TROLLEY-BUS OVERHEAD CONTACT LINE SYSTEMS
VETRA SYSTEM

Data sent by the vehicle are detected by the control unit. Whole process of switch setting runs fully automatically.

Driver just sets the destination code on the keyboard unit.

Transceiver receives data from the passing vehicles below.
Switches are automatically set by VETRA system. Driver is only informed about actual status of the switch.

Light signalling informs driver of actual status of switches - direction, blocking and possible incorrect throw over.

Using this code the vehicle pass automatically through all switches until its final destination.

2.4 GHz VETRA system is a reliable data transmission system developed for high vehicle’s operation speed.
We usually supply GRP (glass-fiber reinforced plastic) cantilevers, but our production includes aluminium cantilevers as well.

For longer lengths or higher load of cantilever we offer double cantilever with all needed armatures.

Cross-wire suspensions are fixed to the poles by the various hinge types.

We use special 3kV loop insulators to reach second level of insulation within the cross-wire suspensions.
The curve clamps are designed for high-speed operation of vehicles.

Our solution of GRP cantilevers is safe for maintenance, longlife and have aesthetic appearance.

Three-way connection of supporting overhead net made from stainless steel rope.
TROLLEY-BUS CROSSINGS & CURVE CLAMPS

Trolley-bus crossings and switches allow a transit speed of up to 50 km/hour.

Curve clamps guarantee smooth passage and higher vehicle speed as well as its easy installation.
Correct type (length) of used curve clamps has large influence on the operation speed.

You can choose different geometrical solution (20°-90°) of TBUS x TBUS crossings. Left and right option is available.
ELECTRICAL & MECHANICAL SWITCHES FOR TROLLEY-BUSES

The latest design of our electrical switches is light and airy and it makes the switches less visible overhead.

The passage over the Elektroline mechanical switches is quick, perfectly smooth and silent.

For roundabout solution is suitable use of double switch point controlled by VETRA system with fully automatic operation.
We offer all types of switches in 10° or 20° narrow-angle design and in left/right option.

Our 20 years experience in switches production makes them highly reliable and in top quality.

Signal lamp informs the driver about actual status of the switch position.
New type of TBUSxTRAM (15°-65°) crossings without interruption of electrical supply is perfectly silent and ensure vehicle’s sustained passage with current.

Vehicle of any direction can stop wherever within passage of this crossing type and easily start driving again.
Supporting net made from KEVLAR synthetic ropes decline undesirable noise which is characteristic for vehicle’s moving.

Except noiselessness of synthetic rope during operation further important advantage is its insulation.

We produce wide assortment of KEVLAR clamps and fitting material adjusted for insulated synthetic ropes.
FEEDING & DISCONNECTORS

Special assembly of insulating rods together with disconnector and motor drive allows simultaneous control of both (plus - minus) polarities.

We offer complex solution of depot control including remote control and no-voltage status alerting.
Motor drives are suitable for control of disconnectors which are in everyday operation. The control of motor drive can be local or remote.

Section insulators for dividing of fed sections of OCL.

Green color of lamp informs operators about no-voltage status and about the possibility of maintenance close to OCL.
CHosen reference projects

**Italy**

**Milan, Piazza Bottini, 2010**

Delivery and assembly of TBUSx-TRAM crossings and OCL and OCL material and of TBUS electrical and mechanical switches - Piazza Bottini

**Czech Republic**

**Plzeň, 2009-2010**

- delivery and assembly of complete electrical TBUS switches including automatic control system - VETRA
- delivery and assembly of complete mechanical TBUS switches
- delivery and installation of 3 sets of TBUS x TBUS crossings
- other OCL material
Centralized transfer station where trolleybuses can overtake each other at stops, with electrical controlling of switches and signalization of current direction of the switch. Total amount:

- complete sets of electrical switches
- complete sets of mechanical switches
- TBUS crossings
- material supply plus supervision during assembly

**Poland**

Gdynia Depot, 2007

Delivery:

- delivery of disconnectors including motor drives
- remote control of disconnectors
- no-voltage status signalisation including security of maintenance workplaces for no-voltage status works