mxion LSS-SH12 Signal with Decoder User Manual

Contents

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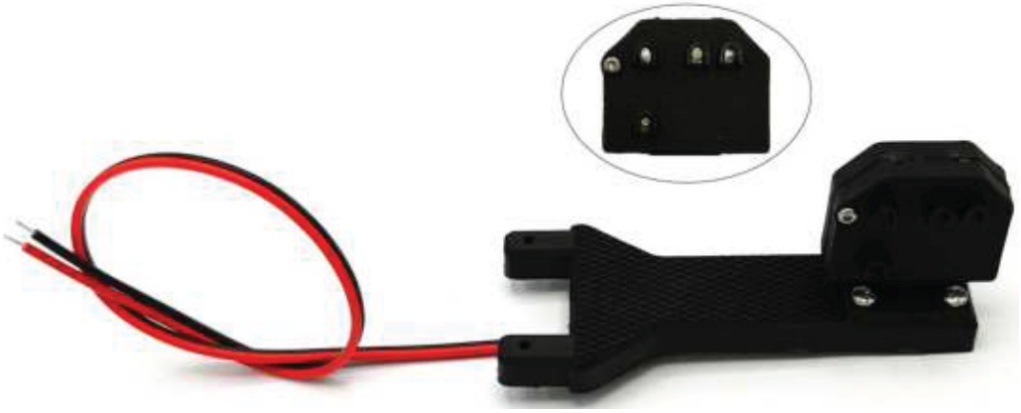


Introduction

Dear customer, we strongly recommend that you read these manuals and the warning notes thoroughly before installing and operating your device. The device is not a toy (15+).
NOTE: Make sure that the outputs are set to appropriate value before hooking up any other device. We can't be responsible For any damage if this is disregarded.
NOTE: Use the mXion LSS-Sh PCB to digitalize your own or other, not signals. With the board it's possible, to use a signal with up to 3 LEDs (HP0, HP1, HP2). You can directly fit the LEDs into the holes or mount cables.

General information

We recommend studying this manual thoroughly before installing and operating your new device.
NOTE: Some functions are only available with the latest firmware. Please make sure that your device is programmed with the latest firmware.

Summary of Functions

- DC/AC/DCC operation
- Compatible NMRA-DCC module
- Real light signals
- Defined start switching
- Outputs invertible
- Automatic switch back functions
- Function outputs dimmable
- Reset function for all CV values
- Easy function mapping
- Sh board usable for other signals
- addresses, 2048 switch addresses
- Multiple programming options
- (Bitwise, CV, POM accessories decoder, register) Needs no programming load

Scope of supply

- Manual
- mXion LSS-Sh12

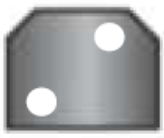
Hook-Up

Install your device in compliance with the connecting diagrams in this manual. The device is protected against shorts and excessive loads. However, in case of a connection error e.g. a short this safety feature can't work and the device will be destroyed subsequently.
Make sure that there is no short circuit caused by the mounting screws or metal.
NOTE: Please note the CV basic settings in the delivery state.

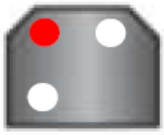
Connectors

- This typical shunting signal is for everyone even in the harz mountains. It can due to the small dimensions optimally in the station area be accommodated. The signal works digitally as well as analog. Simply close the 2 cables to the track or a DC voltage source e.g. EPL® desk. Following pictures and the most important CV's.
- Furthermore, it is possible the second red LED shut down and thus in the KS system as dwarf signal work.
- The board of the Shh is available in single part to use it for other signals up to Hp2.

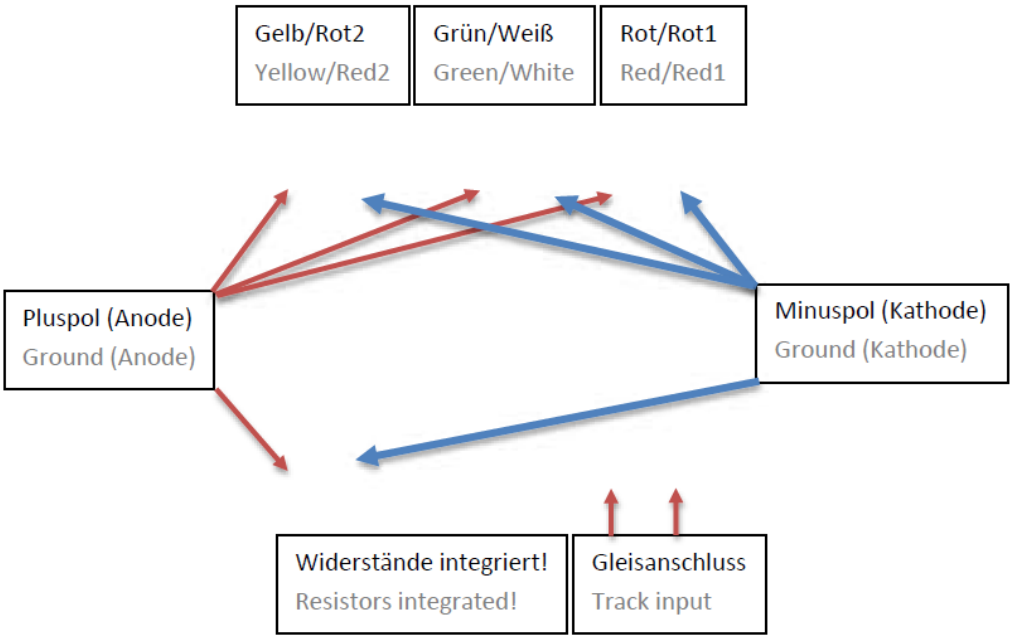
Sh0 (DB)/Lsp-Hsp (DR) Standard. Adresse 1 „rechts“
Sh0 (DB)/Lsp-Hsp (DR) Standard. Address 1 “right”



Sh1 (DB)/Ra12 (DR) Standard. Adresse 1 „links“
Sh1 (DB)/Ra12 (DR) Standard. Address 1 „left“



Hp0+Ra12 (DR) Wenn CV49 Bit 7 = 1 (Adresse 2)
Hp0+Ra12 (DR) If CV49 Bit 7 = 1 (address 2)



Product description

The mXion LSS-Sh12 is a shunting signal which use pretty much every one railway company – no matter if narrow or standard gauge – finds and in large numbers at driveways in front of stations, in the goods area as well as on main routes. There are types of this signal also often put on masts or in main signals build in.
The LSS-Sh12 gives such a typical protection signal exemplary again. It is optionally possible to do it to mount on a mast. Otherwise it lies a floor plate to attach it to the LGB track to screw on.
The integrated decoder for analog and digital operation allows all images of the signal to be given in an exemplary way. In addition will be a series of switching and additional functions allows, which are separately activated (e.g. automatic switching back to timing when a train has passed).
Furthermore, a switch from 2 red LEDs (old system) on a red LED can done (new system).

Programming lock

To prevent accidental programming to prevent CV 15/16 one programming lock. Only if CV 15 = CV 16 is a programming possible. Changing CV 16 changes automatically also CV 15. With CV 7 = 16 can the programming lock reset.
STANDARD VALUE CV 15/16 = 165

Programming options

This decoder supports the following programming types: bitwise, POM and CV read & write and register-mode and programming switch.
There will be no extra load for programming.
In POM (programming on main track) the programming lock is also supported. The decoder can also be on the main track programmed without the other decoder to be influenced. Thus, when programming the decoder can not be removed.
NOTE: To use POM without others decoder must affect your digital center POM to specific decoder addresses (e.g. Massoth® control panels)

Programming binary values

Some CV's (e.g. 29) consist of so-called binary values. The means that several settings in a value. Each function has a bit position and a value. For programming such a CV must have all the significances can be added. A disabled function has always the value 0.
EXAMPLE: You want 28 drive steps and long loco address. To do this, you must set the value in CV 29 2 + 32 = 34 programmed.

Programming switch address

Switch addresses consist of 2 values.
For addresses < 256 the value can be directly in address low. The high address is 0. If the address is > 255 this is as follows (for example address 2000):

- 2000 / 256 = 7,81, address high is 7
- 2000 – (7 x 256) = 208, address low is then 208.

Reset functions

The decoder can be reset via CV 7. Various areas can be used for this purpose.
Write with the following values:

- 11 (basic functions)
- 16 (programming lock CV 15/16)
- 33 (switch outputs)

CV-Table

S = Default, L = Loco address, S = Switch address, LS = Loco and switch address usable

CV	Description	S	L/S	Range	Note	
1	Loco address	3	L	1 – 127	if CV 29 Bit 5 = 0 (automatically reset)	
7	Software version	–		–	read only (10 = 1.1)	
7	**Decoder reset functions**					
	3 ranges available			11 16 33	basic settings (CV 1,11-13,17-19,29-119) programming lock (CV 15/16) switch outputs (from CV 120)	
8	Manufacturer ID	160		–	read only	
7+8	**Register programming mode**					
	Reg8 = CV-Address Reg7 = CV-Value				CV 7/8 don't changes his real value CV 8 write first with cv-number, then CV 7 write with value or read (e.g.: CV 49 should have 3) è CV 8 = 49, CV 7 = 3 writing	
15	Programming lock (key)	215	LS	0 – 255	to lock only change this value	
16	Programming lock (lock)	215	LS	0 – 255	changes in CV 16 will change CV 15	

48	Switch address calculation	0	S	0/1	0 = Switch address like norm 1 = Switch address like Roco, Fleischmann

49	**mXion configuration**	**6**	**S**		**bitwise programming**

Bit	Value	OFF (Value 0)	ON
0	1	SW1 normal output	SW1 inverted
1	2	Transition normal switching	Transition fading
2	4	Transition same time fading	Transition after ones fading
3	8	Both red leds active (Sh0)	Only red1 active (Hp0)
4	16	SW2 normal output	SW2 inverted
5	32	normal function (RA12)	splitted, Hp0, Hp1, Hp2 (SW2)
6	64	do not save switch position	save switch position
7	128	normal function (RA12)	Hp0+Ra12 (DR-Pictures)

118	Automatic switch back function to last state	0	S	0 – 255	0 = off 1 – 255 = time base 0,25 sec. each Value
120	SW1 address high	0	S	1 – 2048	switch signal state, if address smaller 256 easy program CV121 = desired address!
121	SW1 address low	1	S		
122	SW1/SW2 dimming value	100	S	1 – 100	dimming value in % (1 % approx. 0,2 V)
125	SW2 address high	0	S	1 – 2048	active if CV49 Bit 5 = 1 or Bit 7 = 1 switch address for 3rd state (green/yellow)

Technical data

- Power supply: 7-27V DC/DCC
  5-18V AC
- Current: 5mA (with out functions)
- Maximum function current:
  - LSS 0.1 Amps.
- Maximum current: 1 Amps.
- Temperature range: -20 up to 85°C
- Dimensions L*B*H (cm): SH-Signal 3*3*5

NOTE: In case you intend to utilize this device below freezing temperatures, make sure it was stored in a heated environment before operation to prevent the generation of condensed water. During operation is sufficient to

prevent condensed water.

Warranty, Service, Support

micron-dynamics warrants this product against defects in materials and workmanship for one year from the original date of purchase. Other countries might have different legal warranty situations. Normal wear and tear, consumer modifications as well as improper use or installation are not covered. Peripheral component damage is not covered by this warranty. Valid warrants claims will be serviced without charge within the warranty period. For warranty service please return the product to the manufacturer. Return shipping charges are not covered by micron-dynamics. Please include your proof of purchase with the returned good. Please check our website for up to date brochures, product information, documentation and software updates. Software updates you can do with our updater or you can send us the product, we update for you free.
Errors and changes excepted.

Hotline

For technical support and schematics for application examples contact:
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www.micron-dynamics.de
https://www.youtube.com/@micron-dynamics

Documents / Resources

	mxion LSS-SH12 Signal with Decoder [pdf] User Manual LSS-SH12 Signal with Decoder, LSS-SH12, Signal, Decoder, Signal with Decoder

References

- Top Fahrradbekleidung für Damen & Herren - Ride your Style
- micron-dynamics
- micron-dynamics