

SAFELx™-Train actuated Level crossing warning system

Reliable, Cost-effective and Modular Solution

Safety related to traffic at rail/road level crossings has long been a major issue for rail operators all over the world. Railway level crossing crashes result in incalculable pain and suffering for families and others associated with victims as well as any rail operator staff involved in the crash. Crashes result in substantial direct financial costs in terms of medical and repair costs, loss of personal income, and loss of business and consequential financial loss. Due to the degree of severity and relative frequency, railway level crossing crashes can be highly emotive and are generally widely reported in the media.

Kernex Microsystems (India) Ltd. engineered state-of-the-art safety products that aid in prevention of collisions at level crossings, and one such product is SAFELx. SAFELx is an ideal embedded Level Crossing Warning System capable of producing early warning to rail-cum-road users at level crossings thereby preventing possible rail-vehicle collisions. It is a highly customized solution that detects incoming trains automatically and switches on audio-visual warning devices like the Yellow/Red Warning Lights and the Bell/Hooter as a warning for the road users, thereby alerting the road users of approaching train and help maintain a safe-distance.

Kernex, while being innovative ever, has engineered to perfection SAFELx, to work on all types of railway level crossings like: Single-line, Double-line or Multi-line sections. The system is low on installation and maintenance costs with high levels of flexibility, integrity and reliability. It is a fail safe micro controller based system with high availability and modular design that can be adopted with any kind of railway lines interfaced with existing infrastructure and signaling system with ease.

Salient Features

- State of the art intelligent Electronic Safety System.
- Designed for Safety according to EN 50126, EN 50128, EN 50129.
- Redundant fail safe architecture with 2 out of 3 configuration
- Modular structure for Hardware and Software.
- Bi-directional operation (activation in both directions of train movement) or unidirectional operation (activation in only one direction of train movement).
- Suitable for all types of level crossings.
- Cabled Communication or UHF Radio communication between the wheel sensor and ECM.
- Does not interfere with Signal Cabin functioning.
- Low on installation & maintenance costs
- Powerful Central Monitoring System.
- Train Detection speeds up to 250 km/h.
- Detection of all types of rail wheel flange according to UIC 510-2, UIC 512
- Availability of health status indicators.
- Self-diagnostic feature.
- Three Modes of Operation: Normal, Standby, Shutdown.
- Works with 90-R, 52kg, 60 kg Rails.

Major Modules

ECM

ECM is the heart of the SAFELx consisting of redundant micro controllers designed for Safety as per CENELEC standards. Upon Receiving Train Arrival information from the Wheel Sensing system, it generates audio visual alarms and indications (the yellow and red warning flashers and the Bell). On receiving the Train Passing information from the wheel sensors, it deactivates the audio-visual warning devices.

WHEEL SENSING SYSTEM

The Wheel Sensing System (WSS) comprises of the Outdoor and indoor sub-modules. The Indoor sub-modules are connected directly with the ECM. The outside sub-modules are the rail wheel sensors mounted on the railway track and the track-side connection box with a lighting protection unit. UHF based radio communication between sensor and ECM is also available as an alternative to cable.

CONTROL PANEL

The Control Panel comprises of status indication of the flashers, bells and other subsystems as well as a Reset switch, that can be operated with a panel key (lodged with the authorized personnel only) to bring the audio-visual devices to default position in case of any abnormality.

AUDIO-VIDEO WARNING DEVICES

Yellow/Red Flasher lights are highly reliable LED lights provided to produce caution to road users of the approaching train.

Bell is programmable to produce bell sound with a maximum range of 200 m with optional volume reduction during night time. Dimensions as per the requirements of the client.



Wheel Sensor



ECM



Control Panel

Major Accessories

BATTERY CHARGER cum POWER SUPPLY & BATTERY

BCPS 2440 Battery Charger-cum-Power Supply (BCPS) unit is an Industrial Grade Equipment suitable for round-the-clock operation for highly demanding applications.

BCPS 2440 employs state-of-the-art Switching Mode Technology to achieve high efficiency, low power dissipation and small size. BCPS delivers load to the equipment and simultaneously charges a battery in 'Auto Charge' mode.

A Battery of suitable capacity to provide a back up for at least 10 hours duration will be used.

Hand Held Unit

A rugged Hand Held Unit (HHU) can be provided as an optional feature to download the diagnostics and data and wireless configuration of the SAFELx™ parameters in the ECM/Gateman Unit-cum-Reset Box

Optional Equipment

Digital video recording system

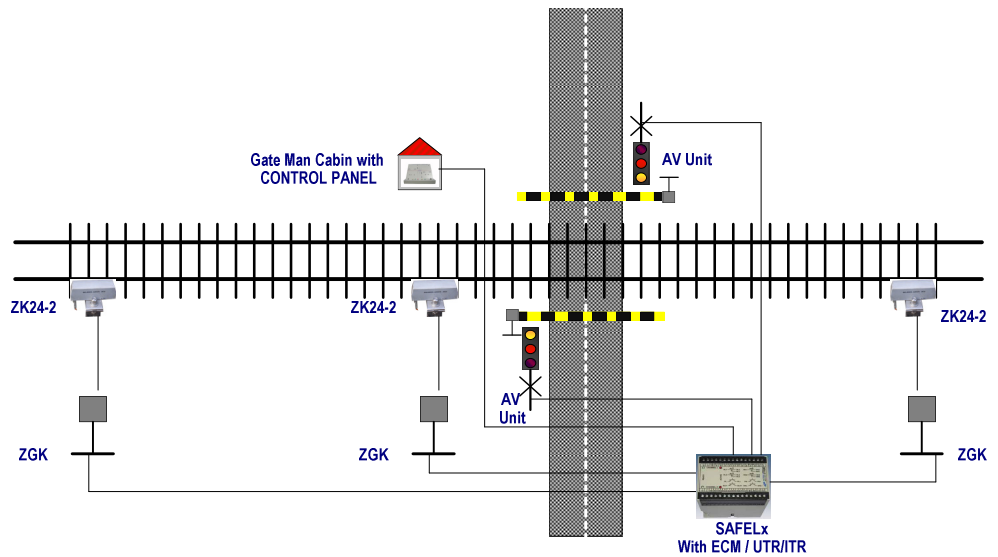
A Digital Video Recording system can be provided as an optional feature with two cameras installed in a way to give a complete view of the Lx platform, with a Digital Video Recording facility that stores motion direction, continuous and scheduled directions of the trains passing the level crossing.

Remote monitoring system

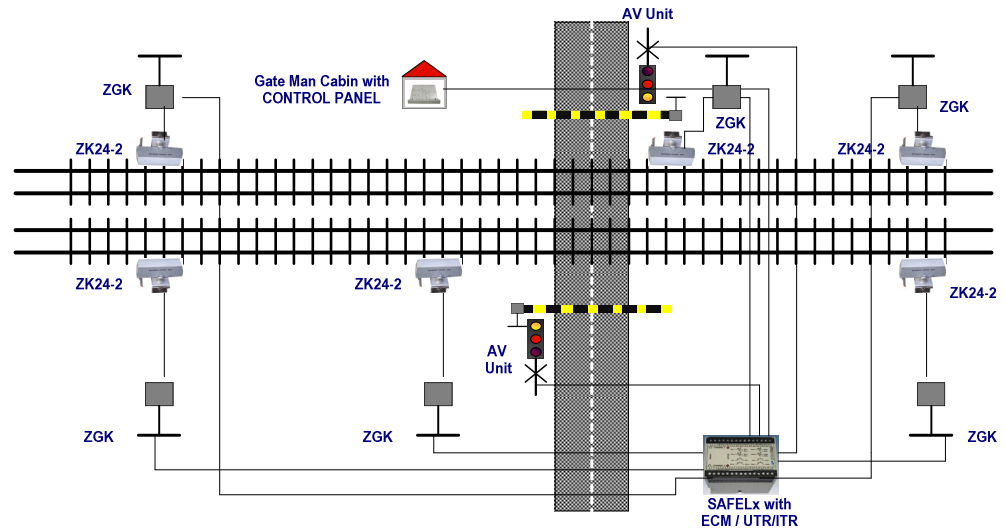
A Remote Monitoring System can be provided as an optional feature to monitor the working of the Level Crossing equipment, including MIS reports. This system will depend on availability of GSM/GPRS communications at respective Level crossing.

Solar Power

A comprehensive Solar Power Backup unit can be provided as an optional feature for operation of the Lx equipment in areas where electric power is not available.



Layout of SAFELx in Single Line



Layout of SAFELx in Double Line

Comprehensive Project Support Services

- Technical feasibility study
- Time and cost estimation
- Pilot project execution
- Manufacturing and supply with accessories
- installation & Commissioning
- Configuration & Customization during incubation
- Training of Personnel
- Warranty Maintenance
- Post warranty annual maintenance(if required)

Contact Details



KERNEX MICROSYSTEMS (INDIA) LTD.

(An ISO 9001:2000 Certified Company)

"THRUSHNA", Plot No. 7, Software Units Layout, Infocity, Madhapur, Hyderabad – 500 081

Tel:+91-40-23113192-94, Fax: +91-40-23114825

Email: inquiries@kernemail.in www.kernex.in