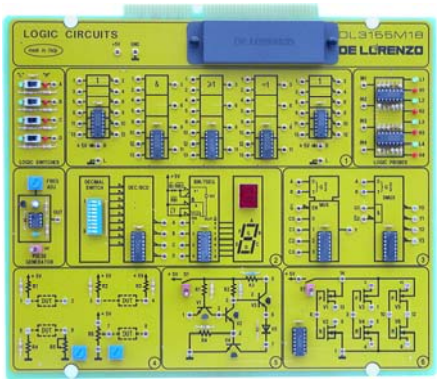
TIME ELECTRONIC BOARDS

LOGIC CIRCUITS



DL 3155M18

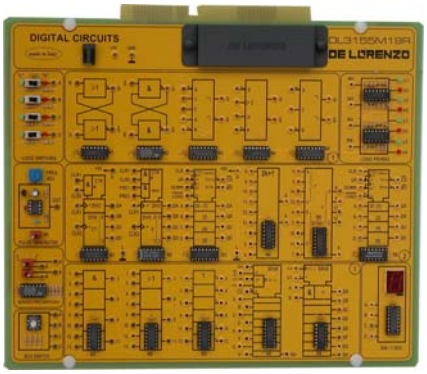
Theoretical topics:

- Binary system
- Logic functions
- The algebraic description of the logic gates
- The truth tables
- The theorems of the Boolean Algebra
- Techniques for the minimization of the logic functions through the application of the theorems
- Fundamental logic operators
- NOT, AND and OR logic operators
- Use of the AND and OR operators as control devices for the transfer of logic signals
- OR-exclusive logic operator
- Classic form of a function
- Graphic representation of the functions
- AND-OR-NOT function
- NAND and NOR logic operators
- Use of the NAND and NOR operators as control devices for the transfer of logic signals
- The TTL family
- The CMOS family
- Characteristic parameters of the logic gates
- Definition and characteristics of a combinatory logic network
- The Karnaugh' maps
- The BCD code
- Encoders, decoders, multiplexer and demultiplexer
- Fault simulation

Circuit blocks:

- Logic gates, Boolean Algebra, Karnaugh's maps and combinatory networks
- Encoder and decoder
- Multiplexer and demultiplexer
- Electric characteristics of the TTL logic gates
- The TTL logic family
- The CMOS logic family

DIGITAL CIRCUITS



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Theoretical topics:

- Flip-flop S-R, with NOR and NAND operators
- Flip-flop J-K
- Flip-flop J-K Master-Slave
- Flip-flop T and D
- Synchronous and asynchronous 4 bit binary counter
- Synchronous and asynchronous decimal counter
- Parity generator
- Adders
- Definition, classification and operating principle of the most common shift registers
- Fault simulation

Circuit blocks:

- Flip-flops
- Counters
- Shift registers