

Classic Organ Works

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MIDI OPTICAL VELOCITY-SENSITIVE KEY SWITCHES OPVKM2 & OPVKM4



Description

The OPVKM2 & 4 are interface boards that create velocity-sensitive data on MIDI channels from optical sensors under each manual key. The data is available via USB or MIDI.

The boards are designed to fit under standard wooden-key manuals either in front of the pivots (OPVKM2, shown above) or behind them (OPVKM4) if balanced keys are used.

Switching is achieved by adjustable shutters attached to the keys that interrupt infra-red light beams. The boards measure the time taken for the shutter to cross a finite aperture. With the OPVKM2, the shutters move into the sensor gap to block the beam. On the OPVKM4, they move out.

Both types can be used if second touch is required, when the rear board handles first touch and the front one the second touch (where the movement is at the end of the key travel).

Four sections of an eight-section DIP-Switch select the MIDI channel, while others select auto calibration mode, velocity on/off and the 'Turn-on' and 'Turn-off' firing points. MIDI IN is always active so that multiple keyboards can be 'daisy-chained' with the last one switched to USB output.

The boards are mounted onto stiff aluminum rails to prevent warping during playing. The rail for the OPVKM2 fastens to the keyboard pivot rail so that the sensors are located where the key travel is about one-half that of the key fronts. The OPVKM4 rail fastens to the underside of the key cheeks behind the pivot point.

MIDI Specification

Pressing any key sends a '9c nn vv' message: where 'c' is the channel number 0-Fh (0-15) and 'nn' is 24h<nn<60h, representing key numbers #1-61. Velocity information (loudness) 'vv' is 1-127 (1-7Fh).

Up to 24 pistons can also be scanned and their data sent out as note-on/note-off messages for keys #0-23 on the same keyboard channel.

Features

- Velocity-sensitive action using optical sensors
- Velocity can be turned off for normal keying
- Adjustable firing points for velocity keying
- OPVKM2 senses the shutters moving in, OPVKM4 senses them moving out
- First or second-touch capability
- MIDI channel selectable 1-16
- Selectable MIDI OUT or USB output
- MIDI IN allows 'Daisy-chaining' of keyboards
- MIDI IN merged with key MIDI data
- Simple calibration for device variations
- Two-board set fits under standard keyboards
- Boards also scan up to 24 pistons on keyclip
- Power: +8V to +15V D.C. from console supply.
- Dimensions (WxL): 33"x2.5" (83.82x6.35cm)

Applications

The OPVKM2 and OPVKM4 are designed to fit under wooden keys and provide velocity-sensitive keying action as MIDI or USB signals. First or second-touch capability.