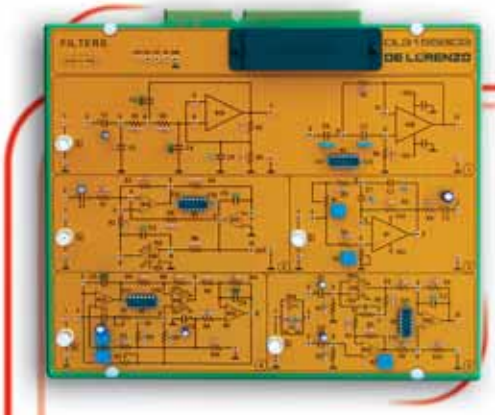


DL 3155B103 FILTERS

In this course we will study the devices that allow the passage of biomedical signals with given characteristics, while attenuating those that do not comply with the required parameters.

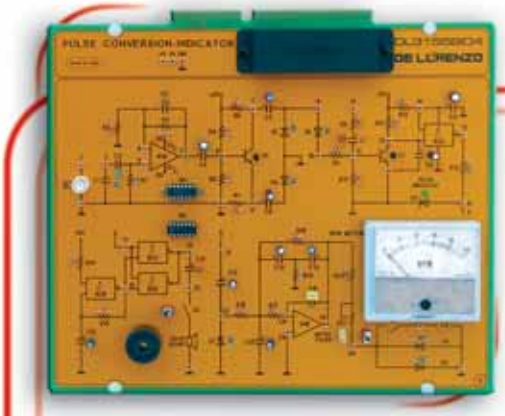
THEORETICAL TOPIC COVERAGE

- Filtering of the biomedical signals
- Types and characteristics of the filters
- Main configurations of the 1st and 2nd order filters
- Active LP, HP and KHN filters
- Filters applications in the biomedical instrumentation
- Notch filter
- Filters used in the measurement of the EEG and of the EMG

CIRCUIT BLOCKS

- Low-Pass
- Band-Pass
- High-Pass
- Notch
- Band-Stop

THE BOARDS propaedeutic modules



DL 3155B104 PULSE CONVERSION indicator

The events monitoring systems such as the frequency of the cardiac pulsations, the breathing frequency, etc., require that an analogue signal be converted to pulses and visualized on a display in order to be measured. In this course students will study some circuits for analogue to pulse conversion, sound indicator and analogue frequency meter.

THEORETICAL TOPIC COVERAGE

- Role of the analogue-pulsed conversion
- Different types of pulse generators
- Description of a conversion block
- Role of the audio and visual signalling
- Description of a visual signalling block
- Description of an audio signalling block
- Different types of visual and audio indicators
- Role of the measurement of the frequency
- Instruments for the measurement of the frequency for biomedical applications
- Difference between analogue and digital meters

CIRCUIT BLOCKS

- Circuit for the conversion of an analogue signal to a pulse signal
- Measurement of the frequency of a periodical signal
- Evaluation of the average cardiac frequency