



TrainSwing STMLS

Specific transmission module of ETCS

- Compatible with ETCS system
- LS type ATP transmitted to OBU ETCS
- Failsafe and reliable system meeting SIL4 requirements according to CENELEC
- Modern microprocessor based solution
- Easy operation
- High reliability, availability and stability
- Easy installation
- Easy maintenance



GENERAL DESCRIPTION

Specific transmission module of ETCS TrainSwing STMLS (further STMLS) provides an interface between national automatic train protection legacy system (ATP) of LS type and ETCS and ensures smooth mutual transition between the area equipped only with national system and the area equipped with ETCS. Installation of STMLS in tractive vehicles is the basic condition of migration strategy for ETCS implementation in Czech Republic and Slovakia.



STMLS is module of SN type (according to ETCS specifications), which takes over a train movement supervision from ETCS core (EVC) on the lines not equipped by ETCS.

In the active mode the STMLS provides three basic functionalities:

- Transmission and display of signal information between track and tractive vehicle
- Check, whether the information transmitted was acknowledged and respected by train driver
- Intervention to braking system in case of negative outcome of checking function

A coded signal from the track circuit for a specific section is received by sensors in front of the first axle. The received signal is digitally processed and then displayed for the train driver on the cab signal repeater.

STMLS evaluates every traffic situation by comparing signal aspect, actual train speed and reaction of train driver. If the response of train driver is inadequate, even after acoustic warning, STMLS generates the command to braking system of tractive vehicle.

During the train movement along the non-coded track or in case of restrictive signal aspect, STMLS also checks the driver's vigilance. In case of absence of adequate reaction, STMLS generates the command to braking system of tractive vehicle. Significant safety element of STMLS is checking the driver's vigilance as reaction to restrictive traffic situation occurred.

STMLS is integrated to OBU ETCS and provides data for unified DMI ETCS.





BASIC TECHNICAL DESCRIPTION

The core of STMLS consists of STMLS panel, cab signal repeater and code reader. STMLS panel is designed

as a set of plug-in units installed in 19" subrack of 3U height.

STMLS has its own internal diagnostics. Diagnostic data and operational

records are stored in an internal memory for prospective download to external USB-drive or computer.

BASIC TECHNICAL PARAMETERS

Complies with standard	EN 50 155
Input	max. 60 W
Humidity	15 % to 95 %
Altitude	up to 1400 m
Supply voltage	24, 48, 72, 96, 110 V
Supply voltage tolerance	-30 %, +25 %
Supply interruption	max. 10 ms
Temperature range	-25 °C to +70 °C

