



DEGEM
SYSTEMS

Tech-Prep

Solar energy training system

Wind energy training system

Solar water heating energy
training system

Polar robot & robotics principles
training system

Conveyors & sorting machines
training system

Cartesian robot & computerized
storage training system

CNC lathe machine training
system

CNC milling machine training
system

Process control training system

Basic electronics training system

Basic communications systems

Basic pneumatics training system

Basic hydraulics training system

Basic mechanics training system

Pressure forming & inflation
training system

Bending & vacuum forming
training system

TP-3711

Polar Robot & Robotic Principles Training System

Objectives

The objective of this training module is to expose students to robotic technology and the disciplines required to activate and control a robot. The student will gain an understanding of where robot technology is applicable. Supporting knowledge, such as algebraic and polar coordinate systems, logic and sequencing are taught and exercised. The student will be able to write, test and run his own programs by applying the enclosed set of control commands.

Description

The desktop system includes a manipulator robot arm. The manipulator can move in a two dimensional plane and also has up/down movement. Motion is implemented by small electrical motors under computer control. By employing vacuum technology, the manipulator can lift small discs and move them around. The system control can be modified by dedicated, simple control software for simulation and creating the manipulator motion and operation trajectory. This package allows creating the trajectory sequence flow diagram, performing a simulation of the procedure and, finally, executing the process on the actual system.



Specifications

LEARNING PROGRAM

- Introduction to robotics
- Cartesian and polar axis systems
- Simulation and control software
- Programming instructions
- Basic program training
- Advanced training

The courseware or e-book contains the essential theory and detailed procedures for each hands-on activity.

TECHNICAL CHARACTERISTICS

- Mechanical structure (3 degrees of freedom)
- Movement range on roll (0-90°)
- Movement range on elbow (180 mm)
- Movement range on z-axis (50 mm)
- Gripper
- Roll motor type (stepper)
- Elbow motor type (DC motor)
- Resolution (± 1 mm)
- Operating voltage (100 - 240 VAC, 50 / 60 Hz)
- General dimensions (610 x 420 x 480 mm)
- Emergency stop button
- Main power switch
- Computer - machine connection (USB)

SUPPLIED ACCESSORIES

The learning unit is supplied with the following accessories:

- 5 discs
- Software application and courseware or soft copy electronic book for MS Windows PC (not supplied)

REQUIRED ACCESSORIES

- Personal computer with MS Windows (not included)
- Air compressor (one per lab, 2.5 HP, 24 liters, 10 bars; not included)

SAFETY FEATURE

The following safety feature is provided by the learning unit:

- 'Emergency Stop' pushbutton that cuts off all electricity to the unit when pressed.