DCC Accessory decoder PRO RB 4400

Contents

Introduction:

RB 4400 is a universal DCC accessory decoder that can operate in three following modes: mode for controlling different types of semaphores, mode for turnout controlling (via MTB motors and/or coil drivers), and mode for controlling LED lighting and servos.

Basic functions:

- **Easy configuration ⚙ via RailBOX: Railroad Control (see more here)**
- **Supports Railcom ® protocol**
- **Ability to manually program the decoder using a button and a potentiometer**
- **Possibility to add external power supply of the decoder up to 24V voltage, which recommended to avoid excessive load on the DCC Command station**
- **Overload protection at all outputs**
- **Possibility of independent configuration of outputs within each decoder mode**
- **SmartLED function – status indicator that shows the status of the last switched output including semaphore signals**

1. Semaphore mode: upper status LED (STS) - GREEN

a) slave mode (lower status LED (STS) is OFF): supports 4 semaphores (1-5 aspects) and 4 shunting semaphores (2 aspects, 5V output voltage)

b) slave mode (lower status LED (STS) is WHITE): supports 4 semaphores (1-5 aspects) with external triggers of a signal S1 (red)

2. Turnout mode: upper status LED (STS) - BLUE

a) slave mode (lower status LED (STS) is OFF): supports 10 motor drive outputs (MTB or coil) and 8 drive position control inputs (2 drives have no position control capability)

b) slave mode (lower status LED (STS) is WHITE): supports 10 motor drive outputs (MTB or coil) and 8 electrical turnout polarity outputs (2 drives have no ability to connect a polarized turnout)

3. LEDs and Servo mode: upper status LED (STS) - YELLOW

a) slave mode (lower status LED (STS) is OFF): supports 20 outputs for LEDs and 8 outputs for servos

b) slave mode (lower status LED (STS) is WHITE): supports 20 outputs for LEDs and 8 outputs for high voltage relays

Technical parameters:

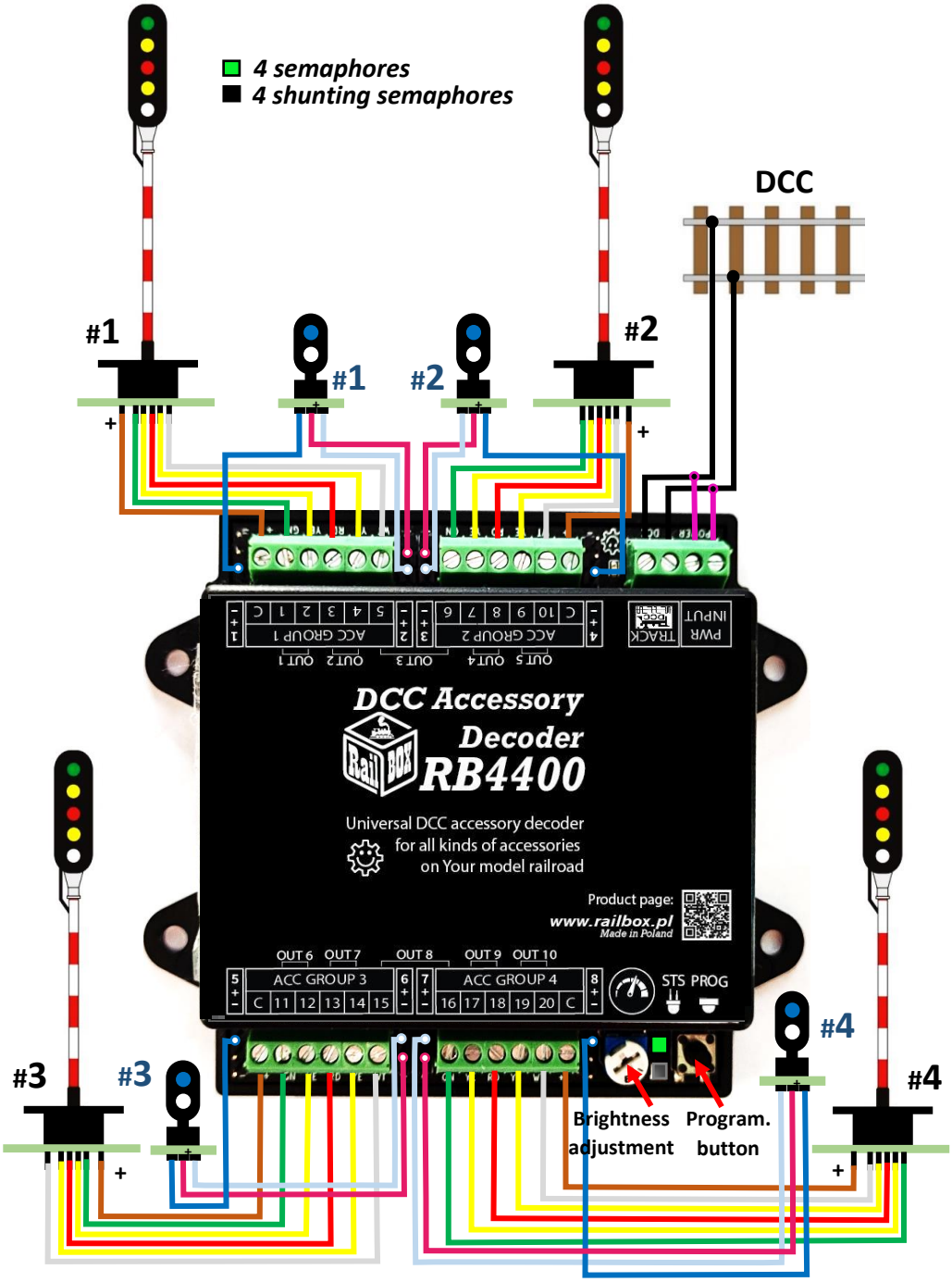
- **Decoder dimensions-88 x 104 x 22 mm.**
- **Power supply: 7-20 V AC / DC.**
- **Maximum output load-2.5 A, all outputs-5A**
- **Maximum 5V pin outputs load: 1A**
- **Resistance of a built-in output resistor for pin 1-8: 1 kOhm**

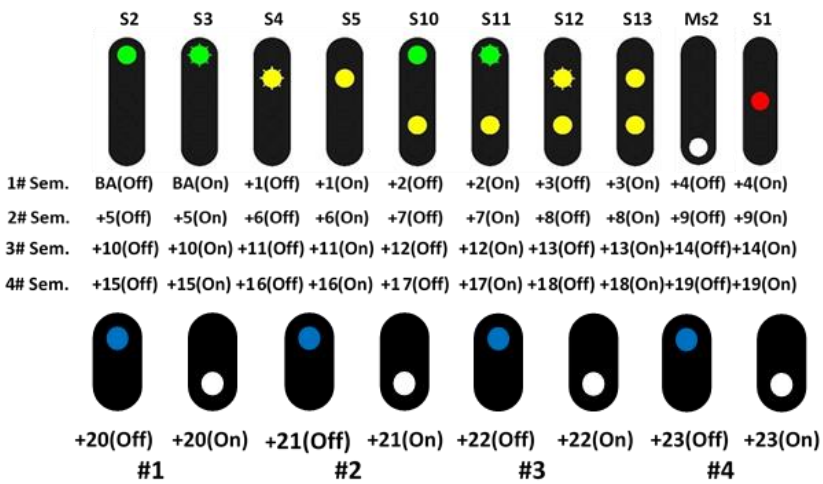
RB4400 decoder connectors description and accessories connecting

The connection of accessories to RB4400 decoder must be done in accordance with the selected operating mode as described on the pictures below. Decoder programming and accessories configuration, see here.

Semaphore mode: connection, capabilities

Note: in Semaphore mode, the use of external power is not mandatory, make the wire bridging according to the schematics and use only the power from the DCC bus. Semaphores on the diagrams have an exemplary appearance, add the appropriate resistors on the outputs of the decoder, if they are not built into the semaphore by default. Detailed instructions for connecting semaphores search on the website of their manufacturers. The potentiometer in this mode is used to adjust the brightness of the switched-on semaphore signals.





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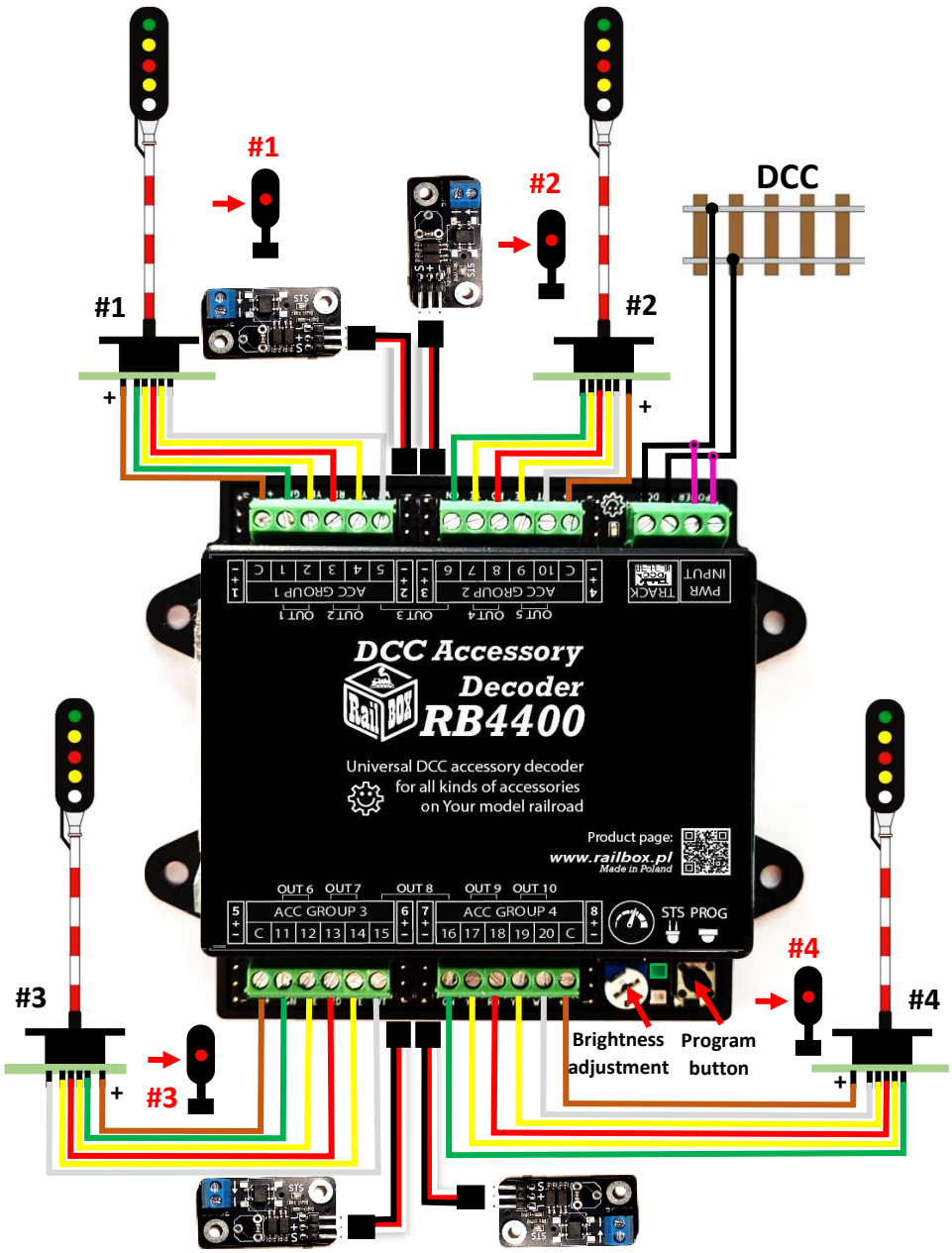
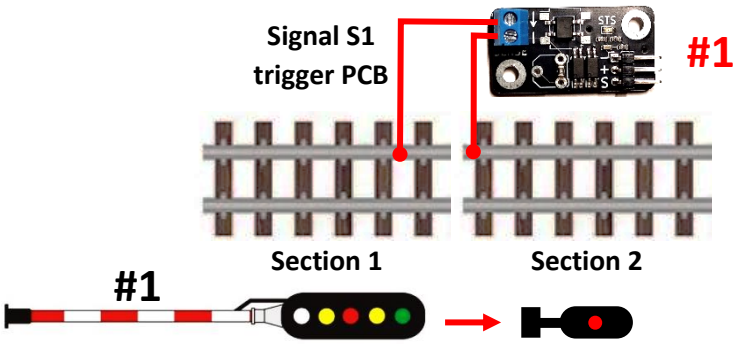
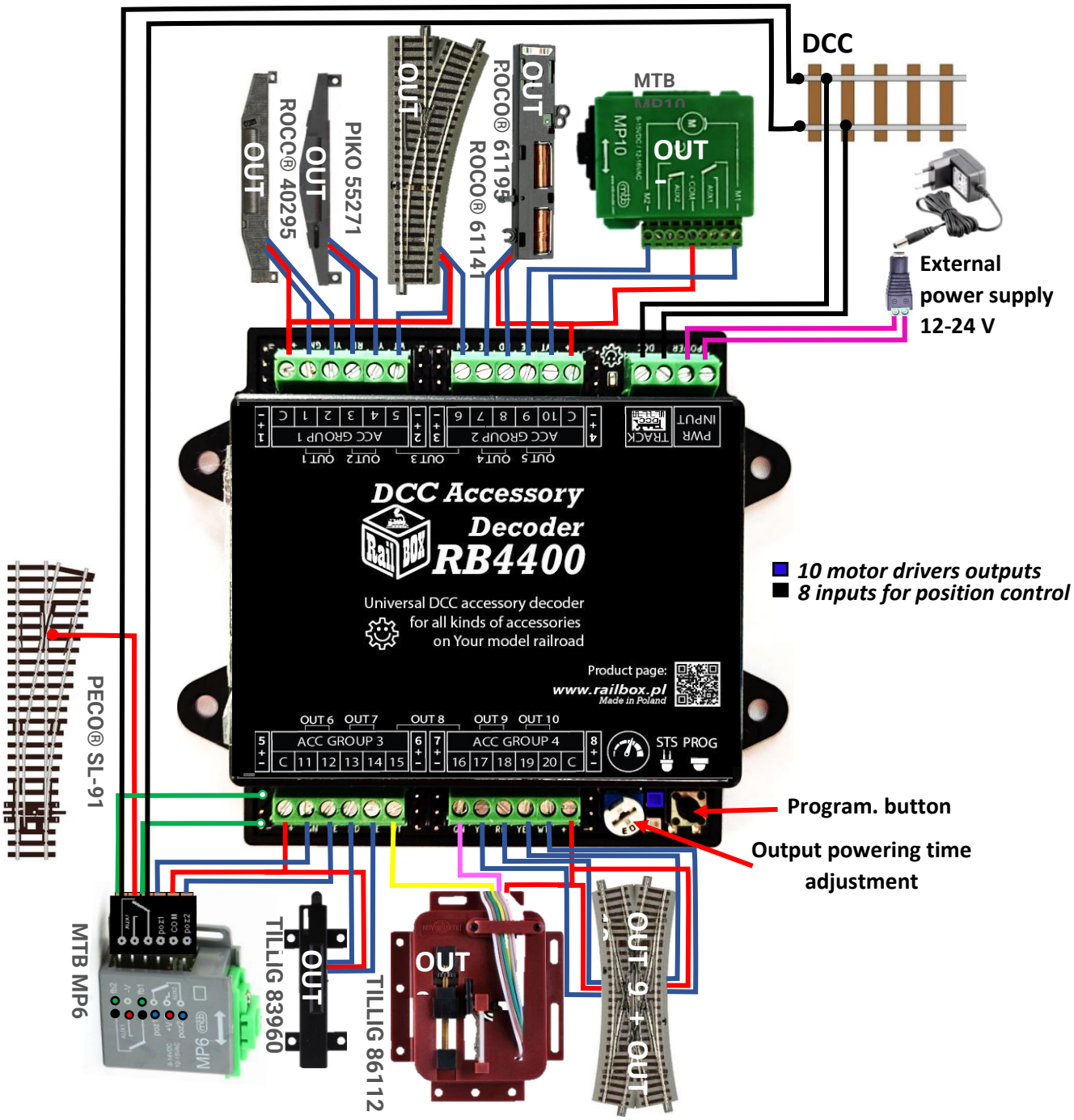


The signal S1 trigger PCB acts as a track occupancy sensor, after driving train from Track section 1 (place the semaphore here) to track section 2 (Connect the sensor in between), the red signal (S1) will be automatically turned on. Connecting the S1 signal trigger to the tracks:



Turnout mode: connection, capabilities

Note: In turnout mode, it is recommended to use an additional external power supply (12-24V) to avoid excessive load on the DCC Command station. The drives on the pictures have an exemplary appearance it can be any MTB motor drives in DCC systems, as well as coil motor drives for railroad turnouts on the model railroad (Roco ®, PIKO ®, Tillig ®). Look for detailed instructions of connecting drives on the website of their manufacturers. The potentiometer in this mode is used to adjust the maintenance time of the selected output (the time for which this output will be powered in one or the other polarity)



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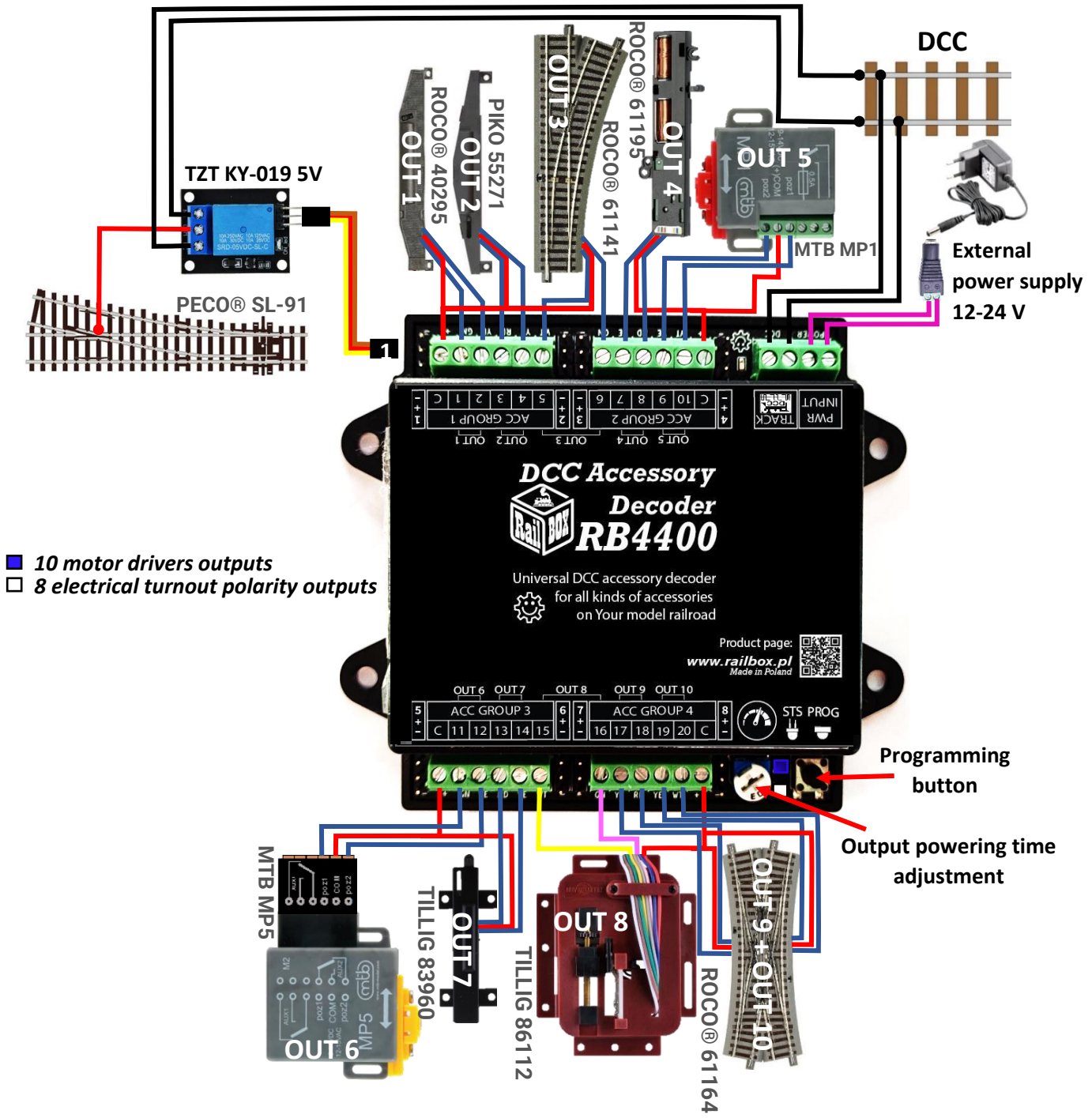
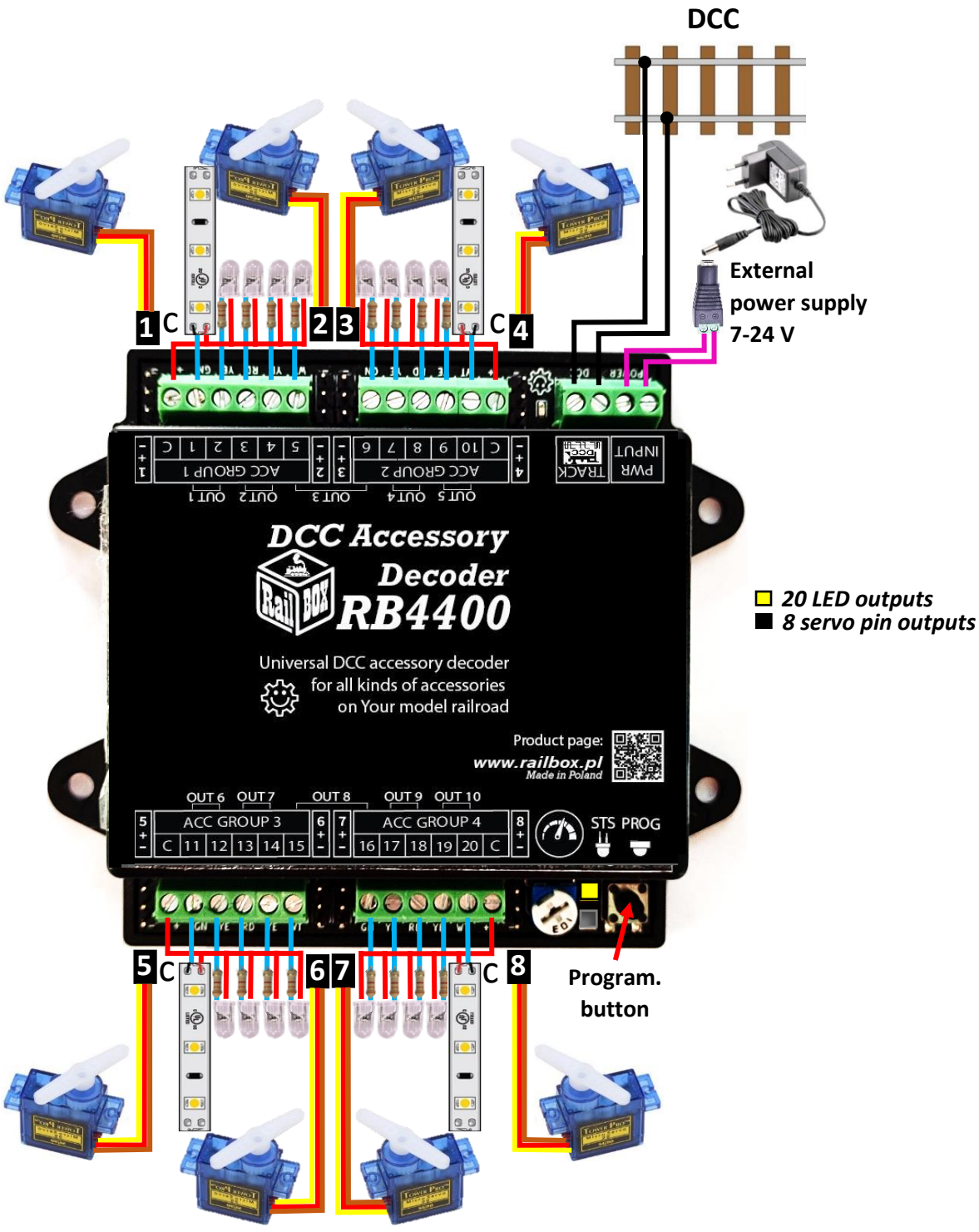
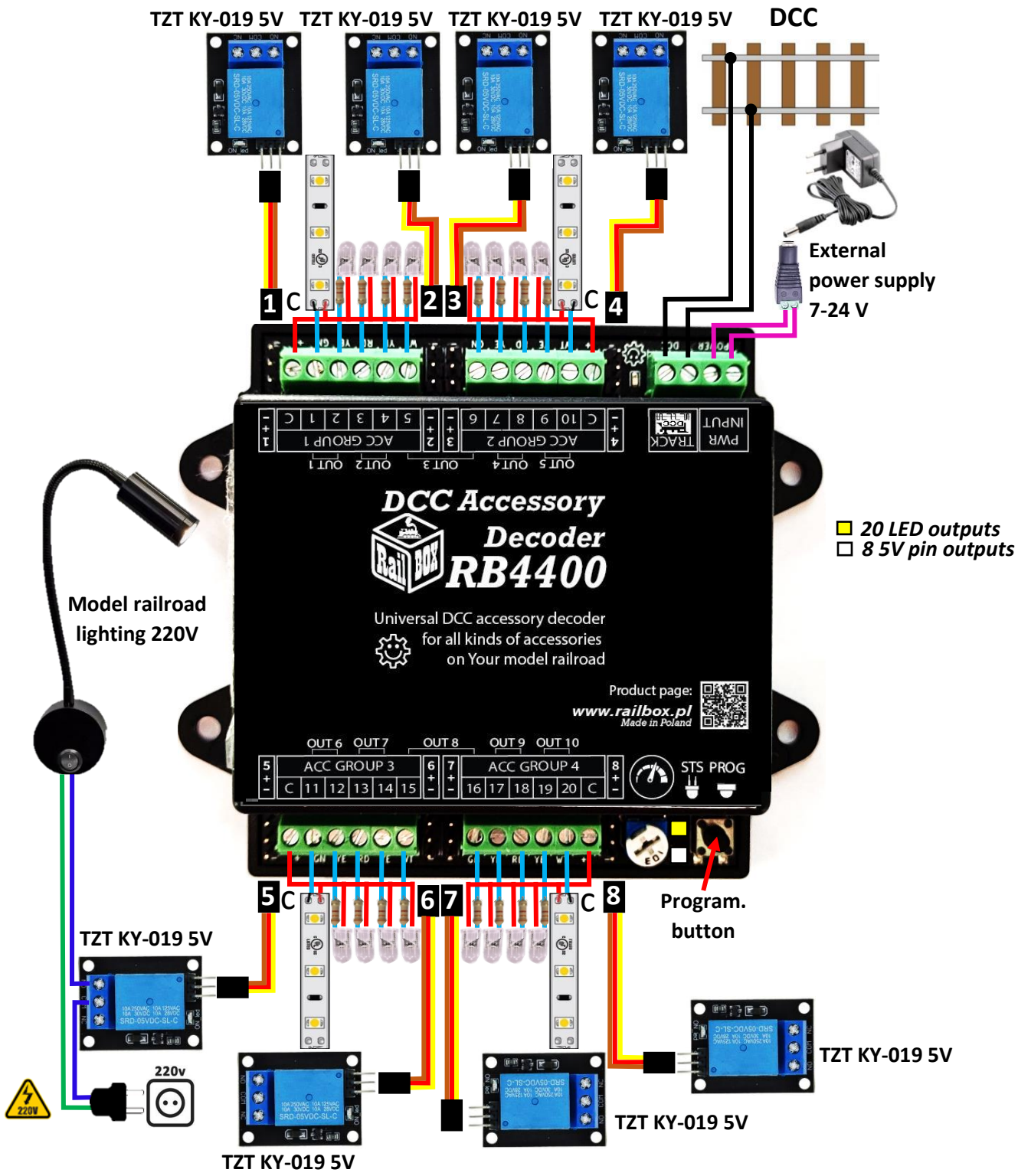


LED + servo mode: connection, capabilities

Note: In LED + servo mode it is also recommended to use an additional external power supply (12-24V) to avoid excessive load on the DCC Command station. To the screw connector outputs 1-20 you can connect LEDs (then also add resistors) or ready-made LED strips with built-in resistors. For PIN outputs 1-8, depending on the selected sub-mode, you can connect servos (lower STS LED is OFF) or 5V relays for setting the 220V lighting for your model railroad (lower STS LED is WHITE)



Note: Potentiometer in this mode does not change the brightness of the LED or the position/speed of the servos. Configure accessories in this mode by CV, more details here.



Note: When connecting 220V high voltage lighting, be extra careful, or use a professional's help!

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RB 4400 decoder programming and accessory configuring

Connection with RailBOX: Railroad Control mobile app

This symbol means "Easy configuration". All RailBOX products with this ⚙ symbol on the board or sticker on the case allows two-way communication (Railcom ® protocol) with command stations with a Railcom ® receiver:

- **Automatic detection of new decoders connected to the tracks and the ability to automatically assign the address to the decoder (only with ⚙ Command station, e.g., WiFi Command Station RB 1110)**
- **Ability to read and write configuration variables (CV) at any time on the main track (PoM)**

Owners of RailBOX decoders with the symbol ⚙ and the RB 1110 Command station no longer have to worry about manual address programming for RailBOX accessory, wagons and loco decoders, just connect a new device to the tracks and the system itself will automatically find the next free address and assign it to the decoder. After that, in the mobile app RailBOX: Railroad Control will automatically appear a new loco, or accessory already with the specified address. In the case of semaphore will only need to move them to the appropriate place on the map in the mobile app RailBOX: Railroad Control. More information about this system **see here**

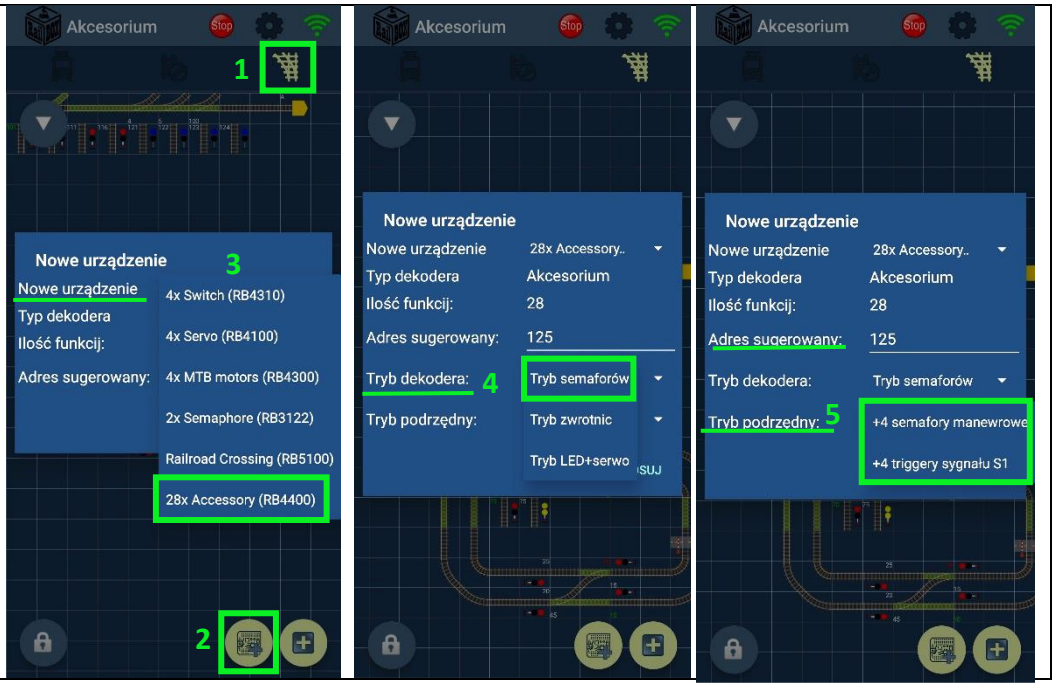
Add this decoder in mobile app RailBOX: Railroad control

Note: If you do not have the RB 1110 Command station and/or there is no ⚙ symbol on the decoder, you can also quickly add the decoder on the map in RailBOX: Railroad control mobile app. Connect your own command station with attached decoder to it to our mobile app and follow the instructions as on above image and further instructions in the app as described in tables below, also watch a detailed tutorial here

Semaphore mode: programming via RailBOX: Railroad control mobile app

The first way: by adding RB 4400 decoder on the map

- Connect RB 4400 decoder to the DCC Command station and connect with app via WiFi
1. Go to the "Accessory" tab
2. Press The "New Device" button at the bottom of the map
3. In the shown window, select the device type- " 28x Accessory (RB4400)"
4. Select the mode of operation of the decoder- "Semaphore mode"
5. Select the slave mode of the decoder, depending on the accessories that you plan to use. Also, here you can change the address - "suggested address" Then click "Apply"



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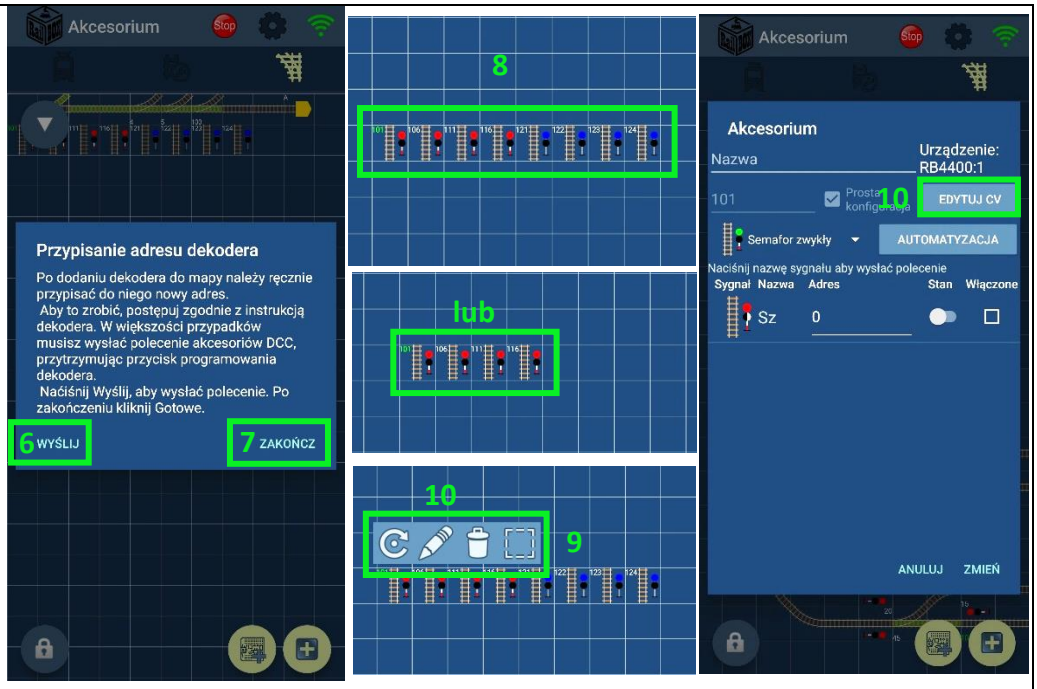
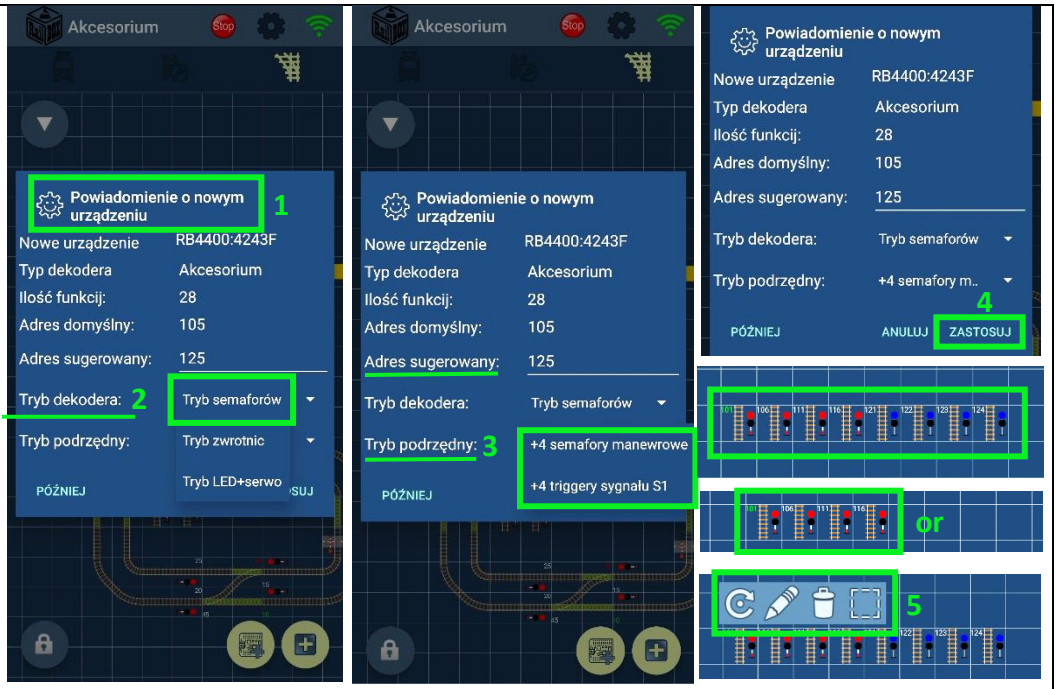
6. Shortly press the program. button on the decoder, then press "Send" in the window, then the STS LED blinks white, setting the selected mode of the RB 4400 decoder
7. Then press "Finish"
8. On the map should appear 4 semaphores + 4 shunting sem. (Or only 4 semaphores if you chose the slave mode "4 signal S1 triggers ")
9. By long pressing on any of these semaphores, you will see options for editing this map element
10. Press the "Pencil" icon if you want to edit the variables (CV) of the decoder and / or other options



Second way: „RailBOX Easy configuration⚙" (Choose this way, if you have RB 1110 Command station)

- Connect decoder RB 4400 to RB 1110 Command station and connect it to the RailBOX Railroad control app via WiFi
1. The "new device notification" window will appear
2. Select the mode of operation of the decoder- "Semaphore mode"
3. Select the slave mode of the decoder, depending on the accessories you plan to use. Also, here you can change the address - "Suggested address"
4. Press "Apply", then on the map you'll see new elements
5. Edit as described in Method 1 above



Semaphores configuration:

To change the brightness of the semaphore signals, select the same signal on all connected semaphores (e.g. all red (S1)), then use the potentiometer on the decoder to determine the right brightness. Then select a different signal on all connected semaphores (e.g. all double yellow (S13)) and repeat the configuration through the potentiometer. Configuration of shunting semaphores and other options (e.g. signal on/off smoothness) can be determined by changing the corresponding CV in the decoder's editor.

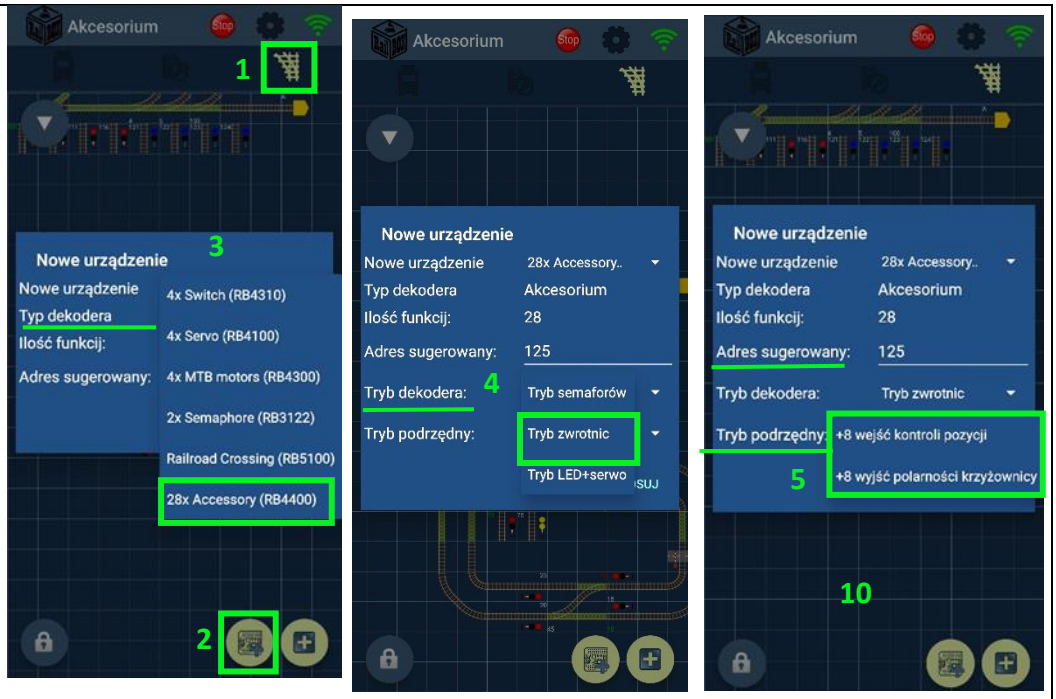
Turnout mode: programming via RailBOX: Railroad control mobile app

The first way: by adding RB 4400 decoder on the map

- Connect RB 4400 decoder to the Command station and connect it to the app via WiFi

1. Go to the tab "Accessory"
2. Press the "New Device" button at the bottom of the map
3. In the shown window, select the decoder type- " 28x Accessory (RB4400)"
4. Select the mode of operation of the decoder- "Turnout mode"
5. Select the slave mode of the decoder, depending on the accessories you plan to use. Also, here you can change the address - "Suggested address"

Then click "Apply"



6. Shortly press the programming button on the decoder, then press "send" in the window, then the STS LED will blink white, setting the selected mode of the RB 4400 decoder
7. After, press "Finish"
8. There should appear 10 turnouts on the map.
9. Long pressing on any of these turnouts, you will see editing options
10. Press the "Pencil" icon if you want to edit the variables (CV) of the decoder and / or other options

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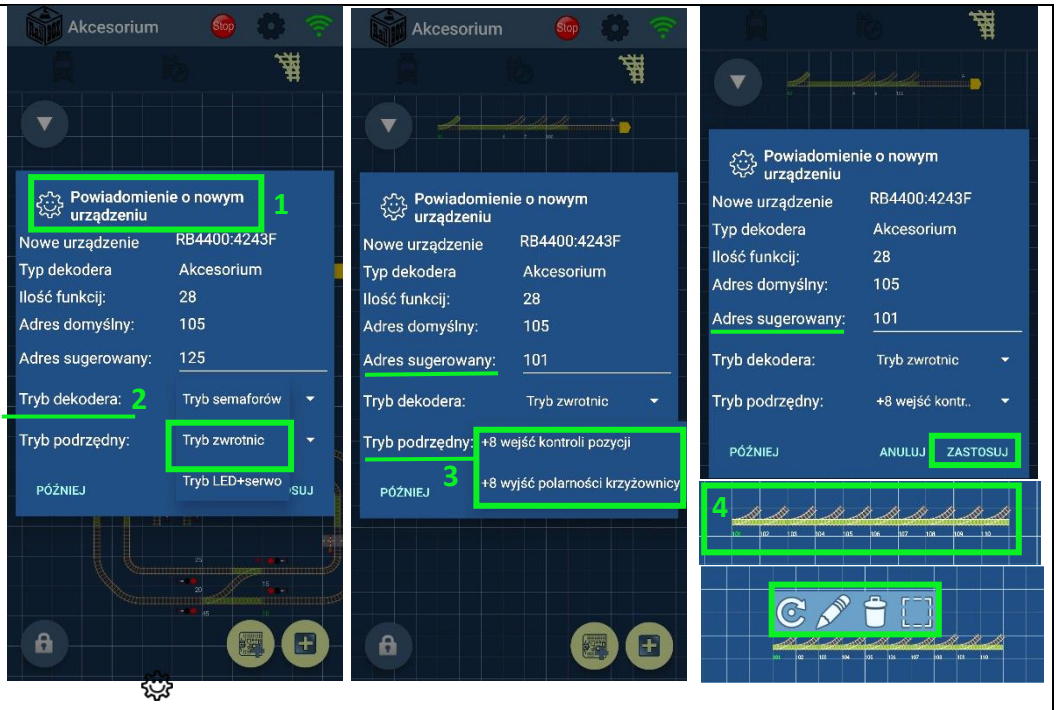
Second way: „RailBOX Easy configuration ⚙" (Choose this way, if you have RB 1110 Command station)

- Connect decoder RB 4400 to RB 1110 Command station and connect it to the RailBOX Railroad control app via WiFi 1. The "new device notification" window will appear 2. Select the mode of operation of the decoder- "Turnout mode" 3. Select the slave mode of the decoder, depending on the accessories you plan to use. Also, here you can change the address - "Suggested address" 4. Press "Apply", then on the map you'll see new elements 5. Edit as described in Method 1 above	

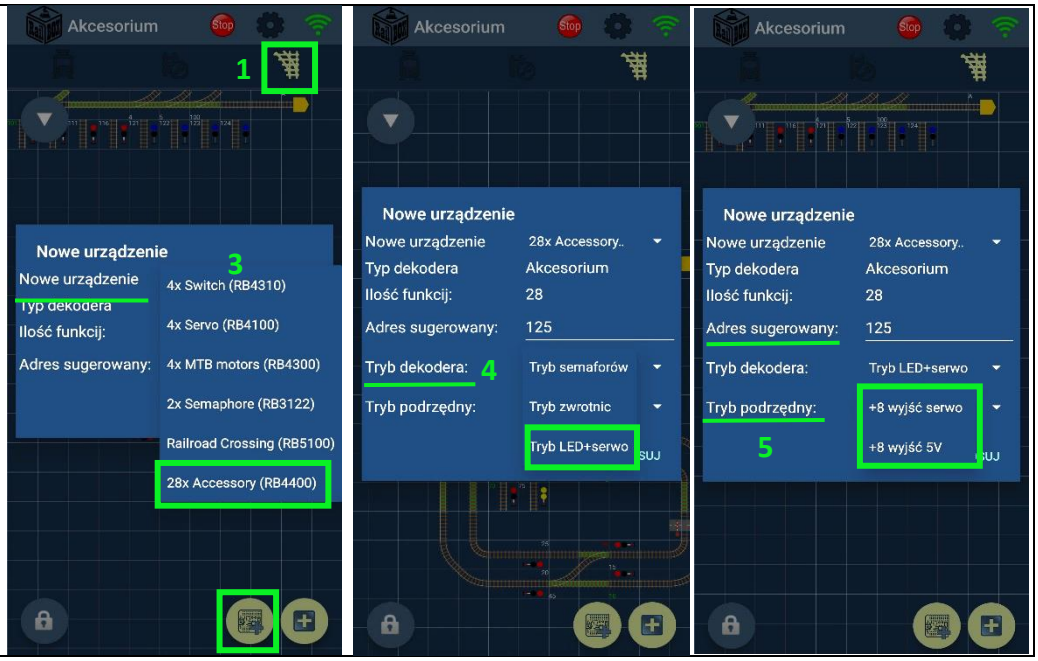
Motor drives configuration:

In this mode, you can use different types of drives (eg. MTB or coil type; **not suitable for bipolar type motors (e.g.Conrad).** To determine the maintenance time of the motor drive output, first switch the turnout you intend to configure, then use the potentiometer on the decoder to determine the correct time (**maximum for MTB or minimum for coil motor drives**). For each of the motor drives, the time can be different, which allows you to use different types of motor drives at the same time. Similarly, all variables, including the maintenance time of the output, can be determined by changing the corresponding CVs in the decoder editor.

LED + servo mode: programming via RailBOX: Railroad control mobile app

The first way: by adding RB 4400 decoder on the map

- Connect RB 4400 decoder to the Command station and connect it to the app via WiFi
1. Go to the tab "Accessory"
2. Press the "New Device" button at the bottom of the map
3. In the shown window, select the decoder type- " 28x Accessory (RB4400)"
4. Select the mode of operation of the decoder- "LED + servo"
5. Select the slave mode of the decoder, depending on the accessories you plan to use. Also, here you can change the address - "Suggested address" Then click "Apply"

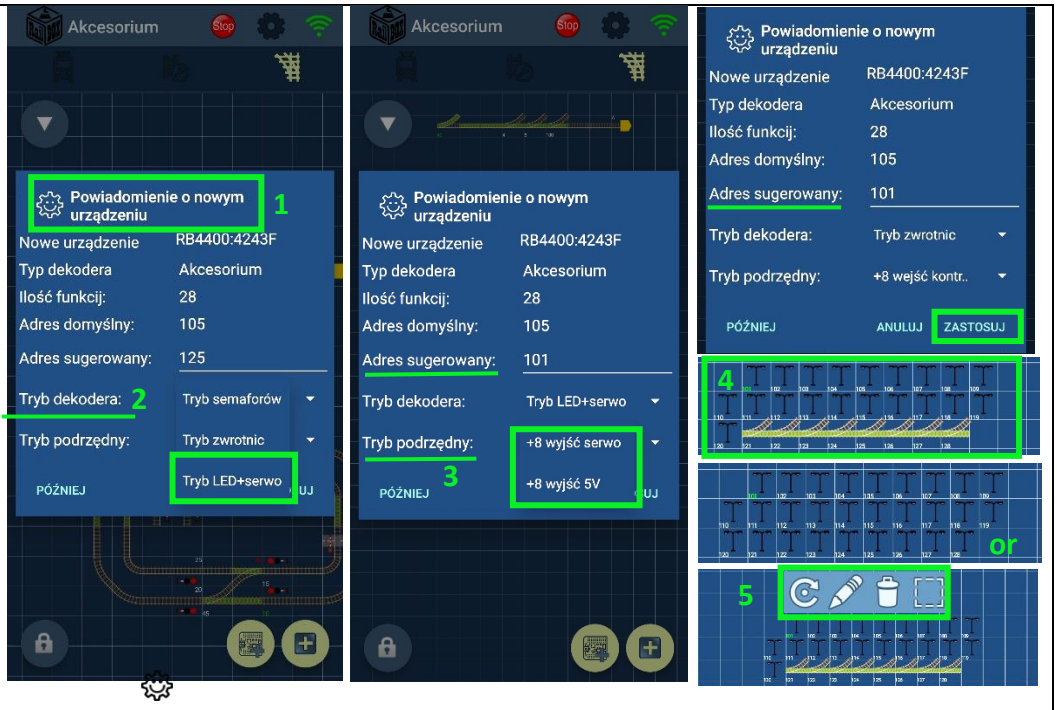


6. Shortly press the programming button on the decoder, then press "send" in the window, then the STS LED will blink white, setting the selected mode of the RB 4400 decoder
7. After, press "Finish"
8. There should appear 10 turnouts on the map.
9. Long pressing on any of these turnouts, you will see editing options
10. Press the "Pencil" icon if you want to edit the variables (CV) of the decoder and / or other options

Second way: „RailBOX Easy configuration ⚙" (Choose this way, if you have RB 1110 Command station)

Connect decoder RB 4400 to RB 1110 Command station and connect it to the RailBOX Railroad control app via WiFi

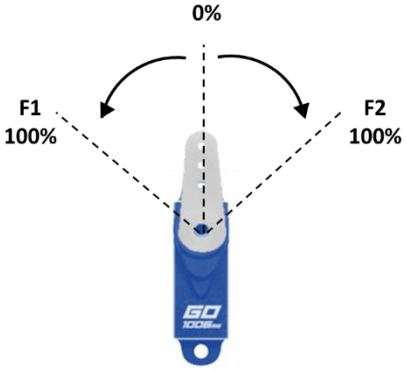
1. The "new device notification" window will appear
2. Select the mode of operation of the decoder- "LED + servo mode"
3. Select the slave mode of the decoder, depending on the accessories you plan to use. Also, here you can change the address - "Suggested address"
4. Press "Apply", then on the map you'll see new elements
5. Edit as described in Method 1 above



Servo configuration:

If you have selected the slave mode "+8 Servo outputs" to configure the servo, repeat the following steps:

- Enter configuration mode: press the programming button on the decoder until the WHITE top STS LED is turned on.
- Use the manipulator/mobile application to switch turnout that corresponds the output of the servo that you intend to configure
- Create a locomotive with the address 9999 in the manipulator / mobile application and make sure that all functions are disabled
- Turn on F1 to configure the left position of the servos. The servo position can be changed by changing the speed of this locomotive. Then turn off the F1 function to save the configuration in the decoder's memory.
- Enable F2 to configure the right position and then proceed as described above
- To change the movement speed of the servo, use the F5 function. In order to save all configurations, you must always disable functions after the change.



- To finish configuring the servos, press and hold the decoder's programming button again until the upper WHITE STS LED is turned OFF and turns YELLOW again to indicate the selected mode.
- Other options and variables, including LED brightness, you can set by changing the appropriate CV in the decoder's editor.

RB4400 manual programming and configuration of accessories

The RB 4400 accessory decoder can also be programmed manually using the button on the decoder and the manipulator (e.g. Multimaus) for address programming and chosen accessories.

1. First, choose the correct mode of the decoder, depending on the accessories that you are going to connect (for a detailed description of the modes, see here and on the connection schemes).
   - By default, the decoder is in Semaphore mode (top STS LED is GREEN).
   - To switch to Turnout mode, long press the PROG button until you see the top STS LED change color to BLUE.
   - If you want to switch to LED+Servo mode, press the PROG button again until the upper STS LED turns YELLOW
2. While in the appropriate decoder mode, shortly press the PROG button (upper STS LED is WHITE)
   - Send a command via the manipulator, switching the "turnout" at the selected address (the upper STS LED briefly blinks white, after which the STS LEDs will indicate the status of the recently switched output)
   - The base address will be assigned to output 1 of the decoder, the remaining outputs will be assigned automatically to subsequent addresses
3. If you plan to use the decoder in one of the other slave modes, change CV112 value to the appropriate one:

   0-semaphore Mode (4 regular + 4 shunting),
   16-semaphore Mode (4 regular + 4 S1 signal triggers),
   1-crossover mode (10 crossover + 8 position control inputs),
   17-crossover mode (10 crossover + 8 crossover polarity outputs),
   2-LED+Servo mode (20 LED outputs + 8 servos),
   18-LED mode+Servo (20 LED outputs + 8 5V outputs)

   - Connect the appropriate accessories to the appropriate outputs of the decoder and check their operation at the programmed "turnouts" addresses. Use the CV table below to fully configure your accessories

CV configuration table

CV	Value	Default value	Description
1	1..255	0	Address (lower byte): Decoder address (CV1 i CV9)
7	0..255		Software version
8	0..255	13	Manufacturer ID / Decoder reset: Manufacturer code / Write value 1 to reset decoder to factory settings
9		0	Address (higher byte): Decoder address (CV1 i CV9)
28	bit		Railcom Configuration
	1	1	Enabling the second channel CH2: 0-off, 1-on
	7	1	Enable automatic detection system : 0-off, 1-on
29	bit		Decoder configuration 1

CV	Value	Default value	Description
	3	1	RailCom : 0-disabled, 1-enabled
	6	1	Address type: 0-Not supported, 1-Output address
	7	1	Accessory decoder: 0-Not supported, 1-yes
33	0..255	100	Flashing period 1: Flashing period 1 (value x 10 msec)
34	0..255	100	Flashing period 2: Same as CV33
35	0..255	10	Light intensity fade in time 1
36	0..255	10	Light intensity fade in time 2
37	0..255	100	Speed, output Pin1: Speed, output 1 (100 – full rotation in 1s, 50 – full rotation – 0,5s)
38	0..255	100	Speed, output Pin2: Same as CV37
39	0..255	100	Speed, output Pin3: Same as CV37
40	0..255	100	Speed, output Pin4: Same as CV37
41	0..255	100	Speed, output Pin5: Same as CV37
42	0..255	100	Speed, output Pin6: Same as CV37
43	0..255	100	Speed, output Pin7: Same as CV37
44	0..255	100	Speed, output Pin8: Same as CV37
45	0..255	1	Own sequences step time period
51	0..255	10	Turnout driver moving time 1: Turnout driver moving time (*10 ms). Set this value greater than the actual moving time for proper operation. Default value 100ms
52	0..255	10	Turnout driver moving time 2: Same as CV51
53	0..255	10	Turnout driver moving time 3: Same as CV51
54	0..255	10	Turnout driver moving time 4: Same as CV51
55	0..255	10	Turnout driver moving time 5: Same as CV51
56	0..255	10	Turnout driver moving time 6: Same as CV51
57	0..255	10	Turnout driver moving time 7: Same as CV51

CV	Value	Default value	Description
58	0..255	10	Turnout driver moving time 8: Same as CV51
59	0..255	10	Turnout driver moving time 9: Same as CV51
60	0..255	10	Turnout driver moving time 10: Same as CV51
61	0..7	0	Semaphore number setting for common signal #1: Semaphore number setting for common signal #1. Set here semaphore number (ACC group) on which common signal from CV 62 will be set.
62	0..11	10	Common signal #1 setting: Common signal #1 setting for several semaphores: 0 – S2, 1 – S3, 2 – S4, 3 – S5, 4 – S10, 5 – S11, 6 – S12, 7 – S13, 8 – Sz, 9 – MS2, 10 – S1, 11 – OFF
63	0..255	0	Common signal #1 address setting: Address setting to enable common signal #1 for several semaphores. Set here DCC address, for which common signal from CV 62 will be set. Note: Some DCC Command stations may send accessory addresses that are larger by 4. So if you don't see any action, try typing value that is lesser by 4.
64	0..7	0	Semaphore number setting for common signal #2: Semaphore number setting for common signal #2. Set here semaphore number (ACC group) on which common signal from CV 65 will be set.
65	0..11	10	Common signal #2 setting: Common signal #2 setting for several semaphores: 0 – S2, 1 – S3, 2 – S4, 3 – S5, 4 – S10, 5 – S11, 6 – S12, 7 – S13, 8 – Sz, 9 – MS2, 10 – S1, 11 – OFF
66	0..255	0	Common signal #2 address setting: Address setting to enable common signal #2 for several semaphores. Set here DCC address, for which common signal from CV 65 will be set. Note: Some DCC Command stations may send accessory addresses that are larger by 4. So if you don't see any action, try typing value that is lesser by 4.
67	0..7	0	Semaphore number setting for common signal #3: Semaphore number setting for common signal #3. Set here semaphore number (ACC group) on which common signal from CV 68 will be set.
68	0..11	10	Common signal #3 setting: Common signal #3 setting for several semaphores: 0 – S2, 1 – S3, 2 – S4, 3 – S5, 4 – S10, 5 – S11, 6 – S12, 7 – S13, 8 – Sz, 9 – MS2, 10 – S1, 11 – OFF
69	0..255	0	Common signal #3 address setting: Address setting to enable common signal #3 for several semaphores. Set here DCC address, for which common signal from CV 68 will be set. Note: Some DCC Command stations may send accessory addresses that are larger by 4. So if you don't see any action, try typing value that is lesser by 4.
70	0..7	0	Semaphore number setting for common signal #4: Semaphore number setting for common signal #4. Set here semaphore number (ACC group) on which common signal from CV 71 will be set.
71	0..11	10	Common signal #4 setting: Common signal #4 setting for several semaphores: 0 – S2, 1 – S3, 2 – S4, 3 – S5, 4 – S10, 5 – S11, 6 – S12, 7 – S13, 8 – Sz, 9 – MS2, 10 – S1, 11 – OFF

CV	Value	Default value	Description
72	0..255	0	Common signal #4 address setting: Address setting to enable common signal #4 for several semaphores. Set here DCC address, for which common signal from CV 71 will be set. Note: Some DCC Command stations may send accessory addresses that are larger by 4. So if you don't see any action, try typing value that is lesser by 4.
73	0..1	0	Output/input inversion Pin1: Output/input inversion 1. 0 – no inversion, 1 - inversion
74	0..1	0	Output/input inversion Pin2: Same as CV73
75	0..1	0	Output/input inversion Pin3: Same as CV73
76	0..1	0	Output/input inversion Pin4: Same as CV73
77	0..1	0	Output/input inversion Pin5: Same as CV73
78	0..1	0	Output/input inversion Pin6: Same as CV73
79	0..1	0	Output/input inversion Pin7: Same as CV73
80	0..1	0	Output/input inversion Pin8: Same as CV73
112	0..18	0	Decoder operating mode: Decoder operating mode: 0-semaphore mode (4 regular + 4 shunting), 16-semaphore mode (4 regular + 4 S1 signal triggers), 1-turnout mode (10 turnouts 8 position control inputs), 17-turnout mode (10 turnouts + 8 cross polarity outputs), 2-LED+Servo mode (20 LED outputs + 8 servos), 18-LED mode (20 LED outputs + 8 5V outputs)
121	0..135	0	Lighting effect, output 1: 0: light bulb 1: flashing with frequency 1 (frequency in CV 33) 2: flashing with frequency 1 (inverted) 3: flashing with frequency 2 (frequency in CV 34) 4: flashing with frequency 2 (inverted) 6: First own sequence (CV211 – 223) 7: Second own sequence (CV224 – 236) 9: Servo mode -- Additional effects -- + 16 enables light intensity fade in during time from CV35 + 32 enables light intensity fade in during time from CV36 + 64 enables light intensity fade in during 500 ms + 128 to the CV value will disable own sequence after 1 execution.
122	0..135	0	Lighting effect, output 2: Same as CV121

CV	Value	Default value	Description
123	0..135	0	Lighting effect, output 3: Same as CV121
124	0..135	0	Lighting effect, output 4: Same as CV121
125	0..135	0	Lighting effect, output 5: Same as CV121
126	0..135	0	Lighting effect, output 6: Same as CV121
127	0..135	0	Lighting effect, output 7: Same as CV121
128	0..135	0	Lighting effect, output 8: Same as CV121
129	0..135	0	Lighting effect, output 9: Same as CV121
130	0..135	0	Lighting effect, output 10: Same as CV121
131	0..135	0	Lighting effect, output 11: Same as CV121
132	0..135	0	Lighting effect, output 12: Same as CV121
133	0..135	0	Lighting effect, output 13: Same as CV121
134	0..135	0	Lighting effect, output 14: Same as CV121
135	0..135	0	Lighting effect, output 15: Same as CV121
136	0..135	0	Lighting effect, output 16: Same as CV121
137	0..135	0	Lighting effect, output 17: Same as CV121
138	0..135	0	Lighting effect, output 18: Same as CV121
139	0..135	0	Lighting effect, output 19: Same as CV121
140	0..135	0	Lighting effect, output 20: Same as CV121
141	0..135	0	Lighting effect, output Pin1: Same as CV121
142	0..135	0	Lighting effect, output Pin2: Same as CV121
143	0..135	0	Lighting effect, output Pin3: Same as CV121
144	0..135	0	Lighting effect, output Pin4: Same as CV121

CV	Value	Default value	Description
145	0..135	0	Lighting effect, output Pin5: Same as CV121
146	0..135	0	Lighting effect, output Pin6: Same as CV121
147	0..135	0	Lighting effect, output Pin7: Same as CV121
148	0..135	0	Lighting effect, output Pin8: Same as CV121
151	0..255	255	Maximum brightness, output 1
152	0..255	255	Maximum brightness, output 2
153	0..255	255	Maximum brightness, output 3
154	0..255	255	Maximum brightness, output 4
155	0..255	255	Maximum brightness, output 5
156	0..255	255	Maximum brightness, output 6
157	0..255	255	Maximum brightness, output 7
158	0..255	255	Maximum brightness, output 8
159	0..255	255	Maximum brightness, output 9
160	0..255	255	Maximum brightness, output 10
161	0..255	255	Maximum brightness, output 11
162	0..255	255	Maximum brightness, output 12
163	0..255	255	Maximum brightness, output 13
164	0..255	255	Maximum brightness, output 14
165	0..255	255	Maximum brightness, output 15
166	0..255	255	Maximum brightness, output 16
167	0..255	255	Maximum brightness, output 17
168	0..255	255	Maximum brightness, output 18
169	0..255	255	Maximum brightness, output 19
170	0..255	255	Maximum brightness, output 20
171	0..255	255	Maximum brightness, output Pin1
172	0..255	255	Maximum brightness, output Pin2
173	0..255	255	Maximum brightness, output Pin3
174	0..255	255	Maximum brightness, output Pin4
175	0..255	255	Maximum brightness, output Pin5
176	0..255	255	Maximum brightness, output Pin6
177	0..255	255	Maximum brightness, output Pin7
178	0..255	255	Maximum brightness, output Pin8
181	0..255	0	Minimum brightness, output 1
182	0..255	0	Minimum brightness, output 2
183	0..255	0	Minimum brightness, output 3
184	0..255	0	Minimum brightness, output 4
185	0..255	0	Minimum brightness, output 5
186	0..255	0	Minimum brightness, output 6
187	0..255	0	Minimum brightness, output 7
188	0..255	0	Minimum brightness, output 8

CV	Value	Default value	Description
189	0..255	0	Minimum brightness, output 9
190	0..255	0	Minimum brightness, output 10
191	0..255	0	Minimum brightness, output 11
192	0..255	0	Minimum brightness, output 12
193	0..255	0	Minimum brightness, output 13
194	0..255	0	Minimum brightness, output 14
195	0..255	0	Minimum brightness, output 15
196	0..255	0	Minimum brightness, output 16
197	0..255	0	Minimum brightness, output 17
198	0..255	0	Minimum brightness, output 18
199	0..255	0	Minimum brightness, output 19
200	0..255	0	Minimum brightness, output 20
201	0..255	0	Minimum brightness, output Pin1
202	0..255	0	Minimum brightness, output Pin2
203	0..255	0	Minimum brightness, output Pin3
204	0..255	0	Minimum brightness, output Pin4
205	0..255	0	Minimum brightness, output Pin5
206	0..255	0	Minimum brightness, output Pin6
207	0..255	0	Minimum brightness, output Pin7
208	0..255	0	Minimum brightness, output Pin8
211			First own sequence, beginning: First own sequence CV211-CV223 write one byte of sequence at a time ---------- 1 Factory sequence ---------- 0xB5, 0xFD,0x6F, 0xF7, 0xB5,0xFD,0x6F,0xF7,0xB5,0xFD,0x6F,0xF7,0xB5
223			First own sequence, end
224			Second own sequence, beginning: Second own sequence CV224-CV236 write one byte of sequence at a time ---------- 2 factory sequence ---------- 0xC7, 0x9F, 0xFF,0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF, 0xFF,0xFF
236			Second own sequence, end