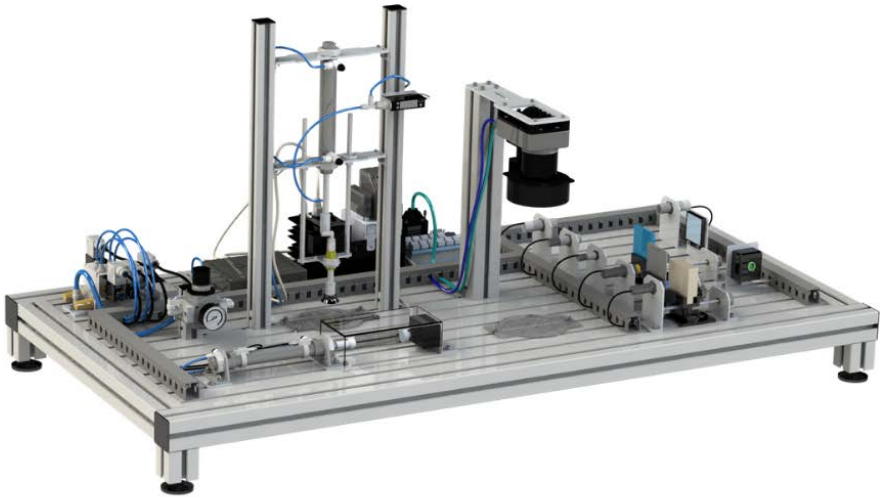
Industrial Sensors



Overview

The Industrial Sensors test bench is designed as educational equipment and can be used for hands-on study of Automated Control Systems.

Educational bench enables the user to study the operating principles and characteristics of various sensors: photosensors (barrier, reflective, diffuse), capacitive and inductive sensors, color sensor.

The stand allows students to study the basics of vacuum technology, pneumatic module functions, the technology of machine vision. The presented technologies are widely used in automation and modernization of production processes.

To perform each laboratory work developed special test samples. The data obtained during the experiments are displayed on the monitor as values or graphs. All results are saved in user folder. There are test questions at the end of each lab.

Technologies

1. Sensor technology
2. Machine vision
3. Pneumatic technology
4. Vacuum technology

List of Labs

1. Vacuum gripper module. Vacuum ejector.
2. Vacuum gripper module. Force sensor calibration.
3. Pneumatic device module. Speed control of the air cylinder rod.
4. Pneumatic device module. Air cylinder flow calculation.
5. Pneumatic device module. Calculation of pressure force of the air cylinder rod.
6. Barrier and reflective photosensors.
7. Diffuse photosensor.
8. Capacitive sensor 1. Determination of the relationship between the trip distance of the capacitive sensor on the thickness of the dielectric.
9. Capacitive sensor 2. Determination of the relationship between the trip distance of the capacitive sensor and the relative permittivity (ε).
10. Inductive sensor. Study of operating principles and characteristics of the inductive sensor.
11. Machine Vision. Determination of the radius.
12. Machine Vision. Determination of contact number.
13. Machine Vision. Determination of color.
14. Color sensor.