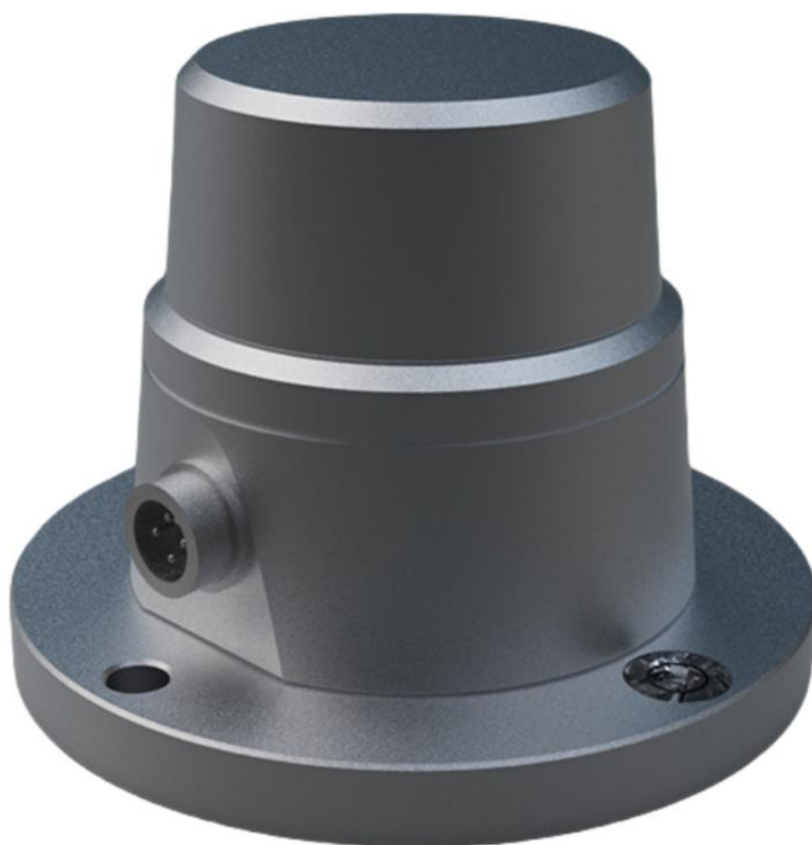


---

# **KH.GDF Photoelectric Total Radiation Sensor Product instruction**



Shenzhen KEHAO Information Technology Co., LTD

---

## **I Qualification**

- Power supply: DC12V
- Power consumption: 0.036W
- Working environment: -20~65℃
- Communication interface: RS485
- Working current: 3mA@DC12V
- Minimum data interval: 0.5S

---

## II Parameters

| Parameter         | Scope  | Resolution Ratio | Accuracy    | Unit             |
|-------------------|--------|------------------|-------------|------------------|
| Irradiance        | 0-2000 | 1                | $< \pm 3\%$ | W/m <sup>2</sup> |
| Hours of sunshine | 0-6500 | 0.1              | $< 0.2$     | h                |

Response time: less than 10S

Annual stability:  $\pm 3\%$

Zero drift: less than or equal to 6 W/m<sup>2</sup>

### Sensor initial configuration

Sensor address: 36 (hexadecimal: 0x24)

Baud rate: 9600

Data bits: 8

Stop position: 1

Check digit: None

CRC16: The low byte is in front and the high byte is behind

---

### III Communication example:

Instruction 03

Read the irradiance value:

To: 24030000000183 3F

Response: 240302040276 82

Data analysis:  $0x04 * 256 + 0x02 = 1026$ , irradiance =  $1026 \text{ W/m}^2$

Read the value of sunshine time:

To be sent: 24 03 00 01 00 01 D2 FF

Response: 24 03 02 04 CF B7 17

Data analysis:  $0x04 * 256 + 0xCF = 1231$ , sunshine hours =  $1231/10 = 123.1 \text{ h}$

Instruction 06

Change the sensor baud rate to 115200

To: 240600050004 9F 3D

Receiving: 240600050004 9F 3D

**Note: After sending the modification command, you need to power off and restart the sensor to use the new baud rate**

Change the sensor address to 120 (default address hex 36)

To: 24 06 00 04 00 78 CF 1C

Receiving: 24 06 00 04 00 78 CF 1C

---

## IV Modbus register description

| Register address<br>(hexadecimal) | Parameter            | Operate                     | Data Format | Remarks                                                                                             |
|-----------------------------------|----------------------|-----------------------------|-------------|-----------------------------------------------------------------------------------------------------|
| 0x00                              | Irradiance           | Readable                    | Uint16      | Unit : W/m <sup>2</sup>                                                                             |
| 0x01                              | Hours of<br>Sunshine | Readable                    | Uint16      | Read value / 10<br>unit : h                                                                         |
| 0x04                              | Address              | Readable<br>and<br>Writable | Uint16      | Address range:<br>0X01-0XFF<br>Default address:<br>0x24 (decimal:<br>36)                            |
| 0x05                              | Baud rate            | Readable<br>and<br>Writable | Uint16      | Bottleneck rate<br>write<br><br>0x01: 4800<br><br>0x02: 9600<br><br>0x03: 56000<br><br>0x04: 115200 |