

# Circuit Design Trainer

## PB-503A



### Description:

Global Specialties model PB-503A is a robust Circuit Design Trainer suitable for all levels of electronics instruction and design.

The PB-503A allows students to acquire valuable hands-on lab experience by employing necessary breadboarding techniques, which provide a solid foundation in circuit experimentation, analyzing and troubleshooting. It can be used to construct basic series and parallel circuits up to the most complicated multi-stage microcomputer circuits, incorporating the latest in industrial technology.

Experienced designers will also find the PB-503A an invaluable, capable and reliable instrument, suitable for the most advanced and demanding design applications. Global Specialties trainers provide the most complete platform required to enable engineers and technicians to train for careers in the rapidly growing field of electronics technology.

The PB-503A is backed by Global Specialties' industry leading 3-year warranty.

### Applications:

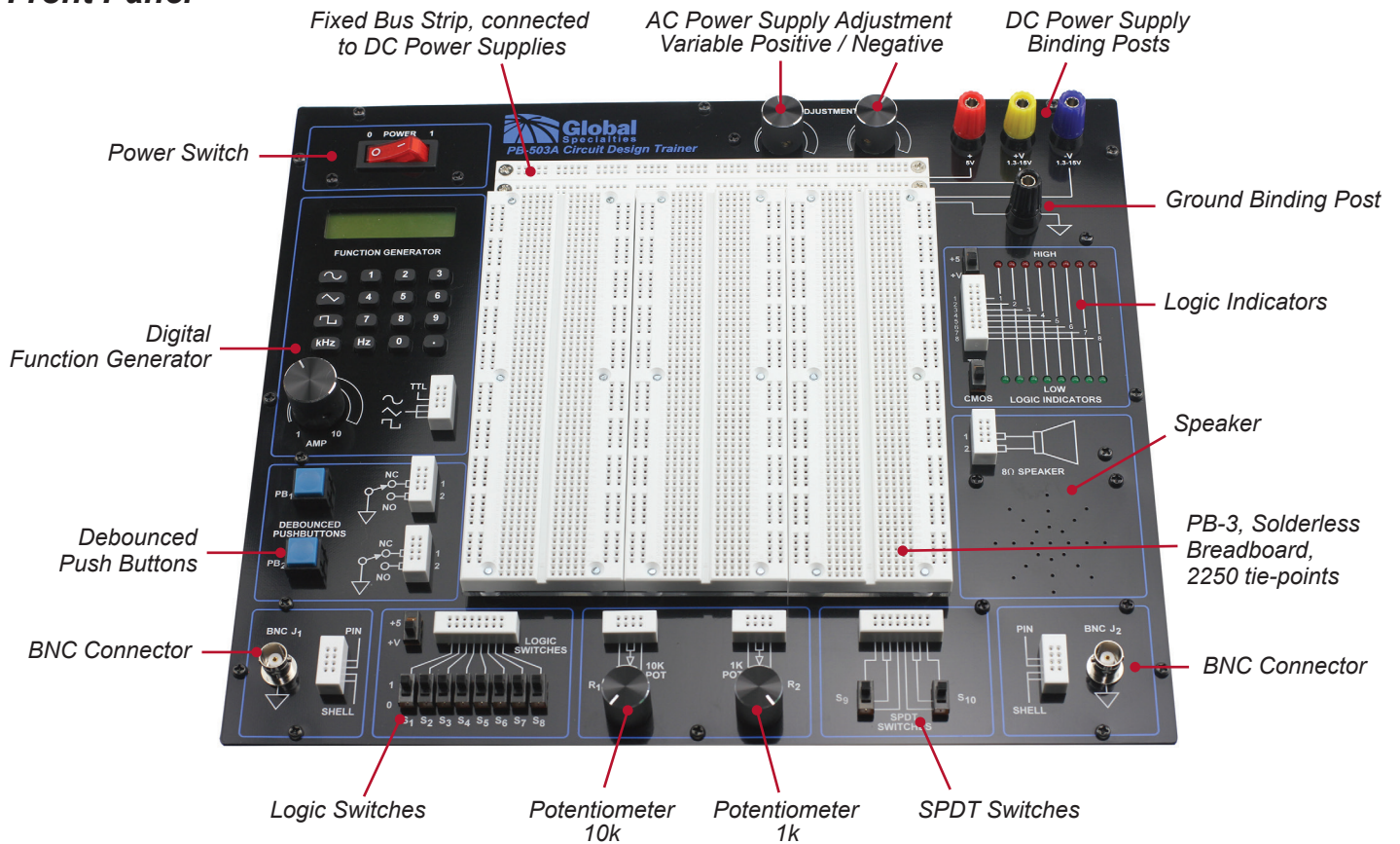
Opto-Device Circuits  
Clocks  
Multivibrators  
Oscillator Circuits  
Timers  
Function Generator Circuits  
Logic Circuits  
Gates  
Counters

Flip-Flops  
Analog-to-Digital  
Converters  
Digital-to-Analog  
Converters  
Medium Scale Integration Circuits  
Phase Lock Loops  
Operational Amplifier

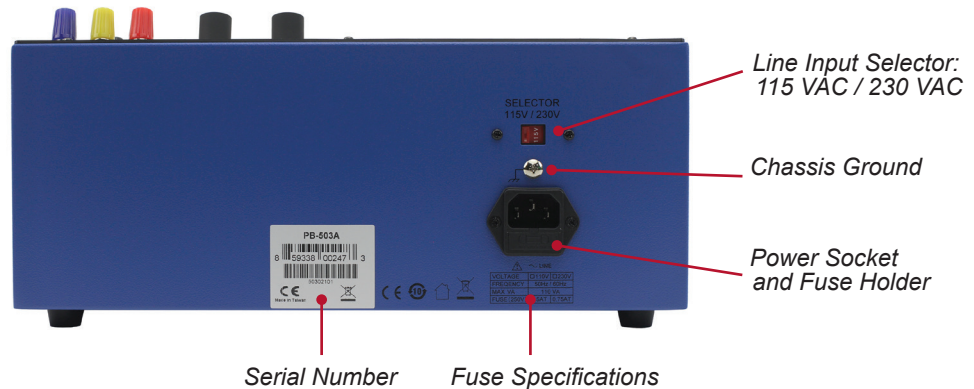
### Features:

- Ideal for analog, digital, and microprocessor circuits
- Includes built-in digital function generator with continuously variable waveforms
- Triple output power supply for a variety of DC voltage levels
- Two digital pulsers for logic test circuits
- High & low buffered logic indicators
- 8 channel logic monitor
- Audio experimentation speaker
- Removable breadboard plate allows the flexibility of building circuits away from the lab and shared units for groups
- Analog & digital optional courseware available
- Input power source, AC line switchable between:
  - 110 - 120VAC @ 60Hz
  - 210 - 230VAC @ 50Hz
- 3-Year warranty

## Front Panel



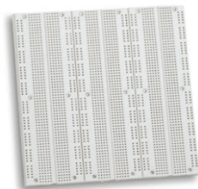
## Rear Panel



## Accessories

Wide variety of classroom parts available

### PB-3



### Included on the PB-503A



### GSC-2311KIT



Specifications and appearance subject to change without notice  
451-056-000\_rA

2- [www.globalspecialties.com](http://www.globalspecialties.com)



## Specifications:

All specifications apply to the unit after a temperature stabilization time of 20 minutes over an ambient range of  $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ .

| Model                      | PB-503A                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AC Line Input              | 115 VAC @ 60 Hz or 230 VAC @ 50 Hz (switchable)                                                                                                                                                                                                                                                                                                                                                             |
| Power Supplies             | Fixed DC: +5 VDC 1.0 A max. (current limited); Ripple <5 mV<br>Variable + DC: +1.3 VDC $\pm 0.05$ V @ 150 mA to +15 VDC @ 500 mA, Ripple < 5 mV<br>Variable - DC: -1.3 VDC $\pm 0.05$ V @ 150 mA to -15 VDC @ 500 mA, Ripple < 5 mV                                                                                                                                                                         |
| Binding Posts              | 4: Ground, +5 VDC, Variable $\pm$ VDC Power Supply Outputs                                                                                                                                                                                                                                                                                                                                                  |
| Pulsers                    | 2 Pushbutton-operated, open-collector output pulsers. Each with 1 normally-open, 1 normally closed output. Each output sinks up to 250 mA                                                                                                                                                                                                                                                                   |
| Digital Function Generator | Frequency Range: 0.1 Hz to 100 kHz, two ranges<br>Output Voltage: 0 to +10Vp-p into 600 $\Omega$ Load (20 Vp-p in open circuit), short circuit protected<br>Output Impedance: 600 $\Omega$ except TTL<br>Output waveforms: Sine, Square, Triangle & TTL<br>Sine Wave Distortion: <3% @ 1 kHz Typical<br>TTL Pulse: Rise & fall time: <25 ns, drive 100 TTL<br>Square Wave: Rise and fall times <0.5 $\mu$ s |
| Logic Switches             | 8 Logic Switches select Logic High and Logic Low<br>Logic Low Level: Ground<br>Logic High Level: Switchable between +5 V and the variable positive power supply                                                                                                                                                                                                                                             |
| Switches                   | 2 Single Pull Double Throw (SPDT) - uncommitted                                                                                                                                                                                                                                                                                                                                                             |
| Logic Indicators           | LEDs: 16 LEDs; 8 red to indicate logic high and 8 green to indicate logic low<br>Logic High Threshold: 2.2 V (nominal) in TTL/+5 V mode, 70% (nominal) of selected operating voltage in CMOS mode<br>Logic Low Threshold: 0.8 V (nominal) in TTL/+5 V mode, 30% (nominal) of selected operating voltage in CMOS mode                                                                                        |
| Connectors                 | 2 BNC - uncommitted                                                                                                                                                                                                                                                                                                                                                                                         |
| Potentiometers             | 2: 1 k $\Omega$ and 10 k $\Omega$ - uncommitted                                                                                                                                                                                                                                                                                                                                                             |
| Speaker                    | 8 $\Omega$ , 0.25 W - uncommitted                                                                                                                                                                                                                                                                                                                                                                           |
| Breadboards                | Removable plexiglas socket plate (PB-3) with 2,520 tie-points with 200 additional bus strip tie-points internally connected to power supply outputs and ground                                                                                                                                                                                                                                              |
| Weight                     | 7 lbs (3.2 kg)                                                                                                                                                                                                                                                                                                                                                                                              |
| Dimensions                 | 6.5 x 12.75 x 10 in (16.5 x 32.4 x 25.4 cm) (H x W x D)                                                                                                                                                                                                                                                                                                                                                     |
| Warranty                   | 3 Years                                                                                                                                                                                                                                                                                                                                                                                                     |

## Contact Info:

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## PB-503ALAB

PB-503A



Courseware



Accessories Kit



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