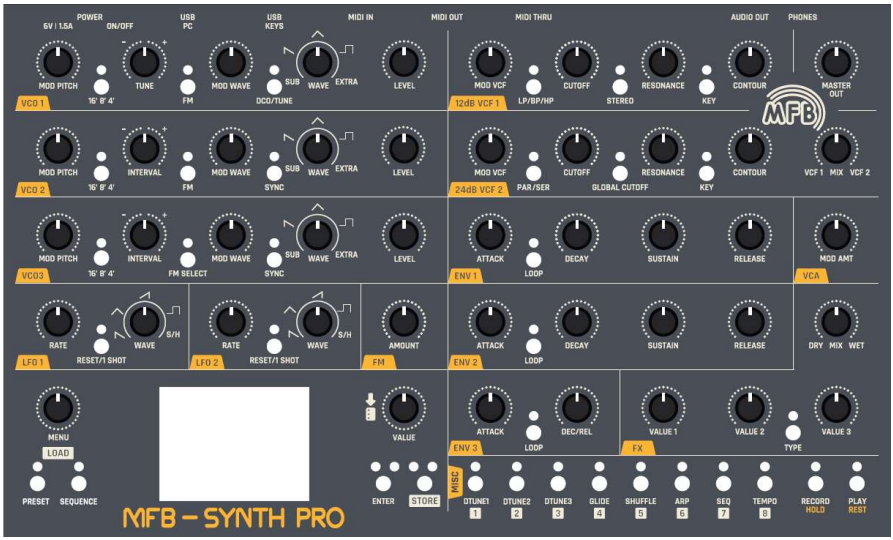


SYNTH PRO

Operating Manual



IMPRINT

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Disclaimer

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Safety Instructions

Please carefully read the following safety instructions! These include general rules of handling electric products. Carefully read all notes before operating the unit.

Suitable place of installation

- Only use this device in confined spaces, avoid humidity and dust.
- Ensure unhindered airflow to all sides of the device. Do not place the device in direct proximity to heat sources.
- Do not expose the device to direct sunlight or strong vibrations.

Electrical connection

- Please only use the power supply that comes with the device. It can be used with a supply voltage of 110 to 240 volts (mains).
- If the provided power supply does not suit your power socket, please consult a qualified electrician.
- Unplug the power supply if you are not going to use the device for a longer period.
- Never touch the power supply with wet hands.
- While unplugging, always pull the plug not the cable!

Operation

- Never place containers of liquid on the device.
- Ensure a safe and firm stand when in use.
- Make sure no objects get inside the device. Should this happen, switch off the device and remove it from the receptacle. Consult a qualified dealer.

Maintenance

- Do not open the device. Repairing and servicing must only be carried out by qualified personnel. There are no user serviceable parts inside the device. In addition, unauthorized opening of the device renders the warranty void.
- Only use dry and soft cloth or a brush for cleaning. Alcohol, solvents or comparable chemicals will damage the device's surface.

Intended use

This device has exclusively been designed to generate and process audio signals as well as control signals corresponding to MIDI-, M-Bus- and USB-specifications. Any further use is not allowed and will preclude any warranty claims against MFB.

Disposal

This unit has been manufactured RoHS-conforming in compliance with the requirements of the European parliament and council and thus is free from lead, mercury, cadmium and hexavalent chromium. **Nevertheless, disposal of this product is classified as special waste which must not be disposed with general household waste!**

For proper disposal please refer to your dealer or to:
MFB - Neue Straße 13 - 14163 Berlin - Germany

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Hint: To provide a better overview, we have added a schematic of the described section in each chapter. All labelings of the controls, buttons and jacks are being printed **bold** in this manual and written as labeled on the device itself.

General

MFB SYNTH PRO is a synthesizer with eight voice polyphony. Its analog sound engine is based on circuits and techniques which have been used in synthesizers of the 70s and 80s and have been updated and expanded by useful functions. Among the special features of SYNTH PRO are the oscillators which can seamlessly blend between waveforms. The VCOs can alternatively being used in a DCO-mode. The filter section offers two separate VCFs (per voice) with different characteristics which can be coupled to be controlled simultaneously. In addition, SYNTH PRO offers 240 storage locations, a polyphonic sequencer, an arpeggiator, extensive controllability via MIDI-controllers and a digital effects processor.

Starting up

SYNTH PRO is powered by an external power supply which is connected to the **6V/1,5A** jack on the unit's rear panel. Find the **POWER ON/OFF** located alongside. Prior to switching on the device, connect the **AUDIO OUT** jack to a mixing console, an audio-interface or an amplifier. Switch SYNTH PRO on or off using the corresponding switch.
SYNTH PRO can be played by a keyboard or an external sequencer using the MIDI protocol. To do so, connect the **MIDI IN** input or **USB KEYS** to the MIDI-output of a keyboard or to a MIDI-interface of a computer running a DAW.

Hint: Since SYNTH PRO is an analog synthesizer, you should always allow a warm-up-period of approx. five to ten minutes to achieve tuning stability.
Presets that have been programmed using the VCO-mode may sound detuned or "strange" compared to the stored version during this period. For this period, but not only for that, SYNTH PRO offers the option to switch to DCO-mode which is always stable in tune.
In case, FM has been used in a preset, make sure the operating temperature for the circuit has been reached since FM is not available in DCO-mode.

Operation

All sound shaping functions of SYNTH PRO can be adjusted using dedicated control elements. Parameters and values currently being changed will be displayed in the topmost display-row.



Additional functions for each section, such as modulation routings, are available via menus which are selected using the display and the **MENU** encoder. Each menu offers (up to) three sub-entries, which are selected by pressing the **VALUE** encoder consecutively. The selected parameter changes in color from red to green and can be adjusted using the **VALUE** encoder.

The display shows parameters in six rows.

1 – the function last used: value
2 – selected menu
3 – menu-parameter 1: value
4 – menu-parameter 2: value
5 – menu-parameter 3: value
6 – varying notifications – preset, bank, FM select, MISC-functions

Oscilloscope

By pressing the **MENU** encoder, the display changes to a real-time waveform-display.
Below the waveform, trigger and timing-values can be adjusted. Return to the regular display-menu by pressing the encoder again.

Voice Display

Four LEDs below the **VALUE** encoder display the currently active voices. Voices 1 to 4 are visualized red, voices 5 to 8 in green.

PRESETS – Selection and Storing

SYNTH PRO offers 240 preset locations. To select, press the **PRESET** button. The lowermost display-row shows the current preset 1 to 8 and the bank 01 to 30. Use the **VALUE** encoder to select a bank. Subsequently, use the **MISC** buttons 1 to 8 to call up a preset in that bank. In doing so, the synthesizer will return back to play-mode.
Pressing the **PRESET** button instead of buttons 1 to 8 instead, SYNTH PRO will adapt all current settings of the controls and switches. The bank selection will remain as is. This function makes programming new presets easier.

To save a preset, press **STORE** first. In doing so, the two LEDs above the button will be lit red/green. Next press the **PRESET** button (LED lit red), select a bank using the **VALUE** control and a press one of the **MISC** buttons 1 to 8. The preset is now saved and SYNTH PRO returns back to play-mode. The LED above **PRESET** will turn off.

Hint: To avoid possible voice assignment issues or hanging notes, do not run the internal sequencer or arpeggiator while loading or saving presets. Also avoid sending MIDI-notes to the MIDI-input.

MENU Voice Mode

The eight voices of SYNTH PRO can be assigned or divided in different ways. **MENU Voice Mode** is the first menu. It will be displayed after switching the device on. It can also be selected by turning the **MENU** encoder.

Type: Poly > Poly1+7 > Chord+4 > Mono > Unisono > Rotate
DTune: 00-15 or **Legato** Off/On (Mono) olso for Poly1+7 and Unisono
Active Voice: 01-08 (display only)

The functions of the voice modes are:

Poly: polyphonic playback of the eight voices
Poly1+7: 1 monophonic voice and 7 polyphonic voices, allocated to two adjacent MIDI-channels
Chord+4: 4 free polyphonic voices and four voices being used for a chord, allocated to two adjacent MIDI-channels
Mono: 8 monophonic voices, allocated to eight adjacent MIDI-channels
Unisono: all 8 voices are played monophonic by the same MIDI-channel
Rotate: the eight voices are addressed by a single MIDI-channel, but called up one after another

Changes of the voice assignment using **Type** need to be confirmed by pressing **ENTER** to allow the preset to distribute the voices correctly.

OSCILLATORS

SYNTH PRO offers three equally powerful analog oscillators (VCO). The functions for **VCO 1**, **VCO 2** and **VCO 3** slightly differ in some parameters.



Pitch
Each oscillator can be separately adjusted in its octave register using the **16‘ 8‘ 4‘** buttons. The corresponding LED will be lit red for 16‘, green for 8‘ and red/green for 4‘.

The **TUNE** function of **VCO 1** sets the overall tuning of the synthesizer. Tune continuously changes the tuning by ±4 semitones.
For **VCO 2** and **VCO 3**, the **INTERVAL** control has a range of ±1 octave to vary the tuning in regard to **TUNE**.



A fine tuning within a range of ±63 cent can be carried out per VCO using the **DTUNE 1/2/3** function in the **MISC** section. To do so, press the corresponding button (the corresponding LED will be lit red) and set the value using the **VALUE** encoder. Leave the **DTUNE 1/2/3** menu by pressing the corresponding button again (LED turns off).

DCO-mode and Auto Tuning

By pressing the button **DCO/TUNE**, the oscillators can be set to work in DCO-mode. This is a global function which applies to all oscillators. With DCO-mode being active, the corresponding LED is lit red. In this operating mode the oscillators' tuning is controlled digitally. The pitches are defined exactly which is advantageous with temperature changes of the environment. However, DCO-mode will also change the sound of the sync function and the beating between the oscillators. FM is not possible when in DCO-mode.

By pressing and holding the **DCO/TUNE** button for two seconds, SYNTH PRO carries out an automatic tuning procedure of its oscillators. This process will take a few moments and is visualized by the LEDs of the **MISC**-section switching, representing the voices.

Hint: To take advantage of the auto tune function, SYNTH PRO should have reached its operating temperature. Using this function immediately after switching on the device can result in detuning because the operating temperature has not yet been reached.

Waveforms

The oscillators' waveforms are continuously blended using the **WAVE** controls. The succession of the waveforms is: Sub > Saw > Triangle > Square > Extra.

SUB is a square-sub-oscillator which plays an octave below the selected register. The **EXTRA** waveform can be selected from the VCO-menus.

VCO - modulation sources

MENU VCO1/2/3 are used to select the modulation sources for the parameters **PITCH** and **WAVE** as well as for the **EXTRA** waveform.

Mod Pitch: LFO1, LFO2, Env1, Env2, Env3, AftT
Mod Wave: LFO1, LFO2, Env1, Env2, Env3, Velo
Extra: Pulse, Ring (VCO1 * VCO2) / Pulse, Noise (for VCO3)

Modulation

The modulation sources being selected for pitch and waveform in the VCO-menus are adjusted in their intensity using the **MOD PITCH** and **MOD WAVE** controls.

The overall pitch of SYNTH PRO can be controlled using the pitch wheel of a MIDI-keyboard or the corresponding MIDI control command.
The range of the pitch-wheel can be adjusted in the **MENU Additional**.

Pitchbend: 02, 04, 07, 12 (VCOs), 12 (VCO2, VCO3)

Glide

Glide (Portamento) is set by **MISC** button 4. With the LED above the button being lit, the glide-time can be adjusted between 00-31 using the **VALUE** control. Accordingly, press **MISC** button 4 again (LED turns off).
Via the **MENU Additional**, the glide curve be set to either linear (**Lin**) or logarithmic (**Log**).

Synchronization

VCO2 and **VCO3** can be synchronized to **VCO1**. Press the **SYNC** button for the corresponding oscillator to enable this function (LED is being lit red). In sync-mode, e.g. **VCO3** follows the pitch of **VCO1**. To achieve the classic sync-sound, you will need to modulate the pitch of **VCO3** , e.g. by an envelope. It is recommended that the DCO-mode of SYNTH PRO is disabled in this case.

Frequency Modulation (FM)

It is possible to use **VCO3** to modulate **VCO2** and/or **VCO1** in frequency. To do so, press the **FM** buttons in the sections **VCO1** and **VCO2**. The corresponding LEDs will be lit red.
By using the **FM SELECT** button in the **VCO3** section, it is possible to specify the modulation source.



The lowermost display-row shows the menu:

FM Select: Pot, LFO1, LFO2, Env1, Env2, Env3

The modulation intensity of the selected source is set by the **AMOUNT** control in the **FM** section.

Hint: With the oscillators being in DCO-mode, **FM** cannot be activated.

Oscillator Mix

The oscillator section includes the volume control for the VCOs. Use the **LEVEL** controls to adjust the VCOs' levels.

FILTER

SYNTH PRO offers two filters that can be used in parallel or in series. The mix of all VCOs is passed into both filters at equal levels.



12dB VCF 1 is a multi-mode-filter with low-, band- and highpass characteristics. Use **LP/BP/HP** to change between the modes. The corresponding LED is lit red for **LP**, green for **BP** and red/green for **HP**.

24dB VCF 2 is a dedicated lowpass-filter (SSI2144) with a steeper slope and different sound character.

Use the **PAR/SER** button to switch the filter routing between serial (LED lit red) and parallel (LED off).

Each filter has its own set of controls to adjust the **CUTOFF** filter frequency and its **RESONANCE**. Enabling the function **GLOBAL CUTOFF** (LED lit red), the **VCF 2** control adjusts both filter frequencies. However, filter 1's **VCF 1** control remains active allowing to specify a possible offset to **VCF 2**.

Hint: Unlike the oscillators, the analog filters cannot be calibrated exactly. Therefore, deviations to the oscillators' pitch may occur, even with key follow being set to 100% (see page 14 > Modulation).

The resonance of both filters can be calibrated separately to adapt for the desired sound characteristic via the **MENU VCF Extra**. The compensating parameter **QComp** allows adjusting to what extend the input signal will be attenuated with progressing resonance values. A value of 00 will cause the highest attenuation.

VCF1 Reso: 00-31
VCF2 Reso: 00-31
VCF QComp: 00-31

Modulation

The **MOD VCF** and **CONTOUR** controls as well as the **KEY** button adjust the filters' modulations. **KEY** toggles between four key follow intensities:

LED: off – off ¦ Red – 25% ¦ Green – 50% ¦ Red/Green – 100%

The assignment of the respective modulation sources and a possible offset for the key follow function is set in **MENU VCF1 Setting** resp. **VCF2 Setting**.

Contour: Env1, Inv1, Env2, Inv2, Env3, Inv3
Modulation: LFO1, Inv1, LFO2, Inv2, ModW, Velo
Key Follow: -32 to +31

Hint: Inv stands for the inverted signal of the respective envelope or LFO.

Filter Output

The outputs of both filters **VCF1** and **VCF2** are being summed using the **MIX** control. Set this control fully to **VCF2** in serial mode, because **VCF1** is slightly offset in phase in this mode.

The **STEREO** button allows **VCF1** and **VCF2** to be spread in the stereo panorama of the output signal. The button toggles between four values:

LED: off – mono ¦ Red – 25% ¦ Green – 50% ¦ Red/Green – 100%

ENVELOPES

SYNTH PRO offers three ADSR-envelopes with loop-functions. The envelopes can be assigned to any targets. Typically, **ENV 1** controls the **VCA** level while **ENV 2** is routed to control one or both filters in most presets.



For **ENV 1** and **ENV 2**, the parameters **ATTACK**, **DECAY**, **SUSTAIN** and **RELEASE** are adjusted by dedicated controls. With **LOOP** being enabled (LED lit red), the **ATTACK** and **DECAY** phases are looped which basically turns the envelope into a LFO. The values of both controls adjust the course and the speed of the cycle.

Hint: When using a sustain pedal, the release times of ENV 1 and ENV 2 will temporarily be set to their maximum values.

For **ENV 3**, decay and release are adjusted commonly using the **DEC/REL** control. The sustain level can be adjusted from 00-31 via the **MENU Additional**.

Hint: Only one of the three envelopes can be run in loop-mode at a time.

LFOs

LFO1 and **LFO2** offer identical features. The **RATE** controls specifies the speed within a range of approx. 50 seconds and 200 Hz. The **WAVE** control selects the waveform. This control offers a continuous blend between descending sawtooth, triangle and ascending sawtooth. Afterwards, the control switches to a square and then to a sample & hold setting.



With the LED above the **RESET/1 SHOT** button being turned off, the LFO cycles continuously. In **RESET** mode (LED being lit red), the LFO-waveform will be restarted with each received MIDI-note. In **1 SHOT** mode (LED being lit green), the LFO will be restarted with each received MIDI-note, but will only complete a single cycle. In this mode, the LFO can be used like a simple envelope, whose course is defined by the selected **WAVE**.

Sync-values to the internal or an external clock as well as a modulation of **LFO 1** by **LFO 2** can be set in the **MENU LFO Setting**.

LFO1 Sync: Gate, 1/16, 1/8, 3/16, 1/4, 3/8, 2/4, 3/4, 4/4
LFO2 Sync: Gate, 1/16, 1/8, 3/16, 1/4, 3/8, 2/4, 3/4, 4/4
LFO2 > LFO1: 00-31

VCA

Typically, the **VCA** is controlled by envelope **ENV 1**. An additional modulation is possible by a second source which acts subsidiary to the envelope control. Use the **MOD AMT** control to set the intensity of the second modulation source.



The modulation sources for the VCA are assigned in **MENU VCA Setting**. Here, the velocity can also be enabled/disabled.

Envelope: Env1, Env2, Env3
Modulation: LFO1, Inv1, LFO2, Inv2, ModW, AftT
Velocity: on, off

EFFECTS

From the **VCA**, the signal of SYNTH PRO is fed into the effects processor. Use **TYPE** to toggle between the available algorithms: Reverb1 (LED off), Reverb2 (LED lit red), Delay (LED lit green), Chorus Reverb (LED lit red/green). Use the **DRY MIX WET** control to blend between the pure synthesizer signal and the processed signal.



The controls **VALUE 1**, **VALUE 2** and **VALUE 3** adjust one dedicated parameter of the selected effect each.

TYPE	**VALUE 1**	**VALUE 2**	**VALUE 3**
Reverb 1	Time	HF Filter	LF Filter
Reverb 2	Time	HF Filter	LF Filter
Pitch/Delay	Pitch Shift	Delay	Delay Mix
Chorus/Reverb	Reverb Mix	Chorus Rate	Chorus Mix

MASTER – MAIN OUTPUT

The **MASTER OUT** control is used to adjust the output level.

SEQUENCER

The sequencer of SYNTH PRO can store 240 patterns, each with a length of up to 16 steps. The sequences can be entered monophonic or polyphonic using an attached MIDI-keyboard.



Sequence – Selection and Storing

To select a sequence, press the **SEQUENCE** button. The lowermost display-row will show the respective sequence 1 to 8 and the respective bank 01 to 30. Use the **VALUE** encoder to select a bank. Subsequently, use the **MISC** buttons 1 to 8 to call up a sequence in that bank.

To store a sequence, first press the **STORE** button – the two LEDs above are being lit red/green. Subsequently, press the **SEQUENCE** button (LED being lit red), select a bank using the **VALUE** control and press a **MISC** button 1 to 8. The sequence is now stored and the LED above **SEQUENCE** turns off.

Hint: To avoid possible issues with hanging notes, do not run the internal sequencer or arpeggiator while loading or saving. Also, avoid sending MIDI-notes to the MIDI-input.

Sequence – Input and Playback

To program a sequence, press the **MISC** button **SEQ** (7) first and activate the sequencer. The corresponding LED will be lit red.
To start programing, press the **RECORD** button. The corresponding LED will be lit red.
Enter single notes or chords step by step using a MIDI-keyboard. Chord notes need to be pressed simultaneously.
It is possible to insert a pause instead of a note by pressing **PLAY/REST**.

The lowermost display-row will show the last programmed step. After entering step 16, record-mode is automatically ended and the corresponding LED turns off.
If a sequence-length with less than 16 steps is required, programming can be stopped at any time by pressing the **RECORD** button.
Subsequently, the sequence can be started and stopped by pressing **PLAY/REST**.
In order to be able to let a sequence run independently, the clock of SYNTH PRO needs to be set to internal. The clock can be changed from **Int** to **Ext** via **MENU MIDI** in case an external clock of a DAW or a drum machine needs to be used as reference.

Hint: A different sequence can be loaded while the sequencer is running. The change will not occur until the current sequence has been completed.

ARPEGGIATOR

The arpeggiator can be used as an alternative to the sequencer. By pressing the **MISC** button **ARP** (6), SYNTH PRO changes to arpeggiator-mode – the corresponding LED will be lit red. Press the **PLAY/REST** button to enable the arpeggiator. The corresponding LED will be lit green.
Repeated pressing of the **ARP** button changes between the arpeggiator-modes. The lowermost display-row as well as the ARP-LED will show the mode:

LED: off – off ¦ Red – Up ¦ Green – Down ¦ Red/Green – Up/Down

The arpeggiator will continue playing as long as MIDI-notes are present at the input. By pressing the **RECORD/HOLD** button, the arpeggio can automatically continue to play until the hold-function is deactivated – the corresponding LED will be lit red.

Shuffle and Tempo

When using the internal clock, a tempo and shuffle for the sequencer and arpeggiator can be set. To accept an input, SYNTH PRO must not be in SEQ-/ARP-mode.

By pressing the **MISC** button **TEMPO** (8) – the corresponding LED will be lit red – the lowermost display-row changes to a tempo-indication. It can be adjusted between 040 and 239 (BPM) using the **VALUE** control. Exit the tempo-menu by pressing **TEMPO** (8) again – the corresponding LED turns off. The display setting remains visible until a different **MISC** function is called up.
By pressing the **MISC** button **SHUFFLE** (5) – the corresponding LED will be lit red – the lowermost display-row changes to a shuffle indication which can be adjusted between 00 and 09 using the **VALUE** control. A value of 00 means that the shuffle-function is inactive. Leave the shuffle-menu after carrying out your adjustments by pressing the same button – the corresponding LED will turn off. The display setting remains visible until a different **MISC** function is called up.

Hint: It is recommended to stop the sequencer when changing the shuffle-settings, because synchronization may else be lost.

Transpose

An arpeggio with the hold-function being enabled can be transposed freely using the keys of a connected MIDI-keyboard.

MIDI-SETTINGS

The **MENU MIDI** allows adjustments for the send- and receive-channel, clock and controllers.

Channel: 01-16
Clock: Int, Ext
CChg/PChg: Off, Send, Receive (sending and receiving controller data at the same time is not possible)

DATA-TRANSFER

Presets, sequences and voice-updates can be transmitted or exchanged with a computer using the **USB PC** port. This is done from the **MENU USB Transfer**. In addition, newer firmware versions can be loaded into SYNTH PRO. (Find the corresponding manuals on the MFB-website)

Preset: Off, Send, Receive
Sequence: Off, Send, Receive
Update: Off, Voices

REAR PANEL – CONNECTIONS

POWER 6V/1,5A – use this jack to connect the power supply which comes with the unit. Use the adjacent **POWER ON/OFF** switch to turn SYNTH PRO on and off.

USB PC (type B) – use this jack to connect SYNTH PRO to a computer in order to transmit/receive presets and sequences as well a firmware-updates.

USB KEYS (type A) – use this jack to connect a MIDI-keyboard or a MIDI-controller with an USB output.

MIDI IN – this jack serves as input for a MIDI-keyboard resp. MIDI-controller with standard MIDI-connectors.

MIDI OUT – this connector sends out MIDI-data from SYNTH PRO.

MIDI THRU – this connector sends out the MIDI-data being received at **MIDI IN**.

HEADPHONE OUT (3.5mm) – use this output to connect a headphone.

AUDIO OUT (6.3mm) – this TRS-jack carries the two-channel output signal. It can be connected to a mixer, an audio-interface or an amplifier.

MIDI-IMPLEMENTATION

CC #1	Modulation Wheel	0-127
CC #16	VCO1 Mod Pitch	0-127
CC #17	VCO1 Octave	0, 32, 64
CC #18	VCO Tune	0-127
CC #19	VCO1 FM	0, 64
CC #20	VCO1 Mod Wave	0-127
CC #21	VCO VCO/DCO	0, 64
CC #22	VCO1 Level	0-127
CC #23	VCO1 Wave	0-127
CC #24	VCO2 Mod Pitch	0-127
CC #25	VCO2 Octave	0, 32, 64
CC #26	VCO2 Interval	0-127
CC #27	VCO2 FM	0,64
CC #28	VCO2 Mod Wave	0-127
CC #29	VCO2 Sync	0, 64
CC #30	VCO2 Level	0-127
CC #31	VCO2 Wave	0-127
CC #32	VCO3 Mod Pitch	0-127
CC #33	VCO3 Octave	0, 32, 64
CC #34	VCO3 Interval	0-127
CC #36	VCO3 Mod Wave	0-127
CC #37	VCO3 Sync	0,6 4
CC #38	VCO3 Level	0-127
CC #39	VCO3 Wave	0-127
CC #40	LFO1 Rate	0-127
CC #41	LFO1 Mode	0, 32, 64
CC #42	LFO1 Wave	0-127
CC #43	LFO2 Rate	0-127
CC #44	LFO2 Mode	0, 32, 64
CC #45	LFO2 Wave	0-127
CC #46	FM Amount	0-127
CC #48	VCF1 Mod	0-127
CC #49	VCF1 LP/BP/HP	0, 32, 64
CC #50	VCF1 Cutoff	0-127
CC #51	VCF1 Stereo	0, 32, 64, 96
CC #52	VCF1 Reso	0-127

CC #53	VCF1 Key	0, 32, 64, 96
CC #54	VCF1 Contour	0-127
CC #56	VCF2 Mod	0-127
CC #57	VCF2 Par/Ser	0, 64
CC #58	VCF2 Cutoff	0-127
CC #60	VCF2 Reso	0-127
CC #61	VCF2 Key	0, 32, 64, 96
CC #62	VCF2 Contour	0-127
CC #63	VCF Mix	0-127
CC #64	Sustain Pedal	0,127
CC #66	ADSR1 Attack	0-127
CC #67	ADSR1 Loop	0,64
CC #68	ADSR1 Decay	0-127
CC #69	ADSR1 Sustain	0-127
CC #70	ADSR1 Release	0-127
CC #71	VCA Mod	0-127
CC #72	ADSR2 Attack	0-127
CC #73	ADSR2 Loop	0, 64
CC #74	ADSR2 Decay	0-127
CC #75	ADSR2 Sustain	0-127
CC #76	ADSR2 Release	0-127
CC #77	Effect Mix	0-127
CC #80	ADSR3 Attack	0-127
CC #81	ADSR3 Loop	0, 64
CC #82	ADSR3 Decay	0-127
CC #83	Effect Value1	0-127
CC #84	Effect Value2	0-127
CC #85	Effect Value3	0-127
CC #86	Effect Select	0, 32, 64, 96
CC #88	VCO1 Fine	0-127
CC #89	VCO2 Fine	0-127
CC #90	VCO3 Fine	0-127
CC #91	Glide	0-127

Sending and receiving of MIDI data is enabled in the **MENU MIDI**:
CChg/PChg: Off, Send, Receive (not available simultaneously)

CE

This product complies with the following harmonized European standards:
EN 55013: 2003, CENELEC EN 55020: 2003, EN61000-3-2: 2000 and EN 61000-3-3: 1995 + correction 1998

This device complies with the EH-directive 89/336/EC.