

## Application Solution

# Switch Point Protection & Yard Automation

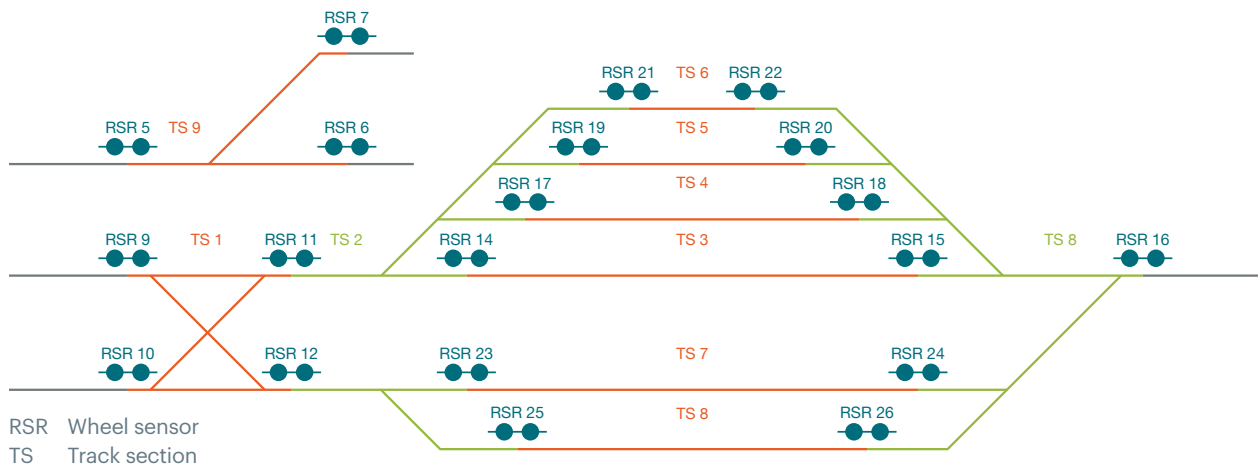
In complex rail yards where operations include the use of hand thrown switches and manual routing procedures, there is room for a significant increase in efficiency and safety. Unprotected switch points may allow switching during traversing, that can result in damage to the switch or even a derailment. Infrastructure and space limitations can make it difficult to improve key performance indicators, such as yard throughput and reduced dwell time. In addition, railroad personnel are at risk during manual routing operations.

### Drawbacks of current systems

- Manual switching systems are inefficient, negatively effecting yard throughput and dwell time
- Personnel must be on track to shunt, placing them in danger
- Track circuits are difficult to install within tight, complex yard layouts
- Insulated rail joints require frequent maintenance and are costly to replace
- Track circuits do not provide flank protection to the switch
- Track sections over switch need to be as short as possible to allow quick throwing of the switch after traversing

### Improvements needed

- Easy, flexible installation
- Low maintenance and life cycle costs
- Handle zero speed and rocking of vehicle wheels
- Prevent switching actions during train traversings that can cause switch damage and derailments
- Quickly release switches after traversing to route next train
- Provide flank protection to switches
- Track axle counts within configurable track sections
- High uptime and reliability



## Solution

The Frauscher Advanced Counter FAdCi is a vital (SIL 3), fail-safe axle counting system designed for fully automated yards. Used in conjunction with the Wheel Sensor RSR180, the FAdCi detects trains from zero speed to 50 mph, with minimal maintenance requirements. Frauscher also offers the SIL 4, fail-safe FAdC system that detects trains from zero speed to 280 mph.

In applications where only switch point protection is required as opposed to full automation, the Wheel Sensor RSR110 would be installed around each switch. Train detection can occur via analog signal, and digital output is also available. The FAdCi system protects trains and yard assets such as switches, and provides reliable train detection, information, direction and the quantity of train movements. Frauscher axle counters can be configured with

hardware (relay) or software-based (Ethernet) interfaces. The FAdCi allows flexible implementation and integration with existing infrastructure and provides:

- Switch and flank protection
- Easy installation (~ 5 minutes) using the Frauscher rail claw
- Less installation space required
- Handling of zero speed and wheel rock
- Increased safety due to less personnel required on track
- Option to automate switch points only, or as part of a full yard automation solution
- Significant operating cost reduction, due to improved throughput and reduced dwell time



### Equipment

For switch protection only

- Wheel Sensor RSR110

For full yard automation

- Frauscher Advanced Counter FAdCi
- Wheel Sensor RSR180

### Further information

Find more detailed product descriptions on [www.frauscher.us](http://www.frauscher.us)

- Datasheet RSR110
- Datasheet RSR180
- Datasheet FAdC®
- Datasheet FAdCi®