

Illumination sensor

Model: LUX20

Operation Manual

V1.01



JNC technology

銘祥科技實業股份有限公司

Catalogue

PART 1. PRODUCT DESCRIPTION 1

1-1 SPECIFICATION 1

1-2 DIMENSIONS UNIT: MM 1

PART 2.WIRING METHOD 1

PART 3.MODBUS TABLE 2

PART 4.MODBUS BYTE FORMAT DESCRIPTION 3

4.1 INT16 READ INSTANT VALUE (FUNCTION03) 3

PART 5. MODBUS EXAMPLE DESCRIPTION 4

5.1 STATION NUMBER MODIFICATION METHOD 4

5.2 READ STATION NUMBER 4

5.3 READ THE ILLUMINATION VALUE 4

5.4 UPPER LIMIT OF ILLUMINATION 5

5.5 GAIN 5

5.6 LUX CORRECTION COEFFICIENT 5

PART 6.TROUBLESHOOTING 6

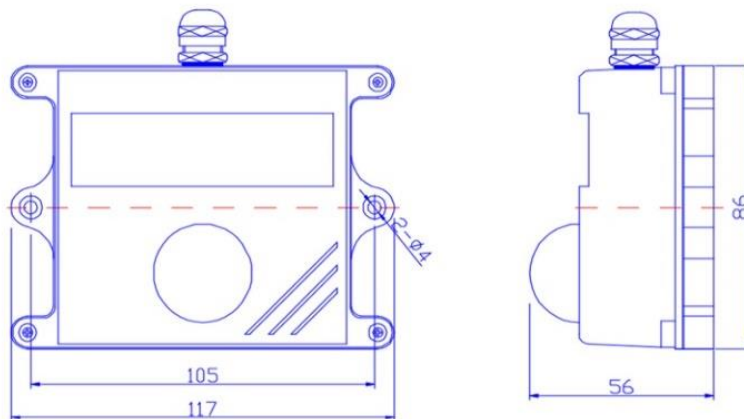
PART 1.PRODUCT DESCRIPTION

1-1 SPECIFICATION

Measuring range	0~200,000 Lux
Spectral range	380nm~730nm
Accuracy	±5% FS (25°C)
Communication method	4-20mA or RS-485
T90 time	≤60S
Repeatability	<1% FS
Working environment	Temperature: 0°C~50°C Humidity: ≤94%RH
Supply voltage	DC 12V ♦Power consumption : ≤50mW
Product weight	170g
Installation method	Wall-mounted
Waterproof level	IP65

※ The RS485 transmission rate is fixed at 9600 bps, and the default station number is 77

1-2 DIMENSIONS UNIT: mm



PART 2.WIRING METHOD

Line color	Function	Line color	Function
Red	DC 12V	Black	GND
White	RS485 : D+(A)	Brown	RS485 : D-(B)

PART 3.MODBUS TABLE

Function 3 to Read/Function 6 to write

Address	Setting Value	Item	Type	R/W	Remarks
0x0000	400001	Read the illumination (High bit, high byte first)	UINT32	R	
0x0001	400002	Read the illumination (low bit, low byte first)	UINT32	R	
0x0013	400020	Upper limit of illumination	UINT16	R/W	
0x0014	400021	Gain	UINT16	R/W	
0x0015	400022	Station number modification method	UINT16	R/W	
0x0016	400023	LUX correction coefficient	INT16	R/W	

PART 4. MODBUS BYTE FORMAT DESCRIPTION

4.1 INT16 Read instant value (Function03)

Protocol format description

	Equipment station number	Function	Starting address		Number of data (Word)		16 CRC code	
Host command	Address	0x03	0x00	0x00	0x00	0x01	CRC0	CRC1
	Equipment station number	Function	Data bytes		Sensor data		16 CRC code	
Reply from machine	Address	0x03	Number of data*2		ByteH	ByteL	CRC0	CRC1

Communication Examples

	Equipment station number	Function	Starting address		Number of data (Word)		16 CRC code	
Host command	0x4D	0x03	0x00	0x15	0x00	0x01	0x9B	0xC2
	Equipment station number	Function	Data bytes		Sensor data		16 CRC code	
Reply from machine	0x4D	0x03	0x02		0x00	0x4D	0x6D	0x91

The measured data 0x004D (hexadecimal) measured by the sensor is converted to decimal format 77; then the station number is 77.

PART 5. MODBUS EXAMPLE DESCRIPTION

5.1 Station number modification method

Example: The default station number is 77 (0x4D), change the station number to 0x01:

	Equipment station number	Function	Starting address		Register value		16 CRC code	
Host command	0x4D	0x06	0x00	0x15	0x00	0x01	0x57	0xC2

5.2 Read station number

	Equipment station number	Function	Starting address		Number of data (Word)		16 CRC code	
Host command	0x4D	0x03	0x00	0x15	0x00	0x01	0x9B	0xC2

	Equipment station number	Function	Data bytes	Sensor data		16 CRC code	
Reply from machine	0x4D	0x03	0x02	0x00	0x4D	0x6D	0x91

Example: The measured sensor data 0x004D (hexadecimal) is converted to decimal format 77, then the station number is 77.

5.3 Read the illumination value

	Equipment station number	Function	Starting address		Number of data (Word)		16 CRC code	
Host command	0x4D	0x03	0x00	0x00	0x00	0x02	0xCA	0x07

	Equipment station number	Function	Data bytes	Sensor data				16 CRC code	
Reply from machine	0x4D	0x03	0x04	0x00	0x01	0xE2	0x08	0xB4	0x35

For example: The measured data 0x0001E208 (hexadecimal) measured by the sensor is converted to 123400 in decimal format, and the illumination value is 123400 LUX.

5.4 Upper limit of illumination

	Equipment station number	Function	Starting address		Number of data (Word)		16 CRC code	
Host command	0x4D	0x03	0x00	0x13	0x00	0x01	0x78	0xC3

	Equipment station number	Function	Data bytes	Sensor data		16 CRC code	
Reply from machine	0x4D	0x03	0x02	0x00	0x02	0x6D	0x91

For example: The data measured by the sensor is 0x0002 (hexadecimal) and converted to decimal format 02, then the upper limit of illumination is 2 LUX.

5.5 Gain

Example: If you want to amplify the illumination by 8 times, change the register value to

0x08

	Equipment station number	Function	Starting address		Register value		16 CRC code	
Host command	0x4D	0x06	0x00	0x14	0x00	0x08	0xC6	0x04

5.6 LUX correction coefficient

Example: Want to correct the illumination coefficient to 13

	Equipment station number	Function	Starting address		Register value		16 CRC code	
Host command	0x4D	0x06	0x00	0x16	0x00	0x0D	0xC6	0x04

PART 6.TROUBLESHOOTING

Exception Category	Cause of issue	Solution
The operation interface cannot be connected or does not display the measurement results.	Incorrect connection between controller and power cord	Reconnect the controller and wires
	Wire failure	Please contact our company



ISO 9001

V1.01 2022/10/19

717 No. 33, Ln. 428, Sec. 3, Wenhua Rd., Rende Dist., Tainan City

Telephone : +886-6-311-0008 <http://www.jnc-tec.com.tw>

Fax : +886-6-311-0522 Email : jnc.jnc@msa.hinet.net

The company reserves the right to modify the content of the copy without prior notice.