COMPTLIS

A70H-SR

Solar Radiation Sensor

Instruction Manual

Pictured:
A70H-SR

DOCUMENT VERSION:
210428

A70H-SR

Solar Radiation Sensor

The A70H-SR Solar Radiation Sensor utilizes a silicone cell. It is designed for measuring radiation in the 300-1100nm range. It is widely used to monitor solar radiation in meteorological, solar energy, agricultural, and environmental applications. It has no moving parts and low power consumption while offering high sensitivity.

FEATURES

-Silicon Solar Radiation Cell

APPLICATIONS

-Building Automation and Controls
-Environmental Monitoring
-General Purpose Solar Radiation Monitoring
(Agriculture, Solar Energy, Meterology)

SPECIFICATIONS

Power Supply: 12-24 VDC
Spectral Range: 300-1100 nm
Accuracy: ±5% reading
Range: 0-1500 W/m²
Output: 4 - 20 mA, RS485 (optional)
Response Time: ≤5s
Temperature Effect: ≤0.08%/°C
Cosine Correction: ≤10% (Solar elevation level = 10°)
Non-Linearity: <±3%
Stability: ≤±2% per year
Operating Temperature: -40°C to 80°C
Ingress Protection: IP65/NEMA4
Material: Aluminum Shell
Storage Conditions: 10°C to 60°C @ 20% to 90% R.H.
Weight: 420g/14.8 oz

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ELECTRICAL CONNECTIONS

CABLE	Voltage/Current	RS485
RED	V+	V+
YELLOW	SIGNAL	RS485A
BLACK/GREEN	V-	V-
BLUE	N/A	RS485B

MOUNTING AND MAINTENANCE:

The sensor should be installed in the open air without any cover above the sensing surface.

The sensor should be mounted horizontally and as level as possible to ensure best accuracy. (If the sensing head is facing downward, it can measure reflected radiation.)

Check the bezel periodically and make sure it is clean. Use a damp or dry cloth to gently wide dirt away. Do not use chemicals or abrasives.

Please do not attempt to remove or loosen the bezel, as this may affect performance. The protective cap is not necessary in general rainfall, but if expecting prolonged heavy rain or hail the protective cover should be installed.

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OUTPUT CHARACTERISTICS:

Current (4-20mA)
Solar radiation values (W/m2)+(I-4)/16*1500 (where I is output current value, unit: mA)

RS485 Communication Protocol (MODBUS-RTU)
Communication parameters: Baud rate: 9600; Data bits:8; Stop bit:1; Parity: none Slave address: factory default is 01H (set according to the need, 00H to FFH)

The 03H Function Code Example: Read the Radiation Value Host Scan Order (slave address: 0x01)
01 03 00 00 00 01 840A

Slave Response
01 03 02 03 B4 91E7

Solar Radiation: (03B4)H = (948)D = 948W/m2

The 10H Function Code Example: Modify the slave address

Host Scan Order (Changed to 01H, read and write address must be 00H):
00 10 01 BDC0

Slave Response
00 10 007C

The 20H Function code Example: Read the Slave Address (fixed command, ensure that no other devices are on the bus)

Host Scan Order:
00 20 00 68

Slave Response (addr.=01H): 00 20 01 A9C0

Note:All underlined is fixed bit;
The last two bytes is CRC check command

Specifications subject to change without notice.
Installation Questions and Troubleshooting?