



Micro Hot Bearing Detector

Fewer False Stops Keep the Wheels of Commerce in Motion

The Micro Hot Bearing Detector (MicroHBD) inspects passing trains for bearing defects in order to prevent derailments and costly infrastructure damage. Analyzing each bearing's InfraRed signature, the MicroHBD is able to alert authorities to potential problems before they hamper productivity.

Utilizing the optional GEN III filtering with its patented digital heat-processing algorithm enables MicroHBD to reduce Nothing Found Stops (NFS) by 75 percent (over GEN II filtering) while ensuring true stops are detected. This capability ensures the railroads achieve maximum velocity through fewer false stops. No competing system offers this technology.

The MicroHBD easily installs in both new and retrofit locations. Upgrade kits are available for various detector systems including Servo 9000s, Servo Cyberscans, Harmon Model 75s, DevTronics CMA02s, and other systems that use Servo ACS I/ ACS II scanners. These upgrade kits re-use most of the existing field equipment, providing the full benefits of the MicroHBD while reducing cost and installation time.

The MicroHBD user interface provides password-protected access to configure site-specific parameters, set alarm limits, upgrade software, interface to other equipment via digital I/O, provide remote access, and communicate to various central reporting systems.





Specifications

Power Requirements

Operating voltage: 9 to 16 VDC

Operating current: <420 mA ,
6A (Train Passing)

Operating Temperature

Minimum: -40°F (-40°C)

Maximum: +158°F (+70°C)

Dimensions

Height: 9 in (22.86 cm)

Width: 8.75 in (22.23 cm)

Depth: 7.25 in (18.42 cm)

Communications

RS-232 local port adjustable baud rate to 115k baud

RS-232 local port NULL adjustable baud rate to 115k baud

RS-232 modem port adjustable baud rate to 33.6k baud

An optional industrial temperature internal modem is available

System has dial-out capability to remote reporting locations





Signals & Communication

Track Interface

Digital I/O

If defined as inputs: input can be normally closed or normally open, user definable

If defined as outputs: can be used to drive 12-volt relays requiring 250 mA current or less

Analog I/O

Ambient temperature probe

12-volt battery monitor

Wheel gates

Differential inputs to support electric rail

Track circuit input

Input can be normally closed or normally open, user definable

Storage

1 Mbyte SRAM for train, car, and axle data

8 Kbyte EERAM for configuration data

2.5 Mbyte FLASH for software and voice

Radio drive

Isolated 600 ohm output with a software controlled modulation level can be preset to specific standards

Can operate with train speeds from 10 to 110 mph (16 to 177 km/h)

Unit is FCC Part 15B Certified





Software Configuration Options

Digital Heat Filtering

Option 1: Patented Gen II Filter

Mathematical filter reduces Nothing

Found Stops (microphonics, etc).

Proven success: reduced BNSF bearing NFS stops by 50% compared to the median filter considered best in class industry-wide

Option 2: Gen III Filter (patent pending)

Peak-detect algorithm detects profile anomalies not detected by the Gen II filter.

Proven success: reducing BNSF bearing NFS by 75%.

Configurable thresholds allow customer to tailor filter algorithm based upon customer's risk management strategy.

Integrity Failure Alerts support proactive site maintenance when atypical profiles are detected. (VH F announcement and office alerts).

AEI Integration

Serial interface (via RS-232) to SAIC

Mainline Reader for integrated HBD

AEI S918B compliance.





Signals & Communication

Track Configurations

Up to triple track supported

Radios

Kenwood TK760

Tellular

Train Detection

Option 1: EPIC III Track Circuit

Option 2: Advanced Transducers

Weather Monitors

Ambient temperature probes

Wind speed/direction monitor

Integration with other Defect Detectors

Micro Hot Wheel Detectors (MicroHWD)

Micro Cold Wheel Detectors (MicroCWD)

Dragging Equipment Detectors (DED)

Car Clearance Detector

Surge Protection

Faraday cage

Upgrade Kits

Call for pricing

Pre-wired House or Case

Call for pricing

