

Axle-Counting FAQs



Are axle-counting systems vital (fail-safe)?

Yes. Axle-counting systems are used on both freight and transit rail systems for a variety of applications such as highway grade crossings, wayside signaling applications, trap circuits, interlocking systems, switch protection and control, yard automation, and more. Pintsch technology is used for some of the world's highest-speed passenger rail systems where the utmost safety level is required.

How safe are axle-counting systems?

A Pintsch axle-counting system incorporates multiple, redundant activation protocols. A minimum of four processes must occur in unison with each change in state (occupied/unoccupied). In addition, each of these activation processes incorporate up to four subordinate redundant processes that must occur in unison with each change in state. Furthermore, both electrical and mechanical (relay) back-checking occur in response to train movements. Anti-valent processes are also incorporated. In other words, the safety protocols exceed the redundancy of competing signaling technologies. It is for this reason that Pintsch axle-counting systems have never experienced an activation failure across our extensive installed base.

What other fail-safe functions are present?

Pintsch axle-counting systems default to the most restrictive signal condition in the event of a short, open or major change in sensor cable electrical characteristics, an off-rail condition in which a sensor is displaced from the web of the rail by more than one millimeter, or in the event that a failure in a double wheel sensor results in dissociated impulses which preclude proper axle-counting.

Are axle-counting systems reliable?

Yes. Pintsch axle-counting technology is extremely reliable. It meets or exceeds that of competing "track-circuit" based systems. It also offers immunity to a wide variety of environmental variables that degrade the performance of other systems. A Pintsch axle-counting system will even function reliably when track and structure are temporarily immersed under water. Pintsch equipment also requires less maintenance and testing than traditional methods.

Is axle-counting used on major class-one and regional railroads?

Yes. Pintsch axle-counting systems and components are used on all major class-one railroads throughout the U.S. and Canada as well as on many regional and short-line railroads. Pintsch technology should never be confused with inferior industrial and private crossing products from other manufacturers.



This intersection in South Carolina experiences nearly continuous truck traffic 24-hours per day. Only Pintsch axle-counting technology provides the necessary reliability.

Pintsch North America

810 Skyline Drive

Marion, IL. 62959

(618) 993-8513