MECHTRONICS COMPOSITE TRAINER   MODEL: MCTR07

FEATURES

- Robust and sturdy construction
- Easy and versatile operation
- Incorporates standard industrial components
- Covers multi disciplinary Mechatronics training

DESCRIPTION

The trainer is designed to teach and familiarize students with various Mechatronics topics. PLC application with bottle filling plant, load measurement, etc can be demonstrated.

INSTRUCTION MANUAL

Self explanatory operating manuals are provided with each system. Detailed theory as well as practical exercises is also included in the manual.

EXPERIMENTS

1. Measurement of Load using Load Cell along with estimation of unknown weight using voltage characteristics
2. Measurement of Temperature: Thermocouple, Thermistor & RTD and comparative analysis (estimation of sensitivity)
3. Interfacing of a sensor with Data Acquisition System
4. PLC control system: Ladder logic implementation on real time system.
5. Ladder Diagram development for different types of Logic Gates using ladder diagram software
6. Real Time Temperature Control using PID Control system.
7. PID control Design, Tuning using software
8. PID Control Implementation on DC Motor Speed Control
9. Demonstration of Bottle Filling System using PLC system

COMPONENTS

1. Proximity sensor
2. Temperature sensors, 3 nos.
3. Load cell
4. A rotary table with DC motor
5. Solenoid valve
6. Feed tank
7. Data acquisition and PID control software
8. Data acquisition hardware
9. PLC
10. Ladder logic software
11. Power controller
12. Power supply
13. Piping
14. Structure

OPTIONAL

- Proximity sensor
- Multimeter
- Microprocessor based PID Controller

SERVICES REQUIRED

- Electric supply 230 V AC, 50 Hz,
- Water with drain arrangement