

Sensors make the foundation of automation and Internet of Things in order to communicate state of device from operations, maintenance, performance, application perspectives. Understand & discern the functionality, response of various analog sensors, switches, drives & other measurement devices and also learn about combining and measuring these devices as a whole or as an individual unit. The kit includes several industry standard sensors used in diverse engineering, process and automation applications. The Sensor Trainer can work as a stand-alone system or combined with PLC . As stand-alone system, the equipment can be used in disciplines such as STEM (physics) learning, electrical and electronics, instrumentation, mechatronics, automation, manufacturing.



### Learning Objectives:

Having successfully completed this lab, the student will demonstrate knowledge in

- Introduction to Analogue & Process sensors
- Study of Sensors – Analogue, digital & Process sensor.
- Sensor in control system.
- Study of transient response, stability & controllability of sensors
- Application of sensors in industries

### Analog Sensor Module And Pneumatic Module

Built on an aluminium profile plate, this trainer offers to build the concepts of basics in sensor technology, with a focus on analog sensors prevalent in the current industry. Advanced industry applications and experiments along are presented here through utilization of industrial components. This trainer has a single sided workstation upon which the following components can be easily mounted to build simple applications & conduct experiments.

### SPECIFICATIONS

Aluminium profile plate for mounting the components with appropriate number of mounting brackets	1 no.
Distribution unit with power supply,16 banana sockets & Switches	1 no.
Digital multimeter	1 no.
Digital Vernier caliper 0 - 150 mm	1 no.
Linear Potentiometer 0 -100 mm	1 no.
Steel Ruler - 1000 mm long	1 no.
Positioning slide for work price	1 no.
LVDT 0-5 mm	1 no.
Analogue Fiber optic distance sensor	1 no.
Analogue inductive distance sensor	1 no.
Analogue ultrasonic distance sensor	1 no.
Manifold Distributor	1 no.
Service unit pressure regulator & gauge	1 no.
Accumulator (tank) Dia 120 x 300 mm long	1 no.
Panel mounting Value	1 no.
Cylinder Dia 16 x 100mm	1 no.
Quick connection connectors, piping	1 no.
Control valve	1 no.
Strain gauge unit (Defective arm)	1 no.
Signal processing Unit for strain gauge	1 no.
Weight Set	1 no.
Force sensor unit	1 no.
Pressure sensor 0 - 8 bars.	1 no.
TEST pieces	1 SET
24v dc power supply	1 no.

Note: Specifications are subject to change.

### Tesca Technologies Pvt. Ltd.

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Near Bombay Hospital, Vidhani Circle, Jaipur-302022, Rajasthan, India,  
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Technical Literature : Sensor Manual with Exercises (CD) 1 CD  
DIMENSION : 800 x 600 x 250 mm  
Weight : 50 kg(approx.)  
Packed Dimensions : 900L x 700W x 550H weight - 80 kg approx.

**Training Skills-**

- Mode of operation properties & Characteristics
- Applications & Selection of sensors
- Sensor adjustment & limitations
- Applications & Lubrication
- Overview of designs used in industrial applications of inductive, optical & ultra sonic sensor for non contact.
- Measuring techniques & Technical data of sensors
- Electrical connections & Electrical Circuit diagram Study
- Sensing range study with Different materials & sizes
- Study of application of sensors & Actuating limitations

**Experiments -**

- Measurement of Linear position variation
- Measurement of pneumatic pressure level in the system
- Experiments by varying module weight at different locations & measurement using strain gauge
- Experiments for validating the various capabilities and response of different types of sensors with different conditions for (Inductive, ultra sonic, reflective, Fiber optic sensors etc.)
- Measurement and comparison of linear actuator-Force measurement using sensor and other integrated applications.
- Response curve generation for the cylinder based on Force of actuation for varying actuation speeds

**REQUIRED EQUIPMENT AT SITE AND UTILITIES TO BE PROVIDED BY THE BUYER DURING COMMISSIONING, DEMONSTRATION & TRAINING**

**For Sensor Trainer Kit**

Compressor - 25 Litre tank Capacity, 6 to 8 Bar (100 – psi) - 1No (for pneumatic module)

**SET OF STANDARD OPERATION TOOLS**

Allen Key----- 1 Set

Screw Driver----- 1 Set

**Note:** As part of continuous improvement, Tesca reserves the right to alter machine design and specification without prior notice.

Ordering Details		
SN.	Order Code	Details
1.	54028A	Export Packing

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