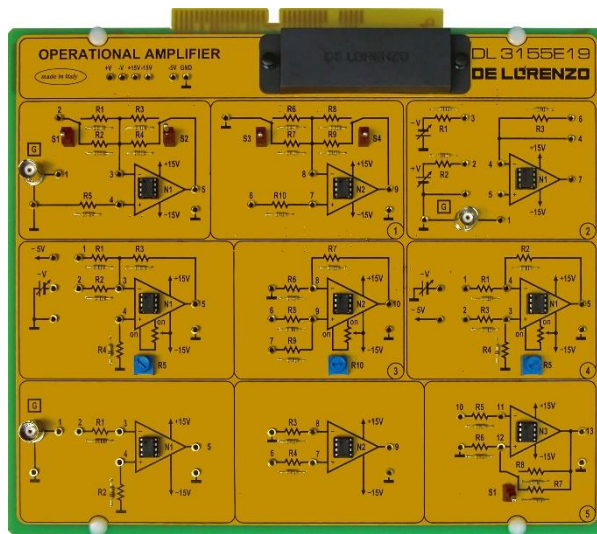


OPERATIONAL AMPLIFIER



DL 3155E19

The design and construction of electronic circuits to solve practical problems is an essential technique in the fields of electronic engineering and computer engineering.

With this board the students can study the structure and the operation of the operational amplifier in all its main configurations (inverting, non-inverting, voltage follower, V/I and I/V inverters, adder, differential, non-inverting and inverting comparators with hysteresis).

THEORETICAL TOPICS

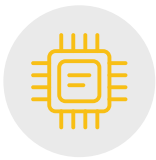
- The ideal operational amplifier
- The operational amplifier
- The negative feedback
- Main configurations of the linear circuits
- Idea of virtual mass
- Inverting and non-inverting configuration
- Buffer
- IV and V/I inverter
- Inverting and non-inverting adder
- Differential amplifier
- Non-linear circuits: comparators, comparator with hysteresis
- Inverting and non-inverting comparators
- Reference voltage different from zero
- Comparator with hysteresis or Schmitt trigger
- Fault simulation

CIRCUIT BLOCKS

- Inverting Operational Amplifier
- Non-inverting Operational Amplifier
- Voltage follower
- Voltage/Current converter
- Current/Voltage converter
- Adder Amplifier (inverting and non-inverting)
- Differential Amplifier (Offset reduction)
- Inverting comparator
- Non-inverting comparator
- Inverting comparator with hysteresis (Schmitt trigger)

Complete with theoretical and practical manual.

Dimensions of the board: 297x260mm

**CAI SOFTWARE:**

Each board of the TIME system can be supplied complete with a Student Navigator software that allows students to perform their learning activities through a Personal Computer, without the need for any other documentation.

Ordering code: please add SW after the code of the board (i.e. DL 3155E19SW)

Required:**POWER SUPPLY NOT INCLUDED**

Base frame with power supply (completed with connecting cables):

- **DL 3155AL3** - Base frame with power supply and interface to pc and virtual instrumentation
- **DL 3155AL2** - Base frame with power supply and interface to pc

Basic power supply (connecting cables not included):

- **DL 2555ALF** - DC power supply $\pm 5 \pm 15$ 0 ± 15 Vdc, 1A
- **TL 3155AL2** - Connecting cables

Choosing this power supply, for the execution of the experiments, it is normally required the use of an oscilloscope and two multimeters.

