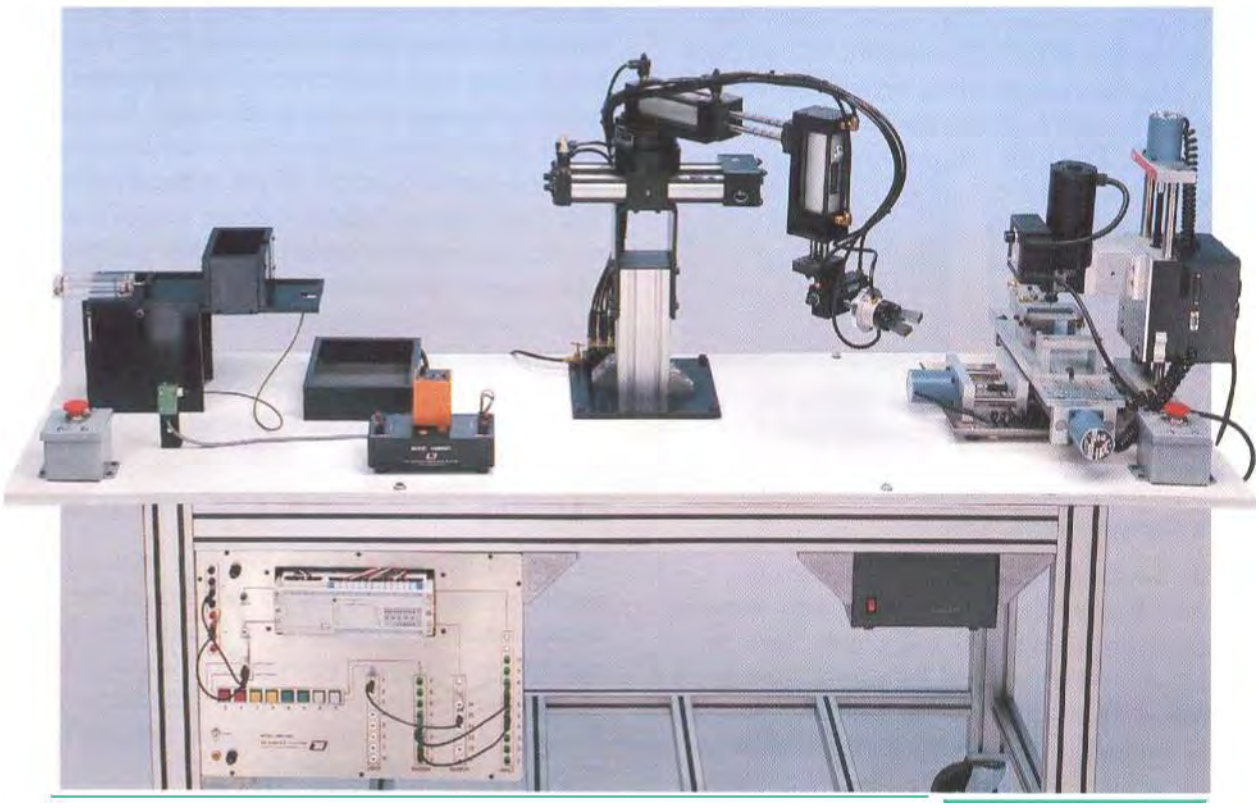
AUTOMATED MANUFACTURING SYSTEMS

AMS-107 TABLETOP MINI CIM CELL



A Complete, Mobile Computer Integrated Manufacturing System for Teaching the Fundamentals of Automation

TII's Tabletop Mini CIM is a true Automated Manufacturing System. It consists of industrial-grade components and teaches the fundamental aspects of automation processes. Robotics, Controls, CNC, Sensors, and System Integration are all included as major learning areas.The student studies each individual component of the small workcell and then learns to integrate these individual modules into a complete manufacturing process.

Each module comes complete with curriculum. The curriculum begins by teaching the basic concepts of each component before moving into system integration and operation. Students will learn:

- How pneumatic components work together in a pick-and-place robot application;
- How to create, edit, run and monitor robot programs using the teach pendant or a menu-driven software program;
- How to operate an industrial PLC;
- How to program a CNC mill;
- How sensing devices are used in automated manufacturing;
- How to integrate all of these individual processes together to develop a true Computer Integrated Manufacturing Enterprise.

The cell consists of the following:

TII's B901 Pneumatic Robot with Teach Pendant and Software
TII's MB650ML Principles of Programmable Logic Controllers Trainer (featuring the Allen-Bradley Micrologix PLC with software)
A CNC Mill with a Pneumatic Vise
A Pneumatically Operated Parts Feeder
TII's MB600 Principles of Industrial Sensors Trainer

The entire system is conveniently mounted on an aluminum extruded mobile table for greater flexibility. The standard system is programmed with the Micrologix using RSLOGIX online/offline programming software. The 4-axis pneumatic robot picks up a flat plastic part (approximately 2" wide by 3" long) from a magazine-type parts feeder. The feeder pneumatically dispenses parts and a sensor indicates to the robot whether a part is present. The robot rotates 180 degrees and positions the part into the mill's pneumatic vise. The vise closes and the CNC mill is activated. The mill carves a logo or the student's name into the part. Other milling procedures can be created using CAD/CAM software programs

SPECIFICATIONS

CM-171M - Milling Center

The CNC Mini-Mill is an extremely durable PC controlled CNC milling machine specifically designed for desktop manufacturing applications. The system uses standard CNC G&M codes that conform to the EIA RS-274D standard NC machine language. The software is menu driven and easy to understand. The mill is programmed using the software provided. The software requires an IBM-compatible computer with 512K RAM minimum and is CAD/CAM compatible and ASCII file compatible. An Engraver Application software package is available as an option. All of the mill's components are industrial-grade and it can machine anything from wax to steel.

B901-Pneumatic Robot Arm

TII's B901 4-axis robot arm has 5 degrees of freedom and is capable of interfacing with various pneumatic training systems and controllers. A hand-held pendant is standard for manual operation and control of the robot arm. The pendant can store up to four programs in memory with a maximum program length of 2000 steps. Besides using the pendant, the robot can be controlled with the supplied software using an IBM-compatible computer or a PLC. The system requires 60 to 150 PSI using shop air or an optional compressor. An industrial pneumatic gripper is included with removable fingers for greater flexibility. Arm rotation and linear motion can be adjusted using mechanical stops.

MB600-Principles of Industrial Sensors

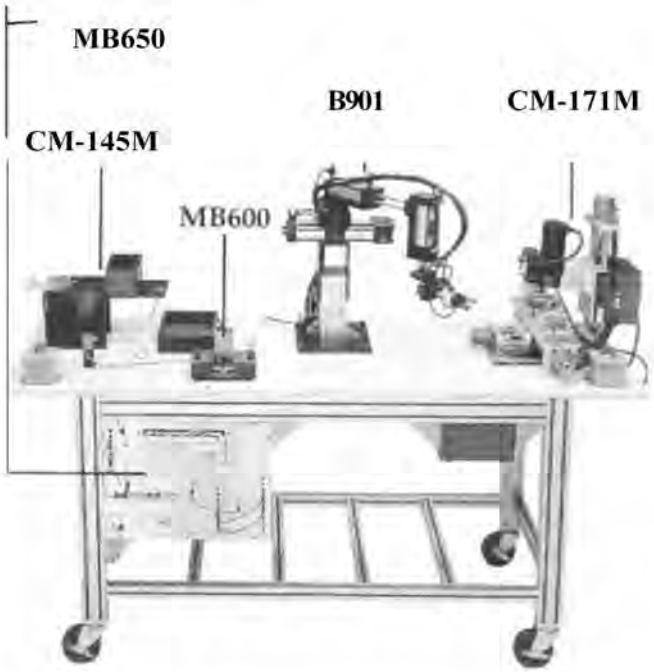
TII's MB600 presents a comprehensive approach to the use of sensing devices in industry. The system includes industrial quality sensors, an electronic power supply with input and output terminal strips, a mounting surface and all the accessories required to perform a variety of experiments. Activities are included throughout the curriculum which simulate the many uses of sensing devices in automated manufacturing. The sensing devices included are a roller lever limit switch, standard lever limit switch, diffuse-reflective fiber optic cable, thru-beam fiber optic cable, infrared sensor, and proximity sensor.

MB650ML-Principles of Programmable Logic Controllers

TII's MB650ML is a complete PLC training system featuring the Allen-Bradley Micrologix PLC. Learners develop competence in operating, programming and troubleshooting a true industrial PLC. The curriculum begins with basic wiring concepts and moves quickly through circuits, ladder logic, and programming. Additional units focus on troubleshooting and the special features of the Allen-Bradley Micrologix PLC. Each unit includes hands-on programming and wiring experiments which stimulate proficiency in PLC operation and industrial applications. Online/offline programming software and an interface converter are included for programming on an IBM-compatible computer and downloading to the PLC. The PLC can be programmed using the hand-held pendant as an option.

CM-145M-Pneumatic Parts Feeder with Sensor

TII's CM-145M is a magazine-type pneumatic parts feeder made specifically to dispense a flat part approximately 2" wide by 3" long. The feeder can be modified for custom applications where necessary. A sensor from TII's MB600 trainer is integrated with the parts feeder to indicate the presence of a piece of material.



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