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Systelec®

MS-7500
Portable Mechatronics Training System (for PLC-220)

MS-7500 contains two independent mechatronics training modules. They are automatic sorting robot and linear positioner. These two modules can be controlled by PLC-220 directly or by other PLC systems through its digital input and output ports on control panel. Each model provides at least ten training courses, beginning from learning the characteristic of every mechatronic component to controlling of whole mechatronic system. It provides an efficient way to build solid knowledge and concept of "Factory Automation" control.

With PLC-220

● System Features

1. Its portable size makes it easy to carry out experiments on lab table.
2. Using 4mm safety plugs and sockets for terminal interconnections of devices to ensure the physical safety of users.
3. The status of input and output signals is monitored and displayed on nearby status LED.
4. Colorful I/O sockets to represent different port function - yellow sockets for signal input, blue sockets for signal output, red socket for DC power input, black socket for DC power ground.
5. External interface supports extensions which are particularly suitable for PLC-220.

● MS-7001 *Automatic Sorting Robot*
● Features

1. Suitable for PLC beginners
2. Systematic training for trainees
3. Abundant experimental practices
   (1) Six basic practices (experiment 1 - 6) for learning basic PLC instructions
   (2) Six advanced practices (experiment 7-12) for upgrading the PLC programming capability

4. Widespread control applications :
   DC motor control, various sensors, pneumatic cylinder control, position control and detection for sliding table, PLC wiring practice

● Specifications

1. Conveyor Module
   DC motor control
2. Pick & Place Robot Module
   (1) X-Axis DC motor drive
   (2) Z-Axis cylinder
   (3) R-Axis cylinder
   (4) Vacuum generator
   (5) 3-slot storing station
   (6) Transfer slide
3. Control Panel
   (1) DC power input : 24V DC
   (2) Digital input   : 13
   (3) Digital output   : 7
   (4) Extension I/O interface : 40-pin
   (5) Emergency stop button

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4. Module Contents :
  (1) Belt-conveyor :
    Driver : 24V DC motor
  (2) Sensors :
    position sensors, color sensor, metal detector
  (3) Sliding table :
    Driver : 24V DC motor
  (4) Three-axis handling robot :
    pneumatic cylinders, vacuum generator, vacuum sucker
  (5) Electromagnetic valve :
    5/2 way single coil x 2, 5/2 way double coil x 1, working voltage 24V

● List of Experiments
1. Conveyer belt position control
2. Workpiece detecting and sorting
3. Z-Axis cylinder up/down control
4. Rotary cylinder right/left control
5. Vacuum generator control
6. Slide table position control
7. 3-Axis pick & place robot control
8. Picking and placing on conveyer belt
9. Storing workpieces sequentially
10. Workpiece sorting and storing control
11. Conveyer loading control
12. Automatic loading-unloading control

● Accessories
1. 6mm Pneumatic Tube
2. Workpiece : three kinds of workpiece
3. Connection Leads x 1 set
4. 40-pin Flat Cable x 1 pce
5. Experiment Manual

● Optional but Necessary
1. Air Compressor
  (1) Air tank   : 25L ± 10%
  (2) Max. pressure : 10kg/cm^2
  (3) Flow rate   : 90L/min ± 10%
2. PLC-220 Trainer
  (1) PLC main unit : SIEMENS SIMATIC S7-1214C
  (2) Digital input   : 14
  (3) Digital output : 10
  (4) Industrial Ethernet Cable
  (5) STEP 7 (TIA Portal) Basic Software CD

● MS-7002 *Linear Positioner*
● Features
1. Using stepper motor to drive a sliding mechanism.
2. Diverse applications for servo control.
3. Combining BCD toggle switches and a 7-segment LED in the trainer.
4. Providing a limit switch to avoid over-movement of the sliding guide

● Specifications
1. Positioner Module
  (1) X-Axis stepper motor drive
  (2) Encoder
  (3) Position sensor
  (4) Limit switch
  (5) Ruler guide : 15cm
2. Control Panel
  (1) DC power input : 24V DC
  (2) Digital input : 13
  (3) Digital output : 10
  (4) Thumbwheel switch : 2-digits
  (5) 7-segment display : 2-digits
  (6) Extension I/O interface : 40-pin
  (7) Emergency stop button

● List of Experiments
1. Linear motion control
2. Zero-Point Correction
3. Open-loop position control
4. Vibration and torque control
5. Positioning time and speed control
6. Closed-loop position control
7. Positioning with thumbwheel and 7-segment display
8. Teaching single-position control
9. Multi-speed control
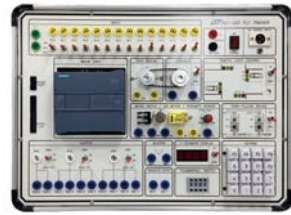10. Multi-position control

● Accessories
1. Connection Leads x 1 set
2. 40-pin Flat Cable x 1 pce
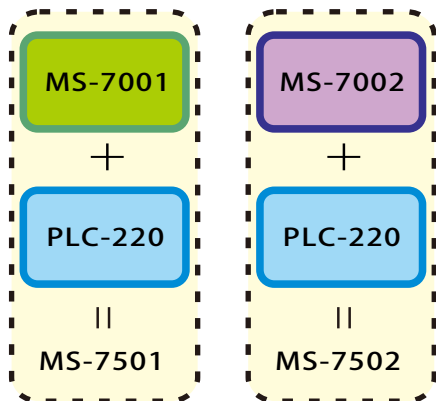3. Experiment Manual

● Optional but Necessary

1. PLC-220 Trainer :

(1) PLC main unit : SIEMENS SIMATIC S7-1214C

(2) Digital input : 14

(3) Digital output : 10

(4) Industrial Ethernet Cable

(5) STEP 7 (TIA Portal) Basic Software CD

PLC-220

Order Information:

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│  MS-7001    │   │  MS-7002    │
│      +      │   │      +      │
│  PLC-220    │   │  PLC-220    │
│      ‖      │   │      ‖      │
│  MS-7501    │   │  MS-7502    │
└─────────────┘   └─────────────┘
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MS-7001
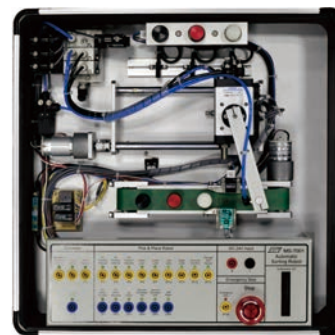
MS-7501 : Automatic Sorting Robot Training System for PLC-220

MS-7502 : Linear Positioner Training System for PLC-220

MS-7002