

# BRAWA H0 DIL 212 DB IV AC Ex World Of Trains Model **Railway Shop User Manual**

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BRAWA H0 DIL 212 DB IV AC Ex World Of Trains Model Railway Shop



# **Specifications**

Product Name: Diesel Loco V100 West
Models: 211, 212, 213, V 100.10, V100.20

• Scale: H0

• Intended Users: Adult collectors

# **Product Usage Instructions**

# **Before Starting Up**

Before starting up the product, perform the following tasks:

- Refer to general assembly and safety information.
- Use only a toy transformer compliant with VDE 0570-2-7/DIN EN 61558-2-7 as the voltage source.

### **Dismantling Instructions (Analog Version)**

To dismantle the NEM shaft in the analog version:

- 1. Follow work-step dismantling instructions.
- 2. Refer to position number of spare part (Pos.) 29.

# **Converting to Digital Operation**

### For DC version

- 1. Consult the installation instructions from the decoder manufacturer for the correct installation of the digital decoder.
- 2. The factory setting for the decoder is address 03.

#### For AC version:

- 1. Use the premium digital decoder (01) for AC locomotive models.
- 2. The decoder identifies the operation type automatically.
- 3. If reprogramming is needed, refer to the enclosed installation and operation instructions.
- 4. The factory setting for the decoder is address 03.

# **Exchanging Components**

- 1. Exchanging digital decoder/speaker: Follow work step dismantling instructions.
- 2. Dismantling circuit board: Follow work step dismantling instructions.
- 3. Exchanging motor/cardan shaft: Follow work step dismantling instructions.
- 4. Dismantling bogie/NEM shaft: Follow work step dismantling instructions.
- 5. **Dismantling bogie:** Follow work step dismantling instructions.

# General assembly and safety information

- These operating instructions describe all work steps necessary for maintenance and repair. Please read these operating instructions carefully before you start with your work.
- In the case of incorrect handling of electrical components, they may be destroyed. Please ask your specialist dealer to help with the necessary work (e.g. changing circuit boards).
- In the case of maintenance work, the disassembly is described below, to re-assemble the tractor reverse the work steps.
- The maintenance work described below is virtually identical for direct current and alternating current models. If there are any differences these will be pointed out specifically.
- All cables and connection wires installed in this product may not be inserted in a main socket. Danger!

Scale and true to original small-sized model for adult collectors.

Electrical equipment may not reach domestic waste. According to the current terms of the country reference the electrical equipment must be professionally disposed of.

### **Used Symbols**

- Please refer to the symbols used in this operating instructions:
- · Work step dismantling
- Position no. of spare part (Pos.)
- Lubricating

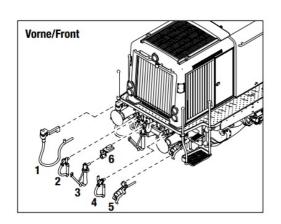
### Fitting additional parts

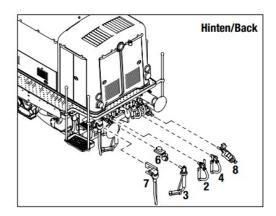
There is an accessory bag added to the model but maybe not all parts will be needed. The additional parts are intended for the showcase. After mounting the additional parts, there can be limitations in driving mode

- 1 = 1x Multiple traction line long
- 2 = 4x Brake hose right
- 3 = 2x Heating pipe
- 4 = 4x Brake hose left

- 5 = 1x Connector multiple traction long
- 6 = 2x Heating connection
- 7 = 1x Multiple traction line short
- 8 1x Connector multiple traction short

Depending on the model, different numbers of parts are in the accessory bag





### Converting to digital operation DC version

### See item 4.

Please consult the installation instructions issued by the decoder manufacturer for the correct installation of the digital decoder and its insert direction.

### **AC** version

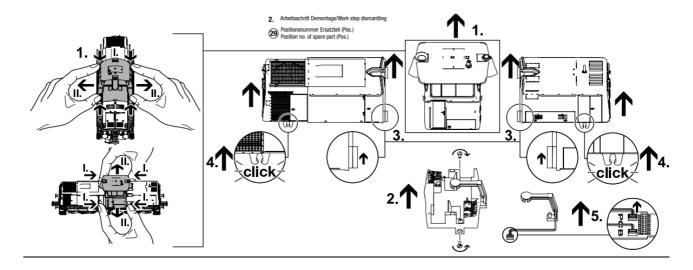
The premium digital decoder (01) is standard for the alternating current (AC) locomotive models. The decoder independently identifies the operation type (analog/digital).

Please refer to the enclosed installation and operation instructions "Premium Digital

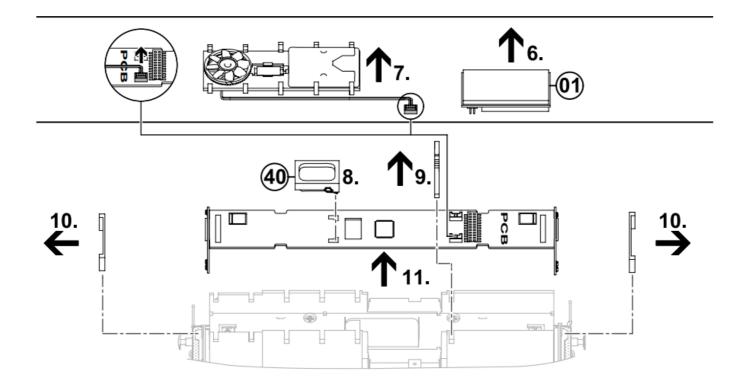
Decoder" if the decoder needs to be reprogrammed

The decoder is set to address 03 in the factory.

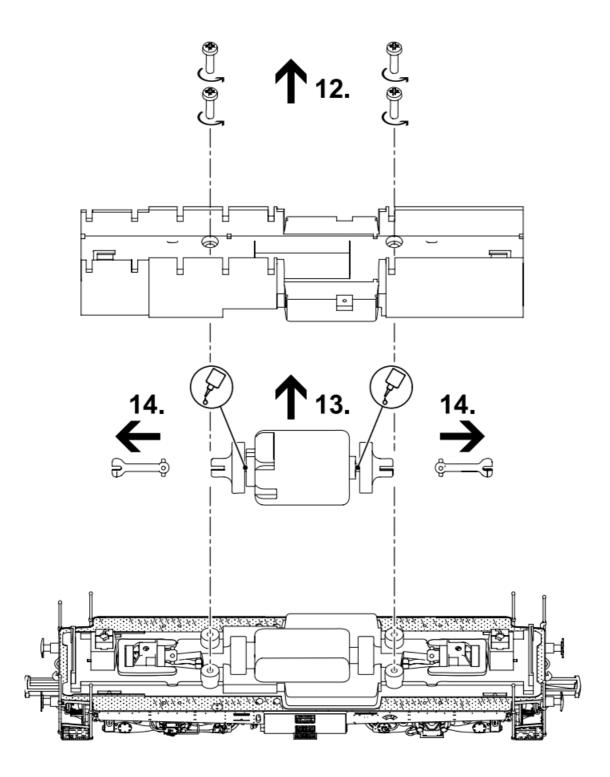
# **Dismantling housing**



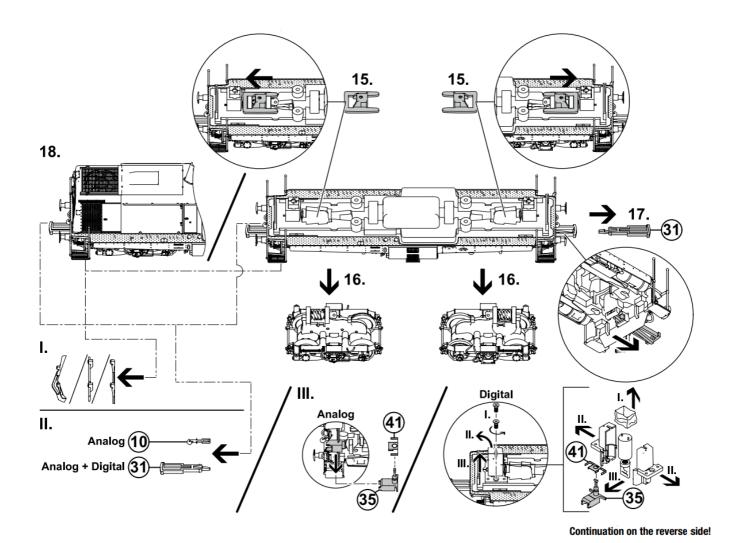
Exchanging the digital decoder/speaker Dismantling the circuit board



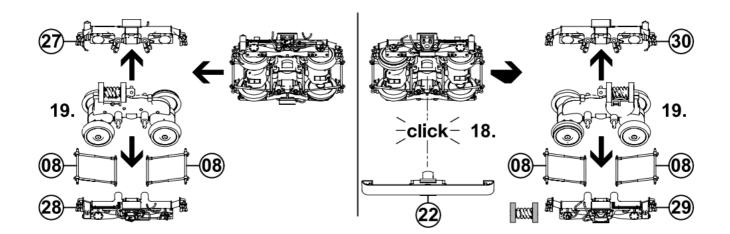
Exchanging the motor/cardan shaft



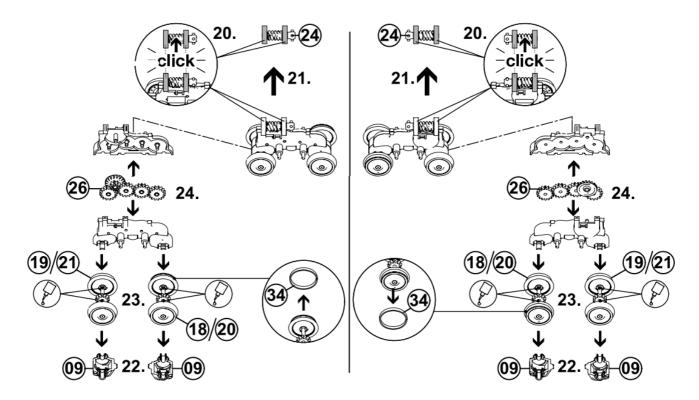
Dismantling the bogie/NEM shaft



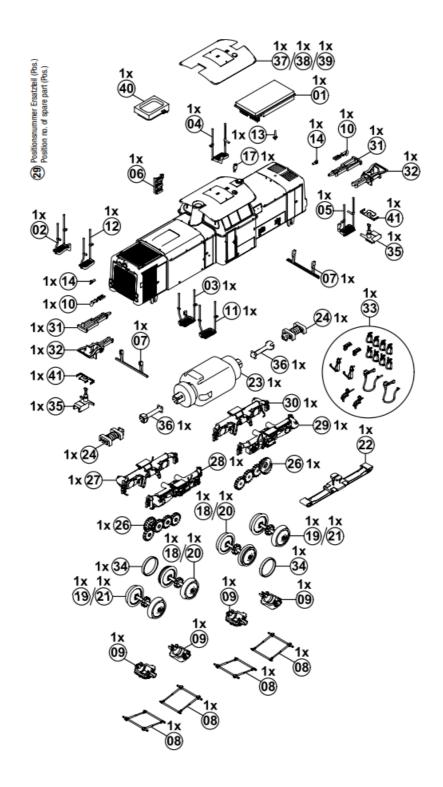
# Dismantling the bogie



Worm gear/Gear set/ Wheelset/Traction tire



**Spare Parts List** 



**Spare Parts List** 

	•	erhältlich, ist nicht im Lieferumfang enthalten.			ı	1	elnumr	1	1	1	ı			
nic		not included.	Bestell Nr.	70020	70022	70023	70024	70026	70027	70052	70054	70056	70058	1001
05.	Bennenung	Description	Order no.								_	7		
1)	Sounddecoder SD22-4 (V100 West)	DCC sound decoder SD22-4 (V100 West)	0014765.11	-	•	•	-	•	•	-	•	_	•	'
	Decoder DH22-4 (Standard)* PCB Blindstecker PluX22 (V100)	Decoder DH22-4 (Standard)* PCB analogue plug PluX22 (V100)	0014764.00*		_	_	•	_	_		-	•	_	
2	Aufstieg Umlauf 2	Ascent frame 2	0014770.01 0008096.00	-	_	_	_	_	_	_	_		•	
٥	Adisting Official 2	ASCEIR Haine 2	0008096.08	_	_	_	_	_				_	_	1
3	Aufstieg Umlauf	Ascent frame	0008097.00	_	_	_	_	_	_	_	_	•	•	
9	Autobog offilaut	Addent Hame	0008097.08	_	_	_	_	_	_				_	١.
4	Aufstieg Umlauf 5	Ascent frame 5	0008098.00	•			-	_	_	-	_	•	•	1
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			0008098.11	_	_	_	_	_	_			_	_	١.
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			0008099.11	_	_	_	_	_	_	•	•	_	_	
6	Aufstieg	Rise	0008100.00	•	•	•	_	_	-	-	_	•	•	Т
	· ·		0008100.01	-	_	l –		•	•	-	-	-	-	
			0008100.10	-	_	_	-	_	_		•	_	-	
7	Bahnräumer	Obstruction removers	0008101.00	•	•	•	_	_	-	-	_	•	•	
			0008101.02	-	_	_	-	-	_	•	•	_	-	
3	Bremsgestänge	Brake linkage	0008106.00	•	•	•	-	-	-	-	-	•	•	
			0008106.01	-	–	-	•	•	•	-	-	-	-	
			0008106.05	_	_	_	_	_	_	•	•	_	_	L
9)	Getriebedeckel	Gear cover	0008112.00	•	•	•	-	_	_	-	-	•	•	П
			0008112.01	-	-	_	•	•	•	-	-	-	-	П
			0008112.05	-	-	-	-	-	-	•	•	_	-	Į.
)	Kuppelhaken V100	Coupling hook V100	0008139.00	•	•	•	-	-	-	-	-	•	•	
			0008139.01	-	-	-	•	•	•	-	-	-	-	
_			0008139.05	_	_	_	_	_	_	•	•	_	_	1
)	Aufstieg Umlauf 3	Ascent frame 3	0008194.00	•	•	•	-	_	-	-	-	-	-	П
			0008194.04	-	_	_	•	•	•	_	_	-	_	۰
•	Aufstieg Umlauf 4	Ascent frame 4	0008195.00	•	•	•	-	-	-	-	-	-	-	
			0008195.04	_	_	_	•	•	•	_	_	-	_	1
3	Lok-Antenne	Antenna	0008211.03	-	_	_	•	•	•	-	_	-	-	т
•	UIC Steckdose	UIC socket	0008212.00	-	-	-	•	•	•	-	-	_	-	
			0008212.01	-	-	-	-	-	-	-	-	•	•	
			0008212.09	-	-	-	-	-	-			-	-	1
			0008212.01	-	-	_	-	-	_	-	-	•	•	
7	Frank ÖDD	D-4:- ÖDD	0008212.09	-	-	-	-	_	_	•	•	_	-	Ł
	Funk ÖBB	Radio ÖBB	0019210.00	•	•	_	-	•	_	-	-	-	•	Ŧ
8	Radsatz mit Haftreifen DC	Wheelset with preparing for traction tire DC	0013319.00	•		_	•		_			•	•	Ł
3	Radsatz ohne Haftreifen DC	Wheelset without traction tire DC Wheelset with preparing for traction tire AC	0013320.00	_	_	•	_	_	-	_	_	_	_	т
<b>1</b>	Radsatz mit Haftreifen AC Radsatz ohne Haftreifen AC	Wheelset without traction tire AC	0013321.00 0013322.00	_	_		_	_		_	_	_	_	h
) )	Schleifer AC kpl.	Pic up shoe AC cpl.	0013322.00	_	_	•	_	_	•	_	_	_	_	т
9	Motor für Antrieb kpl.	Motor cpl.	0013324.00	•	•		•		•	-		•	•	h
) 1)	Schnecke mit Lager kpl.	Worm gear cpl.	0013297.00	•	•	•	•		•		•			T
5	Zahnradsatz kpl.	Gear set cpl.	0013237.00	•	•	•	•		•	•	•		•	h
7	Dregestellblende 2 kpl.	Bogie side frame cpl.	0013332.00	•			_	_	_	_	_	_	_	T
,	Diegestelibieride 2 kpi.	bogic side frame opt.	0013332.01	_	_	_				_	_	_	_	
			0013332.06	_	_	_	_	_	_			_	_	
			0013332.07	_	_	_	_	_	_	_	_			
3	Dregestellblende für Sifa kpl.	Bogie side frame cpl.	0013333.00	•	•	•	_	_	_	_	_	_	_	t
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			0013333.07	_	_	_	_	_	_	_	_	•		1
)	Dregestellblende 3 kpl.	Bogie side frame cpl.	0013334.00	•	•	•	_	_	_	-	_	_	_	Т
-	J	- <b>0</b> <del></del>	0013334.01	_	_	_			•	_	_	_	_	
			0013334.06	_	_	_	_	_	_		•	_	_	
			0013334.07	-	_	_	_	_	_	_	_	•		
	Dregestellblende 4 kpl.	Bogie side frame cpl.	0013335.00	•	•	•	_	_	_	_	_	_	_	İ
	3		0013335.01	_	_	_	•	•	•	_	_	_	_	1
			0013335.06	_	_	_	_	_	_	•	•	_	_	
			0013335.07	-	_	_	_	_	_	_	_	•	•	1
)	Hakenkupplung DB V100 (4er- Set)	Coupling Hook DB V100 (Set of 4)	93704	-	•	•	-	•	•	-	•	-	•	T
	Bügelkupplung (2 Stück)	Standard coupler (2 pieces)	0000729.00	•	•	•	•	•	•	•	•	•	•	
3	Zurüstbeutel	Add on part bag	0013680.00	•	•	•	•	•	•	•	•	•	•	T
1	Haftreifen	Traction tires	0008116.00	•	•	•	•	•	•	•	•	•	•	
	NEM Schacht	NEM shaft	0008149.00	•	•	•	•	•	•	•	•	•	•	T
3	Kardanwelle	Cardan shaft	0007985.00	•	•	•	•	•	•	•	•	•	•	
)	Dach (mit Bohrung hinterm Auspuff)	Roof (with bore behind exhaust)	0008164.00	•	•	•	-	-	_	-	-	•	•	
	, , , , , , , , , , , , , , , , , , , ,		0008164.01	_	_	_	•	•	•	_	_	_	_	
8	Dach (neben dem Auspuff)	Roof (with bore beside exhaust)	-	-	_	-	-	-	-	-	_	-	-	
		Roof (all without bore)	0008226.09	_	_	_	_	_	_	•	•	-	_	ſ
9	Dach (alle ohne Bohrung)	11001 (all Without Bore)	0000110.00											
	Lautsprecher	Speaker	0023540.00	-	•	•	-	•	•	-	•	-	•	

# Function keys for digital models

Sounddecoder SD22-4 (DCC/SX1/SX2/Motorola/DC/AC) / DCC sound decoder SD22-4 (DCC/SX1/SX2/Motorola/DC/AC)

BRAWA-Nr.: 0014765.11	: Ausführung EXTF	A mit Prozessor und	Energiespeicher

<b>Funktion</b>	1. Ebene		2. Ebene (aktiv b	ei Rang	giergang)	Anmerkun	g
F0	Hauptlicht laut CV-Tabelle	Rangierlicht laut CV-Tabelle EIN/AUS			mit Fahrtrichtung wechselnd Länderkennung laut CV Tabelle		
F1	Hauptfahrgeräusch EIN/AU	JS	Hauptfahrgeräuse	ch EIN/A	AUS	mit Zufallsf	unktion für bestimmte Geräusche
F2	Signalton 1 kurz EIN/AUS	ohne Funktion	Signalton 1 kurz	EIN/AUS	S ohne Funktion		
F3	Glocke		Glocke				
F4	Rangiergang EIN>		Rangiergang AUS			2. Ebene ak	•••
F5	Licht vorn AUS		Kupplung vorn er	tkuppe	ln/kuppeln	1. Ebene: F	ung laut CV-Tabelle 5+F6+F0 = Rangierlicht
F6	Licht hinten AUS		Kupplung hinten	entkupp	oeln/kuppeln	1. Ebene: F	5+F6 ohne $F0 = Licht Lok abgestellt$
F7	Licht Führerstand		Licht Führerstand	i			
F8	Ausblenden		Ausblenden				
F9	Signalton 1 lang EIN/AUS	ohne Funktion	Signalton 1 lang	EIN/AUS	S ohne Funktion		
Fkt.	1. Ebene	2. Ebene (aktiv bei	Rangiergang)	Fkt.	1. Ebene		2. Ebene (aktiv bei Rangiergang)
F10	Kompressor	Kompressor		F16	Führerstandstür AU	F/ZU	Führerstandstür AUF/ZU
F11	Lüfter EIN/AUS	Lüfter EIN/AUS		F17	Schaffnerpfiff		Schaffnerpfiff
F12	Dampfheizkessel	Dampfheizkessel		F18	Sound lauter		Sound lauter
F13	Hilfsdiesel	Hilfsdiesel		F19	Sound leiser		Sound leiser
F14	Bremsgeräusch	Bremsgeräusch		F20	Bremsgeräusch der	aktivieren	Bremsgeräusch deaktivieren
F15	Kupplungsgeräusch + Luft	Kupplungsgeräusc	h + Luft	F21	Leerlauf erzwingen		Leerlauf erzwingen

# BRAWA-No.: 0014765.11; Version EXTRA with processor and energy storage

<b>Function</b>	1. Level		2. Level (active a	at shunt	ing mode)	Note		
F0	Main light as per CV tabl	e ON/OFF	Shunting light as	per CV	table ON/OFF	with directir	n change	
						Country cod	e according to CV table	
F1	Main driving noise ON/O	FF	Main driving nois	se ON/OF	Ŧ	with randon	n function f. specific sounds	
F2	Acoustiv signal 1 short 0	N/OFF w/o function	Acoustiv signal 1	short 0	N/OFF w/o function			
F3	Bell		Bell					
F4	Shunting mode ON>	•	Shunting mode (	)FF		2. level activ	/e	
						Country cod	e according to CV table +F6+F0 = Shunting ligh	
F5	Light front OFF		Coupling front de	ecouple/	couple	1. Level: F5	+F6+F0 = Shunting ligh	
F6	Light back OFF		Coupling back decouple/couple 1. Level: F:			1. Level: F5	5+F6 w/o F0 = light loco parked	
F7	Light driver's cabin		Light driver's cal	oin				
F8	Fading out		Fading out					
F9	Acoustiv signal 1 long 0	N/OFF w/o function	Acoustiv signal 1	long Of	I/OFF w/o function			
Fct.	1. Level	2. Level (active at	shunting mode)	Fct.	1. Level		2. Level (active at shunting mode)	
F10	Air compressor	Air compressor		F16	Driver's cabin door	OPEN/CLOSE	Driver's cabin door OPEN/CLOSE	
F11	Ventilator ON/OFF	Ventilator ON/OFF		F17	Conductor whistle		Conductor whistle	
F12	Boiler	Boiler		F18	Sound turn up		Sound turn up	
F13	Auxiliary diesel	Auxiliary diesel		F19	Sound turn down		Sound turn down	
F14	Brake sound	Brake sound		F20	Brake sound deacti	vate	Brake sound deactivate	
F15	Coupling noise + Air	Coupling noise + I	Air	F21	Enforce idling runni	ng	Enforce idling running	

# **CV Attribution**

CV	Beschreibung/Description	Werte/Value	Sound
980	Herstellerkennung/Manufacturer code	8=Reset	97
991	Führerstand/Driver's cabin	0 = aus/off, $1 = F128 = F28$ , $29 = F0*$	$135 = 128 + 7 = F7^*$
993	Lüfter/Ventilator	0 = aus/off, 1 = F128 = F28, 29 = F0	11 = F11
994	Licht vorn AUS **/Light front OFF**	0 = aus/off, $1 = F128 = F28$ , $29 = F0$	5 = F5
995	Licht hinten AUS**/Light back OFF**	0 = aus/off, 1 = F128 = F28, 29 = F0	6 = F6
996	Rangiergang****/Shunting mode****	0 = aus/off, $1 = F128 = F28$ , $29 = F0$	4 = F4
997	Länderkennung*****/Country code*****	0 = Deutschland, 4 = Schweiz	0
998	Analogbetrieb (Zusatzlicht)/	2 = Führerstand/Driver's cabin	2
	Analog operation (Additional light)	8 = Lüfter/Ventilator	
		16 = Licht vorn (Führerstand 1) AUS/	
		Light front (Driver's cabin 1) OFF	
		32 = Licht hinten (Führerstand 2) AUS	
		Light back (Driver's cabin 2) OFF	
		64 = Rangiergang/Shunting mode	
CV1003	Ladezeit Kondensator/Charging time capacitor	0 = aus, 255 bei Anfahrt, 1254 = Wert mal 16ms	255
		0 = off, 255 at start, 1254 = value multiplied by 16ms	
CV1004	Entladezeit Kondensator/Discharging time capacitor	0 = aus, 255 bei Anfahrt, 1254 = Wert mal 16ms	254
		0 = off, 255 at start, 1254 = value multiplied by 16ms	
CV1008	Lüftergeschwindigkeit/Ventilator speed	0 = aus/off, 255 = zunehmende Geschwindigkeit/ increasing speed	30
CV1009	Dimmen weißes Frontlicht/Dim white front light	031 = zunehmende Helligkeit/increasing brightness	31
CV1010	Dimmen rotes Schlußlicht/Dim red tail lamp	031 = zunehmende Helligkeit/increasing brightness	31
CV1012	Dimmen Licht Führerstand/Dim light driver's cabin	031 = zunehmende Helligkeit/increasing brightness	31
	3	<b>3</b>	

### Differentiation driving and standstill:

• Function is on only when driving: Wert+64

• Function is always off: Wert+192

### Additional information for country code Germany:

Extra (Sound)	F0+F5+F6 F5+F6	Rangierlicht aktiv (3x weiß je Seite) Shunting light active (3x white/side) Lok abgestellt (2x rot je Seite) Loco parked (2x red/side)
**F4+F0	Rangierlicht aktiv (3 Shunting light activ	, , ,
CV997	Länderkennung Country code	Wert/Value +1 = 2x weiß unten/white down Wert/Value +2 = 1x weiß oben/white up Wert/Value +3 = 1x weiß unten rechte Fahrzeugseite/ white down right side of the loco

### \*\*\*\*Zusatzinformationen bei Länderkennung Schweiz/ Additional information for country code Switzerland:

ridaliti	raditional information for obtaining obtaining					
	F0	Lok fährt allein (3x weiß vorn, 1x rot rechts hinten) Loco driving alone (3x white front, 1x red right back)				
Extra (Sound)	(Drive forward)	Lok fährt vor Zug (3x Weiß vorn, 1 x weiß rechts hinten) Loco runs before train (3x white front, 1x white right back)				
		Lok fährt vor Zug (3x Weiß vorn, 1 x weiß rechts hinten) Loco runs before train (3x white front, 1x white right back)				
	F0+F5+F6	Rangierlicht aktiv (3x weiß je Seite)				
		Shunting light active (3x/side)				
	F5+F6	Lok abgestellt (2x rot je Seite)/Loco parked (2x/side)				

### **Automatic coupling**

The coupling is only controlled when the shunting mode is selected (F4). The F5 key serves the front coupling (long front end), F6 the rear coupling (short front end). It can always be only one coupling operated. F5 is still active (i.e. lowered), this coupling must be reset before with F6 the rear coupling can be operated. The coupling is set to simple lifting and lowering the coupling hook. It is also possible to set an automatic sequence when coupling:

- CV143 = 0 (automatic process at F5 and F6 without F4)
- CV143 = 64 (hand coupling at F5 and F6 without F4)
- CV143 = 128 (automatic process)
- CV143 = 192 (manual coupling at F5 and F6 with F4, default setting)

#### Storage capacitors

The storage capacitors are only charged after the model is set in motion. They buffer in digital mode the sound, the engine, and the lights. In analog mode, the memory circuit has no effect. With the CV1004 the buffer time can be limited (for example if red signals are passed over).

#### **PLUX22-Serial interface**

The locomotive is equipped with a PluX22 serial interface according to NEM 658. The locomotive is set at digital mode to the DCC mode with address 3. When changing the locomotive decoder of the digital sound locomotive (Extraversion) please make sure that the decoder controls the SUSI interface, since all additional lighting functions are controlled. In analog mode, the standard light changes and the cab lighting is active. If a decoder is used, the "Basic+"-versions (DC with analog plugs and AC with standard decoder) have an assignment of the functions F1 to F4.The "Extra"-versions (all sound versions) have an assignment of the functions F1 to F21 (depending on the model).

### **Frequently Asked Questions**

- Q: Can I use any transformer with the product?
  - A: No, only a toy transformer compliant with VDE 0570-2-7/DIN EN 61558-2-7 should be used as the voltage source.
- Q: What is the factory setting for the decoder address?
  - A: The factory setting for the decoder address is 03.

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### **Documents / Resources**



BRAWA H0 DIL 212 DB IV AC Ex World Of Trains Model Railway Shop [pdf] User Manual H0 DIL 212 DB IV AC Ex World Of Trains Model Railway Shop, H0 DIL 212 DB, IV AC Ex World Of Trains Model Railway Shop, Model Railway Shop, Railway Shop

### References

- \* Startseite BRAWA Modelleisenbahn, Modellbahn, Zubehör Spur 0, O, H0, HO, TT, N, Z
- User Manual

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