plus deliver optimization and quality assurance for the manufacturing process on the machine.

Spectra™ Silver has the capability to program up to three limits per sensor and up to three sensors per tool. **Spectra™** Silver contains a robust and field proven library of user-selectable software algorithms to cover the broadest range of machining applications. These algorithms allow the user to apply an appropriate monitoring strategy based on the application, resulting in accurate and reliable monitoring of process variations and faults.

Spectra™ Silver Human-Machine-Interface (HMI) is provided through Montronix's graphical display (GLCD) or the Integrated Process Monitor (IPM) software. Both products provide an intuitive interface that allows the user to visualize and understand the current state of the manufacturing process, identify and recover from process interruptions, and teach or modify monitoring parameters.

Spectra™ Silver provides the ultimate flexibility in application and connectivity. It can interface with conventional as well as open architecture controls. The modular design supports all Montronix as well as third-party sensors, including digital drive data, monitoring through Profibus and Interbus. **Spectra™** Silver has networking capability over local Fieldbus and plant networks, as well as remote connectivity via internet or intranet for remote diagnostics and tele-services.



**Tool & Process Monitoring
For Lean & Flexible
Manufacturing**

**Detect & Diagnose Process
Problems & Machine Health**

**Connectivity to Conventional/
Open CNC, Fieldbus, Intranet/
Internet & Teleservices**

**Improve Quality & Productivity
Reduce Scrap & Cost**

visit our website: www.montronix.com

Single Station Machines or Transfer Lines

Spectra™ Silver Specifications

Functions

- Teach All
- Broken Tool Detection SL2, SL3
- Machine Collision Detection SL2, SL3
- Tool Collision Detection SL2, SL3
- Missing Tool Detection All

Human Machine Interface

- GLCD Optional
- Integrated Process Monitor Standard
- M-View Optional
- PDA Interface⁴ Optional

Logging & Reporting

- Event Log
 - Alarm History Standard
 - Graphic Display Standard
 - Text History Standard
 - Time/Date Standard
 - Cycle Data Log Optional

Signal Processing, Monitoring & Limits

- Signal Processing Techniques
 - Area Standard
 - Average Standard
 - Peak-to-Peak Standard
- Limits, Fixed Standard
- Limits, Floating Standard
- Limits, Stepped Standard
- Maximum Limits/Tool SL1-1; SL2-4; SL3-9
- Limits/sensor⁵ SL1-1; SL2-2; SL3-3
- Upper Limits SL1-0; SL2-1; SL3-2
- Lower Limits 1

Environmental

- Storage Temperature: 0° - 65°C (32° - 150°F)
- Operating Temperature 0° - 50°C (32° - 120°F)
- Input Power Required 24VDC, 30 Watts
- Approvals & Certifications CE, CSA, ETL, FCC

Interfacing & Control: CNC, Network, Fieldbus, LAN

- Discrete I/O Standard
- CNC Connection Standard
- Interbus Optional¹
- Profibus Optional¹
- Ethernet Optional
- Teach Function Standard
- Tool Select SL3 Only
- Workpiece Select Function Standard
- Rapid Feed Monitor SL2; SL3
- Turret Index Function SL2; SL3

Sensors²

- Sensors / Tool ≤3
- Sensors, Maximum SL1-1; SL2-2; SL3-8
- Stations 1
- Tools/Workpiece SL1 & SL3 ≤127; SL2-1
- Workpieces / Station ≤127
- Force Standard
- Vibration Standard
- Power (DGM) Standard (Optional)
- Acoustic Emission Standard
- Digital Drive Monitoring⁶ Optional
- Other Analog³ Optional

Mounting

- Bracket Standard
- DIN Rail Optional

NOTES:

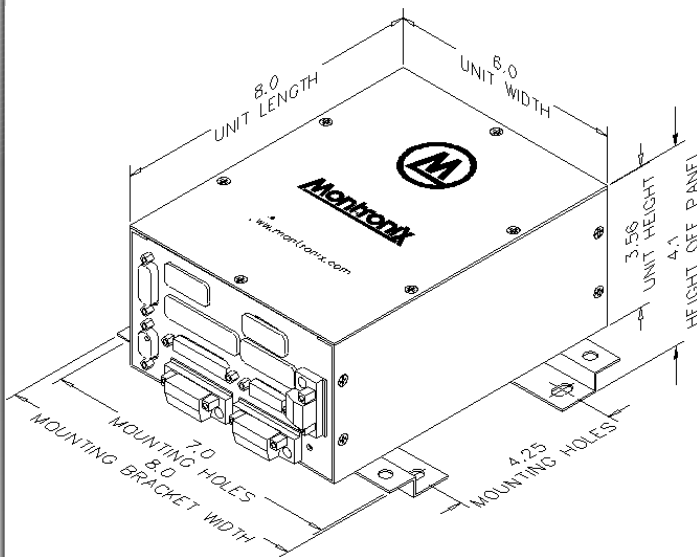
- 1 - Interbus or Profibus: only 1 may be selected.
- 2 - Sensor type and quantity is a function of the Spectra™ controller selected. Consult your local Montronix sales representative for assistance.
- 3 - Montronix line of Spectra™ controllers accepts most standard sensor inputs. Consult your local Montronix sales representative for assistance with sensor selection and integration.
- 4 - PDA - Personal Digital Assistant
- 5 - Sensors limits are factory preset but are field configurable.
- 6 - Digital Drive Data requires either a Profibus or Interbus option.

Applications

- SL-1: All machines requiring Missing Tool Detection
- SL-2: Transfer Machines with single station / single tool requirements
- SL-3: All single station machines utilizing multiple tools that require tool, process, and crash detection

The Montronix Advantage™

Montronix tool and process monitoring solutions are utilized in manufacturing industries worldwide. Applications span virtually all aspects of metal removal operations: from the manufacture of aircraft engine parts made of nickel-based alloys to steel bearing and gear components; from cast iron cylinder liners and brake components to aluminum engine blocks. Montronix products are reliable and easy to use. Montronix detects and diagnoses machining problems and helps you reduce manufacturing costs. Montronix solutions enable you to "Cut with Confidence™".



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