

## Ultimate Multi-Station Monitoring For All Machines

**Spectra™ Gold** provides premium tool and process monitoring for all types of machine tools. It monitors up to four machining stations with multiple tools and multiple part programs. **Spectra™ Gold** reliably detects collisions, "empty cuts", damaged and excessively worn tooling, and delivers process diagnostic and optimization capability via user-friendly visualization software.

**Spectra™ Gold** is a microprocessor-based, multi-station, multi-sensor monitoring platform. Two models are available to meet demanding application requirements. The GL-1 model monitors up to two machining stations and the GL-2 monitors up to four machining stations. Either model utilizes the same programming and sensors, reducing the learning curve and enhancing the ease of application and use.

**Spectra™ Gold** has the capability to program up to three limits per sensor and up to three sensors per tool. **Spectra™ Gold** 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™ Gold** 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™ Gold** 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™ Gold** has networking capability over local Fieldbus and plant networks, as well as remote connectivity via internet or intranet for remote diagnostics and tele-services.

### **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™".



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

**Flexibility and Performance for  
Multiple Stations, Part Programs,  
and Tools**

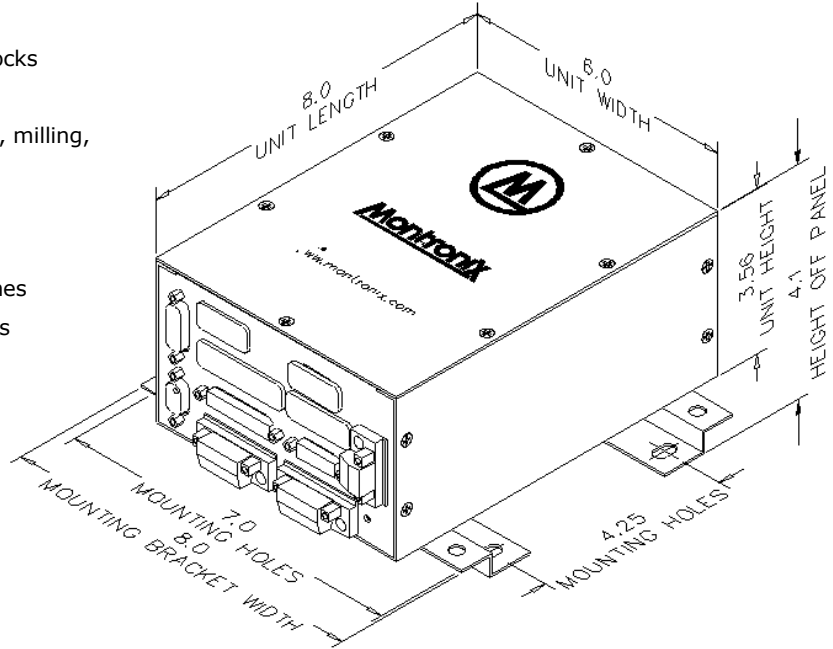
**Connectivity To Conventional/  
Open CNC, Fieldbus, Intranet/  
Internet & Teleservice**

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

# Tool, Process, and Machine Monitoring for New or Existing Machines

## Typical Applications

- Lathes: 2 - 4 axis; with turrets or tool blocks
- Transfer Machine Stations
  - Dedicated applications including drilling, milling, reaming, and tapping
  - Single or multiple heads
- Machining Centers
  - Single spindle CNC tool changer machines
  - Dual spindle CNC tool changer machines
- Other Processes
  - Grinding
  - Broaching
  - Insertion
  - Stamping
  - Gear Manufacturing



## Spectra™ Gold Specifications

### Functions

- |                               |          |
|-------------------------------|----------|
| • Teach                       | Standard |
| • Broken Tool Detection       | Standard |
| • Machine Collision Detection | Standard |
| • Tool Collision Detection    | Standard |
| • Missing Tool Detection      | Standard |

### Human Machine Interface

- |                              |          |
|------------------------------|----------|
| • Integrated Process Monitor | Standard |
| • GLCD                       | Optional |
| • M-View                     | Optional |
| • PDA Interface <sup>4</sup> | Optional |

### Logging & Reporting

- |                   |          |
|-------------------|----------|
| • Event Log       |          |
| o Alarm History   | Standard |
| ▪ Graphic Display | Standard |
| ▪ Text History    | Standard |
| o Time/Date       | Standard |
| o Cycle Data Log  | Option   |

### Signal Processing, Monitoring & Limits

- |                                |             |
|--------------------------------|-------------|
| • Signal Processing Techniques |             |
| o Area                         | Standard    |
| o Average                      | Standard    |
| o Peak-to-Peak                 | Standard    |
| • Limits, Fixed                | Standard    |
| • Limits, Floating             | Standard    |
| • Limits, Stepped              | Standard    |
| • Maximum Limits/Tool          | 9           |
| • Limits/sensor <sup>5</sup>   | 3           |
| o Upper Limits                 | 2 (Default) |
| o Lower Limits                 | 1 (Default) |

### Environmental

- |                              |                            |
|------------------------------|----------------------------|
| • Storage Temperature:       | 0° - 65°C<br>(32° - 150°F) |
| • Operating Temperature      | 0° - 50°C<br>(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                  | Option <sup>1</sup> |
| • Profibus                  | Option <sup>1</sup> |
| • Ethernet                  | Option              |
| • Teach Function            | Standard            |
| • Tool Select               | Standard            |
| • Workpiece Select Function | Standard            |
| • Rapid Feed Monitor        | Standard            |
| • Turret Index Function     | Standard            |

### Sensors<sup>2</sup>

- |   |                     |
|---|---------------------|
| • Sensors / Tool                        | ≤ 3                 |
| • Sensors, Maximum                      | 8                   |
| • Stations                              | 2 - 4               |
| • Tools/Workpiece                       | ≤ 127               |
| • Workpieces / Station                  | ≤ 127               |
| • Force                                 | Standard            |
| • Vibration                             | Standard            |
| • Power (DGM)                           | Standard (Optional) |
| • Acoustic Emission                     | Standard            |
| • Digital Drive Monitoring <sup>6</sup> | Option              |
| • Other Analog <sup>3</sup>             | Option              |

### Mounting

- |            |          |
|------------|----------|
| • Bracket  | Standard |
| • DIN Rail | Option   |

### 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.

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