

ROCO-passagervogne med digitalt styrede døre.

V0 - 10-3-2022 –Oprettet, Jens Krogsgaard

V1 - 19-3-2022 – revideret, Railcom deaktiveret

VOGN:



Vogn: Roco 45879 – AC - <https://www.roco.cc/en/product/59863-0-0-0-4-00-501-003002/products.html>

Manual

Manual for vognen findes sidst i dokumentet – den engelske version

NB – punkter

- 1) Hvis taget skal af skal det trækkes lige op – IKKE til siderne!
- 2) Vognen er lang – 303 mm – NB ved master mm
- 3) Dekoderen er Märklin Motorola – IKKE DCC som der står i vejledningen
- 4) Hvis dørene i den ene side pludselig ikke fungerer – følg så proceduren nedenfor
- 5) Aktivér kun døre i den ene ende - ikke begge ender samtidigt. Altså: Hvis døre åbnes i den ene side – så skal de lukke igen før døre i den anden side åbnes.
- 6) Deaktiver RailCom på centralen – så fungerer lyden på vognen perfekt. Man bør nok deaktivere RailCom på dekoderen – hvordan gøres det ?

CV-værdier

Nedenstående værdier er ændret i forhold til default:

CV	Værdi	Bemærkning
1	170	Adresse
29	2	Der anvendes altså 28/128 speed
61	2	Funktionstasterne er altså: F0 – lys i vogn – ON/OFF F1 – døre korridor side – ON/OFF F2 – døre kupé side – ON/OFF F3 – Fløjte - Tryknap F4 - Konduktør meddelelse – ON/OFF
62	7	Lyde virker sammen med dørene

Ny vogn – Grøn ROCO vogn:



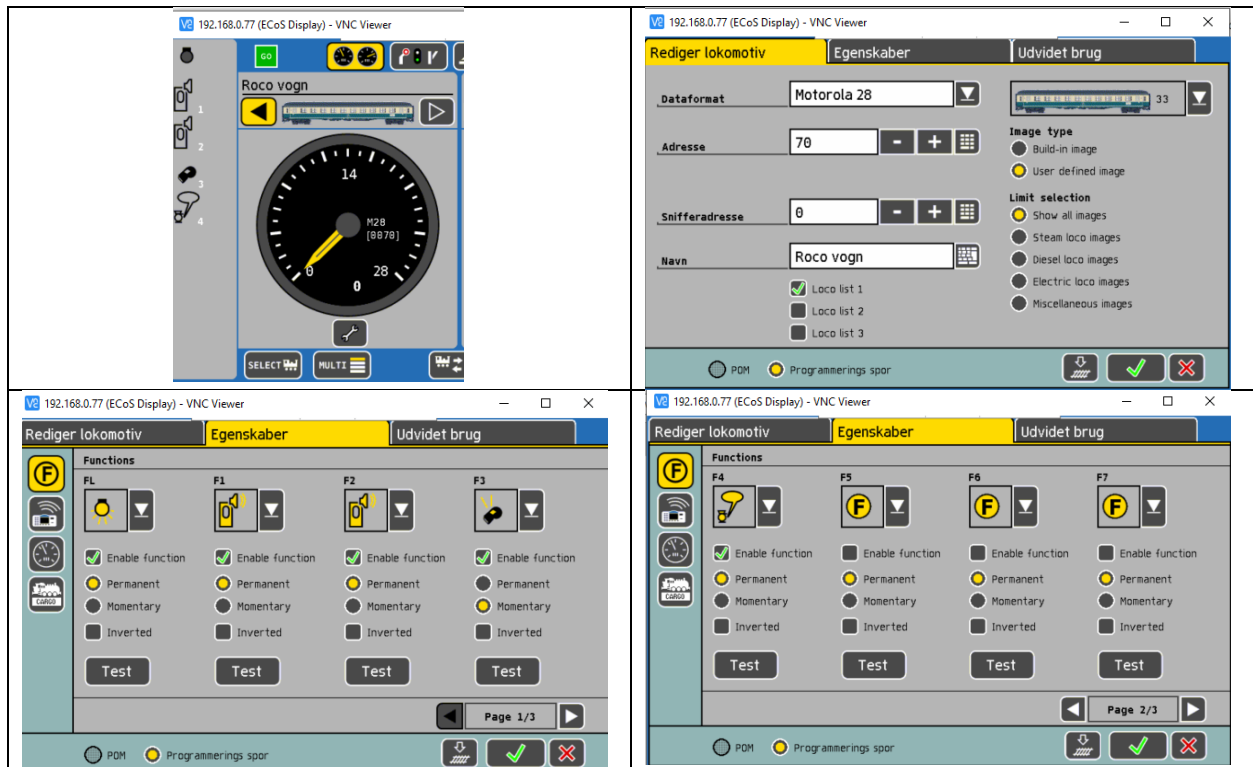
Når de 2 vogne skal køre sammen skal der kun være Fløjt og Konduktør fra den Grønne vogn (lyden her er bedst)

De konfigureres således:

CV	Værdi		Bemærkning
	Blå/Beige	Grøn	
1	170	171	Adresse
29	2	28	Der anvendes altså 28/128 speed
61	2	1	Grøn vogn – har slutlys Grøn: F0 – slutlys Blå/Beige: F0 - lys
62	7 -> 8	7	Lyde virker sammen med dørene

Opret i ECOS

Vognen oprettes i ECOS på sædvanlig måde.



Udfordringer pt:

- 1) Vognen er længere end de øvrige jeg har -> et par master skal flyttes
 - a. Det er fixet
- 2) Lyd i ECOS er IKKE som i CS2 – mærkeligt. Har spurgt et par venner om råd
 - a. Det er fixet – Railcom deaktiveret

Hvis døre i den ene ende af vognen IKKE fungerer



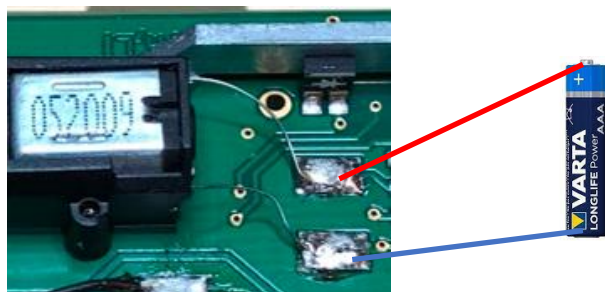
I hver ende af vognen sidder en motor. "052009"

Den trækker en stang frem og tilbage – som så bevæger dørene.

Der sidder 2 sensorere – de kontrollerer om positionen af 'stangen' er korrekt. Hvis ikke fungerer dørene ikke i denne side.



Man kan så 'tvangsflytte' stangen ved at benytte et 1,5 volt batteri som vist herunder:



Herefter skal dekoderen resettes - CV7 sættes til 7. Og så skal den kodes med de værdier der fremgår ovenfor.

Proceduren har jeg fået fortalt fra TogTeknik.dk – info@togteknik.dk. Har pt ikke selv prøvet det.

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Overview of functions

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F-key	Function	Function Type	Direction-related	Additional sound	
Light**	Carriage tail light	ON/OFF	✓		1 st Address Motorola
F03*	Carriage doors corridor side	OPEN/CLOSE		✓	
F04*	Carriage doors compartment side	OPEN/CLOSE		✓	
F07	Interior carriage lighting LED-non-flicker	ON/OFF			2 nd add Mot.
F16	Conductor's whistle			✓	
F17	Conductor's announcement in german language			✓	
F18**	Carriage tail light stop ON: Tail light NEVER on OFF: control via F0	ON/OFF			

*) For mechanical reasons, the doors of a carriage can only permit the position 'open' on one long side ('corridor' or 'compartment')!

**) All information concerning the tail light only has validity if your carriage is fitted with a fixed tail light.

Carriage settings



If you wish to programme other decoders (e.g. in the locomotive, carriage, etc.), you must remove the carriage with the revolving door from the track as this will otherwise also be programmed.

Address

The carriage is programmed at address 3 in the delivery state.

The carriage can be programmed at diverse addresses between 1-99 via CV1. 9999 addresses are possible via the long addressing (CV17/18) (this requires the activation of an additional CV29 Bit5, see CV list).



If your carriage has a tail light, this is logically coupled to only one locomotive (direction of travel, activation) if both of the addresses are the same.

Configuration (CV29)

Decoder configurations are possible via CV29. In the CV list, each of the configurations has a value. The required settings (values) are to be added and CV29 programmed with them.

Bit 0 (value 1 or 0) changes the direction if the carriage is coupled to the locomotive the wrong way round. The tail lamp is now conform with the direction.

Bit 1 (value 2 or 0) comprises the number of speed steps. This is important for a correct, direction-related illumination of the tail lamp and must be conform with the running step setting/operation in the multiMAUS/multiMAUS^{pro} controller. A flashing of the tail lamp when rotating the running controller is an indication of an incorrect speed step setting.

Bit 2 (value 4 or 0) switches the analogue operation on or off.

Bit 5 (value 32 or 0) switches the „long address“ mode on or off.

Combinations for CV29

CV29	Bit 0	Bit 1	Bit 2	Bit 5	
	Direction of Travel	Speed Steps	Operating Mode	Value	Value
				Short address	Long address
	normal	14	digital	0	32
	other way round	14	digital	1	33
	normal	28/128	digital	2 (default)	34
	other way round	28/128	digital	3	35
	normal	14	analogue+digital	4	36
	other way round	14	analogue+digital	5	37
	normal	28/128	analogue+digital	6	38
	other way round	28/128	analogue+digital	7	39

Carriage configuration via CV62 (conductor's carriage)

You can make additional carriage settings with regard to the conductor and the door movement via CV62. In the works settings, the carriage is defined as being the conductor's carriage (CV62 = 7), i.e. the conductor's announcement and whistle sound can be automatically heard when closing in addition to it being manually hear from this carriage via F16, F17. If the conductor function should be deactivated for this carriage, program CV62 with the value 0. Please refer to the CV list (pages 18-19) for other setting possibilities.

Resetting to the default setting

The CV settings of the carriage are reset to the default setting by value 8 being programmed at CV8.

The door mechanic of the carriage goes to the starting state when you program value 7 at CV7.

CV list

CV	Name	Description	Value/explanation	Range	Default Values
1	Carriage address	The decoder reacts to the address range 1-127, the multiMAUS/multiMAUS ^{pro} and other controllers address 1-99 via the short address, the rest via the long address (CV17/18)		1-99/ 1-127	3
7	Version number	Internal decoder software Programming with value 7 results in a resetting of the doors to the delivery state			
8	Manufacturer identification	Manufacturer ID of Modelleisenbahn GmbH Programming with value 8 results in a resetting of the CVs to the delivery state.			161
13	Analogue F1-F8	Function key in analogue mode	F7: interior lighting OFF (0) / ON (64)	0/64	0
14	Analogue Lamp, F9-F14	Function key in analogue mode	F0: tail light OFF (0) / ON (1)	0/1	0
17	Long address			100-9999	
18		high-value byte (HByte)			192
		low-value byte (NByte) Calculation: long address=(HByte-192)x256+NByte e.g.: Adr 170: HByte=192, NByte=170 Adr 270: HByte=193, NByte=14 Adr 370: HByte=193, NByte=114	You do not have to calculate CV17/18 if you use "LONG ADDRESS" when programming the multiMAUS/multiMAUS ^{pro} ➤ Activation of the long address via CV29		0
29	Configuration	Bit 0: direction reversal	0: normal, 1: wrong way round	0/1	OFF: 0
		Bit 1: speed steps (DCC)	0: 14 speed steps 2: 28/128 speed steps	0/2	ON: 2
	See table in the "CV combinations chapter"	Bit 2: analogue operation	0: OFF, 4: functions are switched as set in CV13/14	0/4	OFF: 0
		Bit 5: long address	0: use carriage address (CV1) 32: use long address (CV17/18)	0/32	OFF: 0
33 - 54	Function Mapping	With CVs, one can allocate functions to each of the function keys (see annex "function mapping")			
56	Extended configuration	Bit 0: store function keys	0: switched off, 1: switched on	0/1	9
		Bit 3: 2 nd Märklin [®] address	0: switched off, 8: switched on	0/8	
61	Function keys grouping	automatically writes CV33-54 Value 0: standard occupancy Value 1: for DCC operation Value 2: for Märklin [®] 6021 operation Value 3: for Märklin [®] Mobile Station operation at double address (loc. database 37540)		0-3	0
62	Carriage configuration	Bit 0: manual conductor	0: OFF, 1: ON --> reacts to F16, F17	0/1	7
		Bit 1: automatic conductor whistle	0: OFF, 2: ON --> automatic conductor whistle when doors closing	0/2	
		Bit 2: automatic conductor announcement	0: OFF, 4: ON --> automatic conductor whistle when doors move	0/4	
		Bit 3: fast closing --> short time for closing of the doors; The conductor announcement from another carriage is not waited for. Fast closing is not applicable if the carriage is a conductor carriage.	0: OFF, 8: ON --> shorter time for closing doors	0/8	
63	Dimming of the interior lighting	The brightness of the interior lighting can be set via this CV.		0-15	12

Operation with a DCC Command Station (multiMAUS/multiMAUS^{pro})

Programming modes:

The carriage reacts to all DCC programming types.

We **recommend**: direct CV programming (byte by byte) or POM mode (programming on main track).
The programming is described in the multiMAUS/multiMAUS^{pro} manual.

Reading CVs:

With the appropriate equipment (e.g. Rocomotion 10785 or multiZENTRALE^{pro} 10832), you can read the value byte by byte and bit by bit.

Function key grouping for single operation

If you wish to operate the **carriage** separately, you can simply group the functions.
To do so, program the value 1 via CV61.

Experts can also "map" the functions individually (see Annex):

F-Key	Function	Function Type	Direction-related	Additional sound
F00	Carriage tail light	ON/OFF	✓	
F01	Carriage doors corridor side	OPEN/CLOSE		✓
F02	Carriage doors compartment side	OPEN/CLOSE		✓
F03	Interior carriage lighting	ON/OFF		
F04	Conductor's whistle	ON		✓
F05	Conductor's announcement in german language	ON/OFF		✓

Operation with Märklin¹⁾ 6021

More functions

We are certain that you noticed when trying the set out that not all of the functions which are described in the "function overview" are available in the delivery state.

So that more functions can be addressed with the Märklin¹⁾ 6021, you have

on the one hand: the "2nd address". This is activated in the delivery state and is one higher than the normal address.

Example 1

Address (CV1)=3 (default state)

2nd address=4

on the other: there is a dedicated function key mapping (refer to the table on the next page) which addresses more functions at different addresses (1st address + 2nd address), which can be activated via CV61 respectively.

Only place the carriage on the track!

Programme the value 2 at CV61 (see programming mode)

Function key	Function	Function Type	Direction-related	Additional sound
1 st address function	Carriage tail light and interior lighting	ON/OFF	✓	
1 st address f1	Carriage doors corridor side	OPEN/CLOSE		✓
1 st address f2	Carriage doors compartment side	OPEN/CLOSE		✓
1 st address f3*	Conductor's whistle	ON/OFF		
1 st address f4*	Conductor's announcement in german language	ON/OFF		✓
2 nd address	no functions			

Programming mode

Note: programming is only possible if DIP switch #2 on the back of the Märklin[®] 6021 has been activated.

Programming:

1. set the speed controller to '0'
2. press stop+go for approx. 1 sec. in order to trigger reset (or disconnect/connect the Station)
3. press stop
4. enter the address or '80'
5. press go during the activation of the change in the direction of travel
6. enter the CV at Märklin[®] 6021 in two figures in the form of a locomotive address (CV1-79 possible)
7. activate the change in the direction of travel
8. enter the value in two figures (1-79 possible, enter '80' for value 0)
9. activate the change in the direction of travel
10. the decoder has been programmed and is in travel mode

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F01	Carriage doors corridor side	OPEN/CLOSE		✓
F02	Carriage doors compartment side	OPEN/CLOSE		✓
F03	Interior carriage lighting	ON/OFF		
F04	Conductor's whistle	ON		✓
F05	Conductor's announcement in german language	ON/OFF		✓

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on the one hand: the "2nd address". This is activated in the delivery state and is one higher than the normal address.

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Address (CV1)=3 (default state)

2nd address=4

on the other: there is a dedicated function key mapping (refer to the table on the next page) which addresses more functions at different addresses (1st address + 2nd address), which can be activated via CV61 respectively.

Operation with Märklin¹⁾ Mobile Station

Start up

1. Creating the carriage (same as creating a new locomotive):

- Press ESC
- "NEW LOC" --> press OK
- "Database" --> press OK --> rotate to Loc 37540 --> press OK 'BR55'

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You have now successfully created the carriage but this is still at another address. Change the address as follows:

2. Setting the address

- Press ESC
- Rotate to the right "EDIT LOC" --> press OK
- "Address" --> press OK
- Rotate. e.g. to address "5/6" --> press OK
- "PRG LOC?" --> press OK

The carriage has now been successfully programmed at the new address (a beep sounds 3 times)

3. Setting the function keys:

- Press ESC
- Rotate to the right "EDIT LOC" --> press OK
- Rotate 2x to the left to "REG" --> press OK
- Rotate until REG "61" flashes" --> press OK
- Rotate until REG 61: "3" flashes" --> press OK (lamps flash)

The carriages have now been programmed with the corresponding function key mapping (a beep sounds 3 times).

4. Changing the name:

- Press ESC
- Rotate to the right "EDIT LOC" --> press OK
- Rotate to the right "NAME" --> press OK
- Change letters with rotary knob
- Continue by pressing the rotary knob
- Return by pressing ESC
- Finish with OK

Märklin Mobile Station Function Keys

Function key	Function	Function Typ	Direction-related	Additional sound
	Carriage tail light	ON/OFF	✓	
	Carriage doors corridor side	OPEN/CLOSE		✓
	Carriage doors compartment side	OPEN/CLOSE		✓
	Conductor's whistle	ON/OFF		
	Conductor's announcement "All on board please!"	ON/OFF		✓
	Interior lighting	ON/OFF	✓	

Programming with the Märklin¹⁾ Mobile Station

1. Press the "ESC" button
2. Rotate to the right "EDIT LOC" --> press OK
3. Rotate 2x to the left to "REG" --> press OK
4. Rotate until the required CV flashes --> press OK
5. Rotate until the required value flashes --> press OK

The locomotive confirms the programming by flashing briefly.

The carriage confirms the programming by the interior lighting flashing and with additional sounds.

Analogue Mode

Analogue mode functions

The tail light and the interior lighting can always be active or deactivated via CV13/14. No functions can be switched in analogue mode. The analogue mode is activated via CV29.



When in the DC analogue mode, the tail light is direction-related. The tail lamp is on if the carriage is pulled and extinguishes if it is pushed.
As the track voltage is too low at lower speeds, the analogue operation only works above ~7V).

We recommend that the analogue mode be deactivated (CV29) when using a brake section.

Function mapping (in accordance with the NMRA standard)

You can allocate one or more functions to a function key with function mapping.

Procedure:

) At the CV, programme both the function key and the value which is next to the function in this line (See table on the next page).

You can combine numerous functions for each function key by adding the values. The grey area is not possible, due to the norm.



Ensure that you do not connect a function to both of the doors (corridor/compartment) as only one side can be opened for mechanical reasons.

Examples:

You want to switch the tail lamp and the interior carriage lighting together with the light button (F0):

In the CV33 line, the tail lamp has the value 1 and the interior carriage lighting has the value 32.

--> Programme the value 33 (1+32) at CV33.

You want to switch the door on the corridor side with F8 and the door on the compartment side with F9:

In the F8 line, the door on the corridor side has the value 8. In the F9 line, the door on the compartment side has the value 2.

You want to open the door pairs of the 3 carriages separately (class 1: F11 & F12, class 1/2: F13 & F14, class 3: F15 & F16) but address all 3 carriages via a single address:

The carriages must be programmed separately.

1st class: in the F11 (CV45) line, the door on the corridor side has the value 1. In the F12 (CV46) line, the door on the compartment side has the value 2.

1st/2nd class: in the F13 (CV47) line, the door on the corridor side has the value 64. In the F14 (CV48) line, the door on the compartment side has the value 128.

2nd class: in the F15 (CV49) line, the door on the corridor side has the value 64. In the F16 (CV50) line, the door on the compartment side has the value 128. Connect the conductor's whistle which was previously at F16, to F19: CV53 --> 8

Functionmapping-Tabelle

CV	Function key	Function							
		Door compartment side	Door corridor side	Interior carriage lighting	Conductor announcement	Conductor whistle		Tail lamp block	Tail lamp
33	F0 light forwards	128	64	32	16	8	n.u.	2	1*
34	F0 light reverse	n.u.	n.u.	n.u.	n.u.	n.u.	n.u.	2	n.u.
35	F1	128	64	32	16	8	n.u.	2	1
36	F2	128	64	32	16	8	n.u.	2	1
37	F3	128	64*	32	16	8	n.u.	2	1
38	F4	16*	8	4	2	1			
39	F5	16	8	4	2	1			
40	F6	16	8	4	2	1			
41	F7	16	8	4*	2	1			
42	F8	2	8	4	2	1			
43	F9	2	1						
44	F10	2	1						
45	F11	2	1						
46	F12	2	1						
47	F13	128	64	32	16	8	n.u.	2	1
48	F14	128	64	32	16	8	n.u.	2	1
49	F15	128	64	32	16	8	n.u.	2	1
50	F16	128	64	32	16	8*	n.u.	2	1
51	F17	128	64	32	16*	8	n.u.	2	1
52	F18	128	64	32	16	8	n.u.	2*	1
53	F19	128	64	32	16	8	n.u.	2	1
54	F20	128	64	32	16	8	n.u.	2	1
		*Default		n.u. = not used					

Warnings and instructions



The doors must be actively closed by the operator using the preset command F03 or F04. They do not close automatically when the train departs!

No liability can be assumed for any damage resulting from the train departing when the doors are open (hazard spots are when trains encounter each other in curves, tunnel portals, overhead line masts, etc.!).

A carriage with open doors is 25mm wider when measured from the track centre (permissible clearance gauge in the width from the centre of the track pursuant to NEM301: 20mm) , the projection measuring 32mm in the outer curves with a R2 radius!

Troubleshooting table for the carriages

Fault Pattern	Action
Carriage does not react: neither the doors nor the interior lighting.	Check the carriage address. Programme the value 8 at CV8 in order to reset the settings to the delivery state.
Doors do not open, no door sound.	Programme the value 7 at CV7 in order to reset the <u>hardware</u> to the delivery state.
One door functions, the other does not.	Programme the value 7 at CV7 in order to reset the <u>hardware</u> to the delivery state.
The doors do not open, door sounds audible, engine audible.	Defective gear.
Tail lamp flickers.	Compare the running steps of your centre with the setting in CV29.

- 1) "Märklin" is the registered trademark of the Gebr. Märklin & Cie. GmbH Göppingen
- 2) „Motorola" is the registered trademark of the Motorola Inc., Tempe-Phoenix (Arizona/USA)