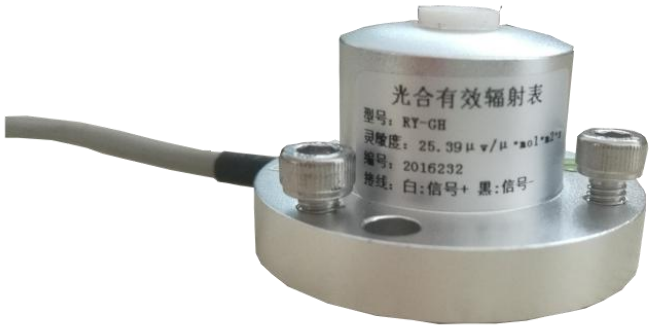
PHOTOSYNTHETICALLY EFFECTIVE RADIATION SENSOR

MANUAL



INTRODUCTION

The photosynthetically effective radiation sensor is mainly used to measure the photosynthetically effective radiation of natural light in the wavelength range of 400-700nm, and is simple to use. It can be directly connected to a digital voltmeter or a data collector and can be used under all weather conditions.

The meter uses a silicon photodetector and passes through a 400-700nm optical filter. When there is light, a voltage signal is generated that is proportional to the intensity of the incident radiation, and its sensitivity is proportional to the cosine of the direct angle of the incident light. μ • mol / m2 • s.

This table is widely used in agricultural meteorology and crop growth research.

TECHNICAL SPECIFICATION

- ●Spectral range: 400-700nm
- ●Sensitivity: 7-70 μv / μ • mol • m2 • s
- ●Response time: <1s (99%)
- ●Temperature related: maximum 0.05% / ℃
- ●Cosine correction: up to 80 ° incident angle
- ●Internal resistance: <2K
- ●Working environment: temperature -40—65 ℃, humidity <90%
- ●Output: 200mv of original output
- ●Wiring: Red + White-
- ●RY-GH + RY-ST: Transmission output RS485 / 4-20MA
- ●Range: 0-4000 μ • mol • m2 • s
- ●Wiring: red + black-yellow ma output (current type)
- ●Wiring: Red + Black-Yellow A Blue B (Type 485)
- ●Standard wiring length: 1.5 meters
- ●Farthest lead length: 200m for current, 100m for RS485, 50m for voltage

COMMUNICATION PROTOCOL

Communication specification

9600,8,1,N,N

Write station number command

Host send command format：

Device address Function code Start register address No. of registers Data length Data CRC check

00 10 0001 0001 02 00xx CRCloCRChi（XX=0X01-0XFF）

Slave response command format：

Device address Function code Start register address No. of registers CRC check

00 10 0001 0001 CRCloCRChi

Example：(address changed to 33)

Command 00 10 00 01 00 01 02 00 33 EA 04

Respond 00 10 00 01 00 01 51 D8

Read station number command (fixed command)

Host send command format：

Device address Function code Start register address No. of registers CRC check

00 03 0001 0001 CRCloCRChi

Slave response command format：

Device address Function code Data length Data CRC check

00 03 02 00xx CRCloCRChi（XX=01-ff）

Example：（address:FF）

Command 00 03 00 01 00 01 D4 1B

Respond 00 03 02 00 FF C5 C4

Read data command

Host send command format

Device address Function code Start register address No. of registers CRC check

xx 03 0000 0001 CRCloCRChi

Slave response command format：

Device address Function code Data length Data CRC check

xx 03 02 00yy CRCloCRChi

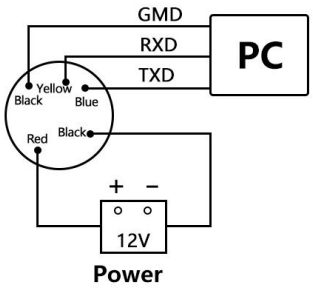
Example：

Command：FF 03 00 00 00 01 91 D4

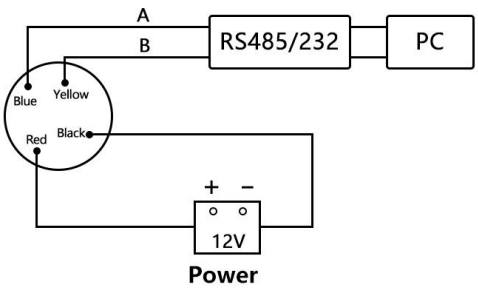
Respond：FF 03 02 00 11 51 9C

Radiation = 00 17 = 23 μ•mol•m2•s

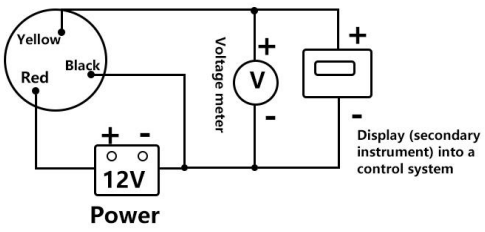
WIRING METHOD



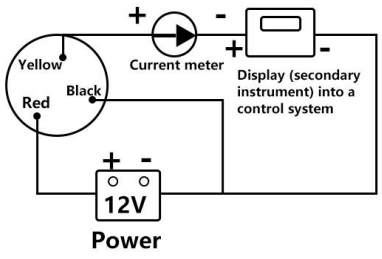
RS232 Interface wiring



RS485 Interface wiring



Voltage output wiring



Current output wiring