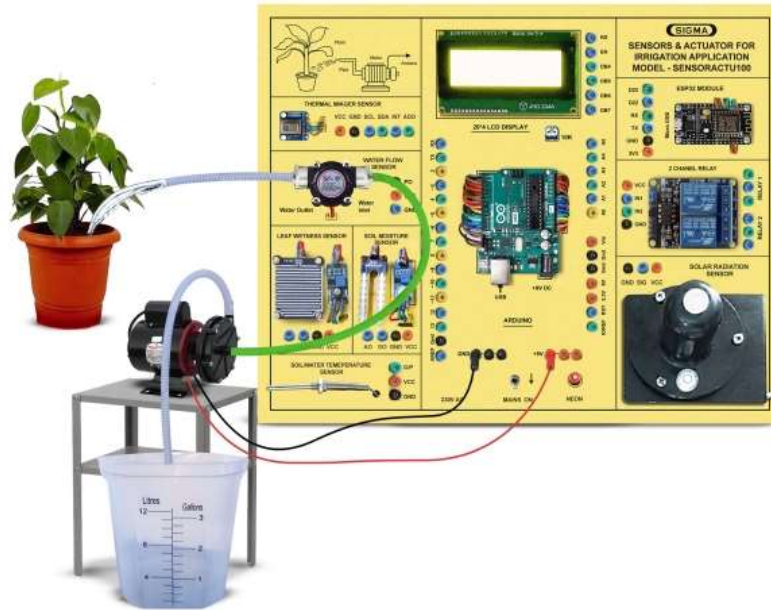# SENSORS & ACTUATOR FOR IRRIGATION APPLICATION
MODEL-SENSORACTU100

SPECIFICATIONS

This trainer has been designed with a view to provide practical and experimental knowledge Sensors programing for IoT based Irrigation Applications with Arduino IOT Board.

SPECIFICATIONS

A. Main Specs

1. Following Parts and Modules are assembled on Single PCB of size - 18 Inch x 15 Inch.
2. The complete circuit diagram is screen printed on component side of the PCB with circuit and Parts at the same place.
3. The PCB with components on front side is fitted in elegant wooden box having lock and key arrangement.
4. Modules and Parts should be removable without desodlering for easy repair / replacement
5. The acrylic cover is fitted on PCB to safeguard main parts.

B. Arduino Microcontroller Board

1. Arduino Uno Microcontroller board based on the ATMEGA328P
2. 14 Digital Input / Output pins (of which 6 provide PWM output)
3. 16 MHz Ceramic Resonator
4. Flash Memory : 16KB (of which 2KB used by boot loader)
5. USB Port
6. Power Jack – 9V DC, 1A

C. Sensors & Other Components

1. Soil Moisture Level Sensor
2. Soil Moisture Temperature Sensor
3. Leaf Wetness Sensor
4. Solar Radiation Sensor SDS011 – 0 to 2000 mw/m2
5. Thermal Imager Sensor
6. 2 Channel Relay as Actuator
7. Flow sensor as Actuator
8. Sprinkler as Actuator

D. Modules and Hardware:

1. 20 X 4 - LCD Display
2. ESP32 Wifi Module
3. 2 mm interconnection Sockets

E. Accessories

1. USB Cable : 1 No
2. Ethernet Cable : 1 No
3. Micro USB to USB cable for ESP32 : 1 No
4. Power Supply Adaptor : +9V DC, 1A
5. Jumper wires : 50 Nos.
6. Pen Derive with Software, Library, Driver,
   Codes, Soft Copy of Manual and Mobile App : 16 GB
7. Printed Practical Manual : 1 No
8. E-Books for Agriculture IOT Subject : 10 Nos. in PDF Format
9. Mp4 Video Class for IOT Subject : 40 Nos
10. Excitation accessories for each sensor
    Plant with Pot

EXPERIMENTS

A. Theory Experiments for Arduino Board

1. To understand theory and working of Arduino Operating software.
2. To understand Pin and Connection Diagram of Arduino.
3. To understand USB Interface for Arduino.
4. To understand 20 x 4 LCD Display.

B. Theory of ESP32 Wireless Module

5. To understand theory and working of ESP32
6. To understand Operating System for ESP32
7. To understand Pin and Connection Diagram of ESP32
8. To understand USB Interface for ESP32

C. Theory Experiments for Sensors

9. To understand theory of Soil Moisture Sensor
10. To understand theory of Soil Temperature Sensor
11. To understand theory of Leaf Wetness Sensor
12. To understand theory of Solar Radiation Sensor SDS011
13. To understand theory of Thermal Imager Sensor
14. To understand theory of 2 Channel Relay as Actuator
15. To understand theory of Flow sensor as Actuator
16. To understand theory of Sprinkler as Actuator

D. Practical Experiments

17. To measure level of Soil Moisture using Soil Moisture Sensor
18. To measure Temperature of Soil Moisture using Temperature Sensor
19. To measure level of Wetness of a Leaf using Leaf Wetness Sensor
20. To measure Solar Radiation using Solar Radiation Sensor SDS011
21. To find temperature of Hotspots of a Land in agriculture using Thermal Imager Camera
22. To measure Water Flow using Water Flow Sensor
23. To use 2 Channel Relay to On/OFF Water Sprinkler, Water Pump etc
24. To provide Automatic Watering System for Plants by using Sprinklers and make them ON/OFF when water soil level is full and empty / dry

Contact us

Registered Office

SIGMA TRAINERS AND KITS

E-113, Jai Ambe Nagar,

Near Udgam School,

Drive-in Road,

Thaltej,

AHMEDABAD-380054. INDIA.

Contact Person

Prof. D R Luhar – Director

Mobile   : 9824001168

Whatsapp   : 9824001168

Phones:

Office   : +91-79-26852427

Factory   : +91-79-26767512

                       +91-79-26767648

                       +91-79-26767649

Factory

SIGMA TRAINERS AND KITS

B-6, Hindola Complex,

Below Nishan Medical Store,

Lad Society Road,

Near Vastrapur Lake,

AHMEDABAD-380015. INDIA.

E-Mails :

sales@sigmatrainers.com

drluhar@gmail.com