



TrainSWing LEA-20

ETCS L1 LEU - Lineside electronic unit

- Integral part of ETCS L1 system
- Redundant system working in 2oo2 architecture
- High safety and reliability
- Increased traffic flow
- Energy optimisation



GENERAL DESCRIPTION

TrainSWing LEA-20 (further LEA-20) is a standalone system, which serves for transmission of information (derived from signals, level crossing systems etc.) via ETCS L1 switchable balises and provides movement authority for trains under ETCS supervision.

LEA-20 is preferably located in the vicinity of signals, level crossings and interlocking rooms of existing interlocking systems (e.g. relay based). LEA-20 is accommodated in detached cabinet on the line.



For connection to modern electronic interlocking systems (e.g. TrainSWing ESA-44), TrainSWing LEA-10 is more convenient.

BASIC TECHNICAL DESCRIPTION

LEA-20 consists of the following units:

- LSI (Safety Input) – scanning the voltage inputs, e.g. level crossing or relay based systems
- LSC (Safety Current) – scanning the electric current, especially from signals
- LSO (Safety Output) – safety outputs from the system
- LPU (Processing Unit) – selection of telegram for relevant balises (other signalling system can be connected to LPU unit)
- LCI – direct control of a balise (LEU C interface)
- LPS – power supply

LPU unit provides selection of input balise and ETCS telegrams based on programmed combination of inputs of LSI and LSC units and data input for LPU. Selected telegram for specific balise is sent to LCI unit.

LCI unit transmits information to balise via standard C-type interface according to UNISIG 036 (Eurobalise). LCI uses C1-type interface for data transmission, C6-type interface for supplementary power supply of balise input and C4-type interface for identification of railway vehicle located above balise.

Power supply of LEU-20 is provided from 24 V DC source (located in interlocking room) or preferable power supply source 3 × 400 V AC / 24 V DC (located in cabinet on the line).

LCI units are located:

- in interlocking room (next to LPU unit) – for balises installed in max. distance 2200 m from interlocking room
- in detached cabinet on the line – for balises installed in max. distance 2200 m from the cabinet

Fail-safe remote data transmission (e.g. CommSWing UMS-300) is used for communication between LEU and LCI units.





BASIC TECHNICAL PARAMETERS

Supply voltage	24 V DC (3 × 400 V AC for distributing point)
Range of supply voltage	19,2 V – 34 V DC
Complies with EMC requirements according to	EN 50121-1 and EN 50121-4
Interface specification	UNISIG Subset 036
Number of controlled balises	4
Maximum distance of balise	approx. 2200 m
Temperature range	-25 °C to +70 °C
Service life	more than 25 years

