

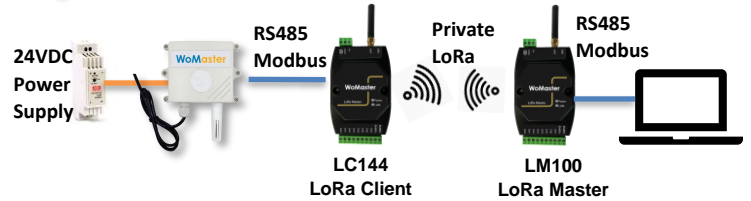
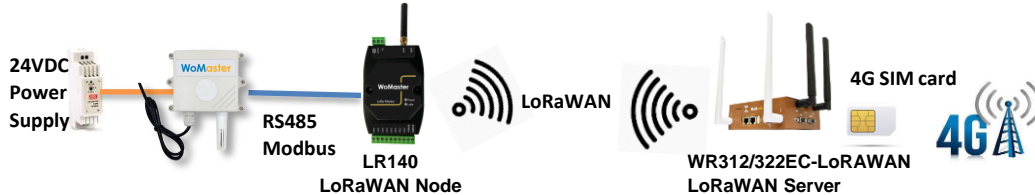
Outdoor Air Quality Sensor

- Outdoor Protective Design against direct ultraviolet radiation
- Well ventilated for measure changes in external detection parameters
- Single or multiple parameters in small shutter, small size, light weight and easy to install
- 2-Wire RS485 Modbus output to connect to optional cellular gateway WR222 or LC144/LR140 LoRa/LoRaWAN nodes
- 24(10-30) VDC Power Input and Real-time measurement
- 4~20mA or 0~10V Output by Special Order



Model		Measurement	Accuracy	Dimension
ES101-CO-2000	Outdoor CO Carbon Monoxide Sensor	0~2000ppm	±3%, 1ppm	110x85x44(mm)
ES101-O3-10	Outdoor Ozon O³ Sensor	0-10ppm	±6%, 0.01ppm	110x85x44(mm)
ES101-CO2-5000	Outdoor CO² Carbon Dioxide Sensor	0-5000ppm	±40ppm +3%FS	110x85x44(mm)
ES101-CO2-HC	Outdoor CO² Carbon Dioxide Sensor	0 ~ 100%Vol	±3%FS	110x85x44(mm)
ES101-O2	Outdoor Oxygen O² Sensor	0~25%Vol	±3%FS, 0.1%VOL	110x85x44(mm)
ES101-PM	Outdoor Air Monitor Quality Sensor (PM2.5, PM10)	0~1000ug/m3	1ug/m3, 10%	110x85x44(mm)
ES101-TVOC	Outdoor TVOC (Total Volatile Organic Compounds) Sensor	0~60000ppb	1ppb±8%FS±125ppb	110x85x44(mm)
ES101-NO2-2000	Outdoor Nitrogen Dioxide NO² Sensor	0-2000ppm	0.1ppm	110x85x44(mm)
ES101-NO-2000	Outdoor Nitric Oxide NO Sensor	0-2000ppm	1ppm	110x85x44(mm)
ES101-SO2-2000	Outdoor Sulphur Dioxide SO² Sensor	0-2000ppm	1ppm +3%FS	110x85x44(mm)
ES101-NH3-50 ES101-NH3-100 ES101-NH3-500	Outdoor Ammonia NH³ Sensor	0-50ppm 0-100ppm 0-500ppm	0.1ppm 1ppm 1ppm	110x85x44(mm)
ES101-H2S-100	Outdoor Hydrogen Sulfide H₂S Sensor	0-100ppm	1ppm +3%FS	110x85x44(mm)
ES101-H2-1000	Outdoor Hydrogen H₂ Sensor	0-1000ppm	1ppm +3%FS	110x85x44(mm)
ES101-CH4	Outdoor Methane CH₄ Sensor	0-100% Lower Explosive Limit (LEL)	1% LEL +5%FS	110x85x44(mm)
ES101-SMK-2000 ES101-SMK-10000	Outdoor Smoke Sensor	0-2000ppm 0-10000ppm	+5%FS	110x85x44(mm)

1) Sensor Connect to PC/HMI/PLC

2) Sensor Connect to Private LoRa to PC/HMI/PLC

3) Sensor Connect to LoRaWAN Gateway

4) Sensor Connect to LTE NB-IoT Gateway SCB111-485-NB

5) Sensor Connect to WiFi + LTE Gateway WR222-WLAN+LTE


Optional Accessory

Item	
MDR-40-24	Din-Rail Power Supply INPUT:85-264VAC, 120-370VDC, OUTPUT: 24VDC/1.7A, -20 ~ +70°C
ThingsMaster OTA-5GW	ThingsMaster OTA for 5 gateways, One Year License
LM100	LoRa Master / Modbus RTU Client (Must work with LC144) (with LoRa antennas)
LC144	LoRa End-Node, 8CH AIO, 1 Modbus RTU 485 2-wire, 2 x 0~10V input, 2 x 4~20mA input, 1 x 0~10V Output, Open Collect (O.C.), 1 x 4~20mA Output, 1 x PWM Output (0~5V), 1 x PWM (0~10V), Open Collect (O.C.) Type, 1 x SMA /LoRa Antenna (Must work with LM100 or LM200)
LR140	LoRa WAN End-Node, 4CH AI, 1 Modbus RTU 485 Host, 1 x RS485 Host, 2-wire, 1 x SMA /LoRa Antenna Connector (with LoRa antennas)
WR322GR-EC-LTE-LORAWAN	Industrial LoRaWAN Gateway, 2GbE+2COM, LTE 2SIM, (with LTE and LoRa antennas)(Must work with LR140)
WR312GR-EC-LORAWAN	Industrial LoRaWAN Gateway, 2GbE+2COM (Must work with LR140)
WR222-WLAN+LTE	Industrial Wireless IIoT Field Router, 2FE+1COM, SD, 802.11b/g/n WLAN, 1SIM (with WiFi, LTE Antennas)
SCB111-485-NB-DC	Outdoor Modbus RS485 to NB-IoT / LTE Cat M1 Gateway

ES101CO-2000

Outdoor CO Carbon Monoxide Sensor

Wide Measuring Range, High Accuracy

- 1000 / 2000ppm, +/-3% Accuracy
- 1 ppm Resolution, ≤ 2% Stability

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

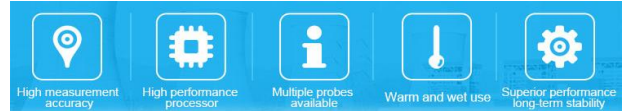
- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBloT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



CO measurement range	ES101CO-2000: 0~2000ppm
Accuracy	±3%
CO resolution	1ppm
Stability	≤2% Signal / Month
Signal output	RS485 2-Wire output (Modbus protocol)
Operating Voltage	10~30VDC
Working Environment	-20~+50°C , 15-90%RH
Power consumption	<0.18w
Response time	≤ 3 Sec.
Dimension & Installation	85 x110 x 44mm; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	CO concentration value	Range : 0~2000ppm Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101CO-2000	Outdoor CO Carbon Monoxide Sensor, 0~2000ppm, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit, 1 x Quick Installation Guide
	2x Expansion plugs, 2 x Self-tapping screws

*4~20mA / 0~5V / 0~10V output by request

*ES101CO-1000 by request

ES101O3-10

Outdoor Ozon O3 Sensor

Wide Measuring Range, High Accuracy

- 10/100ppm, +/-6% Accuracy in Full Scale
- 0.01 ppm Resolution, ≤ 7% Stability/Year

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

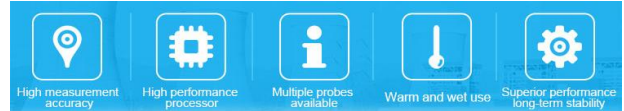
- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBloT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



O3 measurement range	ES101-O3-10: 0-10ppm
O3 resolution	ES101-O3-10: 0.01ppm
Accuracy	±6%
Stability	<7% Signal / Year
Signal output	RS485 2-wire output (Modbus protocol)
Operating Voltage	10~30VDC
Working Environment	-10~+50°C , 15-90%RH
Power consumption	<0.12w
Response time	≤35 seconds
Dimension & Installation	85 x110 x 44mm; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	O3 concentration value	Range : 0~10ppm Upload data 100 times real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101O3-10	Outdoor Ozon O3 Sensor, 0~10ppm, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

*4~20mA / 0~5V / 0~10V output by request

*ES100O3-100 by request

ES101-CO2-5000

Outdoor CO2 Carbon Dioxide Sensor

Wide CO2 Measuring Range

- 5000ppm with +/- 40ppm Accuracy in full-scale
- Widely applied at Heavy Air-Pollution Area

Std. Modbus RTU RS-485, Wide Power Range

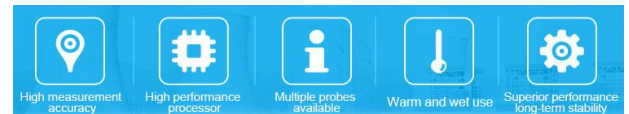
- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBIoT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits

CO2 Measurement Range:	0-5000ppm
Digital Signal output	RS485 2-Wire output (Modbus protocol)
Working Voltage	10-30VDC
Power consumption	< 0.4w
CO2 Accuracy	±40ppm +3%FS (25°C)
Working Environment	-10-+50°C , 0-80%RH
Stability	<2% Signal / Year
Response time	≤90s with 90% step change
Dimension & Installation	85 x110 x 44mm; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0002 H	40003	CO2 concentration value	Range : 0~5000ppm Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101CO2-5000	Outdoor CO2 Carbon Dioxide Sensor, 0~5000ppm, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

*4~20mA / 0~5V / 0~10V output by request

*ES101CO2-10000 by request

ES101-CO2-HC

Outdoor CO2 Carbon Dioxide Sensor High Concentration

Wide CO2 Measuring Range

- 0 to 100% Vol High Concentration CO2 Measurement
- Widely applied at Heavy Air-Pollution Area

Std. Modbus RTU RS-485, Wide Power Range

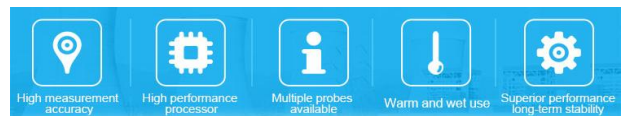
- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

- IP65 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBIoT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits

CO2 Measurement Range:	0 ~ 5%Vol : 0.5%Vol +3% current value 0 ~ 20%Vol : 0.5%Vol +3% current value 0 ~ 50%Vol : 1%Vol +3% current value 0 ~ 100%Vol : 1%Vol +3% current value
Digital Signal output	RS485 2-Wire output (Modbus protocol)
Working Voltage	10-30VDC
Power consumption	0.14W (24VDC)
CO2 Accuracy	±3%FS (25°C)
Working Environment	-10-+50°C , 0-80%RH
Stability	<2% Signal / Year
Response time	≤90s with 90% step change
Dimension & Installation	85 x110 x 44mm; Wall Mounting



Ordering Information

Model Name	Description
ES101CO2-HC5VoL	Outdoor CO2 Carbon Dioxide Sensor, High Concentration 0~5Vol, RS485 Modbus, 10-30V Power
ES101CO2-HC20VoL	Outdoor CO2 Carbon Dioxide Sensor, High Concentration 0~20Vol, RS485 Modbus, 10-30V Power
ES101CO2-HC50VoL	Outdoor CO2 Carbon Dioxide Sensor, High Concentration 0~50Vol, RS485 Modbus, 10-30V Power
ES101CO2-HC100VoL	Outdoor CO2 Carbon Dioxide Sensor, High Concentration 0~100Vol, RS485 Modbus, 10-30V Power



Ext Probe Thread: M30*1.5

Package List

- 1 x Product Unit
- 2x Expansion plugs, 2 x Self-tapping screws
- 1 x Extension Probe
- 1 x Quick Installation Guide

ES10102

Outdoor Oxygen O2 Sensor

Wide Measuring Range

- 0~25% VOL, +/-3% Accuracy in Full Scale
- 0.1% VOL Resolution

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

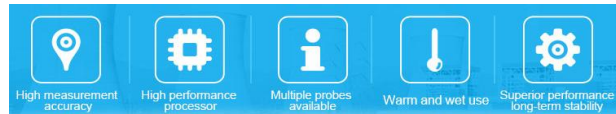
- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBloT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



O2 measurement range	0~25%Vol
O2 resolution	±3%FS
Accuracy	0.1%VOL
Signal output	RS485 2-wire output (Modbus protocol)
Stability	<5% Signal / Year
Operating Voltage	10~30VDC
Power consumption	<0.25W
Working Environment	-20~+50°C , 5-95%RH
Response time	<10 seconds
Pre-Heat Time	≥ 5Min
Dimension & Installation	87 x117 x 44; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	O2 concentration value %	Range : 0~250 Upload data 10 times real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES10102	Outdoor Oxygen O2 Sensor, 0~25%Vol, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

ES101PM

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

Wide Measuring Range , High Reliability

- 1000 ug/m3 for PM2.5, PM10
- I.R. Laser Detective Technology

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

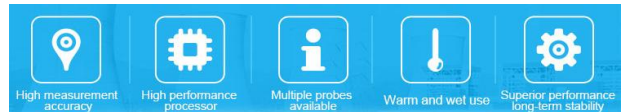
- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

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



Features & Benefits



PM2.5/10 measurement range	0~1000ug/m3
Resolution	1ug/m3
Accuracy	10%
Signal output	RS485 2-wire output (Modbus protocol)
Stability	< 7% Signal / Year
Operating Voltage	10~30VDC
Power consumption	< 1.2W
Working Environment	-20~+60°C , 0-80%RH
Response time	< 90 seconds
System Pre-Heat Time	≤ 2 Min.
Dimension & Installation	85 x110 x 44mm; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	PM2.5	Range : 0~1000ug/m3 ; Upload real data
0001 H	40002	PM10	Range : 0~1000ug/m3 ; Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101PM	Outdoor Air Monitor Quality Sensor (PM2.5, PM10), 0~1000ug/m3, RS485 Modbus, 10-30V Power
ES101PM-SH	Outdoor Air Monitor Quality Sensor (PM2.5, PM10), 0~1000ug/m3, RS485 Modbus, 10-30V Power, Shutter Box
Package List	
1 x Product Unit, 1 x Quick Installation Guide	
2x Expansion plugs, 2 x Self-tapping screws	*4~20mA / 0~5V / 0~10V output by request

ES101TVOC

Outdoor TVOC (Total Volatile Organic Compounds) Sensor

Wide Measuring Range , High Reliability

- 0~60000ppb

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

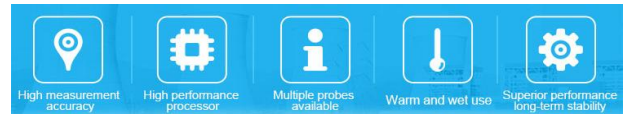
- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBloT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



Measurement range	0~60000ppb
Resolution	1ppb
Accuracy	±8%FS±125ppb
Signal output	RS485 2-wire output (Modbus protocol)
Stability	< 7% Signal / Year
Operating Voltage	10~30VDC
Power consumption	< 0.5W
Working Environment	-40~85°C , 0-95%RH
Response time	< 1 seconds
Dimension & Installation	85 x110 x 44mm; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	TVOC (ppb)	Range: 0~60000; Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101TVOC	Outdoor TVOC Sensor, 0~60000ppb, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit, 1 x Quick Installation Guide
	2x Expansion plugs, 2 x Self-tapping screws

*4~20mA / 0~5V / 0~10V output by request

ES101NO2-2000

Outdoor Nitrogen Dioxide NO₂ Sensor

Wide Measuring Range

- 2000ppm – ES101-NO2-2000
- 20ppm- ES101-NO2-20

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBloT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



NO₂ measurement range	0-2000ppm (ES101-NO2-2000)
NO₂ resolution	0.1ppm(ES101-NO2-2000)
Signal output	RS485 2-wire output (Modbus protocol)
Stability	<2% Signal / Month
Operating Voltage	10~30VDC
Power consumption	<0.18W
Working Environment	-20~+50°C , 15-90%RH
Response time	90% step change is generally less than 90s
Dimension & Installation	87 x117 x 44; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	NO ₂ concentration value	Range : 0~2000ppm Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101NO2-2000	Outdoor Nitric Dioxide NO ₂ Sensor, 0~2000ppm, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

*4~20mA / 0~5V / 0~10V output by request

*ES101-NO2-20 by request

ES101NO-2000

Outdoor Nitric Oxide NO Sensor

Wide Measuring Range

- 0~2000ppm

Standard Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 12-24Vdc Power Input

High Grade Enclosure Protection

- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMasterOTA

- Optional LTE Gateway WR222-WLAN-LTE
- Optional NBloT Gateway SCB111-485-NB
- Optional LoRa Gateway LC144, LoRaWAN Gateway LR140
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



High measurement accuracy	High performance processor	Multiple probes available	Warm and wet use	Superior performance long-term stability
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NO measurement range	0-2000ppm
NO resolution	1ppm
Signal output	RS485 2-wire output (Modbus protocol)
Stability	<2% Signal / Month
Operating Voltage	12~24VDC
Power consumption	<0.15W
Working Environment	-20~+50°C , 15-90%RH
Response time	Less than 3 seconds
Dimension & Installation	87 x117 x 44; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0006 H	40007	NO concentration value	Range : 0~2000ppm Upload real data
0100 H	40101	Slave ID	1 ~ 254 (Factory Default 1)
0101 H	40102	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101NO-2000	Outdoor Nitric Oxide NO Sensor, 0~2000ppm, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	1 x Quick Installation Guide

ES101SO2-2000

Outdoor Sulphur Dioxide SO₂ Sensor

Wide Measuring Range

- 2000ppm , +/-3% Accuracy in Full Scale
- 1ppm Resolution

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

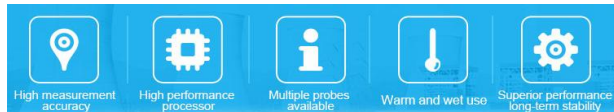
- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NB IoT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



SO ₂ measurement range	0-2000ppm
SO ₂ resolution	1ppm
Accuracy	+/- 3% in Full Scale
Signal output	RS485 2-wire output (Modbus protocol)
Stability	<7% Signal / Year
Operating Voltage	10~30VDC
Power consumption	<0.18W
Working Environment	-20~+50°C , 15-90%RH
Response time	<70 seconds
Pre-Heat Time	≥5Min.
Dimension & Installation	87 x117 x 44; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	SO ₂ concentration value	Range : 0~2000ppm Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101SO2-2000	Outdoor Sulphur Dioxide SO ₂ Sensor, 0~2000ppm, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

*4~20mA / 0~5V / 0~10V output by request

ES101NH3-50/100/500

Outdoor Ammonia NH₃ Sensor

Multiple Measuring Range

- 50ppm, 100ppm, 500ppm
- +/-20%, +/-2% Accuracy
- 0.1 ppm /1ppm Resolution

Std. Modbus RTU RS-485, Wide Power Range

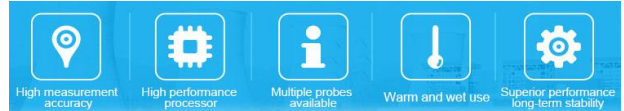
- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBloT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits

NH₃ measurement range	0-50ppm, 0-100ppm, 0-500ppm
NH₃ resolution	1ppm
Accuracy	±20% in Full Scale Oxygen : ≥18%VOL
Signal output	RS485 2-wire output (Modbus protocol)
Stability	<2% Signal / Month
Operating Voltage	10~30VDC
Power consumption	0.9W
Working Environment	-20~+50°C , 15-90%RH
Response Time	≤25Sec.
Pre-Heat Time	≥ 48Hours
Dimension & Installation	87 x117 x 44; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	NH ₃ concentration value	Range : 0~500ppm Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101NH3-50/100/500	Outdoor NH ₃ Sensor, 0-50/0-100/0-500ppm, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

ES101H2S-100

Outdoor Hydrogen Sulfide H2S Sensor

Multiple Measuring Range

- 0~100ppm, ±3%FS
- 1ppm Resolution

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

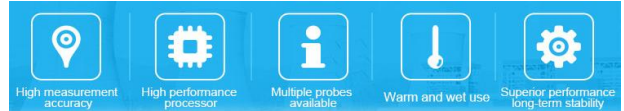
- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBIoT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



H2S measurement range	0-100ppm
H2S resolution	1ppm
Accuracy	±3% in Full Scale
Signal output	RS485 2-wire output (Modbus protocol)
Stability	<2% Signal / Month
Operating Voltage	10~30VDC
Power consumption	0.12W
Working Environment	-20~+50°C , 15-90%RH
Response Time	≤35Sec.
Pre-Heat Time	≥ 5Min
Dimension & Installation	85 x110 x 44; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	H2S concentration value	Range : 0~100ppm Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101H2S-100	Outdoor H2S Sensor,0~100ppm, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

ES101H2-1000

Outdoor Hydrogen H2 Sensor

High Accuracy

- 0~1000ppm, ±3%FS

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBloT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



H2 measurement range	0-1000ppm
H2 resolution	1ppm
Accuracy	±3% in Full Scale
Signal output	RS485 2-wire output (Modbus protocol)
Stability	<2% Signal / Month
Operating Voltage	10~30VDC
Power consumption	0.9W
Working Environment	-20~+50°C , 15-90%RH
Response Time	≤70Sec.
Pre-Heat Time	≥ 5Min
Dimension & Installation	85 x110 x 44; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	H2 concentration value	Range : 0~1000ppm Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101H2-1000	Outdoor H2 Sensor, 0-1000PPM, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

ES101CH4

Outdoor Methane CH4 Sensor

High Accuracy

- ExdIMb grade
- 0~100%LEL

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBIoT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



CH4 measurement range	0-100% Lower Explosive Limit (LEL)
CH4 resolution	1% LEL
Accuracy	±5% in Full Scale, No Less than 5% Oxygen
Signal output	RS485 2-wire output (Modbus protocol)
Stability	<7% Signal / Year
Operating Voltage	10~30VDC
Power consumption	0.9W
Working Environment	-20~+40°C , 0-95%RH
Response Time	≤15Sec.
Pre-Heat Time	≥ 5Min
Dimension & Installation	85 x110 x 44; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	CH4 concentration value	Range : 0-100% LEL; Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101CH4	Outdoor CH4 Sensor, 0-100%LEL, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

ES101SMK

Outdoor Smoke Sensor

High Accuracy

- Semiconductor transducer
- 0~2000ppm or 0~10000ppm

Std. Modbus RTU RS-485, Wide Power Range

- 2-Wire RS-485
- 10~30Vdc Power Input

High Grade Enclosure Protection

- IP54 Grade Protection, ABS Plastic, UL94V0 Anti-fire
- Water-Proof, Anti-Dust with Out-Door Shelter

Optional IoT Router and Cloud Platform - ThingsMaster

- Support Modbus to connect optional NBIoT Gateway WR222-WLAN-NB for one or many sensors
- Real-time online monitoring, analysis, reporting
- Remote cloud security and visual management



Features & Benefits



Smoke measurement range	0-2000ppm 0~10000ppm
Smoke resolution	1 ppm
Accuracy	±5% in Full Scale
Signal output	RS485 2-wire output (Modbus protocol)
Stability	<2% Signal / Month
Operating Voltage	10~30VDC
Power consumption	0.9W
Working Environment	-20~+50°C , 0-95%RH
Response Time	≤35Sec.
Dimension & Installation	85 x110 x 44; Wall Mounting

Register Address	PLC or Configuration Address	Content	Description
0000 H	40001	Smoke concentration value	Range : 0-10000 Upload real data
07D0 H	42001	Slave ID	1 ~ 254 (Factory Default 1)
07D1 H	42002	Baud Rate	0=2400 1=4800 2=9600(Default)



Ordering Information

Model Name	Description
ES101SMK-2000	Outdoor Smoke Sensor, 0-2000ppm, RS485 Modbus, 10-30V Power
ES101SMK-10000	Outdoor Smoke Sensor, 0-1000ppm, RS485 Modbus, 10-30V Power
	Package List
	1 x Product Unit
	2x Expansion plugs, 2 x Self-tapping screws
	1 x Quick Installation Guide

*4~20mA / 0~5V / 0~10V output by request