

## Integrated Open Architecture Monitoring and Process Controls

**Spectra™ PC** is a real-time tool and process monitoring system designed to utilize the versatility of open architecture controls. **Spectra™ PC** provides a machine operator with a full-featured monitoring system with the familiarity and ease of use of an industrial PC. The powerful operator interface, called *Integrated Process Monitor™* (IPM), runs on open architecture machine controls, and replaces what have historically been proprietary, hardware-based front panels or custom-built operator panels.

The IPM is an intuitive human-machine interface that enables an operator to quickly and easily determine the state of his manufacturing process. Graphical visualization of the process using the IPM interface helps the operator identify and rapidly recover from undesirable process events.

**Spectra™ PC** solutions stop a process immediately upon detecting an abnormal condition, such as a machine collision, "empty cuts", damaged and excessively worn tooling, and broken tools. **Spectra™ PC** effectively minimizes damage to tooling, fixtures, and machines reducing the cost of manufacturing.

### **Spectra™ PC IPM Software**

- Integrates with CNC operator screens
- Windows® compatible with a familiar look and feel
- Supports English, French, German, Italian, and Spanish languages
- Operator friendly programmable application specific alarm and fault recovery messages
- On-line help utility
- Intuitive, 2-D graphical visualization of real-time manufacturing process events
- Full teach, edit, and set-up programming capability
- Archives program set-up data for multiple part programs
- Part program set-up information quickly restored from PC's hard drive
- Time / Date stamped event log for quick and easy access

### **Spectra™ PC Hardware**

- Single ISA slot plug-in card meets most requirements
- Multiple **Spectra™ PC** boards may be combined in a single backplane to monitor from one to 4 asynchronous processes simultaneously
- Powerful RISC processor minimizes signal processing and interrupt load on the control CPU
- Ethernet support for networking requirements
- Digital Drive Data monitoring and CNC interface utilizing Profibus / Interbus
- Provides flexible bus address and interrupt configurations for easy setup
- Responds to alarm conditions in less than one (1) millisecond
- Feed hold outputs incorporate high-speed, solid-state relays for direct connection to drive subsystems avoiding scan time delays, and resulting in the fastest possible response.



**Designed for Machines Using  
Open Architecture Controls**

**Simple Integration & Installation  
Reducing Time & Costs**

**1-4 Stations, Multiple Tool  
& Process Monitoring**

**Full Featured &  
Expansion Capability**

# Integrated Monitoring Solution for Open Architecture / PC-Based Controls

## Spectra™ PC 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
  - Alarm History Standard
    - Graphic Display Standard
    - Text History Standard
  - Time/Date Standard
  - Cycle Data Log Option

### 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 9
- Limits/sensor<sup>5</sup> 3
  - Upper Limits 2 (Default)
  - Lower Limits 1 (Default)

### Environmental

- Storage Temperature -20° – 70°C (-4° – 160°F)
- Operating Temperature 0° – 55°C (32° – 130°F)
- Relative Humidity 10 – 90% non-condensing
- 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>

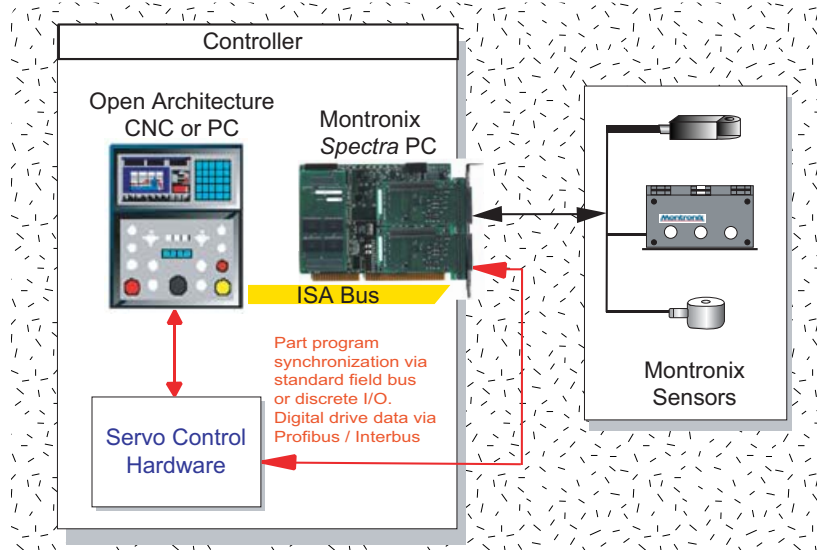
- Sensors / Tool ≤3
- Sensors, Maximum 8
- Stations 1 - 4
- Tools/Workpiece ≤127
- Workpieces / Station ≤127
- Force Standard
- Vibration Standard
- Power (DGM) Standard (Optional)
- Acoustic Emission Standard
- Digital Drive Monitoring<sup>6</sup> Option
- Other Analog<sup>3</sup> Option

### Product Description

- 135 MHz RISC Processor
- Plug-In Card
- Interface Type ISA
- Low Power Consumption and Low Heat Generation

### 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.



### 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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