



SIEMENS

[siemens.com/mobility](https://www.siemens.com/mobility)

Wayguard WESTeX

Level crossing solutions



Wayguard WESTeX

Wayguard WESTeX provides a complete suite of products and systems for level crossings, suitable for a wide range of applications in North America, the UK and around the world. With a range that includes predictor systems, controllers and next generation barriers, Wayguard WESTeX delivers high quality, cost-effective level crossing control solutions.

Delivering safe solutions – cost effectively

Improving the safety of level crossings is a key priority for many of the world's railway operators. Working with technologies drawn from across Siemens Rail Automation, Wayguard WESTeX offers a portfolio of solutions that drive down costs whilst improving efficiencies and operational performance, as well as providing enhanced safety.

Predictor technology automatic level crossing systems provide warnings to road users in sufficient time to protect them from an approaching train. Traditionally, the warning sequence is initiated at a fixed point (the 'strike-in') on an approach to a level crossing, to provide protection against trains travelling at maximum permissible speed.

Whilst this system guarantees the required warning time, in practice not all trains travel at maximum speed, resulting in the road being closed longer than necessary.

Wayguard WESTeX predictor technology continually monitors the speed of each approaching train, enabling the level crossing predictor (LCP) to calculate the time at which it will arrive at the crossing. Consequently, the warning sequence can be triggered at the optimum point, providing a consistent, pre-determined warning period to road traffic for each train, regardless of its approach speed.

The LCP monitors trains until they leave the crossing train detection section, enabling the crossing to be re-opened to road users as quickly as possible, and also providing inherent bi-directional train detection for the crossing.

Wayguard WESTeX GCP 3000 level crossing predictor

The Wayguard WESTeX GCP 3000 provides the same level of train detection as conventional technology but at significantly reduced cost. One Wayguard WESTeX GCP 3000 system replaces the equipment traditionally required for a standard Network Rail automatic level crossing – typically six track circuits, twelve treadles, forty five relays, eight insulated rail joints, four location cases, power supplies and 3km of cable.

For each track controlled by the LCP, there are just four rail connections at the crossing. Completely passive equipment is provided at the strike-in points and this requires no power or cabling.



Compared to traditional level crossings, use of the LCP reduces hardware costs, and also enables significant savings to be made during the design, planning and installation stages.

In addition to cost savings, the Wayguard WESTeX GCP 3000, as a “Constant Warning” device, provides consistent warning times irrespective of the speed of the approaching train, and this contributes to increased safety by reducing the risk of road users misusing the crossing.

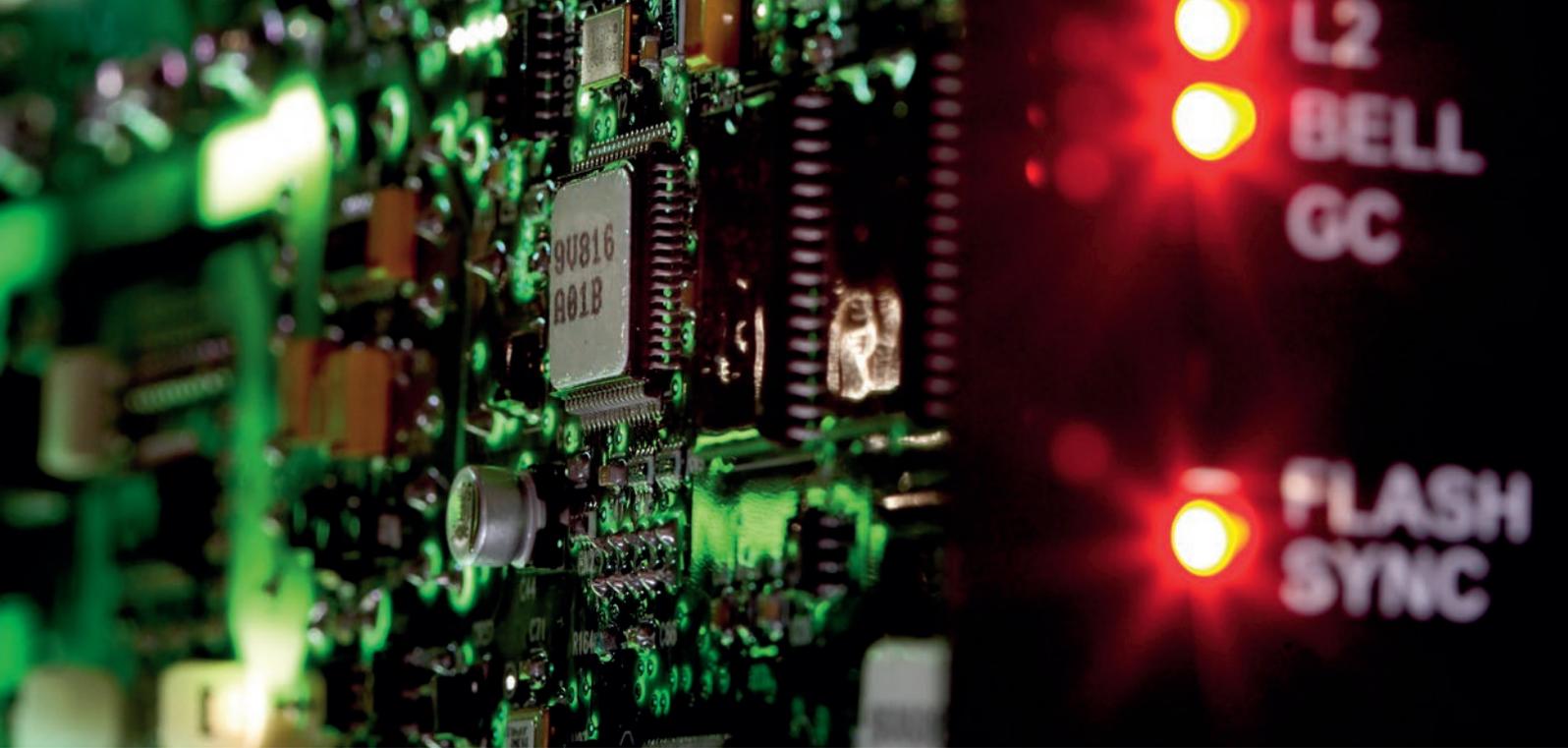
Wayguard WESTeX GCP 4000 level crossing controller

The Wayguard WESTeX GCP 4000 is capable of providing complete crossing control for up to six lines and four barriers, as well as complex layouts – for example, areas containing stations, multiple lines and where the strike-in point is separated by signal sections.

Each GCP 4000 system provides complete train detection, crossing control logic, vital indicators, communications and timers, solid state barrier/ light drives, and full event recording. Component modules within the GCP 4000 housing are provided with at least two vital inputs/outputs that enable direct interfaces with signalling equipment.

The Wayguard WESTeX GCP 4000 can work in any automatic crossing configuration. In addition the GCP 4000 can be used to control manually controlled barriers (MCBs) – with or without CCTV, and can be used to control radar scanners to allow obstacle detection at manually controlled barriers with obstacle detectors (MCB-OD) or automatic full barrier (AFB) crossings.

The GCP 3000 is approved for use on nonelectrified lines. The GCP 4000 will additionally be available for use in areas with electric traction. Siemens Rail Automation is currently developing a module (the Wayguard WESTeX SO 4000) which is a frequency – based track circuit that operates either as a plug-in card for the GCP 4000, or as a stand-alone package (the PSO 4000 LCM). When used as a stand-alone unit the PSO 4000 LCM provides a cost effective solution for simple level crossings (such as user worked crossings or miniature stop lights) including those on electrified lines.



A modular approach

The Wayguard WESTeX GCP 4000 is a modular level crossing solution, capable of interfacing with other equipment including signals, barriers, lights and detectors. Use of the WESTeX GCP 4000 allows application engineers to adopt an approach that uses a series of standard and proven templates to provide the level crossing control logic. For new installations, an existing template is selected and adapted for use, rather than developing a bespoke solution for each project – greatly simplifying design, configuration and testing.

Wayguard WESTeX next generation barrier machines

Unlike the majority of conventional products, Wayguard WESTeX next generation barriers can be driven directly from the solid state crossing controllers in the GCP 4000. There is no requirement for interface relays, significantly reducing complexity of design, installation and testing, and associated project costs.

Wayguard WESTeX next generation barriers use a highly efficient operating mechanism that requires less power than conventional machines. Using Wayguard WESTeX barriers will significantly reduce power requirements at level crossings, which will translate into associated project and operational savings for customers.

Wayguard WESTeX barriers provide a cost-effective, reliable solution and can be configured as drive up/gravity fall, or drive up/drive down. In addition, separate options are available for entrance and exit barriers – which can be configured to remain in the raised position in the event of power failure.



Wayguard WESTeX

The Wayguard WESTeX suite of products provides railway operators with a complete level crossing package, developed to meet a broad range of applications.

Delivering efficiency without compromise

Over and above technological and operational improvements, the Wayguard WESTeX solution also delivers significant efficiencies aimed at supporting level crossing renewals on a 24/7 railway.

Drawing from practical worldwide experience, Siemens Rail Automation is developing a number of new initiatives which will see a dramatic reduction in disruption to both road and rail users during the level crossing delivery process. Adopting Wayguard WESTeX principles, installation and testing is achieved during non-disruptive possessions, rather than 56 hour blockades that have been traditional on typical mainline projects.

Wayguard WESTeX efficiencies include close integration of all cross discipline site activities and the formation of dedicated, multi-disciplinary teams capable of managing the whole level crossing implementation process.

Site management is improved, as all equipment required for a level crossing is delivered to site during a single visit by a low-loader vehicle. Site delivery consists of a stainless steel bungalow (that houses the level crossing control equipment) along with all required ancillary equipment (barriers, road traffic lights, cables and bases etc) and tools housed in a walk-in vandal proof container. Everything is packed into the container in order to reduce the instal-

lation time required on site. In addition, the container acts as a secure 'compound' in which all material and waste can be safely and securely stored during installation, prior to removal from site at the conclusion of the project.

Siemens AG

Infrastructure & Cities Sector
Mobility and Logistics Division
Nonnendammallee 101
13629 Berlin
Germany

© Siemens AG 2013

Printed in Germany
PPG262 312257 PA09130.5
Dispo 01000 c4bs 1410
Order No.: A19100-V100-B952-X-7600

The information in this document contains general descriptions of the technical options available, which do not always have to be present in individual cases. The required features should therefore be specified in each individual case at the time of closing the contract.