BREDA ALn 56 – 556 Os.Kar International

Table des matières

These instructions will evolve to meet the needs of model makers. If you have any questions about how to set up our decoders, please contact us by e-mail at **digital@distrimodel.com**. *If the answers are worth adding to these instructions, we will produce a new version of the document. For this reason, these instructions are only available for downloading from the Internet, to ensure that the latest version is always available.*

In this manual, you can make a note of your personal CV settings to help you remember them.

The factory settings are also indicated to save you having to completely reset the decoder.

Locomotive data sheets for Z21 can be downloaded from our website or from your specialist dealer.

All you need to do is change the driving address.

Current version: 1.1 of 6 April 2024

BREDA ALn 56 – 556 Os.Kar International

1. Introduction

You have in your possession a non-sound decoder from the manufacturer ESU specifically set up by DISTRIMODEL for the BREDA ALn 56 -556 in HO scale from Os.Kar International. This programming is only compatible with OS.KAR INTERNATIONAL productions for which DISTRIMODEL has designed the electronic boards.

This manual complements the corresponding ESU manual and the other documents for our productions.

We recommend that you read the functions offered by our programming very carefully. It differs from the programming for other makes of model aircraft.

We have analysed the decoder manufacturers' manuals and the NMRA and NEM standards. Our programming is therefore optimised for both silent and sound versions. In addition, users of a ROCO Z21 multiMAUS system have access to the main functions from F0 to F10.

2. Our programming features

2.1. Operating mode: F3 and F4

The standard and the instructions for the various brands of digital decoder require functions **F3** and **F4** for half speed and deactivation of the acceleration and braking timers.

F4 corresponds to "half speed". Version 5 of the ESU decoders allows this speed to be set precisely. We have therefore set the speed limit at **30 km/h as in reality**.

In addition to these settings, the standard also allows the auxiliary lighting outputs to be used for these functions. By activating **F3 and F0**, you will have the manoeuvring lanterns: 2 white lanterns on each side.

If you activate **F1 without activating F2**, only the whites at end 2 are activated, which is useful for pushing a train back into a junction as in reality.

If you activate **F2 without activating F1**, only the whites at end 1 are activated, which is useful for pushing a train into a junction as in reality.

2.2. Headlights / full headlights or "spotlights": F7

Generally, **F7** or even **F6** can be used to dim the lighting. We set F7 to dim the 2 horizontal white lanterns at each end ("Front light" or FL at end 1 and "Rear light" or RL at end 2).

2.3. Lights off at one end: F1 or F2

Our electronic mother boards comply with the standardisation of odd-numbered auxiliary outputs (FL, FA1, FA3 and FA5) on the odd-numbered end (1) and even-numbered auxiliary outputs (RL, FA2, FA4 and FA6) on the even-numbered end (2).

By activating **F0**, the 2 ends are active. You have whites at one end and reds at the other. By adding F1 (**F0 + F1**), only end 2 remains active. You now have whites or reds on side 2 only.

By adding F2 (**F0 + F2**), only end 1 remains active. You now only have whites or reds on side 1.

If you add both F1 and F2, (**F0 + F1 + F2**), both ends remain off.

2.4. Driver's cab lighting digital only: F5

The driver's cabs can be illuminated according to the direction of travel.

The **F5 key lights up cab 1** (end 1) when you are driving with end 1 in the lead. A timer is activated for automatic switch-off when you start moving forward. Conversely, the **F5 key lights up cab 2** (end 2) when you are driving with end 2 in the lead. A timer is activated for automatic switch-off when you start moving forward. **By combining F4 + F5** (during the manoeuvre), both (2) cabs are switched on and the automatic switch-off while driving is deactivated.

2.5. Light Alert Signal or SAL : F20

In real life, if there is an incident on the line, the driver presses the alert button. A continuous sound signal is heard on the radio. This signal is received by all the trains in the radio sector where the faulty train is located. The drivers activate the flashing lights and stop their trains. The dispatcher then takes over to identify the train that issued the alert, to determine the type of incident (breakdown, level crossing fault, accident, etc.) and then which trains can set off again and which must remain stopped.

On your miniature network, you can also encounter incidents on the line. **Rather than making an emergency stop that could cut the general power supply to your tracks, by pressing F20, your model train will make an emergency stop if it is moving or remain stationary if it is stopped**. The 2 horizontal white lanterns flash if F0 is activated and the end is activated (F1 and/or F2 not activated).

2.6. The "parking" mode at the terminus station: F17

In some cases, a train may be immobilised on a siding with the reds lit at both ends. This is the case when the driver has to change sides at the terminus of the line. Function **F17 key** enables you to switch on the reds and stop your train only if you are already at a standstill. F17 has no effect if your train is moving.

2.7. VL80, VL100, VL120 speed gears: F18 and F19

Versions 5 of the ESU decoders provide real-life operation. For example, it is possible to set speed modes corresponding to a speed limiter. Function keys **F18 and F19** are used to activate these different speed limits. Note that the lowest speed is always taken into account. By default, your railcar is limited to 100 km/h. Activating **F19 without activating F18** allows you to reach the maximum speed of your railcar, i.e. 120 km/h.

3. CV 29 settings

This configuration variable allows you to specify what you allow for your locomotive.

				usine	**moi**
Normal direction of travel	0	1	**Reverse direction of travel**	0	
14 speed settings	0	2	**28/128 speed settings**	2	
Digital only	0	4	**analogue and digital**	4	
without Railcom®	0	8	**with Railcom®**	8	
3-point speed curve (CV2 + CV5 + CV6)	0	16	**Fine speed curve (CV67 à CV94)**	16	
Short address (CV1)	0	32	**Extended address (CV17 + CV18)**	0	
			CV29 =	**30**	

BREDA ALn 56 – 556 Os.Kar International

4. Driving address

By default, your decoder is set to the short address in CV29 and the line address is 3.

$$\boldsymbol{CV1 = 3}$$

We recommend using long addresses. In fact, with a long address you can have a short address.

To do this, you need to change the value of CV29. Using the table in section 3, the value to be entered becomes 62. This means that the value entered in CV1 no longer has any effect.

To obtain drive address 3, you therefore need to modify CV17 and CV18. These configuration variables work together.

CV17 value:

$$\frac{3}{256} = 0{,}01171875$$

The quotient of the result (to the left of the decimal point) is 0. CV17 starts at 192, so the quotient obtained must be added to the starting value of CV17 to determine the value to be entered.

$$CV17 = 192 + 0$$

$$\boldsymbol{CV17 = 192}$$

Let's now determine the value of CV18. The maximum value of this variable is 256. We therefore need to subtract the quotient obtained above, multiplied by the maximum value of CV18, from the driver address value 3.

CV18 value:

$$CV18 = 3 - 0\,x\,256$$

$$\boldsymbol{CV18 = 3}$$

So, to continue using a short address when you have configured CV29 for long addresses, you only need to specify the value 192 in CV17 and the short driving address in CV18 instead of CV1.

Your locomotive is OS 2052 and you want the drive address to be 2052.

$$\frac{2052}{256} = 8{,}015625$$

$$CV17 = 192 + 8$$

$$\boldsymbol{CV17 = 200}$$

$$CV18 = 2052 - 8\,x\,256$$

$$\boldsymbol{CV18 = 4}$$

LokPilot 5 has a multi-traction address, ideal for multiple unit (MU) or double traction traffic. This is ***CV19***. Note that this configuration variable works in the same way as CV1, i.e. as a short address. You drive your locomotives with the CV19 address, but the functions remain at the locomotive address. Some functions can still be used with the CV19. We have configured your decoder so that the following functions are active in multi-traction: F7, F8, F9, F11, F12, F14, F15, F17, F18, F19, F20 and F23.

The Z21 application also allows you to make up trains without using CV19. To do this, you need to enter the speed curve for each locomotive in the corresponding tab of the locomotive file.

BREDA ALn 56 – 556 Os.Kar International

5. Speed settings

The railcar is authorised up to VL120, i.e. a maximum authorised speed of 120 km/h.

The maximum speed of the miniature model has therefore been calculated on the basis of this speed:

$$CV5 = 171 \qquad CV5 = \_\_\_\_$$

The minimum speed gives a very good idle:

$$CV2 = 1 \qquad CV2 = \_\_\_\_$$

Acceleration and braking times:

$$CV3 = 140 \qquad CV3 = \_\_\_\_$$

$$CV4 = 100 \qquad CV4 = \_\_\_\_$$

In real life, manoeuvres are carried out at a maximum speed of 30 km/h. LokPilot 5 and LokSound 5 allow you to specify the manoeuvring speed instead of simply dividing the speed notch values by 2:

$$CV101 = 32 \qquad CV101 = \_\_\_\_$$

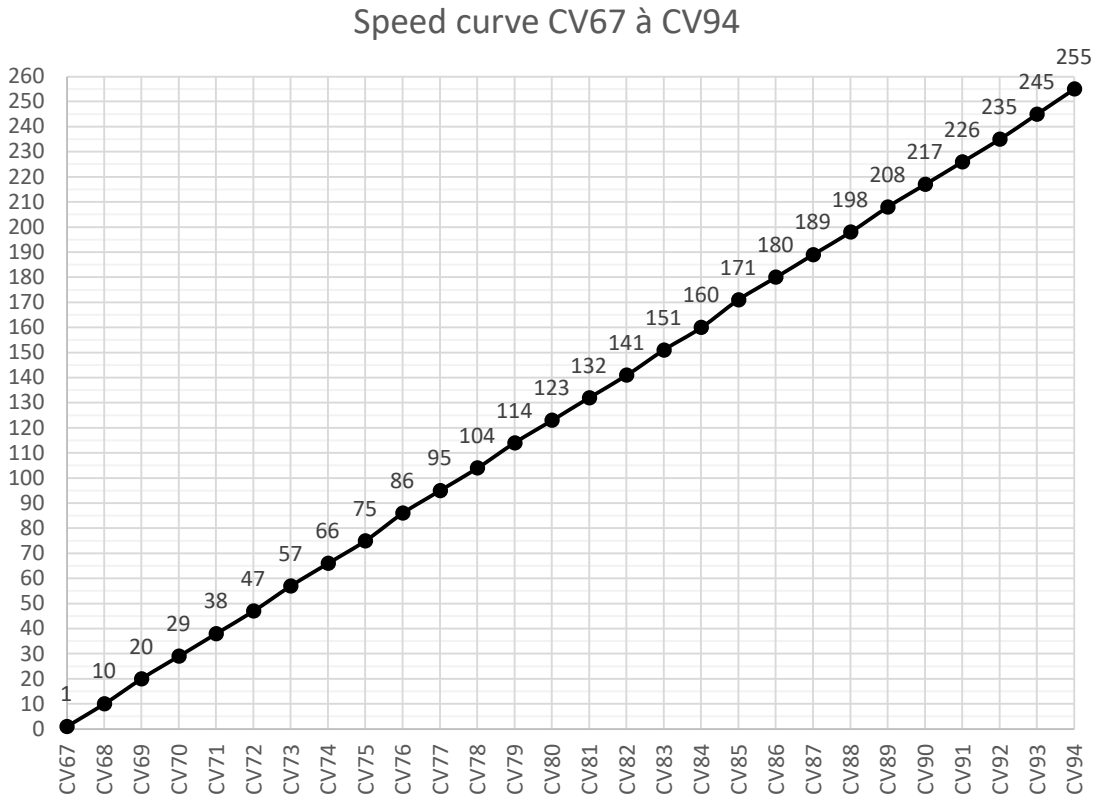
LokPilot 5 and LokSound 5 can be used to set various braking and speed limits. We used these functions for the VL80, VL100 and VL120 steps in our programming:

Type 1 braking:	$CV179 = 179$	$CV179 = \_\_\_\_$
Type 2 braking:	$CV180 = 64$	$CV180 = \_\_\_\_$
Type 3 braking:	$CV181 = 38$	$CV181 = \_\_\_\_$
Speed for emergency stop (SAL):	$CV182 = 0$	$CV182 = \_\_\_\_$
Speed for VL80:	$CV183 = 84$	$CV183 = \_\_\_\_$
Speed for VL100:	$CV184 = 105$	$CV184 = \_\_\_\_$

The table and curve below show the values for CV67 to CV94.

Index	CV67	CV68	CV69	CV70	CV71	CV72	CV73	CV74	CV75	CV76	CV77	CV78	CV79	CV80
Valeur	1	10	20	29	38	47	57	66	75	86	95	104	114	123
Index	CV81	CV82	CV83	CV84	CV85	CV86	CV87	CV88	CV89	CV90	CV91	CV92	CV93	CV94
Valeur	132	141	151	160	171	180	189	198	208	217	226	235	245	255

BREDA ALn 56 – 556 Os.Kar International



6. Characteristics for analogue operation

We have configured the decoders for start-up from 2V and maximum speed at 14V.

2 tracks (DC)		**3 tracks (AC)**	
$CV125 = 20$	$CV125 =$ ____	$CV127 = 20$	$CV127 =$ ____
$CV126 = 140$	$CV126 =$ ____	$CV128 = 140$	$CV128 =$ ____

Functions **F0, F5 and F6** are active in analogue.