



English Electric Class 20 Bo-Bo Diesel Locomotive

IMPORTANT - please read this sheet before running your locomotive

Features

- ▶ High frequency 32Khz pulse power for quiet operation
- ▶ User configurable Back EMF control
- ▶ 6 function outputs to control functions (where fitted) on the locomotive (eg lighting)
- ▶ Complies with NMRA DCC requirements
- ▶ Automatic detection of speed steps (14, 28, 128 steps)
- ▶ 2digit and 4digit addresses
- ▶ Overload protection on outputs
- ▶ Program on main or programming track
- ▶ Operable on DC controlled layouts
- ▶ Supports Lenz® brake sections
- ▶ Uses 4ohm speakers only

Technical specification

Current carrying capacity:
 Motor Output 1.1A
 Function outputs 250mA each, 500mA Total
 total
 Speed steps 14, 28, 128
 Addresses 1-9999

Functions

The following features, both sound effects and decoder performance features, can be operated by the appropriate function button on the control unit. Functions can be controlled subject to the limit of functions on the DCC controller being used.

The model is shipped with a default decoder address of 3

Sound functions

F0	N/A
F1	Engine on / off (If pressed whilst on move sound will fade in / out)
F2	Horn 1 (playable)
F3	Front Horn 1
F4	Brakes on / off
F5	Flange Squeal
F6	Coupling
F7	Notch Up
F8	Notch Down
F9	Horn 2
F10	Guard Whistle
F11	Spirax valve
F12	Fan
Random	Fan and compressor
Note	F1 on Warm Start F1 on-off Failed Start F1 on-off-on Cold Start

CV	Name	Min	Max	Default
1	Primary Address	1	127	3
2	Start voltage Sets minimum speed	1	255	
3	Acceleration rate	1	255	
4	Deceleration rate	1	255	
5	Max voltage sets maximum speed	0	255	
6	Medium speed	0	255	
8	Manufacturer ID		151	
	Decoder reset: write a value of 8 to CV8			

	CV 29 Summary	Default				
Bit	Feature	14	Effect when bit is set to 0	Effect when bit is set to 1		Decimal value when set
0	Direction of operation	0	Normal	Reversed	0	1
1	Speed steps	1	14	28/128	0	2
2	DC Operation	1	Disabled	Enabled	0	4
3	Railcom	1	Disabled	Enabled	0	8
4	Speed curve selection	0	CVs 2,5,6	CVs 67 – 96	0	16
5	Short / long address	0	Short (CV1)	Long (CVs 17/18)	0	32
6		0				
7		0				

Add the decimal values of the bits to be set and write this to CV29

Decoder reset to default manufactured settings: write 8 to CV 8

The full **ESU LokSound Select** User Guide is available to download from www.bachmann.co.uk