

# 7. Industrial control and machine safety

## Industrial sensors study benches

### Training objectives

- Finding out about the various technologies used in industrial detection:
  - Photoelectric detectors (barrier, reflex, fiber optics, background obliteration, etc.),
  - Inductive and capacitive sensors for detection of various materials,
  - Detection of rectilinear or angular movement via position switches.
- Implementing sensors.
- Making adjustments.
- Setting up a detection chain

### Presentation

These detection workshops are designed to study the principles of industrial detection. The various types of sensors and targets proposed are representative of the equipment found in an industrial environment. The power supply box is equipped with indicator lights to show the states of the sensors.

The grooved plate and the case of accessories can be used to quickly mount, remove and position the sensors and the targets, and to measure the distances and angles of detection.

### Description

Grooved Aluminium support plate

- X axis: travel 600 mm.
- Y axis: length 460 mm



Plate with case and power supply box

Contents	
Description	Quantity
Limit switch Plastic	1
Limit switch, metal end Plunger with elastomer boot 1 NO + 1 NC PG11	1
Limit switch plastic thermoplastic roller lever 1 NO + 1 NC PG-11 cable	1
Limit switch thermoplastic roller lever plunger Horizontal action in 1direction 1 NO + 1 NC PG-11 cable entry	1
Inductive sensor M18 sensing distances 8 mm 1 NO length 62 mm	1
Inductive sensor M18 sensing distances 8 mm PNP length 62 mm	1
Inductive sensor M18 sensing distances 8 mm	1
Capacitive Proximity sensor M18 sensing distances 5 mm	1
Photo Electric sensor sensing distance 30 m thru beam need a transmitter	1
Photo Electric sensor sensing distance 30 m thru beam need a transmitter	1
Photo electric sensor nominal sensing distances 1 m defuse	1
Photo electric fibre amplifier	1
Plastic fibre optic for sensor 3 m long	1
Fibre optic Amplifier	1
Reflector	1

#### Case of accessories

- 2 fast-opening vices with fine screw tightening system.
- 1 cam with 15°, 30°, 45°, and 90° angles.
- 1 set of steel, aluminium or brass targets for the inductive sensors.
- 1 set of colour reflecting targets made of aluminium, cardboard, reflecting strip, glass, mirror, neutral.
- 1 set of reflectors and
- 1 set of metallic/non-metallic labels.

#### Power supply box with regulator

- 0-24 V variable direct current power supply (powering the sensors).
- Sensor connections via safety sockets.

References	
Description	Reference No.
Sensor Case	AET-K01-SEN