AVC-ES101 Series Datasheet

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

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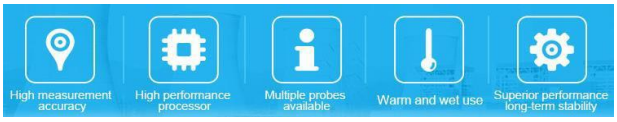
Outdoor Air Atmospheric Pressure Sensor
AVC-ES101AT

Outdoor Protective Design

- 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
- Single or multiple parameters both can use small shutter,
- small size, light weight and easy to install

Optional IoT Router and Cloud Platform - ATMS

- Support Modbus to connect optional Gateway AP222 for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits

Testing Range	Air pressure: 0~120kpa; Temperature: -40℃~+80℃
Digital Signal output	RS485 (Modbus protocol)
Working Voltage	10~30VDC
Power consumption	≤0.5w
Accuracy	Air Pressure: ±0.15Kpa@25℃ 101Kpa; Temperature: ±0.5℃（25℃）
Long-term stability	Air pressure: -0.1kpa/year Temperature: ≤0.1° C/year
Response time	≤1s
Working Environment	-40~+60° C , 0%~95%RH (non-condensing)

Register Address	PLC or Configuration Address	Content	Operation
0000 H	40001	Air pressure (Kpa) upload data is 10 times real data	Read only
0001H	42001	Temperature upload data is 10 times the real data	Read only

Ordering Information

Model Name	Description
AVC-ES101AT	Outdoor Air Atmospheric Pressure Sensor, 0~120kpa, RS485 Modbus, 10~30V Power.

Outdoor Noise Level Sensor
AVC-ES101NL

Outdoor Protective Design

- 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
- Single or multiple parameters both can use small shutter,
- small size, light weight and easy to install

Optional IoT Router and Cloud Platform - ATMS

- Support Modbus to connect optional Gateway AP222 for one or many sensors
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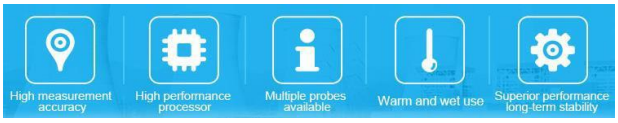


Features & Benefits

Noise measurement range	30~130dB (20Hz~12.5KHz)
Noise resolution	0.1dB
Accuracy	±0.5dB
Signal output	RS485 (Modbus protocol)
Operating Voltage	10~30VDC
Power	0.4W
Working Environment	-20~+60°C , 0~95%RH（Non-condensing）
Response time	≦3 seconds
stability	<2% in service period

Register Address	PLC or Configuration Address	Content	Operation
0000 H	40001	Instantaneous Noise Value The uploaded data is 10 times the true value	Read only

Ordering Information

Model Name	Description
AVC-ES101NL	Outdoor Noise Level Sensor, 30~130dB (20Hz~12.5KHz), RS485 Modbus, 10-30V Power

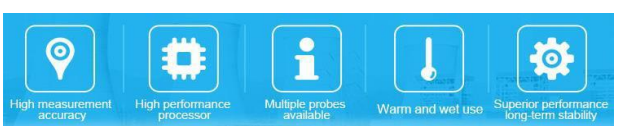
Outdoor Anemometer Wind Speed Sensor
AVC-ES101WS

Outdoor Protective Design

- Prevent direct ultraviolet radiation to the sensors
- Avoid rapid aging of sensors under harsh environmental conditions such as strong winds, rain, and snow

Optional IoT Router and Cloud Platform - ATMS

- Support Modbus to connect optional Gateway AP222 for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits

Housing Material	Polycarbonate
Wind measurement range	0~70m/s
Resolution	0.1m/s
Signal output	RS485 (Modbus protocol)
Operating Voltage	10~30VDC
Power consumption	≤ 0.3W
Working Environment	-20~+60°C , 0%RH~80%RH
Response time	≤1s
Accuracy	±(0.2+0.03V)m/s, V=wind speed

Register Address	PLC or Configuration Address	Content	Operation
0000 H	40001	Instantaneous Wind Speed upload data is 10 times real value	Read only

Ordering Information

Model Name	Description
AVC-ES101WS	Outdoor Anemometer Wind Speed Sensor, 0~70Meters/Second, RS485 Modbus, 10~30V Power

Outdoor Wind Direction Sensor
AVC-ES101WD

Outdoor Protective Design

- Prevent direct ultraviolet radiation to the sensors
- Avoid rapid aging of sensors under harsh environmental conditions such as strong winds, rain, and snow

Optional IoT Router and Cloud Platform - ATMS

- Support Modbus to connect optional Gateway AP222 for one or many sensors
- Real-time online monitoring, analysis, reporting
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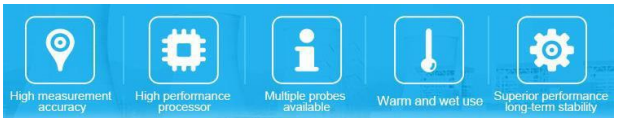


Features & Benefits

Housing Material	Polycarbonate
Wind measurement range	360°, 8 directions
Accuracy	45°
Signal output	RS485 (Modbus protocol)
Operating Voltage	10~30VDC
Power consumption	0.15W
Working Environment	-20~+60°C , 0%RH~80%RH
Response time	≤0.5s

Register Address	PLC or Configuration Address	Content	Operation
0000 H	40001	Wind direction (0~7) Upload data is real value	Read only
0001 H	40002	Wind Direction (0~360°) Upload data is real value	Read only

Ordering Information

Model Name	Description
AVC-ES101WD	Outdoor Wind Direction Sensor, 360 degree, RS485 Modbus, 10-30V Power

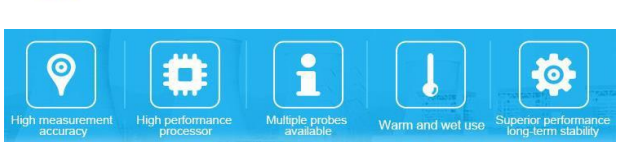
Outdoor Rain Measurement Sensor
AVC-ES101RG

Outdoor Protective Design

- Prevent direct ultraviolet radiation to the sensors
- Avoid rapid aging of sensors under harsh environmental conditions such as strong winds, rain, and snow

Optional IoT Router and Cloud Platform - ATMS

- Support Modbus to connect optional Gateway AP222 for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits

Housing	Stainless, 200mm Diameter
Measurement Range	0~4mm/Min (Max.8mm/Min)
Resolution	0.2mm/0.5mm (optional)
Signal output	RS485 (Modbus protocol)
Operating Voltage	4.5~30VDC
Working Environment	0~+50°C , < 95% (40º)
Storage Environment	-40~+125° C , < 80% (non-condensing)
Max power consumption	0.24W
Measurement error	≤±3%

Address	Function Code	Start Register Address (high)	Start Register Address (low)	Register Length (high)	Register Length (low)	CRC16 (low)	CRC16 (high)
0x01	0x03	0x00	0x00	0x00	0x0A	0xC5	0xCD

Ordering Information

Model Name	Description
AVC-ES101RG	Outdoor Rain Measurement Sensor, 0~4mm/Min (Max.8mm/Min), RS485 Modbus, 4.5~30V Power

Outdoor UV Measurement Sensor
AVC-ES101UV

Highly Sensitive UV measurement

- The ultraviolet measurement is highly sensitive to 290-390nm to accurately measure ultraviolet intensity
- The transparent window adopts high-quality light- transmitting materials for over 95% of ultraviolet transmittance.
- Wall Mount Enclosure for outdoor environment

Optional IoT Router and Cloud Platform - ATMS

- Support Modbus to connect optional Gateway AP222 for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management

Features & Benefits

Accuracy	±10% FS（@365nm,60%RH,25℃）
Measurement	0~15 mW/ cm2
Sensitivity	0.01 mW/ cm2
UV Index	0~15
Wave Length Range	290~390 nm
Digital Signal output	RS485 (Modbus protocol)
Working Voltage	10~30VDC
Linearity	≤±1%
Stability	≤±3%
Response Time	0.2 Second
Working Environment	-25~+60°C
Max power consumption	0.06W

Register Address	PLC or Configuration Address	Content	Operation	Description
0000 H	40001	UV intensity	Read only	Uploaded data is 100 times of Actual Value
0001 H	40002	UV Index	Read only	Actual value
0052H	40083	UV intensity deviation value	Read and write	Uploaded data is 100 times of Actual Value
07D0 H	42001	Slave ID	Read and write	1 ~ 254 (Factory Default 1)
07D1H	42002	Baud Rate	Read and write	00=2400 01=4800 02=9600

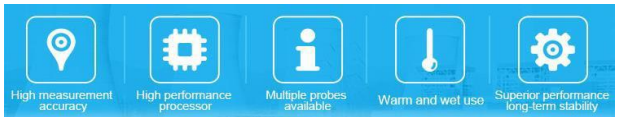
Ordering Information

Model Name	Description
AVC-ES101UV	Outdoor UV Sensor, 0~15 mW/ cm2, RS485 Modbus, 10~30V Power

Solar Radiation Sensor
AVC-ES101SR

The AVC-ES101SR adopts high precision photosensitive elements with wide spectrum absorption, high absorption, and good stability. The dust cover provides 95% transmittance of radiation and gives a excellent dust-proof and water-proof protection with special treatment to reduce dust adsorption and enhance the measurement accuracy.

The AVC-ES101SR supports standard Modbus RTU protocol with a 2-wire RS-485 communication interface that can be integrated with an IoT gateway, like as AP222, AP312, which with 4G/LTE, NB, WiFi transmission technologies, or through the cost efficiency solution - LoRa End-Node AP144-LC to upload environmental data to the cloud server for monitoring.



Features & Benefits

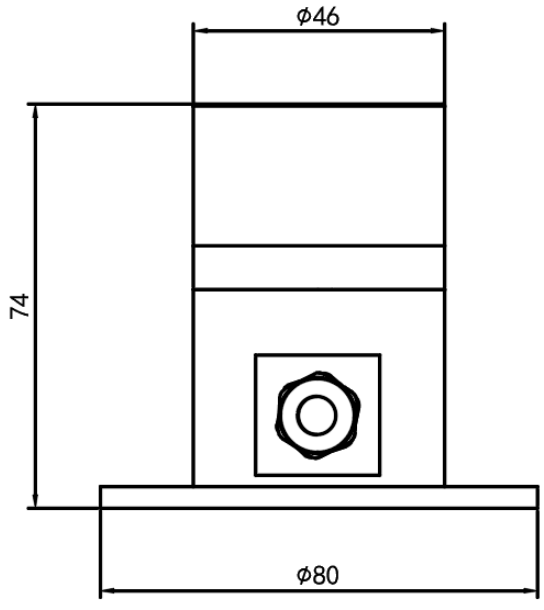
Excellent Solar Radiation Detection
- Photoelectric measuring technology
- Wide Measuring Range: 0 ~ 1800 w/m²

Water-Proof / Anti-Dust
- IP65 Ingress Protection
- Anti Dust Absorption Treatment
- Anti-U/V Plastic Housing

Modbus RTU Standard
- RS-485 Communication Interface
- Simply Data Access

Harsh Operating Environment
- Wide range power input DC7~30V
- Lower Power Consumption 0.06w
- Wide Operating Temperature -25~60°C

Dimension (mm)



Application

 Avcomm Technologies Inc. Add: 333 West Loop North Ste. 460, Houston, TX 77024

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Solar Radiation Sensor Parameters	
Measuring Range	0 ~1800 w/m2
Resolution	1 w/m²
Long term stability	≤±3%
Response time	≤ 10s
nonlinear	<±3%
System Operating Parameters	
Operating Temperature	-25 ~ 60℃
Power Input Range	7~30VDC (V+: Brown, V- : Black)
Power Consumption	0.06w
Communication Interface	RS-485 (RS485-A: Green, RS485-B: Blue)
Enclosure Material	Aluminum housing
Enclosure Protection	IP65 Protection Level
Enclosure Dimension	80mm (Diameter) x 74mm (High)

Register Address	Content	Operation	Description
0000 H	Solar radiation value	Read only	Real value
0052 H	Deviation value	Read and write	Solar radiation deviation value (0~1800)
07D0 H	Slave ID	Read and write	1 ~ 254 (Factory Default 1)
07D1 H	Baud Rate	Read and write	0=2400 1=4800 2=9600

Ordering Information

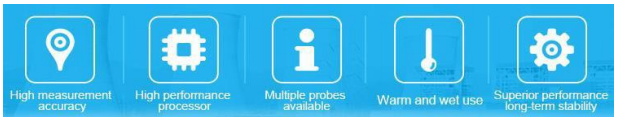
Model Name	Description
AVC-ES101SR	Solar Radiation Senor, Modbus RTU protocol, 2-wire RS-485 , 7~30VDC

Flood / Water Leak Detection Sensor
AVC-ES101-FL-5M/10M/20M/30M

The Flood Water Leak Detection Sensor AVC-ES101-FL is widely used in communication base stations, undergrounds, IT rooms, warehouses, cabinets and other places where water alarm is needed. The power input, water detection cable and signal output are completely isolated for security operation.

The water detection cable sensors are typically used to detect water leaks under floors but may also be used to detect water levels rising by fitting cable along a wall or surface. Water detection cable is designed to be used in conjunction the AVC-ES101-FL, and the length can be customized for 5, 10, 20, 30 meters.

Modbus



Features & Benefits

Power Input	10~30VDC
Power Consumption	0.4W
Detection	Natural Water
Operation Temperature Humidity	-20℃~+60℃，0%RH~80%RH
Output	RS485 Modbus
Water Detection Length	5M, 10M, 20M, 30M
Enclosure	IP53 Wall Mount

Register Address	PLC or Configuration Address	Content	Description
0004 H	40005	Measurement	Range：0~10m; Upload real data
0000 H	40001	Slave ID	1 ~ 254 (Factory Default 1)
0001 H	40002	Baud Rate	0=2400 1=4800 2=9600(Default)

Ordering Information

Model Name	Description
AVC-ES101-FL-5M	Outdoor Flood Water Detection Sensor, 5 Meter, RS485 Modbus, 10~30V Power
AVC-ES101-FL-10M	Outdoor Flood Water Detection Sensor, 10 Meter, RS485 Modbus, 10~30V Power
AVC-ES101-FL-20M	Outdoor Flood Water Detection Sensor, 20 Meter, RS485 Modbus, 10~30V Power
AVC-ES101-FL-30M	Outdoor Flood Water Detection Sensor, 30 Meter, RS485 Modbus, 10~30V Power