DOEPFER

MIDI Master Keyboard

LMK2+

User's Guide

LMK2 User's Guide

INDEX

The difference between the MIDI Masterkeyboards LMK2 und LMK2+ is the type of keys. LMK2 uses weighted plastic keys while LMK2 has keys with real hammer mechanics. The control of LMK2 and LMK2+ is identical. Both instruments are delivered with the combined LMK2/LMK2+ manual.

1. POWER SUPPLY

The LMK2 does not have a built-in power supply. Instead it uses a plug-in type external power supply (AC adapter). One reason for this feature is electrical safety. Keeping danger voltages (main) out of the keyboard increases the electrical safety. Therefore a external power supply of high quality and safety should be used. If the keyboard is used in Germany the external power supply must be VDE approved.
Another reason for the external power supply is the fact that line voltages and plug types vary considerably from country to country. Using a plug-in external supply the LMK2 can be used any where with a locally purchased power supply, thus keeping the retail price down.
The power supply must be able to deliver 7-12 VDC unstabilized voltage, as well as a minimum current of 200mA. The LMK2 is switched ON by plugging the AC adapter into a wall outlet and connecting it to the appropriate jack on the back of the keyboard case. There is no separate ON/OFF switch.
If the polarity of the power supply is incorrect, the LMK2 will not function. However, there is no danger of damage to the circuitry since it is protected by a diode. A power supply for 230V AC and European type plug is included with the LMK2. Any other type of power supply and must be purchased locally by the user.
If you are using the power supply shipped with LMK2 you may find the pinout of the LMK2 power jack in the appendix B.

2. MIDI-INTERFACE

Connect the MIDI-OUT jack(s) of the LMK2 with MIDI-IN of the device(s) to be controlled (i.e. Expander, Sequencer, Synthesizer, etc.) via a suitable MIDI-cable. Both MIDI-OUTs are sending the same MIDI-signal. If you want to control more than 2 MIDI devices you have to use daisy chain MIDI THRU/MIDI IN connection of the devices ore use a external MIDI THRU BOX.

3. CONNECTION OF EXTERNAL PEDAL AND FOOT CONTROLLER

Located on the rear of the keyboard case are 2 jacks for connecting a single or double foot switch and a foot controller. The jack for the switches is labeled SUSTAIN, the jack for the foot controller VOLUME. The two foot switches have SUSTAIN (MIDI controller #64) and SOSTENUTO pedal function (MIDI controller #66). If a single foot switch is used only the SUSTAIN function is available. A suitable foot switch is the DOEPFER VFP2.
If a foot controller is connected to the VOLUME jack it has volume function (MIDI controller #7). A suitable foot controller is the DOEPFER FP5.
If you are not using VFP2 or FP5 you may find the pinout of the SUSTAIN and VOLUME jacks in the appendix B as well as the type of potentiometer required for the foot controller.
The activity of the foot switches and the foot controller can be turned on or off for each keyboard zone independently. For details see chapter 5.3.7 CONTROLLERS in this manual.

Do not connect the footswitches or the foot controller unless the LMK2 is switched OFF. While power on the LMK2 electronics checks the levels of the foot switches and assumes that these levels are the "off" states. So do not operate the foot switches while turning power on. This feature allows the use of foot switches with contacts open at rest as well as those closed at rest. The foot switches and the foot controller are not included with the LMK2 and have to be ordered separately if required. The LMK2 will work without the foot switches and the foot controller, although the functions SUSTAIN, SOSTENUTO and VOLUME will not be available to the user in that case.

4. CONTROLS

The LMK2 features the following controls and displays:

- 3-digit LED display
- 8 MENU-buttons in 2 rows of 4 buttons each
- 8 LEDs (serving as indicators for the MENU-buttons)
- 1 Wheel without spring (assignable to any MIDI Controller #1..31)
- 1 spring loaded Wheel (for Pitch Bend function)

In addition LMK2 is equipped with a monophonic After Touch sensor below the keys that is activated if you put pressure on the keys pressed down. The activity of the wheels and the after touch sensor can be turned on or off for each keyboard zone independently. For details see chapter 5.3.7 CONTROLLERS in this manual.

5. OPERATING AND SECURITY INSTRUCTIONS

Please follow the given instructions for use of the instrument because this will guarantee correct instrument operation. Due to the fact that these instructions touch on Product Liability, it is absolutely imperative that they be read carefully. Any claim for defect will be rejected if one or more of the items was observed. Disregard of the instructions can endanger the 6 month warranty.

The instrument may only be used for the purpose described in this operating manual. Due to safety reasons, the instrument must never be used for other purposes not described in this manual. If you are not sure about the intended purpose of the instrument please contact an expert.

The instrument may only be operated with the voltage written on the power input on the rear panel. Before opening the case disconnect the power plug.

All eventual modifications must only be carried out by a qualified person who will follow the valid safety instructions. Every modification should becarried out only at the manufacturer or an authorized service company. Any modification not released by the manufacturer leads to the extinction of the operation permission.

With the introduction of a third person the warranty will be lost. In case of a destroyed warranty seal, any warranty claim will be rejected.

The instrument must never be operated outdoors but in dry, closed rooms. Never use the instrument in a humid or wet environment nor near inflammables.

No liquids or conducting materials must get into the instrument. If this should happen the instrument must be disconnected from power immediately and be examined, cleaned and eventually be repaired by a qualified person.

Never subject the instrument to temperatures above +50°C or below -10°C. Before operation the instrument should have a temperature of at least 10°C. Do not place the instrument into direct sun light. Do not install the instrument near heat sources.

Keep the top side of the instrument free in order to guarantee proper ventilation, otherwise the instrument could be overheated. Never place heavy objects on the instrument.

All cables connected with the instrument must be checked periodically. If there is any damage the cables must be repaired or replaced by an authorized person.

Transport the instrument carefully, never let it fall or overturn. Make sure that during transport and in use the instrument has a proper stand and does not fall, slip or turn over because persons could be injured.

Never use the instrument in the immediate proximity of interfering electronic devices (e.g. monitors, computers) since this could create disturbances within the instrument and corrupt memory data.

The exchange of electronic parts (e.g. EPROMs for software update) is allowed only if the instrument is disconnected from power supply.

The instrument should only be shipped in the original packaging. Any instruments shipped to us for return, exchange, warranty repair, update or examination must be in their original packaging! Any other deliveries will be rejected. Therefore, you should keep the original packaging and the technical documentation.

When using the instrument in Germany, the appropriate VDE standards must be followed. The following standards are of special importance: DIN VDE 0100 (Teil 300/11.85, Teil 410/11.83, Teil 481/10.87), DIN VDE 0532 (Teil 1/03.82), DIN VDE 0550 (Teil 1/12.69), DIN VDE 0551 (05.72), DIN VDE 0551e (06.75), DIN VDE 0700 (Teil 1/02.81, Teil 207/10.82), DIN VDE 0711 (Teil 500/10.89), DIN VDE 0860 (05.89), DIN VDE 0869 (01.85). VDE papers can be obtained from the VDE-Verlag GmbH, Berlin.

6. OPERATION OF THE KEYBOARD

6.1 SWITCHING THE KEYBOARD ON

When the keyboard is switched ON a message regarding the software version will appear for several seconds on the display (for example "100" for version 1.00) and the LEDs will flicker for several seconds. After that the keyboard will go into the PLAY-mode and all settings made before
turning the keyboard off previously are automatically called up (non volatile memory for the last settings). The PLAY-mode is indicated by the letters "PLA" on the display.

6.2 MENU STRUCTURE

There are 8 menus available which are selected by means of the 8 MENU-buttons. A menu is selected by pressing the corresponding MENU-button. The LEDs above the MENU-buttons indicate which menu is active at any given time. Menus are exited simply by pressing a different MENU-button. Some menus are exited by pressing the same MENU-button a second time or by pressing one of the keys on the keyboard. If none of the LEDs is illuminated the keyboard is in PLAY-mode. PLAY-mode is always indicated by the absence of illuminated LEDs and the letters "PLA" on the display. In some menus both the controls and certain keys on the keyboard are utilized to set parameters.

The following menus correspond to the MENU-buttons (from left to right):

	Upper row			**Lower row**
1	**PRESET**		5	**TRANSPOSE**
2	**PROGRAM CHANGE/BANK/REALTIME**		6	**DYNAMIC**
3	**SPLIT**		7	**CONTROLLERS**
4	**CHANNEL**		8	**PANIC**

In the next few paragraphs the function of each menu is briefly discussed. A detailed description of each menu can be found in the next section after that.

1 PRESET

The LMK2 has 17 presets. Each preset contains data about all 4 keyboard zones and their corresponding keyboard ranges, MIDI-channels, transpositions, allocation and activation of the controllers and the velocity-response curve. Preset 1 is the user definded preset that is called up when turning on the keyboard and that is automatically altered whenever the user changes any zone parameter.
Presets 2-17 are 16 factory presets which are fixed and cannot be altered by the user. The PRESET-menu serves to select the user preset (1) or one of the the 16 factory presets.

2 PROGRAM CHANGE/BANK/REAL TIME

This menu, in conjunction with the keys of the keyboard, is used to send MIDI-program change and MIDI-bank select messages (MIDI controllers #0 and #32) to the devices connected to the LMK2. Also, in this menu the MIDI-real time messages START, STOP and CONTINUE can be sent. Certain keys of the keyboard are used for this purpose.

3 SPLIT

The LMK2 can transmit on up to 4 MIDI-channels simultaneously. Each MIDI-channel is assigned a part of the keyboard, a so-called keyboard zone or split range. Overlaps between the zones are possible (i.e. some keys are used by more than one zone). The SPLIT-menu is used to define the keyboard zones, i.e. the lowest/highest key for each of the 4 zones.

4 CHANNEL

In this menu the MIDI-channels for the 4 keyboard zones are set.

5 TRANSPOSE

In this menu the transpositions of the 4 keyboard zones are set.

6 DYNAMIC

In this menu the velocity-response curves for the 4 keyboard zones are set. 16 different velocity tables are available.

7 CONTROLLER

In this menu the on/off status of each wheel, the after touch sensor, the external foot switches and the external foot controller is determined for each keyboard zone, as well as the controller number (#1...31) for the first wheel (the not spring loaded type).

8 PANIC

This menu provides a PANIC-button which can be used in any operational mode.

6.3 DETAILED DESCRIPTION OF MENUS

The following rules apply to all menus and will not be mentioned in each individual menu description:

- A menu is activated by pressing the corresponding MENU-button. The active menu is indicated by an illuminated LED.
- In some cases, menus are deactivated automatically once certain parameters have been set. The keyboard will then go into PLAY-mode. Other menus can be exited only by pressing another MENU-button. (This method of leaving a menu will work with all menus)
- Repeated pressing of the same MENU-button will cause a switch to the next keyboard zone or to the next parameter (except for the PRESET- and PANIC-buttons !). In order to go into the next keyboard zone or to the next parameter, the button for the presently active menu has to be pressed again. This is continued until the desired keyboard zone or the desired parameter has been reached. The process is circular, i.e. after zone 4 one jumps back to zone 1 and starts over again.
- Some functions cause a sequence of letters and/or numbers to appear on the display prior to it indicating PLAY-mode with "PLA". However, the keyboard will already be in PLAY-mode and the user can play on the keyboard. The time-delay for the display change was chosen in order for the user to be able to read the parameter which has been set. If the display were to change immediately, the parameter would only appear for a fraction of a second and would thus be impossible to read.
- In order to set the various parameters, both the controls and keys on the keyboard are being utilized. A graphic representation of the functions of the keyboard keys is provided below.
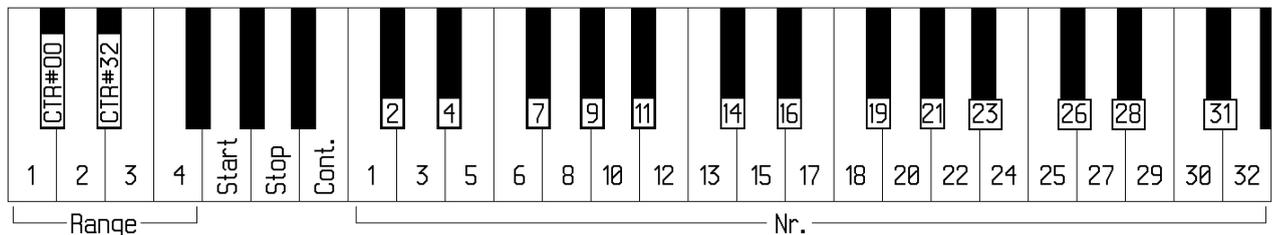
All the white keys and two of the black keys of the lowest octave (C-C) have the following special functions in the PROGRAM CHANGE/BANK/REAL TIME menu:

C	**Select number range 1-32**
D	**Select number range 33-64**
E	**Select number range 65-96**
F	**Select number range 97-128**
G	**START**
A	**STOP**
H(B)	**CONTINUE**
CIS	**Select Controller #0-Mode**
DIS	**Select Controller #32-Mode**

The NUMBER-keys which are needed to enter numbers (Program-number, MIDI-channel, Velocity-response curve, Controller-number) in some menus start with C in the next higher octave (i.e. C=1, Cis=2, D=3, Dis=4, etc.). The number labels 1-32 above the keyboard make it easier to find the right number key.

6.3.1 PRESET (1)

Leftmost button in the upper row

The PRESET-menu serves to call up the user preset (1) or one of the 16 factory presets (2-17). Each preset contains all data about the 4 keyboard zones, i.e. the corresponding keyboard ranges, MIDI-channels, transpositions, allocation and activation of the controllers and the velocity-response curves.

When entering this menu the LED display will show the number of the currently selected preset. A new preset is called up by pressing one of the keyboard keys which have been assigned the numbers 1 through 17. The new preset number will appear on the display for several seconds and the keyboard goes into PLAY-mode.

You have to distinguish between the user preset 1 and the 16 factory presets 2-17. If you call up preset 1 the user defined preset memory is selected. If you modify any parameter in the menus 3-7 after calling up preset 1 the change is written immediately to the user preset and is available after turning the keyboard off and on again.

If you select one of the factory presets 2-17 the keyboard parameters may be changed in the same way but the changes are lost after turning the LMK2 off. Information about the keyboard configurations contained in the 16 factory presets can be found in Appendix D. If individual parameter settings shall be available after turning the LMK2 off and on again you have to call up preset 1 and modify the parameters as required. When turning the keyboard on next time the user preset 1 is called up automatically and thus the required individual parameter settings.

6.3.2 PROGRAM CHANGE / BANK / REALTIME (2)

2nd button in the upper row

This menu serves to send MIDI-program change, MIDI-bank select and MIDI-real time messages. When entering this menu the number of the selected keyboard zone (important for the MIDI-channel on which the program change and bank instructions will be sent) will be shown on the left of the LED display, the number of the presently selected number range on the right (1 = 1...32, 2 = 33-64, 3 = 65-96, 4 = 97-128).

Sending a program change instruction

The programs are organized into 4 ranges of 32 programs each. Number range 1 corresponds to programs 1-32, range 2 to 33-64, range 3 to 65-96 and range 4 to 97-128. The number ranges are selected with the first four white keys of the lowest octave of the keyboard (C, D, E, F). When switching range with one of these keys the range number 1...4 is shown on the display. However, no program change instruction is sent until one of the keys corresponding to the numbers 1-32 on the keyboard has been pressed. The program number sent will appear on the display for several seconds, then the keyboard will go into PLAY-mode. The program-number will be sent on the MIDI-channel which has been assigned to the currently selected keyboard zone.

Sending a program bank instruction

To switch from program change mode to program bank mode you have to press one of the first two black keys in the lower octave. The CIS key selects the controller #0 mode, DIS the controller #32 mode. If you press after that one of the number keys 1...32 a controller #0 or #32 instruction is sent. The range is selected in the same way as for the program change mode with the first 4 white keys.

Unfortunately there is one difference between the data range of program change and program bank instructions. The program change number range is 1...128, only a few manufacturers use the range 0...127. However the data range of controller #0 and #32 is 0...127. So you have to add 1 to the controller data required to get the right key number (key number 1 corresponds to program change data 1 but to controller data 0). This inconsistency is found in MIDI unfortunately very often. The internal data range in MIDI is always starting at 0, but in the everyday usage some MIDI parameters start at 1 (e.g. MIDI channel, program change), others at 0 (e.g. controller numbers).

The complete bank instruction consists of a controller #0 event followed by a controller #32 event. Thus up to 16384 (=128 x 128) different program banks theoretically are available. A program change instruction following the bank select instruction selects one of 128 sounds (programs) within the selected bank. Thus up to 2097152 (= 128 x 16384) sounds theoretically are available. Of course no MIDI expander is able to produce 2097152 different sounds. If your expander, synthesizer or sampler recognizes the program bank instruction can be found in the MIDI implementation chart of the unit. Normally only a few combinations of controller #0 and #32 are allowed to select one of the program banks availabe. Some manufacturers also use only Controller #0 or #32 to select a program bank.

Sending a realtime instruction

The upper three white keys of the lowest octave are assigned to the real time instructions START (G), STOP (A), and CONTINUE (H). If one of these three keys is pressed while beeing in menu 2 the corresponding realtime instruction is sent. An abbreviation of the message will appear on the display for several seconds ("StP", "StA", "CON"), then the keyboard goes into PLAY-mode. Pay attention that LMK2 transmits only these three real time events. No clock events i.e. tempo information is sent!

6.3.3 SPLIT (3)
Third button in the upper row

The SPLIT-menu serves to define the keyboard zones, i.e. the lowest/highest key for each of the 4 zones. When entering this menu the LED display will show the number of the currently selected keyboard zone, followed by "LO". The message "LO" is meant to prompt the user to press the lowest key for this keyboard zone. Once a key has been pressed the display will show "HI", meaning that the user should now press the highest key for the keyboard zone. Once this has been accomplished the keyboard will return to PLAY-mode.

6.3.4 CHANNEL (4)
Fourth button in the upper row

This menu serves to set the MIDI-channels for the 4 keyboard zones. When entering this menu the number of the currently selected keyboard zone is shown on the left side of the display, the corresponding MIDI-channel is displayed on the right side. In order to set the MIDI-channel one must press one of the keyboard keys which have been assigned the numbers 1 through 16 (starting with C of the second octave). After the MIDI-channel has been entered the keyboard will return to PLAY-mode.

6.3.5 TRANSPOSE (5)
Leftmost button in the lower row

This menu serves to define the transpositions of the 4 keyboard zones. The number of the currently selected keyboard zone is shown on the left of the display, followed by "FI". "FI" stands for "First" and prompts the user to enter the first key (= reference key) for the transposition. After pressing the desired key the display changes to "SE", prompting the user to press the second key needed for calculation of the transposition. For example, in order to achieve an upward transposition of one octave, one must press any key and then press the same key one octave higher. In order to achieve a downward transposition of a semi-tone one must press any key followed by the next lower key. In order to cancel a transposition one must press the same key twice. Please note that each transposition is calculated from scratch, there are no additive effects from or references to earlier transpositions. Otherwise it would become quite difficult to remember what sort of transposition is actually in effect after several have been made. After the desired pair of values for the keyboard zone in question have been entered the keyboard goes into PLAY-mode.

6.3.6 DYNAMIC (6)
Second button in the lower row

This menu serves to assign velocity-response curves to the 4 keyboard zones. When entering this menu the number of the currently selected keyboard zone is shown on the left side of the display, the corresponding velocity-response curve (1...16) on the right. Information on the use of the velocity-response curves can be found in Appendix A. The curves permit the user to adjust his/her personal keyboard touch to the electronic response of the keyboard, as well as the implementation of key pressure-controlled blend-over effects ("Crossfade"). In order to assign the desired velocity-response curve to a keyboard zone one must press one of the keys on the keyboard which have been assigned the numbers 1 - 16. Afterwards the keyboard will go into PLAY-mode.

6.3.7 CONTROLLER (7)
Third button in the lower row

This menu serves to activate or deactivate the wheels, the after touch, the external footswitches and the external foot controller in the 4 keyboard zones. Additionally the controller number for the wheel without spring is determined in this menu. When entering this menu the number of the currently selected keyboard zone is shown on the left side of the display, on the right side on of the following abbreviations is to be seen:

Abbrev.	Meaning	Function
r1	wheel 1 (without spring)	MIDI-controller 1...31
r2	wheel 2 (spring loaded)	Pitch wheel
EC	external foot controller	Volume (MIDI-Controller #7)
AF	after touch sensor	Monophonic After touch
F1	external foot switch 1	Sustain (MIDI-Controller #64)
F2	external foot switch 2	Sostenuto (MIDI-Controller #66)

Repetitive operation of the menu button steps through all the above abbreviations. When reaching "F2" the next step leads to "r1" of the following zone. The process is circular, i.e. after F2 in zone 4 one jumps back to r1 in zone 1 and starts over again. To turn off the selected controller (controller means in this case one of the above elements) in the selected keyboard zone one has to press any key left of the number key 1 on the keyboard. To turn on the selected controller one has to press any key right of the number key 1 (including key 1 itself). The decimal point of the right digit displays the activity of the selected controller. If this point is illuminated the controller is "on" otherwise it is "off".Except for wheel 1 (r1) the absolute number of the key has no meaning when turning on the controller. It may be any number key from 1 to 32. For wheel 1 (r1, wheel without spring) the number of the key is equal to the controller number assigned to this wheel. So any MIDI-controller in the range of #1....#31 may be assigned to wheel 1 (e.g. #1 = modulation). To get an information about the controller number of wheel 1 the number is displayed for a short time when selecting wheel 1 before the abbreviation "r1" appears. Whenever you press a number key 1...31 on the keyboard in this mode the new controller number appears shortly in the display followed by "r1". To turn off wheel 1 you have to do the same as for the other controllers i.e. to press any key left of number key 1 on the keyboard. In this case no controller number appears in the display rather "r1" is displayed immediately (without illuminated decimal point).

6.3.8 PANIC (8)
Fourth button in the lower row

This is a panic button which can be used in any operational mode, rather than an actual menu. When this button is pressed an "All Notes Off"-instruction is sent on all 16 MIDI-channels. Additionally Modulation (Controller #1) is set to 0, Volume (Controller #7) to 110 and Pitch-Bend to 64 on all 16 MIDI-Channels. The function is used primarily in the event of "stuck notes" in order to switch off all sound generating devices. Please note that the devices connected to the LMK2 must be able to recognize the "All Notes Off"-instruction.

Appendix A: Information about the velocity-response curves

When defining the parameters of the keyboard zones, one can select among 8 velocity-response curves. In the following paragraph the reasons for this feature shall be discussed briefly.

The special MIDI-chip used inside the LMK2 to poll the key-contacts uses the time difference required by the switch-contact to derive the velocity response (or dynamics-value). The relationship between measured time difference and velocity is one of inverse proportion, i.e.doubling the time causes the velocity-response to be halved. However, this is not the response one is used to from a piano. Thus the option of adjusting the keyboard's velocity-response via response curves was created. In the case of a non-adjusted velocity-response (Curve 1) most people feel that the high values start too early and that there is insufficient resolution in the lower range. There are three curves (Curves 2,3 and 4) which more or less compensate for this. The higher the number of the curve the more the velocity-response moves upward, i.e. the harder one must press the keys to obtain a given velocity-response. Curve 5 shows the exact opposite response. Here the high dynamics-values appear much earlier than in the linear curve 1. Curve 6 is an exponential curve like curves 2,3 and 4, but it features a start-response. The inverted curve 7 features decreasing velocity-response values as key-pressure increases. This seemingly illogical feature can be used for key-pressure-controlled blend-over effects ("Crossfade"). This is done by defining two keyboard zones with equal numbers of keys and assigning a normal curve (for example No.3) to one zone and the inverse curve to the other. Then two expanders (or one expander capable of simultaneously generating different sounds on two different channels) are run via two different channels from these two keyboard zones. Depending on how hard the keys are pressed one expander will now become louder while the other expander will simultaneously become more quiet. If curve 8 is selected, the same dynamics-value (64) is sent constantly, regardless of actual key pressure. This curve would be used for non-dynamic sounds such as that of an organ.

The velocity response curves 9-16 are identical to the curves 1-8 with one little exception. If a key is pressed very slow the curves 1-8 produce a small velocity value (normally 1) whereas the curves 9-16 will send a velocity value of 0 (this is defined as note off). The main reason for the curves 9-16 is that many expanders produce an audible sound if they receive a note on event with velocity 1. But this is not the behaviour of a real piano. A real piano will produce no sound in this case. So if you want to achieve the behaviour of a real piano you have to select one of the velocity response curves 9-16 rather than 1-8. Therefore the curves 9-16 are called "Piano Mode velocity response curves".

Velocity-response is to some extent also dependant upon the expander being used. There are significant differences in the characteristics of different expanders. Some expanders also include various velocity-response curves of their own. The 8 curves included with the LMK2 generally permit sufficiently good adjustment of the velocity-response characteristics.

| 1/9 | 2/10 | 3/11 | 4/12 | 5/13 | 6/14 | 7/15 | 8/16 |
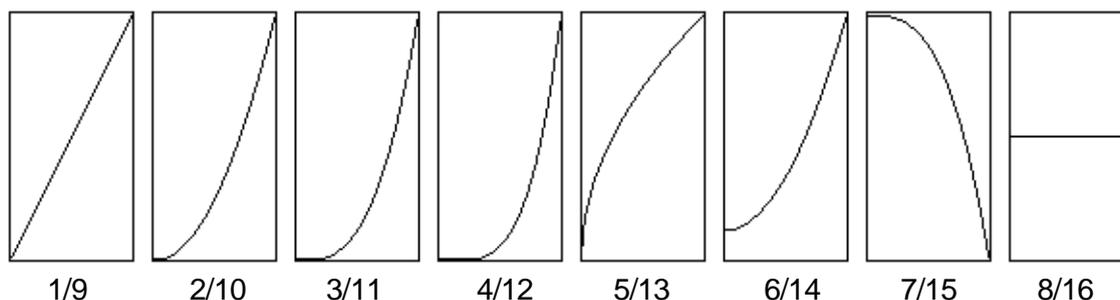
Appendix B: Pin Assignment of the Jack Sockets
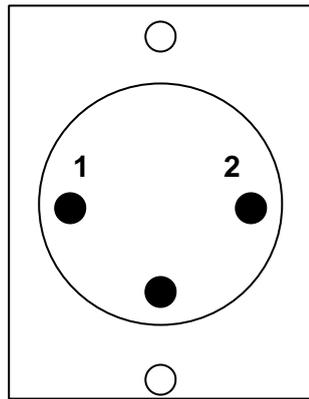
Power Supply

1 = +7...12V DC
2 = GND

"high" end   "low" end

Foot Controller ("Volume")

2...10k linear
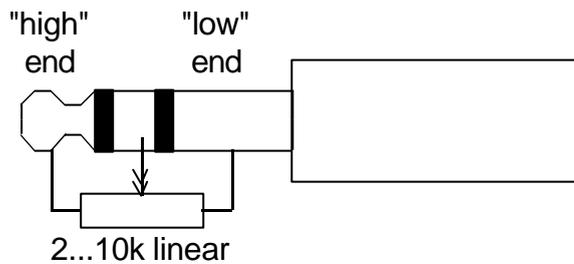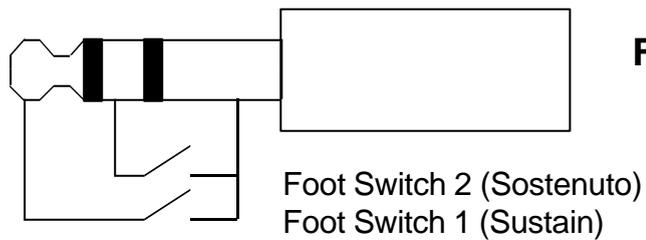
Foot Controller ("Sustain")

Foot Switch 2 (Sostenuto)
Foot Switch 1 (Sustain)

Appendix C : Velocity-Response Reduction Factor for the Black Keys

Because of the shorter leverage the black keys have a slightly higher velocity response than the white keys with pressure being equal. The LMK2 enables to reduce the velocity values of the black keys in comparison to the white keys. To adjust the reduction factor you have to keep pressed the first button (PRESET) during power on. In this case you will enter a special menu where a 3 digit number is to be seen on the display. The value can be adjusted by using wheel 1 (not spring loaded type). A value of 127 corresponds to a reduction factor 1 i.e. no reduction. Values below 127 reduce the velocity values of the black keys. The possible display range of 100...127 corresponds to a reduction factor of about 0.75 . . . 1.0. From our experience values between 110 and 120 are meaningful. The factory value is 118. If the desired value appears in the display you have to press the last button (PANIC) to leave this special menu. By this means the value is stored to the non volatile memory of the LMK2 and you enter the play mode.

Appendix D: Details of the 16 Factory Presets

	Zone 1					Zone 2					Zone 3					Zone 4					Bemerkung
Preset	L	H	C	T	V	L	H	C	T	V	L	H	C	T	V	L	H	C	T	V	
2	21	108	1	0	2																entire keyboard channel 1
3	21	108	2	0	2																entire keyboard channel 2
4	21	108	3	0	2																entire keyboard channel 3
5	21	108	4	0	2																entire keyboard channel 4
6	21	108	5	0	2																entire keyboard channel 5
7	21	108	16	0	2																entire keyboard channel 16
8	21	59	1	0	2	60	108	2	0	2											double split, channel 1/2
9	21	47	1	0	2	48	71	2	0	2	72	108	3	0	2						triple split channel 1/2/3
10	21	35	1	0	2	36	59	2	0	2	60	83	3	0	2	84	108	4	0	2	quad split channel 1/2/3/4
11	21	108	1	0	2	21	108	2	0	2	21	108	3	0	2	21	108	4	12	2	entire keyboard channel 1...4 (zone 4: +1 octave)
12	21	59	1	0	2	21	59	2	0	2	60	108	3	0	2	60	108	3	0	2	"dual double" split channel 1/2+3/4
13	21	108	1	0	2	21	108	2	0	2											entire keyboard channel 1+2 parallel
14	21	59	1	0	2	60	108	2	0	2	60	108	3	0	2	60	108	4	0	2	double split channel 1 + 2/3/4 parallel
15	21	59	1	0	2	60	108	2	0	8	60	83	3	0	2	84	108	4	0	2	quad combination split channel 1+2 / (3+4)
16	21	59	1	0	2	48	83	2	0	2	60	108	3	0	2						triple split with overlap channel 1/2/3
17	21	108	1	0	2	21	108	2	0	7											dynamic blend over channel 1/2

L = Lowest key
H = Highest key
C = MIDI Channel
T = Transposition
V = Velocity table

Shaded zones are not in use. All controllers (wheels, after touch, external foot switches and foot controller) are active in the shaded zones. Wheel 1 is assigned to MIDI-controller #1 (modulation).