MIDECO

eurorack module

24-outputs MIDI note decoder

USER MANUAL

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Overview

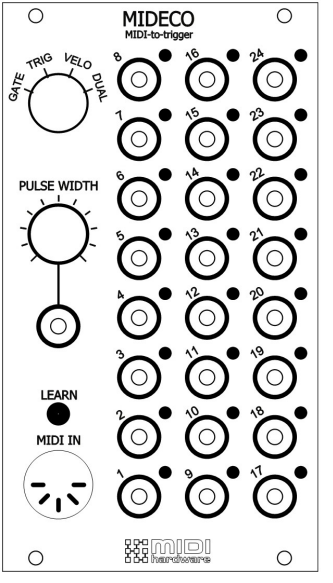
MIDECO module is a decoder of MIDI notes to gates or triggers. It receives MIDI notes via DIN5 MIDI IN jack and converts them to +5V gate or trigger pulses, depending on mode selected. There are 24 outputs and each of them is assigned to different MIDI note from continuous range in single MIDI channel. So if you connect for example keyboard to MIDECO, all gate outputs will represent key status (on or off) of selected 2-octave range. This range, or in another words – a starting note, as well as MIDI channel, can be set using MIDI-learn button or via MIDI System-Exclusive messages.

When trigger modes are selected, duration of the pulse can be altered by "PULSE WIDTH" knob and CV input. Additionally in VELO mode, duration is controlled by MIDI note's velocity.

This module can only be used when properly installed in eurorack modular case. It occupies 14HP and needs only +12V supply delivered via standard 10-pin plug. The power input is keyed, so no mistake can be made using proper cables, but in any case MIDECO will not get damaged by connecting power in reverse.

Module width is 14HP (70.8mm), depth 25mm (without power plug inserted).

Panel & modes of operation



Upper knob is for mode selection. Possible modes:

GATE – output is active (+5V) as long MIDI note is on. Pulse width knob and CV has no use.

TRIG – output is active (+5V) only for the short time at MIDI note start. Pulse duration is adjusted only by Pulse Width knob and CV

VELO – works just like TRIG mode, but pulse duration is affected by velocity of MIDI note

DUAL – odd outputs send trigger at the time MIDI note starts, while even outputs send trigger at the end of MIDI note. Each note drives 2 outputs, hence 12-note range in this mode.

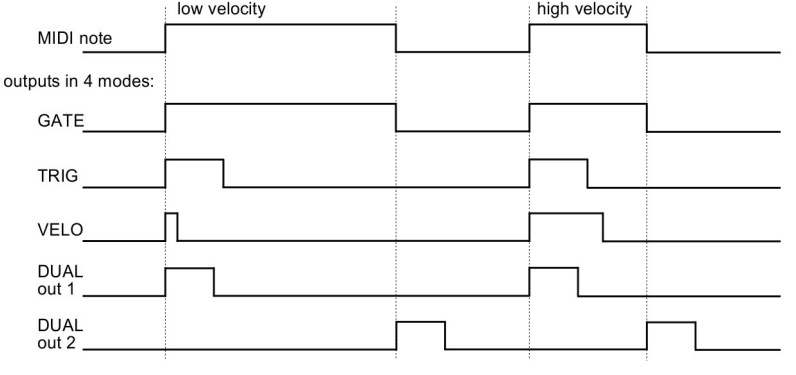
PULSE WIDTH knob alters trigger duration, and depending of mode and velocity, this is between fraction of a millisecond up to 0.5s

LEARN button for setting starting note and MIDI channel (setting remains after power off) and indicator of MIDI signal. GREEN = MIDI coming in, RED = MIDI note in my

channel and within my range, ORANGE = waiting for first note in MIDI-learn procedure. Module does not blink on MIDI real time messages like MIDI clock for better visibility. To assign a range of 24 gates to notes, press LEARN button and play the lowest note of that range. From now on MIDECO will respond to that MIDI channel, starting from that note.

There is a LED at each of 24 gate/trigger jacks to indicate that output is active.

To show how different modes affect GATE outputs, see the timing below. It assumes the same MIDI note was played 2 times with different velocity.



MIDI System-Exclusive

Starting note, MIDI channel, and mode of operation can be set also with MIDI Sys-Ex message of the following syntax (in hex):

F0 00 20 7A 05 01 [channel] [mode] [starting note] F7

channel must be entered as one of the following values representing channel 1-16 accordingly: 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B, 0C, 0D, 0E, 0F, 10

mode selects one of the modes just like mode switch, and can take those values: 01 – GATE, 11 – VELO, 12 – TRIG, 13 – DUAL.

Starting note as hexadecimal value from 00 to 7F. Enter 24 for typical starting note in 5-octave keyboard.

Parameters

Power consumption: 4mA at +12V with all LEDs off, 10mA with all LEDs on. Current may rise significantly if GATE outputs will be (by mistake or intentionally) shorted to GND, although this cannot damage the module. -12V and +5V rails are not used.

Pulse duration: in TRIG and DUAL set by the knob and CV: 1-500ms. In VELO mode dependent on velocity: 0.1-5ms for minimum knob/CV setting, 5-450ms for maximum knob/CV setting.

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