ENERGY ANALYTICS CONTROLLER

INDOOR AIR QUALITY

Most advanced IAQ sensor with **Built-in Analytics** and **Clustering** features

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ENERGY ANALYTICS CONTROLLER

INDOOR AIR QUALITY

When people say that we are living in the post-PC era they mean that the personal computer is being eclipsed as the center of the IT universe by the smartphone. Operations technology is experiencing a similar reordering. In this new era of the Internet of Things (IoT), compute resources equivalent to a PC or smartphone are being integrated into all sorts of equipment and devices. For commercial buildings, a new category of IoT device is emerging—the Energy Analytics Controller (EAC). Smart building applications development should revolve around the enormous possibilities of these edge devices.

ECO friendly whitelabelable fire-retardent fillement utilized 3D print

Recyclable aluminum

Hardware Intro

- AM335x 1 GHZ Arm Cortex-A8 Processor
- 4GB 8-bit eMMC on-board flash storage (1.9 GB User)
- 512MB DDR3 RAM

Frameworks

- Sedona Framework (Realtime controls engine)
- EAC Engine * (Analytics to Optimization)
- SkySpark (Analytics Engine)
- Visualytik (Visual Analytics Dashboard)

ANALYTICS ON THE EDGE

Anyone designing an IoT architecture must decide which tasks are best performed locally by a device at the network's edge versus remotely by a cloud-hosted application. Within the IT world, an edge device is defined as a gateway or global controller. Within the building automation world, a direct digital controller (DDC) can be considered an edge controller. Likewise, a global controller is an edge controller.

One of the most revolutionary aspects of having robust compute resources at the DDC level is that these edge devices can do analytics processing of large data sets. Application developers are challenged to make the most of this new capability. The Buildings-IoT represents an opportunity to radically rethink the software architectures that define core

* Work in progress workflows such as detecting and diagnosing faults in equipment, responding to occupant hot/cold calls, shifting energy loads to participate in demand response programs, and performing other building operations management tasks. Energy Analytics Controllers are capable of high-speed handling of the work involved in trending data, adding semantic tagging and generating analytics. Doing these tasks locally and sharing the results among other edge devices, opens the path to a host of new applications

SPECIFICATIONS

- **1 GHZ ARMTM 8 Processsor**
- **Debian Linux with Java 8**
- **SkySpark 3.0.16+**
- **1GB DDR3 RAM**
- **8GB 8-bit eMMC aon-board flash storage**
- **extensible with industrial grade microSD**
- **Two 1 Gigabit Ethernet ports**
- **One USB 2.0 port / Wifi a/b/n**
- **RTC built-in**

Sensor Specifications

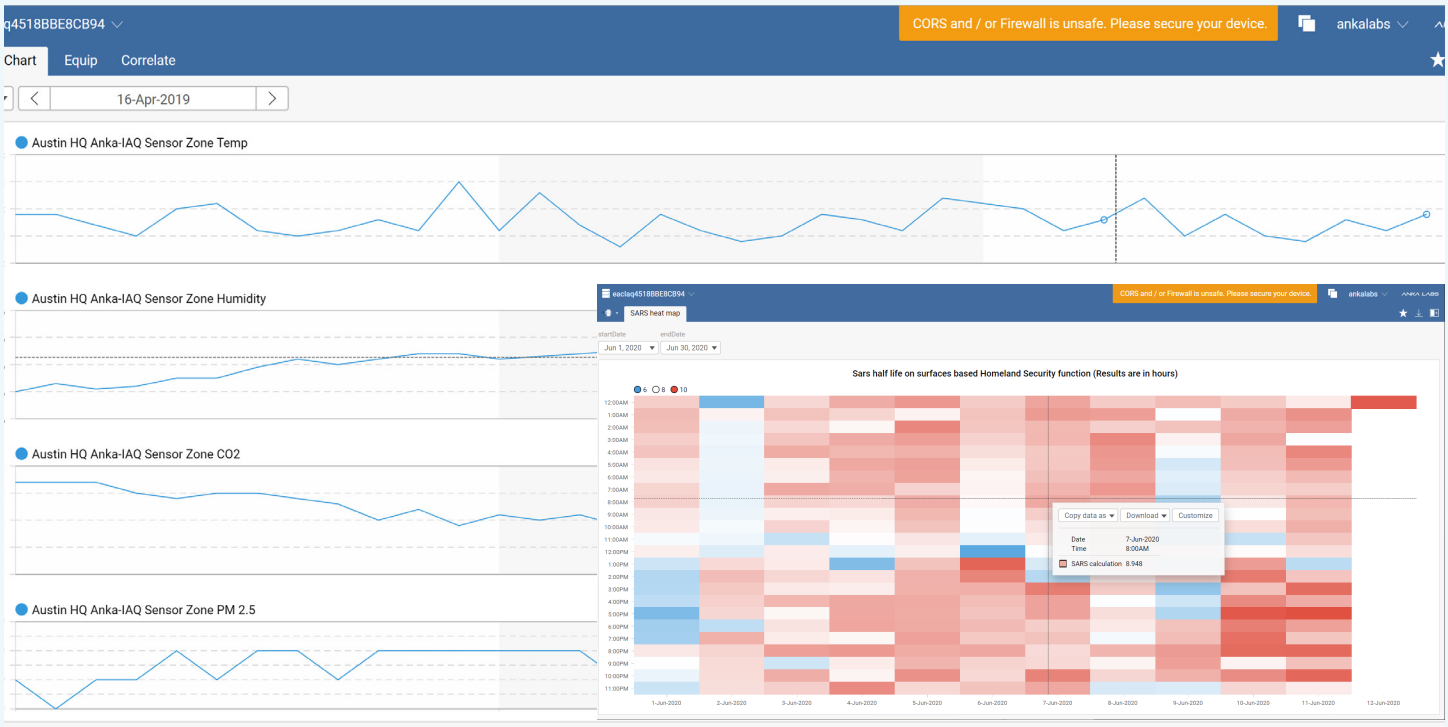
- CO2
- TVOC
- PM2.5
- TEMPERATURE
- HUMIDITY

Power Input

24 VAC

Environmental Conditions

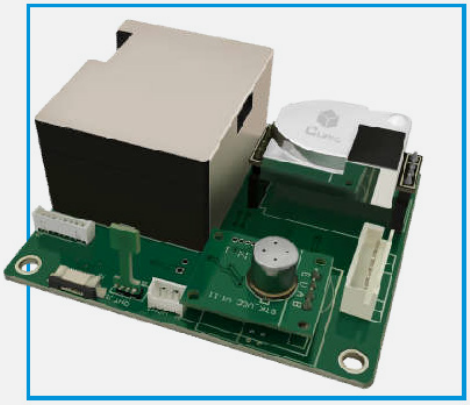
Temperature:	**40 to 140 F (4 to 60 C)**
Humidity:	**10-90% Relative, noncondensing**
Storage Temperature:	**-10 to 150 F (-23 to 66 C)**
Storage Humidity:	**0-95% Relative, noncondensing**



AM4100-I

INTEGRATED AIR QUALITY SENSOR MODULE

Applications
Air purifier
Air quality monitor
Air conditioner
Ventilation system
Consumer electronic products
Environmental monitoring



Description

AM4100-I is an integrated air quality sensor module, able to detect indoor particle concentration, CO2 concentration, VOC, RHT and output real-time measurement data. It is with stable performance, compact structure design, multi-function and optional connection ways.

Features

Highly integrated with sensors including laser particle, NDIR CO2, VOC, temperature and humidity for option

High accuracy and stable performance

Digital interface UART/I^2C

Easy to install and simple to debug

With voltage regulator design and EMC compliant, strong anti-static ability

Working Principle

The PM sensor integrated adopts laser scattering technology to detect PM2.5 mass concentration

The CO2 sensor integrated adopts NDIR technology to detect indoor CO2 concentration

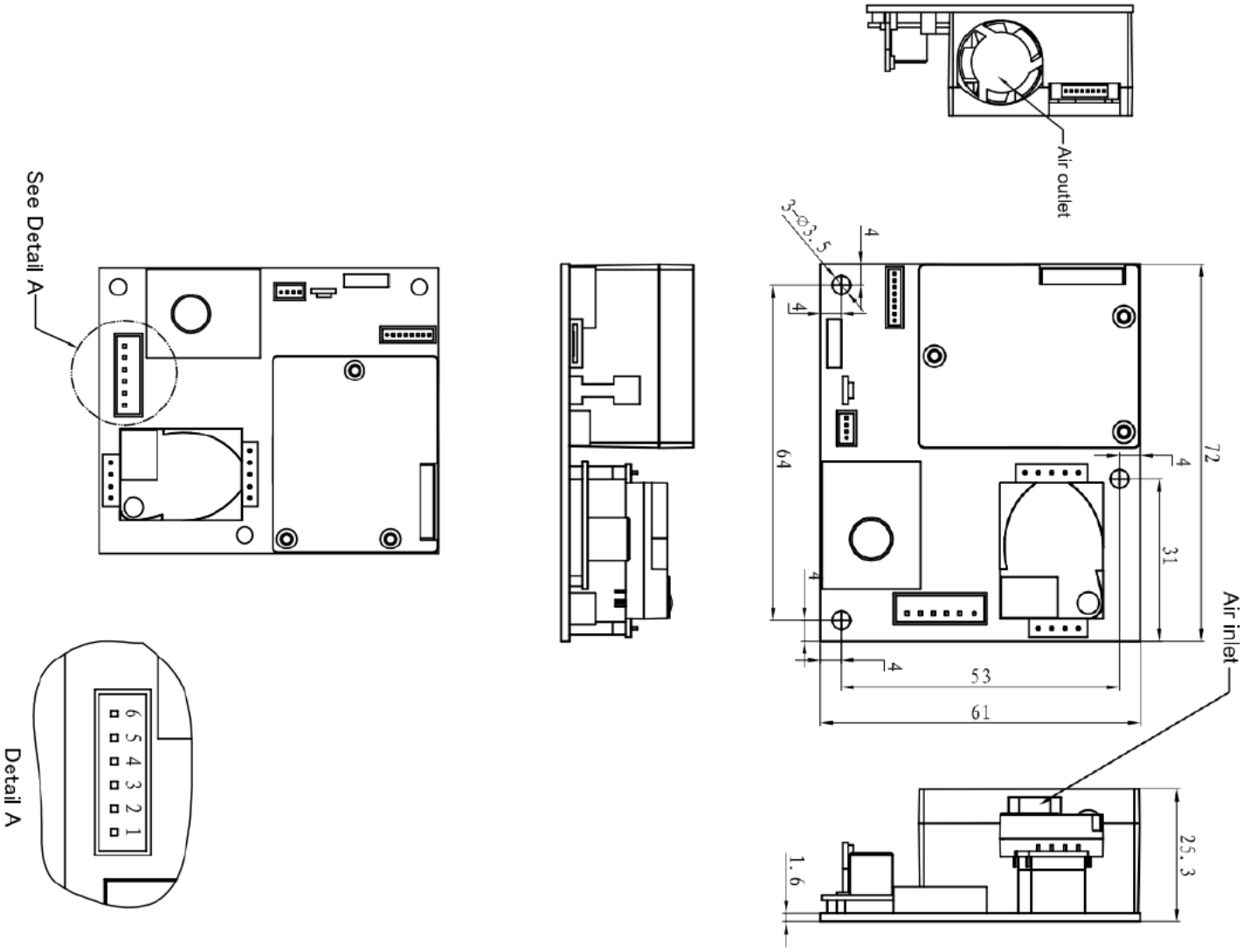
The TVOC sensor is based on semiconductor principle

The RH&T sensor integrated adopts capacitance resistance materials to detect indoor RH&T

SPECIFICATIONS

Integrated IAQ Sensor Specification	
Operating principle	CO2: NDIR technology PM: Laser scattering technology VOC: Semiconductor technology
Measurement range	PM2.5: 0~1000μg/m³ CO2: 400~2000ppm VOC: 0~3 level Temperature: -20°C ~ 60°C RH: 30%~80% RH (non-condensing)
PM2.5 measurement accuracy	≤ 100 μg/m³: ±15μg/m³ >100 μg/m³: ±15% of reading Condition: 25°C ± 2°C, 50 ± 10%RH Reference instrument: TSI8530 Dust source: Cigarette
CO2 measurement accuracy	±(50ppm+5% of reading) (25°C ± 2°C, 50 ± 10%RH)
Temperature accuracy	±1°C
Relative humidity accuracy	±5%RH
PM time to first reading	≤8s
CO2 responding time (warm up)	<120s
Data refresh rate	1s
Working condition	-10~50°C, 30%~80% RH (non-condensing)
Storage condition	-20~60°C, 0~95%RH
Working voltage	DC 5V±0.1V, ripple wave < 50mV
Average working current	<300mA (VOC:<80mA/CO2:<120mA/PM2.5:<80mA)
Standby consumption	≤1.5W
Signal output	UART_TTL (3.3V TTL), I2C (3.3V TTL)
Dimension	72*61*25.3 mm
Life span	PM: under ambient temperature and pressure, in the condition of continuous use, lifespan is 22000 hours. Lifespan could be prolonged by controlling working time interval of the optical source. CO2: ≥8-10 years

Dimensions and Connector



Ordering Information

Points	10	100	1000
ANALYTICS	**eac.ankalytik.10**	**eac.ankalytik.100**	**eac.ankalytik.1000**

*Ordering in 10 point increments.

ONLINE ORDER SITES

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Architecture