

DIGITAL / ANALOG TRAINER

MODEL XK-700

A COMPLETE MINI-LAB FOR BUILDING, TESTING
AND PROTOTYPING ANALOG AND DIGITAL CIRCUITS



Tools and meter not included.

Instruction Manual
For Trainer with Organizer Case

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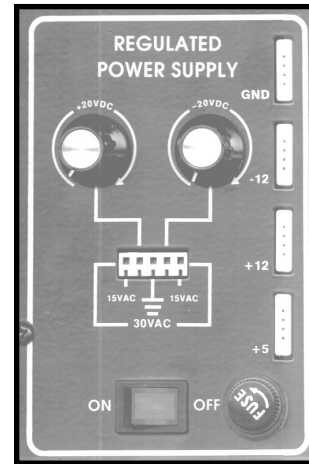
INTRODUCTION

Congratulations on your purchase of the Elenco® Model XK-700 Digital / Analog Trainer. This trainer is designed to simplify designing of digital and analog circuits. It contains most of the necessary test equipment needed to build and test these circuits.

Your XK-700 has four basic trainers in a single package. They are, 5 independent power supplies, an analog trainer, a digital and a breadblock assembly trainer. We shall proceed in describing each trainer in the following sections.

POWER SUPPLY

Model XK-700 has five built-in power supplies which will satisfy most design needs. This includes two variable power supplies giving up to +20 volts and -20 volts at .5 amp. Below 15V the current available is over 1 amp. Three fixed power supplies give you +12VDC, -12VDC or +5VDC at 1 amp each. These fixed voltages are the most commonly used voltages for design work. All supplies are regulated to within 150mV. This means that you can increase the current draw from no load to .5 amp and the voltage will change less than 150 millivolts. All supplies are also short circuit protected by using integrated circuit regulator devices.



ANALOG TRAINER SECTION FUNCTION GENERATOR

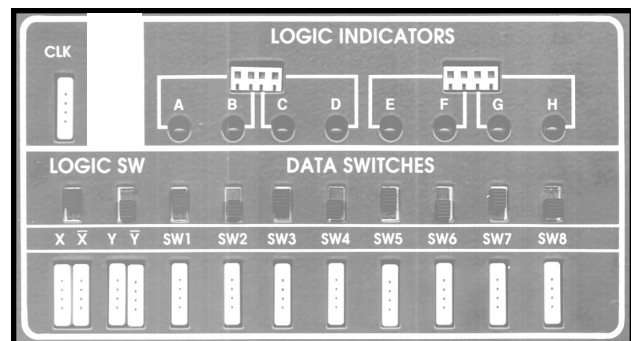
The analog trainer contains a complete function generator capable of producing sine, square and triangle waveform. The frequency of this generator is continuously variable from one hertz to over

100,000 hertz in five steps. A fine tuning control makes selection of any frequency easy. The output voltage amplitude is variable between 0 to 15Vpp. The output impedance is approximately 330 ohms.



DIGITAL TRAINER SECTION

The digital trainer has the necessary functions to do your digital designs. They consist of a clock generator, two no bounce logic switches, 8 LED indicator lamps and 8 data switches. These functions will make it easy to do your digital experiments.



GENERAL SPECIFICATIONS FOR MODEL XK-700

Power Supplies:

- 0V to 20VDC @ 0.5A (0V to 15V @ 1A)
- 0V to -20VDC @ 0.5A (0V to -15V @ 1A)
- +12V \pm 5% @ 1A
- -12V \pm 5% @ 1A
- +5V \pm 5% @ 1A
- 30VAC center-tapped at 15VAC @ 1A.
- Load regulation all DC supplies less than 0.2V no load to 0.5A
- Line regulation all DC supplies less than 0.2V 105 to 135V
- Hum and ripple all DC supplies less than .01V rms
- Short protection all DC supplies-Internal IC thermal cutoff
- Fuse - 1.25A 250V

Function Generator Analog Section:

- Waveforms sine, square, triangle, complimentary square
- Frequency - 1Hz to 100kHz in 5 steps continuously variable
- Fine frequency adjust - 10:1 approximate
- Amplitude variable 0-15Vpp
- Output impedance 330 Ω : short protected
- DC offset change \pm 10V from zero crossing

Digital Section:

- Data switches, eight DPDT, Hi 5V, low 0V
- Logic switches, two no bounce with complimentary output
“On” voltage level 2.8V min., “Off” voltage level 1V max.
Input impedance 100k Ω .
- Eight LED readouts, 100k Ω input impedance
- Clock frequency, 1Hz to 100kHz in 5 steps continuously variable
- Clock amplitude, 5Vpp squarewave
- Clock rise time, better than 100nsec.

Breadboards Section:

- Two breadboards containing 830 tie points each (total 1,660 pins)
- 6 independent power bus lines for common connections

Variable Resistance (undedicated):

- 1k Ω Potentiometer
- 100k Ω Potentiometer