mxion KSM Spin Module User Manual

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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.

General information

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

Summary of Funktions

Analogue and digital operation DCC operation Compatible NMRA-DCC module REAL short circuit free sweep module without sensor track or sth. like that 15 A strong sweeping loader module with possibility of electricity adaptation by CV Reset function for all CV values Multiple programming options (Bitwise, CV, register) Needs no programming load

Ideal for turntables
Ideal for reverse loops
Ideal for triangles
Ideal for complex constructions

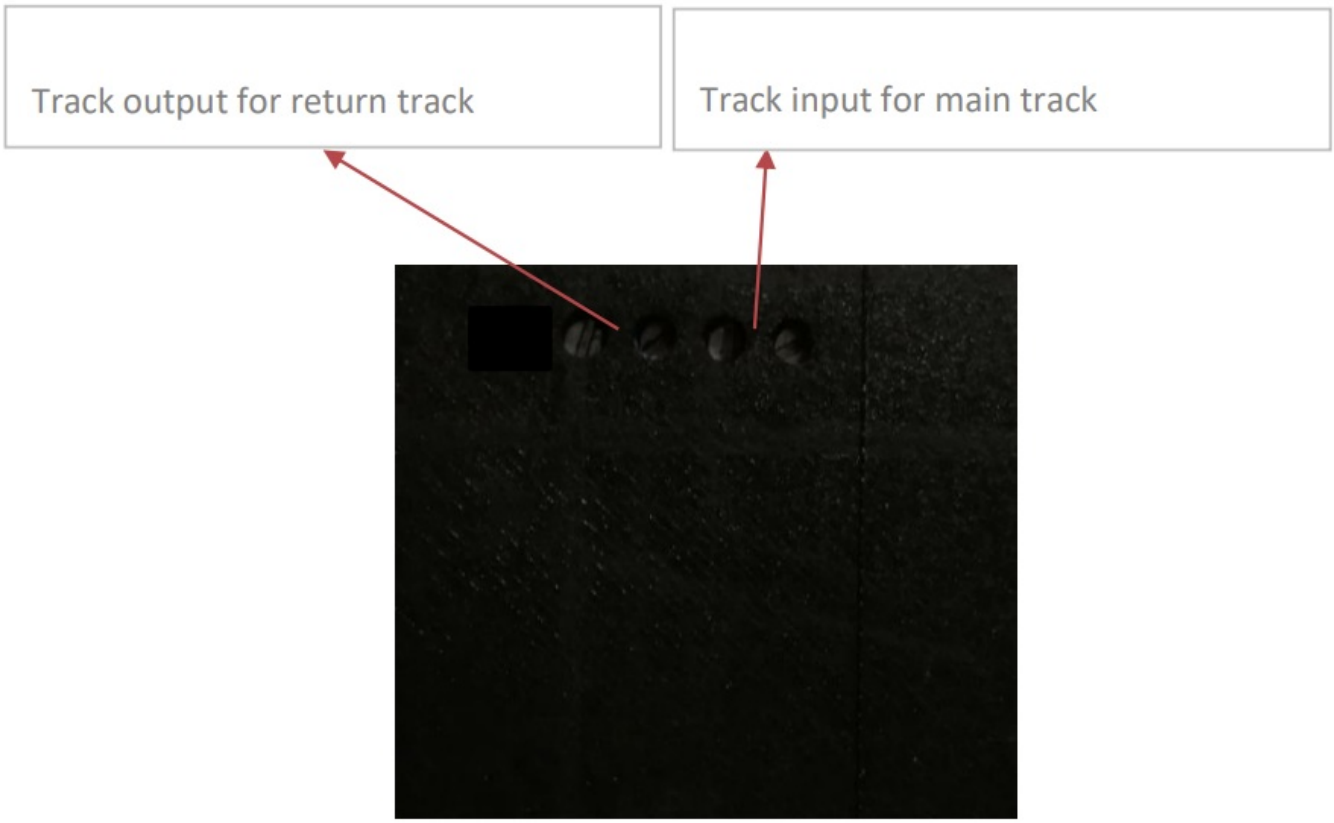
Scope of supply

Manual mXion KSM

Hook-Up

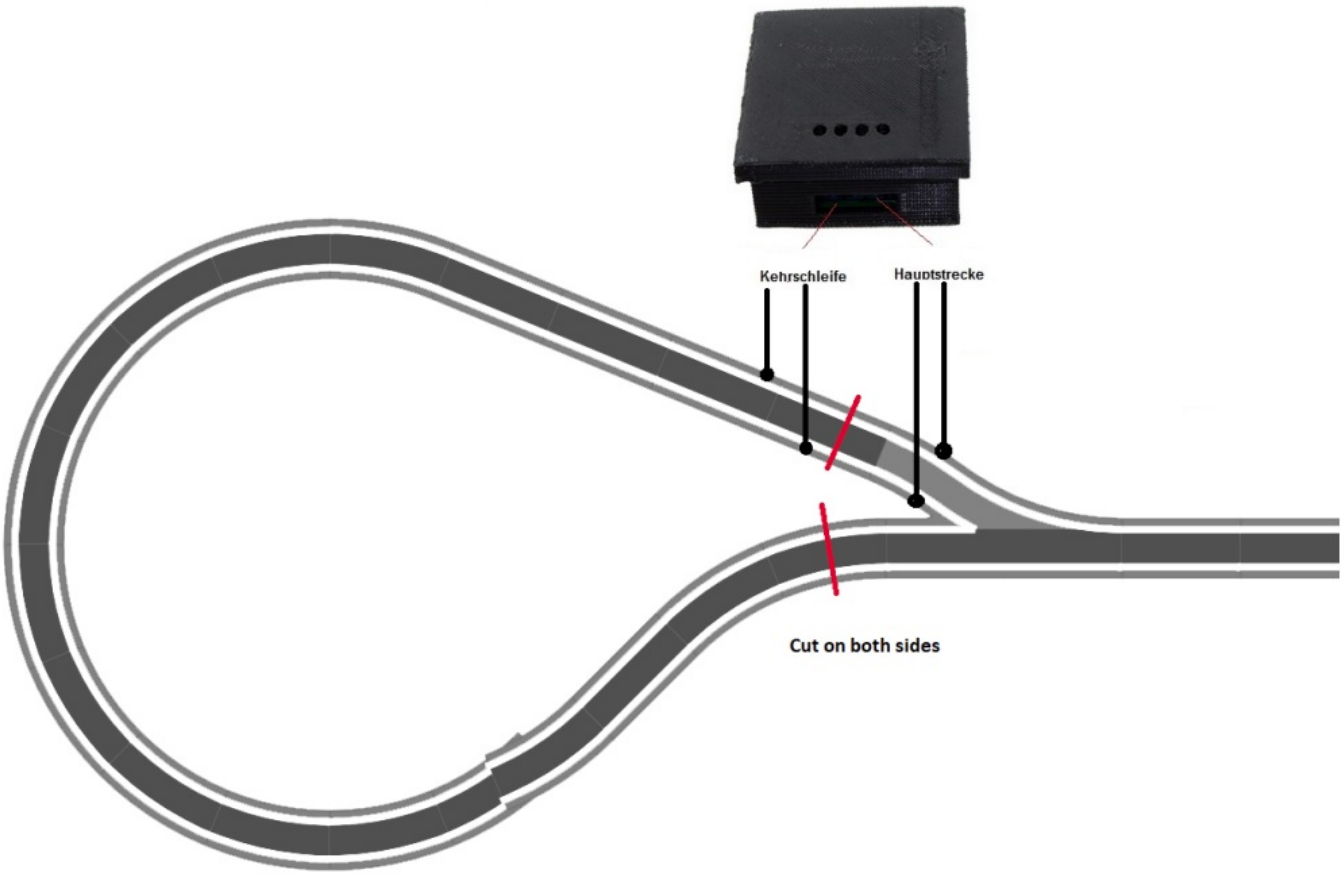
Install your device in compliance with the connecting diagrams in this manual. The device is protected against shorts and excessive loads. However, in case of a connection error e.g. a short this safety feature can’t work and the device will be destroyed subsequently. Make sure that there is no short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

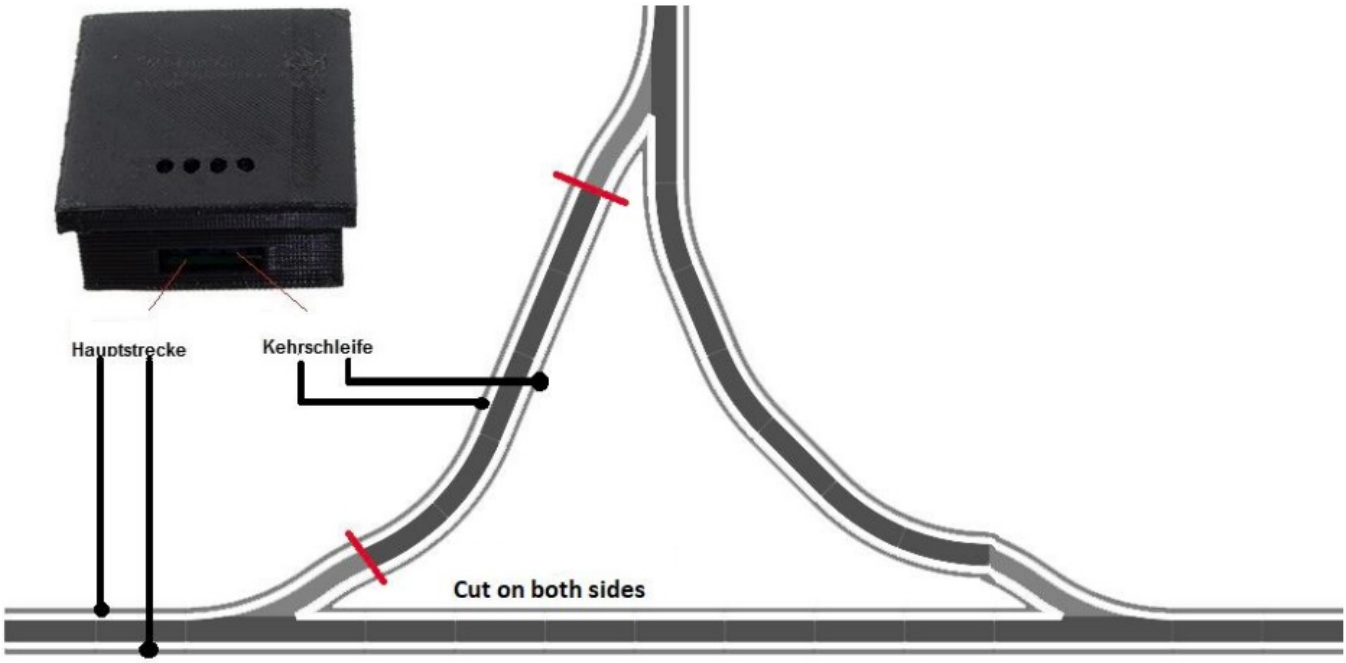
Connectors

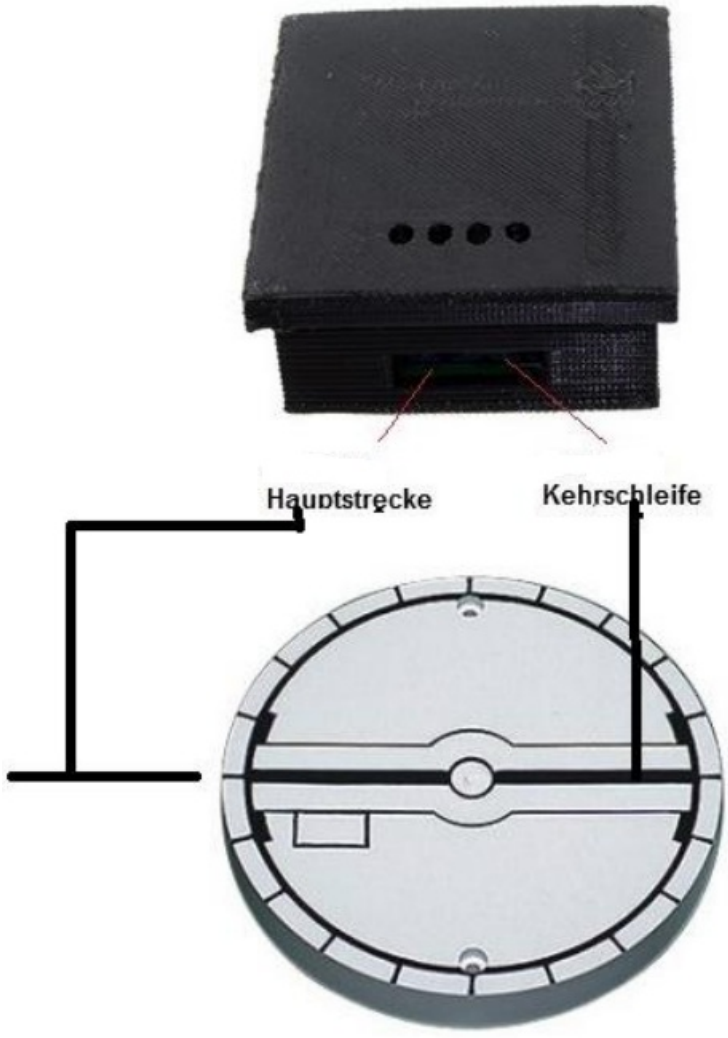


Digital operation

In digital mode, you can use the KSM just connect as usual and so that the separation point, so the reverse loop supply. There is no need to pay attention. The ,,Hauptstrecke” is powered by the central station or booster. Same for triangles or turntables. By turntables, all output tracks, should be connected to main track.



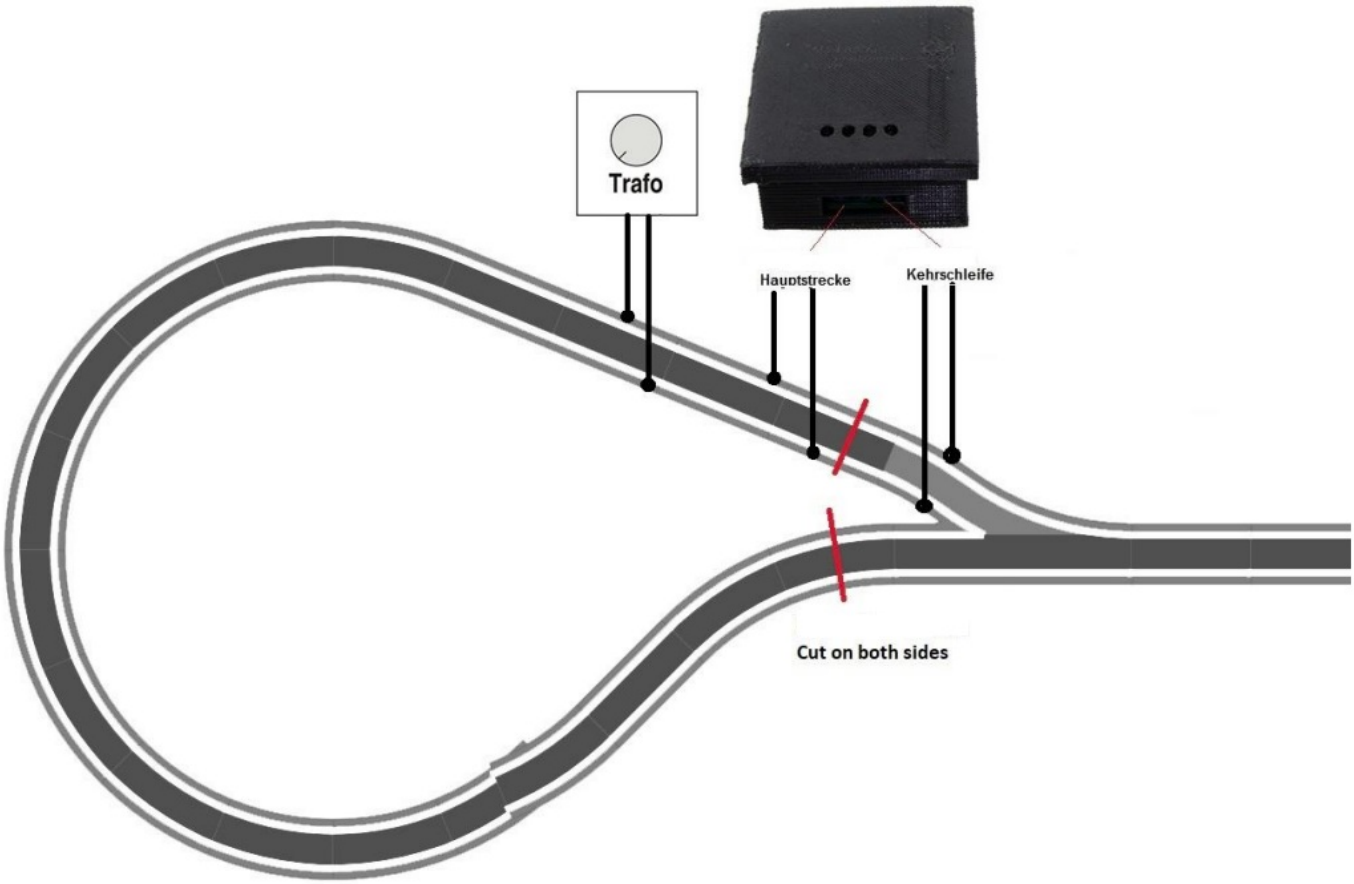


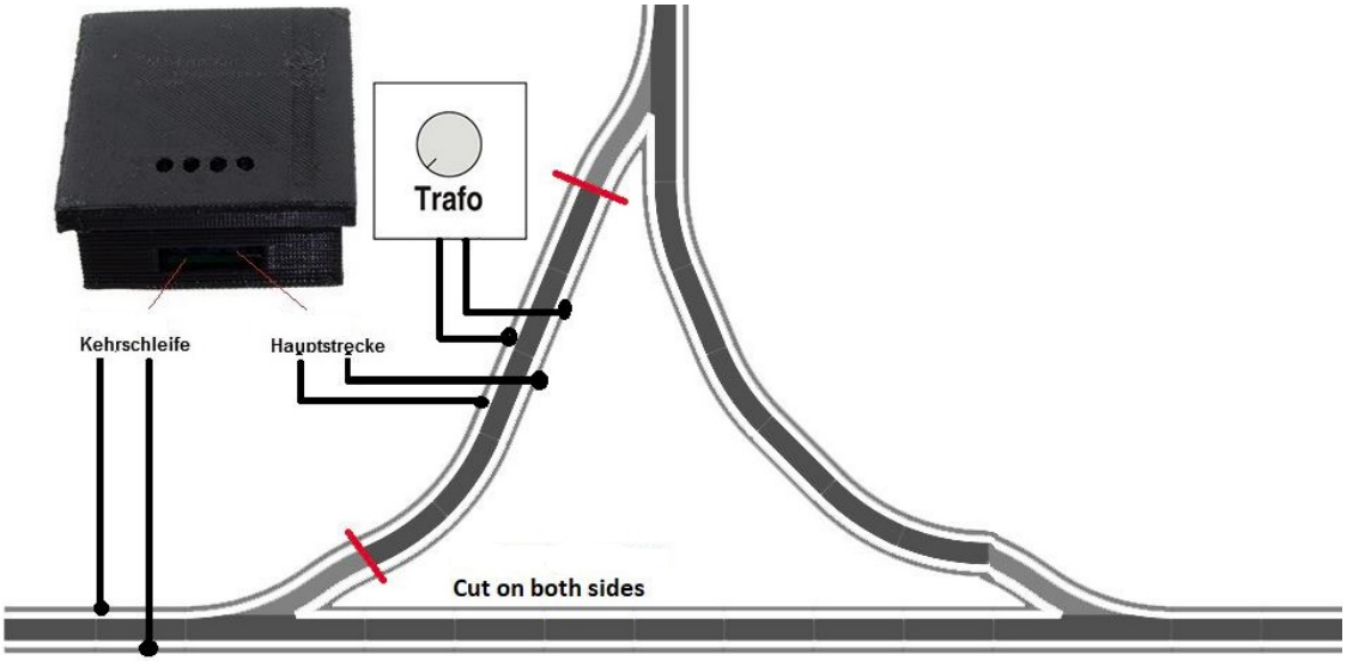


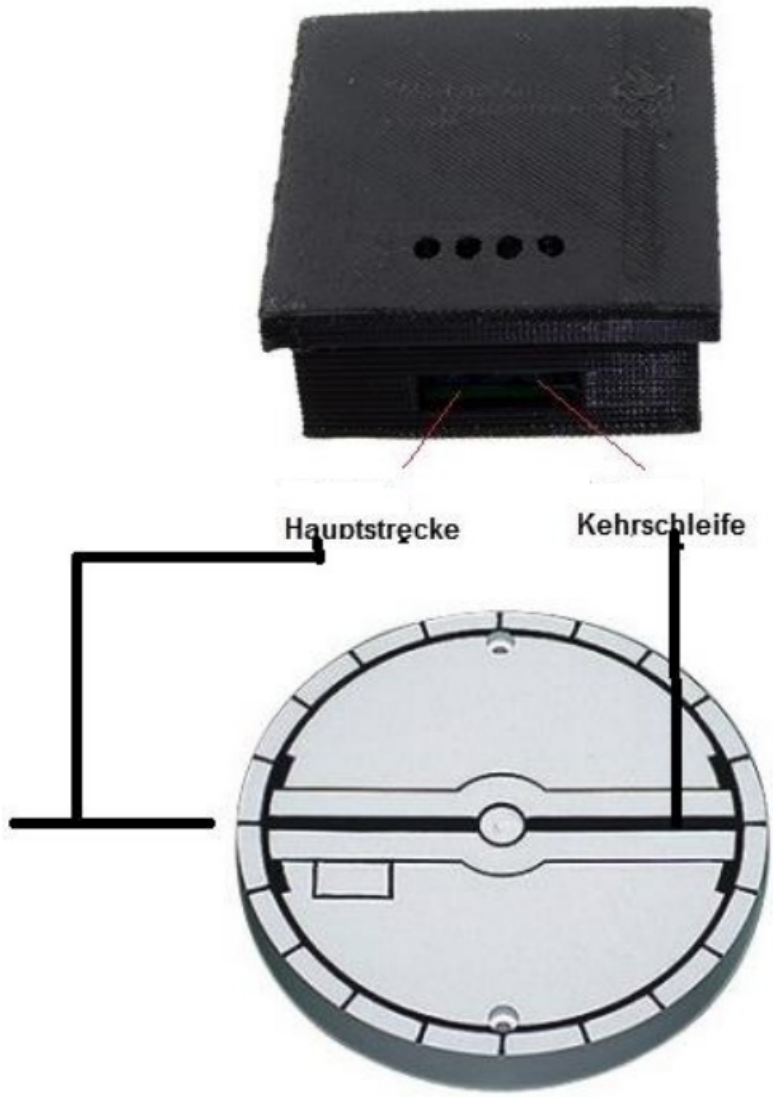
Analog operation

For analog systems, the module works stable from 6V. in addition, the switching position saved, thus the direction of travel received remains. It should be noted that in the analog ,,Kehrschleife" and the ,,Hauptstrecke" swap roles so that the reverse loop with the modelt rain transformer is supplied and the main line from the KSM. In several reverse loops needs this concept to be kept. Same for triangles or turntables. By the turntable, all output tracks, not the main, must be also powered by the KSM! In analog mode, the driving direction is only possible in one drive

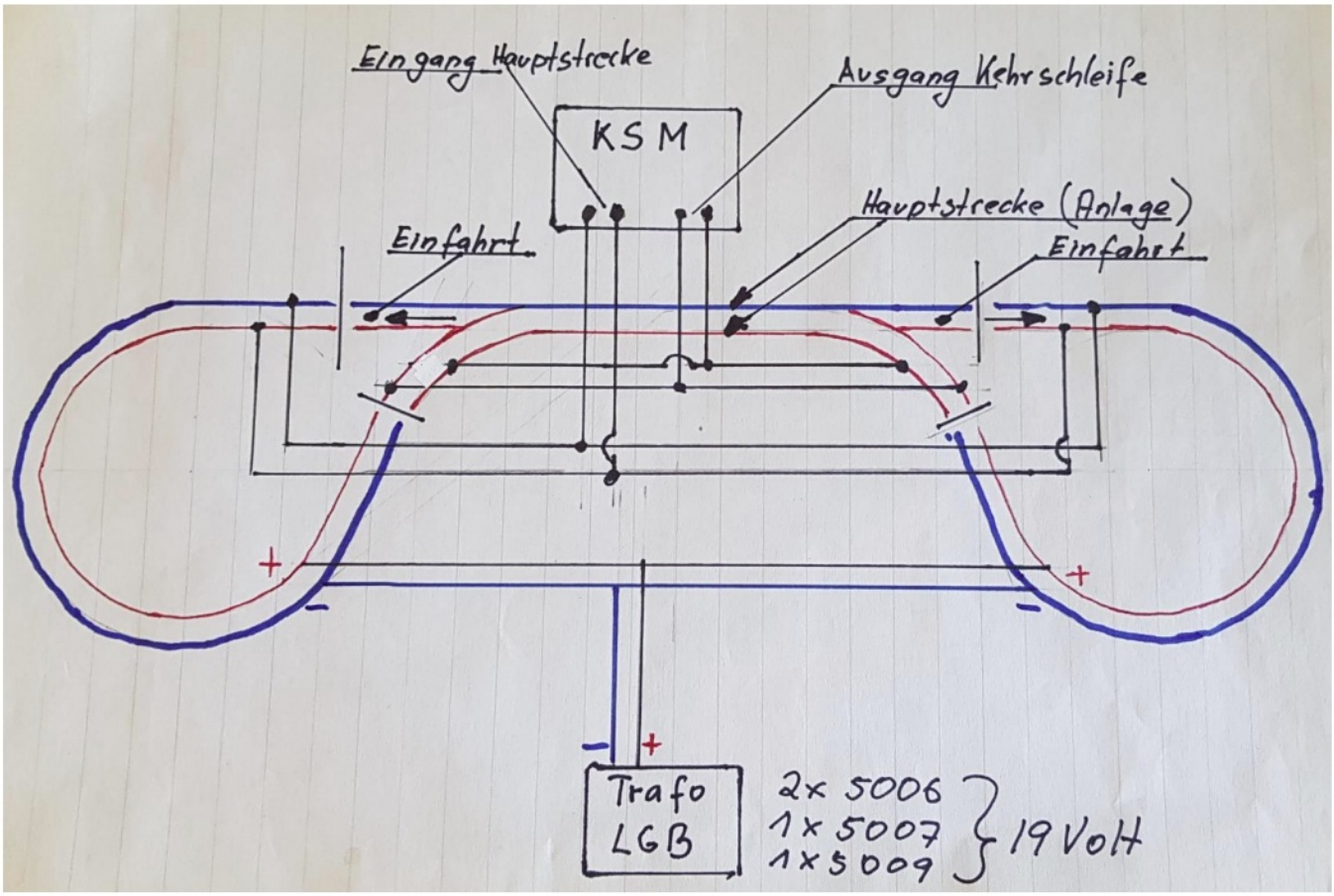
direction!


Trafo
Hauptstrecke
Kehrschleife
Cut on both sides


Trafo
Kehrschleife
Hauptstrecke
Cut on both sides

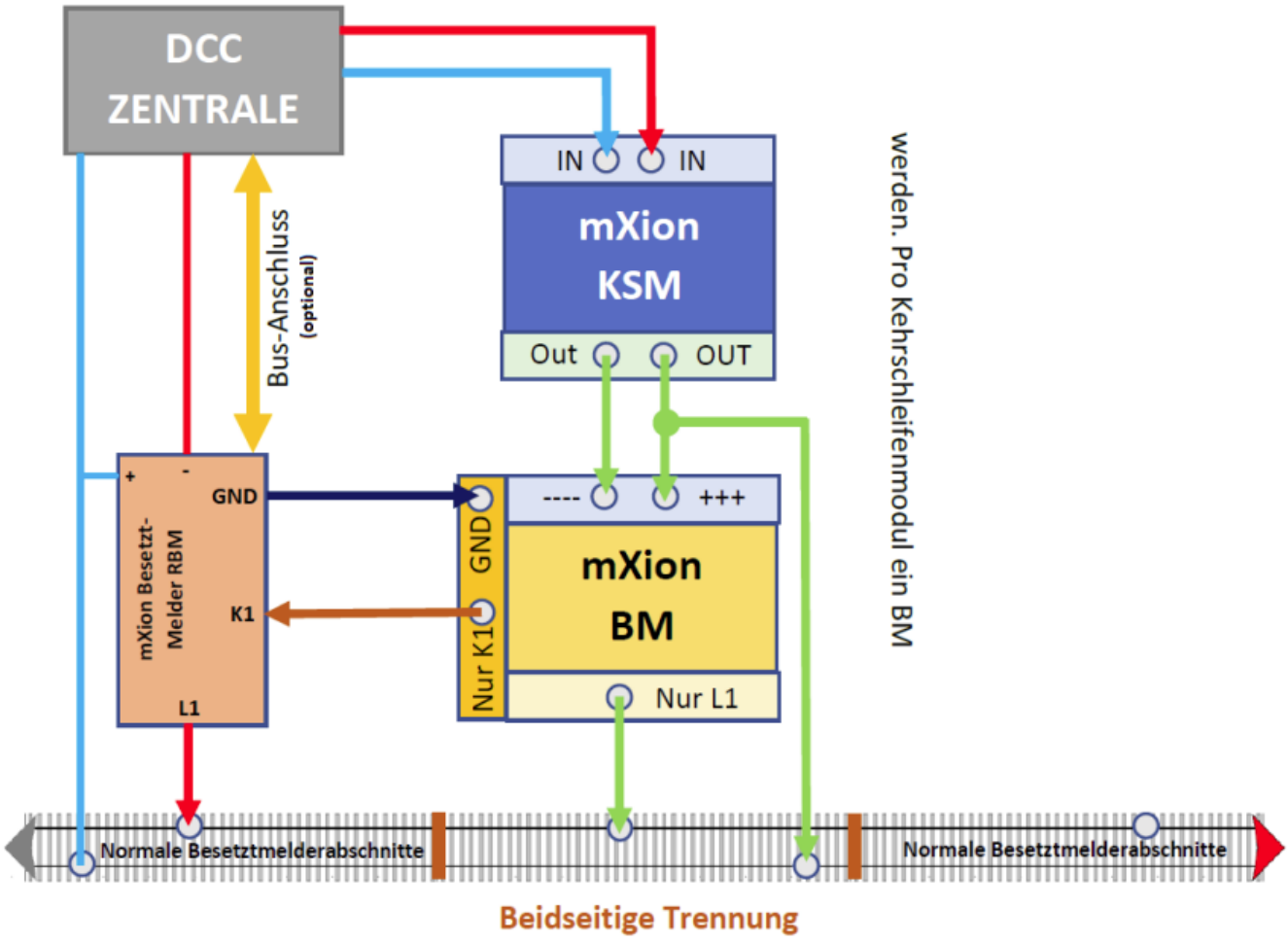


Dog bone example for analog



Connection with occupancie modules

Around the reverse loop module or the track triangle in the being able to display the occupancy message correctly is one thing special wiring is necessary because the KSM has a own consumption. Here in the example ist he use of our central 30Z with connection via LocoNet and with our occupancy detectors as well as feedback modules (BM & RBM) are shown. The trick behind the circuit ist hat the KSM is switched in front of the occupancy reporting module. Of course, the occupancy reporting module then polest he BM, therefore 1 BM module per loop ,,get wasted”.



Product description

The mXion KSM is a short-free 15 Amps strong sweep module with integrated decoder and controller. The advantage of the KSM lies in that the latter has no sensor track or the like, and this short-free!
Detection current and rate can directly affect you plant and and your electricity consumption be adapted within the loop; thanks to the integrated digital decoder. This is very much flexible and yet remains extremely powerful contrast to other systems.
It may be necessary to increase CV114 if in the reverse loop trains with more than 3.5 A drive. All other CVs should not be changed
CV 114 is the detection current at the entrance to the loco return section. If you have locos with high power you need to adjust this CV. Otherwise the loco will be recognized as driving in loco. If you do not have this (e.g. more than 3,5A) don't change.
CV 115 is the detection rate. If you turn this up, you are going more and more into the short circuit detection. This CV is direct rated to CV 114! CAUTION!
CV 116 defines the samples per round. If this is higher, you will have higher accurate, but the detection time will shrink.

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 = 240

Programming options

This decoder supports the following programming types: bitwise and CV read & write and register-mode.
There will be no extra load for programming.

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.

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)

CV- Table

S = Default, A = Analog operation usable

CV	Description	S	A	Range	Note
7	Software version	–		–	read only (10 = 1.1)
7	**Decoder reset functions**				
	2ranges available			11 16	basic settings (CV 1,11-13,17-19,29-116) programming lock (CV 15/16)
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) CV 8 = 49, CV 7 = 3 writing
11	Analog timeout	30		30 – 255	1ms each value

15	Programming lock (key)	240		0 – 255	to lock only change this value
16	Programming lock (lock)	240		0 – 255	changes in CV 16 will change CV 15
113	detection lock after drive in	11	√	0 – 255	100ms each value
114	power detection	35	√	1 – 150	value / 10 (35 = 3,5 Amps)
115	detect time	0	√	0 – 10	0 = permanent else 1 ms each value
116	samples	3	√	1 – 50	samples for safe current detection

Technical data

Power supply:
12-24V DC/DCC 8-18V AC
Current:
10mA (with out functions)
Maximum current:
15 Amps.
Temperature range:
-15 up to 60°C
Dimensions L*B*H (cm):
5*4*2.2
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 KSM Spin Module [pdf] User Manual KSM Spin Module, KSM, KSM Module, Spin Module, Module

References

- Dynamics | Bikewear für Damen & Herren - Ride your Style
- micron-dynamics
- micron-dynamics
- User Manual