



A Comprehensive Approach To the Use of Sensing Devices in Industry

TII's instructor-developed curriculum features over 25 hours of instruction in limit switches and fiber optics, infrared and proximity sensors. Each section includes an introduction to components, principles of their use and applications. The modular format allows **self-teach/self-paced or group** instruction.

The system includes industrial quality sensors, an electronic power supply with input/output terminal strips, a mounting surface and all the accessories required to perform a variety of experiments. All components are housed in a carrying case.

Activities are included throughout the curriculum which simulate the many uses of sensing devices in **automated manufacturing**. The versatile training system can also be used with motors, lighting systems, conveyors and other 115 volt-AC devices. It has been designed to interface with several other TII technology training systems.

A special feature of the MB600 is SenSelect software from Cutler-Hammer. This software program with operating manual helps students determine which sensor group would be most effective for various

industrial applications. The program is interactive, asking students to evaluate characteristics and conditions such as target size and material, light levels, contamination and object positioning.

The combination of the MB600 with the MB200 Pneumatics trainer or MB400 Hydraulics trainer, the MB650 Programmable Controller trainer, the MB501 robot and the MB505 programmable valve pack form a comprehensive application package. All TII trainers are complete, self-contained units which feature:

- Instructor and student versions of curriculum; the instructor guide includes lesson preparation and presentation suggestions
- Easy-to-read curriculum with three levels of instruction: introduction to components, background information and industrial applications
- Student mountable components for hands-on experience
- Impact-resistant case with lock; portable to other classrooms or buildings
- Systems removable from the case for mounting on a table or in a carrel to meet space requirements

SPECIFICATIONS

Experiment Station:

The learning system was developed to address identification, application and design of sensing systems. It is enclosed in a portable and lockable storage case made of impact-resistant polyethylene. The interior holds the sensor control unit, the power pack with input/output terminal strips, the SenSelect software and the sensor component kits. The mounting bracket and hardware for mounting the sensors are included, as well as an experiment work surface made of a 1/2" extruded and anodized aluminum T-slot slider bar. The work surface can be removed from the case for setting up sensor experiments with other equipment.

Component Kit:

The kit includes the six different types of sensing devices that are necessary for mastering the curriculum objectives, a roller lever limit switch, a standard lever limit switch, a diffuse-reflective fiber optic cable (with base unit), a thru-beam fiber optic cable (with base unit), an infrared sensor and a proximity sensor. Application components for conducting experiments with the sensors include a 12.5-volt pilot light, mallory sonalert alarm, a color board and steel, brass and aluminum plates.

Case Size (closed): 23"x19"x8" Shipping Weight:
22 lbs.

Warranty: One year, parts and labor

CURRICULUM

The Principles of Industrial Sensors curriculum was designed and reviewed by a panel of experienced high school and community college teachers. It includes 29 units of hands-on activities and instructional support. Each unit includes background study of the topic, observational and hands-on experiments, application exercises and the use of mathematical formulas for proving results where applicable. Courseware includes a student laboratory manual and a complete instructor's manual.

A 10 activity modular format is also available.

Sensor System Familiarization

Fiber Optics:

Diffuse-Reflective and Thru-Beam Fiber Optic Hardware
Setting Sensitivity of Diffuse Reflective Sensors
Normal and Inverted Operation of Diffuse Reflective Sensors
Setting Delays on Diffuse Reflective Sensors
Diffuse Reflective Sensing Application
Controlling Sensitivity of Thru-Beam
Sensors Normal and Inverted Operation of
Thru-Beam Sensors Controlling Delay on
Thru-Beam Sensors
Thru-Beam Sensor Application

Infrared Sensors:

Infrared Reflective Sensor Hardware
Setting Sensitivity for Infrared Reflective Sensing
Normal and Inverted Operation of Infrared Reflective Sensors
Controlling Delay on Infrared Reflective Sensors
Infrared Reflective Sensing Application

Proximity Sensors:

Inductive Proximity Sensor Hardware
Normal and Inverted Operation of Inductive Proximity Sensors
Setting Delay on Inductive Proximity Sensors
Proximity Sensing Application

Limit Switches:

Limit Switch Operation
Limit Switch Operating Characteristics
Positioning a Limit Switch
Trip Dog Design

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