



Origin of your safety.



PRODUCT PORTFOLIO

ABOUT US

ALPRO is a specialized signalling company active in research, development and production of safety critical signalling systems used on railway infrastructure and in railway vehicles. The Company offers train detection systems fit for regular railway, monorail, tram, metro and APM applications, level crossing protection systems and INDUSI based automatic train protection (ATP – i60 and PZB90). Over 25 years of experience in research, development and production in railway sector have made **ALPRO** one of the key factors in the global market with solutions in more than 50 countries on 6 continents. Strong and flexible network of partners throughout the world enables optimal customer support and project execution. As a flexible and customer oriented company **ALPRO** is able to take on customer specific, small scale projects as well as act as a system integrator in big (re)construction projects.

Since quality and innovation are **ALPRO's** ways to stay competitive on the market, the Company is certifying its products in independent international certification institutions for the highest safety integrity levels (SIL 4). Currently, more than 200 experts in 5 locations in Croatia and the region work in line with ALPRO's vision of innovative, integrated and sustainable approach to railways all over the world to bring the safety of railway transport to a higher level.



Testing site



Odra 2



Odra 1

SAFETY SYSTEMS FOR ROLLING STOCK

From its beginnings, ALPRO has accumulated knowledge of railway vehicles from its region and further. As a result of that effort, ALPRO of today has a variety of competences and experiences with INDUSI type ATP systems. The Company can offer a turnkey project, starting from project documentation and management, implementation of INDUSI equipment, commissioning of the vehicle and aftersales support. Flagship products in this production programme are:

- ATP system RAS90 based on INDUSI PZB90
- ATP system RAS8385 based on INDUSI I60
- Dead man's system SIFA

Till today, the Company has installed over 300 ATP systems and dead man's systems. Those systems are characterized by robustness and exceptional reliability which results in low maintenance costs. ATP systems are equipped with event recorders and they are designed to be additionally equipped with dead man's system and wheel flange lubrication system. ALPRO complements its ATP systems with the complete set of testing devices developed for the ease of maintenance.

QUALITY

ALPRO is certified according to the latest ISO 9001:2015 and ISO 14001:2015 quality standards and IRIS certification process is currently being conducted. As safety

is of prime importance in ALPRO, main signalling systems and safety systems for railway vehicles are SIL 4 certified by independent safety assessment bodies such as

SIGNALLING AND SAFETY SYSTEMS FOR RAILWAY INFRASTRUCTURE

ALPRO has long-term experience in research, development and production of signalling equipment for railways. Results of the work are seen as the following flagship products:

- Level crossing protection system type RLC23
- Outdoor level crossing protection units: road signal CS, barrier systems PB13 and PBH21, LED driver's indication signal KS11
- BO23 series axle counting
- ZK24-2 wheel sensor and ZK24-M series wheel sensors
- Train detection systems UTR/ITR and TDR14

All signalling products from ALPRO are tested and certified in independent assessment bodies. Based on the feedback ALPRO values and gathers from its satisfied customers, the Company policy defined 5 key aspects of every signalling product it produces. Expected functionality, independent certification, advanced communication technologies, simple maintenance and detailed diagnostics - mix of these 5 aspects make ALPRO products successful and customers satisfied.

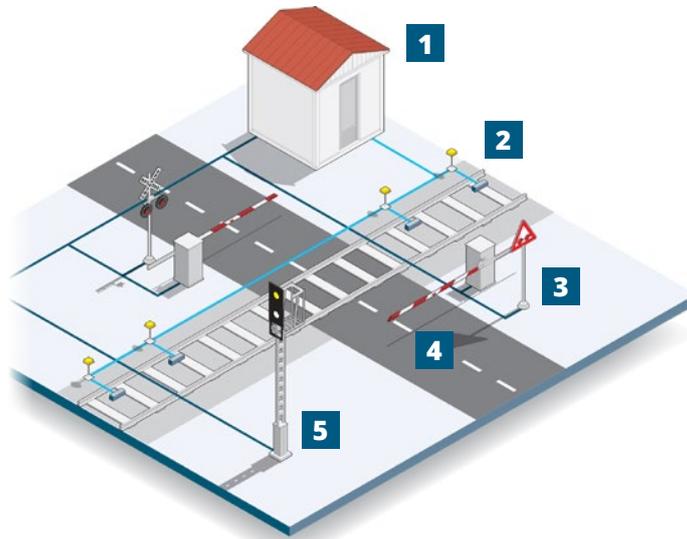
TUV Rheinland. All safety tests (SIL, EMC...) are being conducted in accredited European laboratories such as TÜV Rheinland and SIQ.



SIGNALLING SYSTEMS FOR RAILWAY INFRASTRUCTURE

LEVEL CROSSING PROTECTION SYSTEM

Level crossing protection system RLC23 is the ideal solution for installation on the existing unprotected or future level crossings on the line with or without any signalling infrastructure; as well as an easy replacement of existing old LC protection systems. **Simple configuration** of generic RLC23 system is achieved by using PC / Windows configuration wizard. All types of road signals, barriers / half-barriers and train driver's indication signals can be used according to the local national regulations. Interface with any type of station interlocking system (relay or microprocessor based) is provided in the station, on the remote control unit. The system is certified for **SIL4**, as well as tested according to EN 50125-3 and 50121-4 (EMC), by independent safety assessor TÜV Rheinland.

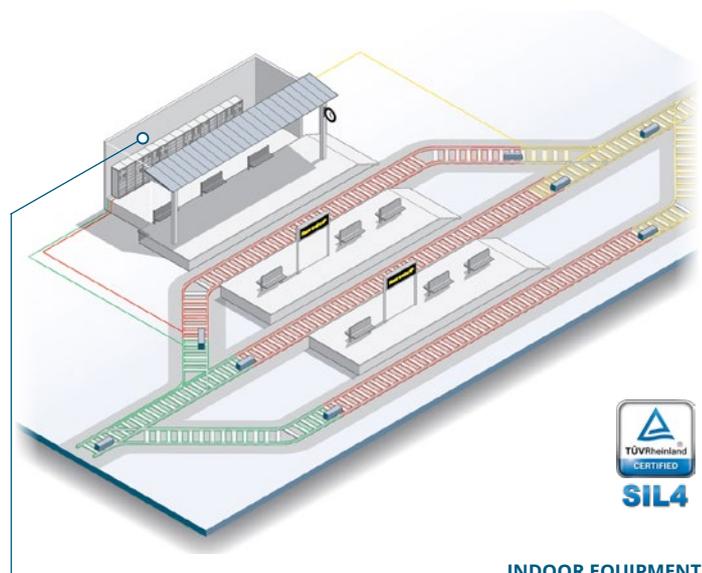


BO23 SERIES AXLE COUNTING

BO23 series (BO23, BO23-MTA and BO23-A) axle counters are well established and recognized axle counters from ALTPRO. Axle counters are SIL4 certified and conform to all relevant norms according to CENELEC. **BO23** is usually used in pair with wheel sensor **ZK24-2** and they form a robust and reliable combination which is in use in more than 25 countries worldwide. It can be used in various applications on main lines, secondary lines, tram and LRT lines. **BO23-MTA** is usually used in pair with **ZK24-M sensor series** (ZK24-M, ZK24-M1 and ZK24-M3) for specific train detection purposes. It is ideally used as secondary or primary detection system on APM, rubber tyred metro, regular metro, tram, monorail and similar applications.

TRAIN DETECTION SYSTEMS TDR14 AND UTR/ITR

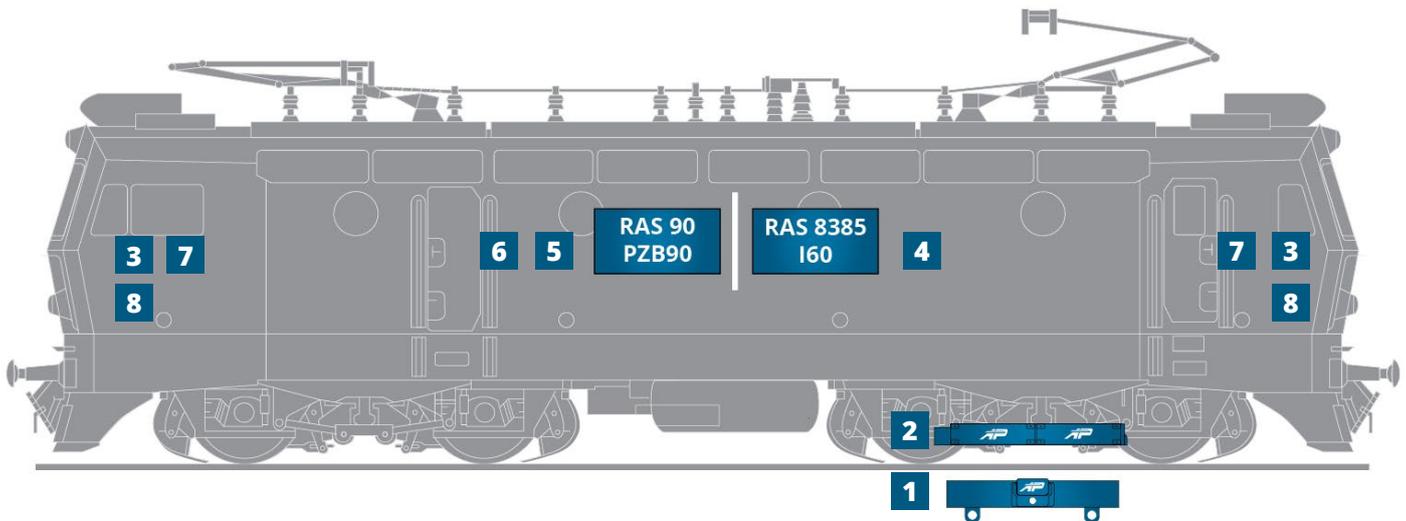
Train detection systems TDR14 (SIL4 certified) and UTR/ITR are used for punctual train detection using ZK24-2 railwheel sensor. These train detection systems are ideally used in simple applications where they are able to provide safe and reliable information about the passage of the train. Possible applications include train detection in level crossing protection system, activation and triggering of various systems (HOT BOX, gate control, data for passenger warning) etc.



INDOOR EQUIPMENT



SAFETY SYSTEMS FOR ROLLING STOCK



AUTOMATIC TRAIN PROTECTION SYSTEM

Automatic train protection systems based on INDUSI (PZB) principle are designed in order to increase the safety of railway traffic. If the driver doesn't comply with

the safety regulations, the system activates brakes (initiates automatic braking). ALTPRO specializes in research, development and production of INDUSI systems based

on I60 and PZB90 principle. Along with the basic function of train protection, these systems offer a wide variety of complementary systems like event recording, train

driver activity recording, speed display, wheel flange lubrication, dead man's system...



AUTOSTOP (I60) system consists of central device **RAS8385**, locomotive balise, track balises and signalling and operating elements located in the locomotive cabin. It is a simple, robust and extremely reliable system. ALTPRO can offer any service/product related to this system from project documentation all the way to system commissioning.



RAS 90 (PZB90) system consists of central device **RAS90**, locomotive balise, track balises and signalling and operating elements located in the locomotive cabin. The system offers high level of reliability and safety while maintaining the main idea of ALTPRO INDUSI based ATP systems - simplicity, robustness and longevity.

DEAD MAN'S SYSTEM (SIFA)

The dead man's control system is designed for all kinds of rail vehicles and consists of **control unit UDB1**, **foot switch UP1/UP1-D** and **three - tone sound indicator ZS24 / ZS72 / ZS110**. The function of the system is to control the alertness of the

locomotive driver. In case that the driver, for whatever reason, is not alert, light and sound signals are produced and eventually the braking process is initiated. SIFA is tested according to EN50155, EN 50121-3 and EN 61373.

UDB1
Electronic Dead Man's Control Unit



ZS
Three-tone Sound Device



UP1-D, UP1
Foot Switch



WORLDWIDE PRESENCE



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