

INTEGRATED AMBIENT ENVIRONMENTAL (3-IN-1) TRANSMITTER

User Guide for SRMS-D139



Product Description >>

The SRMS-D139 is a 3-in-1 environmental sensor that measures temperature, humidity and illuminance. With a waterproof housing, the SRMS-D139 can be used outdoors, as well in demanding indoor environments. The measured values are output via the popular Modbus protocol. It is a good choice for sensing these three primary ambient conditions in applications ranging from solar farms to industrial automation where these measures can impact manufacturing.

Features >>

- Monitors three conditions
- 12 – 24 VDC supply
- Wide detection ranges
- RS485 output
- Wall mount waterproof housing

Applications >>

- Greenhouses
- Agriculture
- Solar farms
- Laboratories
- Factory floors
- Manufacturing
- General environmental monitoring

Thank you for choosing L-com product. To ensure safe, accurate performance and product longevity, please take a moment to familiarize yourself with this manual before powering the device. Please keep it handy for future reference. In case of any questions regarding the installation or use of product, please call us at 800.341.5266.

Reach out to us at customerservice@l-com.com and visit our website at www.l-com.com

Technical Parameters >>

Working Voltage	12 – 24 VDC	
Working Current	<50 mA	
Output Mode	MODBUS 485	
Measuring Range	Illuminance	0~65535 Lux
	Temperature	-20~100 °C
	Humidity	0~100% RH
Accuracy	Illuminance	±5%
	Temperature	±0.5 °C
	Humidity	±4.5% RH
Work Environment	Temperature	-20~80 °C
	Humidity	0~100% RH (No condensation)
Storage Environment	Temperature	-20~80 °C
	Humidity	0~100% RH (No condensation)

Electrical Diagram >>

No.	Wire Color	Definition	Function description
1	Brown	VCC	12-24 VDC Power supply
2	Blue	Vout -	485 -/B
3	Black	GND	Power supply negative, GND
4	Yellow	Vout +	485 +/A

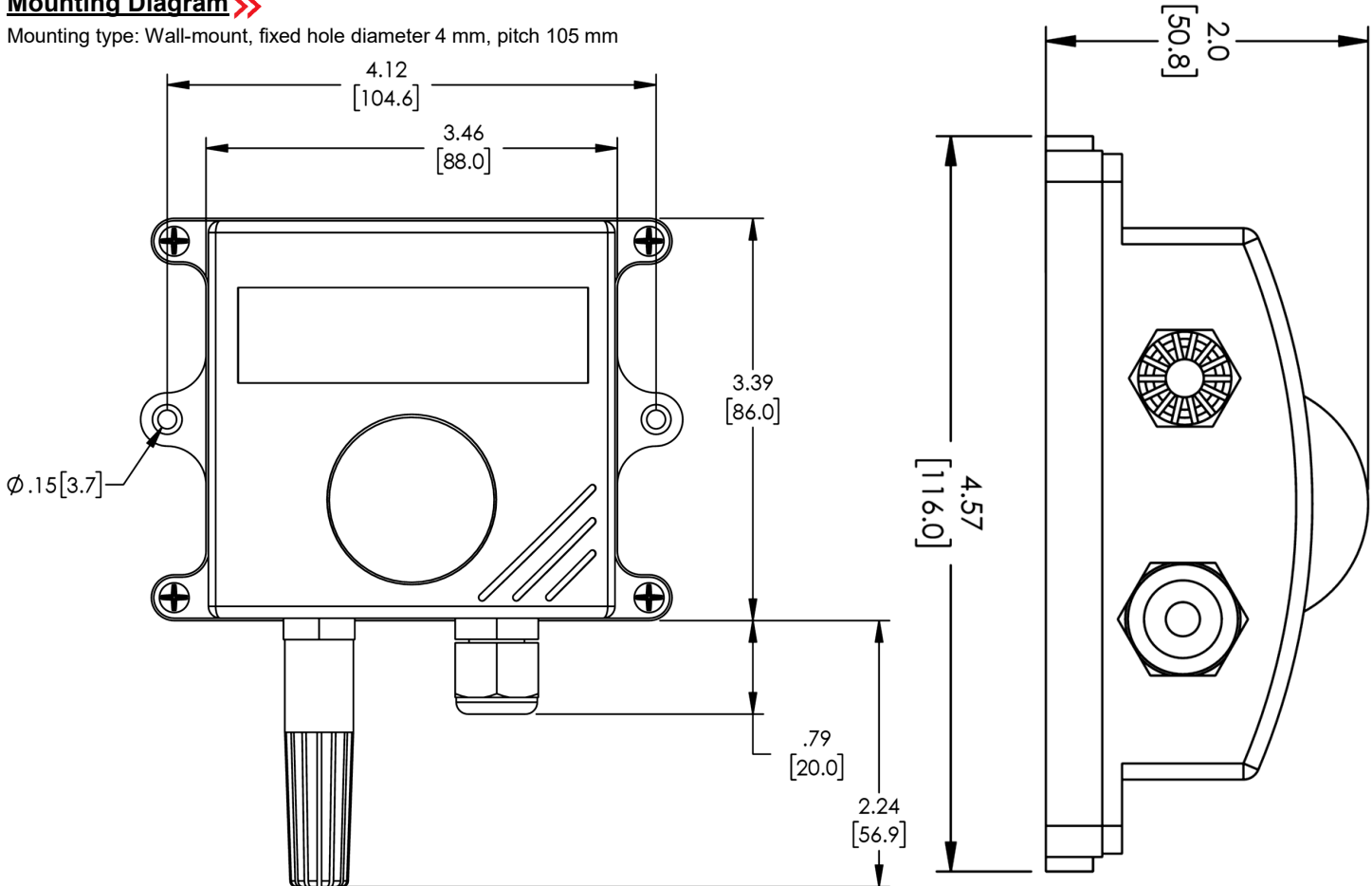


Notes >>

1. The power supply voltage should not exceed the specified voltage. Make sure no reverse connection of the power supply during wiring and live operation.
2. The temperature measurement range is the sensor measurement range, and the actual measurement range should be the temperature range in the working environment. In order to avoid damage to the casing under high-temperature conditions.
3. The light detection sensor lens should be kept clean while using.
4. If user does not know the address of the transmitter, user cannot connect to the 485 networks to read. User can only read the address first in the stand-alone state, and then connect to the 485 networks after modifying the address.

Mounting Diagram >>

Mounting type: Wall-mount, fixed hole diameter 4 mm, pitch 105 mm



MODBUS Protocol >>

- Baud rate: 9600 (default)
- Data bits: 8
- Stop position: 1
- Check bit: N
- Communication mode: 485 transmissions, RTU ModBus protocol, CRC calibration method (low in front)
- Serial return data time: 300 ms
- Reading speed is not more than 500ms

Command to Read Address >>

XX 00 xx xx 00 01 +Check (This feature cannot be read online)

XX	00	xx	xx	00	01	CRC check	
Address (Any)	Function Code	Start Address of Register (Any)		Read Data Byte Length		CRC_L	CRC_H

Read Address Return >>

XX 00 02 00 xx + Check (xx indicates to be determined)

XX	00	02	00	xx	CRC check	
Address (Same as sending the first)	Function Code	Data Length	Retain	Address	CRC_L	CRC_H

Command to Modify Address >>

(In advance through the above command to read the module's current address is xx)

xx 01 00 yy 00 00 + Check (This feature cannot be read online)

xx	01	00	yy	00	00	CRC check	
Current Address	Function Code	Retain	Modify Address	Retain	Retain	CRC_L	CRC_H

Current Address: Can read the order through the address to read this address.

Function Code: 01 indicates that the address is modified.

Modify Address: Want to modify the address, range (2-255, No. 1 is reserved).

Address Modification Return: yy 01 02 00 yy + Check

yy	01	02	00	yy	CRC Check	
Modify Address	Function Code	Data Length	Retain	Modify Address	CRC_L	CRC_H

Modified address : The above pre modification address, to determine the success of the address changes.

Command to Read All Data >>

yy 03 00 01 00 03 + Check

yy	03	00	01	00	03	CRC_Check	
Address	Function Code	Start Address of Register		Data Length		CRC_L	CRC_H

Return data : yy 03 06 xx xx xx xx xx xx xx + Check

yy	03	06	xx	xx	xx	xx	xx	xx	CRC_Check	
Address	Function Code	Data Length	Tmp_H	Tmp_L	Humi_H	Humi_L	Lux_H	Lux_L	CRC_L	CRC_H

Note:

Tmp = temperature

The highest bit of Tmp_H is 1,

Tmp_H&0x80 = 1 Express Negative temperature

Tmp_H&0x80 = 0 Express Positive temperature

Temperature Data = (Positive temperature) (Tmp_H * 256 + Tmp_L) / 100, Unit: °C

(Negative temperature) ((Tmp_H&0x7F) * 256 + Tmp_L) / 100, Unit: °C

Humidity Data = (Humi_H * 256 + Humi_L) / 100, Unit: % RH

Light Illumination Degree Data = (Lux_H * 256 + Lux_L) * 4, Unit : lx

Command to Read Partial Data >>

yy 03 00 MM 00 NN + Check

yy	03	00	MM	00	NN	CRC_Check	
Address	Function Code	Start Address of Register		Data Length		CRC_L	CRC_H

Return data: yy 03 NN*2 xx xxxx xx + Check

yy	03	NN*2	xx xxxx xx	CRC_Check	
Address	Function Code	Data Length	Sensor Data	CRC_L	CRC_H

Note: xx xxxx xx is the sensor data. According to the register address and data length change.

00 MM is the Start address of register, 00 NN is the data length.

00 01	00 02	00 03
Temperature	Humidity	Light Illumination Degree

Data length NN minimum of 00 01.

Maximum of 00 03 (depending on the number of sensors). When the MM value is 01, the maximum data length nn can be 03

The value of all the sensors can be read at this time, Can also be 01, 01 can only read temperature data. The address on the front of the register, When the data length is increased, Data can be read back sensor, but the address on the back of the register, cannot read data from the previous address sensor.

See below for details:

00 MM 00 NN for 00 01 00 01 express from the start address 00 01 read Temperature data.

00 MM 00 NN for 00 01 00 02 express from the start address 00 01 read Temperature and Humidity data.

00 MM 00 NN for 00 01 00 03 express from the start address 00 01 read Temperature , Humidity and Light illumination degree data.

00 MM 00 NN for 00 02 00 01 express from the start address 00 02 read Humidity data.

00 MM 00 NN for 00 02 00 02 express from the start address 00 02 read Humidity and Light illumination degree data.

00 MM 00 NN for 00 03 00 01 express from the start address 00 03 read Light illumination degree data.