# ELEVATOR TRAINING KIT
## Model Number : GOTT-ELEVATOR-05



## DESCRIPTION

This PLC controlled model elevator allows the student to apply his Programmable Logic Controller operating skills to a real world application. This 4-Level Elevator is developed to demonstrate and simulate the operations of the Elevator.

The elevator is constructed with an aluminum base and four supporting columns. It is a portable working model with transparent sides. Moves along two guided bearing shafts. The cabin has a safety sensor to prevent the elevator from moving if it is overloaded or the floor door is not closed or blocked.

The top portion of the model accommodates an induction motor with brake and a pulley assembly to operate the lift. A counter-weight system is used to keep the hoisting cable taut. The counter-weight system also moves along another pair of guided bearing shafts. The PLC, Power Supply and Relay Module are also housed in this compartment.

The overweight assembly is fitted with an inductive sensor that communicates the error of the car to the PLC. The electrical signal of the sensors is connected to a PLC input.

It is designed to give all "UP" requests higher priority than the "DOWN" requests if the elevator is going up and priority will be given to "DOWN" requests if it is moving down. The programming is done in ladder diagram format software (CX programmer).

There are indications to show the direction of the elevator movement. It also has a 7-segment digital display for the level number.

The Level Selection Panel is mounted on the front of the top compartment instead of inside the cabin itself to enable easy access during training or simulation.

## FEATURES

- Programmable Logic Controller System
- Ladder diagram format
- I/O listing with description
- All system parameters can be commanded by using 4 buttons and a 7-segment display placed on the panel as reference
- Can be used with simple push button command all levels (up&down)
- Running at variable speed lifts with inverter control. System can be programmed from the software
- Floor detection is carried out by PLC system.
- The current floor level number is displayed on the 7-segment display during normal operation.
- An alarm is displayed in case of an abnormal condition
- Contains signal inputs for full load, car priority switch; and outputs for direction arrows, car illumination, busy, out of service, and automatic door
- All digital and signalization outputs are short-circuit protected
- System consists of only one lift cabin
- Economical and practical solution for simple systems with full specification of an actual elevator system
- Floor sensing and visual indication of direction of travel
- Automatic motorized floor door
- Hold car at desired floor during idle
- Call buttons on each floor for action
- Front panel manual control switch for serviceman use during maintenance and simulation
- Manual control switch for all motion (up&down) floor door upon floor level status basis
- Anti-slip safety feature for cabin

## MECHANICAL SPECIFICATION

| | |
|---|---|
| Input Voltage | AC 240V, 50/60Hz 1-Phase |
| Control Mode | Auto & Manual |
| Operating control | PLC |
| Safety | Emergency Stop |
| Display Indicator | LED, 7-segment |
| Machine Control | Induction motor with brake |
| Traction Machine | Speed ratio 30:1 (right angle switching) |
| Rotation Speed | 1400 rpm |
| Speed Regulation | AC variable frequency |
| Structure | 4 floors (including pit and a machine room. The dimension is scaled to real life building structure) |
| | Transparent Perspex Sheet Panel |
| | Four castors for easy movement |
| Door System | Front open only |

## SYSTEM SPECIFICATION

- One mechanical structure simulating the electrical elevator system total 30 wires
- PLC control
- Display (Door Zone, Position indication, Speed controller, Safety Simulation Switches)
- Control box with the safety simulation switches and encoder reading in digital

## General Terms:

(1) Accessories will be provided where applicable.
(2) Manuals & Training will be provided where applicable.
(3) Designs & Specifications are subject to change without notice.
(4) We reserve the right to discontinue the manufacturing of any product.

## ACCESSORIES:

- Programming Software
- User Manual
- Software Manual

## EXPERIMENT TOPICS:

- Introduction to sequential control
- Initial process condition can be set
- Study of real lift operating condition
- Timed sequence control
- Fundamentals of Logic
- Study the simulation of process control
- Developing Ladder Logic Programs
- Programming timers
- Structure of Control Systems
- Sequencer Programs
- Study of lift motion control system
- Study of Counters
- Understand the lift logic flow
- Combined Counter and Timer Functions

## Manuals :

(1) All manuals are written in English
(2) Model Answer
(3) Teaching Manuals

## Warranty :

2 Years

## ORDERING INFORMATION :

| ITEM | MODEL NUMBER | CODE |
|---|---|---|
| ELEVATOR TRAINING KIT | GOTT-ELEVATOR-05 | 188-104 |

*Proposed design only, subject to changes without any notice.