



AVCOMM®

# AVC-ES106

## Datasheet

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



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## Outdoor Environment Air Quality Inspection System

### AVC-ES106

AVC-ES106 is an intergraded device and designed for all types of environmental monitoring. It can be used to detect multiple parameters of temperature, humidity, PM2.5, PM10, wind speed and wind direction in the environment. Each parameter is independent and high sensitivity, users can freely integrate monitoring parameters. AVC-ES106 has the characteristics of high precision and good stability, which is suitable for various environmental monitoring.

The AVC-ES106 is equipped with a standard RS485 interface and supports the Modbus RTU protocol, which can be integrated into the Internet of Things and cloud interfaces, such as smart city boxes and gateway AP222 or LoRa node AP144-LC, for real-time monitoring and analysis via remote smartphones or computers.



				
One-piece shutter box structure	Multi-sensor set	A variety of detection options	Highly sensitive easy to install	Superior performance long-term stability

### Features & Benefits

#### High Integrated Monitoring

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

#### Outdoor Protective Enclosure

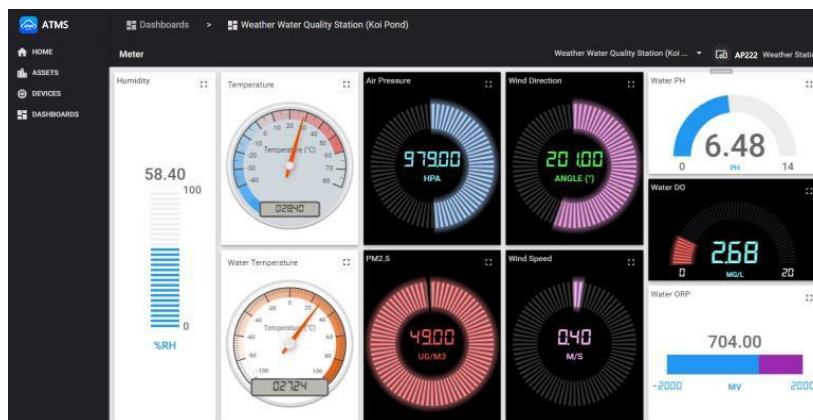
- Prevent direct ultraviolet radiation to the sensors
- Avoid rapid aging of sensors under harsh environmental conditions such as strong winds, rain, and snow
- The sensor parts are ventilated for truly sensing the changes in external detection parameters

#### 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
AVC-ES106	Outdoor Integrated Sensors- PM2.5, PM10, Temperature, Humidity, Wind Speed, Wind Direction, RS485 Modbus



## Specifications

System Parameter	
<b>Power Input</b>	10~30VDC
<b>Communication</b>	RS485 Modbus RTU
<b>Warranty</b>	1 year
<b>Communication</b>	2 Wires; Pin Define: Yellow : 485-A; Blue: 485-B
<b>Power Input</b>	2 Wires; Pin Define: Brown : V+; Black: V-
Inspection Parameter	
<b>Wind Speed</b>	Detection Range: 0~70m/s Accuracy: $\pm(0.2+0.03V)$ m/s, V for wind speed (60%RH,25°C) Housing Material: Polycarbonate Response Time: $\leq 0.5$ s
<b>Wind Direction</b>	Detection Range: 360°, 8 directions Response time: $\leq 0.5$ s Accuracy: 45°
<b>Temperature</b>	Detection Range: -40°C~ +80°C Accuracy : $\pm 0.5$ °C (25°C) Long Term Stability: $\leq 0.1$ °C/y Response Time: $\leq 1$ s
<b>Humidity</b>	Detection Range: 0~99% RH Accuracy : $\pm 3$ %RH (60%RH,25°C) Long Term Stability: $\leq 1$ %/y Response Time: $\leq 1$ s
<b>PM2.5</b>	Detection Range: 0-1000ug/m <sup>3</sup> Response Time: <90 Sec Accuracy: 50% @0.3um, 98% @ $\geq 0.5$ um, $\pm 10$ ug/m <sup>3</sup> @0~100ug/m <sup>3</sup> Resolution: 1ug/m <sup>3</sup>
<b>PM10</b>	Detection Range: 0-1000ug/m <sup>3</sup> Response Time: <90 Sec Accuracy: 50% @0.3um, 98% @ $\geq 0.5$ um, $\pm 10$ ug/m <sup>3</sup> @0~100ug/m <sup>3</sup> Resolution: 1ug/m <sup>3</sup>
Communication Protocol Basic Parameter	
<b>Protocol</b>	Modbus RTU
<b>Data bits</b>	8 bit
<b>Parity bit</b>	No
<b>Stop bit</b>	1
<b>Error Detecting Code</b>	CRC
<b>Baud Rate</b>	2400 bit/s,4800 bit/s, 9600 bit/s, default setting is 4800 bit/s

ES106 Modbus Register Information				
Register Address	PLC or Configuration Address	Content	Operation	Description
500	40501	Humidity Value	Read only	Real Value = Read Value /10
501	40502	Temperature Value	Read only	Real Value = Read Value /10
503	40504	PM2.5 Value	Read only	Real Value
504	40505	PM10 Value	Read only	Real Value
0000H	40001	Wind Speed	Read only	Real Value = Read Value /10
0001H	40002	Wind Direction	Read only	Real Value

## Function interface



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



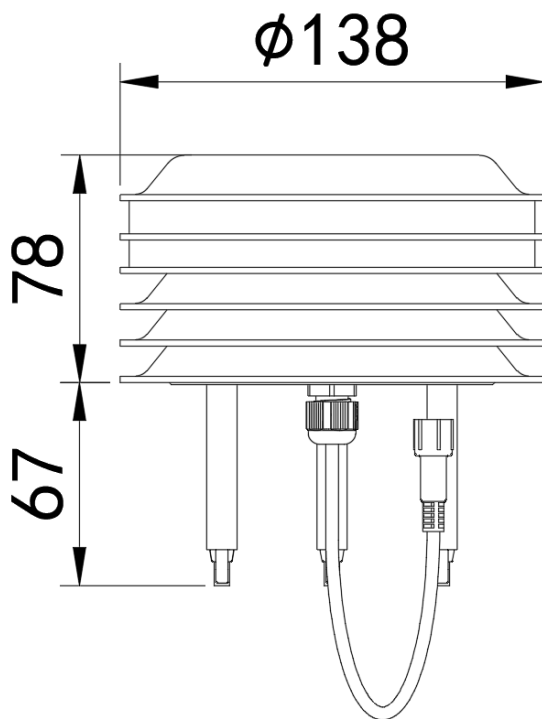
AVC-ES101-WS Wind Speed



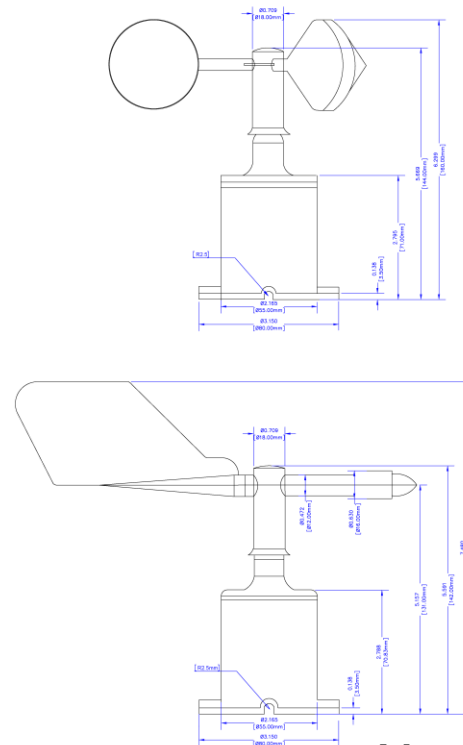
AVC-ES101-WD Wind Direction

## Installation dimensions

Unit:  $\frac{\text{inch} \pm 0.040}{\text{mm} \pm 1.00}$



Main Device



Mount Kit