

# MODEST-TRIDENT

Automated Control of Tram Depots



- The highest safety level according to the European standards of CENELEC 50 1xx and EN 61508
- The system's scalability enables to control tram depots of unlimited range
- Semi-automatic or fully automatic control system of the depot traffic
- Automatic control of washing processes
- On-line visualization
- The option of local and remote control and maintenance
- High reliability and excellent availability
- Low construction & maintenance costs

## GENERAL DESCRIPTION

**MODEST-TRIDENT** is interlocking equipment designed for the control of tram depots.

The system fully ensures routing of tram trains from their arrival to the tram depot, through running to the destination, up to their next departure.

The modular structure enables to find an optimum solution for each customer, beginning from manual route setting using pushbutton panels, through remote route setting in the driver's cabin using radio up to the fully automatic routing of tram trains along the whole way, from the arrival through the track for maintenance to the final position in the shed. The tram trains are set in the order based on the time table automatically so that no changes are necessary for their next departure.

## BASIC TECHNICAL DESCRIPTION

- MODEST-TRIDENT is a hierarchical control system using state-of-the-art technologies.
- It meets the European standards for control system safety of CENELEC 50 1xx and EN 61508.
- High availability parameters are reached both by top reliability of used HW solutions, and by the concept of architecture with optional hot back-up.
- The system enables to control various types of point machines and signal.
- Wagon numbers are identified automatically using RFID tags.
- Loops or axle counters may be used for the tram position detection.
- Routes within the depot are set automatically incl. route setting to the inspection track or to the washer.
- Trains are marshalled in an optimum order and are automatically dispatched based on the time table.
- All the traffic and diagnostic data are recorded and archived.
- The system has available top diagnostics for easy detection and localization of possible failures.
- Maximum accent is put on failure prevention using timely detection of deviations and issuing warnings for maintenance staff.
- The system enables an interconnection to the superior EPR information system.

### BASIC TECHNICAL PARAMETERS

Number of controlled points	<b>unlimited</b>
Number of led trains	<b>unlimited</b>
Radio control	<b>enabled</b>
Remote/centralized control	<b>enabled</b>
Remote/centralized maintenance	<b>enabled</b>
Local diagnostics	<b>enabled</b>
Fully automatic traffic	<b>enabled</b>
Connection to IS ERP	<b>enabled</b>

