

Axle Counter Az LE

The Axle Counter System for small and mid-sized applications





Small, Strong, Cost-Efficient

Az LE – the latest Axle Counter System is completing Thales's Axle Counter portfolio towards small and mid-sized applications. This new Axle Counter version is ideal for centralised as well as decentralised train detection in level crossing-, loop line-, single section- and block applications or in small stations. An added benefit of this new evaluator is that the Az LE is able to be installed in IP54 class cabinets, making line side installation easier.

The Az LE is suitable for any type of railway situation, from Main Line to Metro and Light Rail operations and integrates easily in any existing environment.

Based on the Thales experience as the world market leader for Axle Counters solutions, the Az LE guarantees, in combination with the Thales field proven detection points, highly-reliable and fail-safe wheel detection.

Az LE APPLICATION FIELDS:

- Centralised as well as decentralised train detection
- Level crossing applications
- Loop line applications
- Single section applications
- Block applications
- Small stations
- For any type of operation:
From Main Line to Metro and Light Rail



Az LE – ADVANTAGES AND KEY FEATURES

FLEXIBLE AND EASY CUSTOMIZATION AND SCALABILITY

Due to its modular and flexible architecture, the Az LE is optimized to easily scale the system according to the customer's needs. It offers the possibility to start with a small and simple application of two or three detection points, but has also enough capacity for later extensions. Thanks to this scalability, the Az LE is also suitable for more difficult applications like a double-slip switch or a ladder track.

The track layout and the reset conditions for each section board are stored on a small program plug. Sections can be added without changing any data of the installed system. Four different reset modes can be programmed for each section.

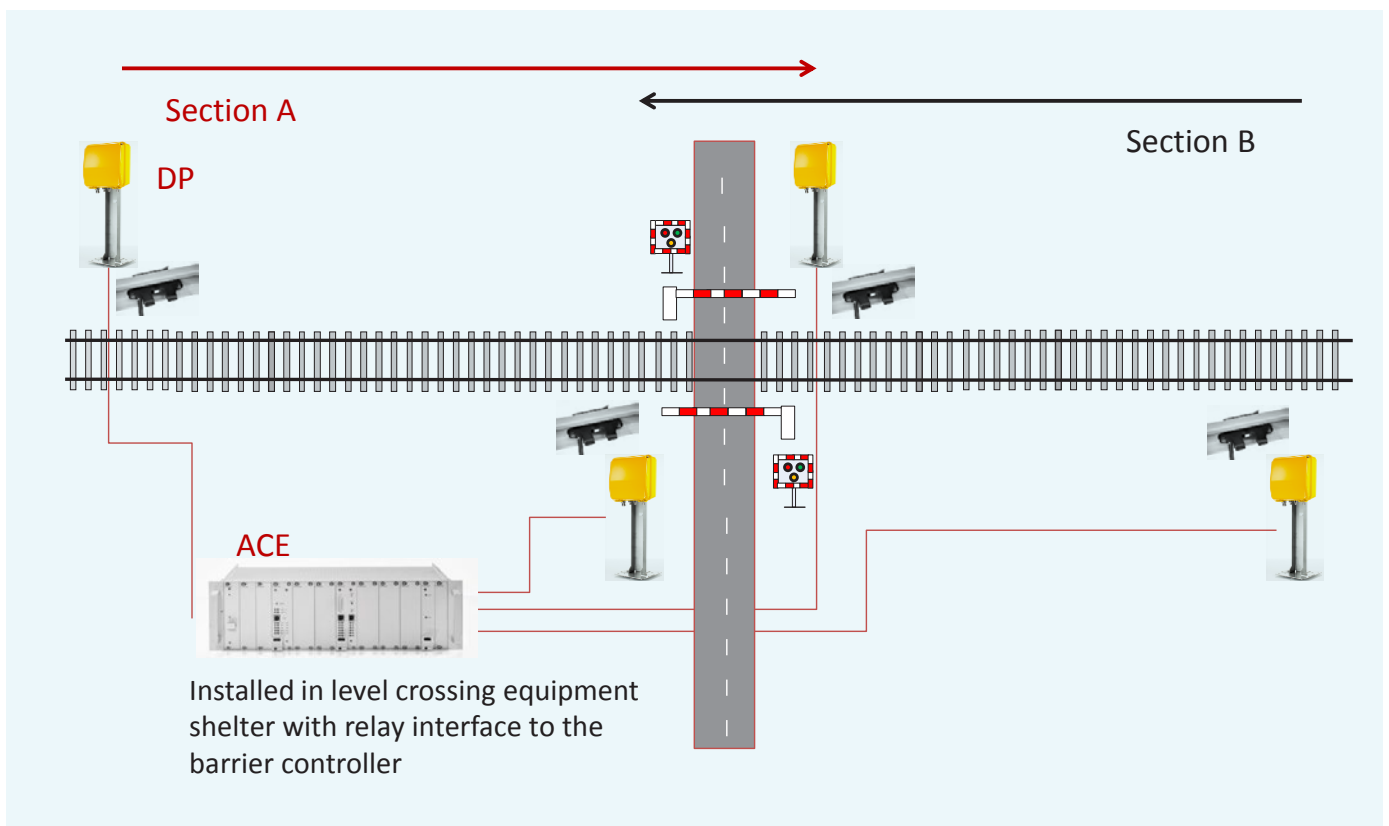
COMPACT DESIGN, SPACE-SAVING AND COST-EFFECTIVE

The flexibility and scalability as well as the easy integration in any existing environment lead to a smooth and also cost-effective implementation as well as to a cost effective lifetime of the whole Az LE system.

The boards of the Az LE are fitted in a 19" subrack, which requires little space indoor. The subrack can be installed in an IP54 class trackside cabinet, which allows cost efficient outdoor installation along the track.

KEY BENEFITS:

- SIL-4 micro-controller based technique with a short reaction time
- Little space required: Compact and space-saving design
- Modular system with smallest number of line replaceable units
- Fitting to centralised and decentralised signalling system architecture
- Suitable for indoor and outdoor conditions (class IP 54)
- Easy and flexible customization to change and adapt and update configurations
- Fully compatible to the existing field proven detection points Zp30H and Zp30K
- Relay-interface for vital section status output, optional with vital disturbed status output
- Integrated power supply for the detection points
- Virtually maintenance free



Application example at a level crossing

Az LE COMPONENTS

INDOOR EQUIPMENT



Section board for one or two sections, 2 out of 2 vital CPU, SIL4, four vital relays for section free/occupied/disturbed. Reset logic by opto-coupler input and two push buttons at the front panel.



The program plug contains the site specific configuration of the sections. Configuration and application software are independent.



The outdoor detection points are connected to the Az LE via the modem board, which provides the axle count information to the section boards. One modem board can manage and connect the power to the data line for up to four detection points.

Axle count information and supply power are transmitted over only two copper wires to the outdoor detection point. The modem board has integrated over-voltage protection.



The system power supply board provides the power for the section boards as well as the modem boards. If two power supplies are equipped in one rack, they provide redundant power supplies.



The power supply for the detection points is also integrated in the Az LE subrack. As a consequence, the only hardware needed for the Az LE evaluator is the Az LE subrack.



The Az LE subrack has slots for three modem boards, four section boards and the power supply for the boards and detection points.

Up to six subracks are stackable to one system.

The subracks can be installed in IP54 class trackside cabinets for outdoor usage.

OUTDOOR EQUIPMENT

The Az LE indoor system is fully interface-compatible to the existing and field proven Thales detection points Zp30H and Zp30K.

The outdoor electronic units connect the wheel sensor to the Az LE Evaluator unit:

- The EAK30H can be combined with the classical wheel sensors Sk30 and Sk30H or the slimline wheel sensor Sk30K
- The EAK30K can be combined with the slimline wheel sensor Sk30K



Classical electronic unit EAK30H



Slimline electronic unit EAK30K

OUTDOOR EQUIPMENT



Drill mounting

Classical wheel sensor Sk30 and Sk30H.



Drill mounting

Slimline wheel sensor Sk30K. Also available with clamp mounting to mount the wheel sensor without drilling, which leads to short installation and removal times.



Clamp mounting

DIAGNOSTICS AND KNOW-HOW TRANSFER

DIAGNOSTICS

The Az LE is virtually maintenance free due to the sophisticated self-diagnostic system and its unique fixing concept. No annual visual checks or mechanical adjustment is required.

Exceptional events caused by for example theft or vandalism can be fed into a central maintenance system. This enables the maintenance staff to diagnose any defective or damaged part remotely before attending the site.

The user-friendly diagnostics interface through USB port ensures access to current and historic data of the axle counter like the current state of the section, states of the inputs and the related detection points. The diagnostic system optimises fault finding and rectification and, as a result, reduces maintenance works and according costs.

KNOW-HOW TRANSFER SCALABLE TO YOUR INVESTMENT POLICY

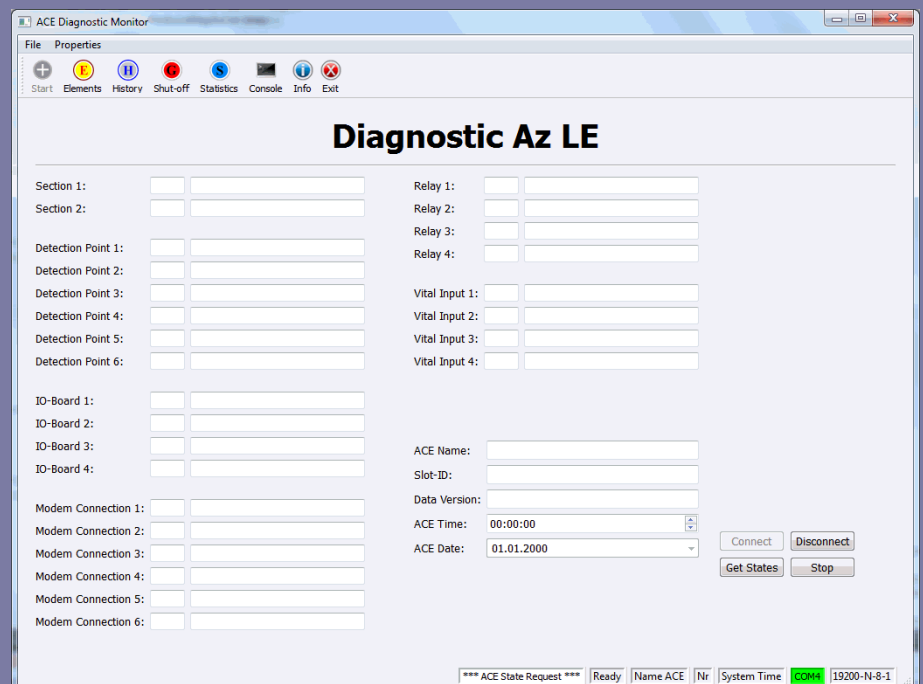
The scalable and flexible allocation of tasks is the key for optimal investment into a train detection system.

Engineering, installation, commissioning or maintenance of the Axle Counter System may be carried out by customers, contractors and of course railway staff.

The transfer of the specific knowledge is required for each task and ensured

by Thales' exhaustive training and certification program. This unique program comprises all tasks with certification levels for participants, experts and trainers.

For further information, please visit rail.myproducts-thales.de



TECHNICAL DATA

Indoor Equipment

Dimensions	Format of rack 19" Height 3(HE)
Supply voltage	24VDC or 48/60VDC
Temperature (operation)	Class T1 and T2 [EN 50125-3] - 40 °C to + 70 °C
Humidity (operation)	Class TX (with Tunnel) [EN 50125-3] up to 100% (< 60 % average/year)
Altitude	Class AX [EN 50125-3] < 2000 m above sea level
Lightning	Separation of interfaces according [EN50124-1]
Degree of pollution	[EN 50124-1] PD2 [EN 50125-3] 3B1, 3C2, 3S1
Shock and Vibration	[EN50125-3]
EMC/EMI	[EN 50121-4] [EN 50238-3] (Rolling Stock)
Safety level	SIL 4 [EN 50129]

Outdoor Equipment (Detection points)

Supply voltage	24VDC or 60-120VDC
Temperature (operation)	Class T1 and T2 [EN 50125-3] - 40 °C to + 70 °C
Humidity (operation)	Class TX (with Tunnel) [EN 50125-3] up to 100% (< 60 % average/year)
Altitude	Class AX [EN 50125-3] <2000 m above sea level
Degree of protection	IP67
Lightning	Separation of interfaces according [EN50124-1]
Degree of pollution	[EN 50124-1] PD4 [EN 50125-3] 4B1, 4C3, 4S3
Shock and Vibration	[EN 50125-3]
EMC/EMI	[EN 50121-4] [EN 50238-3] (Rolling Stock)

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