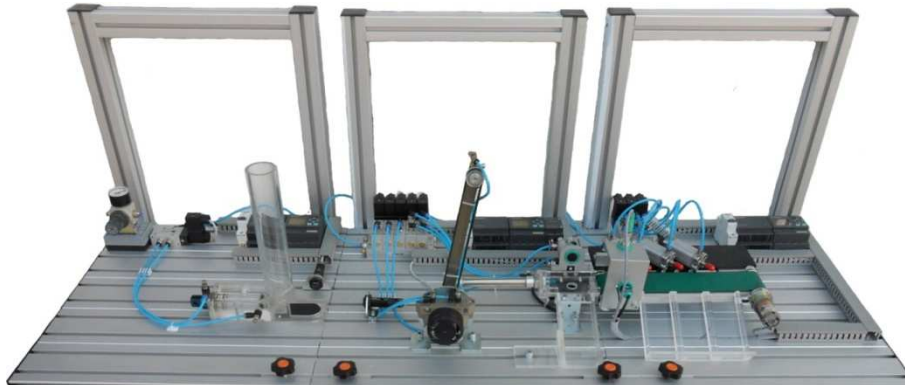


MECHATRONICS TRAINING SET (FM-PSRFM)(Modular)



The objective of Ferma Mechatronics Training Set is to show students how to deal with various types of sensors and how to set an algorithm with a PLC.

There exists various sample parts which are detected by the sensors. The program in PLC classifies the materials on the conveyor belt.

Through the PLCs in each station; the distribution, carriage/test and separation; the set is appropriate to use independently.

The system consists of;

- Ultrasonic height measurement
- Fibre Optic object recognition
- Inductive Sensors
- Optical sensors
- Pressure measurement
- PLC, Siemens S7-1200
- Motor driven belt
- Pneumatic cylinder
- Pneumatic rotary actuator
- Vacuum unit
- Electropneumatic valves
- Sample Program
- Software

- Documentation

There is a sample parts magazine, which can take up to 7 parts. The part ejecting cylinder is a transparent cylinder, so users can understand the working principles of the pneumatic cylinders very easily.

The sample parts that can be seperable with sensors are;

- Aluminium
- Green polyamid
- White polyamid

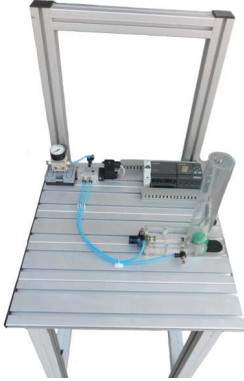
Short height samples will be sent to the undefined section.

The sample program could be supplied with air for the pneumatic equipments. The silent air compressor can be ordered additionally.

Available experiments, which can be applied with the sets are;

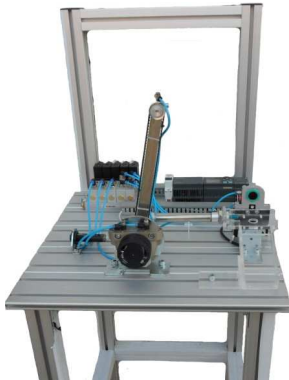
- Basic programming and understanding of an automation process flow chart
- Learning the use of industrial programming and communicating with a PLC
- Scada software programming to visualise a real mini industrial process.
- Pressure control via a mechanical manometer
- Arrange the related solenoid valves according to the present scenario
- Setup and piping of preesurised air systems, pipes can be installed easily by quickconnections. Teachers can change the hoses, to teach the students fault detection.
- Understanding the sensor characteristics, as
 - Mechanical pressure manometer
 - Inductive sensor
 - Optical sensor
 - Proximity sensor
 - Fiber-optic sensor

Distribution Station



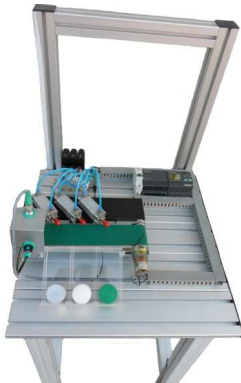
The module which consists of pressure manometer, transparent cylinder, transparent sample magazine, PLC, electropneumatic valve and sensors fulfills the distribution of the samples.

Carriage / Test Station



The module contains vacuum unit, pneumatic rotary actuator, double acting cylinder, PLC, electropneumatic valves and sensors. Short heighted faulty samples are separated in this station and not sent to next part.

Seperation Station



The module includes motor driven belt, motor, PLC, cylinders, electropneumatic valves and sensors classifies the samples according to the data received from the sensors.