

A/D conversion EDD 038 101

MAIN CHARACTERISTICS

One complete system of two monitors enabling easy training to « Analog / Digital » & « Digital / Analog » converters

- The A/D conversion module EDD038100 shows the operation of:
 - Count and display unit,
 - Single & double ramp converters,
 - Counting converters,
 - Integrated circuit converters.

The module includes one counting and display unit as well as one quartz clock with different use frequencies.

The D/A conversion module EDD038060 enabling the study of different Digital / Analog conversion modes :

- DAC with weighted resistors (8 bits)
- DAC with R/2R network (8 bits)
- Counting DAC (8 bits)
- Integrated circuit DAC (8 bits)

Besides converters, all auxiliary functions necessary to the proposed studies are located on the module:

Clock, reference voltage, filter, amplifier, counter, ...

APPLICATION

Basic training :

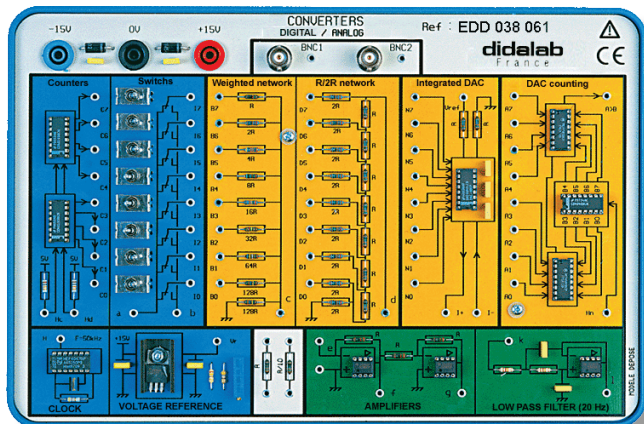
Introduction to principles of the different A/D & D/A conversion modes

- Technical Colleges and Higher Education,
- Universities....

Professional training :

Illustration of A/D & D/A conversion systems used in Industry or Laboratories.

A/D & D/A Conversion



D/A conversion EDD 038 061

TECHNICAL SPECIFICATIONS

A/D Conversion EDD 038 101

- **Single / double ramp integrator :** Operational Amplifier integrator, comparator and three analog switches.
- **Control logic :** CMOS Up & Down counter logic for the analog switch control.
- **Display and counting unit :** Counting & readout on 3 digits with 3 inputs : clock, reset and storing.
- **Counter :** CMOS 8 bits counter - Light emitting diodes outputs display - Comparator
- **Industrial converter:** ADC 08000 8 bits D/A conversion Integrated Circuit including the Sample & Hold unit and the control monostable.
- **Clock :** Quartz clock providing the following output frequencies: 512, 4, 2 & 1 kHz
- **Pushbutton** with bounce free logic for manual study.
- **Reference voltage:** Integrated controller with multi-turn potentiometer adjustable output voltage and outputs +U ref. & -U ref.
- **Power Supply** (External) : +/-15V (ref. PMM062180)

D/A Conversion EDD 038 061

- **Counter function :** Natural binary 8 bits Up & Down counter (CMOS technology).
- **Clock function :** CMOS technology
Clock : F = 50 kHz.
- **Switch function :** 8 logic state readouts using On/Off contacts switches.
- **Reference voltage function :** Built-in controller with multi-turn potentiometer adjustable output voltage.
- **Weighted resistors function :** 8 bits weighted resistors using accuracy resistors.
- **R - 2R network function :** 8 bits R-2R network using accuracy resistors.
- **Integrated DAC function :** DAC 0800 industrial Digital / Analog converter.
- **Amplifier function :** Current / Voltage conversion and inverter amplifier using Operational Amplifier
- **Counting DAC function :** 8 bits Counter linked to 2 * 4 bits comparators enabling the conversion of a digital value into a rectangular voltage cyclic ratio.
- **Low-pass filter function:** 2nd order filter in order to get the DAC output average voltage by counting.

Accessories :

PMM 062 180 (ALF1501D) :
Balanced-output power supply with common 0V. Floating outputs
on 4-mm safety sockets

Specifications :

Voltages : +/- 15 Vdc with common zero,
(adjustable from ± 10 to ± 15 V)

Precision : +/- 5%,

Maximum current : 1 A on each output

Protections : Against short-circuits by current limit and disjunction.

Against overcurrent on source by fuse

Power supply : 230 VAC, 50/60 Hz.



Configurations :

EDD 3806 B : Basic package «STUDY OF DIGITAL ANALOG CONVERSION» including :

Reference	Designation	Qtés
EDD 038 061	Digital to Analog conversion module: functions studied: counter, clock, weighted resistors, R/2R network, integrated circuit DAC, by counting and low-pass filter.	1
ERD 037 782	Kit of 20 security patching leads $\varnothing 4$ mm (20 x 2 mm, 5 x 4 mm).	1
PMM 062 180	(AF1501D) Symmetric power supply +/-15V, 1 A.	1

EDD 3810 B : Basic package «STUDY OF ANALOG DIGITAL CONVERSION» including :

Reference	Designation	Qties
EDD 038 101	Analog to Digital Converter Module, functions studied : single and double, ramp control logic, count and display unit, conversion circuits : DAC0800, ADC0800.	1
ERD 037 782	Kit of 20 security patching leads $\varnothing 4$ mm (20 x 2 mm, 5 x 4 mm).	1
PMM 062 180	(AF1501D) Symmetric power supply +/-15V, 1 A.	1

EDD 3810 C : Complete package «STUDY OF ANALOG DIGITAL CONVERSION and DIGITAL ANALOG CONVERSION» including :

Reference	Designation	Qties
EDD 038 061	Digital to Analog conversion module: functions studied: counter, clock, weighted resistors, R/2R network, integrated circuit DAC, by counting and low-pass filter.	1
EDD 038 101	Analog to Digital Converter Module, functions studied : single and double, ramp control logic, count and display unit, conversion circuits : DAC0800, ADC0800.	1
ERD 037 782	Kit of 20 security patching leads $\varnothing 4$ mm (20 x 2 mm, 5 x 4 mm).	2
PMM 062 180	(AF1501D) Symmetric power supply +/-15V, 1 A.	1

Packing list :

EDD 3806 B : Dimensions 35 x 30 x 30 cm, weight 5 kg.

EDD 3810 B : Dimensions 35 x 30 x 30 cm, weight 5 kg.

EDD 3810 C : Dimensions 35 x 30 x 50 cm, weight 8 kg.