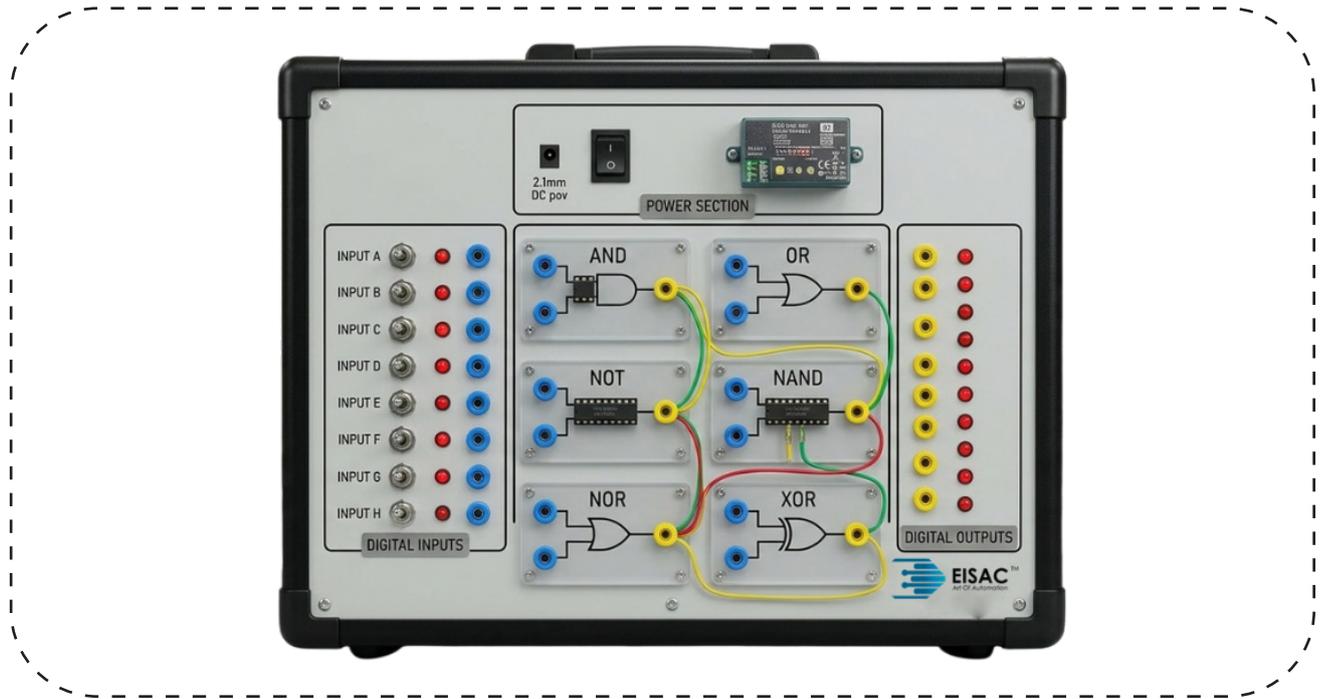


# Digital Logic Design Training Kit



**Kit code : ES-LOGIC**

## Overview

The EISAC Digital Logic Design Training Kit – Foundation Series is an essential educational platform designed to simplify the core concepts of digital electronics and programmable logic. Unlike software-only simulations, this kit provides a tactile, hands-on experience using physical integrated circuits. It empowers students and engineers to manually construct and troubleshoot complex logic circuits, providing a deep, foundational understanding of how modern processors and PLCs execute fundamental decision-making processes.

## TRAINING EXPERIMENTS

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Fundamental Gates: Verification of truth tables for all basic and universal logic gates.

Combinational Logic: Designing half-adders, full-adders, and complex encoders/decoders.

Boolean Algebra: Physical implementation and simplification of Boolean expressions.

Universal Logic: Constructing any basic gate using only NAND or NOR gates.

Sequential Basics: Introduction to flip-flops and simple memory cell construction.

## SAFETY FEATURES

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IC Protection: Internal current-limiting resistors to prevent damage to logic gates.

Reverse Polarity Protection: Safeguards the internal circuitry against incorrect power connections.

Shrouded Jacks: 4mm safety banana terminals to ensure secure and touch-safe connections.

Stable Power: Regulated internal bus to prevent logic errors caused by voltage ripples.

Visual Safety: Master power LED ensures the user is aware of the kit's operational state.

## SYSTEM COMPONENTS

Logic Gate Array	Core IC Modules (AND, OR, NOT, NAND, NOR, XOR)
Input Module	8 Digital Inputs (A-H) with manual toggle switches
Output Module	Dedicated Output Bus with high-brightness status LEDs
Wiring System	Color-Coded Interface with standardized banana jacks
Power Section	Regulated DC Input with master safety switch and indicator
Chassis	Industrial Hard Case with labeled aluminum faceplate

## TECHNICAL SPECIFICATIONS

Logic Levels	Standardized TTL/CMOS compatible logic levels (\$0V\$ for Logic 0, \$5V\$ for Logic 1)
Gate Variety	Includes Basic (AND, OR, NOT) and Universal (NAND, NOR, XOR) gates
Input Interface	8 x manual toggles with independent LED confirmation for each state
Output Interface	8 x visual result indicators using industrial-grade red LEDs
Power Supply	Integrated DC regulation to ensure protection of internal Integrated Circuits (ICs)

## MECHANICAL SPECIFICATIONS

Foundation-Case: Housed in a heavy-duty, impact-resistant case for high-traffic lab environments

Interface Design: Color-coded zones for Inputs (Green), Gates (Blue), and Outputs (Red)

Surface Durability: Scratch-resistant aluminum panel with permanent, high-contrast labeling

Component Mounting: Precision-fixed IC sockets to ensure long-term mechanical reliability

Portability: Compact, lightweight design with an ergonomic handle for easy storage and transport

## SOFTWARE & COMPATIBILITY

Simulation Link: Ideal for hardware-in-the-loop verification of Multisim or Logisim designs

Manual Learning: 100% hardware-based; no PC required for core experiments

Expansion: Compatible with standard external breadboards and digital multimeters



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ES-LOGIC

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