



EIS23 RAILWAY ELECTRONIC INTERLOCKING



With a clear leadership philosophy in railway technology, ENYSE continues to develop and innovate its products to offer its customers the opportunity to enjoy the best options in the market.

EiS23 is a system specially designed to facilitate implementation in a wide range of railway installations, adapting itself flexibly to different signaling operating criteria.

The EiS23 electronic interlocking system for railway traffic complies with the most rigorous standards for reliability, availability, maintainability and safety (RAMS), guaranteeing compliance with CENELEC Standards: EN-50128 and EN-50129. The system achieves SIL-4 (*Safety Integrity Level*), and has an architecture based on "2 out of 3" redundancy, where all the processing, internal communication and input and output control elements are in triplicate. The equipment also has decision-making mechanisms to ensure high levels of safety and availability.

The main features of the EiS23 system are:

- Standardization: equipment developed under the most recent CENELEC standards for railway signaling.
- Robustness and reliability.
- Operational safety compliant with the most stringent CENELEC regulations.
- Modular construction: ease of maintenance.
- Ease of operation (local and remote).
- Ease of integration.
- Scalability equipment, can be applied to a wide range of station sizes and can manage all different types of track devices, blockages, etc.

SIL-4 SAFETY LEVEL

EiS23 interlocking complies with SIL-4 standard and fail-safe criteria. The equipment is developed and certified according to the following CENELEC standards:

- UNE-EN-50126
- UNE-EN-50128
- UNE-EN-50129
- UNE-EN-50159-2
- UNE-EN-50121-4
- UNE-EN-50124-1
- UNE-EN-50125-3



ARCHITECTURE

EiS23 is composed of the following subsystems:

- **Control unit:** Set of 2 or 3 processing modules in a redundant configuration.
- **Input / output modules:** Composed of a series of Control and Supervision Modules (MCS), which are controlled from the control unit. These include the elements to supervise field equipment (track circuits, signals, points, etc.)
- **Workstation:** Through graphic monitors.
- **Adaptation and protection module:** Composed of elements located between the field equipment and the control and supervision modules. It will be responsible for receiving, filtering and protecting the various field elements inputs.
- **Power supply:** supplies power to the all the other elements.
- **SAM:** Local and Centralized Maintenance Support System. This element monitors the systems that form the interlocking, provides the status of inputs and outputs, both vital and non-vital. It also generates reports (events, alerts, etc.).
- **Legal Recorder:** Sequentially stores all commands either manually or automatically generated by remote control systems or interlocking itself, as well as status changes of interconnection variables, faults and failures, etc.
- **Interface module with CTC:** transfers commands and instructions to the control center.
- **Interface module with LEU and ERTMS systems:** Through communication protocols or inputs/outputs.



EQUIPMENT FUNCTIONS

The equipment is based on 32-bit processors, using specific hardware and software techniques to guarantee safety in accordance with stringent CENELEC standards.

The included functions basically allow:

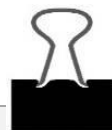
- Manual commands to control field equipment.
- Manual and automatic control of the convoy's movement.
- Manual control of inter-station blocking
- Automated control of possible faults and failures.
- Exchange of information with operation and maintenance equipment.

All three processors operate in a synchronized manner. This "operation cycle" has three basic phases:

1. Data collection and field equipment orders.
2. Data processing.
3. Generation of field equipment outputs.

MODULAR CONSTRUCTION:

The equipment is supplied in standardized racks to optimize space. This allows you to add new items without modifying existing hardware by simply adding additional modules such as level crossings, track circuits, blockage commands and remote control.



BASIC PARAMETERS

Cabinet dimensions:	600 (width) x 800 (depth) x 2,250 (height) mm
Protection index:	IP24
Operating temperature:	-25° C/ + 55° C
Storage temperature:	Max + 70° C
Humidity:	95% (without condensation)

