

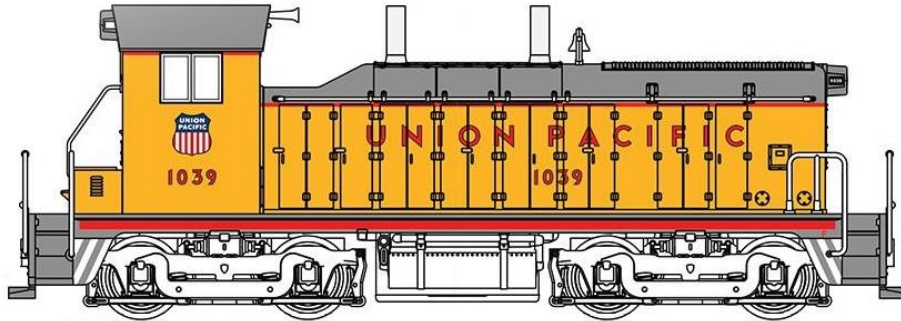


Image: Kato USA

The EMD NW2 is a 1,000 hp (750 kW), B-B switcher locomotive manufactured by General Motors Electro-Motive Division of La Grange, Illinois. From February 1939 to December 1949, EMD produced 1,145 NW2s: 1,121 for U.S. and 24 for Canadian railroads. Starting in late 1948, the NW2s were manufactured in EMD's Plant #3 in Cleveland, Ohio. The locomotives were powered by a 12-cylinder model 567 engine and later a model 567A engine. The "N" in NW1 stands for the nine in nine hundred hp (670 kW). The "W" in both models stands for "welded frame".

Source: Wikipedia

Project settings and information:

Projekt no.: A246

The project was realised in the new 16-bit technology for ZIMO MS decoders and is customized for the model of Kato in N-gauge.

- The decoder must have at least software version 5.15.
- The decoder can be controlled at address 3
- The model also runs in analog mode, no programming is needed.
- To ensure the functionality of the project, CV values should only be changed very carefully.
- A decoder reset can be carried out using CV #8 = 8.
- If the sound is to be switched on/off with key F8, the following CVs must be programmed:
 - CV 401 = 8
 - CV 408 = 1
- Random sounds: Z1 = air drain 1; Z2: air drain 2
- The decoder used in the Kato models is a special ZIMO loco board decoder without interface produced especially for this model.

Key	Function	Function Output	Sound
F0	Light on/off	White light (FO0v) on front end in forward direction, White light on short front end (FO0r) in backward direction	
F1			Bell
F2			Horn short
F3			Coupling / uncoupling
F4	Halfspeed- and shunting key		
F5			Horn long
F6	Shunting lights on / off	White lights on both ends	
F7			Curve squeal (when running)
F8			Sund on / off
F9			Mute (when on)
F10	Constant speed		Speed Lock
F11			Cab door open / close
F12			Brakes off / on
F13			Hand brake on / off
F14			Radio
F15			Splitter valve
F16			RR-crossing bell
F17			Refuel
F18			Sanding
F19			Volume +
F20			Volume -
F21-F28	At your free disposal		

Modified CVs:

CV# 1 = 3 DCC short address
 CV# 3 = 22 Beschleunigungszeit
 CV# 4 = 14 Verzögerungszeit
 CV# 5 = 180 Geschwindigkeit bei höchster Fahrstufe
 CV# 6 = 75 Geschwindigkeit bei mittlerer Fahrstufe
 CV# 9 = 58 Motorregelung Periode/Länge
 CV# 12 = 53 Zulässige Betriebsarten
 CV# 13 = 128 Analog Funk. F1-F8
 CV# 33 = 0 Function Mapping F0v
 CV# 34 = 0 Function Mapping F0r
 CV# 57 = 100 Motorregelung Referenzspg.
 CV# 59 = 5 n.a. (HLU Reaktionszeit)
 CV# 63 = 62 Effekte Zykluszeit/Ausschaltverl.

CV# 320 = 0 Z2 Abspieldauer [s]
 CV# 356 = 10 Speed Lock-Taste
 CV# 359 = 30 Schaltwerk Hoch Limit / Loopzeit
 CV# 363 = 10 Schaltwerk Anzahl Stufen
 CV# 376 = 220 Fahrsound Lautstärke
 CV# 395 = 55 Max. Lautstärke für Lauter-Taste
 CV# 396 = 20 Leiser-Taste
 CV# 397 = 19 Lauter-Taste
 CV# 430 = 29 ZIMO Mapping 1 F-Tast
 CV# 432 = 46 ZIMO Mapping 1 A1 vor
 CV# 434 = 47 ZIMO Mapping 1 A1 rück
 CV# 436 = 6 ZIMO Mapping 2 F-Tast
 CV# 438 = 46 ZIMO Mapping 2 A1 vor

CV# 105 = 145 User data 1	CV# 439 = 47 ZIMO Mapping 2 A2 vor
CV# 106 = 40 User data 2	CV# 440 = 46 ZIMO Mapping 2 A1 rück
CV# 124 = 3 Rangiertaste Konfiguration (Binär)	CV# 441 = 47 ZIMO Mapping 2 A2 rück
CV# 125 = 88 Effekte Lvor	CV# 513 = 37 F1 Sound-Nummer
CV# 126 = 88 Effekte Lrück	CV# 514 = 91 F1 Lautstärke
CV# 141 = 20 Konstanter Bremsweg Weg	CV# 515 = 8 F1 Loop-Info
CV# 147 = 160 Motorregelung I-Wert	CV# 516 = 65 F2 Sound-Nummer
CV# 149 = 150 Motorregelung P-Wert	CV# 517 = 0 F2 Lautstärke
CV# 155 = 4 Halbgeschw. Taste	CV# 518 = 64 F2 Loop-Info
CV# 156 = 4 Rangiertaste Anf/Brems	CV# 519 = 25 F3 Sound-Nummer
CV# 158 = 44 ZIMO Konfig 3 (Binär)	CV# 520 = 64 F3 Lautstärke
CV# 165 = 10 Servo 1 Umlaufzeit [0,1s]	CV# 521 = 8 F3 Loop-Info
CV# 169 = 10 Servo 2 Umlaufzeit [0,1s]	CV# 525 = 68 F5 Sound-Nummer
CV# 173 = 10 Servo 3 Umlaufzeit [0,1s]	CV# 526 = 0 F5 Lautstärke
CV# 177 = 10 Servo 4 Umlaufzeit [0,1s]	CV# 543 = 26 F11 Sound-Nummer
CV# 190 = 60 Effekte Aufdimm	CV# 544 = 91 F11 Lautstärke
CV# 191 = 20 Effekte Abdimm	CV# 545 = 8 F11 Loop-Info
CV# 254 = 246 Projekt-ID	CV# 546 = 40 F12 Sound-Nummer
CV# 256 = 2 Projekt-ID	CV# 547 = 181 F12 Lautstärke
CV# 266 = 55 Gesamtlautstärke	CV# 549 = 48 F13 Sound-Nummer
CV# 273 = 22 Anfahrverzögerung	CV# 550 = 91 F13 Lautstärke
CV# 275 = 245 Lautstärke Konstant Langsam	CV# 551 = 8 F13 Loop-Info
CV# 276 = 245 Lautstärke Konstant Schnell	CV# 552 = 41 F14 Sound-Nummer
CV# 284 = 15 Schwelle für Verzögerungs-Lautstärke	CV# 553 = 91 F14 Lautstärke
CV# 285 = 20 Dauer der Verzögerungs-Lautstärke [0,1s]	CV# 555 = 47 F15 Sound-Nummer
CV# 286 = 230 Lautstärke bei Verzögerung	CV# 556 = 46 F15 Lautstärke
CV# 287 = 65 Brems-Quietsch-Schwelle	CV# 557 = 72 F15 Loop-Info
CV# 288 = 75 Brems-Quietsch-Mindestfahrzeit [0,1s]	CV# 558 = 31 F16 Sound-Nummer
CV# 290 = 40 Thyristor Tonhöhe / FS mid.	CV# 559 = 64 F16 Lautstärke
CV# 291 = 40 Thyristor Tonhöhe max.	CV# 560 = 8 F16 Loop-Info
CV# 292 = 100 Thyristor Fahrstufe mid.	CV# 561 = 30 F17 Sound-Nummer
CV# 293 = 30 Thyristor Lautstärke konstant	CV# 562 = 64 F17 Lautstärke
CV# 294 = 100 Thyristor Lautstärke Beschleunigung	CV# 563 = 72 F17 Loop-Info
CV# 295 = 50 Thyristor Lautstärke Verzögerung	CV# 564 = 29 F18 Sound-Nummer
CV# 296 = 100 EMotor Lautstärke	CV# 565 = 64 F18 Lautstärke
CV# 297 = 30 EMotor min. Fahrstufe	CV# 566 = 72 F18 Loop-Info
CV# 298 = 100 EMotor Lautstärke Steigung	CV# 577 = 32 Bremsenquietschen Sound-Nummer
CV# 299 = 100 EMotor Tonhöhe Steigung	CV# 578 = 181 Bremsenquietschen Lautstärke
CV# 307 = 128 Kurvenquietschen Eingänge	CV# 744 = 33 Z1 Sound-Nummer
CV# 310 = 8 Fahrsound E/A-Taste	CV# 745 = 128 Z1 Lautstärke
CV# 313 = 109 Mute-Taste	CV# 746 = 72 Z1 Loop-Info
CV# 315 = 55 Z1 Mindest-Intervall	CV# 747 = 34 Z2 Sound-Nummer
CV# 316 = 85 Z1 Maximum-Intervall	CV# 748 = 128 Z2 Lautstärke
CV# 317 = 0 Z1 Abspieldauer [s]	CV# 749 = 8 Z2 Loop-Info
CV# 318 = 65 Z2 Mindest-Intervall	CV# 768 = 32 Aktuelles Dampf/Diesel-Set
CV# 319 = 100 Z2 Maximum-Intervall	CV# 981 = 128 Script-CV

Sound Samples:

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|----|-------------------------------------|----|------------------------------------|
| 25 | Coupling / Uncoupling | 47 | Spitter_valve.wav |
| 26 | Cab door_open-close.wav | 48 | Handbrake on / off |
| 27 | Curve squeal | 49 | Horn_0.60.wav |
| 28 | Rolling | 50 | Horn_1.60.wav |
| 29 | Sanding | 51 | Horn_3.80.wav |
| 30 | Refuel | 52 | Horn-double_4.50.wav |
| 31 | RR-crossing | 53 | Horn_LeslieRS3L_3x_1.30 ne.wav |
| 32 | Brake | 54 | Horn_Midland_0.48a.wav |
| 33 | Air drain 1 | 55 | Horn_Midland_1.52a.wav |
| 34 | Air drain 2 | 56 | Horn_Midland_2.35a.wav |
| 35 | Horn_Bridgeport_0.75a ne.wav | 57 | Horn_Midland_3.15a.wav |
| 36 | Horn_Bridgeport_1.30a.wav | 58 | Horn_Bridgeport_0.75a_short.wav |
| 37 | Bell_02.wav | 59 | Horn_Leslie_RS3K_0.40_short.wav |
| 38 | Horn_Bridgeport_2.10a.wav | 60 | Horn_LeslieRS3L_0.40_short.wav |
| 39 | Horn_Bridgeport-double_3.10a.wav | 61 | Horn_Midland_0.48a_short.wav |
| 40 | Brakes off-on.wav | 62 | NAK3-2h_short.wav |
| 41 | Radio_1.wav | 63 | Horn_Leslie_RS3K_3.80_02.wav |
| 42 | Horn_Leslie_RS3K_0.40 ne.wav | 64 | Horn_Bridgeport_2.00a_03.wav |
| 43 | Horn_Leslie_RS3K_3.80.wav | 65 | Horn_LeslieRS3L_1.80_04.wav |
| 44 | Horn_Leslie_RS3K-triple_4.52 ne.wav | 66 | Horn_Bridgeport_RR-cross_8.50.wav |
| 45 | Horn_LeslieRS3L_0.40_ne.wav | 67 | Horn_Leslie_RS3K_RR-cross_8.00.wav |
| 46 | Horn_LeslieRS3L_1.80.wav | 68 | Horn_LeslieRS3L_RR-cross_8.50.wav |

Scripts:

Script 1: Curve squeal, speed dependent

Script 2: Light dimming at motor start

ZIMO Elektronik GmbH
Schoenbrunner Strasse 188
1120 Vienna
Austria

