

PCD-1 Specifications

OS version 3.01
Hardware version 2



Juzisound PCD-1 breath controller is functional analog of Yamaha breath controller BC-3 + MidiSolutions box for analog to midi conversion – but this design is more modern and flexible!

Box PCD-1 /PCD - Pressure Controlled device/ is most user friendly device with 101x64 pixels LCD display with LED backlight and keyboard with sensor technology. No mechanical buttons – extended device life. This device converts analog level from pressure sensor to MIDI out signal, and merge this MIDI signal with incoming MIDI messages on MIDI IN input port. All is send to MIDI OUT.

Hardware version 2 work native with Juzisound Breath Controller headset, and with Yamaha BC-3A breath controller headset. Difference in this headsets is in some connection pin and signal polarity. In PCD-1, hardware version 2 found internal CPU controlled switch, which change necessary headset modes. Active headset mode selection, made by system menu, and memorized for next usage. In version 2, headset input is with additional current protection for broken or short circuit cables or other external problems. PCD-1 breath input is fully protected!

Power IN on PCD-1 hardware version 2 accepts ANY polarity or waveform from power sources, AC or DC.

Specifications:

Hardware In / Out Ports:

- MIDI IN – with MINI DIN to DIN adapter – included.
- MIDI OUT – with MINI DIN to DIN adapter – included.
- ANALOG INPUT – 3.5 stereo jacks.
- POWER INPUT – standard power in connector.

System Setups

Sensor Setups:

- Read Accuracy: 10 bit with native 8 times over sampling and averaging.
- Read Mode: Direct, Averaged 2/1, Averaged 4/1, Averaged 8/1, Smooth.
- Offset: 0 to 999 – for user “no pressure” level calibration.
- Gain: from x1.00 to x10.00 with 0.25 steps.

Bypass Setups:

- This device use special technology for ON and OFF bypass mode.
- If no breath pressure added – sensor produce analog level different from 0.
- If max pressure added – level rise up to 1024. /if gain = 1.00/.
- If negative pressure added, level down from normal /when no pressure / value /56 for example/ to minimum value - 0.
- This particularity is used for enter an exit in BYPASS mode.
- If user adds negative pressure – less that user selected value – device enters in BYPASS mode. In BYPASS mode device send default values for all previously used controllers, and stop produce MIDI for these controllers. For exit in BYPASS mode, user must apply again positive breath pressure more that another user selected level – and device again will produce MIDI for selected controllers and channels. That is – simply and flexible.

Global MIDI Setups:

- This device produces 4 deferent MIDI controllers – each with completely independent settings. Every controller must be send to one or all 4 globally selectable MIDI channels - A, B, C and D. These MIDI channels are set here.
- MIDI Channel A: 01 – 16, OFF.
- MIDI Channel B: 01 – 16, OFF.
- MIDI Channel C: 01 – 16, OFF.
- MIDI Channel D: 01 – 16, OFF.
- Output Running Status: ON, OFF.
- Reset Controllers if change presets: ON or OFF. If ON, device send default values for used controllers in old preset, when next preset use different controllers.
- MIDI THRU: ON or OFF. Special low latency MIDI THRU technology also available – for very low MIDI THRU latency - < 320 micro sec. /theoretical minimum for MIDI systems/.
- BYPASS mode: DFLT, STOP. In DFLT mode, if device enter in BYPASS mode, send default values for used controllers. In STOP mode – if device enter in BYPASS mode, only stop produce new MIDI messages for used controllers.

Sound Setups:

Keyboard Ticks: ON, OFF.
BYPASS Sound: ON, OFF.

Display Setups:

Language: ENG, BUL.
LCD Contrast: 1 – 30. 22 default.
Backlight: 0-16.
Effects: NO, BP1, BP2, BL1, BL2. Visual effects with display backlight.

Preset Setups:

This device use preset system with 24 user programmable presets. Every preset contains all setups for 4 controllers and preset name with 8 chars.

User Controller setups: 4 different controllers available simultaneously.

Controller Number: Controller 0 – 119, or After Touch.

Send to global MIDI channel A: ON, OFF.

Send to global MIDI channel B: ON, OFF.

Send to global MIDI channel C: ON, OFF.

Send to global MIDI channel D: ON, OFF.

Curve select: 1 – 16. 16 different curves available.

Curve X start point: 0 to 127. 0 default.

Curve X end point: 0 to 127. 127 default.

Curve Y start point: 0 to 127. 0 default.

Curve Y end point: 0 to 127. 127 default.

If curve Y end point is less curve Y start point – curve is inverted.

Breath Vibrato

This is technology for modulating Pitch Bend with breath. This is new and most flexible. If breath increases, pitch is modulating down. If breath decreases – pitch is modulating up. This technology is used for imitating Sax or other breath instruments.

Preset Name

8 Chars – ACSII table chars.

All preset and system setup is send or receive over MIDI with Sysex Messages.

OS software is up gradable over MIDI with free Windows software tools from Juzisound. All new OS version is free for old users.