mXion USD 6-Channel Switching Decoder User Manual

Contents

MAXION WHEELS

mXion PWD 2-Channel Function Decoder

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 functions are only available with the latest firmware. Please make sure that your device is programmed with the latest firmware.

Summary of Functions

Summary of Funktions
DCC NMRA digital operation
Compatible NMRA-DCC module
Märklin-Motorola digital operation
Very small outlet
6 reinforced function output
18 effect for each output activable
SDF-Specialdecoderfunction with 14
run-lights, house, construction side, funfair Outputs invertable
Switch outputs dimmable
Reset function for all CV values
Ideally for station lamps and more
Easy function mapping
Programming via programming switch Multiple programming options
(Bitwise, CV, POM accessoire decoder, register) Needs no programming load

Scope of supply

- Manual

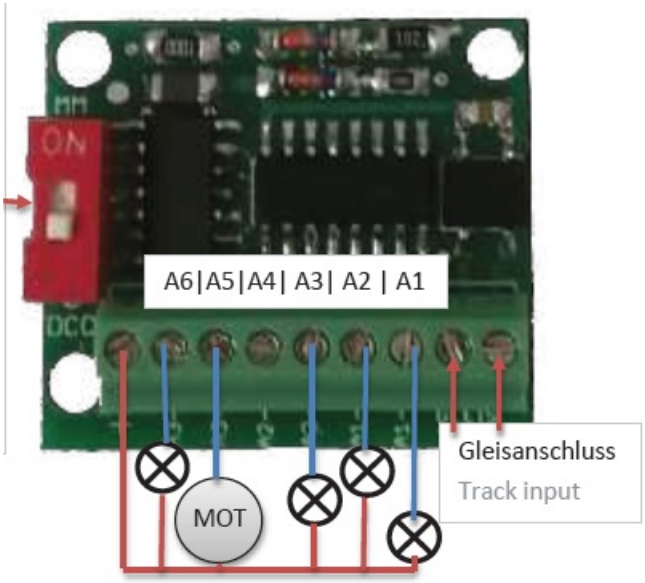
- mXion PWD

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

DCC/MM switch
At operation, programming switch, change direction for start programming send desired address switch back to normal state



Product description

The mXion USD is a very small but powerful 6 ch. switch decoder for universal use.

He offers various programmable functions like flashing, pairwise flashing and over
16 other effects (18 in total). This includes simulations such as TV, Neon, Petroleum, Welding, US lights and much more. The effects are great for street lamps, even entire streets, houses and much more and also with the SDF combined!

The special thing about this decoder is that integrated SDF. With this system (known from our FSD decoder) you can now stationary
the 6 channel use for chases (14 integrated), fun fair (2x integrated), lively house, construction site and much more ideal for funfairs, buildings and so on.

The 6 turnout addresses can be independently programm and do not need each other be following. In addition to the usual CV programming also supports the module a programming switch to quickly get the addresses to be able to change.

The module supports DCC and Motorola, so this decoder can be used universally.

Fairy mode
Another special feature of the decoder is the SDF and thus the fair, running lights and site feature. This is described in CV19 set. Switched via F1 (CV21). So owns the decoder 15 chases with various patterns, construction site running lights, speed cameras and much more. On top of that
2 finished fairground events integr. (15/16).

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 = 245

Programming options

This decoder supports the following programming types: bitwise, POM and CV read & write and register-mode.

There will be no extra load for programming.

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.

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.

About the programming button:
Change the position of the slider during operation, the point output 1 will alternate in 1 sec. clocking.

Switch on the desired control unit on the control unit switch address, then output 1 will alternate faster (0,5 sec). In order to the address has been accepted correctly and all 3 outputs are numbered.

You can now put the slider back on the switch the original state. The protocol can not be changed during operation become!

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 outputs)

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

CV	Description	S	L/S	Range	Note	
7	Software version	–		–	read only (10 = 1.1)	
	Decoder reset functions					
7	3 ranges available			11 16 33	basic settings (CV 1,11-13,17-19,29-119) programming lock (CV 15/16) function- & Switch outputs (CV 120-139)	
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	
9	SDF-House time min in minute	3	S	1 – 255	minimal time for reload rate	
10	SDF- House time max in minute	15	S	1 – 255	maximum time for reload rate	

12	Random generator	0	W	0 – 255	Add value to the CV for function 0 = deactive +1 = A1, +2 = A2, +4 = A3, +8 = A4, +16 = A 5, +32 = A6	
15	Programming lock (key)	165	S	0 – 255	to lock only change this value	
16	Programming lock (lock)	165	S	0 – 255	changes in CV 16 will change CV 15	
17	SDF time for function	10	S	0 – 255	time base (10 ms / value)	
18	Switch address calculation	0	S	0/1	0 = Switch adress like norm 1 = Switch adress like Roco, Fleischmann	
19	Specialdecoderfunctions (SDF)	0	S		see attachment 2, switchable w. A1 0 = deactive, normal function for A1-A6 else SDF effect active	
20	A1 switch address high	0	S	1 – 2048	switch output 1, if address smaller 256 easy programm CV21 = desired address!	
21	A1 switch address low	1	S			
22	A1 dimming value	100	S	1 – 228	dimming value in % (1 % ca. 0,2 V) +128 = fading	
23	A1 special function	0	S		see attachment 1	
24	A1 time for special function	5	S	1 – 255	time base (0,1s / value)	

25	A2 switch address high	0	S	1 – 2048	switch output 2, if address smaller 256 easy programm CV26 = desired address!	
26	A2 switch address low	2	S			
27	A2 dimming value	100	S	1 – 228	dimming value in % (1 % ca. 0,2 V) +128 = fading	
28	A2 special function	0	S		see attachment 1	
29	A2 time for special function	5	S	1 – 255	time base (0,1s / value)	
30	A3 switch address high	0	S	1 – 2048	switch output 3, if address smaller 256 easy programm CV31 = desired address!	
31	A3 switch address low	3	S			
32	A3 dimming value	100	S	1 – 228	dimming value in % (1 % ca. 0,2 V) +128 = fading	
33	A3 special function	0	S		see attachment 1	
34	A3 time for special function	5	S	1 – 255	time base (0,1s / value)	
35	A4 switch address high	0	S	1 – 2048	switch output 4, if address smaller 256 easy programm CV36 = desired address!	
36	A4 switch address low	1	S			
37	A4 dimming value	100	S	1 – 228	dimming value in % (1 % ca. 0,2 V) +128 = fading	

38	A4 special function	0	S		see attachment 1	
39	A4 time for special function	5	S	1 – 255	time base (0,1s / value)	
40	A5 switch address high	0	S	1 – 2048	switch output 5, if address smaller 256 easy programm CV41 = desired address!	
41	A5 switch address low	2	S			
42	A5 dimming value	100	S	1 – 228	dimming value in % (1 % ca. 0,2 V) +128 = fading	
43	A5 special function	0	S		see attachment 1	
44	A5 time for special function	5	S	1 – 255	time base (0,1s / value)	
45	A6 switch address high	0	S	1 – 2048	switch output 6, if address smaller 256 easy programm CV46 = desired address!	
46	A6 switch address low	3	S			
47	A6 dimming value	100	S	1 – 228	dimming value in % (1 % ca. 0,2 V) +128 = fading	
48	A6 special function	0	S		see attachment 1	
49	A6 time for special function	5	S	1 – 255	time base (0,1s / value)	

ATTACHMENT 1 – Special function			
Value	**Application**	**Note**	
0	no special function (normal output)		
1	flash symetric	time base (0,1s / value)	
2	flash asymetric short ON (1:4)	time base (0,1s / Value) is for the long v alue	
3	flash a symetric long ON (4:1)		
4	Photographer flash	time base (0,25s / value)	
5	monoflop (automatic switch off)	time base (0,1s / value)	
6	switch on delayed	time base (0,1s / value)	
7	firebox		
8	TV flickering		
9	petroleum flickering		
10	flourescent tube		
11	defective flourescent tube		
12	alternating flash to paired output	in combination with second output (e.g. A1 & A2, A3 & A4)	
13	US strobelight		
14	US double strobelight		
15	US marslight	time base (0,1s / value)	
16	US ditch light	in combination with second output (e.g. A1 & A2, A3 & A4), 1st output normal lig ht, 2nd ditch light function	
17	sodium lamp		
18	welding light	use with blue led	
+32	add switch off delayed	add value to function	
+64	add switch on delayed	add value to function	
+128	invers	add value to function	

ATTACHMENT 2 – SDF lightcontrol			
Value	**Application**	**Note**	
0	no special function (normal output)		
1 – 14	running light (differnt templates)	time base (10 ms / value)	
15	fairground 1	time base (10 ms / value)	
16	fairground 2 (mXion KLM)		
18	construction side light simulation	A6 = flasher	
19	flash lights	time base (10 ms / value)	
21	moving house (A1-A6 lights, A7 = bath, A8 = TV)	rate = time base	

Technical data

- Power supply: 7-27V DC/DCC 5-18V AC
- Current: 5mA (with out functions)
- Maximum function current:
  - Switch 1-6 each 0.5 Amps.
- Maximum current: 1.5 Amps.
- Temperature range: -40 up to 85°C
- Dimensions L*B*H (cm): 2.5*2.7*1

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:

- micron-dynamics
- **info@micron-dynamics.de**
- **service@micron-dynamics.de**

Documents / Resources

	mXion USD 6-Channel Switching Decoder [pdf] User Manual USD 6-Channel Switching Decoder, USD, 6-Channel Switching Decoder, Switching Decoder, Decoder

References

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