

# TESTING MODULE FOR PEN RECORDERS

## Mod. EB-B2/EV

## INTRODUCTION

EB-B2/EV is one of the modules that constitute the Interactive Practical Electronics System – I.P.E.S for the study of Biomedical Equipment.

It consists of a set of components and circuits used in biomedical equipment.

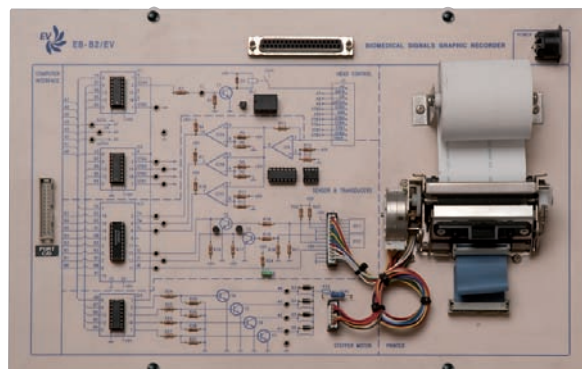
For the lessons development, the module operates in computerized mode, by means of the interactive software version of the handbook SWBB-B2/EV and the Unit mod. GAU/EV. The software inserts circuit variations and faults automatically, enabling the development of the lessons, even without the teacher's assistance.

## EB-B2/EV

Most biomedical instruments include a printing unit to provide users with the data resulting from the detection of physiological parameters or from other measurements carried out on patients. Generally this information consists of the graphic representation concerning electrocardiogram, electroencephalogram, electromyography, etc...

The printing instruments used for this operation are called PEN RECORDERS. But the application of microprocessor units enables a lot of instruments of recent design to use digital recorders almost exclusively, consequently the printing unit is included in most biomedical instruments.

Studying this section is very important to know the operating principles, the signals and the typical electronic equipment used. This module is designed to study and apply the basics of graphic recording used in biomedical equipment.



## TRAINING PROGRAM:

- Printing of biomedical signals
- Pen recorders
- Structure of a thermal printer
- Printing onto roll chart
- Roll feeding unit
- Printing system
- Interface to microprocessor
- Checking signals

## TECHNICAL SPECIFICATIONS:

- 448-dot line head thermal printer
- Printing speed: 400 lines per minute
- Stepper motor: 4 phases
- Head driving voltage: 24 Vdc – max. absorption of 11.7 A
- Printing width: 56 mm
- 2-mm interconnection and test points
- Jumpers for quick circuit modifications
- Fault simulation
- 37-pin connector for Interface Unit GAU/EV
- 8-way connector for Power Supply Unit
- Printed circuit board with protective treatment and silk-screen printed mimic diagram

**Dimensions:** 386 x 248 x 40 mm

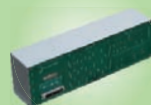
## REQUIRED



**POWER SUPPLY  
UNIT  
PS1-PSU/EV  
- NOT INCLUDED -**

## POWER SUPPLY

$\pm 12$  Vcc – 0,5A  
+24Vcc – 1A  
+5Vcc – 2A



**BIOMEDICAL SIGNAL GENERATOR/ACQUISITION  
AND FAULT INSERTION UNIT - MOD. GAU/EV  
SOFTWARE SWBB-B2/EV  
- NOT INCLUDED -**



**PERSONAL COMPUTER  
- NOT INCLUDED -**

## INSTRUMENTS - NOT INCLUDED -

- MULTIMETER
- OSCILLOSCOPE

## SUPPLIED WITH

**STUDENT HANDBOOK: THEORY AND EXERCISES  
TEACHER HANDBOOK: WIRING DIAGRAMS  
AND SOLUTIONS OF EXERCISES**



## OPTIONAL

**MODULE HOLDER - BOX/EV**

