AS100 Datasheet

Aiming to create better and safer working environments and life experiences through the products we deliver.

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Outdoor Ambient Air Quality Detection System

AS100

The AS100 is an integrated device designed for all types of environmental monitoring. It can be used to detect temperature, humidity, PM2.5, PM10, wind speed, wind direction and other parameters in the environment. Each parameter is independent and highly sensitivity, allowing the user to freely integrate monitoring parameters. AS100 has the characteristics of high precision and good stability for various environmental monitoring. Equipped with a standard RS485 interface and support for the Modbus RTU protocol. AS100 integrates IoT and cloud interfaces, such as smart city boxes and NBIoT routers AP222 or LoRa node LC144 for real-time monitoring and analysis via remote smartphones or computers.

Features & Benefits

High Integrated Monitoring

- Intergraded multiple sensors
- Central management by sharing a signal output
- Support Industrial Modbus RTU protocol, RS485

Outdoor Protective Enclosure

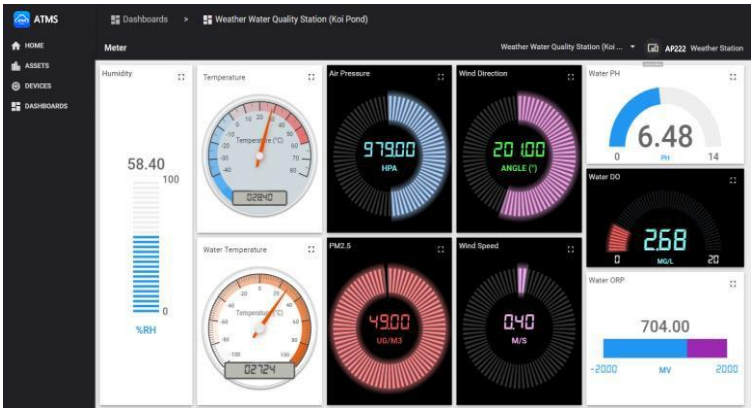
- Prevent direct ultraviolet radiation to the sensors
- Avoid rapid aging of sensors under harsh environmental conditions such as strong winds, rain, and snow
- The sensor parts are ventilated for truly sensing the changes in external detection parameters

Flexible Design

- Customized Shutter Height
- Single or multiple parameters both can use small shutter, small size, light weight and easy to install
- Customized Monitoring parameters
- Each parameter is independent and high sensitivity, users can freely integrate monitoring parameters

Work with IoT Cloud Platform - ATMS

- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Ordering Information

Model	Description
AS100-CO2	Outdoor ambient air quality detection system. Integrated embedded Hum., Temp., PM2.5, PM10 Sensor and external wind direction, wind speed sensor, output: RS485
AVC-ES104	Outdoor ambient air quality detection system. Integrated embedded Hum., Temp., PM2.5, PM10 Sensor , output: RS485
AVC-ES101-WD	Outdoor wind direction sensor, output: RS485
AVC-ES101-WS	Outdoor wind direction sensor, output: RS485

Specifications

AS100 System Parameter	
Power Input	12/24VDC (10~30VDC)
Communication	RS485 Modbus RTU
Warranty	1 year
AS100	
Communication	2 lines; Pin Definition: Yellow (Gray): RS485+; Blue: RS485-
Power Input	2 lines; Pin Definition: Brown: V+; Black: V-
AS100 Test Parameter	
Wind Speed	Detection range: 0-70m/s Accuracy: ±0.3m/s Working temperature: -20~60°C Operating humidity: 0-80% RH
Wind Direction	Detection range: 0~359° Working temperature: -20~60°C Operating humidity: 0-80% RH
Temperature	Detection range: -40~120° C Accuracy Level: ±0.5° C (25° C)
Humidity	Detection range: 0~99% RH Accuracy: ±3%RH (5%RH~95%RH, 25°C)
Fine Particulate Matter (PM2.5)	Detection range: 0-1000ug/m³ Measurement: Laser inspection Accuracy: <±10% (25°C) Resolution: 1ug/m³
Inhalable Particulate Matter (PM10)	Detection range: 0-1000ug/m³ Measurement: Laser inspection Accuracy: <±10% (25°C) Resolution: 1ug/m³
AVC-ES104 System Parameter	
Power Input	12/24VDC (10~30VDC)
Communication	RS485 Modbus RTU
Warranty	1 year
AVC-ES104	
Communication	2 lines; Pin Definition: Yellow (Gray): RS485+; Blue: RS485-
Power Input	2 lines; Pin Definition: Brown: V+; Black: V-
AVC-ES104 Test Parameter	
Temperature	Detection range: -40~120° C Accuracy Level: ±0.5° C (25° C)
Humidity	Detection range: 0~99% RH Accuracy: ±3%RH (5%RH~95%RH, 25°C)
Fine Particulate Matter (PM2.5)	Detection range: 0-1000ug/m³ Measurement: Laser inspection Accuracy: <±10% (25°C) Resolution: 1ug/m³
Inhalable Particulate Matter (PM10)	Detection range: 0-1000ug/m³ Measurement: Laser inspection Accuracy: <±10% (25°C) Resolution: 1ug/m³

Specifications

AVC-ES101-WD/WS	
Communication	2 lines; Pin Definition: Yellow (Gray): RS485+; Blue: RS485-
Power Input	2 lines; Pin Definition: Brown: V+; Black: V-
AVC-ES101-WS Wind Speed	Measuring range: 0-70m/s Accuracy: ±0.3m/s Working temperature: -20~60° C Operating humidity: 0-80% RH, non-condensing
AVC-ES101-WD Wind Direction	Measuring range: 0~ 359° Working temperature: -20~60° C Operating humidity: 0-80% RH, non-condensing
Basic parameters of the communication protocol	
Protocol	Modbus RTU
Data Bit	8 bit
Parity Check Bit	NO
Stop Bit	1
Error detection code	CRC
Baud Rate	2400bps/4800bps/9600bps, default setting 9600bps

AS100 Modbus Register Information

Default ID	Parameter Function	Register to add (hex/decimal)	PLC added (Index Number)	Note
	Device ID Store Add	07D0H / 2000	2001 (42001)	R/W , R a n g e :1~254
	Serial Baud Rate Add	07D1H / 2001	2002 (42002)	R/W , Default: 2 2(9600), 0(2400), 1(4800)
1	Temperature	01F4H / 500	501(40501)	R/O, Real Value = Read Value/10
1	Humidity	01F5H / 501	502(40502)	R/O, Real Value = Read Value/10
1	Fine Particulate Matter (PM2.5)	01F7H / 503	504(40504)	R/O, Real Value = Read Value
1	Inhalable Particulate Matter (PM10)	01F8H/ 504	505 (40505)	R/O, Real Value = Read Value
2	Wind Speed	0000H / 000	001 (40001)	R/O, Real Value = Read Value/10
3	Wind Direction	0001H / 001	002 (40002)	R/O , Integer angle value(0~359), Real Value = Read Value

R/W: Read & Write, R/O: Read-only

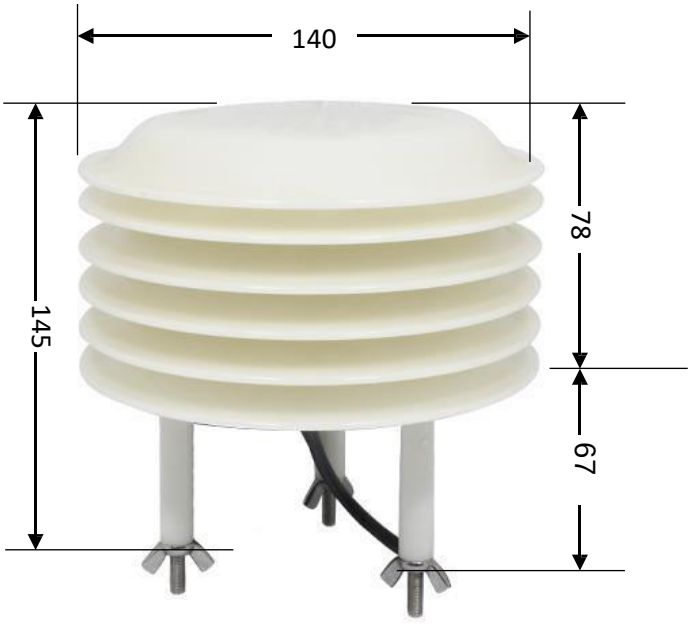
Function interface

AVC-ES101-WS wind speed

AVC-ES104 Temperature, Humidity, PM2.5, PM10

AVC-ES101-WD wind Direction

Installation dimensions



Main Equipment