SBB Ee 922 „Papamobil“

Photo Wikipedia

Prototype:

The **Ee 922** is an electric shunting locomotive used by Swiss Railways (SBB). It was build by Stadler Rail in Wintherthur and is the base for other small locos, for example the SBB Eem 923. The Ee 922 has an IGBT electronic power converter and therefore has many features normally found on regional motor-passenger locomotives rather than on shunting engines. For example the energy of the brakes is recuperated back into the overhead contact line, and the engine is fitted with multiple-unit control. The top speed is 100km/h, which is high for a shunting engine and much more than the 45km/h of the Ee 3/3. On shunting duties the engine will be run mostly at 30km/h or a maximum of 40km/h. The tow speed of at least 100km/h was one of the few mandatory specifications. Together with the multiple-unit control it allows the Ee 922 to be used for short main line duties, for example transferring rolling stock.
The electrical equipment is technically equivalent to a large extent the Stadler Flirt and the newer GTW. But it is not identical, as it had to be adapted for reasons of space to another enclosure. The IGBT electronic power converter is a Bordline CC750 from ABB. The Ee 922 has a vibration damping system. The vibration eradication weights are located on both sides immediately behind the push bar of the shunting platform.

Source: Wikipedia

Implementation in the model:

In the sound project the wine of the converter and the sound of the electric motor are clearly audible. The sound of the electric motor is most distinct when the engine slows down or is running at very low speeds, because as much braking energy as possible is being recuperated back into the overhead power line.

The sound project is based on the Zimo Advanced Standard ZAS-CH. This configuration is especially suited to the typical shunting headlight effects.

The decoder must have at least software version 33.14.

MX 690 is suitable.

Features:

Some of the function outputs (connections) have attributes. In this sound project the FAs are programmed so that the headlights can be correctly set for a main line run with a train, without a train, for shunting duty and for standby. **Please read the instructions before soldering!**

Warnings

The values in the CVs 3, 4, 5, 57, 154 und 158 are important values for the sound project. Changing these values can cause malfunctions in the sound.

Users of digital systems that do not use all 28 functions, or who wish to change the functionality of the keys, can use the Zimo input mapping to map any function to any function key.
Program the desired key number as your value in the CV 400+Fu number and the whole function is mapped to another key. The standard value 0 (function number) is identical with the function key number.
Take care: It is possible to lay multiple function on one key, and to invert functions!
http://www.zimo.at/web2010/documents/Zimo%20Eingangsmapping.pdf

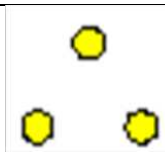
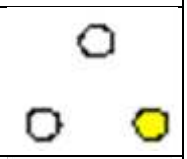
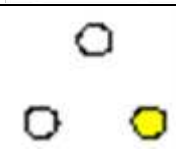
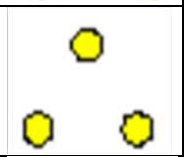
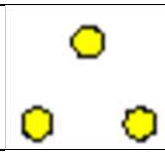
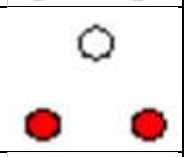
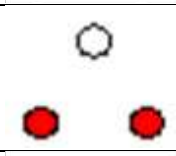
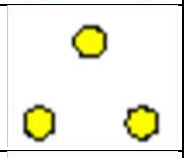
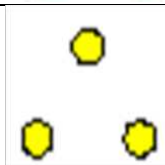
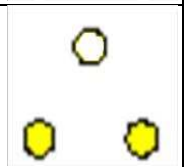
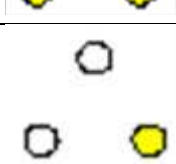
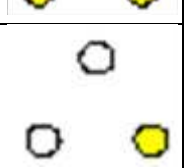
Function	Installation	Function output	Sound effect
F0	Light on	FA 0 v + 0 r FA1 to 4	
F1	Rear lights	FA 5+6	
F2	Locomotive horn		Horn
F3			
F4	Shunting headlights	FA0v FA1 to 4	
F5	Standby headlights	FA2+4	Warning signal that the engine is going in to sleep mode
F6	Diesel smoke (Eem923 only)	FA8	
F7	Normal headlight / high beam	High beam switches on in the direction of travel	
F8	Sound on / off		Diesel starts / dies
F9	Wheels screeching on curves		Sound of Wheels screeching on curves
F10	SIFA Test		Test run of SIFA
F11			
F12	Servo coupler opens and loco moved back and forth	FA7, Servo 1+2 for electric coupler	Uncoupling sound
F13	Coupling		Sound of buffers touching
F14			
F15			
F16	Tunnel fader (muting)		Sound fades in or out
F17			
F18			
F19			
F20			
F21			
F22			
F23			
F24			
F25			
F26			
F27			
F28			

Random effect	sound	
Z1		
Z2		
Z3		
Z4		
Z5		
Z6		

Input	Sound	Activity
S1	Locomotive horn	
S2	Wheels screeching on curves	

S2		

Table of Swiss Headlight Mapping

		L forward 2 white LED front L backward 2 white LED rear FA1 lower white LED front left FA2 lower white LED front right FA3 lower white LED rear left FA4 lower white LED rear right FA5 lower rote LED front FA6 lower rote LED rear	L forward FA1 FA2 FA5 red	L backward FA3 FA4 FA6 red
F0 forwards (Cab 1 in front)	L forward FA1 FA2	Pulling a train, coaches coupled at cab number 2, standard train without a cab coach		
F0 forwards (Cab 2 in front)	L backward FA1 FA2	Pulling a train, coaches coupled at cab number 1, standard train without a cab coach		
F0 + F1 forwards (Cab 1 in front)	L forward FA1 FA4	Engine moving		
F0 + F1 backwards (Cab 2 in front)	L backward FA2 FA3	Engine moving		
F0 + F4 shunting duties	L forward FA1 to FA4	On shunting duty, 3 lights are on at the front and 2 in the rear. No confusion as to forwards and backwards is possible.		
F0 + F5	FA2 FA4	Standby		

Changed CVs

CV# 29 = ---
CV# 35 = 0
CV# 36 = 0
CV# 37 = 0
CV# 38 = 0
CV# 39 = 0
CV# 40 = 0
CV# 41 = 0
CV# 42 = 0
CV# 43 = 0
CV# 44 = 0
CV# 45 = 0
CV# 46 = 4
CV# 56 = 11
CV# 60 = 197
CV# 115 = 77
CV# 116 = 167
CV# 133 = 20
CV# 137 = 153
CV# 138 = 204
CV# 139 = 255
CV# 152 = 63
CV# 154 = 18
CV# 158 = 72
CV# 159 = 48
CV# 160 = 80
CV# 181 = 12
CV# 182 = 12
CV# 266 = 65
CV# 283 = 245
CV# 286 = 245
CV# 287 = 65
CV# 290 = 0
CV# 291 = 0
CV# 292 = 0
CV# 293 = 64
CV# 294 = 64
CV# 295 = 64
CV# 296 = 91
CV# 298 = 7
CV# 299 = 130
CV# 312 = 7
CV# 313 = 116
CV# 314 = 25
CV# 344 = 40
CV# 351 = 204
CV# 352 = 255
CV# 353 = 32
CV# 355 = 51
CV# 362 = 90
CV# 372 = 91
CV# 373 = 128
CV# 376 = 181
CV# 430 = 29
CV# 432 = 14
CV# 433 = 1
CV# 434 = 15
CV# 435 = 3
CV# 436 = 29
CV# 438 = 2
CV# 439 = 4
CV# 440 = 4
CV# 441 = 2
CV# 442 = 5
CV# 443 = 29
CV# 444 = 2
CV# 445 = 4
CV# 446 = 4
CV# 447 = 2
CV# 448 = 1
CV# 449 = 29
CV# 450 = 14
CV# 451 = 1
CV# 452 = 15
CV# 453 = 3
CV# 454 = 1
CV# 455 = 29
CV# 456 = 2
CV# 457 = 6
CV# 458 = 4
CV# 459 = 5
CV# 460 = 4
CV# 461 = 29
CV# 462 = 14
CV# 463 = 1
CV# 464 = 14
CV# 465 = 1
CV# 466 = 4
CV# 467 = 29
CV# 468 = 2
CV# 469 = 3
CV# 470 = 2
CV# 471 = 3
CV# 472 = 4
CV# 473 = 29
CV# 474 = 4
CV# 476 = 4
CV# 478 = 7
CV# 479 = 255
CV# 480 = 14
CV# 481 = 1
CV# 482 = 15
CV# 483 = 3
CV# 484 = 7
CV# 485 = 255
CV# 486 = 2
CV# 488 = 4