MIDI Solutions

Velocity Converter

OPERATING INSTRUCTIONS

MIDI Solutions Velocity Converter
Operating Instructions M209

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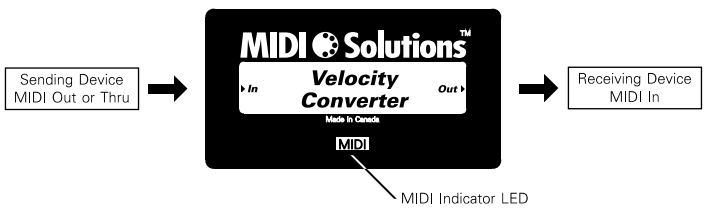
INTRODUCTION

Congratulations on your purchase of the MIDI Solutions Velocity Converter. The MIDI Solutions Velocity Converter is capable of modifying the velocity sensitivity of a MIDI instrument. Individual MIDI channels may be assigned separate velocity curves. The curves are selected from 40 preset curves and one user-definable curve. Programmed settings are retained in non-volatile memory until cleared or overwritten with new settings. The Velocity Converter is MIDI-powered and requires no batteries or power supply to operate.



CONNECTIONS

To program the Velocity Converter, connect the **In** of the Velocity Converter to the MIDI Out of the device that is sending the programming commands. The **Out** jack can be left disconnected during programming.

Once the Velocity Converter is programmed, it can be inserted anywhere in your MIDI setup. Connect the **In** of the Velocity Converter to the MIDI Out or Thru of the sending MIDI device. Connect the **Out** of the Velocity Converter to the MIDI In of the receiving MIDI device. It is recommended that the number of MIDI Solutions products chained together between any two MIDI devices be limited to five.

OPERATION

The Velocity Converter's MIDI Indicator LED will light as soon as the sending device is turned on, and flashes whenever MIDI data passes through the unit. Note On velocities are modified according to the Velocity Converter's programmed settings as described on the following pages. All other messages are sent unchanged to the MIDI Out.

PROGRAMMING

The curve assignments of the Velocity Converter are programmed by sending it MIDI System Exclusive programming messages from a device capable of creating System Exclusive messages, such as a computer-based sequencer. These messages are described in detail on the following pages. For decimal to hexadecimal conversions, see the chart on page 27. Upon receipt of a System Exclusive programming message, the MIDI indicator LED flashes rapidly for about one second to indicate that the setting has been stored. Settings are retained in non-volatile memory until cleared or overwritten with new settings.

Clear Settings

To clear all of the Velocity Converter's current settings, send it the following System Exclusive programming message:

F0 00 00 50 09 00 F7 (all values in Hexadecimal)

It is advisable to send the Clear Settings command to the Velocity Converter prior to programming the unit to insure that all previous settings are cleared.

Dump Settings

To dump all of the Velocity Converter's current settings, send it the following System Exclusive message:

F0 00 00 50 09 10 F7 (all values in Hexadecimal)

Upon receipt of this command the Velocity Converter will dump its current settings to its MIDI Out.

Curve Assign

To assign a velocity curve to a particular MIDI channel, send the Velocity Converter the following System Exclusive programming message:

F0 00 00 50 09 01 aa cc F7 (all values in Hexadecimal)
aa = curve# (see p. 19 - 26)
cc = MIDI channel (see p. 18)

To specify the user defined curve, set **aa** = 00.

Example: To program the Velocity Converter to apply curve #11 to all incoming velocities on channel 1, set **aa** = 0B for curve #11 and set **cc** = 00 for channel 1. These values result in the following System Exclusive programming message:
F0 00 00 50 09 01 **0B 00** F7

User Curve

To program the user curve, first send the Velocity Converter the following System Exclusive programming message:

F0 00 00 50 09 02 F7 (all values in Hexadecimal)

Upon receipt of this command the LED will flash rapidly, indicating that the user curve values are expected in the form of Note or Controller data. The first 127 Note or Controller values received after this are stored sequentially as the user curve (corresponding to input velocities 1 through 127).

Example: To program the Velocity Converter to assign a velocity of 1 to all input velocities under 30, and a velocity of 64 to all other input velocities, send it F0 00 00 50 09 02 F7, followed by 29 Note or Controller messages with value 1, followed by 98 Note or Controller messages with value 64. The most efficient way of performing this routine is with a sequencer.

Control Change Velocity Control

To set the velocity to follow a MIDI Control Change value, send the Velocity Converter the following Sysex message:

F0 00 00 50 09 03 aa bb cc F7 (all values in Hexadecimal)
aa = Control Change#
bb = Offset added to incoming Control Change value
cc = MIDI channel (see p. 18)

The Velocity Converter will accept **one** of these commands. If the offset value (bb) added to the incoming Control Change value exceeds 127, then output velocities are assigned a value of 127.

Example: To program the Velocity Converter to assign velocities based on incoming MIDI volume on channel 1 with an offset of 20, set **aa** = 07 (volume is MIDI Controller #7), **bb** = 14 (see p. 27), and set **cc** = 00 (see p. 18). As volume is increased, velocities are increased. As volume is decreased, velocities are decreased. The minimum output velocity value will be 20, due to the offset. The above values result in the following System Exclusive programming message:

F0 00 00 50 09 03 **07 14 00** F7

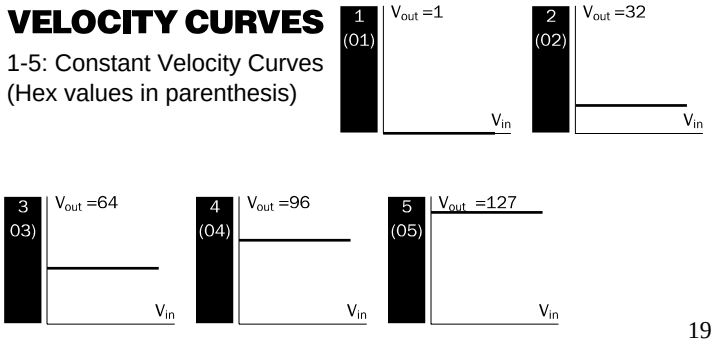
MIDI CHANNEL TABLE

cc must be set according to the following table:

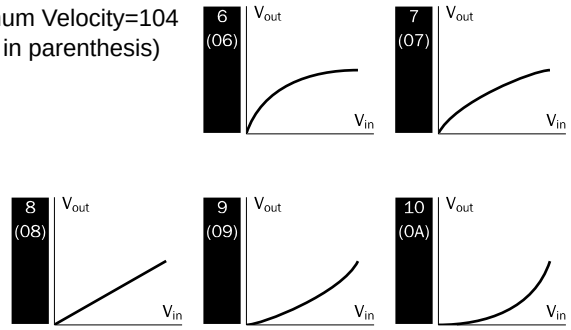
Chan.	cc	Chan.	cc	Chan.	cc
1	00	7	06	13	0C
2	01	8	07	14	0D
3	02	9	08	15	0E
4	03	10	09	16	0F
5	04	11	0A	ALL	7F
6	05	12	0B		

VELOCITY CURVES

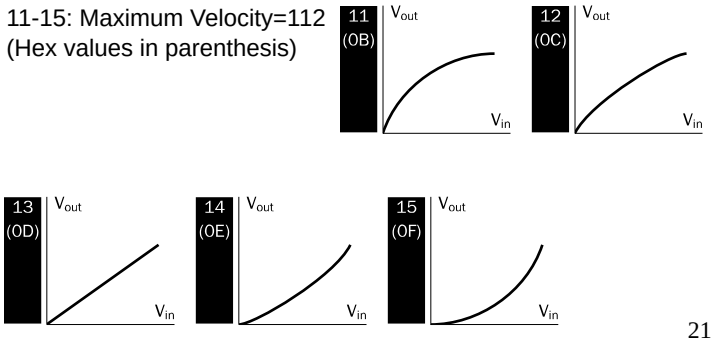
1-5: Constant Velocity Curves
(Hex values in parenthesis)



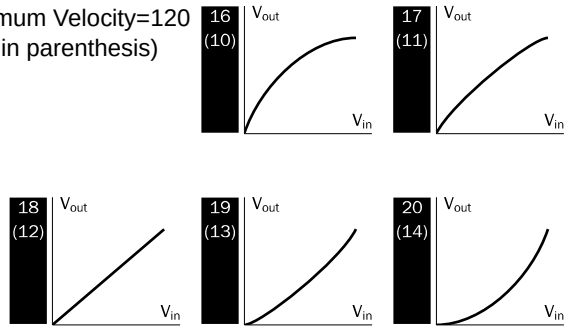
6-10: Maximum Velocity=104
(Hex values in parenthesis)



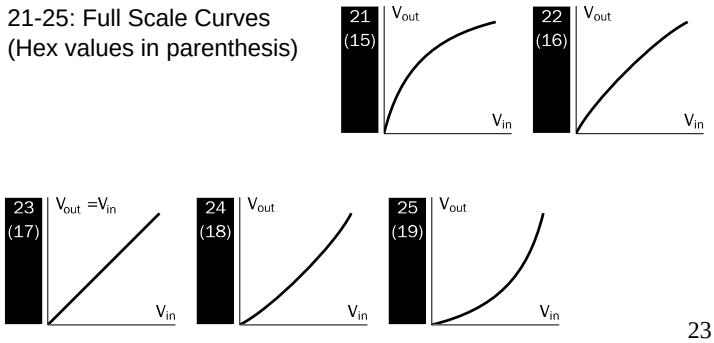
11-15: Maximum Velocity=112
(Hex values in parenthesis)



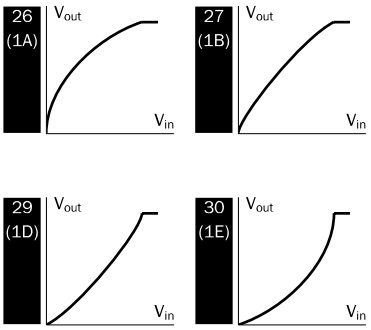
16-20: Maximum Velocity=120
(Hex values in parenthesis)



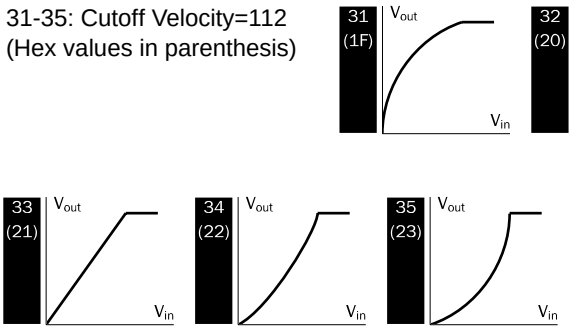
21-25: Full Scale Curves
(Hex values in parenthesis)



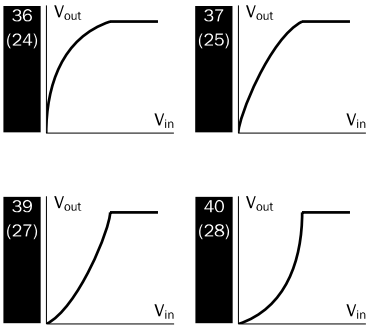
26-30: Cutoff Velocity=120
(Hex values in parenthesis)



31-35: Cutoff Velocity=112
(Hex values in parenthesis)



36-40: Cutoff Velocity=104
(Hex values in parenthesis)



HEXADECIMAL CONVERSION TABLE

Dec/Hex																				
0	00	16	10	32	20	48	30	64	40	80	50	96	60	112	70
1	01	17	11	33	21	49	31	65	41	81	51	97	61	113	71
2	02	18	12	34	22	50	32	66	42	82	52	98	62	114	72
3	03	19	13	35	23	51	33	67	43	83	53	99	63	115	73
4	04	20	14	36	24	52	34	68	44	84	54	100	64	116	74
5	05	21	15	37	25	53	35	69	45	85	55	101	65	117	75
6	06	22	16	38	26	54	36	70	46	86	56	102	66	118	76
7	07	23	17	39	27	55	37	71	47	87	57	103	67	119	77
8	08	24	18	40	28	56	38	72	48	88	58	104	68	120	78
9	09	25	19	41	29	57	39	73	49	89	59	105	69	121	79
10	0A	26	1A	42	2A	58	3A	74	4A	90	5A	106	6A	122	7A
11	0B	27	1B	43	2B	59	3B	75	4B	91	5B	107	6B	123	7B
12	0C	28	1C	44	2C	60	3C	76	4C	92	5C	108	6C	124	7C
13	0D	29	1D	45	2D	61	3D	77	4D	93	5D	109	6D	125	7D
14	0E	30	1E	46	2E	62	3E	78	4E	94	5E	110	6E	126	7E
15	0F	31	1F	47	2F	63	3F	79	4F	95	5F	111	6F	127	7F

WARRANTY

MIDI Solutions Inc. warrants this product to be free from defects in material and workmanship for a period of one (1) year from date of purchase. This warranty is void if the product has been damaged by accident, misuse, alteration, unauthorized repairs or other causes not arising out of defects in material or workmanship. Under no circumstances will MIDI Solutions be liable for any loss of profits, benefits, time, interrupted operation, commercial loss, or consequential damages arising out of the use or inability to use the product. MIDI Solutions specifically disclaims any implied warranties of merchantability and fitness for a particular purpose. If the product requires service, a Return Merchandise Authorization (RMA) number must be obtained from MIDI Solutions and the product must be shipped prepaid to a specified Service Center. MIDI Solutions will repair or replace the product at our discretion and will pay return shipping fees. The customer is responsible for any damage or loss sustained during shipment in any direction.