

# WSB-60P Series

## PLC Trainer(GLOFA GM4)

### Introduction

- It is designed to learn GLOFA PLC from basic to application. It allows users to carry out various experiments with built-in push button, lamp, buzzer, etc.
- Users can carry out sensor application experiment. It basically contains approach sensor, photo sensor and DC motor.
- Users can carry out experiments conveniently with built-in DC power supply.
- It offers Demonstration Unit 1 which allows users to study various application program.



### Experimental List

- Basic Commands Experiments(Basic Commands, Self-holding, Quiz Circuit)
- Function Block Commands Experiment(Timer, Counter)
- Function Experiment(MCS & MCR)
- $1\Phi$  ,  $3\Phi$  Induction Motor Forward/Reverses Operation by Demonstration Unit 1.
- $3\Phi$  Induction Motor's Direct-on-line Start by Demonstration Unit 1.
- $3\Phi$  Induction Motor's Y- Operation by Demonstration Unit 1.
- Two Lane Road's Traffic Signal Control by Demonstration Unit 1.
- Three Floors Elevator Operation by Demonstration Unit 1.
- Auto Water Pump Operation 1, 2 by Demonstration Unit 1.
- 1 Axis Position Control by Demonstration Unit 1.

### Specification

#### PLC Unit(LS GLOFA-GM4 Series)

##### ■ 1-1. CPU

- **Control Method** : Cyclic execution of stored program, Time-driven operation, Interrupt task operation

# WSB-60P Series

## Specification

- **I/O Control Method** : Scan synchronized batch processing method(Refresh method)
- **Program Language** : LD(Ladder Diagram), IL(Instruction List), SFC(Sequential Function Chart)
- Number of Instructions : LD(20 EA), IL(13 EA), SFC(194 EA)
- Processing Speed : 0.2 / Step
- Program Memory Capacity : 128 Kbyte
- Maximum I/O Points : 512 points(With 16-pt modules), 1024 points(With 32-pt modules), 2048 points(With 64-pt modules)

1-2. Digital Input	↔	↔	1-3. Digital Output
<ul style="list-style-type: none"> <li>• Input Point : 16 Points (2 EA)</li> <li>• Rated Input Voltage : DC 12/24V</li> <li>• Common Method : 8 Points/1Com</li> <li>• Insulation Method : Photo Coupler Insulation</li> </ul>			<ul style="list-style-type: none"> <li>• Output Point : 16 Points (2 EA)</li> <li>• Rated Load Voltage : DC 12V, AC 220V</li> <li>• Rated Load Current : MAX 2A</li> <li>• Common Method : 8 Points/1Com</li> <li>• Insulation Method : Relay Insulation</li> </ul>

### ■ 1-4. Power Module

- AC, 50Hz / 60Hz
- DC 5V/4A, 24V/0.7A

### ■ 1-5. Vibration-proof Module

- Vibration-proof for Non-use Slot

### ■ 1-6. Base

- 8 Slot (Maximum Number for Module Attach 8 EA)

## Trainer

### ■ 1-1. Power Supply

- Power : 1 $\phi$  AC, 50Hz / 60Hz
- Meter : 1 EA
- Main Power(Built-in Current Protection Device) : 1 Unit
- P.L.C Power(Built-in Current Protection Device) : 1 Unit
- DC Output Power(DC 24V) : 1 Unit
- Output Terminal : 4 EA

### ■ 1-2. Sensor Input & Motor Device

- DC Motor(DC 24V) : 1 Unit
- Coupling : Circular Type (Hole 4 EA/ Magnetic 1 EA)
- Photo Sensor(Detection Distance : 200mm) : 1 EA
- Proximity Sensor(Detection Distance : 8mm) : 1 EA
- Power for Sensor : DC 12V~24V

# WSB-60P Series

## Specification

### 1-3. Input Signal Device

- Non Lock Type Push Button : 7 EA
- Lock Type Push Button : 1 EA
- Digital Switch(BCD, 2 Digits) : 1 Unit

### 1-4. Output Signal Indication

- Output Lamp(DC 24V) : 7 EA
- Buzzer(DC 24V) : 1 EA
- Segment Display (BCD, 2 Digits) : 1 Unit

### 1-5. Digital I/O Terminal

- Input : 32 Points(16 Points/1COM Total 4EA)
- Output : 32 Points(16 Points/1COM Total 4EA)

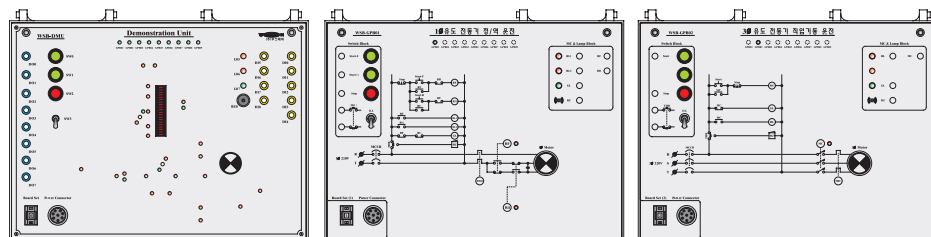
### Demonstration Unit

#### 1-1. Demonstration Unit 1

- Output Lamp(DC 24V) : 7EA
- Buzzer(DC 24V) : 1EA
- Segment Display(BCD, 2 Digits) : 1 Unit

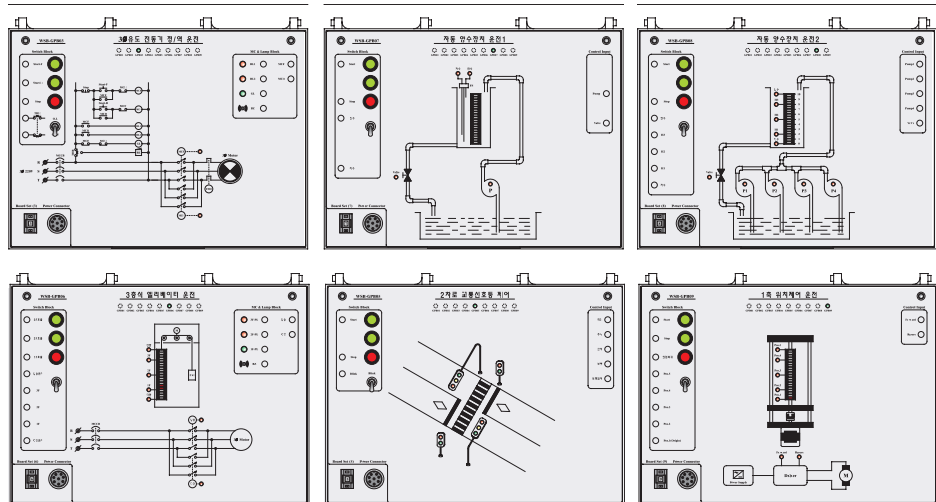


#### 1-2. Masks (Digital Control)



| Graphic Diagrams for Demonstration |

## Specification



| Graphic Diagrams for Demonstration |

PLC Trainer(GLOFA GM4)

### ■ 1-3. Digital I / O : 8input / 9output

- Indicating LED for Mask
- Power Connector
- LED for Simulator :
  - Instruction PB : 3 EA
  - Buzzer : 1 EA
- Function Change by Coding Switch (DC 24V)
- 10-Step LED for Simulator : 2 EA
- Instruction TS : 1 EA
- Motor : 1 EA
- Lamp : 3 EA

### ■ 1-4. Mask( Digital Control)

- GPB01 : 1 Phase Induction Motor Direct On-Line Start Operation
- GPB02 : 3 Phase Induction Motor Direct On-Line Start Operation
- GPB03 : 3 Phase Induction Motor Forward/ Reverse Operation
- GPB04 : 3 Phase Induction Motor Y- Operation
- GPB05 : Two Lane Road's Traffic Signal Control
- GPB06 : 3 Floors Elevator Control
- GPB07 : Auto Pump Control 1
- GPB08 : Auto Pump Control 2
- GPB09 : 1 Position Control Operation

### Accessory

- ▶ Experimental Manual : 1 Copy
- ▶ Connecting Cord : 1 Unit
- ▶ Communication Cable, Power Connecting Cable : 1EA

# WSB-60P Series

## Specification

### P.L.C Unit Option

#### ■ A/D Conversion Module

- Input Channel : 4 CH
- Input : Available to Select Voltage, Current(DC -5 ~ +5V, -10 ~ +10V, -20 ~ +20mA)
- Digital Value : -8,000~8,000 or 0~16,000      • Maximum Resolution : 1/16,000 or 1/6,000

#### ■ Analog Unit

- Input Terminal : 18 EA      • Output Terminal : 10 EA
- Input Signal Generator:Signal : 0~10V      • Input Display : Digitalmeter 0~10V, VR
- Output Signal Indication:Signal : 0~10V
- Output Display : Digitalmeter 0~10V, Indication LED

#### ■ D/A Conversion Module

- Input Channel : 2 CH
- Vibration-proof Input for Non-use Slot : Available to Select Voltage, Current (-10 ~ +10V, 4 ~ +20mA)
- Digital Value : -8,000~8,000 or 0~16,000      • Maximum Resolution : 1/16,000 or 1/6,000

#### ■ Input Module for High-Speed Counter

- Pulse Input for Variable Voltages(5, 12, 24V)      • Kinds of Signal : A, B, Z phase
- Counter Range : -2,147,483,648 ~ 2,147,483,647
- Maximum Counter Speed : 500Kpps      • 1/2/4 Multiply dip S/W Set
- External Output for Comparison Result between set value and counter value of 1, 2 phase pulse input(Transistor Output Max 2 Points)
- Available to connect with incremental encoder

#### ■ High-Speed Counter Unit

- Pulse Input Terminal(5, 12, 24V) : 12 EA
- Available to input A, B, Z phase according to signal External Output for Comparison Result(Transistor Output) : 2 EA
- L/S Terminal(External Input DC 24V) : 2 EA
- Power Terminal(External Input DC 24V) : 2 EA

#### ■ Position Decision Module

- Available to select 1/2/3 Axis for Slot Vibration-proof
- Output Type : Pulse Output      • Speed Control(Position Control) Function

- Set :mm, inch, degree, pulse
- Position Decision Range : -2,147,483,648~2,147,483,647
- Manual Operation : JOG Operation, MPG Operation, Inching Operation.
- M Code : 1 - 65.535

### ■ Position Decision Exercise Unit

- External Connection Method :  $\varnothing 4$  Jack or Connector
- Pulse Output      • Pulse Signal      • Up/Down Signal      • External Stop Signal
- Speed/Position Control Change Signal      • Manual Pulse Generator / Encoder Input

### ■ Communication Module

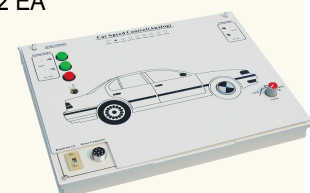
- GLOFA Fnet(Fieldbus) Module : (Electric Communication, Optical Module Select)
- GLOFA PLC, PMU Touch, LS Inverter      • GLOFA Fast Enet(Ethernet) Module
- Open Type Ethernet and Ethernet Type for LS Only.
- High Efficiency with 32 Bit Processor
- Maximum 16 Channel for Synchronous Communication

### ■ Communication Exercise Unit

- GLOFA Cnet(Computer Link) Module : FS-232C, RS422/485 1 Channel, Available to use third-party interface
- GLOFA Dnet(Device Net) Module : Available to communicate with Third-party PLC and controller, Communication Speed : 125, 250, 500Kbps
- GLOFA Pnet(Profibus-DP) Module

### ■ Demonstration Unit 2 (Analogue Control)

- Indicating LED for Mask      • Function Change by Coding Switch (DC 24V)
- Power Connector      • 10-Step LED for Simulator : 2 EA
- LED for Simulator :
  - Instruction PB : 3 EA      - Instruction TS : 1 EA
  - Lamp : 3 EA      - Buzzer : 1 EA
  - Motor : 1 EA



| Analogue I/O 2input / 2output |

### ■ Mask(Analogue Control)

- GPBA01 : Level Control      • GPBA02 : Car Speed Control