

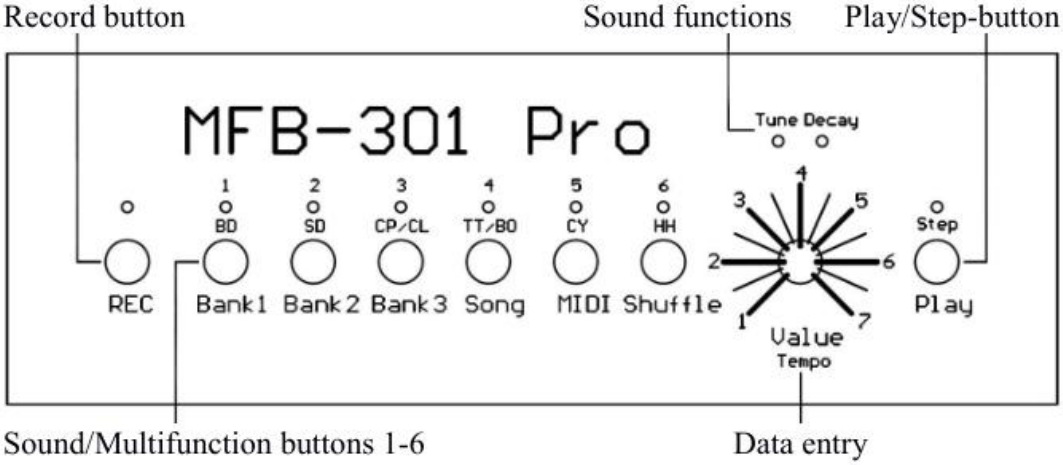
Operating Manual

Drum Computer

MFB-301 Pro

Hint: The MFB-301 Pro's MIDI-implementation is compatible to the model MFB Tanzmaus. You may use the latter's control elements to remote-control the MFB-301 Pro.

Control Elements



General
The MFB-301 Pro is a technically advanced reissue of our legendary model MFB-301, expanded by the claps of model MFB-401. This fully analogue drum computer offers eight instruments and a step-sequencer with memory locations for 108 patterns and 36 songs. Patterns consist of up to 16 steps, but can be expanded in length through chaining in song mode. In addition, it is possible to automate the parameters pitch, length and attack per step. Besides support for MIDI velocity, the sound parameters are also remote-controllable via MIDI-CCs.

Setup
Plug the connector of the supplied power adapter into the mini-USB socket of the unit. Connect the MIDI-input **MIDI In** to a keyboard or sequencer.
The unit provides stereo- as well as headphone outputs.

Sounds
Available are eight analogue instruments, being editable in the following parameters:

BD	Bassdrum	Pitch, Decay, Tone, Level
SD	Snare drum	Pitch, Decay, Noise Level, Level
CP	Clap	Decay, Attack, Level
TT	Tom	Pitch, Decay, Attack, Level
BO	Bongo	Pitch, Decay, Attack, Level
CL	Claves	Pitch, Decay, Attack, Level
CY	Cymbal	Pitch, Decay, Mix Noise/Metal, Level
HH	Hi-hat	Pitch, Decay, Mix Noise/Metal, Level

Sequencer
Push **Play** to start and stop the internal sequencer. Turn the **Value** control to adjust the tempo. This will only work with the LEDs above this control not being lit.

Loading, saving and deleting patterns
The MFB-301 Pro offers three banks with 36 patterns each. A pattern is loaded by pressing **Bank 1/2/3** , (LED above lit). Release the button and subsequently press two buttons **1-6** to select the memory location (11-66). Saving patterns follows the same scheme. Here, press **REC** after pressing **Bank** first. Now release these buttons and select the memory location by a combination of **1-6**.
A pattern is deleted by pressing and subsequently releasing the buttons **REC** and **Play**.

Sound Parameters
It is possible to adjust the pitch, the note length and the extra parameters upfront. This way, you will create a default setting that applies, e.g. when deleting a pattern. To do so, press the button of the **Value** control once (left LED lit). Next, press **REC** and e.g. **BD**, then release both buttons. Subsequently, the **Value** control can be used to adjust the pitch, note length and the extra parameter of the **BD**, depending on which LEDs are lit above the **Value** control. To exit this mode, press **BD**. The same procedure can be used for the other instruments. **BO** and **CL** can be adjusted by pressing the buttons twice (**REC** + **CP/CL** + **CP/CL** and release both buttons).
In addition, it is possible to adjust the instruments' level for the pattern. When deleting a pattern, this level will be used as the default level. To do so, press the **Value** control once (left LED lit). Now press **BD** for example. As long as this button is being pressed, the **Value** control can be used to adjust the level of the **BD**. The same procedure can be used for the other instruments. The levels for **BO** and **CL** can be adjusted with the right LED of the **Value** control being lit.

Programing Songs
This function allows to chain multiple patterns. Chained patterns are played consecutively in a pre-programmed sequence. Programming is carried out as follows. Note that the sequencer has to be stopped:
Press and release **Song** (LED lit), then press and release **REC** (LED lit). Programming starts by selecting the first pattern, such as …
Press and release **Bank1**, select a pattern by pressing two buttons **1-6** and confirm by pressing **Play/Step**. You have now saved the first pattern. The second pattern is created as follows: Press **Bank1**, press two buttons **1-6** and confirm by pressing **Play/Step**. Continue programming respectively until all patterns are stored. Then confirm the whole procedure by pressing **REC**.

Loading and saving songs
Songs are loaded just like patterns. Press **Song** and two buttons **1-6**. To save a song, press **Song**, then **REC.** Release both buttons and press two buttons **1-6**.

Shuffle
The MFB-301 Pro offers five shuffle-intensities. While the sequencer is being stopped, press **Shuffle** followed by a button **1-6**. 1 stands for no shuffle. The corresponding LEDs **1-6** visualize the selected pattern.

Programing Patterns
There are two possible ways to program a pattern:

Step Record Mode
In this mode, a pattern is programmed by sequentially entering up to 16 steps using the buttons **REC** and **Play**.
An instrument is programmed as follows:

- Press **REC** followed by an instrument button (e.g. **BD**).
- Release both buttons.
- Pressing **REC** sets the **BD** while **Play** deletes the instrument for that step.

Example:
Press 1 x **REC** , then 7 x **Play**, then 1 x **REC** and again 7 x **Play**.
The result is: **o--- ---- o--- ----**

Hint: In case you accidentally made erroneous inputs, a track can be deleted by pressing and holding **REC** for a while. This will stop programming.

The push-function of the **Value** control can be used to change the following parameters per step:

- Pitch (left LED above **Value** lit)
- Length (right LED lit)
- Extra function (both LEDs lit).

The extra functions are:

- Attack for BD, CP, TT, BO and CL
- Noise for SD
- Noise/Metal-mix for CY and HH.

Value changes are carried out by using the **Value** control. By this, you can program high and low toms or closed and open hi-hats.

Example:

- Press **REC** and **HH**, then release both buttons.
- Press **REC** to program the first hi-hat.
- Press the button of the **Value** control until the right LED is lit, Then turn to set the desired length (e.g. Open Hi-hat).

- Continue programming by pressing **Play** (Pause) or **REC** to add a second hi-hat.
- Now, turn the **Value** control again to create a closed hi-hat by setting a short value for the note length (example).
- Subsequently, program the rest of the pattern.

Hint: You only need to turn the **Value** control in case you want to change the note length.

CL and **BO** are programmed by first pressing **REC** followed by a doubleclick on **CP/CL** respectively **TT/BO**. Next, release both buttons. For example
(**REC** + **CP/CL** + **CP/CL)**.

Pattern Length
In case you want a pattern with less than 16 steps, end programming at any time.

Example:
BD-track, press 1 x **REC**, 5 x **PLAY**, 1 x **REC**, 5 x **PLAY** and finally **BD** to complete programming. As a result, you did program 12 steps, equaling a 3/4 bar.

Real Time Mode
Start the sequencer and press **REC** (You will hear the clave sound **CL** in a quarter beat). You can now set the steps in real time by pressing the corresponding instrument buttons. Delete a track by pressing the corresponding instrument button for a longer time.
Changes in pitch, note length or for the extra parameter can be carried out for the last programmed instrument by turning the **Value** control, depending on which LEDs are lit.
Programming of **CL** and **BO** is possible by pressing **REC** twice. I.e. 1 x **REC** = CP or TT, press **REC** again = CL and BO. To end recording, press **REC** once more.

The level of the instruments can be changed per pattern (see Sound Settings). Press **Play** followed by the push function of the **Value** control (until the left LED is lit) and e.g. **BD**. Use the **Value** control to adjust the level of the **BD** track while keeping **BD** pressed. **CL** and **BO** can be adjusted with the right LED being lit. The level for the headphones can be controlled with both LEDs being lit. As a final step, the pattern needs to be saved. If this is not done, the settings will be lost when switching the unit off.

MIDI Channel
The MFB-301 Pro offers MIDI-learn capabilities. While stopped, press **MIDI** followed by a note on a connected keyboard. The received MIDI channel will be adopted. As soon as the LED above the MIDI button turns off, the procedure is completed.

MIDI Velocity
The reception of velocity can be enabled by pressing **1** (LED lit) or disabled (LED off). To do so press **MIDI** and select the condition by pressing button **1**.

MIDI CC
The unit can receive more than 20 MIDI-control commands (see MIDI implementation list) . The reception of MIDI CC can be enabled by pressing **1** (LED lit) or disabled (LED off). To do so press **MIDI** and select the condition by pressing button **2**.

MIDI Clock/External Sync
In case the MFB-301 Pro is set to internal clock (LED above buttons 3 + 4 off), the unit will ignore MIDI-sync- or external sync-signals. A possible sync to a MIDI-clock can be activated (LED 3 lit). The same is true for a possible sync to an external, analogue sync-signal (LED 4 lit). To do so,press **MIDI** and select the status by pressing button **3** or **4**.

Sound Changes via MIDI
Received MIDI controller data will permanently change the sound settings. Should you wish to return to the last saved state, press **MIDI** followed by **5**.

Hint: When using MIDI CCs to dynamically change sound parameters, it is recommended to use the drumkit to be found on MIDI-notes 36 to 47. Higher notes already use MIDI CCs internally. See table MIDI implementation.

Saving Basic Settings
Sound-, MIDI- and shuffle-settings can be saved, making them available when turning the unit back on. To do so, press **MIDI**, release the button and press **REC**.

Hint: It is only possible to load and save patterns with both LEDS above the **Value** control not being lit. In addition, patterns can only be stored with the sequencer being stopped.

MIDI-Implementation

MIDI-Note	Instrument/Function
36	BD
37	HH
38	SD
39	CY
40	CP
41	REC button
42	TT
44	BO
46	CL
47	Play button
48	BD + CC long Attack
49	SD + CC low
50	BD + CC middle
51	SD + CC high
52	CP + CC long
53	CP + CC short
54	TT + CC low
55	TT + CC low Attack
56	TT + CC middle
57	TT + CC middle Attack
58	TT + CC high
59	TT + CC high Attack
60	BO + CC low Attack
61	BO + CC middle
62	BO + CC middle Attack
63	BO + CC high
64	CL + CC low
65	CL + CC high
66	CY + CC Metal
67	HH + CC short Mix
68	CY + CC Mix
69	HH + CC long Mix
70	CY + CC Noise
71	HH + CC short Noise
72	HH + CC long Noise

CC-Number	Function
03	BD Tune
11	SD Tune
19	TT Tune
21	BO Tune
86	CL Tune
84	CY Tune
89	HH Tune
64	BD Decay
67	SD Decay
75	CP Decay
20	TT Decay
78	BO Decay
87	CL Decay
85	CY Decay
90	HH Decay
02	BD Attack
13	SD Snappy
76	CP Attack
79	TT Attack
82	BO Attack
53	CL Attack
88	CY Mix
93	HH Mix