EDD – 100

BASIC LOGIC

GENERAL DESCRIPTION

The purpose of this **EDD100001** module is the study of the fundamental electronic circuits of the basic logic.

List of logic functions :

♦ 2 Resistors, 3 Diodes, 1 Transistor (Réalisation of AND, OR, NOR, NAND in RTL & DTL technologies)
♦ 6 NOT ♦ 8 AND 2 inputs ♦ 8 NAND 2 inputs ♦ 3 NAND 3 inputs ♦ 8 OR 2 inputs ♦ 8 NOR 2 inputs ♦ 3 NOR 3 inputs ♦ 4 XOR 2 inputs

Flip-Flops :

♦ 2 RS ♦ 2 RSH ♦ 2 D ♦ 4 JK

Services Functions :

♦ 1 Potentiometer
♦ 1 Bounce-free pushbutton
♦ 1 Pushbutton to be wired
♦ 1 Fixed clock : 1 KHz
♦ 1 Adjustable clock : 0 to 2 KHz
♦ 8 Switches for programming 0 or 1 levels
♦ 8 Logic state LED displays
♦ 2 adaptators (BNC/ 2 mm sockets)
♦ External plug-in power supply
  (7-12 V AC or DC)

FIELDS OF APPLICATION

Fundamental and Further Education :

Efficient and professional training on the basic logic functions used in the electronic industry :

♦ **Vocational training**

♦ **Secondary and Higher Technical Education**
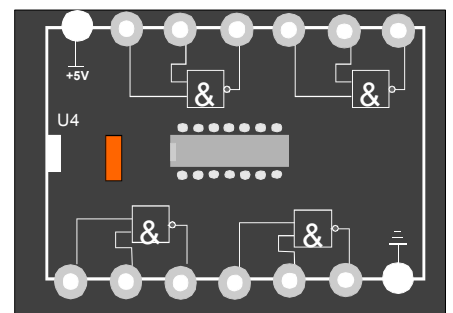
♦ **Universities and Engineers Schools**

Securities :

♦ Electronic protection against short-circuits and over-voltages
♦ Security fuses
♦ Easy maintenance : all active components on sockets for easy and fast replacing
♦ Option : Fixing of the active components (soldered jump)

PARTICULARITIES

The front-face corresponds to the technical manuals and data books in such a way to introduce very rapidly the student to the professional reality.
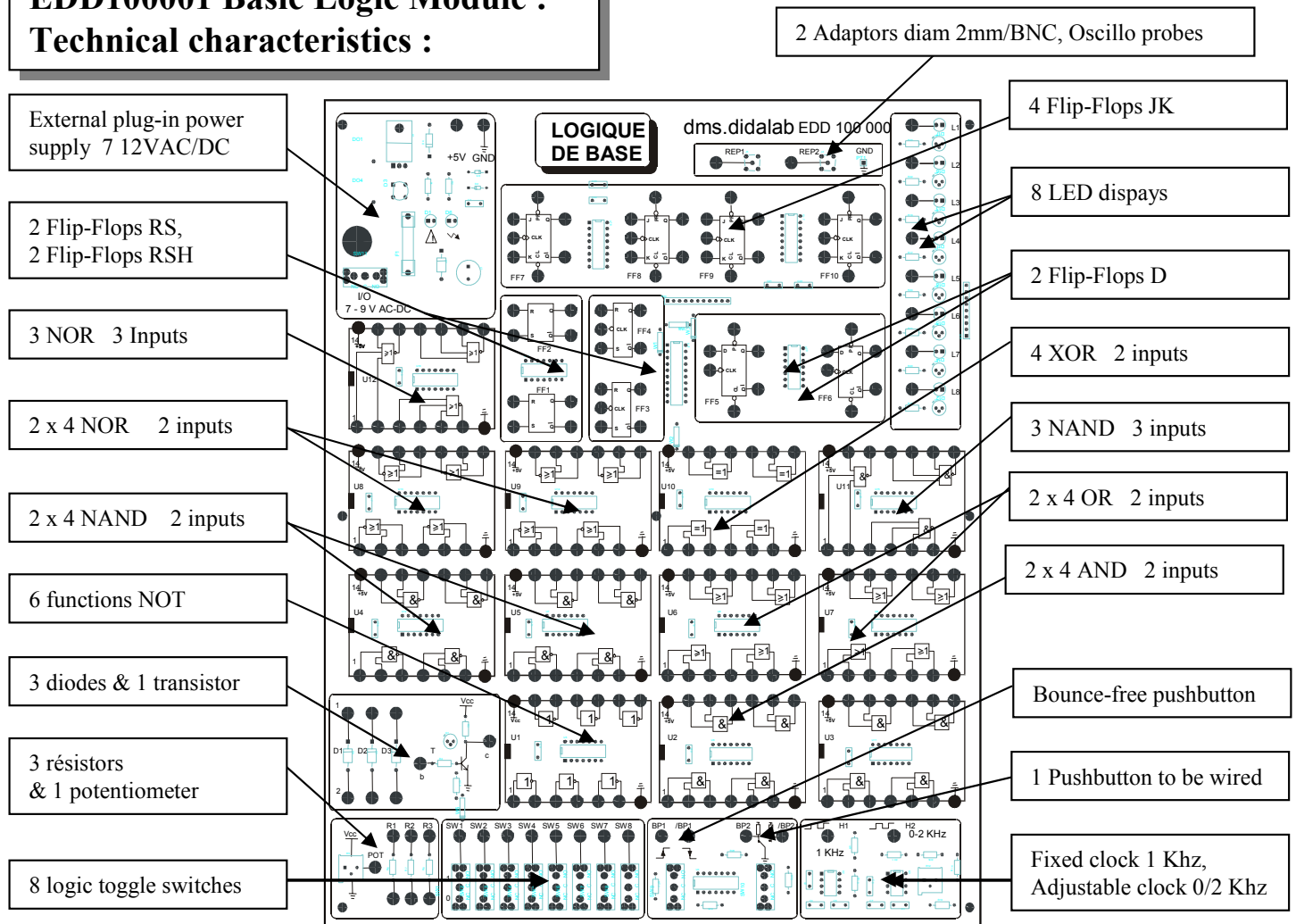Youn have an exact wirng correspondance with the « DATA-SHEETS ».

Example of a 7400 NAND function :

Packaging

Weight   :   3 Kg
Dimensions :   284 x 336 x 42 mm

DIDALAB Line of Digital Training Aids

2 Adaptors diam 2mm/BNC, Oscillo probes

External plug-in power supply 7 12VAC/DC

2 Flip-Flops RS, 2 Flip-Flops RSH

3 NOR 3 Inputs

2 x 4 NOR 2 inputs

2 x 4 NAND 2 inputs

6 functions NOT

3 diodes & 1 transistor

3 résistors & 1 potentiometer

8 logic toggle switches

4 Flip-Flops JK

8 LED dispays

2 Flip-Flops D

4 XOR 2 inputs

3 NAND 3 inputs

2 x 4 OR 2 inputs

2 x 4 AND 2 inputs

Bounce-free pushbutton

1 Pushbutton to be wired

Fixed clock 1 Khz, Adjustable clock 0/2 Khz

LOGIQUE DE BASE dms.didalab EDD 100 000

Training manual : EDD100041 Teacher Practical Works

Basic logic :
Study of the following functions : OR & AND (diodes), NOR & NAND (diodes & transistors)
Study of the commutation levels in the TTL technology
Study and verification of the Truth Table : NOT, AND, OR, NAND, NOR, EXCLUSIVE OR
Réalisation of :   2 bits equality comparator in combinatory logic
           4 bits complete equality comparator in combinatory logic
           1 & 2 bits binary multiplier in combinatory logic

Sequential logic :

Study of :
- RSH Flip-Flop
- D   Flip-Flop
- JK   Flip-Flop

Combinatory logic réalisation of :
- RS Flip-Flop with NOR gates
- Bounce-free with NOR gates
- RS Flip-Flop with NANDgates
- Bounce-free with NAND gates
- D, RSH & JK Flip-Flops.

Flip-Flops applications :
Réalisation of :   2 bits asynchronous binary counter with D Flip-Flops
           4 bits asynchronous binary counter with JK Flip-Flops
           4 bits synchronous binary counter with JK Flip-Flops and combinatory logic
           4 bits synchronous BCD counter with JK Flip-Flops and combinatory logic
           4 bits synchronous binary modulo N counter with JK Flip-Flops and combinatory logic
           4 bits programmable counter.

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