USER GUIDE FOR CDG-14A ILLUMINANCE SENSOR

CDG-14A-01-MN-10	SEP-2024

This document is applied for the following products

SKU	CDG	HW Ver.	1.0	FW Ver.	1.0
Item Code	CDG-14A	Illuminance Sensor, 4-20mA RS485 0-5V 0-10V Output, ABS, 0-2000lux,0-20klux,0-200klux			

1. Introductions

CDG-14A Illuminance Sensor is very sensitivity and can detect weak light, has a wide measuring range, high accuracy, good waterproof performance, easy to use, easy to install. It's suitable for most applications, especially in agricultural greenhouses, urban lighting and other places.

2. Specification

Item	Specification	
Range	0-2000lux,0-20klux,0-200klux optional	
Spectral range	380-780nm	
Supply	5VDC,12-24VDC	
Output	4-20mA,0-5V,0-10V	RS485
Accuracy	<±5%FS	<±4%FS
Response time	1s	
Temperature effect	±0.2%/℃	
Repeatability	<1%FS	
Display	LCD optional(ABS housing)	
Operating temperature	-40℃-+75℃	
Weight(unpacked)	170g	
Shell material	ABS,metal shell can be customized	

3.Working Process

The illuminance sensor is a sensor that converts the size of the illuminance into an electrical signal, and the unit of measurement of its output value is usually lux. It works by converting the received light intensity into the corresponding electrical signal through a specific photoelectric element for measurement and monitoring.

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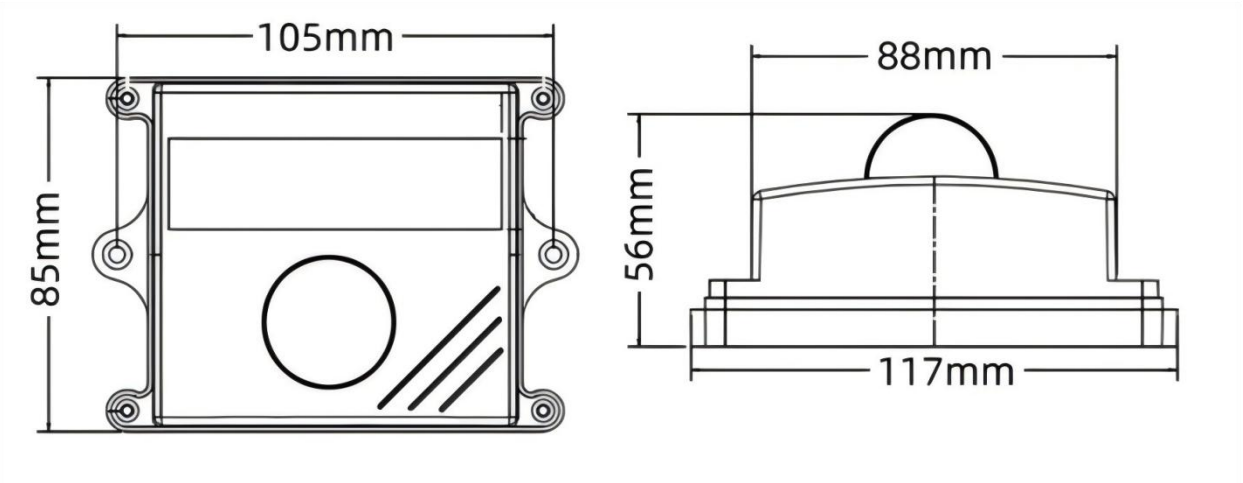
4. Electrical Connections

Connector（cable）	Current /Voltage	RS485	Connector（cable）
Red	V+	V+	Red
Black	V-	V-	Black
Yellow	Signal out	RS485A	Yellow
Blue/Green		RS485B	Blue/Green

5. Dimensions



6. Installation

Open without shelter: It should be installed in an open area without shelter from tall buildings, trees, etc., to ensure that it can fully receive solar radiation.

Sensors usually need to be mounted horizontally to ensure measurement accuracy. You can calibrate using a level to ensure that the sensor is mounted on a level surface

7. Communication Protocol（MODBUS）

Transmission mode: MODBUS-RTU,**Baud rate:** 9600bps,**Data bits:**8,**Stop bit:**1,**Check bit:**no

Slave address:the factory default is 01H (set according to the need,00H to FFH)

7.1 The 03H Function Code Example: Read Illuminance Value

Host Scan Order(slave address:0x01)
01 03 00 00 00 01 840A

Slave Response
01 03 02 0025 799F

Illuminance:(0025)H=(37) D,37*10=370(Lux)

7.2 The 06H Function Code Example: Modify the slave address

Host Scan Order (Changed the 01H to 02H):
01 06 00 30 00 02 0804

Slave Response:
01 06 00 30 00 02 0804

Note:
1. All underlined is fixed bit;

2. The last two bytes is CRC check command.

Note: This product has been tested and complies with European CE requirements for EMC directive.

8. Troubleshooting

If some error occurs, such as no output or unreliable. Please disconnect the sensor first, then check if the sensor installation and connection is correct with the instruction manual.

If still not successful, please contact our company.

9. Support contacts:

Complies with applicable CE directives.

Manual subject to change without notice. Version 1.0

Hunan Coda Electronic Tech Co.,Ltd

T:+86-0731-85117089

W:www.codasensor.com

E:Molly@codasensor.com