2 Modules

> Digital Electronics

M61/N-M61. Digital/Analog Converters



GENERAL DESCRIPTION

Digital/analog conversion happens when we want to recover or re-obtain a digital signal that has been processed and we want to regenerate it. A signal that has been sampled, for example, a temperature signal and we want to return it to the continuous medium, or it may be that we do not need to recover such a signal but we want to generate an analog signal from a digital signal. The process we can describe for returning or obtaining a signal from digital to analogue is called reconstruction. Each discrete value of ones and zeros must be directly related to the previously defined value of an analogue signal.

With the Digital/Analog Converters, "N-M61", designed by EDIBON, the different direct and indirect digital to analog converters can be studied.

In addition, faults can be simulated in most of the circuits under study. The student must investigate what is happening in the circuit and why it is not working properly. These faults simulations can be of several types from damage components to a hypothetical incorrect circuit assembly.

PRACTICAL POSSIBILITIES

- 1.- D/A converter of weighted divider resistors.
- 2.- Analog switches errors.
- 3.- D/A converter of R-2R ladder.
- 4.- Current division in R-2R ladder converter.
- 5.- D/A converter of inverted ladder.
- 6.- D/A integrated converter.
- 7.- Serial data input D/A converter.
- 8.- D/A converter of pulse width modulation.

-Several other exercises can be done and designed by the user.

SPECIFICATIONS

Circuit blocks: Generators. R-2R converter. Weighted converter. D/A converter. Serial converter. Amplifier. Adder. Sample/Hold. Frequency-voltage converter.

DIMENSIONS AND WEIGHTS

| Dimensions | : 300 x 210 x 45 mm approx. (11.81 x 8.26 x 1.77 inches approx.) |
|------------|---|
| Weight: | 300 g approx. (0.66 pounds approx.) |

REQUIRED ELEMENTS (NOT INCLUDED)

- Required (at least one):
- FACO. Power Supply.
- EBC100. Base Unit, with built-in power supply.

ADDITIONAL RECOMMENDED ELEMENTS (NOT INCLUDED)

Recommended (only one):

- EDAS/VIS-0.25. EDIBON Data Acquisition System and Virtual Instrumentation (speed: 250,000 samples/s). or - EDAS/VIS-1.25. EDIBON Data Acquisition System and Virtual Instrumentation (speed: 1,250,000 samples/s).