OPERATING INSTRUCTIONS
FOR

PRO-2
DUAL CHANNEL
MIDI TO CV CONVERTER

INTRODUCTION

Congratulations on your purchase of the Kenton Electronics PRO-2 dual channel MIDI to CV converter, which has been designed to give you maximum flexibility, whilst maintaining ease of use.

The converter has two completely independent sections - one called Channel A and the other Channel B - do not confuse these with the MIDI channels - each of Channel A & B can be operated independently from any MIDI channel.

Additionally, you can have a Wasp port fitted, to run an EDP Wasp synth, and a KADI port, to allow you to control the notes of some drum machines (TR-808/606, CR78/8000).

The BARGRAPH display

The Bargraph display is used in conjunction with the SELECT OPTION push button. The bar which is lit (or unlit for inverse display) indicates which option is current. The current option value is displayed in the dual 7 segment display window and can be edited using the INC & DEC buttons.

A normal bargraph display (one bar lit) indicates that the option is from the Group I list (i.e. MIDI channel A etc.). An inverse bargraph display (all but one bar lit) indicates that the option is from the Group II list (i.e. Note priority A etc.).

THE DUAL 7 SEGMENT DISPLAY
(also referred to as the Window)

When displaying letters, & numbers from 0 to 99, you will see the digits as you would expect.

When displaying numbers above 99, the following format is used :-
a dash " - " at the bottom of the left-hand display = 100+
a dash " - " in the middle of the left-hand display = 110+
a dash " - " at the top of the left-hand display = 120+

For example, supposing the display reads " - 7 "
if the dash is at the bottom, this means 107
if the dash is in the middle, this means 117
if the dash is at the top, this means 127

No values above 127 are used.
The two dots at the top of the display indicate when the gates of Channels A or B are active.

THE PUSH BUTTONS

SELECT OPTION

Press and release the SELECT OPTION push button and the bargraph display will move on to the next position. The legend to the right of the bargraph will tell you what the dual 7 segment display is showing - this can be edited using the INC & DEC buttons.

When you step the display on from "aux B-2 offset" you will see that the bargraph is inverted - in other words, all but one of the bars will be lit. This unlit bar is then the current option, but from the second group of options "GROUP II" which starts with "note priority A." If you keep stepping through past "continue=start" you will come back to the original non-inverted display, or in other words "GROUP I".

When you have edited something you can use the new settings until the converter is turned off, or you can store them to back-up memory so that they will be recalled when the converter is next turned on. When you store to back-up memory, the whole current setup is stored, not just the option you have just edited. To store to back-up memory press and hold the SELECT OPTION button until "st" appears in the display window. The present setup has then been stored.

Note; If you have edited the current option, the bar will not step the first time you press the select button after editing.

INC & DEC

Use the INC and DEC push buttons to edit the display and hence the option that is currently selected. If you hold either button in for more than a second, it will auto-repeat. when the displayed option has reached its minimum or maximum value you cannot decrease or increase it any further.
The INC and DEC buttons can be used while MIDI notes etc. are being received.

Trimmer adjustments for Channel A & B

CV INIT (range approx 2 octaves)
- tunes the converter to the synth.

CV SCALE (range approx 20%)
- adjusts the scale of the converter to match the synth. When the converter leaves the factory, this is set to the standard 1 volt per octave, but some synths may require some adjustment of this control if the octaves are out of tune with each other.

PITCHBEND (range approx 0 to 1 octave)
- adjusts how much pitchbend is integrated into the CV output. You can set this control to give you any required amount of pitch- bend from zero to 1 octave.

AUX 1 (range 4 to 14 volts)
- adjusts the maximum voltage available from the AUX 1 jack socket for Channel A - in other words the maximum voltage available when the source controller for AUX 1-1 is at maximum. This adjustment is provided as different synths require different voltages.

AUX 2 (range 4 to 14 volts)
- adjusts the maximum voltage available from the AUX 2 jack socket for Channel A - (see AUX 1 above).

Tuning in your PRO-2 & analogue synths

It may be that your synth is slightly out of tune, so it will be necessary to tune the PRO-2 to your synth;

1, Tune your synth (when playing from its own keyboard) correctly with your digital synths first. Do this by adjusting the tuning or pitch knob on your analogue synth whilst playing middle C on both synths. (To do this, you may need to disconnect the analogue synth from the PRO-2).

2, Now, with the PRO-2 connected to the analogue synth, play middle C on your digital synth. Both synths should sound. With a small flat blade screw driver, tune in the PRO-2 with your analogue synth by adjusting the INIT trimmer on the front panel.

3, When your digital & analogue synths are once again in tune, play a key two octaves up on your digital synth. Now adjust the SCALE trimmer till both synths are in tune. The analogue synth should now play correctly across it`s range from your master keyboard.

The OPTIONS in Group I
(the left hand list - normal display)

MIDI CHANNEL A (range 1 to 16) [factory default =1]
- displays the current MIDI receive channel for Channel A of the converter.

AUX A-1 SOURCE (range pb/vl/af/ 0-120) [factory default =16]
- displays which MIDI controller is being output to the AUX 1 jack socket for Channel A of the converter. If the window displays a number, then this is the controller which is being used. If you decrement past 0, you will see "af" which means after-touch, "vl" which means velocity and "pb" which means pitchbend (note however that pitchbend is already integrated into the CV output).

AUX A-1 OFFSET (range 0 to 127) [factory default =0]
- displays the offset value sent to the AUX 1 jack socket for Channel A when the converter is turned on, or when it receives a "reset all controllers" MIDI message. For example, this feature can be used if controlling the volume of a synth using the AUX 1 socket. Setting this value to 127 will mean that you will be able to hear your synth from power up or after a reset all controllers message, instead of the volume being set to zero.

AUX A-2 SOURCE (range tr/pb/vl/af/ 0-120) [factory default =7]
- displays which MIDI controller is being output to the AUX 2 jack socket for Channel A of the converter. Mostly as for Aux A-1 source (see above) but with the additional option of "tr" - trig. If AUX A-2 source is set to "tr" then a trigger voltage is sent to the AUX 2 jack socket for Channel A whenever a valid new note is played. This can be used for synths that have a separate trig input for the envelope generators (such as the ARP 2600).

AUX A-2 OFFSET (range 0 to 127) [factory default =127]
- displays the offset value sent to the AUX 2 jack socket for Channel A when the converter is turned on, or when it receives a "reset all controllers" MIDI message, as for Aux A-1 offset (see above).

The Group I options for channel B are the same as that for channel A

The OPTIONS in Group II
(the right hand list - inverse display)

NOTE PRIORITY A (range lo/hi/ne) [factory default =ne]
- displays the note priority for Channel A of the converter.
If set to "lo" then the lowest valid note played takes precedence.
If set to "hi" then the highest valid note played takes precedence.
If set to "ne" then the newest valid note played takes precedence.

TRIG / RETRIG A (range t/rt) [factory default =rt]
- displays whether normal trigger " t" or retrigger "rt" mode is in operation for Channel A.
If set to " t" the gate is always on while a valid note is playing.
If set to "rt" then a new valid note will briefly turn off the gate to retrigger the envelope generators of the attached synth.

NOTE PRIORITY B (range lo/hi/ne) [factory default =ne]
- displays the note priority for Channel B of the converter.
If set to "lo" then the lowest valid note played takes precedence.
If set to "hi" then the highest valid note played takes precedence.
If set to "ne" then the newest valid note played takes precedence.

TRIG / RETRIG B (range t/rt) [factory default =rt]
- displays whether normal trigger " t" or retrigger "rt" mode is in operation for Channel B of.
If set to " t" the gate is always on while a valid note is playing.
If set to "rt" then a new valid note will briefly turn off the gate to retrigger the envelope generators of the attached synth.

ARP CLOCK DIVIDE (range 2 to 24) [factory default =2]
- displays the ratio of MIDI clocks to output pulses from the arp clock jack socketl.
If set to " 2" there will be 1 pulse from the arp clock jack socket for every 2 MIDI clocks. (i.e. 12 pulses per quarter note).
If set to "24" there will be 1 pulse from the arp clock jack socket for every 24 MIDI clocks. (i.e. 1 pulse per quarter note).

N.B. MIDI sends 24 clocks per quarter note.

CONTINUE = START (range off/on) [factory default =on]
- displays whether an incoming "continue" message will be treated as a start message.
If set to "of" then incoming "continue" messages are ignored.
If set to "on" then incoming "continue" messages are treated as if they were "start" messages.

The Mini-jack output sockets
(starting from the right)

Hz / V CHAN A (option)
- This optional output is for the connection of synths requiring linear control - such as some of the KORG and YAMAHA synths, where the frequency of the note is directly related to the control voltage. (This is available only for the channel A output and can be used as well as or instead of the normal CV output for Channel A.

CV CHAN A (-1Volt to 5 volts +/-1V offset +/-1V pitchbend)
- the control voltage output to connect to the CV input of a synth. This output provides a 1 volt per octave output (adjustable for initial and scale) with integrated pitchbend.

GATE [V-TRIG] (off= 0 volts on= +15 volts)
- gate voltage output for a standard gate input of a synth.

S-TRIG (off= open circuit on= short circuit)
- gate signal for synths requiring an S-TRIG (short circuit trigger) such as many of the MOOG synthesizers. The tip of the jack is the trigger signal - if your synth has the CINCH/JONES connector with two flat pins, the narrower pin is the trigger signal and the wider one is ground.

N.B. use either Gate or S-Trig (not both) as they are two different ways of doing the same thing.

AUX 1 - (range 4 volts to 14 volts)
- voltage output for connecting to an auxiliary input on a synth such as filter control. (see AUX 1 in trimmer adjustments section).

AUX 2 - (range 4 volts to 14 volts)
- voltage output for connecting to an auxiliary input on a synth such as volume control, can also be used as a trigger output. (see AUX 2 in trimmer adjustments section).


```
CV CHAN B          |
GATE [V-TRIG]      |
S-TRIG             |        all as above but for Channel B
AUX 1              |
AUX 2              |
```

The ARP CLOCK & SYNC 24 outputs

ARP CLOCK - (arpeggio clock)
- this output provides a 5 volt clock pulse related to the incoming MIDI clock. The ratio of MIDI clocks to arpeggio pulses can be adjusted - (see ARP CLOCK DIVIDE above).
A 5 volt positive voltage will be output on the first MIDI clock after a MIDI start (or continue if selected) is received, & there- after dependent upon the ARP CLOCK DIVIDE ratio.

SYNC 24 - (DIN 24 sync - used on much ROLAND equipment)
- this output provides clock and stop / start signals.

Pin 1 - Stop = 0 volts
        Start = 5 volts (or continue if selected)
Pin 3 - 5 volt pulses (24 per quarter note - the same as MIDI)
Pin 2 - Ground
Pins 4 & 5 are not used.

Note that MIDI leads are not generally suitable for connecting to the SYNC 24 socket as they have different pins connected. Use a 5 pin DIN to 5 pin DIN audio lead - available from a HI-FI shop.

POTENTIAL PROBLEMS USING MIDI CLOCK

When using the MIDI clock in conjunction with the PRO-2 or our retrofits please note the following;
The Kenton add-on cannot sync the arpeggio if it is not actually receiving the MIDI clock. This is not as silly as it sounds, there are a few points to watch for:-

a) Some MIDI mergers & patch bays actually remove MIDI clock information from the MIDI data stream or you may have to enable it for the port you are using.

b) Users of CUBASE note that the default for MIDI clock is for it NOT to be sent, you will have to go into MIDI edit and switch it on.

c) Users of UNITOR/EXPORT on an Atari note that the MIDI clock will only come out of port A (that is the Atari's own MIDI port) unless you can re-assign it.

One way you can check whether the PRO-2 is receiving MIDI clock is to use the in built MIDI Analyser, described later in this manual.

The MIDI sockets

MIDI IN
- connect this to the MIDI out of your MIDI synth or MIDI sequencer using standard MIDI cables.

MIDI THRU
- This provides a copy of the information coming into the MIDI IN socket so that you can "daisy-chain" several MIDI devices. Should be connected only to a MIDI IN socket (or not used).

OPTIONAL WASP PORT IF FITTED TO PRO-2

The Wasp port if fitted to the PRO-2 MIDI to CV converter works on its own MIDI channel independently of the two existing channels A & B, making the PRO-2 into effectively a three channel converter.

To use the Wasp port, use the connecting cable supplied. This has an 8 pin din plug on one end & a 7 pin plug on the other end. Plug the 8 pin din plug into the PRO-2 and the 7 pin din plug into the Wasp.

As default, the Wasp will respond to MIDI channel 3, this can be changed and stored just like all the other parameters on the PRO-2.

Use the SELECT OPTION button to step the bargraph display through until you reach 'continue = start' (position 16) - the message 'On' or 'OF' will appear in the window, now step to the next position - this has no text beside it but it is the MIDI channel for the Wasp, the display will probably say 3. If you now step to the next position, this selects LO, HI or NEW notes take precedence. These are the only 2 set-ups available for the Wasp.

The Wasp responds to 3 octaves of notes only - on a DX7 or other 61 note keyboard. This corresponds to bottom C# to C three octaves above.

The Wasp does not respond to pitchbend or indeed any other controls except sustain pedal, which will hold the current note.

The above limitations are design limitations of the Wasp itself.

USING THE OPTIONAL TR606/808 INTERFACE WITH YOUR MODIFIED TR606/808

Connect the special multi-way cable supplied to the TR606 or TR808 and to the PRO-2. The TR606/808 can now be played from your master keyboard/sequencer.

To set the TR MIDI receive channel, press the SELECT button till you are on the 9th LED bar in the OPTIONS II menu. There are no markings on the PRO-2 box for this option. The current TR MIDI channel will now be displayed. This can be changed with the INC & DEC buttons, and stored with the rest of the PRO-2 settings. The sounds will play with or without Accent. A velocity level of over 70 will cause the sound to be accented, subject to the level of Accent selected on the TR606/808.

Below is the MIDI drum map for the TR-606 sounds;

NOTE	MIDI NOTE NUMBER	TR-606 SOUND
C	36	BASS DRUM
C#1	37	SNARE DRUM
D1	38	LOW TOM
D#1	39	HIGH TOM
E1	40	CYMBAL
F1	41	OPEN HIHAT
G1	42	CLOSED HIHAT

Below is the MIDI drum map for the TR-808 sounds;

NOTE	MIDI NOTE NUMBER	TR-808 SOUND
C	36	BASS DRUM
C#1	37	SNARE DRUM
D1	38	LOW TOM/CONGA
D#1	39	MID TOM/CONGA
E1	40	HI TOM/CONGA
F1	41	RIMSHOT/CLAVES
F#1	42	CLAP/MARACAS
G1	43	COWBELL
G#1	44	CLOSED HIHAT
A1	45	OPEN HIHAT
A#1	46	CYMBAL

CONNECTING YOUR MODIFIED TB303 (5 SOCKET RETRO) TO THE PRO-2

PRO-2	*to*	*TB303*
CV CHANNEL A	>	CV IN
GATE CHANNEL A	>	GATE IN
AUX1 CHANNEL A	>	FILTER
AUX2 CHANNEL A	>	SLIDE
AUX2 CHANNEL B	>	ACCENT

Set the AUX sources to which ever MIDI controller you wish to control the Filter, Accent or Slide.
If you use AUX2 (or 1) on Channel B to control the Filter, Accent or Slide, remember to send MIDI controller messages on the MIDI channel channel B is set to receive on to affect the TB303.

Using Slide;
The Channel A AUX2 trimmer on the front panel of the PRO-2 should be set to minimum (fully anti-clockwise) and the OFFSET set to zero. To turn the SLIDE on/off, the MIDI controller must be set to 65 for on, and 0 for off. When the slide is on, all following notes will glide into each other. It is best to play legato style for good results.

Using Accent;
The Channel B AUX2 trimmer on the front panel of the PRO-2 should be set to minimum (fully anti-clockwise) and the OFFSET set to zero. To turn the ACCENT on/off, the MIDI controller must be set to 65 for on, and 0 for off.

INFO FOR CONNECTING PRO-2 TO VARIOUS MONO SYNTHS _____

MINIMOOG		KENTON PRO-2	ADDITIONAL INFORMATION
OSCILLATOR INPUT note	(1/4" jack)	CV CHAN (A)	The oscillator input on this synth is affected by the last played on the Minimoog keyboard
S-TRIG INPUT	(Cinch-Jones)	S-TRIG (A)	See note 1 below re Cinch Jones connectors.
FILTER INPUT	(1/4" jack)	AUX 1 (A)	See note 5 below re FILTER
LOUDNESS	(1/4" jack)	AUX 2 (A)	

MOOG PRODIGY		KENTON PRO-2	ADDITIONAL INFORMATION
KBD IN/OUT	(1/4" jack)	CV CHAN (A)	EARLY MODELS HAVE NO CV, GATE OR FILTER INPUTS FITTED AS STANDARD (although we can fit them for you - see notes)
S-TRIG IN/OUT for s-	(1/4" jack)	S-TRIG (A)	Some Prodigy synths have the Cinch Jones connector trig input- see note #1
VCF IN	(1/4" jack)	AUX 1 (A)	See note 5

MOOG ROGUE		KENTON PRO-2	ADDITIONAL INFORMATION
CV IN	(ring of 1/4" stereo jack)	CV CHAN (A)	See note 7 below for connections to ring of stereo jack
V-TRIG IN	(ring of 1/4" stereo jack)	GATE (A)	Do not use the S-TRIG connection on this synth as it sometimes causes unpredictable results

MOOG SOURCE		KENTON PRO-2	ADDITIONAL INFORMATION
CV IN/OUT	(ring of 1/4" stereo jack)	CV CHAN (A)	See note 7 below for connections to ring of stereo jack
S-TRIG IN/OUT external	(ring of 1/4" stereo jack)	S-TRIG (A)	If the level 2 EXT TRIG on the Source is set to off, all triggers are defeated.

ROLAND SH-101		KENTON PRO-2	ADDITIONAL INFORMATION
CV INPUT sockets to	(3.5mm jack)	CV CHAN (A)	We can fit additional filter and modulation control the SH-101
GATE INPUT	(3.5mm jack)	GATE (A)	
EXT CLK IN	(3.5mm jack)	ARP CLK	will run the internal sequencer in time with MIDI - do not use at the same time as the CV & gate

SEQUENTIAL PRO-ONE		KENTON PRO-2	ADDITIONAL INFORMATION
CV IN	(1/4" jack)	CV CHAN (A)	
GATE IN	(1/4" jack)	GATE (A)	
FILTER IN	(1/4" jack)	AUX 1 (A)	See note 5

KORG MS-20		KENTON PRO-2	ADDITIONAL INFORMATION
VCO 1+2 CV IN	(1/4" jack)	Hz/V CHAN (A)	Requires the PRO-2 Hz/V option to be fitted
TRIG IN	(1/4" jack)	S-TRIG (A)	Use the S-TRIG output of the PRO-2
ANY OTHER	(1/4" jack)	AUX 1 (A)	There is much facility for control on the MS-20
ANY OTHER	(1/4" jack)	AUX 2 (A)	

KORG MONOPOLY		KENTON PRO-2	ADDITIONAL INFORMATION
CV IN	(1/4" jack)	CV CHAN (A)	ADJUST THE PRO-2 CV INIT TRIMMER FOR THE APPROPRIATE CHANNEL TO 1 OCTAVE HIGHER THAN THE FACTORY DEFAULT
TRIG IN	(1/4" jack)	GATE (A)	SET TRIG POLARITY OF THE MONOPOLY TO +15v
VCF fcM IN	(1/4" jack)	AUX 1 (A)	ADJUST THE PRO-2 AUX 1 TRIMMER TO +5 VOLTS
PORTA	(1/4" jack)	AUX 2 (A)	ADJUST THE PRO-2 AUX 2 TRIMMER TO +5 VOLTS [works inverted] (switches portamento on & off)
ARPEGGIO TRIG IN	(1/4" jack)	ARP CLK	

YAMAHA CS-30		KENTON PRO-2	ADDITIONAL INFORMATION
KEY VOLT IN	(1/4" jack)	Hz/V CHAN (A)	Requires the PRO-2 Hz/V option to be fitted

TRIG IN	(1/4" jack)	S-TRIG (A)	Use the S-TRIG output of the PRO-2

ARP ODYSSEY (LATE MODELS) & ARP AXXE		KENTON PRO-2	ADDITIONAL INFORMATION
CV INPUT	(3.5mm jack)	CV CHAN (A)	
GATE INPUT	(3.5mm jack)	GATE (A)	YOU DO NOT NEED TO CONNECT TO THE TRIG INPUT OF THE ODYSSEY / AXXE

ARP 2600		KENTON PRO-2	ADDITIONAL INFORMATION
CV INPUT	(3.5mm jack)	CV CHAN (A)	
GATE INPUT	(3.5mm jack)	GATE (A)	
TRIG INPUT to	(3.5mm jack)	AUX 2 (A)	Set the aux (a)-2 source to TR (trig) and aux (a)-2 offset zero.
VCF INPUT	(3.5mm jack)	AUX 1 (A)	

CV / GATE / FILTER SOCKETS CAN BE FITTED TO THESE

OCTAVE CAT
ROLAND TB-303
ROLAND MC-202
MOOG PRODIGY (EARLY MODELS)
ARP ODYSSEY (EARLY MODELS)
KORG MINI 700S (WOULD NEED THE OPTIONAL Hz/V OUTPUT FITTED TO PRO-2)
JEN SX1000

CONTROL USING A MIDI TO CV CONVERTER NOT POSSIBLE FOR THESE

OSCAR (WE CAN DO AN INTERNAL MIDI RETRO-FIT TO THIS THOUGH)

THE FOLLOWING POLY-SYNTHS HAVE CV & GATE SOCKETS AND THUS CAN BE CONTROLLED USING THE PRO-2 - NOTE HOWEVER THIS CONTROLS ONLY ONE VOICE OF THE SYNTH - BUT SEE NOTE #8

PROPHET 5 OBERHEIM OB-X / OB-Xa

NOTES -

1) The Cinch-Jones S-Trig connector commonly fitted to MOOG synths, has two flat blades - the narrow blade connects to the tip of a 3.5mm jack plug and the fatter blade connects to the body.

2) The connection info refers to channel A, but this could equally well be channel B etc. If you are going to use channel B of the converter, you would be using the gate, s-trig, aux 1 & aux 2 outputs (as required) of that channel also.

3) All the outputs of the PRO-2 (except the SYNC 24 and MIDI thru) are on 3.5mm jack sockets.

4) Some of the control inputs on synths are mutually exclusive, ie. you wouldn't use the EXT CLK IN of the SH-101 at the same time as the CV & GATE inputs.

5) References to FILTER control, mean control of the filter cutoff frequency - sometimes also called filter sweep or VCF frequency control (VCF means voltage controlled filter).

6) We can fit CV, GATE and FILTER control sockets to most monophonic synths if they do not have them already - cost »37.60 (»32.00 plus VAT) in most cases

7) A stereo jack plug has the following connections, tip - ring - and body - in that order. To connect to the ring of the stereo jack involves connecting the body of the 1/4" stereo jack to the body of the 3.5mm jack - and connecting the ring connection of the 1/4" stereo jack to the tip of the 3.5mm jack.

8) The PRO-2 (or indeed any MIDI to CV converter) is not generally the appropriate solution for the control of Polyphonic synths. Although a few early poly-synths do have CV & GATE inputs fitted, this only enables you to use one of the voices, so you effectively get a monophonic synth when using CV & GATE. The way to control poly-synths using MIDI is to get an internal retro-fit, which of course KENTON can supply and fit for you.

Controller Numbers

Controller Number		Control Function
Decimal	**Hex**	
0	00H	Bank switch MSB
1	01H	Modulation wheel/lever
2	02H	Breath controller
3	03H	Undefined
4	04H	Foot controller
5	05H	Portamento time
6	06H	Data entry MSB
7	07H	Main volume
8	08H	Balance
9	09H	Undefined
10	0AH	Pan
11	0BH	Expression controller
12-15	0C-0FH	Undefined
16-19	10-13H	General purpose controllers (1-4)
20-31	14-1FH	Undefined
32-63	20-3FH	LSB for values 0-31
64	40H	Damper pedal (sustain)
65	41H	Portamento
66	42H	Sostenuto
67	43H	Soft pedal
68	44H	Undefined
69	45H	Hold 2
70-79	46-4FH	Undefined
80-83	50-53H	General purpose controllers (5-8)
84-90	54-5AH	Undefined
91	5BH	External effects depth
92	5CH	Tremolo depth
93	5DH	Chorus depth
94	5EH	Celeste (detune) depth
95	5FH	Phaser depth
96	60H	Data increment
97	61H	Data decrement
98	62H	Non-registered parameter number LSB
99	63H	Non-registered parameter number MSB
100	64H	Registered parameter number LSB
101	65H	Registered parameter number MSB
102-120	66-78H	Undefined
121-127	79-7FH	Reserved for channel mode messages

Additional PRO-2 features

MIDI Analyser

The PRO-2 now has a useful MIDI analyser function. This feature allows you to see what types of MIDI messages it receives.

To enter analyser mode, you must power on the PRO-2 whilst holding the INC and STORE buttons.

The display will first show `--`, then `nt`. `nt` means the display will show the MIDI note number of any notes it receives.

Using the INC, DEC, and SELECT OPTION buttons, different types of MIDI messages received may be displayed;

INC	short press	`rc` Receive channel
	long press	`Pc` Program change
DEC	short press	`cn` Controller number
	long press	`cv` Controller value
SELECT OPTION	short press	`nt` Note number
	long press	`nv` Velocity

For whichever of the above selected, the PRO-2 will display the MIDI value or message type of any messages that it receives.

Although pitchbend and after-touch are not controllers, when Controller number is selected, `pb` will be displayed if pitchbend is received, & `af` will be displayed if after-touch is received. If Controller values is selected, and pitchbend or after-touch are received, their values will be displayed.

For values over 99 the usual method is employed for displaying large numbers on the PRO-2.

The LED bargraph in this mode operates as a received MIDI message indicator;

1	Note on
2	Note off
3	Pitch bend
4	Controller
5	After-touch
6	Program change
7	Timing clock
8	Start
9	Stop
10	Continue

LED bars 1 to 10 will flash when they receive their corresponding MIDI messages.
To exit MIDI analyser mode, the PRO-2 must be powered off then on again.

Displaying PRO-2`s software version

To see what software version the PRO-2 has, hold down the INC & DEC buttons whilst powering up the PRO-2.

The PRO-2 will then display it`s software version & software build number, then return to normal operation.

First it will display `40`, then `31`, `00`, finally `71`.
This means `software version 4031, build number 0071,` (current version when this is being typed).

The Kenton Electronics PRO-2 CV converter has a built in mains transformer factory set to 240 volts AC 50Hz unless otherwise marked. The transformer also has a tapping for 220 volts AC, but this adjustment must only be made by qualified service personnel. A different transformer must be fitted for operation from 120 volts. An internal fuse of rating 100mA is fitted, but replacement of this should also be confined to qualified service personnel. (If fitted with A 120v transformer, a 250mA fuse must be used).

WARRANTY

The PRO-2 comes with a 12 month (from purchase date) back to base warranty, (i.e. customer must arrange and pay for carriage to and from Kenton Electronics

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