



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 Oxygen O2 Sensor AVC-ES10102

AVC-ES10102 has the characteristics of fast response and strong anti-interference ability. Through the compensation algorithm and multi-stage standard gas calibration, it also has the characteristics of long service life, high precision, high repeatability and high stability. It is suitable for warehouse, workshop, chemical plant, farm, confined space and other places that require real-time monitoring of oxygen concentration.



Features & Benefits

Measurement range	0~30%Vol
Measure accuracy	±2%FS
Resolution	0.1%Vol
Output signal	RS485 Modbus
Zero drift (-20~40°C)	±0.3%Vol
Repeatability	≤1%
Power supply	10~30VDC
Power consumption	0.12W
Operating temperature	-20°C~50°C
Operating humidity	5%~95%RH Non-condensing
Pressure range	90~110Kpa
Stability	≤5% signal value/year
Response time	≤10S
Preheat time	≥5 min

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0000 H	40001	Oxygen concentration value	0x03/0x04	0~300 (The value is expanded by ten times)
0002 H	40003			



Ordering Information

Model Name	Description
AVC-ES10102	Outdoor Oxygen O2 Sensor, 0~30%Vol, RS485 Modbus, 10-30V Power

Outdoor CH4 Sensor AVC-ES101CH4

AVC-ES101CH4 is a flameproof ExdIMb explosion-proof sensor, which has the characteristics of strong safety, fast response and strong anti-interference ability. Through the compensation algorithm and multi-stage standard gas calibration, it also has the characteristics of long service life, high precision, high repeatability and high stability. It is suitable for underground pipe gallery, underground parking, public toilet, garage, workshop, chemical plant, farm and other places that require real-time monitoring of CH4 concentration.



Features & Benefits

Measurement range	0-100%LEL
Measure accuracy	± 5% FS, not less than 5% Vol oxygen environment
Resolution	1%LEL
Output signal	RS485 Modbus
CH4 Zero drift	±2%FS
Repeatability	≤2%
Power supply	10~30VDC
Power consumption	0.9W
Operating temperature	-20°C~40°C
Operating humidity	0~95%RH Non-condensing
Pressure range	80~116Kpa
Stability	≤7% signal value/year
Response time	≤15S
Preheat time	≥5 min

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0000 H	40001	CH4 concentration value	0x03/0x04	0-100%LEL
0002 H	40003			



Ordering Information

Model Name	Description
AVC-ES101CH4	Outdoor CH4 Sensor, 0-100%LEL, RS485 Modbus, 10-30V Power

Outdoor CO Carbon Monoxide Sensor AVC-ES101CO-2000

AVC-ES101CO-2000 is an electrochemical carbon monoxide sensor, which has the characteristics of fast response and strong anti-interference ability. Through the compensation algorithm and multi-stage standard gas calibration, it also has the characteristics of long service life, high precision, high repeatability and high stability. It is suitable for underground parking, garage, workshop, confined space and other places that require real-time monitoring of CO concentration.



Features & Benefits

Measurement range	0-2000ppm
Measure accuracy	±5ppm or ±10%
Resolution	1ppm
Output signal	RS485 Modbus
Zero drift	±3ppm
Repeatability	≤2%
Power supply	10~30VDC
Power consumption	0.18W
Operating temperature	-20°C~50°C
Operating humidity	15%~90%RH Non-condensing
Pressure range	90~110Kpa
Stability	≤2% signal value/month
Response time	≤30S
Preheat time	≥5 min

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0000 H	40001	CO concentration value	0x03/0x04	0~1000
0002 H	40003			Corresponds to CO 0-1000ppm



Ordering Information

Model Name	Description
AVC-ES101CO-2000	Outdoor CO Carbon Monoxide Sensor, 0~2000ppm, RS485 Modbus, 10-30V Power

Outdoor H2S Sensor AVC-ES101H2S-100

AVC-ES101H2S-100 is an electrochemical hydrogen sulfide sensor, which has the characteristics of fast response and strong anti-interference ability. Through the compensation algorithm and multi-stage standard gas calibration, it also has the characteristics of long service life, high precision, high repeatability and high stability. It is suitable for underground pipe gallery, underground parking, garage, workshop, chemical plant, farm, confined space and other places that require real-time monitoring of H2S concentration.



Features & Benefits

Measurement range	0-100ppm
Measure accuracy	±2ppm or ±10%
Resolution	1ppm
Output signal	RS485 Modbus
H2S Zero drift (-20°C~40°C)	±5ppm
Repeatability	≤2%
Power supply	10~30VDC
Power consumption	0.12W
Operating temperature	-20°C~50°C
Operating humidity	15%~90%RH Non-condensing
Pressure range	90~110Kpa
Stability	≤2% signal value/month
Response time	≤35S
Preheat time	≥5 min

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0000 H	40001	H2S concentration value	0x03/0x04	0~100
0002 H	40003			

Ordering Information

Model Name	Description
AVC-ES101H2S-100	Outdoor H2S Sensor,0~100ppm, RS485 Modbus, 10-30V Power

Outdoor Ozone O3 Sensor AVC-ES10103-10

AVC-ES10103-10 uses electrochemical technology for O3 concentration measurement. It is sensitive and reliably detects ozone concentrations. Using 485 communication, standard ModBus-RTU communication protocol, communication address and baud rate can be set, the maximum communication distance up to 2000 meters. It can be widely used in water sterilization, food processing and purification, food storage and preservation, medical health, household disinfection and purification, etc.



Features & Benefits

Measurement range	0-10ppm
Measure accuracy	±6%FS (@5ppm、25°C、50%RH)
Resolution	0.01ppm
Output signal	RS485 Modbus
Zero drift	±1%FS
Repeatability	≤2%
Power supply	10~30VDC
Power consumption	0.1W
Operating temperature	-10°C~55°C
Operating humidity	15%~90%RH Non-condensing
Pressure range	91~111Kpa
Stability	≤7% signal value/year
Response time	≤180S
Preheat time	≥5 min

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0000 H	40001	O3 concentration value (register 0 is the same as register 2, and the user can choose one of them according to the actual situation.)	0x03/0x04	Selected model range (0~100ppm is the actual value, 0~10ppm is 100 times actual value)
0002 H	40003			



Ordering Information

Model Name	Description
AVC-ES10103-10	Outdoor Ozone O3 Sensor, 0~10ppm, RS485 Modbus, 10-30V Power

Outdoor H2 Sensor AVC-ES101H2-1000

AVC-ES101H2-1000 is an electrochemical hydrogen sensor, which has the characteristics of fast response and strong anti-interference ability. Through the compensation algorithm and multi-stage standard gas calibration, it also has the characteristics of long service life, high precision, high repeatability and high stability. It is suitable for places where hydrogen leakage is easy and real-time concentration monitoring is required.



Features & Benefits

Measurement range	0-1000ppm
Measure accuracy	±5%FS
Resolution	1ppm
Output signal	RS485 Modbus
Zero drift	≤±10ppm
Repeatability	≤2%
Power supply	10~30VDC
Power consumption	0.9W
Operating temperature	-20°C~50°C
Operating humidity	15%~90%RH Non-condensing
Pressure range	90~110Kpa
Stability	≤2% signal value/month
Response time	≤70S
Preheat time	≥5 min

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0000 H	40001	H2 concentration value	0x03/0x04	Actual value
0002 H	40003			



Ordering Information

Model Name	Description
AVC-ES101H2-1000	Outdoor H2 Sensor, 0-1000PPM, RS485 Modbus, 10-30V Power

Outdoor NH3 Sensor AVC-ES101NH3

AVC-ES101NH3 has the characteristics of fast response and strong anti-interference ability. Through the compensation algorithm and multi-stage standard gas calibration, it also has the characteristics of long service life, high precision, high repeatability and high stability. It is suitable for agricultural greenhouse, breeding farm, pesticide manufacturing plant, chemical plant and other places that require real-time monitoring and control of NH3.



Features & Benefits

Measurement range	0~50ppm, 0~100ppm
Measure accuracy	±8%
Resolution	0~50ppm: 0.1ppm; ~100ppm: 1ppm
Output signal	RS485 Modbus
Zero drift	±2ppm
Repeatability	≤2%
Power supply	10~30VDC
Power consumption	0.12W
Operating temperature	-20°C~50°C
Operating humidity	15%~90%RH Non-condensing
Pressure range	90~110Kpa
Stability	≤2% signal value/month
Response time	≤90S
Preheat time	≥5 min

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0000 H	40001	NH3 concentration value	0x03/0x04	When the range is 50ppm, the value is expanded by 10 times, and when the range is 100ppm or 500ppm, the actual value is uploaded
0002 H	40003			



Ordering Information

Model Name	Description
AVC-ES101NH3-50	Outdoor NH3 Sensor, 50ppm (0.1ppm), RS485 Modbus, 10-30V Power
AVC-ES101NH3-100	Outdoor NH3 Sensor, 100ppm (1ppm), RS485 Modbus, 10-30V Power

Outdoor Sulfur Dioxide SO2 Sensor AVC-ES101SO2-2000

AVC-ES101SO2-2000 is an electrochemical sulfur dioxide sensor, which has the characteristics of fast response and strong anti-interference ability. Through the compensation algorithm and multi-stage standard gas calibration, it also has the characteristics of long service life, high precision, high repeatability and high stability. It is suitable for places where the leakage concentration of sulfur dioxide needs to be monitored.



Features & Benefits

Measurement range	0~2000ppm
Measure accuracy	±5%FS or ±10%
Resolution	1ppm
Output signal	RS485 Modbus
Zero drift	≤±4ppm
Repeatability	≤2%
Power supply	10~30VDC
Power consumption	0.18W
Operating temperature	-20°C~50°C
Operating humidity	15%~90%RH Non-condensing
Pressure range	90~110Kpa
Stability	≤2% signal value/month
Response time	≤70S
Preheat time	≥5 min

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0000 H	40001	SO2 concentration value	0x03/0x04	When the range is 20ppm, the value is expanded by 10 times, and when the range is 2000ppm, the actual value is uploaded
0002 H	40003			



Ordering Information

Model Name	Description
AVC-ES101SO2-2000	Outdoor Sulfur Dioxide SO2 Sensor, 0~2000ppm, RS485 Modbus, 10-30V Power

Outdoor Nitrogen Dioxide NO2 Sensor AVC-ES101NO2-2000

AVC-ES101NO2-2000 is an electrochemical nitrogen dioxide sensor, which has the characteristics of fast response and strong anti-interference ability. Through the compensation algorithm and multi-stage standard gas calibration, it also has the characteristics of long service life, high precision, high repeatability and high stability. It is suitable for places where the leakage concentration of nitrogen dioxide needs to be monitored.



Features & Benefits

Measurement range	0~2000ppm
Measure accuracy	±5%FS
Resolution	1ppm
Output signal	RS485 Modbus
Zero drift	≤±4ppm
Repeatability	≤2%
Power supply	10~30VDC
Power consumption	0.18W
Operating temperature	-20°C~50°C
Operating humidity	15%~90%RH Non-condensing
Pressure range	91~111Kpa
Stability	≤2% signal value/month
Response time	≤60S
Preheat time	≥5 min

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0000 H	40001	NO2 concentration value	0x03/0x04	When the range is 20ppm, the value is expanded by 10 times, and when the range is 2000ppm, the actual value is uploaded
0002 H	40003			



Ordering Information

Model Name	Description
AVC-ES101NO2-2000	Outdoor Nitrogen Dioxide NO2 Sensor, 0~2000ppm, RS485 Modbus, 10-30V Power

Outdoor Air Monitor Quality Sensor (PM2.5, PM10) AVC-ES101PM

AVC-ES101PM uses the laser scattering measurement principle. Through the unique dual-frequency data acquisition technology, the number of particles of equivalent particle size per unit volume is obtained. A scientifically unique algorithm is used to calculate the mass concentration of particulate matter of equivalent particle size per unit volume. It can be used in outdoor weather station, dust monitoring, library, archives, industrial plant and other places that need PM2.5 or PM10 concentration monitoring.



Features & Benefits

Measurement range	0-1000ug/m3
Measure accuracy	Particulate counting efficiency: 50%@0.3um, 98%@>=0.5um. ±10ug/m3@0~100ug/m3
Resolution	1ug/m3
Output signal	RS485 Modbus
Power supply	10~30VDC
Power consumption	0.5W
Operating temperature	-20°C~60°C
Operating humidity	0~95%RH Non-condensing
Response time	≤90S
Preheat time	≤2min

Register Address	PLC or Configuration Address	Content	Operation
0000 H	40001	PM2.5 uploaded data is actual value	Read only
0001 H	40002	PM10 uploaded data is actual value	Read only
0002H	40003	PM1.0 uploaded data is actual value	Read only



Ordering Information

Model Name	Description
AVC-ES101PM	Outdoor Air Monitor Quality Sensor (PM2.5, PM10), 0~1000ug/m3, RS485 Modbus, 10-30V Power

Outdoor CO2 Carbon Dioxide Sensor AVC-ES101CO2-5000

AVC-ES101CO2-5000 adopts new infrared verification technology for CO2 concentration measurement, which responds quickly and sensitively, avoiding the problem of working life and long-term drift of traditional electrochemical sensors. Built-in temperature compensation, less affected by temperature. It is suitable for agricultural greenhouse, flower cultivation, edible fungus planting and other places that require CO2 monitoring.



Features & Benefits

Measurement range	0~5000ppm
Measure accuracy	±(40ppm+ 3%F·S) (25°C)
Nonlinear	<1%F·S
Output signal	RS485 Modbus
Power supply	10~30VDC
Power consumption	0.3W
Operating temperature	-10°C~50°C
Operating humidity	0~80%RH Non-condensing
Temperature effect	Built-in temperature compensation
Stability	<2%F·S
Response time	≤90S
Preheat time	2min (available), 10min (maximum accuracy)

Register Address	PLC or Configuration Address	Content	Function Codes	Range and Description
0002 H	40003	CO2 concentration value	Read only	0~5000
003A H	40059	CO2 upper limit alarm value	Read and write	0~5000
003BH	40060	CO2 lower limit alarm value	Read and write	0~5000
003D H	40062	CO2 calibration value	Read and write	-2000~2000
07D0 H	42001	Device ID	Read and write	1~254 (Factory default 1)
07D1H	42002	Device baud rate	Read and write	0=2400, 1=4800, 2=9600



Ordering Information

Model Name	Description
AVC-ES101CO2-5000	Outdoor CO2 Carbon Dioxide Sensor, 0~5000ppm, RS485 Modbus, 10-30V Power