

MS-7400

Portable Mechatronics Training System (for MCU)



MS-7400 provides two independent mechatronics training modules. They are automatic sorting robot and linear positioner. These two modules can be controlled by MS-C100 directly or other microcontrollers through its digital input and output ports on control panel. Each model offers at least ten training courses, beginning from learning the characteristic of every mechatronic components to controlling of whole mechatronic system. It provides an efficient way to build solid knowledge and concept of "Factory Automation" control.



With MS-C100

● System Features

1. Its portable size makes it easy to carry out experiments on lab table.
2. The status of input and output signals are monitored and displayed on nearby status LED.
3. Easy cabling-using one single flat cable to connect MS-C100.

● MS-C100 dsPIC Microcontroller Unit

● Features

1. MS-C100 includes a dsPIC30F4011 chip and peripheral I/O circuits, which is very helpful to understand the knowledge related with microprocessor control.
2. The trainer is protected by a suitcase for easy carrying and storage.
3. The pins of MCU are protected by photo coupler.
4. Able to use either TACT or Slide switch as signal input.

● Specifications

1. MCU : dsPIC30F4011(ISP circuit included)
 - (1) 6-Bit digital signal controller
 - (2) 40-pin
 - (3) 48K byte program memory
 - (4) 2K byte RAM
2. AC Power Switch
3. Reset TACT Switch
4. MCU Power LED
5. Input : TACT switch x14, slide switch x14, indicator LED x14, photocoupler IC x14
6. Output : indicator LED x10, photocoupler IC x10
7. Power Input : 90V ~ 264V AC, 47Hz~63Hz
Power output : 5V DC/2.5A, 3.3V DC/2.5A, 24V DC/2A

● MS-7001 Automatic Sorting Robot

● Features

1. Suitable for MCU beginners
2. Systematic training for trainees
3. Abundant experimental practices
4. Widespread control applications
DC motor control, various sensors, pneumatic cylinder control, position control and detection for sliding table, C code programming 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
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-axel 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. Conveyor 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 conveyor belt
9. Storing workpieces sequentially
10. Workpiece sorting and storing control
11. Conveyor loading control
12. Automatic loading-unloading control

● Accessories

1. 6mm Pneumatic Tube
2. Three Kinds of Workpiece
3. 40-pin Flat Cable x 1
4. Experiment Manual
5. MPLAB IDE Software

● Optional but Necessary

1. Air Compressor
 - (1) Air tank 25L ± 10%
 - (2) Max. pressure : 10kg/cm²
 - (3) Flow rate : 90L/min ± 10%
2. MS-C100 Trainer
3. PICKit™3 Programmer

● 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 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-digit
 - (5) 7-segment display : 2-digit
 - (6) Extension I/O interface : 40-pin
 - (7) Emergency stop button

● List of Experiments

1. Linear motion control
2. Open-loop position control
3. Vibration and torque control
4. Positioning time and speed control
5. Linear acceleration-deceleration 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

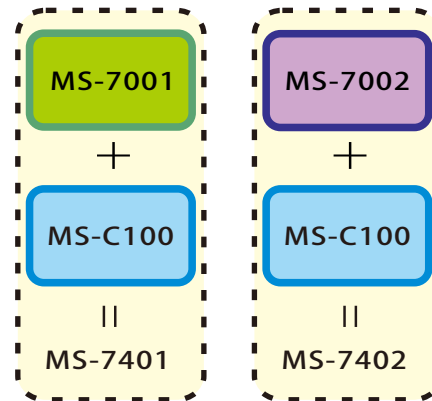
● Accessories

1. 40-pin Flat Cable x 1
2. Experiment Manual
3. MPLAB IDE Software

● Optional but Necessary

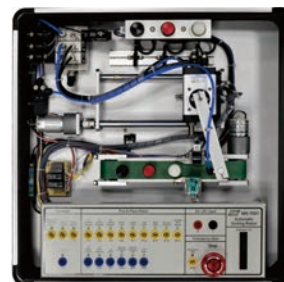
1. MS-C100 Trainer
2. PICKit™3 Programmer

Order Information:



MS-7401 : Automatic Sorting Robot Training System for MS-C100

MS-7402 : Linear Positioner Training System for MS-C100



MS-7001



MS-7002



MS-C100