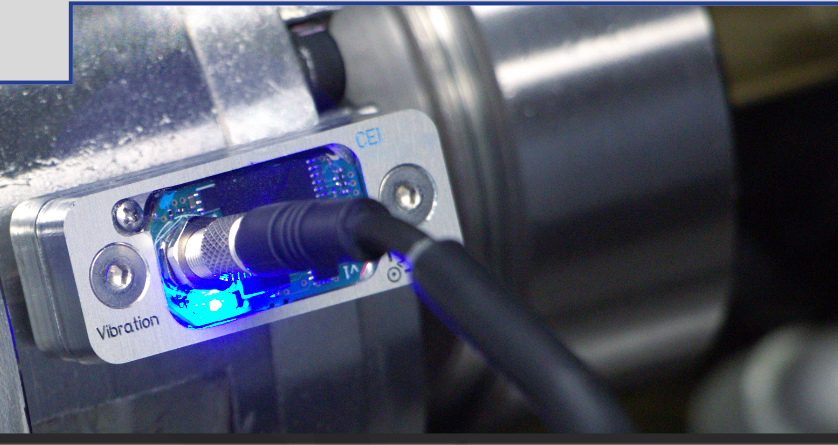


MONITOR ANY AREA OF CONCERN ON YOUR CNC MACHINE TOOL OR FIXTURE



D-Tect-IT is a Windows application that communicates with custom Caron Engineering USB sensors to effectively monitor any area of concern on your CNC machine tool or fixture. Using sensors for **vibration, strain, high-precision power, and analog**, the user can establish a baseline of characteristics to determine when irregularities are present.

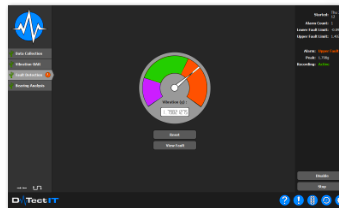
MONITORING AND ANALYSIS MODES

LIMIT ANALYSIS



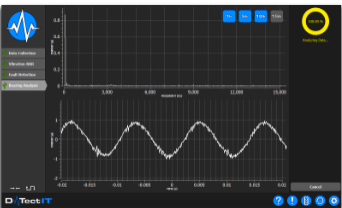
- Limits can be learned automatically or set manually using the adjustable sliders
- Work (area under the curve) limits can be enabled to calculate tool wear

FAULT DETECTION



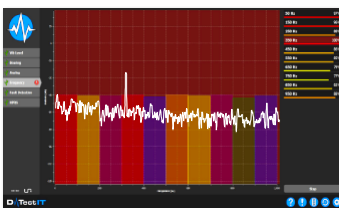
- D-Tect-IT recognizes when set upper and lower limits are exceeded, identifying an excessive condition (e.g. machine impact, overheating, extreme vibration)
- Indicates and time stamps machine faults and records data on either side of the fault for analysis

BEARING ANALYSIS



- D-Tect-IT measures spindle vibration to monitor bearing health for analysis
- Vibration signal is analyzed for the (1) Acceleration signature which tells the health of the bearings, (2) Velocity signature which detects misalignment, imbalance and looseness

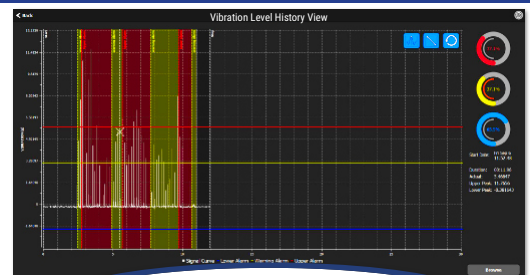
FREQUENCY ANALYSIS



- Set magnitude limits to monitor and detect anomalies within specific frequency bands
- Alarms and notifications are generated when magnitude limits (in decibels) are exceeded

FEATURES

- Ideal for monitoring up to 4 tools
- Run multiple analysis at the same time
- Application runs standalone or easily integrates with the CNC control
- Monitoring can be initialized from the user interface or the CNC control
- Collects raw data from any sensor (up to 62,500 data points/sec)
- Easily detects excessive bar feeder vibration (i.e. bent bar), and signals the CNC to automatically adjust spindle RPM, if needed



Analyze historical monitoring data using the **Analysis Viewer!**

SENSOR SPECIFICATIONS



Vibration Sensor

Wireless and USB options



- Dynamic Range: 0 - 32 g
- Frequency Response: 100 Hz - 20 kHz at 41.667 ksp/s
- Temperature Sensor: -40 - 85°C NTC thermistor
- 40mm x 16mm (1.575 x 0.623 inch) including the anodized aluminum case



Analog Sensor



- 4 channel inputs
- 0 to ±10 VDC analog signals
- 4 - 20 mA current signals
- Allows monitoring with power, pressure, coolant flow, etc.



High Precision Power Sensor



- 24 bit resolution
- Power monitoring range 0 - 10 HP (0 - 7.5 KW)
- Ideal for micro-tools (less than 1 mm), right angle heads, and low power cutting operations



Strain Sensor



- Capability depends on mounting characteristics
- Temperature Sensor: -40 - 100°C NTC thermistor



Audio Sensor (using microphone)

- Records from any recognized audio device on the DTect-IT Windows PC

Operating System Requirements

- Windows 7, 10

Stored Data Format

- CSV
- SQLite
- XML



Control Compatibility

- Fanuc
- Okuma
- Heidenhain
- Mitsubishi
- Siemens
- Citizen
- Brother

Communication

- TCP/IP Ethernet
- RS232
- Physical I/O - Ethernet
- Physical I/O - USB

PROMINENT APPLICATIONS

Barfeeder Vibration Detection

Spindle Bearing Analysis

Yoke Strain Detection

Temperature

Displacement

Machine Health and Preventative Maintenance

Tapping Operations

Tool Wear and Breakage Detection

OTHER PRODUCTS FROM CARON ENGINEERING



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