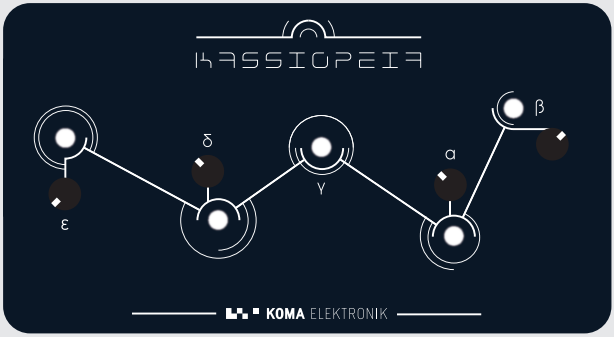
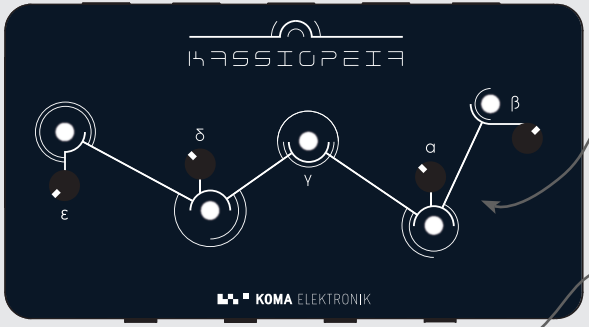
KASSIOPEIA



Manual

FUNCTION OVERVIEW

Kassiopeia is a 4-channel DC interface that lets you control motors, solenoids, fans, LEDs and more using MIDI or CV/Gate. Each channel can either smoothly adjust power levels or send short, punchy triggers.



Back side
- 9 - 24V Power Input
- 4 Powerful DC Outputs

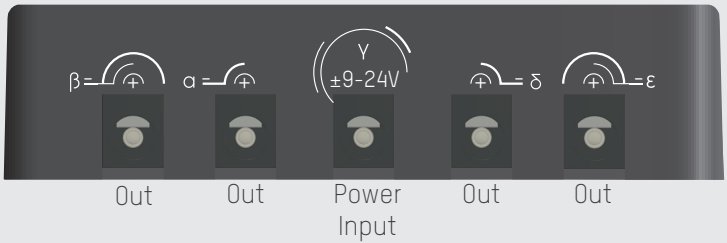
Top side
- Intensity Controls
- Power / MIDI Learn LED

Front side
- MIDI Input
- CV / Gate Inputs
- Mode Switches

Trigger mode

Continuous mode

BACK SIDE



The back side contains the POWER INPUT in the center as well as the four DC OUTPUTS.

The POWER INPUT accepts 9 – 24 V. Polarity doesn't matter. The voltage you feed in here directly powers the outputs.

DC OUTPUTS deliver the same voltage as the input. They are center-positive by default, but polarity can be reversed with a KOMA inverting DC cable or custom cabling.

FRONT SIDE

Button released: Trigger mode

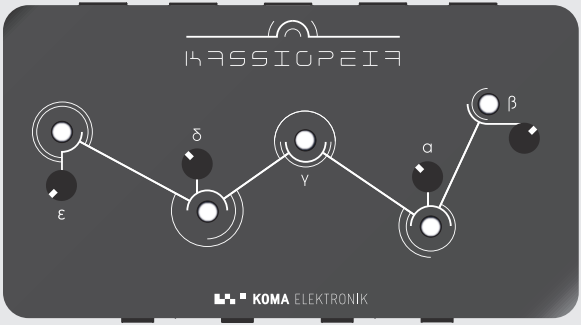
Button pressed: Continuous mode

Inputs and Mode Switches of Kassiopeia are on the front side.

Each of the four channels features a 3.5mm mono input that accepts CV / Gate. CV / Gate inputs accept up to 5V and are voltage-protected. The Mode Switch changes the channel's behavior between continuous and trigger mode.

The center jack is the MIDI input. It accepts both TRS-A and TRS-B adapters. Kassiopeia receives MIDI messages on all channels by default.

TOP SIDE



On the top you'll find the four Intensity controls - one for each channel - as well as four Channel LEDs and the Status LED.

- Intensity controls set the output level of each channel.
- Channel LEDs show the outgoing signal for their channel.
- Status LED lights solid when Kassiopeia is ready, and blinks in MIDI Learn mode.

BOTTOM SIDE

You access the MIDI Learn button via the small hole in the bottom panel. During power-up, take a small screwdriver or paper clip to press the large green button on the inside. The button is soft and doesn't click. Afer power-up Kassiopeia will go into MIDI Learn Mode and the Status LED on the top starts blinking.

Factory MIDI Settings

- Trigger Mode reacts to MIDI Notes: 0, 2, 4, 5 (equals to C-1, D-1, E-1, F-1)
- Continuous Mode reacts to MIDI CC#s: 20, 21, 22, 23

MIDI LEARN

Kassiopeia can store custom MIDI mappings. In MIDI Learn mode you first assign four MIDI Notes (for trigger mode) and then four MIDI CCs (for continuous mode).

- The first MIDI Note received goes to Out 1, the second to Out 2, and so on.
- After four Notes, send four CC messages in the same order.
- During Learn mode, Kassiopeia listens on all MIDI channels and stores the channel of the learned assignment.
- The active channel LED glows dim while waiting. Once a Note/CC is received, the LED flashes briefly.
- After eight assignments, Kassiopeia exits Learn mode automatically and shows its startup LED sequence.

At any point you can press the MIDI Learn button again to stop. Changes made so far are saved; untouched channels remain as before.

OUTPUT MODES

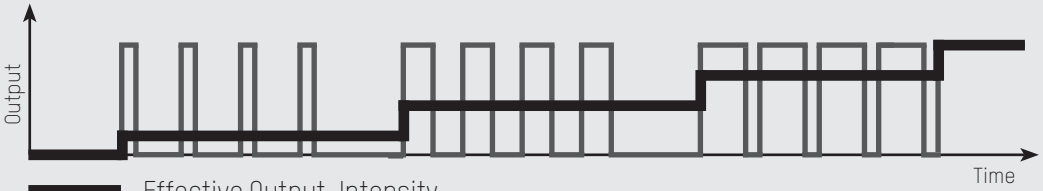
Continuous Mode provides a PWM output. PWM stands for Pulse Width Modulation and means for any setting between fully on and fully off, the output is constantly being switched on and off. This is a common way to control the speed of a motor or the brightness of an LED.

This mode is expecting CC messages if used via MIDI and a CV if the CV/Gate input is used.

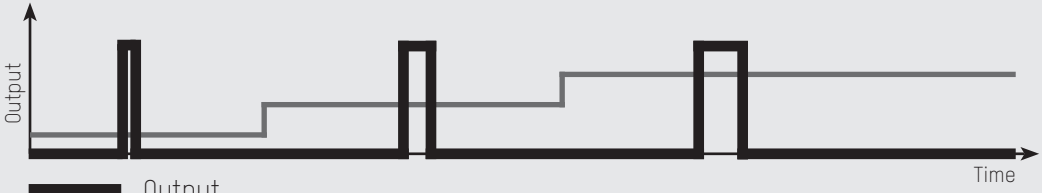
Trigger Mode provides a short pulse of full energy. The Intensity control defines the length of that pulse. This is ideal for triggering solenoids with short bursts of energy. Keep in mind that with higher trigger frequencies, it can be better to set a smaller intensity to allow the solenoid to recoil.

This mode is expecting MIDI Notes. The Note Velocity automagically maps onto Intensity. Use triggers or gates (or even CV) when using the CV/Gate input.

Continuous Mode



Trigger Mode



Solenoids can get pretty hot, be careful!

POWER CAPABILITIES

Each output can handle 1.5 A on its own, and the combined load of all four outputs must also not exceed 1.5 A total *continuously*. 1.5 A equals 1500mA.

Kassiopeia can handle a total *average, continuous* power of 20W. The maximum power of 20W can be pulled from any of the four outputs. 20W is a combination of voltage and amps, here is a small table for some common voltages :

Input Voltage	Max Current
9 V	1.5 A
12 V	1.5 A
15 V	1.3 A
24 V	0.8 A

Do not exceed these values for an extended period of time

This table shows values for a continuous load, like a motor or light *constantly* running on 100% intensity.

It's possible to provide more power in shorter bursts, e.g. triggering solenoids or when having intensity set below 100% in continuous mode.

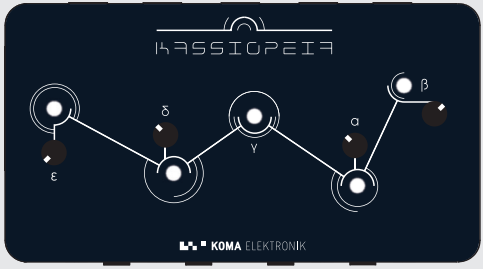
FIRMWARE UPDATE

Updating Kassiopeia is done by copying a file to it over USB.

1. **Open the case**
   Unscrew the four screws on the bottom.
2. **Connect USB**
   Plug a USB-C data cable into the Firmware Update USB slot (marked with an arrow).
3. **Enter update mode**
   Find the small pushbutton marked Firmware Update. It's tiny. While holding the button, power up Kassiopeia.
4. **Copy the file**
   Your computer shows a drive named RPI-RP2. Drag the new firmware file onto this drive.
5. **Reboot**
   After copying, Kassiopeia restarts automatically with the new firmware.

NOW HAVE FUN!

WARRANTY KOMA Elektronik warrants its products to be free of defects in materials / workmanship and conforming to specifications at the time of shipment for period of two years from the date of purchase. During the warranty period any defective products will be repaired or replaced at KOMA Elektronik's option on a return-to-factory basis. This warranty covers defects that KOMA Elektronik determines are no fault of the user.
RETURN? You must obtain prior approval in the form of an RMA (Return Material Authorization) number from KOMA Elektronik before returning any product. Get in touch with us at support@koma-elektronik.com to request the RMA number. All products must be packed carefully and shipped with the KOMA Elektronik supplied power adapter. Sorry, the warranty will not be honored if the product is not properly packed. Once you have received the RMA#, write it on a sheet of paper or a note on the inside of the package and carefully pack and ship the product to KOMA Elektronik with transportation and insurance charges paid, and include your return shipping address.



IMPRINT

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Registered Office: Berlin, Germany
Court of Registration: Amtsgericht Berlin-Charlottenburg
Registration Number : HRB 145453
VAT ID: DE285522050
WEEE-Reg. Nr:DE97459400

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