VERMONA

ELEKTROAKUSTISCHE MANUFAKTUR



meloDICER

User Guide

manual version: 1.1

firmware version: R19

Foreword

The fact that you are reading this and hopefully the next sentences as well, means, that you purchased a meloDICER or at least want to know more about it. Thank you.

What is meloDICER?

MeloDICER is our vision of a sequencer with the perfect balance between stochastic and deterministic creation of rhythm and melody. Its algorithms generate random values that magically turn into musical events only through your defaults.

Sounds complicated? Don't worry. You can play meloDICER like an instrument. All controls are intuitive and interact with the stochastic engine at any given time.

Please use the manual!

You probably are eager playing around with your newly acquired meloDICER, aren't you? Make it so! Please mount the module into your case by observing all necessary safety precautions. Power it up, and have fun!

When you come to the point where you need some help, get back to this manual and continue reading.

We conceived this manual as a tutorial. It's best to follow it step by step. If you prefer exploring certain aspects of meloDICER, jump to the desired section. No matter how you like to use it, please do the one thing: **Use it!**

If you still are hungry for more information about meloDICER, check out its product site on our homepage.

Enjoy meloDICING!

Your VERMONA crew from the
Elektroakustischen Manufaktur, Erlbach

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Preparations

Probably you changed some settings when discovering the surface of meloDICER. To make sure, that your module behaves as expected reset it to factory defaults.

Reset to factory defaults

1. Make sure your modular system respectively the module is not powered.
2. Press and hold both **DICE** buttons while powering the module. Watch the little lightshow around the *rotary encoder*. Once all LEDs light up, you can release the buttons.

☞ **A factory reset will not affect saved patterns. It only applies to *edit-parameters* and *dice-mode* state.**

If you like to clear the pattern memory as well, press the *rotary encoder* and LOCK when powering meloDICER. The lightshow is even more spectacular.

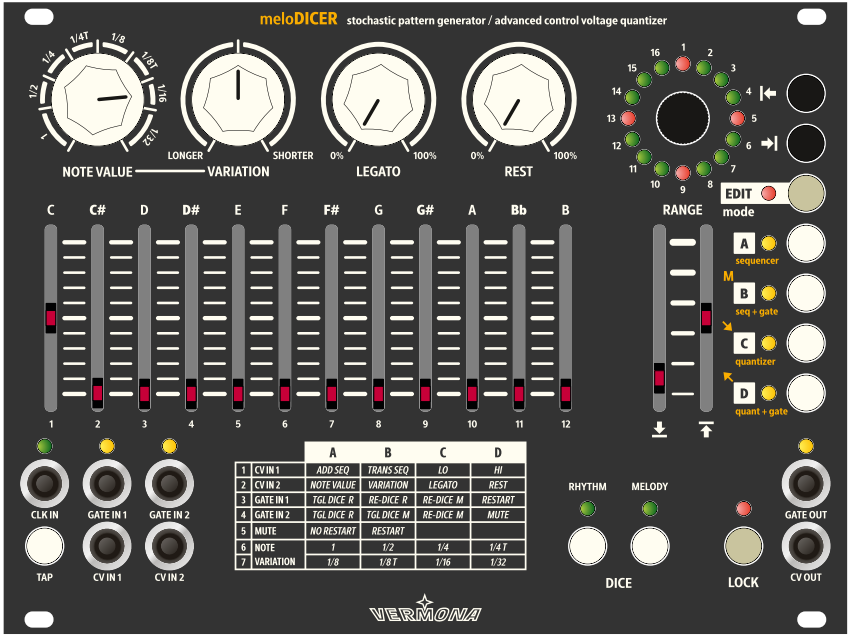
Basic settings and connections

In order to follow this tutorial you will need a synthesizer voice with at least an oscillator and a VCA, modulated by an envelope generator with a sustain-phase.

Connect **GATE OUT** to your envelope generator's input and **1V/OCT** to the oscillators corresponding CV-input.

Please set your meloDICER's knobs and faders like on Figure 1: *MeloDICER with basic settings* on page 5.

☞ **It is helpful to use some kind of metronome as rhythmical reference. Patch a percussive noise or use the click of your DAW and make sure to synchronize meloDICER to it.**



		A	B	C	D
1	CV IN 1	ADD SEQ	TRANS SEQ	LO	HI
2	CV IN 2	NOTE VALUE	VARIATION	LEGATO	REST
3	GATE IN 1	TGL DICE R	RE-DICE R	RE-DICE M	RESTART
4	GATE IN 2	TGL DICE R	TGL DICE M	RE-DICE M	MUTE
5	MUTE	NO RESTART	RESTART		
6	NOTE	1	1/2	1/4	1/4 T
7	VARIATION	1/8	1/8 T	1/16	1/32

Figure 1: MeloDICER with basic settings

Internal and external clocking

MeloDICER can generate its own tempo or it can be synced to an external clock source.

Use **TAP** to set the tempo. Hit the button at least twice, more taps will increase the accuracy. MeloDICER will measure the time between your taps and calculate the desired tempo.

The internal clock will be overwritten when using an external clock signal at **CLK IN**. MeloDICER accepts signals with a voltage of up to +10 volts. It syncs on the positive edge at a threshold of +2 volts.

MeloDICER expects quarter notes as clock reference (1 PPQN). Higher values make the module run too fast.

The module does not work like a step sequencer that triggers the next step with each incoming clock signal. Instead it synchronizes its own internal clock to the external one. Thus, stopping and starting the clock will not immediately stop and start meloDICER.

To start and stop meloDICER use the mute function instead (see "Mute" on page 12).

Basics

With your meloDICER set up as described above, you are ready to explore the control elements and the stochastic engine.

Basically, music has two important parts: rhythm and melody. MeloDICER has a set of controls for each and although the one doesn't work without the other, we will take a look at them separately. Let's start with rhythm.

The RHYTHM Section

The rhythm section has four controls labelled with **NOTE VALUE**, **VARIATION**, **LEGATO** and **REST**.

With the current settings you will hear 1/16th-notes and two pitches, one octave apart. The pattern length is four quarter notes. The LEDs around the *rotary encoder* indicate the position within the pattern with a 1/16-resolution.

NOTE VALUE

You hear 1/16th-notes, because of **NOTE VALUE** is set to this value. If you turn it to another value, a different note length will appear. Play with **NOTE VALUE** to find out what note values meloDICER offers.

NOTE VALUE is a static parameter without any stochastic aspect. There are no surprises here. It simply sets the base rhythm. If you are ready, set it to **1/8** and let's proceed with randomness.

VARIATION

VARIATION randomly brings in other note values, based on the setting of **NOTE VALUE**. It is turned off at 12 o'clock. From there it can create longer note values by turning it to the left, or shorter note values by turning it to the right. Always consider that **VARIATION** directly interacts with **NOTE VALUE**. Play with both controls to generate different rhythm patterns.

☞ **You may recognize, that VARIATION does not generate any of the triplets or 1/32nd-notes. Be relaxed, meloDICER can do that but it is switched off by factory defaults. You will find more information about that under "NOTE VARIATION" on page 20.**

LEGATO

When you play legato on a keyboard, there is a smooth transition between two notes. On meloDICER it means that the pitch (**1V/OCT**) between two notes changes without generating a new gate signal at **GATE OUT**. With **LEGATO** you set the probability for this behavior. Increase the setting to get more legato. On the far right position, there won't be any gate signal at all which means that GATE OUT is always on (+10 volts).

☞ **Legato between two notes with the same pitch is known as tie. It extends the length of the note by the length of the following note.**

REST

Silence is golden. Does this make **REST** the golden rhythm control?

With **REST** meloDICER randomly adds musical rests to the pattern. Set the controls of the rhythm section back to basic settings (see Figure 1: *MeloDICER with basic settings* on page 5) and slowly increase **REST**. Some of the notes will get lost and turned into rests instead of being played. If **REST** is at the far right position, there won't be any note left to play.

Get familiar with all four controls of the rhythm section. Isn't it amazing how the rhythm changes with just these four controls?

The MELODY Section

Now that you know how the rhythm section works, let's explore the melody section with its faders.

Octave Range

Our current pattern consists of only two different pitches, the same note in two octaves. The overall output range of meloDICER is up to five octaves (0…5 volts). You can set the lowest and highest note with the faders ⬇ and ⬆. Raise ⬆ to instantly expand the pattern with higher notes.

If you raise ⬇ as well, lower notes will disappear and the complete pattern will be shifted.

Can you find out what happens if you set ⬇ higher than ⬆ ?

Semitone Probability Faders

These faders set the probability for each semitone to appear in the pattern. In our basic setting we only raised the fader, labeled with **C**. As result, meloDICER generates only C-notes, resp. generates 1 volt and 2 volts at **1V/OCT**.

Raise the **F** fader to 50%. The melody changes immediately and F-notes will appear in the pattern. As both faders are set to the same probability amount the chance is the same for both notes be part of your pattern.

As a visual support, the faders' LED goes on for the duration of the corresponding note.

Raise the **F** fader fully up to increase the probability and with that the number of F-notes.

☞ **The probability for a semitone also depends on the pitch range. If a note is not between ⬇ and ⬆, it cannot be played. If only one semitone-fader is raised, its probability is always 100%, whether it is set fully up or somewhere in between 0 and 100.**

And now start to play with all the parameters you learned about. It's easy to lose yourself in this endless possibilities, randomness and probabilities.

To Dice or not to Dice

There are two more essential control elements of the rhythm- and melody section: The **DICE** buttons.

Did you already hit one or both of them? If not, just do it. With each press, meloDICER generates new random values for the rhythm respectively the melody section. We call that behavior *dice-mode*.

The counterpart of *dice-mode* is *realtime-mode*. Press and hold one or both **DICE** buttons for a second until the corresponding LED goes off. MeloDICER leaves *dice-mode* and enters *realtime-mode*.

In *realtime-mode*, there is no repeated pattern. MeloDICER continuously generates new random values, based on the parameters you set for the corresponding section.

To re-enter *dice-mode*, hit **DICE** again.

☞ **Whenever you re-enter *dice-mode*, you will get the same random values that you had before leaving it. Thus you can play a pattern, change to *realtime-mode* to get some variations and go back to the original pattern.**

With separate DICE buttons for rhythm and melody section, you can i.e. generate a repeated pattern for the rhythm while the melody continuously plays random notes.

Advanced Functions

Pattern Length

Until now our pattern had a length of four quarter notes which marks the maximum length. You can set the first and last step with a resolution of 1/16 and with that the pattern length.

Setting first and last step

Before you proceed, make sure to activate *dice-mode* for the rhythm and melody section.

To the right of the *rotary encoder* you will find the buttons for the first |← and last →| step. If you hold down one of these, the LED around the *rotary encoder* shows the first (1) resp. last (16) step. For changing that, just turn the encoder while still holding down |← or →|.

With release of the knob, the new position is assigned.

☞ **You cannot set the last step before the first step.**

Moving the sub-range

If your range is less than 16/16, you can move the sub-range within the maximum length of four quarter notes. Just press and hold both buttons, |← and →| while turning the encoder. When releasing the buttons, the new position is applied.

Returning to maximum length

If you'd like to quickly return to base settings (step 1 and 16), hold |←, →| or both while pushing the encoder.

Restart

With a push on the *rotary encoder* (without pressing any other button), you can reset the pattern. This means, that it restarts from the first step with the next internal or external clock signal.

☞ **This function can also be triggered with an external trigger signal on GATE IN 1 (see Configuring the gate inputs on page 14).**

Mute

MeloDICER does not have a start, stop or continue button, it is always running. You can however mute **GATE OUT**. The sequencer is still running but doesn't generate any gate event.

You can manually activate mute by pressing **M** (button B). As long as mute is on, the yellow LED next to **M** is blinking.

With *edit-parameter* 5 you can select if leaving mute instantly opens **GATE OUT** again (option A) or if it resets the pattern and opens **GATE OUT** with the next internal or external clock signal (option B) — see "MUTE-Mode " on page 20.

You can also activate/deactivate mute with a gate signal on **GATE IN 2** (see "Configuring the gate inputs" on page 19).

LOCK-Mode

All adjustments of the rhythm- and melody sections are instantly applied. The stochastic engine reacts as soon as you turn a knob or move a fader. Thus, meloDICER can be treated as an instrument. You can and should play the module's control elements.

On the other hand you might want meloDICER to play a pattern while you already prepare new settings for rhythm and or/melody changes. Luckily we implemented *lock-mode* for that purpose.

Press **LOCK** to activate *lock-mode*; the red LED goes on. As long as *lock-mode* is active all control elements of the rhythm and melody section as well as |← and →| are now decoupled from the stochastic engine. The adjustments you make do not have an immediate impact. To apply the settings leave *lock-mode* by pressing **LOCK** again.

Saving and Loading Patterns

What is a pattern?

In the context of meloDICER a pattern means the collection of all ingredients the leads to a certain rhythm and melody. It includes:

- the settings of the rhythm and melody section’s faders and knobs
- the available note values of **VARIATION** (see "NOTE VARIATION" on page 20)
- the patterns' length
- the state of **DICE** buttons
- all currently available random values

MeloDICER can hold up to 16 patterns.

Saving patterns

For saving a pattern, just press the save button ↘ and select a memory space using the *rotary encoder*. By pushing the *rotary encoder*, the pattern will be stored.

If you’d like to abort the storing process, simply press ↘ again.

Loading patterns

To load a pattern press ↖ select the number of the pattern with the *rotary encoder*. When pushing the *rotary encoder*, the new pattern is loaded.

With loading the pattern meloDICER automatically activates *lock-mode* to ensure that the current settings of control elements do not have an impact on the resulting pattern. Remember, meloDICER does not save the sequence but the parameters that leads to certain rhythm-melody-combinations.

As soon as you leave *lock-mode* the stored values will be overwritten by the current settings.

EDIT-Parameters

MeloDICER comes with a simple menu structure to set up some parameters that you won't have to change very often. We call these the *edit-parameters*.

You find a list of all *edit-parameters* printed on the surface of the module.

		A	B	C	D
1	CV IN 1	ADD SEQ	TRANS SEQ	LO	HI
2	CV IN 2	NOTE VALUE	VARIATION	LEGATO	REST
3	GATE IN 1	TGL DICE R	RE-DICE R	RE-DICE M	RESTART
4	GATE IN 2	TGL DICE R	TGL DICE M	RE-DICE M	MUTE
5	MUTE	NO RESTART	RESTART		
6	NOTE	1	1/2	1/4	1/4 T
7	VARIATION	1/8	1/8 T	1/16	1/32

Figure 2: EDIT-parameter list

To access edit parameters follow these steps:

1. Enter the edit menu by pressing EDIT.
2. Select a parameter by setting the *rotary encoder* to the desired value 1...7.
3. Change a parameter's value by using the buttons A, B, C and D. On some parameters you can use more than one option.
4. Leave the edit menu by pressing EDIT again.

Configuring the control voltage inputs

MeloDICER offers two inputs for controlling various parameters by an external control voltage. Both CV inputs work with positive voltages between 0 and 5 volts, negative voltages have no effect.

☞ **Voltages up to +12 volts won't damage meloDICER. But above +5 volts there won't be any changes to the selected parameter(s).**

CV IN 1 – pitch control

Control voltage input **CV IN 1** can be routed to control four destinations dedicated to pitch.

ADD SEQ vs. TRANS SEQ

Options **A** ADD SEQ and **B** TRANS SEQ are exclusive, meaning, that only one of them or none can be selected. They are very similar as both of them affects the sequence's pitch.

A ADD SEQ adds the incoming voltage to the **1V/OCT** output without quantization whereas **B** TRANS SEQ adds the incoming voltage with quantization to semitones.

In practice that means, that you can add a modulation, i.e. from an LFO with option **A**. With option **B** you can transpose the pattern.

☞ **When CV IN 1 is set to ADD SEQ, the input also accepts and processes negative voltages.**

LO and HI

C LO and **D** HI double the faders ⬇ and ⬆. You can either modulate one of them, both or none. The incoming control voltage is added to the current fader setting. Options **C** and **D** work in addition to option **A** or **B**.

CV IN 2 – rhythm control

Control voltage input **CV IN 2** is dedicated to rhythm. They double the rhythm section's functions parameters **NOTE VALUE** (**A**), **VARIATION** (**B**)[1], **LEGATO** (**C**) and **REST** (**D**). All four options can be selected at the same time. The incoming control voltage will be added to the corresponding parameter's setting.

1 EDIT-Patameters **NOTE VALUE** and **VARIATION** do not work in the current firmware version (R19)

Configuring the gate inputs

The gate inputs **GATE IN 1** and **GATE IN 2** can handle gate or trigger signals with a voltage of up to +12 volts. Some of the functions can be assigned to **GATE IN 1** as well as **GATE IN 2**. We describe these functions only once.

Toggle DICE

You can toggle between *dice-mode* and *realtime-mode* using the gate inputs. MeloDICER switches to the opposite mode for the rhythm respectively melody section with each incoming positive edge.

TGL DICE R activates the toggle dice parameter for the rhythm section, **TGL DICE M** for the melody section.

☞ **If you change from *realtime-mode* to dice mode, meloDICER won't dice new random values. It always uses the last available random values. Use the parameter RE-DICE if you want to dice new randomness.**

RE-DICE

You can dice new random values using trigger signals. This only works if the corresponding section is in *dice-mode*.

RE-DICE R generates new random values for the rhythm section, **RE-DICE M** for the melody section.

☞ **The parameters toggle dice and re-dice can be mixed for the same gate input.**

MUTE

Mute doubles the MUTE mode that can be accessed by pressing the **M** button (see "Mute" on page 12). It activates the functions with a positive edge, respectively deactivates it with a negative edge at **GATE IN 2**.

RESTART

Restart doubles the restart function that you can access by pushing the *rotary encoder* (see "Restart" on page 12). It restarts the sequence from the first step with incoming trigger signals.

MUTE-Mode

There are two options of how mute works. With option **A NO RESTART**, it continues at the current position when leaving mute.

If **B RESTART** is active, it deactivates mute with the next clock signal and restarts from the first step.

NOTE VARIATION

Parameter 6 and 7 are dedicated to the **VARIATION** parameter of the rhythm section (see "The RHYTHM Section " on page 7). You can choose which note values should be included in the random variation. Maybe you don't like to use 1/32nd-notes or triplets within your pattern. You can deactivate these values for **VARIATION**.

This parameter doesn't influence **NOTE VALUE**. You still can access triplets there, even if they are not included into **VARIATION**.

☞ **NOTE VARIATION parameters 6 and 7 are stored with a sequence.**

Modes

You can use meloDICER in four different ways. It has two sequencer- and two quantizer-modes. To change the mode follow these steps:

1. Press and hold EDIT for one second.
2. When the red LED is blinking you can select the desired mode A, B, C or D.
3. The new mode is instantly applied. The yellow LED next to the buttons A, B, C and D shows the current mode.

Read on to find a short explanation of the four modes.

A - Sequencer (meloDICER)

This is the standard meloDICER mode. All functions that you learned about in the manual so far work in this mode.

☞ **EDIT-parameters as well as saving and loading patterns are only available here.**

B - Seq + Gate

This mode only uses the melody section as well as **LEGATO** and **REST** of the rhythm section. The module doesn't generate an own rhythm, instead you will have to feed it with gate signals using the **GATE IN 1** input.

The module generates a control coltage at **1V/OCT** based on the settings of note- and octave range faders with each incoming gate signal.

☞ **This mode can be used to alter rhythms that you get from another module, i.e. a randomRHYTHM. You can also use it to pair two meloDICER modules for duophonic melodies with the same rhythm base.**

C - Quantizer 1

In this mode meloDICER works as quantizer for external CV signals. It works with voltages between 0 and 5 volts at **CV IN 2**. The faders of the melody section define your scale. The higher a fader is raised, the wider its quantization range.

The quantized voltages are available at **1V/OCT**. The module quantizes on quarter notes (clock in respectively the red LEDs around the *rotary encoder*). The pattern length can be adjusted by setting up first and last step (see Pattern Length on page 9).

D - Quantizer 2

This mode works similar to quantizer mode 1 but with external gate signals at **GATE IN 2**. As long as **GATE IN 2** gets a gate signal, the voltage at **CV IN 2** will be quantized and output at **1V/OCT**.

Technical Specification

In- and Outputs

CLOCK input ..... max. +12 volts, threshold +2 volts
GATE inputs ..... max. +12 volts, threshold +2 volts
GATE output ..... +10 volts
CV inputs ..... 0…5 volts (max. 12 volts)
1V/OCT output ..... 0…5 volts

Maximum Power Consumption

+12 volts ..... 150 mA
-12 volts ..... 50 mA
+5 volts ..... n/a

Dimensions and Weight

Width/Height ..... 34 HP, 3U
Depth ..... about 25 mm
Weight ..... 333,3 g



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