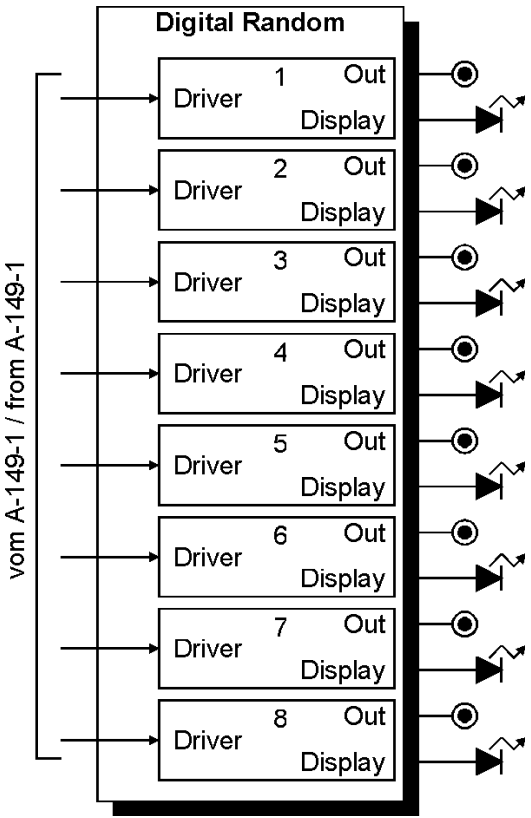
1. Introduction



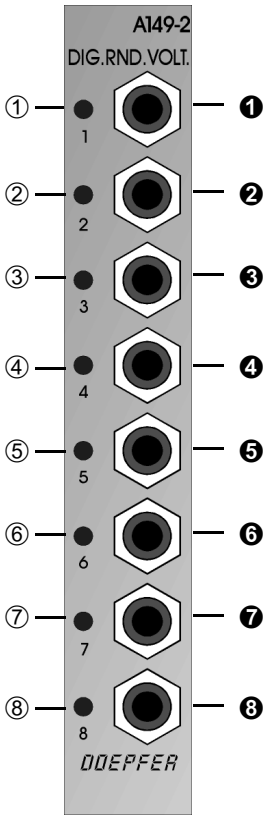
A-149-2 is an extension module for the random voltage generator A-149-1. It makes available 8 digital random voltages (i.e. only low/high states like a gate signal).

The outputs are controlled by the "Quantized Random Voltages" section of the assigned A-149-1 and correspond to the 8 digital outputs of the shift register that is used to generate the Quantized Random Voltages (for detailes please refer to the A-149-1 description).

As the alteration of the A-149-2 outputs is clock controlled by the Clock Input of the "Quantized Random Voltages" section of the A-149-1 the A-149-2 can be used to create random rhythmical sequences.

Module A-149-2 requires module A-149-1 and has to be assembled next to the A-149-1 into the A-100 frame.

2. Overview



Controls:

①... ⑧ (**LEDs)**: Display for each output

Outputs:

❶ ... ❽ **(sockets)**: Digital outputs

3. Controls

①...⑧ (LEDs) / ❶...❽ (sockets)

At the sockets ❶...❽ the 8 random digital outputs are available. The output levels are ~ 0V (low state) resp. +12V (high state).
Each positive clock transition of the "Quantized Random Voltages" section of the A-149-1 causes a new combination of the A-149-2 output states. The outputs reflect the digital states of the shift registers used in the A-149-1 to generate the random voltages. Details about this subject are available in the A-149-1 manual and on our web site www.doepfer.com where the method of random voltages generation with the A-149-1 is described in detail.
As the level changes are triggered by the QRV clock the A-149-2 outputs have a timing correlation with the clock signal and can be used e.g. as random gate or trigger signals with the level changes in sync with the clock.

As the level changes are random even no level change is possible for a certain output (i.e. the output remains low or high) as these four level changes are possible:

- low → low
- low → high
- high → low
- high → high.

4. User Examples

not yet ready

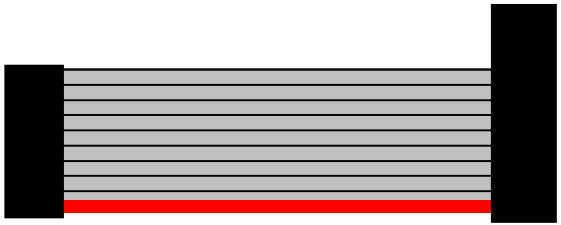
Appendix: Connection A-149-1 – A-149-2

Module A-149-2 (Digital Random Voltages) is delivered with two 10 pin ribbon cables connected to two pin headers on the A-149-2 pc board:

1. One of the ribbon cables is equipped with a 10 pin female connector on one end and a 16 pin female connector on the other side. The 10 pin female connector is connected in the factory to the pin header labelled "JP1" on the A-149-2 pc board. This is the bus connection cable and the 16 pin female connector has to be connected to a free pin header of the A-100 bus board. Pay attention to the right polarity (red wire = bottom).

10 pin female connector → JP1 / A-149-2

16 pin female connector → bus board



red wire = bottom

Please refer to the A-100 user's manual (introduction) for details concerning correct bus cable connection.

2. The second ribbon cable is equipped with 10 pin female connectors on both ends. One of the female connectors is connected in the factory to the pin header labelled "JP2 TO A-149-1 EXPANSION CONNECTOR" on the A-149-2 pc board. The second female connector of this cable is used to establish the connection between A-149-2 and A-149-1. This female connector is put on the pin header labelled "JP5 EXPANSION" on the main board of the module A-149-1. For both modules the cable has to be the same polarity (i.e. red wire to bottom for both modules).

10 pin female connector → JP5 EXPANSION / A-149-1

10 pin female connector → JP2 TO A-149-1 EXPANSION CONNECTOR / A-149-2

red wire = bottom