

Sensoyo[®] IO & T10

Your first step to IOT

Product Overview

T10 is a temperature indicator, monitor and an IOT device. It works on a sensor to server (s2s[®]) architecture. A semiconductor temperature sensor DS1820 is used to sense the temperature and the same is sent over a WiFi to an IOT server over MQTT or HTTP. Data so collected at the server side is useful for remote monitoring, analysis and control.

A variant of the product T10, is offered in an open enclosure format for the benefit of the learners and developers to enable exploring the internals.



T10 Use Cases

You will find T10 useful for monitoring temperature of enclosed spaces. Typical environments are:

- Offices & Factory
- Pathology Labs
- Data Centers
- Restaurants
- Commercial spaces

Connect to Sensoyo[®]

T10 connects seamlessly over local WiFi and transmits data to Sensoyo[®], an IOT SAAS. T10 is configurable and can

connect to any MQTT server. Data formats are well defined and available for the learners to make use of those to build end to end applications. Ask for serial communication specifications to connect other sensors to T10.

Product Specifications

Features

- Powered by Dual Core Xtensa 32-bit LX6 Microprocessor
- Communication interface: Wi-Fi/Bluetooth
- Communication protocols: MQTT/HTTP
- Supported formats: JSON
- Stores data offline when not connected to server
- Firmware OTA

Technical Specification

- Operating voltage: 5 V DC (Power supply not included)
- CPU: Dual-core Xtensa® 32-bit LX6 MCU (ESP32WROOM)

Operating conditions

- Temperature: -10° to 70° degrees Celsius

Connectivity

- Wi-Fi: 802.11 b/g/n (802.11n up to 150 Mbps)
- Bluetooth: Bluetooth v4.2 BR/EDR and BLE specification, NZIF receiver with -97 dB sensitivity, Class-1, class-2 and class-3 transmitter

Display Specs

- Monochrome 7-pin SSD1306 1.3" OLED display, 182×64 pixel resolution.
- Supply voltage 3V – 5V (supports both 5V and 3.31v logic devices).
- Uses SSD1306 for interfacing hence can communicate through SPI or I2C

Temperature Sensor:

- DS18B20 temperature sensor (T10 Sensor)
- Operating range -55 to +125 °C
- Sensitivity +/- 0.5 °C, Accuracy +/-1%
- Temperature conversion time - 750 msec

Sensoyo® Access

- Access to platform (learner's account) for end to end IOT for 6 months included
- Connect upto 3 devices*
- Protocols supported: MQTT
- Data Formats: JSON (ask for specifications)
- Notifications: Email, FCM and Websockets
- Portal access and web services for building your own Apps

Documentation

- On registration will be emailed to you
- User Manual
- Developer Manual

IoT Learners and Developer's Delight

A definitive way of connecting systems with an industry grade product enhances a learner's experience. T10 is exactly that. It connects over MQTT with Sensoyo®, an industry grade IoT platform. Thus, making end-to-end connectivity available and visible.

T10 can be configured to connect with any MQTT server and thus, you are free to build your own system. An App is used to configure the T10 for various parameters like server to connect to, interval of data transmission, units of measurement and more.

Sensoyo® - an industry grade IOT platform - provides the necessary APIs (REST web services), manage devices, FOTA, Dashboards for monitoring, and Notifications over email and websockets. An accompanying App is available which allows configuration of the devices and also to monitor them.

Thus, you have an end to end working system at hand to learn and explore.

*Connect up to 3 devices to transmit data to the platform. Additional devices will require a subscription at additional cost.

A brief history of T10

We built T10 two years ago and it has been a hardware device for various development activities and applications. It started off with exploration of various chipsets and one chosen for this is a good and robust for commercial applications. One of the first applications was monitoring of the AC units in various spaces. One such device (from our first batch) of devices is still in our data center.

This device is innovative, robust, industry ready and provides numerous possibilities for starting the journey of IOT architectures. We now proudly present it as a learning platform. Allows one to learn and use end to end networking, APIs for web apps and mobile apps, notifications testing for real use cases.

Developed by

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