mxion ZKW 2 Channel Switch Decoder User Manual

mxion ZKW 2 Channel Switch Decoder


DEC+
GLEIS
GLEIS
A2
A1
DEC+
SW1
SW1
SW2
SW2
mXion
ZKW

Contents

Introduction

Dear customer, we strongly recommend that you read these manuals and the warning notes thouroughly 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: The switch address is from CV120/121! For addresses < 256 you need only write to CV121 etc.

General information

We recommend studying this manual thoroughly before installing and operating your new device. Place the decoder in a protected location. The unit must not be exposed to moisture.
NOTE: Some funktions are only available with the latest firmware. Please make sure that your device is programmed with the latest firmware..

Summary of Functions

DCC NMRA digital operation Compatible NMRA-DCC module 2 reinforced function outputs 2 Switch outputs (2- and 3 wire) Intelligent switching for 3-Way switches Implemented function for decoupler tracks Defined start switching position Automatic switch back functions Function outputs dimmable Reset function for all CV values Easy function mapping Multiple programming options (Bitwise, CV, POM accessoire decoder, register) Needs no programming load

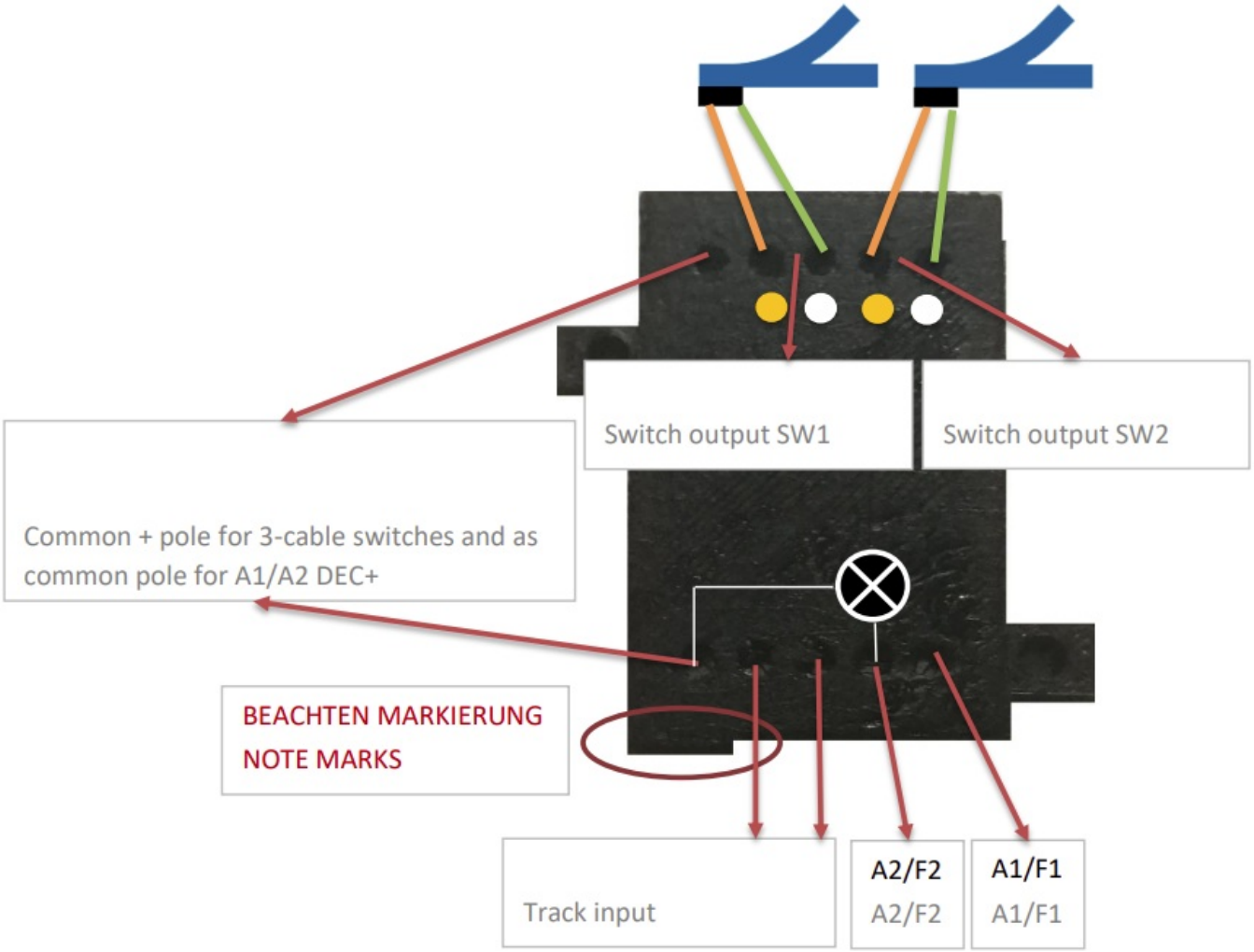
Scope of supply

- Manual
- mXion ZKW

Hook-Up

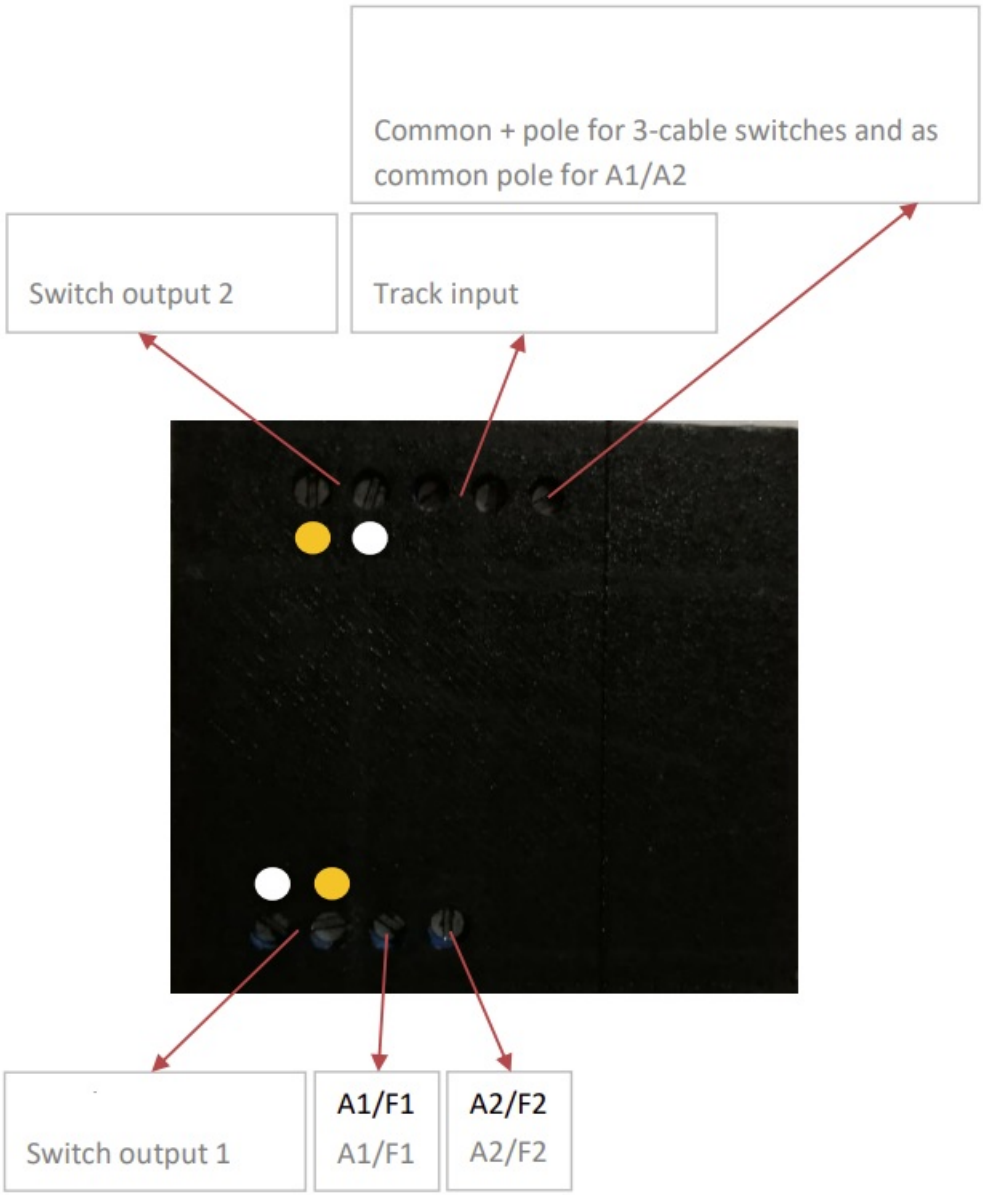
Install your device in compliance with the connecting diagrams in this manual. The device is protected against shorts and excessive loads. However, in case of a connection error e.g. a short this safety feature can't work and the device will be destroyed subsequently. Make sure that there is no short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

Connectors



Switch lamps between A1/A2 and common + pole. Use with 3-wire switches the common DEC+ pole as the center line. Not use 3 pole LGB drives!

Connectors (old version)



Switch loads between A1/A2 and common + pole. Use with 3-wire switches the common + pole as the center line. Not use 3 pole LGB drives!

Product description

The mXion ZKW is a 2 channel switch decoder with 2 function outputs for switch laterns or signal lighting. The two points are also independently of one another and freely adressable. For this purpose, dimming and time units. Here are the special features as with the mXion MFB that one integrated 3-way switch is implemented. This controls 3-way switches so that always has a defined direction of the soft takes place and derailments can be eliminated. Fit the switch to ,,straight" if using this mode or use CV 49 Bit 3/4 = 1. CV 49 Bit 3/4 = 1. The rear tongue atomatically switches on ,,straight" when the front is operated. man die Switches one the front tongue back again, so also takes the rear tongue again the old direction. If the front tongue is on ,,branch" man and the rear tongue is now switched and the anterior tongue in the appropriate direction, so that on the one hand there are no derailments of vehicles and on the die other hand the operation of the 3-way switch is simplified. So you can use the address for the switch the front tab ,,branch right" and with the address for the rear tongue ,,straight" or ,,branch left". The other tongue extra will automatically so that does not must happen.
Another highlight of the ZWK is the setting for decoupling tracks. Here you can create a corresponding function output (A1 to SW1 and A2 to SW2 bound in this mode) CV 49 Bit 0/1 and automatically with of the switch. The advantage ist hat the luminous "E" of the LGB® decoupling track as the decoupler is active. Now, wheather the decoupler is still disengaged or coupling.
Ideally, the two modes, complement each other with the mode for defined position of SW1/2. The outputs of the switches switch automatically to ,,stop" or ,,branch". This hast he advantage that signals on red, decoupling tracks to normal and turn switches to ,,branch" after the system has been switched on.

So you always have a defined starting position.

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 = 250

Programming options

In POM (programming on maintrack) 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.
HINWEIS: Um POM zu nutzen ohne andere Decoder zu beeinflussen muss Ihre Digitalzentrale POM an spezifische Decoderadresse unterstützten.
NOTE: To use POM without others decoder must affect your digital center POM to specific decoder adresses.

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 adress

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.
Programm these values into the CVs of SW1, SW2, A1 and A2.

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 (function and switch outputs)

Function output features

Function	**A1**	**A2**	**SW1**	**SW2**	**Timevalue**
On/Off	**X**	**X**	**X**	**X**	
Deactivated	**X**	**X**			

Permanent-On	**X**	**X**			
Forwards only					
Backwards only					
Standing only					
Driving only					
Timer sym. flash					**X**
Timer asym. short					**X**
Timer asym. long					**X**
Monoflop					**X**
Switch on delay					**X**
Firebox					
TV flickering					
Photographer flash					**X**
Petroleum flickering					
Flourescent tube					
Pairwise alternating					**X**

Autom. switch back			**X**	**X**	**X**
Dimmable	**X**	**X**	**X**	**X**	

CV-Table

	CV	Description	S	L/S	Range	Note	
	7	Software version	–		–	read only (10 = 1.0)	
		Decoder reset functions					
	7	3 ranges available			11 16 33	basic settings (CV 1,11-13,17-19,29-117) programming lock (CV 15/16) function- & Switch outputs (CV 118-139)	
	8	Manufacturer ID	160		–	read only	
		Register programming mode					
	7+8	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)	250	LS	0 – 255	to lock only change this value	
	16	Programming lock (lock)	250	LS	0 – 255	changes in CV 16 will change CV 15	

	48	Switch address calculation	0	S	0/1	0 = Switch adress like norm 1 = Switch adress like Roco, Fleischmann
	49	mXion configuration	0	LS		bitwise programming

Bit	**Value**	**OFF (Value 0)**	**ON**
0	1	A1 normal function	A1 for decouplertrack lamp
1	2	A2 normal function	A2 for decouplertrack lamp
2	4	3-Way-Switch inactive	3-Way-Switch active
3	8	SW1 no defined position	SW1 defined position
4	16	SW2 no defined position	SW1 defined position
5	32	A1 normal output	A1 permanent switched-on
6	64	A2 normal output	A2 permanent switched-on
7	128	switch outputs single use	sw outp. paired (if Bit 2 = 0)

118	Switch output invers	0	W	0 – 255	add the values to the desired function! SW1 = 1, SW2 = 2, A1 = 4, A2LW = 8 Only with version 1.1 and higher
120	switch address 1 (SW 1) high	0	S		switch output 1, if address smaller 256 e

121	switch address 1 (SW 1) low	1	S	1 – 2048	asy programm CV121 = desired address!
122	switch 1 dimming valu e	100	S	1 – 100	dimming value in % (1 % approx. 0,2 V)
123	switch 1 time for auto matic switch back function	0	S	0 – 255	0 = off 1 – 255 = time base 0,25 sec. each value
124	switch 1 switch off tim e	3	S	0 – 255	0 = permanent on 1 – 255 = time base 0,25 sec. each value
125	switch address 2 (SW 2) high	0	S	1 – 2048	switch output 2, if address smaller 256 e asy programm CV126 = desired address!
126	switch address 2 (SW 2) low	1	S		
127	switch 2 dimming valu e	100	S	1 – 100	dimming value in % (1 % approx. 0,2 V)
128	switch 2 time for auto matic switch back function	0	S	0 – 255	0 = off 1 – 255 = time base 0,25 sec. each value
129	switch 2 switch off tim e	3	S	0 – 255	0 = permanent on 1 – 255 = time base 0,25 sec. each value
131	A1 dimming value	100	LS	1 – 100	dimming value in % (1 % ca. 0,2 V)
132	A1 switch address hig h	0	S	1 – 2048	function output 1, if address smaller 256 easy programm CV133 = desired addres s!

133	A1 switch address low	3	S		
134	A1 time for special fun ction	10	LS	1 – 255	time base (0,1s / value)
136	A2 dimming value	100	LS	1 – 100	dimming value in % (1 % ca. 0,2 V)
137	A2 switch address hig h	0	S	1 – 2048	function output 2, if address smaller 256 easy programm CV138 = desired addres s!
138	A2 switch address low	3	S		
139	A2 time for special fun ction	10	LS	1 – 255	time base (0,1s / value)

Technical data

Power supply: 7-27V DC/DCC 5-18V AC
Current: 20mA (with out functions)
Maximum function current: A1 0.3 Amps. A2 0.3 Amps. SW1-SW8 each 0.8 Amps.
Maximum current: 2 Amps.
Temperature range: -20 up to 85°C
Dimensions L*B*H (cm): 4.5*3*1.5
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

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https://www.youtube.com/@micron-dynamics

Documents / Resources

	mxion ZKW 2 Channel Switch Decoder [pdf] User Manual ZKW 2 Channel Switch Decoder, ZKW, 2 Channel Switch Decoder, 2 Channel Decoder, Switch Decoder, Decoder, ZKW Decoder

References

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