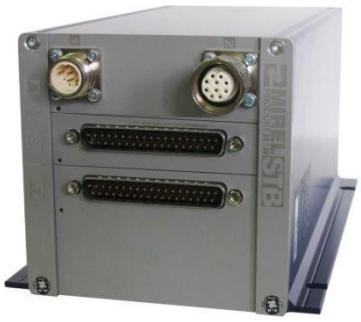
Functional interface MIREL STB of the train protection system MIREL VZ1

Type **STB**

Illustrative picture



Functional interface MIREL STB is an equipment of the MIREL modular system. Basic function of the MIREL STB is to provide an interface between the train protection MIREL VZ1 central unit and the onboard unit ETCS (function STM). This basic function is realized either by binary or serial interface.

Optionally there is an interface between the train protection MIREL VZ1 central unit and the vigilance control system (function STB). This optional function is realized either by binary or serial interface.

The basic functions of the MIREL STB is to control the transitions between the active and passive modes of the national train protection MIREL VZ1 based on the commands from on board unit ETCS and from vigilance control system.

Nomenclature

STB.1.USWAB

- Mechanical design
- Functional properties
- Software version
- Supply voltage 2 → 24V, 4 → 48V

Modifications

Designation	Supply voltage [VDC]	Functional properties	Mechanical design	Notes
STB.1.203AL	24	A	L	1), 2), 3), 4)
STB.1.203ALN	24	A	LN	1), 2) , 3), 4)
STB.1.203AP	24	A	P	1), 2) , 3), 4)
STB.1.203APN	24	A	PN	1), 2) , 3), 4)
STB.1.203BP	24	B	P	1), 2) , 3), 4)
STB.1.203EL	24	E	L	1), 2)

1) with software version v03, compilation 10 homologated in Hungary
2) with software version v03, compilation 12 homologated in Hungary
3) with software version v03, compilation 12 homologated in Slovakia and Czech Republic
4) with software version v03, compilation 13 homologated in Slovakia and Czech Republic

Modifications prepared for new applications

Designations	Supply voltage [VDC]	Functional properties	Mechanical design	Notes
STB.1.203CL	24	C	L	WF852
STB.1.203CP	24	C	P	WF974
STB.1.203C0L	24	C0	L	WF943
STB.1.203C0P	24	C0	P	WF994
STB.1.203C1P	24	C1	P	WF861
STB.1.203C1U	24	C1	U	WF892
STB.1.203C2P	24	C2	P	WF861
STB.1.403CP	48	C	P	WF939

Mechanical design

Designation	Dimensions [mm] W x H x D	Construction system	Assembly	IP rating[1]	Weight (Max) [kg]	Holder ARMBBL
L	130 x 105 x 228	BOXTUG	left	IP40	1,7	–
P	130 x 105 x 228	BOXTUG	right	IP40	1,7	–
LN	130 x 105 x 228	BOXTUG	left	IP40	2,3	✓
PN	130 x 105 x 228	BOXTUG	right	IP40	2,3	✓
A	198 x 132 x 268	BOXU[3]	Not embedded	IP20[2]	2,2	–
B	198 x 132 x 303	BOXU[3]	embedded	IP20[2]	2,4	–
U	129 x 132 x 227	BOXKOG	–	IP40	1,9	–

[1] IP rating when connectors are assembled
[2] possibility of increasing IP to IP30 according to document 1975M
[3] modifications with functional properties B and D are not available in this construction system

Functional properties

Designation	Binary interface version	Type of binary interface	Principal functions	Additional functions	Extending functions	Scope of use		
						LS	EVM	SHP
A	A	–	✓	–	–	✓	✓	–
A1	A	MVB	✓	✓	–	✓	✓	–
B	B	–	✓	–	–	✓	✓	–
C	C	MVB	✓	✓	–	✓	✓	✓
C0	C	–	✓	–	–	✓	✓	✓
C1	C	MVB [1]	✓	✓	✓	✓	✓	✓
C2	C	–	✓	✓	✓	✓	✓	✓
D	B	RS422 / RS485	✓	✓	–	✓	✓	–
E	–	MVB	✓	✓	–	✓	✓	✓
F	–	RS422 / CAN	✓	✓	–	✓	✓	✓

[1] interface version 02 and higher

Overview of functions

Group	ID functions	Description
Principal functions	f_STM	Function of STM mode control
	f_STB	Function of vigilance supervision mode control
Additional functions [1]	f_COM-JRU	Function of communication with recording device
	f_COM-SPD	Function of data transfer between on-board terminal and/or MIREL systems
Extending functions [1]	f_MS	Interconnection of 2 MIREL STB ports in master / slave mode

[1] functions can be implemented solely by means of a serial interface

Binary interface version

Version	Connector quantity and type	Ability to carry out functions	Permitted range of use
A	1x D-SUB37	f_STM and f_STB	LS, EVM
B	2x D-SUB37	f_STM and f_STB	LS, EVM
C	1x D-SUB37	f_STM and f_STB	LS, EVM, SHP

Specification

Catalogue sheet was prepared based on the following specifications:

Number	Version	Title
257VZ1	211203	MIREL VZ1 Technical conditions
1357VZ1	200908	MIREL STB Technical conditions
1068M	170516	BOXTUG Installation conditions
1975M	161208	BOXU.2 Installation conditions
2468M	191016	BOXKOG Installation conditions

Usage

MIREL VZ1 – train protection

Modifications not recommended for new applications

Designation	Supply voltage [VDC]	Functional properties	Mechanical design	Notes	Replacement
STB.1. 203A1A	24	A1	A	3)	without replacement
STB.1. 203DP	24	D	P	2)	without replacement
STB.1. 203FP	24	F	P	2)	without replacement
STB.1. 403DP	48	D	P	1)	without replacement

[1] homologated in Slovakia
[2] only for the laboratory
[3] homologated in Hungary, homologation in process in Czech Republic and Slovakia