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model: **Factory automation with PLC-GTBD50515**

Factory Automation Trainer with PLC System

Features

1. Hands-on factory automation practices: transfer, fabrication, testing, classification and warehousing
2. One-touch clamping device mounted on each component allowing easy assembly and disassembly practices
3. Capable of controlling the speed of conveyor
4. Relay Module and Time Counter Module
5. Experimental Contents:
6. Wiring practices on the operation panel and PLC control panel
7. Understanding automation process: transfer, fabrication, testing, classification and warehousing
8. System installation practices using modules and components
9. Speed control practices on the conveyor
10. PLC programming practices

System configuration



Components

Hardware platform	1 set
Power cable	1 ea
Manual book	1 book

Technical Specifications

1. Supply Process:

- 1) Composition: Feed cylinder, feeding tube, fiber optic sensor, proximity switch and supply block
- 2) Fiber optic sensor: Detects the presence or absence of work pieces in the feeding tube
- 3) Proximity switch: Forward/backward detection (mounted on the cylinder)
- 4) Work piece: Plastic and aluminum

2. Drilling Process:

- 1) Composition: Drilling cylinder, drilling motor and proximity switch
- 2) Proximity switch: Forward/backward detection (mounted on the cylinder)
- 3) Drilling motor: DC 24V

3. Transfer Process:

- 1) Composition: Transfer cylinder, proximity switch, supply block, conveyor belt and conveyor driving motor
- 2) Proximity switch: Forward/backward detection (mounted on the cylinder)
- 3) Conveyor driving motor: DC 24V

4. Inspection Process:

- 1) Inductive proximity sensor (18Ø)
- 2) Detectable distance: 8mm (metallic material detection)
- 3) Capacitive proximity sensor (18Ø)
- 4) Detectable distance: 8mm (metallic & non-metallic material detection)
- 5) Optical sensor (18Ø)
- 6) Detectable distance: 100mm (color detection)
- 7) Extraction & Warehousing Process:
- 8) Composition: Extract cylinder, proximity switch, extract block and carrying boxes (passed & failed)
- 9) Proximity switch: Forward/backward detection (mounted on the cylinder)

5. Specification

- 1) Worktable (with a control panel rack)
- 2) Material: Aluminum profile (150mm in width)
- 3) Slot interval: 25mm
- 4) Dimension
 - (1) Worktable: 610(W) x 1100(D) x 30(H) mm
 - (2) Vertical frame: 1300(W) x 1100(D) x 750(H) mm
- 5) Materials Supply Unit
 - (1) Circular magazine: 40Ø
 - (2) Dummy work piece: 8ea
 - (3) Double acting cylinder: Ø16-100mm
 - (4) Reed switch: 2ea
 - (5) Optical sensor: 1ea
- 6) Fabrication Unit
 - (1) Double acting cylinder: Ø16-100mm
 - (2) Double rod cylinder (spin prevention type)
 - (3) Electric drill for fabrication
- 7) Transfer & Loading Unit
 - (1) Double acting cylinder: Ø16-100mm
 - (2) Conveyor system: 60(W) x 530(D) x 120(H) mm
 - (3) Gear motor: DC 24V, 1~ 15m/min speed
 - (4) Encoder: Pulse generation
 - (5) Material carrying box: 90(D) x 110(W) x 60(H) mm

8) Test & Classification Unit

- (1) Material detection sensor
- (2) Capacitive sensor (standard)
- (3) Inductive sensor (option)
- (4) Optical sensor (option)
- (5) Double acting cylinder: Ø16-100mm

9) Material loading unit: 110(W) x 90(D) x 60(H) mm

10) Operation Panel

- (1) Status indicator LED (Sensor & Actuator)
- (2) Cylinder indicator LED: 8ea
- (3) Motor indicator LED: 2ea
- (4) Sensor indicator LED: 3ea
- (5) Operational switch: 4ea (start, stop, reset, emergency)
- (6) 25-pin PLC connector: 1ea
- (7) Power supply terminal: + (5ea), - (5ea)
- (8) Dimension: 295(W) x 340(D) x 100(H) mm

11) Motor speed control unit

- (1) Travel speed meter (m/min)
- (2) Motor connector: 4mm terminal
- (3) Encoder terminal
- (4) Counter module : Setting range: 1 ~ 9999
- (5) Preset counter
- (6) Incremental
- (7) Reset function (MANUAL/AUTO)

12) PLC Control Unit

- (1) Programmable logic controller: GM6 (16-point input and 16-point output)
- (2) Power supply: DC 24V 5A
- (3) Power supply connector: + (4ea) and - (4ea)
- (4) 4mm I/O connector: 18ea
- (5) Dimension: 295(W) x 340(D) x 100(H) mm