

### General project information

Project-Name:

BR 221

Version-No.:

2

Project-No.:

11427

Item-No.:

Order-No.:

Customer:

Roco Modelleisenbahn GmbH  
Plainbachstrasse 4  
A-5101 Bergheim

Contact person:

Tel.-No.:

Email:

Project start:

October 2008

Project status:

Active

Date of approval:

OEM-Manual required ☐

### Sound recording documentation

Origin of the sound:

ESU Recordings

Recording date:

Comments:

## Decoder information

Decodertype:

LoksoundV3.5 16MBit

Loudspeaker:

20mm, 100 Ohms

Configuration:

1 speaker downwards

Firmware-Version:

0.0.6068

## Decoder Setup

Address:

3

max. speed:

35

Protocols:

DC ☒AC ☒DCC ☒Motorola ☒mfx ☐Selectrix ☐

Break sections:

DCC ☒Märklin ☒

Prime mover sound description:

diesel hydraulic locomotive; 2 sound steps for more differentiated sound

Function keys:

F0	Light on/off
F1	Sound on/off
F2	Airhorn
F3	Coupler
F4	Compressor
F5	Conductor's Signal
F6	Shunting Mode
F7	Brake Release
F8	Sanding
F9	Announcement
F10	Airhorn Short
F11	Diesel Notch Up
F12	Diesel Notch Down
F13	
F14	
F15	
F16	
F17	
F18	
F19	
F20	

Special features:

### CV-Values

CV	DEC	BIN	HEX	CV	DEC	BIN	HEX	CV	DEC	BIN	HEX
CV 001 = 003	00000011	0x03		CV 114 = 015	00001111	0x0F		CV 178 = 003	00000011	0x03	
CV 002 = 003	00000011	0x03		CV 115 = 015	00001111	0x0F		CV 179 = 000	00000000	0x00	
CV 003 = 010	00001010	0x0A		CV 116 = 015	00001111	0x0F		CV 180 = 000	00000000	0x00	
CV 004 = 010	00001010	0x0A		CV 117 = 000	00000000	0x00		CV 181 = 003	00000011	0x03	
CV 005 = 035	00100011	0x23		CV 118 = 000	00000000	0x00		CV 182 = 000	00000000	0x00	
CV 006 = 019	00010011	0x13		CV 119 = 000	00000000	0x00		CV 183 = 000	00000000	0x00	
CV 013 = 000	00000000	0x00		CV 120 = 000	00000000	0x00		CV 184 = 000	00000000	0x00	
CV 014 = 003	00000011	0x03		CV 121 = 064	01000000	0x40		CV 185 = 007	00000111	0x07	
CV 017 = 192	11000000	0xC0		CV 122 = 064	01000000	0x40		CV 186 = 000	00000000	0x00	
CV 018 = 000	00000000	0x00		CV 123 = 064	01000000	0x40		CV 187 = 000	00000000	0x00	
CV 019 = 000	00000000	0x00		CV 124 = 015	00001111	0x0F		CV 188 = 007	00000111	0x07	
CV 021 = 000	00000000	0x00		CV 125 = 020	00010100	0x14		CV 189 = 000	00000000	0x00	
CV 022 = 003	00000011	0x03		CV 126 = 055	00110111	0x37		CV 190 = 000	00000000	0x00	
CV 029 = 006	00000110	0x06		CV 127 = 030	00011110	0x1E		CV 191 = 008	00001000	0x08	
CV 049 = 019	00010011	0x13		CV 128 = 065	01000001	0x41		CV 192 = 000	00000000	0x00	
CV 050 = 003	00000011	0x03		CV 129 = 000	00000000	0x00		CV 193 = 000	00000000	0x00	
CV 051 = 011	00001011	0x0B		CV 130 = 000	00000000	0x00		CV 194 = 008	00001000	0x08	
CV 052 = 000	00000000	0x00		CV 131 = 000	00000000	0x00		CV 195 = 000	00000000	0x00	
CV 053 = 050	00110010	0x32		CV 132 = 000	00000000	0x00		CV 196 = 000	00000000	0x00	
CV 054 = 032	00100000	0x20		CV 133 = 000	00000000	0x00		CV 197 = 009	00001001	0x09	
CV 055 = 024	00011000	0x18		CV 134 = 000	00000000	0x00		CV 198 = 000	00000000	0x00	
CV 056 = 064	01000000	0x40		CV 135 = 000	00000000	0x00		CV 199 = 000	00000000	0x00	
CV 057 = 000	00000000	0x00		CV 136 = 000	00000000	0x00		CV 200 = 009	00001001	0x09	
CV 058 = 000	00000000	0x00		CV 137 = 007	00000111	0x07		CV 201 = 000	00000000	0x00	
CV 059 = 032	00100000	0x20		CV 138 = 000	00000000	0x00		CV 202 = 000	00000000	0x00	
CV 060 = 055	00110111	0x37		CV 139 = 000	00000000	0x00		CV 203 = 010	00001010	0x0A	
CV 061 = 032	00100000	0x20		CV 140 = 007	00000111	0x07		CV 204 = 000	00000000	0x00	
CV 062 = 064	01000000	0x40		CV 141 = 001	00000001	0x01		CV 205 = 000	00000000	0x00	
CV 063 = 064	01000000	0x40		CV 142 = 000	00000000	0x00		CV 206 = 010	00001010	0x0A	
CV 064 = 007	00000111	0x07		CV 143 = 000	00000000	0x00		CV 207 = 064	01000000	0x40	
CV 066 = 000	00000000	0x00		CV 144 = 002	00000010	0x02		CV 208 = 000	00000000	0x00	
CV 067 = 003	00000011	0x03		CV 145 = 000	00000000	0x00		CV 209 = 000	00000000	0x00	
CV 068 = 005	00000101	0x05		CV 146 = 000	00000000	0x00		CV 210 = 064	01000000	0x40	
CV 069 = 008	00001000	0x08		CV 147 = 000	00000000	0x00		CV 211 = 000	00000000	0x00	
CV 070 = 011	00001011	0x0B		CV 148 = 004	00000100	0x04		CV 212 = 000	00000000	0x00	
CV 071 = 015	00001111	0x0F		CV 149 = 000	00000000	0x00		CV 213 = 128	10000000	0x80	
CV 072 = 018	00010010	0x12		CV 150 = 000	00000000	0x00		CV 214 = 000	00000000	0x00	
CV 073 = 022	00010110	0x16		CV 151 = 004	00000100	0x04		CV 215 = 000	00000000	0x00	
CV 074 = 026	00011010	0x1A		CV 152 = 000	00000000	0x00		CV 216 = 128	10000000	0x80	
CV 075 = 030	00011110	0x1E		CV 153 = 000	00000000	0x00		CV 217 = 000	00000000	0x00	
CV 076 = 034	00100010	0x22		CV 154 = 032	00100000	0x20		CV 218 = 000	00000000	0x00	
CV 077 = 040	00101000	0x28		CV 155 = 001	00000001	0x01		CV 219 = 000	00000000	0x00	
CV 078 = 046	00101110	0x2E		CV 156 = 000	00000000	0x00		CV 220 = 000	00000000	0x00	
CV 079 = 052	00110100	0x34		CV 157 = 032	00100000	0x20		CV 221 = 000	00000000	0x00	
CV 080 = 058	00111010	0x3A		CV 158 = 001	00000001	0x01		CV 222 = 000	00000000	0x00	
CV 081 = 066	01000010	0x42		CV 159 = 000	00000000	0x00		CV 223 = 000	00000000	0x00	
CV 082 = 074	01001010	0x4A		CV 160 = 000	00000000	0x00		CV 224 = 000	00000000	0x00	
CV 083 = 082	01010010	0x52		CV 161 = 005	00000101	0x05		CV 225 = 000	00000000	0x00	
CV 084 = 090	01011010	0x5A		CV 162 = 000	00000000	0x00		CV 226 = 000	00000000	0x00	
CV 085 = 100	01100100	0x64		CV 163 = 000	00000000	0x00		CV 227 = 000	00000000	0x00	
CV 086 = 110	01101110	0x6E		CV 164 = 005	00000101	0x05		CV 228 = 000	00000000	0x00	
CV 087 = 124	01111100	0x7C		CV 165 = 000	00000000	0x00		CV 229 = 000	00000000	0x00	
CV 088 = 136	10001000	0x88		CV 166 = 000	00000000	0x00		CV 230 = 000	00000000	0x00	
CV 089 = 152	10011000	0x98		CV 167 = 002	00000010	0x02		CV 231 = 000	00000000	0x00	
CV 090 = 168	10101000	0xA8		CV 168 = 000	00000000	0x00		CV 232 = 000	00000000	0x00	
CV 091 = 188	10111100	0xBC		CV 169 = 000	00000000	0x00		CV 233 = 000	00000000	0x00	
CV 092 = 208	11010000	0xD0		CV 170 = 002	00000010	0x02		CV 234 = 000	00000000	0x00	
CV 093 = 230	11100110	0xE6		CV 171 = 000	00000000	0x00		CV 235 = 000	00000000	0x00	
CV 094 = 255	11111111	0xFF		CV 172 = 000	00000000	0x00		CV 236 = 000	00000000	0x00	
CV 095 = 000	00000000	0x00		CV 173 = 006	00000110	0x06		CV 249 = 000	00000000	0x00	
CV 105 = 000	00000000	0x00		CV 174 = 000	00000000	0x00		CV 250 = 000	00000000	0x00	
CV 106 = 000	00000000	0x00		CV 175 = 000	00000000	0x00		CV 251 = 000	00000000	0x00	
CV 112 = 015	00001111	0x0F		CV 176 = 006	00000110	0x06		CV 252 = 000	00000000	0x00	
CV 113 = 015	00001111	0x0F		CV 177 = 000	00000000	0x00		CV 253 = 000	00000000	0x00	

## Revision

Date issued:

Sent by:

Customer's feedback date:

08-11-04

email

Customer's feedback (change requests):

## Changes in comparison to the former version:

Sound "Abschlammen" entfernt  
Bremsenquietschen forciert  
Kuppler leiser gemacht  
Kompressor-Sound ausgetauscht  
Schaffnerpfeif lauter gemacht  
Kurzpfiff aus Langpfiff (F2) genommen  
zweiter Motorsound eingebunden

Approval note added ☐

Production file generated by:

Date of generating:

Manual generated by:

Manual generated from: