LIGHT SENSOR (RS485 OUTPUT)

User Guide for SRMS-D469-2

Product Description

The SRMS-D469-2 is a sensor that measures ambient light intensity. With a waterproof housing, the SRMS-D469-2 can be used outdoors, as well in demanding indoor environments such factory floors. The SRMS-D469-2 has MODBUS 485 output and can measure illuminance up to 65,000 lux.

Features

- Monitors ambient light intensity
- 12 – 24 VDC supply
- Up to 65,000 Lux
- MODBUS 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

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Technical Parameters

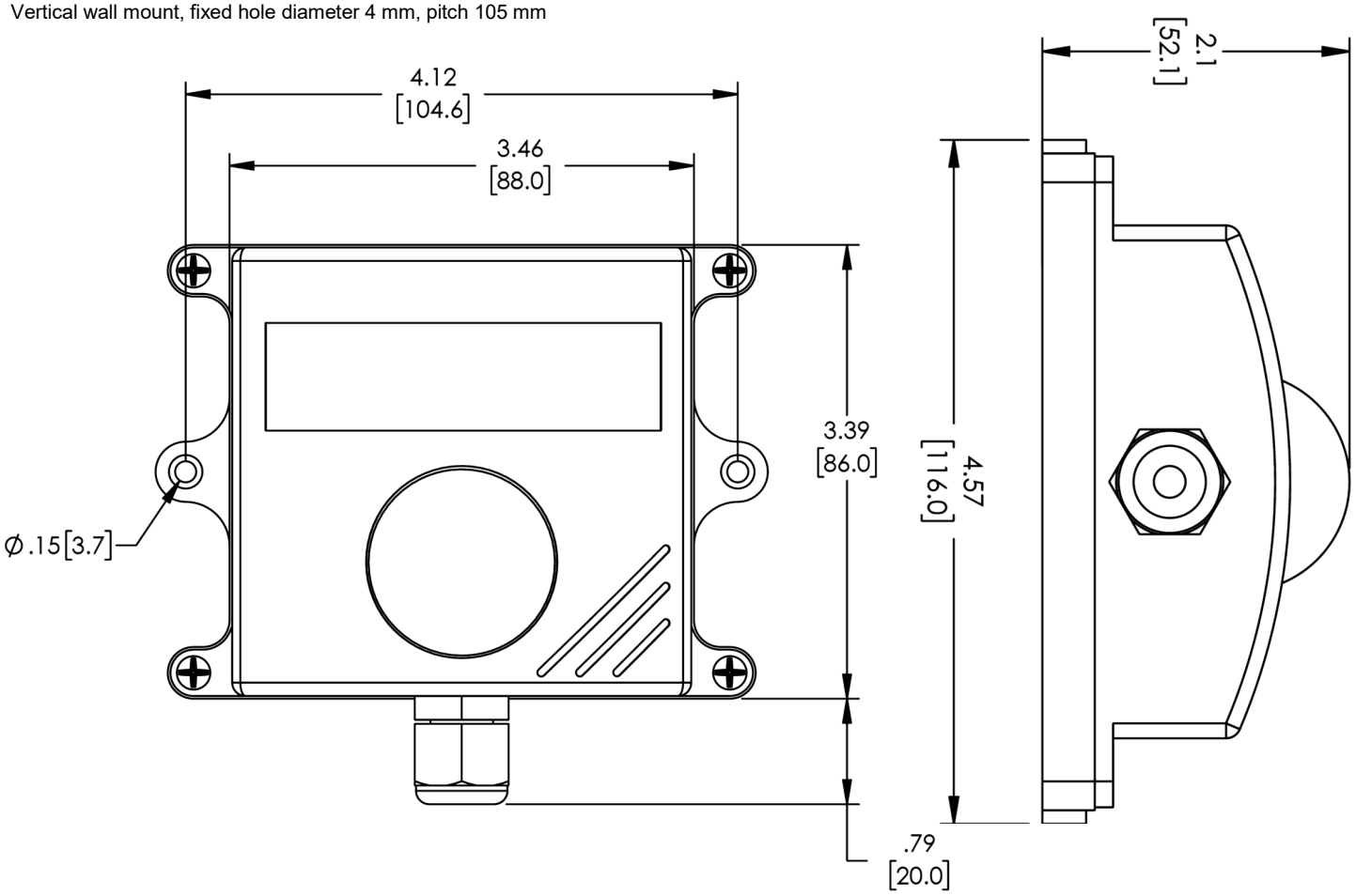
Working Voltage	12 – 24 VDC	
Output Mode	RS485 (Modbus)	
Measuring Range	0~65000 Lux	
Long-term Stability (Light Intensity)	±5% / y	
Maximum Allowed Error	±10%	
Work Environment	Temperature	0~60 °C
	Humidity	≤80% RH (No condensation)
Storage Environment	Temperature	-20~65 °C
	Humidity	0~100% RH (No condensation)

Electrical Diagram

No.	Wire Color	Definition	Function description
1	Brown	VCC	12-24 VDC Power supply
2	Blue	Vout -	RS485-B
3	Black	GND	Power supply negative, GND
4	Yellow / Gray	Vout +	RS485-A

Mounting Diagram

Vertical wall mount, fixed hole diameter 4 mm, pitch 105 mm



Notes

1. Confirm the polarity and the voltage of the power supply before powering ON the sensor.
2. There are two colors for wire 4, ie. Yellow or gray.

MODBUS Protocol

Baud rate: 9600(Default, 2400bps / 4800bps / 9600bps can be set)
Data bits: 8
Stop position: 1
Check bit: N
Communication mode: 485 transmissions, RTU Modbus protocol, CRC calibration method.

Data Frame Format Definition

Modbus-RTU Communication protocol is adopted, 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
End structure ≥ 4 bytes of time
Address code: indicates the function of the transmitter, this transmitter only uses the function code 0x03 (read register data).
Data area: The data area is the specific address, which is unique in the communication network (Factory default 0x01).
Function code: communication data sent by the host, pay attention to 16 bits data high word Festival ahead!
CRC code: Two-byte check code.

Read Commands

Address	Function Code	Register Start Address	Register Length	CRC_Low	CRC_High
1 byte	1 byte	2 byte	2 byte	1 byte	1 byte

Return Data

Address	Function Code	Data Length	First Data Area	Second Data Area	N^{th} Data Area
1 byte	1 byte	2 byte	2 byte	2 byte	2 byte

Register Address

Register Address	PLC Configuration Address	Content	Operating
0007H	40008	Illuminance (High Byte)(Unit 1Lux)	Read only
0008H	40009	Illuminance (low byte)(Unit 1Lux)	Read only
0100H	40101	Device address (0-252)	Read and write
0101H	40102	baud rate (2400/4800/9600)	Read and write

Communication Protocol Examples and Explanations

Read light value at device address 0x01

Read Commands

ID	Function Code	Register Start Address	Register Length	CRC_Low	CRC_High
0x01	0x03	0x00 0x07	0x00 0x02	0x75	0xCA

Return data:(E.g. read 132854 Lux)

ID	Function Code	Data Length	Data Area	CRC_Low	CRC_High
0x01	0x03	0x04	0x00 0x02 0x06 0xF6	0xD8	0x15

Illumination Calculation Instructions

000206F6H (hexadecimal) = 132854 => lightness = 132854 Lux