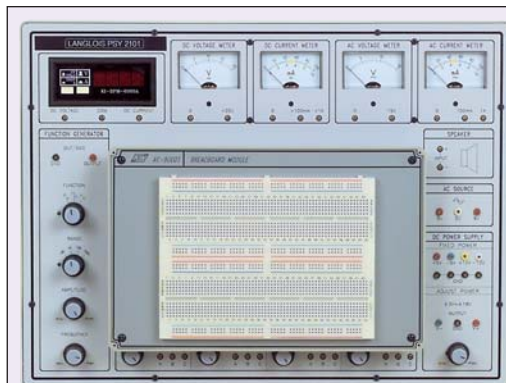


ELECTRONIC & ELECTRICAL CIRCUIT LAB



Electronic circuit lab equipped with a main unit and 11 experiment modules.
Each module permits to realize several practical work.
Supplied with leads and user's manual.



ref. PSY2101

MAIN UNIT PSY2101 INCLUDING

- 4 fixed DC supplies** with output overload protection
+5V -5V +12V -12V / 300mA on each output.
- Dual DC power supply** with output overload protection
 $\pm 3V$ to $\pm 18V$ / 1A continuously adjustable.
- 2 AC power supplies** with output overload protection
0-9VAC / 500mA
- Signal generator**
Sine, square and triangle 10Hz to 100kHz.
- 4 ranges 100Hz - 1 - 10 - 100 kHz
- Output impedance: 50 Ω
- Output voltage : 9Vpp (with 50 Ω load),
18Vpp (open loop).

3 1/2 digit digital voltmeter and ammeter

Range: 2V - 200V - accuracy 0.3%
Range 200 μ A - 2A - accuracy 0.5%

Analogue voltmeter and ammeter

0 to 20V DC - 0 to 100mA DC - 0 to 1A DC
0 to 15 V AC - 0 to 100mA AC - 0 to 1A AC

Speaker 8 Ω , 0.25W with driver circuit.

0.25W potentiometers : 1k Ω , 10k Ω , 100k Ω , 1M Ω .

Breadboard : 1680 tie-point breadboard on top panel can be easily put into and taken off (permutable).
Dim: 400 x 300 x 130 mm. Weight: 5.8kg

EDUCATIONAL OBJECTIVES

- Studying by different modules of electrical & electronical circuits commonly encountered

TEACHING RESSOURCES + PRACTICAL WORKS

11 EXPERIMENT MODULES

Designed with a 215 x 165 x 30mm solid body plastic housing, with electrical wiring printed on the front panel. An 8-bit DIP switch, located on the right top corner allows the user to simulate faults. Each analogue module is delivered with 2 experiment manuals.

STUDENT BOOK

(supplied with each module)

A theoretic part, definitions, terminology, characteristics curves, schemas, theoretical schemas, and wiring diagrams with link slots.

The functioning is explained in details.

An experimental part to guide step by step the student to do practical works: choice of measurement appliances, settings, measurement to do, blank tables to be filled, curves to be drawn.

Result commentaries, additional practical works

INSTRUCTOR BOOK

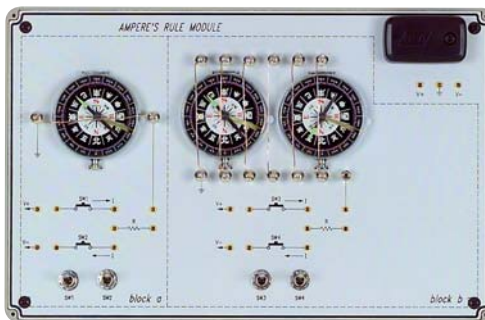
(supplied with each module)

Practical works presentation: purposes, manipulation interpretation

Switches position to simulate troubleshooting.

Detailed and pedagogical solutions of practical works

Calculation shown in extenso. Moreover, the instructor will find technical complements, which can be distributed to students without any modifications.



DC voltage and current measurement.

Ohm's law. Power in DC circuit.

Series - Parallel network and Kirchoff's law.

Thevenin's and Norton's theorems.

Maximum power transfer theorem.

RC circuit and transient phenomena. AC voltage and current measurement. RC, RL, RLC circuits.

Transformer characteristics.

Series and parallel resonant circuits. LC filter.

ref. ELEC1

Magnetic devices. Magnetic field.

ref. ELEC2

Drawing magnetic curves. Magnetic field strength.

Lentz's and Faraday's laws.

ref. ELEC3

Ampere's rule

ref. ELEC4

Fleming's rule

ref. ELEC5

Self induction. Mutual induction.

Magnetic flux detection by sensor and amplifier

ref. ELEC6

Diode characteristics.

Rectifier circuit half and full wave.

Filter circuit.

LC filters and RC filters in π . Zener diode characteristics.

LED characteristics. Transistor characteristics

NPN PNP Vce IB. Multimeter functions.

FET characteristics.

Triac UJT characteristics.

ref. ELEC7

One stage transistor amplifier.

AB class Push-pull - Voltage regulator - SCR power

dimmer - Two stages amplifier - Relay characteristics

- Touch controller switch.

ref. ELEC8

Two stages amplifiers by transformers.

Coupling - Push-pull output on speaker

Wheatstone bridge.

ref. ELEC9

Photoresistor characteristics - Using a switch.

Thermistor characteristics. Wheatstone using.

Thyristor driven by thermistor.

3 stages amplifiers controlled by microphone.

ref. ELEC10

Blocking oscillator.

Blocking oscillator with speaker output.

Astable multivibrator. LC resonant circuit.

Electronic birdcall circuit

ref. ELEC11