# db-tech

## PORTABLE ANALOG/DIGITAL TRAINER

#### **GENERAL DESCRIPTION**

The db-tech, DB-905 Portable Analog/Digital Trainer is an ideal teaching aid for all types of electronic circuits, Located all around the 2230 Tie-Point removable breadboard is a variety of functional input and out-put circuits, which can be used to stimulate or measure electrical signals from the circuit under test or development. The removable breadboard area is not con-nected to these peripheral circuits and is meant to be connected by the user using standard solid AWG #22-30 wire. These circuit functions allow for the breadboarding and testing of circuits without the need for many expensive individual pieces of equipment.





### **Specification**

#### Technical Data

Completely Self-Contained Unit   Built-in regulated D.C. supplies:   ± 18V, 1A Variable   + 5V @ 1.0A   - 5V @ 250 mA   18-0-18V & 0-9V 1A AC Constant Supply (Optional) full short circuit protection and indicators   Function Generator:   Sine wave:   Variable 0 to ± 4 Vp-p   Triangle wave: ± 4Vp-p   Square wave: ± 5Vp-p   3 state logic probe   Two single shot pulse generators, 80 μs   8 Bit LED display with buffers   3.5 Digit Digital Voltmeter:   4 ranges: 199.9mV, 1.999V, 19.99V and 199.9V fsd. LCD Display Input impedance: 4MΩ.   Analog Current Meter: 0 to 1mA   2.5 inch 8 Ohm, 1W Loud Speaker   Two flip-flop gates with "minic" diagram.   1K & 100K Potentiometer (Optional)   Input/Output connector, BNC & Banana   Two logic switches +5V/0V   Two 25-Pin D-Type connectors for computer interface   Removable breadboard with 2230 intercon-nected tie-points, accepts 0.3-0.8mm solid wire.				
Built-in regulated D.C. supplies: + 5V @ 1.0A   -5V @ 250 mA   18-0-18V & 0-9V 1A AC Constant Supply (Optional) full short circuit protection and indicators   Function Generator: 1Hz to 100 KHz continuously variable over 5 decade ranges.   Sine wave: variable 0 to ± 4 Vp-p   Triangle wave: ± 4Vp-p   Square wave: ± 5Vp-p   3 state logic probe 50 μs   Two single shot pulse generators, 80 μs 8 Bit LED display with buffers   3.5 Digit Digital Voltmeter: 4 ranges: 199.9mV, 1.999V, 19.99V and 199.9V fsd. LCD Display Input impedance: 4MΩ.   Analog Current Meter: 0 to 1mA 2.5 inch 8 Ohm, 1W Loud Speaker   Two flip-flop gates with "minic" diagram. 1K & 100K Potentiometer (Optional)   Input/Output connector, BNC & Banana Two logic switches +5V/0V   Two 25-Pin D-Type connectors for computer interface Removable breadboard with 2230 intercon-nected tie-points, accepts 0.3-0.8mm	Completely Self-Contained Unit			
Built-in regulated D.C. supplies: - 5V @ 250 mA   18-0-18V & 0-9V 1A AC Constant Supply (Optional) full short circuit protection and indicators   Hz to 100 KHz continuously variable over 5 decade ranges.   Sine wave: variable 0 to ± 4 Vp-p   Triangle wave: ± 4Vp-p   Square wave: ± 5Vp-p   3 state logic probe -5V @ 250 mA   Two single shot pulse generators, 80 µs 8 Bit LED display with buffers   3.5 Digit Digital Voltmeter: 4 ranges: 199.9mV, 1.999V, 19.99V and 199.9V fsd. LCD Display Input impedance: 4MΩ.   Analog Current Meter: 0 to 1mA -50 mA   2.5 inch 8 Ohm, 1W Loud Speaker Two flip-flop gates with "mimic" diagram.   Two logic switches +5V/0V/ -5V with current limit Eight data switches +5V/0V   Two 25-Pin D-Type connectors for computer interface Removable breadboard with 2230 intercon-nected tie-points, accepts 0.3-0.8mm	Built-in regulated D.C. supplies:	± 18V, 1A Variable		
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Gecade ranges.   Sine wave: variable 0 to ± 4 Vp-p   Triangle wave: ± 4Vp-p   Square wave: ± 5Vp-p   3 state logic probe Triangle wave: ± 5Vp-p   3 state logic probe 4 ranges: 199.9mV, 1.999V, 19.99V and 199.9V fsd. LCD Display   3.5 Digit Digital Voltmeter: 4 ranges: 199.9mV, 1.999V, 19.99V and 199.9V fsd. LCD Display   Input impedance: 4MΩ. Analog Current Meter: 0 to 1mA   2.5 inch 8 Ohm, 1W Loud Speaker Two flip-flop gates with "iminic" diagram.   Two flip-flop gates with "iminic" diagram. 1K & 100K Potentiometer (Optional)   Input/Output connector, BNC & Banana Two logic switches +5V/0V   Two 25-Pin D-Type connectors for computer interface Removable breadboard with 2230 intercon-nected tie-points, accepts 0.3-0.8mm		(Optional) full short circuit protection and		
Triangle wave: ± 4Vp-p   Triangle wave: ± 4Vp-p   Square wave: ± 5Vp-p   3 state logic probe ************************************		,		
Square wave: ± 5Vp-p   3 state logic probe Two single shot pulse generators, 80 μs   8 Bit LED display with buffers 4 ranges: 199.9mV, 1.999V, 19.99V and 199.9V fsd. LCD Display Input impedance: 4MΩ.   Analog Current Meter: 0 to 1mA   2.5 inch 8 Ohm, 1W Loud Speaker 100K Potentiometer (Optional)   Input/Output connector, BNC & Banana 100K Potentiometer +5V/0V/ -5V with current limit   Eight data switches +5V/0V Two 25-Pin D-Type connectors for computer interface   Removable breadboard with 2230 intercon-nected tie-points, accepts 0.3-0.8mm	Function Generator:	Sine wave:	variable 0 to ± 4 Vp-p	
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Two flip-flop gates with "mimic" diagram.   1K & 100K Potentiometer (Optional)   Input/Output connector, BNC & Banana   Two logic switches +5V/0V/ -5V with current limit   Eight data switches +5V/0V   Two 25-Pin D-Type connectors for computer interface   Removable breadboard with 2230 intercon-nected tie-points, accepts 0.3-0.8mm	Analog Current Meter: 0 to 1mA			
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Removable breadboard with 2230 intercon-nected tie-points, accepts 0.3-0.8mm				
	Two 25-Pin D-Type connectors for computer interface			

#### **Applications**

- Ohm's law and Kirchhoff's laws
- Controlling current and voltage
- Serial and parallel resistor circuits
- Power and DC circuits
- Algebraic fractions
- Digital switching units
- ► Binary coding and computer arithmetic
- ► Logic circuit tracing using Boolean Algebra
- ► Pulse processing circuits Network theorems
- ► Applications of trigonometric functions
- Diode networks
- ► Analyzing transistor circuitry
- ► Audio amplifier circuits
- Digital systems and trouble shooting
- ► Time base generators
- Magnetic circuits
- Digital interfacing circuits
- Computer interfacing circuits
- Many others with user manual