

# CSI 2125-IS Machinery Health Analyzer

- Intrinsically safe ATEX Zone 0 and IECEx certified for monitoring the health of machines in hazardous area locations
- Emerson's PeakVue technology allows for earlier detection of bearing and gear defects
- Integration with AMS Suite: Machinery Health Manager keeps the data for all your assets in a single database
- The combination touchscreen LCD and dual-entry keys is a convenient approach to facilitating left- and right-hand operation
- The intuitive user interface requires less training, faster implementation



*The CSI 2125-IS Machinery Health Analyzer complements your existing route-based maintenance program by allowing machinery monitoring in intrinsically safe areas.*

## Overview

A portable vibration analyzer is the cornerstone of a typical predictive maintenance program. But in some cases, the hazardous nature of the plant environment requires intrinsically safe technology in order to meet route-based monitoring needs. The ability to quickly and accurately identify developing faults does not have to be sacrificed to keep personnel and production safe.

The intrinsically safe CSI 2125-IS Machinery Health Analyzer meets industry standards for use in hazardous environments. You can collect important information on rotating equipment without acquiring hot work permits or putting themselves and others in unnecessary danger. Industries such as oil and gas, chemical, mining, grain processing, and water treatment often have intrinsic safety regulations that require the use of certified instruments for data collection.

## Easy Operation

Interact with the CSI 2125-IS using either the touchscreen menus or the function keys located on the faceplate. In either case, intuitive menu guide you to select route or off-route data collection modules, review data, or edit the analyzer's global settings. Left and right enter buttons make initiating data collection easy for all users.

At 1.5 lbs, the ergonomic design of the CSI 2125-IS is easily portable for all-day data collection. The rugged impact-resistant construction delivers reliable operation in harsh industrial environments.

In the Route module, the CSI 2125-IS can collect the vibration spectrum, waveform and overall data.

The analyzer can collect the spectrum and up to 12 narrow band parameters that can be trended and trigger alarms in AMS Machinery Manager when preset thresholds are crossed. The Overall reading indicates the previous level as compared to the current level. Red, amber, and green LED indicators indicate the status of the data collection and whether or not the unit detected a problem.

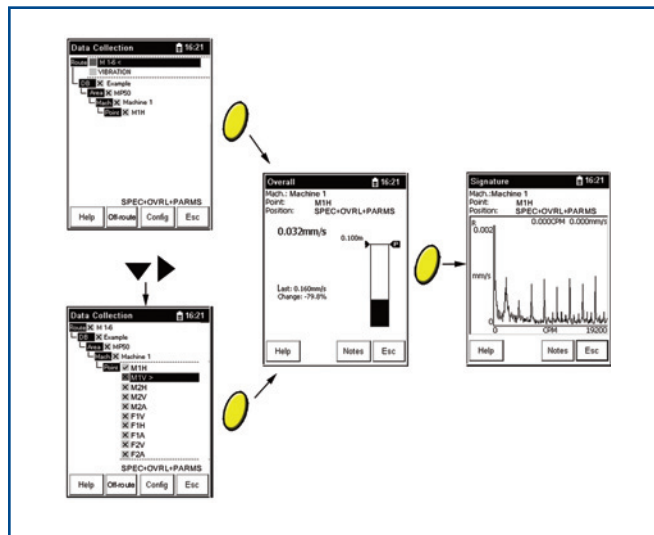
### Cover all the important assets of the plant

Using an intrinsically safe analyzer for data collection eliminates the need to acquire hot work permits or to exclude assets in safety rated areas from the route. When the CSI 2125-IS is used in conjunction with the industry-leading CSI 2130 Machinery Health Analyzer to monitor assets in non-intrinsically safe areas, you are assured that all rotating assets in the plant are monitored safely and accurately.

### Detect the Earliest Sign of Bearing and Gear Wear

Emerson's PeakVue™ capability applies digital technology to detect stress waves, which are the earliest indication of bearing and gear wear. Demodulation and other acceleration enveloping technologies typically cannot detect such faults until much later, after the machine is already damaged. PeakVue technology also provides an indication of fault severity. Measurements are repeatable, creating reliable trends for determining the optimal timing for maintenance.

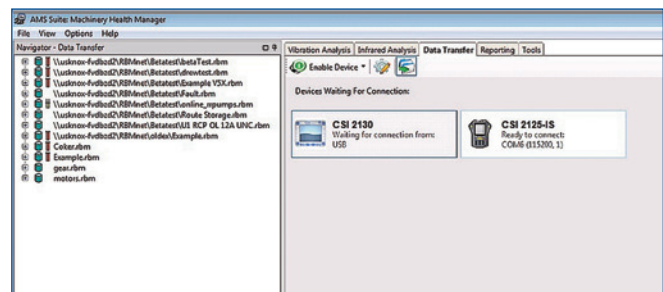
With PeakVue the waveform is critical in determining the fault diagnosis and severity, providing more insight to the machinery health than traditional spectrum analysis.



Navigate through the route to select a point for data collection. The analyzer will display the overall measurement and waveform during collection before returning to the route navigation menu.

## Integrated with AMS Suite: Machinery Health Manager

Like the CSI 2130, the CSI 2125-IS communicates with AMS Machinery Manager using the same data transfer application to load and unload routes. Likewise, the same analysis applications are used to analyze the vibration data, reducing the need to learn and use multiple applications. This data can be integrated with the many other supported technologies in AMS Machinery Manager, such as oil and infrared data, to provide a comprehensive view of the machinery health. It is this comprehensive view of machinery health that allows you to plan and prioritize maintenance action when it is most economical.

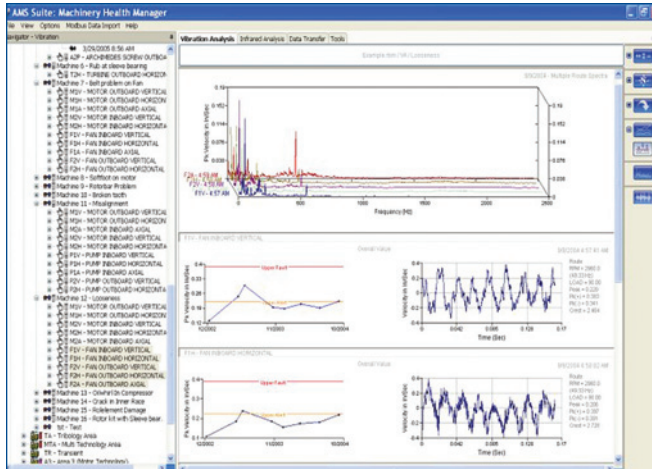


Data Transfer incorporates route communications for the CSI 2125-IS.

### Flexible Analysis Interface

With AMS Machinery Manager, you can view data more efficiently because you don't need to constantly switch screens. All plots can be displayed as full screen or several plots can be combined in a single window. With multiple monitor support, separate plots can be displayed on up to three monitors. Common applications of this powerful flexibility include:

- Looking at three directions: the X, Y, and Z plot in a single screen.
- Viewing the complete machine component: all measurement points on a motor in a single screen.
- Viewing a complete machine.
- Viewing similar machines from more than one database.
- Selecting how many and what types of plots will appear in your view.
- Identifying changes in data from month to month.



### Quickly Determine Machine Status

Use the AMS Machinery Manager Parameter Status Profile to quickly view parameter alarm status of a machine with a simple, configurable color selection (like green, yellow, and red). This capability helps you to determine where additional attention is needed.

### Fine Tune Alarms

During your analysis or after you have had time to acquire several months of data, you may need to adjust your original alarm setups. The Automated Statistical Limit Calculation module can take data from vibration patterns and construct narrowband alarms. Envelope alarms can also be manually defined and created from a reference spectrum.

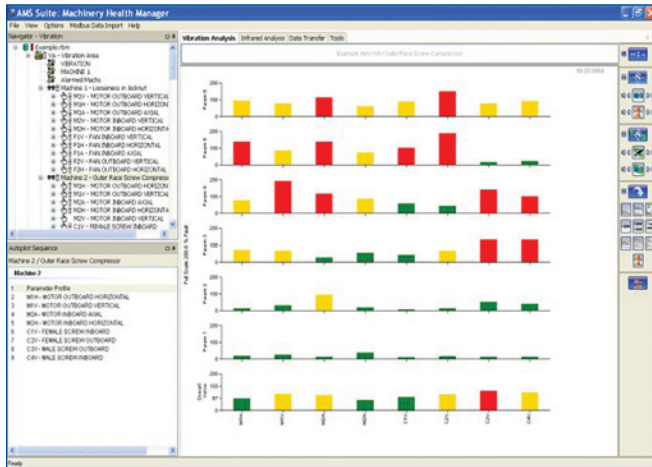
### Intrinsic Safety Certifications

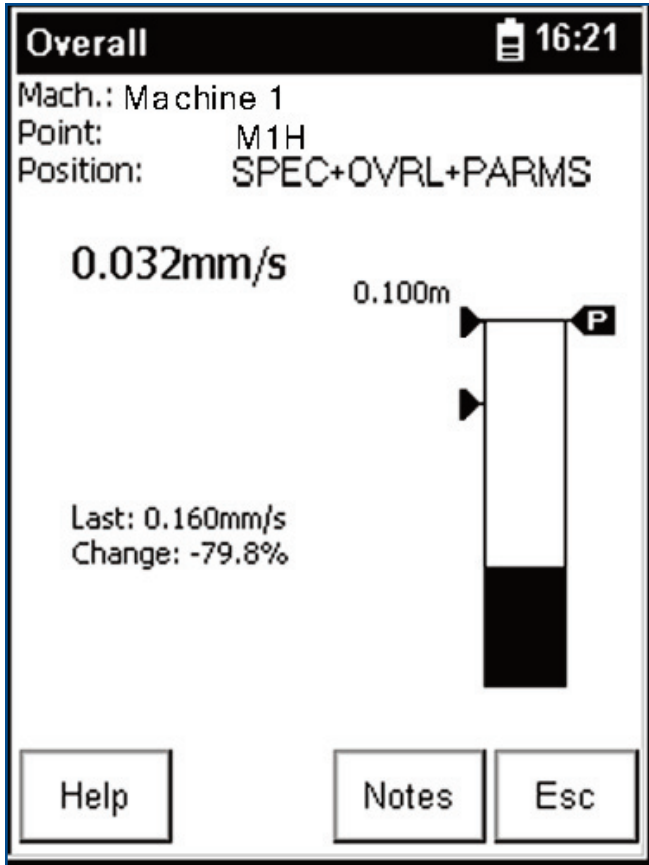
The CSI 2125-IS Machinery Health Analyzer has one of the highest levels of intrinsic safety available for a portable vibration handheld instrument. It is rated Group I (Mining) and Group II (Petrochemical) for both ATEX and IECEx from the European regulatory agency SIRA.

- ATEX and IECEx

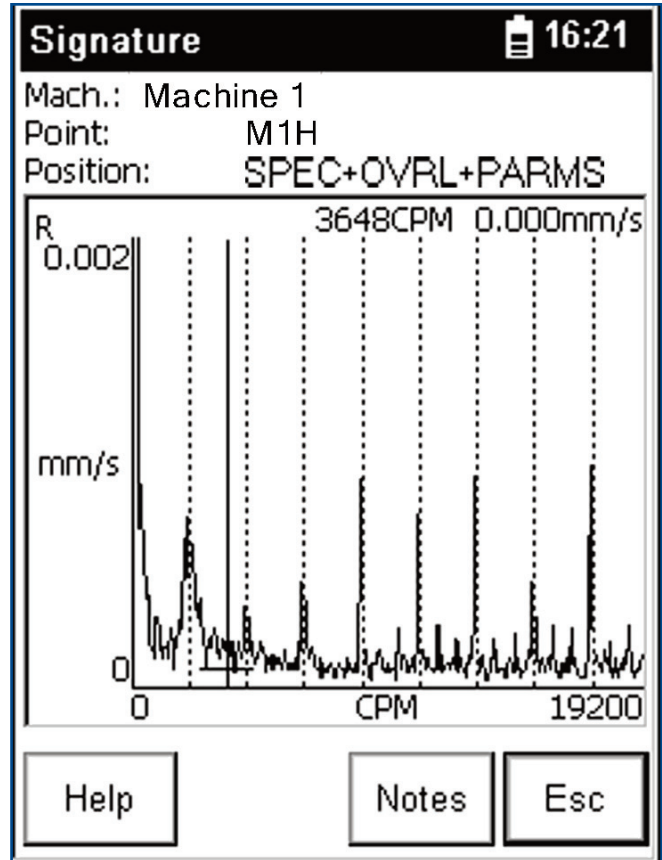


- Ga Ex ia IIC T4 (Ta -20 to +50 °C)
- Ma Ex ia I (Ta 0 to +50 °C)
- Complete system includes ATEX approved sensor

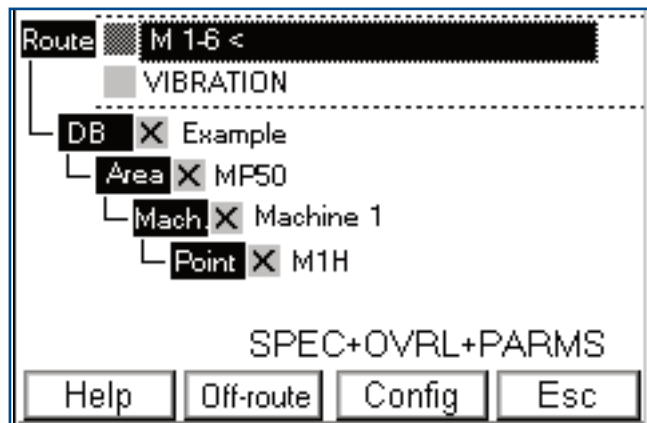




The analyzer displays the overall measurement showing the previous and current overall readings.



The analyzer also displays the spectrum during data collection.



Navigate through the route to select a point for data collection.

**Specifications**

<b>INPUT SOURCES</b>	
Input Signal Types	ICP™ Accelerometers, Velocity Transducers, Displacement Probes, and Photo Optical Pick-Ups
Signal Input	ICP™ (20 V at 3.5 mA), AC Signal, Tachometer (trigger input – photo optical, etc.) Power Input – Battery Charge
<b>INPUT PARAMETERS</b>	
Input Signal Range	ICP™: 0-20V Non ICP™ : ± 12V, or 0-24V for Displacement
Signal	RMS/Peak/Peak-to-Peak/True Peak/ True Peak-to-Peak
Transducer Check	Bias Voltage Integrity (ICP™)
Auto Range	Yes
Dynamic Range	>85 dB (20 bit ADC sigma-delta)
Amplitude Accuracy	5%
Input Connectors	Signal: 4-Pin Fischer, 102 Type Power In/Battery Charge: 2-Pin Trigger : 3-Pin Fischer, 102 Type
<b>MEASUREMENT PROCESSING</b>	
Measurement Parameters	Acceleration, Velocity, Displacement, Phase, Voltage, User Specified.
Measurement Types	Overall, PeakVue, Spectrum, Time Waveform, Phase, Order Normalized.
Range (Route and Off Route)	3 Hz to 40 kHz
Frequency Range	DC to 40 kHz Maximum.
Integrated Measurements	5% Accurate >10 Hz
Bearing Condition	PeakVue
FFT Resolution	100-6,400 Lines (Route), 100-12,800 (Non-Route)
Averaging	Time, Spectral, Peak Hold
Alarms	Overall and Spectrum
Note Codes	100 Note Codes (select up to 6 from 100)
Measurement Windows	Hanning, Flattop and Rectangular.

<b>DATA PROCESSING AND STORAGE</b>	
Microprocessor	MIPS
Memory	OS 16 MB Flash Disk (User data) 8 MB Flash Data Displays Spectrum, Time, Overall Up to 12 bands downloadable from host software.
<b>POWER</b>	
Battery Size	Custom Rechargeable NiMH 1800 mAh removable battery pack. No loss of data during battery charges. Battery charges in the collector.
<b>PHYSICAL DATA</b>	
Keyboard	Sealed chemical resistant elastomeric silicon, tactile touch, alpha-numeric.
Dedicated Keys	Up, down, right and left two enter keys for right and left hand operation.
LCD Screen	1/4 VGA Monochrome Touch Screen, 240 pixels x 320 pixels (57mm x 76mm) Viewable.
Size	186mm x 93mm (7.44" x 3.72") narrowest point 186mm x 134mm (7.44" x 5.36") widest point
Weight	700 grams (1.51 lb)
<b>ENVIRONMENTAL</b>	
ATEX	II 1G EEx ia IIC T4 (Ta -20°C+50°C)
CE Rated	
IP Rating	IP 65 (Dust and Waterproof)
Temperature Range Storage	-20°C to +60°C (-4°F to +140°F)
Temperature Range Operating	-10°C to +50°C (+14°F to +122°F)
Humidity	0-80% relative humidity, non-condensing
EMC	EN61000-6-4 (Emission) EN61000-6-2 (Susceptibility)
Drop Test	1 Meter (3.3 Feet), to ATEX Spec.
<b>COMMUNICATIONS</b>	
Communication	RS-232
<b>HOST SOFTWARE</b>	
AMS Suite	Machinery Health Manager v5.51 and higher

**Standard Kit**

The CSI 2125-IS Machinery Health Analyzer standard kit includes the following	
CSI 2125-IS	Machinery Health Analyzer with single-channel route and off-route measurement firmware
CSI 2125-IS	CD-ROM with firmware, user manual, and firmware loader utility
A212501-IS	Accelerometer, ATEX (100mV/g), top mount
MHM-91503	Accelerometer cable), Fischer four pin, 2m (6.6ft) coil, to two pin MIL
MHM-91504	AC/DC signal cable, Fischer four pin, 2m (6.6ft) straight, to BNC
MHM-91505	Tach cable Fischer three pin, 2m (6.6ft) straight, to BNC
MHM-91500	Magnet mount, pull strength 20kg
MHM-91507	Battery pack for DC225-IS
MHM-91508	Power adapter/battery charger for DC225-IS
MHM-91515	Hard shell carrying case, double ABS shell, foam insert with cables pocket
MHM-91518	Leather hand strap
MHM-91519	Leather neckstrap
MHM-91517	Rubber boot sleeve
MHM-91521	Stylus for DC225-IS
MHM-91502	Serial to USB communications adapter cable

**Accessory Options**

Part #	Description
A212501-IS	Accelerometer, ATEX (100mV/g), top mount
MHM-91500	Magnet mount, pull strength 20kg
MHM-91501	Magnet accelerometer base (pull strength 11 kg)
MHM-91502	Serial to USB communications adapter cable
MHM-91503	Accelerometer calbe, Fischer four pin, 2m (6.6ft) coil, to two pin MIL
MHM-91504	AC/DC signal cable, Fischer four pin, 2m (6.6 ft) straight, to BNC
MHM-91505	Tach cable, Fischer three pin, 2m (6.6 ft) straigh, to BNC
MHM-91506	Tach cable for use in IS areas
MHM-91507	Battery pack for DC225-IS

## Accessory Options

Part #	Description
MHM-91508	Power adapter/battery charger for DC225-IS
MHM-91509	Power supply cable for Australia
MHM-91510	Power supply cable for Europe
MHM-91511	Power supply cable for South Africa/India
MHM-91512	Power supply cable for UK
MHM-91513	Power supply cable for USA
MHM-91514	Power supply cable for Brazil
MHM-91515	Hard shell carrying case, double ABS shell, foam insert with cables pocket
MHM-91516	Leather carrying pouch
MHM-91517	Rubber boot sleeve
MHM-91518	Leather hand strap
MHM-91519	Leather neckstrap
MHM-91520	Leather belt
MHM-91521	Stylus for DC225-IS

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