MCV8

8 CHANNEL MIDI-TO-CV INTERFACE

USER MANUAL

Version 3.1
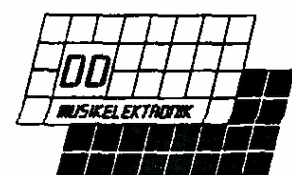
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1. CONNECTIONS (Rear Panel)

- Connect the 220/240V AC power input to a 220/240V AC wall outlet.
- Connect MIDI IN of the MCV8 with MIDI OUT of the MIDI transmitter (MIDI Master Keyboard, Synthesizer, Sequencer ....).
- The MIDI THRU of the MCV8 may be connected with the MIDI IN of other MIDI devices (optional).
- The 8 CV and GATE Outputs of the MCV8 are connected to the CV and Gate/Trigger inputs of the synthesizer modules to be controlled by the MCV8.
- Not all the CV and GATE outputs of the MCV8 need to be used.
- The factory adjustment of the CV outputs is 1.00V/Octave. To change or readjust the scale you have to insert a small screw driver into the the small hole labeled ADJUST left of the MIDI THRU jack and turn the potentiometer setting to the desired value.

Voltage Settings

The factory setting for the GATE outputs is +5V voltage gate.
If you want to change the setting you have to remove the cover plate.
Before opening the case you have to disconnect the MCV8 from mains under all circumstances!

For each GATE output you may find a jumper behind the corresponding GATE jack.
Each jumper can be set in one of 3 ways:
+5V voltage,
+7.5V voltage gate or
switch trigger (jumper removed, e.g. for MOOG synthesizers).

A label on the bottom of the MCV8 will show you the 3 versions of jumper settings.
Which type of Gate is required for your synthesizer you may find in the user's guide of your synthesizer.

2. SWITCHING THE MCV8 ON

The MCV8 is switched on with the ON/OFF switch at the rear panel near the 220V power jack.

After power on the message "MCV8 3.X" appears scrolling character by character on the display (X is the actual sub version number of the software).

As not all characters can be shown exactly some characters appear "reduced", some different characters appear in the same way (e.g. "M" as "n", "W" as "U", "B" = 8", "G" = "6", "S" = "5").

After that the display turns to "--" indicating the GATE DISPLAY MODE (see below).

When turning on the MCV8 the parameters stored in the User Memory (US) are called up.

The User Memory contains the last configuration of the MCV8 before the unit was turned off.

For details see Chapter 3.1. PRESETS.

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3. Operation

- The 8 buttons on the front panel correspond to 8 menus.

- The last two keys are the increment/decrement keys rather than real menu keys.
- These keys are used to change settings in the real menus 1-6.

- Pressing one of the buttons 1-6 will access the corresponding menu.
- The LED's serve as visual indicators of the menu selected.

- To leave the menu selected another menu button has to pressed.

- After that you enter the GATE DISPLAY MODE.
- This mode is indicated by "--" in the Display.

- In this mode the 8 LEDs are visual indicators of the 8 Gate Outputs.

- To enter a new menu while in another menu you have to press the new menu button twice as the first operation enters the **GATE DISPLAY MODE**.

3.1. PRESETS

This menu serves to call up one of the *Factory Presets* **P8/P4/P2/ , S8/S4/2** or
one of the *User Presets* 1....8 and to store one of the **SIX** *User Presets* 1....6 .

Calling up a Preset
Select the desired preset with the *Up/Down* buttons while the **PRESET LED** is illuminated.

Storing of one of the 6 User Presets

- Pressing the **PRESET** button once more while the **PRESET LED** is illuminated causes all 8 LEDs to be illuminated as a warning.

- Select with the *Up/Down* buttons one of the 6 *User Memories* **01...06**.

- Pressing the **PRESET** button a 3rd time causes the storage of the actual configuration of all MCV8 parameters into the selected *User Presets* number **01...06**.

- If you don't want to trigger the store function while the 8 LEDs are illuminated you have to press one of the other menu buttons 2-6. In this case the store function will not be performed.

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3.1. PRESETS (Continued)

Presets
The presets are defined as followed:

FACTORY PRESETS

PRESETS	OUT1	OUT2	OUT3	OUT4	OUT5	OUT6	OUT7	OUT8
Poly 8 (P8)	CV1	CV2	CV3	CV4	CV5	CV6	CV7	CV8
Poly 4 (P4)	CV1	CV2	CV3	CV4	VEL1	VEL2	VEL3	VEL4
Poly 2 (P2)	CV1	CV2	VEL1	VEL2	AT	CTR1	CTR2	CTR3
Mono 8 (S8)	CV1	CV2	CV3	CV4	CV5	CV6	CV7	CV8
Mono 4 (S4)	CV1	CV2	CV3	CV4	VEL1	VEL2	VEL3	VEL4
Mono 2 (S2)	CV1	CV2	VEL1	VEL2	AT1	AT2	CTR1	CTR2

- **Poly 8 (P8): 8-Voice polyphonic (factory preset)**
All 8 CV outputs are Pitch Outputs *(controlled by MIDI note on/off)* on the same MIDI channel

- **Poly 4 (P4): 4-Voice polyphonic (factory preset)**
The CV outputs 1-4 are Pitch Outputs *(controlled by MIDI note on/off)* on the same MIDI channel.
The CV outputs 5-8 are the corresponding Velocity Outputs *(controlled by the velocity values of the note on/off events)*

- **Poly 2 (P2): 2-Voice polyphonic (factory preset)**
CV 1 and 2 are Pitch Outputs on the same MIDI channel,
CV 3 and 4 are the corresponding Velocity Outputs ,
CV 5 is the (monophonic) After Touch Output and
CV 6, 7, 8 are Controller Outputs .

- **Single 8 (S8): 8-Voice monophonic (factory preset)**
Each CV output is a Pitch Output on a *different* MIDI channel.

- **Single 4 (S4): 4-Voice monophonic (factory preset)**
The CV outputs 1-4 are Pitch Outputs on 4 *different* MIDI channels.
The CV outputs 5-8 are the corresponding Velocity Outputs .

- **Single 2 (S2): 2-Voice monophonic (factory preset)**
CV 1 and 2 are Pitch Outputs on 2 *different* MIDI channels.
CV 3 and 4 are the corresponding Velocity Outputs ,
CV 5 and 6 are the (monophonic) After Touch Outputs,
CV 7 and 8 are Controller Outputs .

- *Default Controllers are:*
    - o *CTR1 = Modulation (Midi CC#1)*
    - o *CTR2 = Volume (Midi CC#7)*
    - o *CTR3 = Balance (Midi CC#8)*

USER PRESETS (US):

These are actual User Configuration when parameters in the Menus 2-6 are changed.
The update will be performed when leaving the menu where the parameters were changed.
When turning on the MCV8 this configuration is selected automatically.

- **User Presets (01...06):**
These are the 6 User Presets defined by the user.

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3.2. OUTPUT

In this menu one of the 8 outputs is selected with the *UP/DOWN* buttons.
The settings in the Menus 3-6 apply to the output selected in Menu 2.

3.3. CHANNEL

In this menu the **MIDI channel** of the output selected in Menu 2 is adjusted with the *UP/DOWN* buttons.

3.4. EVENT

In this menu the MIDI event assigned to the output selected in Menu 2 is adjusted with the *UP/DOWN* buttons.

The following events are available:

Display	Event
no	Note On/Off (Normal)
co	Note On/Off (Continuous)
DY	Dynamic/Velocity
CL	Controller
AF	Monophonic After Touch

The difference between "**no**" and "**co**" is the following:
- If "**co**" is chosen a new Control Voltage corresponding to the incoming MIDI note event is generated in any case.
- If "**no**" is selected the Control Voltage is generated only if there is a free output for the new MIDI note event on this channel. If all CV outputs assigned to "**no**" on this MIDI channel are already occupied the incoming note event is ignored.

For example if only one CV output is assigned to note event on MIDI channel 1 in case of "**no**" there is no new CV generated when playing legato (i.e. playing a new note while the key of the former note is still pressed) as the output is already occupied with the first note event.

In case of "**co**" a new CV would be generated when the next note event on Channel 1 appears.

It is suggested to choose "**co**" for *Monophonic* applications as otherwise note events seem to disappear if you are not playing strictly "Staccato" (i.e. releasing the last key before pressing the next on the keyboard).
In Polyphonic modes you may choose "**no**" or "**co**" depending on which type of assignment of incoming note events to CV outputs you prefer.

3.5. CONTROLLER NO.

This is a submenu to Menu 4 (**EVENT**) if the event type "**CL**" (controller) is selected in Menu 4.

To set the Controller No. to the desired value the *UP/DOWN* buttons are used.

If the Controller No. is 100 or higher, the *decimal point is illuminated* as an indication to add 100 to the value displayed.

Attention!
Please change the given parameter in this menu only if the event type "**CL**" was assigned in Menu 4 to the output.
Otherwise unforeseen actions of the MCV8 may occur as this parameters affects the second byte of incoming MIDI events!

3.6. PARAMETERS

In this menu all other parameters are displayed.
Some of the parameters apply to the output selected in Menu 2, some are Global Parameters valid for the entire MCV8.

Display	Parameter
LE	Legato On/Off
gA	Gate Polarity
bE	Pitch Bend On/Off *(only in V/Oct. mode)*
HZ	Type of CV Characteristic *(V/Oct. or Hz/V)*
nF	MIDI Note Reference for 0V CV in V/Oct. mode
bH	Pitch Bend Travel of CV *(only in V/Oct. mode)*

The desired parameter is selected by using the **UP/DOWN** buttons.

The parameters **LE**, **gA**, **bE** and **Hz** are *digital*, i.e. they take only one of 2 states (like On/Off).
> To toggle between the 2 states the menu button is used.
> The state is indicated by the decimal point.
> These parameters apply to each output individually.

The parameters **nF** and **bH** allow a wide range of values.
> The actual value of the parameter appears for a short time before the display shows "**nF**" or "**bH**".
> These two parameters are global, i.e. they affect the entire MCV8 and are valid for all outputs.

The *LEGATO* parameter **LE** is important only for monophonic applications.
> It can be selected whether a new gate or trigger pulse is generated when playing **LEGATO**.
! Do not mix up this parameter with the event types "**co/no**". **LEGATO** applies to the Gate Output, **co/no** to the CV Output!

The *GATE POLARITY* parameter **gA** determines whether the gate outputs have normal polarity
(i.e. +5/7.5V for note on, 0V for note off) or inverted polarity (i.e. 0V for note on, +5/7.5V for note off).
- If the gate output is set to *switched trigger (S-Trig)* the function is opposite.
- If the synthesizer module connected to MCV8 sounds when releasing the key of the keyboard the *GATE POLARITY* has to be changed.

The *PITCH BEND* parameter **bE** selects whether incoming MIDI Pitch Bend events affect the Control Voltage.
> This parameter has meaning only if V/Oct. mode is chosen.

The *CHARACTERISTIC TYPE* parameter **HZ** defines whether the CV output characteristics are of the **V/Octave type** (*decimal point Off*) or **Hz/V type** (*decimal point On*).
- *V/Octave* is used by most of the synth manufacturers *(Moog, ARP, Oberheim, Roland, Sequential Curcuits, EMS, Doepfer)*.
- *Hz/V* is used only by some *Korg* or *Yamaha* synthesizers.
> If Hz/V is selected incoming MIDI pitch bend events do not affect the CV output.

The *NOTE REFERENCE* parameter **nF** determines the MIDI note number for 0V CV output in V/Octave mode.
> When entering this submenu the MCV8 is looking forward to an incoming MIDI note event.
> The MIDI note number received is displayed.
> You have to leave this menu after adjusting the note reference by pressing the **UP/DOWN** buttons or another menu button. Otherwise any incoming MIDI note event changes the note reference.
> It is not possible to play in this submenu as each incoming note event is assumed to be the new note reference.

The *PITCH BEND TRAVEL* parameter **bH** determines the travel of the CV voltage triggered by incoming MIDI pitch bend events.
> MCV8 is looking for 2 consecutive incoming MIDI note events.
> The difference between the 2 note numbers of the events define the CV travel.
> A difference of 12 (i.e. 1 octave) corresponds to 1V travel, a difference of 1 (i.e. 1 semitone) to 1/12 V.

> As the CV outputs range from 0 to +5V you have to pay a little attention when using the pitch bend function. If you play a note on your keyboard which is one octave above the reference note the CV output for this note is +1V.
> The maximum pitch travel relative to this +1V output voltage is -1V … +4V as the maximum range 0 to +5V. If you want to use the pitch bend function you should play in the mid range i.e. about 2 or 3 octaves above the reference key to have enough voltage travel for the pitch bend function.