How it works:

A remote control computer has a USB MIDI stick and sends midi data on midi channel 1 as noteOn:

Note 1 Velocity 1
Note 2 Velocity 1
Note 3 Velocity 1
etc ...

On remote control computer a dedicated software is DIAcontrol. It is based on html, javascript and php. So: the computer must have XAMPP server installed (or at least Apache and PHP). On dedicated computer it is best to have Apache server as service.

Folder diacontrol must be put in htdocs folder. Chrome browser has MIDI enabled by default — other browsers need Jazz-Plugin installed and Web Midi API extension.

In this way any computer operating system can be used.

This device (DIAcontrol) receives midi data via a cable on one of three types of inputs. The opto-coupler transfers the data to microcontroller (Arduino UNO). Microcontroller decodes the Note received — and triggers a pulse of 250ms on one of six relevant outputs.

These outputs are doubled: one output is control LED on DISPLAY board, second output creates a shorting contact on ISOLATING TRIGGER SWITCHES board.

Relays are used because they are isolating and the speed that is needed is relatively low. It is still fast enough so that trigger on all outputs happens momentarily.

Diaprojectors:

— they are old machines with simple advancing.
— about 40 VDC/ 0.3A triggers solenoid action.
— relays are 5-6VDC / 1A — contacts in parallel
— relays consume about 80mA each: 0.5A all
— diode protection and reservoir capacitors prevent restet of microcontroller

It should be the most robust solution for a variety of old diaprojectors.

DIAcontrol midi receiver / pulse trigger
receives remote midi on channel 1 as NoteOn 1-6, velocity 1
makes 250ms long pulses to turn on briefly the
corresponding six isolating switches -> relays.

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Title: **DIAcontrol by BS 2021**

Size: A4 | Date: | Rev:
KiCad E.D.A. kicad (5.1.5)-3 | Id: 1/1

MIDI IN
mini Jack J2
Audio Jack J3
XLR Jack J1A

POWER SUPPLY
U1 mains_regulator_module
7.5V_OUT GND
SW1 SW_DIP_x01
P1 220VAC

USB MIDI OUT
mini Jack J4
USB_A_stick J5

Arduino UNO with daughter board
U2 6N136
A1 Arduino_UNO_R3

DISPLAY
R16 340
MIDILED D9
LED6 LED5 LED4 LED3 LED2 LED1
D6 D7 D8 D10 D11 D12

ISOLATING TRIGGER SWITCHES
Q1 BC338 — K1 — J6 Conn_01x02 diaprojector 6
Q2 BC338 — K2 — J7 Conn_01x02 diaprojector 5
Q3 BC338 — K3 — J8 Conn_01x02 diaprojector 4
Q4 BC338 — K4 — J9 Conn_01x02 diaprojector 3
Q5 BC338 — K5 — J10 Conn_01x02 diaprojector 2
Q6 BC338 — K6 — J11 Conn_01x02 diaprojector 1