Avalanche Detection System

An essential detection system for snow, tree and embankment risk.
Part of the **Total Track Monitoring™** suite

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Avalanches are a major threat to critical infrastructure, such as railroads, causing delays, disruption and damage.

Avalanche Total Track Monitoring™ by L.B. Foster is an end-to-end solution that sends alerts to operators about events in often remote locations that can lead to snow, trees and debris on the track. Proactively monitoring such events increases safety, reduces costs through a reduction in service delays, eliminates false alarms and enhances reputation resulting from continuity of service.

SYSTEM OVERVIEW

Product Family

Avalanche Total Track Monitoring™ by L.B. Foster is part of a wider suite of Remote Condition Monitoring (RCM) solutions for a wide range of events. These include flood, temperature, grade crossing safety, mud and landslide. All solutions incorporate remote monitoring capabilities with control center alerts and data management software.

Components

> Tag / Detector

> Gateway

> Control Center (Human Machine Interface)

> Solar CCTV camera (optional)

> Asset Management software (L.B. Foster Anatomy Suite)
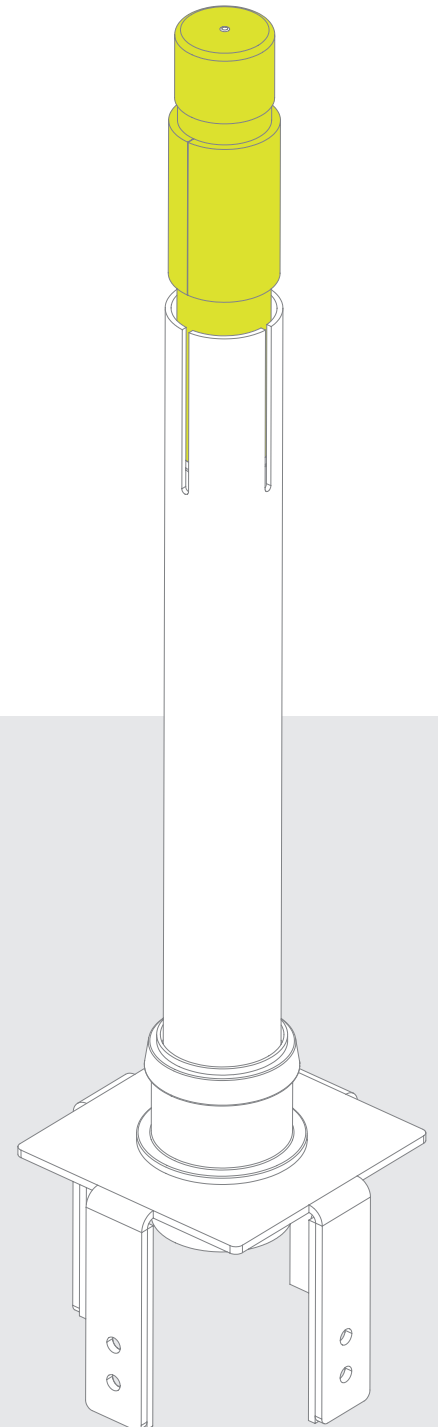
FUNCTIONALITY & APPLICATION

Avalanche Total Track Monitoring™ by L.B. Foster uses long-life battery-powered RCM tilt and position sensors attached to posts, which are swept along during an avalanche. These small, inexpensive sensors have the potential to be used over hundreds of miles of susceptible track.

1. When an avalanche occurs, G-force accelerometer sensors are triggered. An optional HMI display module provides real time visual monitoring.

2. Event data is automatically relayed to a special information gateway. The Human Machine Interface (HMI) sends alerts to the railroad control center that an event has occurred.

3. Operators can also log in remotely to see the event in real time, if optional solar powered CCTV cameras are designed into the solution.

4. The Control Center's alarm summary page shows the system status. Equipped with live video images, operatives can quickly determine the extent of the event and identify appropriate actions from stopping trains or running at caution.
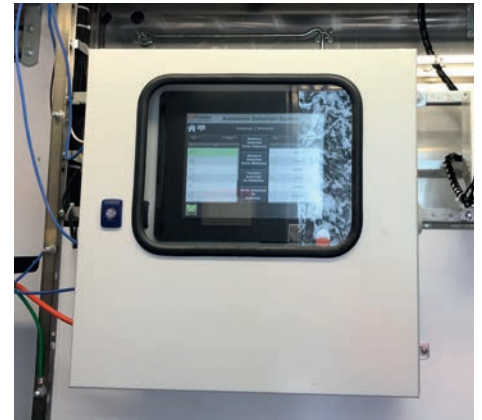
ADDITIONAL INFORMATION

Avalanche Total Track Monitoring™ by LB Foster features sophisticated data management software. Event data resulting from the avalanche is captured, stored and analyzed, providing detailed intelligence on event regularity and severity. This allows railroad operators to build a detailed event profile and identify actions to prevent or offset future events.

Avalanche Total Track Monitoring™
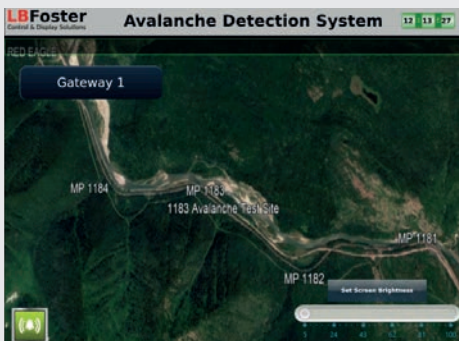
TECHNICAL SPECIFICATIONS - TAG / DETECTOR

Operating Frequency	917.400MHz (Factory Programmable)
Operating Temperature	-22°F (-30°C) to 158°F (70°C)
Battery and Operational Life	3.5v 2 years

GATEWAY DEVICE

Operating Temperature	-22°F (-30°C) to 158°F (70°C)
Power Requirements	5V +/-10% 0.04A

HMI DEVICE

Operating Temperature	-4°F (-20°C) to 131°F (55°C)
Power Requirements	+24V DC 0.81A
Relative Humidity (RH)	5% to 95% (non-condensing)
Operating Altitude	6,562 ft (2,000 m)
Shock IEC 60068-2-27	15G, 11ms duration
Vibration IEC 60068-2-6	5Hz to 8.4Hz, 3.5mm constant amplitude, 8.4Hz to 150Hz, 1G acceleration
Screen	LCD type TFT, Backlight type White LED
Luminous intensity, (brightness)	Typically 400 nits (cd/m2), at 25°C
Backlight longevity	50k hours
Resolution (pixels)	800 x 480, Size 10.4"
Color support	65,536 (16bit) 16M (24bit)
Surface treatment	Anti-glare
Touch screen	Resistive Analog Capacitive, Actuation force (min) > 80 g (0.176 lb)
Processor	32 bit, 800MHz RISC Processor, with Graphic Accelerator
Internal memory RAM	512 MB
ROM	3GB system memory
User Memory	1GB
External memory	MicroSD or microSDHC card, Size: up to 32GB
Data Speed	Up to 200Mbps