

# WoMaster

## Quick Installation Guide

### Outdoor Temperature And Humidity Sensor

ES102-TH

www.womaster.eu

#### • Overview

ES102-TH is widely applied in communication engine room、 industrial automation、 automatic control where needs the temperature and humidity monitor. The three parts about input power supply, temperature measurement unit and signal output of sensor are completely isolated. Safe and reliable, beautiful appearance, easy installation.

Model Name	Description
ES102-TH	Outdoor Temperature And Humidity Sensor, -40~+80°C, 0~100%RH, RS485 Modbus, 10-30V Power

#### • Package Checklist

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

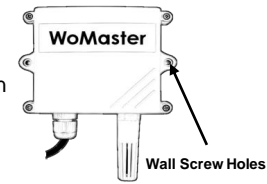
Optional Accessory (for detailed information please refer to the Datasheet)

**\*Configure and use equipment, please refer to the document "How to configure and use IoT sensors"**

#### • Installation

##### Wall Mount

- 1) Use tools to drill holes in the wall
- 2) Expansion plug into hole.
- 3) Self-tapping screw into expansion plug.



##### Shell Wiring

	Line Color	Description
Power	Brown	Power supply is (10 ~ 30V DC)
	Black	Power supply negative
Communication	Yellow	485-A
	Blue	485-B

##### Wiring The RS485 Signals

- 1) Connect the cable to the device, connect the yellow wire to RS485-A, and connect the blue wire to RS485-B.
- 2) When wiring the RS485 cable, pay attention to A/B the two lines cannot be reversed.
- 3) Make sure the addresses of multiple devices on the Modbus setting do not conflict.

##### Wiring The Power Input (10~30V)

- 1) Connect the power cable to the device. Brown cable is the positive pole of the power supply and black cable is the negative pole of the power supply.
- 2) Connect the power wires to suitable DC Switching type power supply. The input range is 10-30VDC.

#### • Appearance

ES102-TH



#### • Communication Agreement

##### Basic Parameter

Parameter	Description
Protocol	Modbus RTU
Data Bits	8 bit
Parity Bit	None
Stop Bit	1 bit
Error Detection Code	CRC
Baud Rate	2400bps/4800bps/9600bps, default setting is 9600bps

##### Data Format Definition

Adopt Modbus-RTU communication protocol, the format is as follows:  
 Initial structure ≥ 4 bytes of time  
 Address code = 1 byte  
 Function code = 1 byte  
 Data area = N bytes  
 Error check = 16-bit CRC code  
 End structure ≥ 4 bytes of time  
 Address code: The address of the transmitter and will be the only (Factory Default 0x01) in the communication net.  
 Function code: The order function orders from host computer, this transmitter only uses function code 0x03(reading register data).  
 Data area: Data area is the specific communication data, attention 16bits data high byte in front!

##### Inquiry Frame

Address Code	Function Code	Register Origin Address	Register Length	Low Checksum	High Checksum
1 byte	1 byte	2 byte	2 byte	1 byte	1 byte

##### Response Frame

Address Code	Function Code	Effective Byte No.	First Data Area	Second Data Area	~	N Data Area	Checksum
1 byte	1 byte	1 byte	2 byte	2 byte	~	2 byte	2 byte

##### Device Stack List

Register Address	PLC or Configuration Address	Content	Desc.
0000 H	40001	Humidity	Range: 0-100.0%RH; Upload data 10 times real data
0001 H	40002	Temperature	Range: -40-80°C; 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)

## • Safety Precautions

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- Try to stay away from high-power interference equipment to avoid inaccurate measurement, such as inverters, motors, etc.
- Before connecting the DC power module to the device, make sure all connections are established and then turn on the DC power.
- Multiple 485 models of equipment access the same bus, address codes cannot be duplicated.

## • Support

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At WoMaster, you can use the online service forms to **request the support**. The submitted forms are stored in server for WoMaster team member to assign tasks and monitor the status of your service. Please feel free to write to [help@womaster.eu](mailto:help@womaster.eu) if you encounter any problems.

## • Warranty

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**2-year Global warranties** are available for WoMaster products assuring our customers that the products shall remain free from defects in workmanship or materials and conform in all material respects to WoMaster specifications, or Purchaser's supplied and accepted specifications. The warranty is limited to the repair and/or replacement, at WoMaster sole discretion, of the defective product during its warranty period. The customer must obtain a **Return Merchandise Authorization (RMA)** approval code prior to returning the defective Product to WoMaster for service. The customer agrees to prepay shipping charges, to use the original shipping container or equivalent, and to insure the Product or assume the risk of loss or damage in transit. Repaired or replaced products are warranted for ninety (90) days from the date of repair or replacement, or for the remainder of the original product's warranty period, whichever is longer.

## • Disclaimer

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WoMaster reserves the right to make changes to this QIG or to the product hardware at any time without notice. It is the user's responsibility to determine whether there have been any such updates or amendments herein.

Defects, malfunctions, or failures of the warranted Product(s) caused by damage resulting from unforeseeable incidents (such as lightings, floods, fire, etc.), environmental and atmospheric disturbances, other external forces such as power line disturbances and surge, host computer malfunction and virus, incorrect power input, or incorrect cabling, incorrect grounding and damages caused by misuse, abuse and unauthorized alteration or repair are not warranted.