

*Digital*  

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*plus*  
*by Lenz*

**Info Version 3.6**

for LZ/LZV100 and LH100

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## **1 New and changed features in version 3.6**

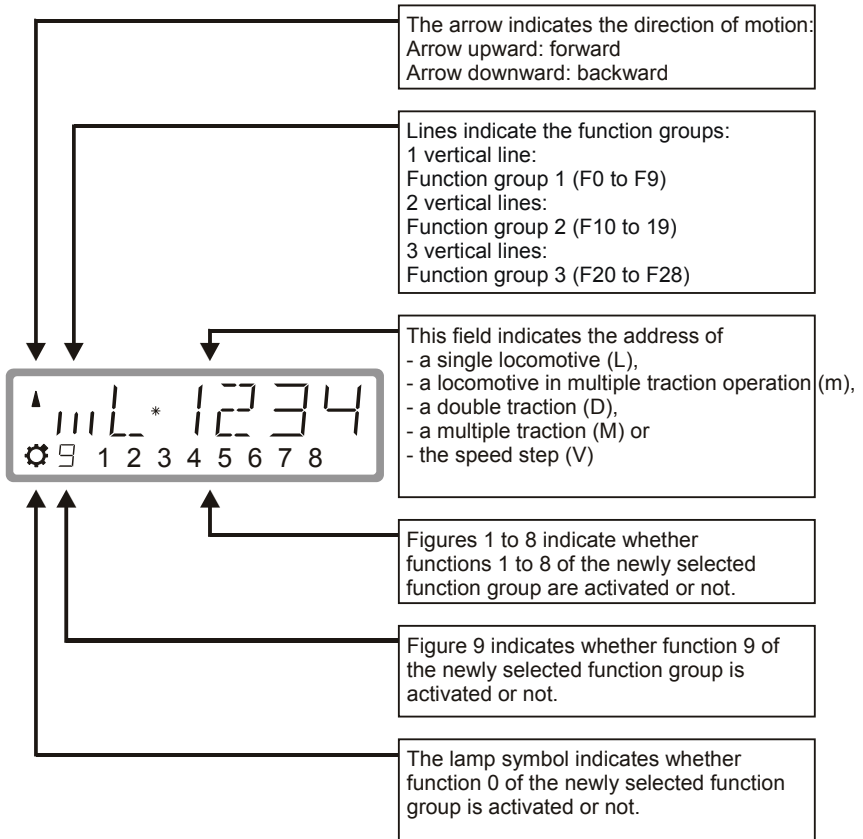
Here is an overview of the new or changed features:

- Fast change between up to 12 freely selectable locomotive addresses with the 'Esc' key.
  - Functions F0 to F28 can now be switched.
  - Functions F1 to F28 can be set to temporary or continuous operation. This setting can be made individually for each locomotive address. Ex-works, functions are set to continuous operation.
  - You can set which function information is to be stored in the command station even when it is turned off. Ex-works, functions F0 to F8 are stored.
  - Function information stored in the command station is transmitted cyclically via the track.
  - The storage and cyclic transmission of information for functions F5 to F28 can be activated and deactivated (only LH100).
  - Programming on the programming track from CV1 to CV1024.
  - Programming in operational mode (PoM) from CV1 to CV1024.
  - Simple increasing and decreasing of CV values during programming: Ideal, for example, for setting the maximum speed of a locomotive (only LH100).
  - Simple change to the next or previous CV during programming (only LH100).
  - Reading of CVs via PoM with the RailCom address display LRC120.
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## 2 Changes to the LH100

Due to the new functions we have made some changes to the display and operation of the LH100. These changes are described below.

### 2.1 Display when controlling a locomotive

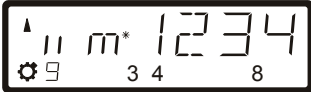


**2.1.1 Examples for the most important displays:**



The single locomotive (L) with address 0003 is controlled.

The display of function group 1 is selected; functions 0, 1, 3 and 8 are activated.



The locomotive with address 1234 is in multiple-traction operation (m).

The display of function group 2 is selected; functions 10, 19, 13, 14 and 18 are activated.



The multiple traction with address 0033 is controlled.

When the multiple-traction address is displayed, no functions are displayed.

**2.2 The expanded stack**

Up to version 3 it was possible to change between two locomotive addresses with the 'Esc' key of the LH100. With version 3.6 it is now possible to scroll through a stack of up to 12 locomotive addresses with the 'Esc' key. This is comparable to an index card box with 12 index cards. You can place any locomotive address in any stack slot.

Ex-works, locomotive addresses 1 to 12 are placed in this stack.











**2.2.1 Scrolling through the stack**



Each time the LH100 is turned on, stack slot 1 is displayed. Ex-works, this slot is occupied by locomotive address 1.





Press 'Esc' to display the next stack slot.



















		Release 'Esc' to display the locomotive address placed in this slot.
		Press 'Esc' again to change to the next stack slot ...
		... and to display the locomotive address placed in this slot.
...		
		Continue until the last stack slot is displayed.
		
		After the last stack slot, the first slot will be displayed again ...
		... with the locomotive address placed therein.

You can scroll through the stack only in forward direction.

### 2.2.2 Setting the stack size

Ex-works, the stack has 12 slots. The size can be set from 1 to 12.

		To change the number of stack slots, go to the 'SYS' menu:
		The menu that was selected last is displayed.

		Select 'SYS'.
		Select 'Setup'.
		The current stack size is displayed.
		Decrease the stack size with '-'. 
		Increase the stack size with '+'. 
		Confirm your selection.
		Return to the 'SYS' menu.
		Return to displaying the locomotive address.

Locomotive addresses are set as with the last version.

### 2.3 Switching locomotive functions

As in previous versions of the LH100, locomotive decoder functions can be activated and deactivated with keys 0 to 9 while controlling the locomotive.

Depending on the selected function group (1 to 3), the following functions are switched:

Key:	0	1	2	3	4	5	6	7	8	9
Function group 1:	0	1	2	3	4	5	6	7	8	9
Function group 2:	10	11	12	13	14	15	16	17	18	19
Function group 3:	20	21	22	23	24	25	26	27	28	

The bottom line of the display shows the function status: If the function number is visible, the function is activated; if the number is not visible, the function is deactivated.

## 2.4 Changing function groups

Up to three vertical lines to the left of the display of the locomotive address indicate the selected function group.



Press this key to change to the next function group.

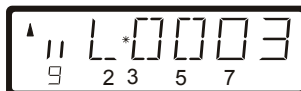


Press this key to change to the previous function group.

Exception: A multiple-traction address (M) or the address of a locomotive in multiple-traction operation (m) is displayed. In this case, use the 'L' key to scroll through the addresses of the locomotives in multiple-traction operation.



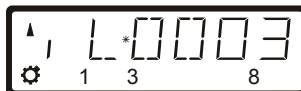
Function group 1 is displayed; functions 0, 1, 3 and 8 are activated.



Function group 2 is displayed; functions 12, 13, 15, 17 and 19 are activated.



Function group 3 is displayed; functions 20, 21, 22 and 28 are activated.



Displays function group 1 again.

## 2.5 Configuring locomotive decoder functions

Functions F1 to F12 of the locomotive decoder can be set to continuous or temporary operation.

### Continuous operation

Press the key to activate the function; press the key again to deactivate it.

### Temporary operation

Press the key to activate the function; release the key to deactivate it.

This information is stored in the command station LZ100/LZV100. When calling the locomotive, the manual control queries the setting from the LZ100/LZV100. This setting can be made individually for each function and each locomotive address.

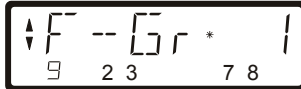
Proceed as follows:



Select the address of the locomotive whose function setting you want to display or change.



The menu that was selected last is displayed.



The configuration of function group 1 (functions 0 to 9) is displayed first.

The figures in the bottom line show the function settings:

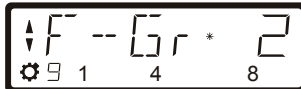
#### Visible functions:

Functions are set to **continuous operation** (here 9, 2, 3, 7 and 8).

#### Invisible functions:

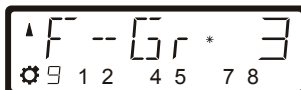
Functions are set to **temporary operation** (here 1, 4, 5 and 6).

To change the setting, simply press the number key corresponding to the function.



Press '+' to change to the next function group (group 2, F10 to F19).

The setting is made analogously to group 1.



Press '+' again to change to function group 3 (F20 to F28).

The setting is made analogously to group 1.



Enter



Press 'Enter' to complete the entering process and store the new setting in the command station. Press 'Esc' to return to controlling the locomotive without storing the setting.

## 2.6 'Refreshing' functions

By 'refreshing' functions we mean the following: In defined regular intervals the command station sends function information via the track to all decoders located on the track. This ensures that a decoder does not 'forget' all settings, even if the connection between command station and decoder is interrupted intentionally (due to 'dead frogs') or unintentionally (due to dirt on the track or power interruptions).

For very large layouts with very many locomotives or decoders it may make sense to deactivate the cyclic transmission of individual functions to decrease the time delay resulting from the total time required for each transmission (typically 8 mS).

This way, you can decide which function information is transmitted cyclically and which not. Ex-works, the information of functions 0 to 8 is transmitted cyclically. 'Refreshing' affects all locomotive addresses.

To 'refresh' functions, proceed as follows:



Start with 'controlling the locomotive'. It does not matter which locomotive address you select.

F

The menu that was selected last is displayed.

1



3



Functions F0 to F8 are transmitted cyclically.

+



Use '+' to scroll through the options:

Functions F0 to F12 are transmitted cyclically.

+	r F0--20	Functions F0 to F20 are transmitted cyclically.
+	r F0--28	Functions F0 to F28 are transmitted cyclically.
+	r F0--4	Functions F0 to F4 are transmitted cyclically.
Enter	▲ L*0003 ⚙ 1 3 8	Press 'Enter' to confirm your selection.

### 2.7 Displaying and changing the speed-step mode

To display or change the speed-step mode, proceed as follows:

▲ L*0003 ⚙ 1 3 8	Select the address of the locomotive whose speed-step mode you want to display or change. Make sure that the locomotive is set to speed step 0 (if not, press the hexagonal key).
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F	The menu that was selected last is displayed.
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1	SETF* _
---	---------

2	FST* 28	Press '+' to display the speed-step mode currently set.
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+	FST* 128	Press '+' again to display the speed steps available:
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+	FST* 14
---	---------

+

FST\* 27

Enter

▲ L\*0003  
⚙ 1 3 8



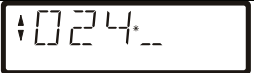
Press 'Enter' to assign a specific speed-step mode to the locomotive address.

If the speed step of the locomotive is not 0, the speed-step mode currently set will be displayed while you press '+' and cannot be changed.

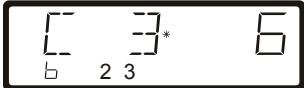

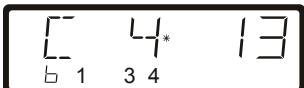

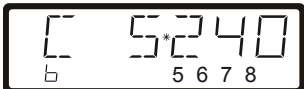

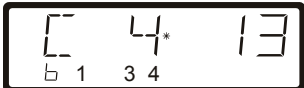

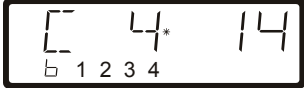




## 2.8 Enhancements for programming on the programming track

With version 3.6 you can enter and read CVs from 1 to 1024 on the programming track.

Depending on the selected CV, the display shows:





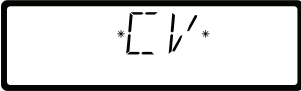





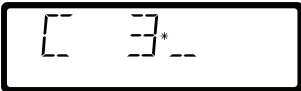



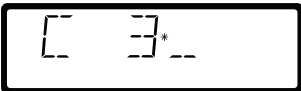


CV 1 – 99:	CV 100 – 999:	CV 1000 – 1024:
		

When you have selected a CV and entered or read a value, use the arrow or plus and minus keys to:

		
		read the next CV.
		read the next CV.
		read the previous CV.
		increase the displayed value and enter it with
		
		increase the displayed value and enter it with
		

## 2.9 Enhancements for programming in operational mode (PoM)

### 2.9.1 Fast changing of a CV

		Select the address of the locomotive whose features you want to change via PoM.
		The menu that was selected last is displayed.
		The programming mode that was selected last is displayed.
		Use '-' to scroll to 'CV'.
		Enter the number of the CV whose value you want to change.
		In our example we selected CV3 (starting delay).
		Confirm your selection with 'Enter'. Use the arrow keys to change the CV selection.
		
		
		

Every time you change the CV number a PoM read command is sent to the locomotive decoder. The result of this command can be displayed with an address display LRC120; see Section '2.9.3' below.

### 2.9.2 Fast changing of a CV value

If you have selected a CV or entered and confirmed a value with 'Enter' during programming in operational mode, you can increase or decrease this value simply with '+' or '-'. The new value will be entered immediately into the decoder.

This is particularly helpful if you, for example, want to adjust the brightness of the locomotive lighting.

If you have selected a CV and entered a value, you can increase or decrease this value with '+' or '-'. The new value will be entered immediately after each change (unlike when programming on the programming track).

Keep pressing '+' or '-' to increase or decrease the value.

### 2.9.3 Reading CVs with the address display LRC120

It is now possible to read CV values via PoM while in operation. Requirements:

- Use of a RailCom-able locomotive decoder (GOLD series).
- The locomotive is located in a track section monitored by the address display LRC120.
- RailCom transmission is activated in the decoder.

Information on how to connect the address display LRC120 and the settings of RailCom-able locomotive decoders can be found in the respective operating manuals.

#### **Proceed as follows:**



Enter the address of the locomotive whose features you want to change via PoM.


Move the locomotive whose CVs you want to read via PoM to the track section monitored by the address display LRC120. The address display now shows the address of the locomotive.



The menu that was selected last is displayed.



The programming mode that was selected last is displayed.

-	*CV*	Use '-' to scroll to 'CV'.
Enter	[ * _ _ ]	Enter the number of the CV whose value you want to change.
3	[ * 3 _ _ ]	The value for the starting delay is stored in CV3.
Enter	[ 3 _ _ ]	The address display LRC120 displays the value of CV3 for approx. 3 seconds.
		'c' is flashing at the very left of the display while the value is shown on the right:
		

Whenever you

- enter the number of a CV,
- change this number with the arrow keys,
- change the value of the CV with the '+' or '-' keys,

a PoM read command is sent to the decoder which sends the content of the respective CV via RailCom. The address display LRC120 receives this information and displays it for approx. 3 seconds.

We reserve the right to make changes in line with technical progress, product maintenance or changes in production methods.

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