



Condition Monitoring Application Guide

Points/Switch Machines

System Overview

TrackSense is designed with your organization in mind. Unlike expensive, rigid systems, it offers an affordable, modular solution which is compatible with off-the-shelf sensors, enabling you to select the tools that best suit your needs. With a user friendly interface that streamlines daily tasks, TrackSense promises to deliver lasting value and support long after your purchase. TrackSense can monitor key performance data for any rail asset, including:

 Point Machines	 Power Supplies	 Battery Banks	 Axle Counting	 Level Crossings	 Safety Signals	 Track	 Track Circuits
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Points/Switch Machine Monitoring

The most effective way to monitor Points Machines is by using a current sensor installed on the input to the motor to measure the current draw during operation. The waveform generated from this current draw provides a clear and visual representation of the machine's performance.

Changes in the waveform can signal various issues, such as increased resistance due to dry chairs, rust, or debris. It can also detect short movements caused by power failures, failure to lock, and obstructions within the mechanism.

Optional Additional Sensors

Monitoring can be further improved with the addition of any of the following sensors:

- Voltage
- Rail Temperature (especially in cold environments requiring rail heaters)
- Relay Detection Contacts

Wiring Block

Below is an example wiring block. Wiring in practice may vary depending on circumstances.

Minimum Requirements

- 1x TS Logger Module
 - Collects data for analysis
- 1x TS Analog Module
 - 6 analog input channels
- 1x 4-20mA Current Sensor

NOTE: For AC points machines, either an additional 4-20mA Current Sensor or a TrackSense Digital Module (for Digital Detection Contacts) will be required in order to differentiate movement directions for waveform analysis.

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