HUKSEFLUX SR300 PYRANOMETER

TECHNICAL PRODUCT SHEET

Overview

The SR300-D1 from Hukseflux is a Class A pyranometer designed for industrial-grade solar radiation monitoring per IEC 61724-1. It delivers the highest accuracy measurements with the lowest cost of ownership, without the need for additional accessories.

This all-digital sensor offers precise irradiance measurements and high data availability, thanks to a robust feature set that includes internal heating and ventilation, a tilt sensor, a status LED, and integrated surge protection.

Specifications

Measurement Range	-400 to 4000 W/m^2
Signal Type	Two Wire Half Duplex MODBUS RS-485
Sensor Accuracy	Class A (secondary standard) ISO 9060:2018 & IEC 61724-1:2021 compliant
Supply Voltage	8 to 30 VDC (standard power mode)
Power Consumption	<0.5W-3W
Operating Temperature Range	-40 to 80 C
Sensor Cables	Multiple lengths available
Mounting	Met Mast and array mount options available

Recommended Maintenance

Please note that as with all thermopile pyranometers, regularly scheduled maintenance is imperative to achieve the sensor's specified performance.

Tools Required

- 4 mm hex key
- T10 torx key for opening sensor bottom

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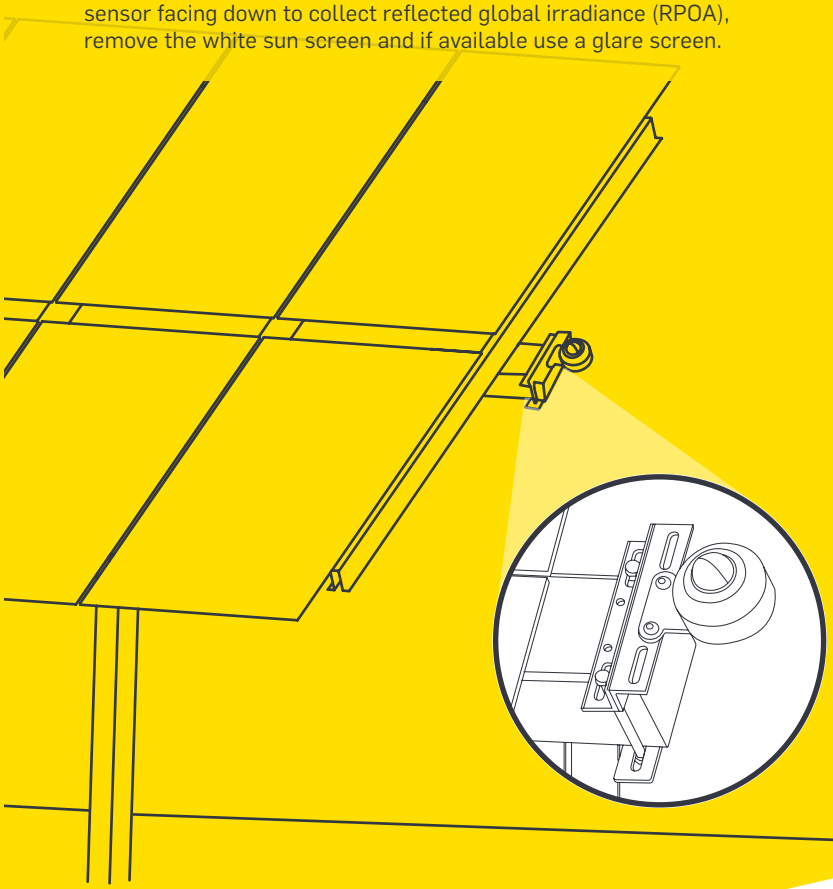
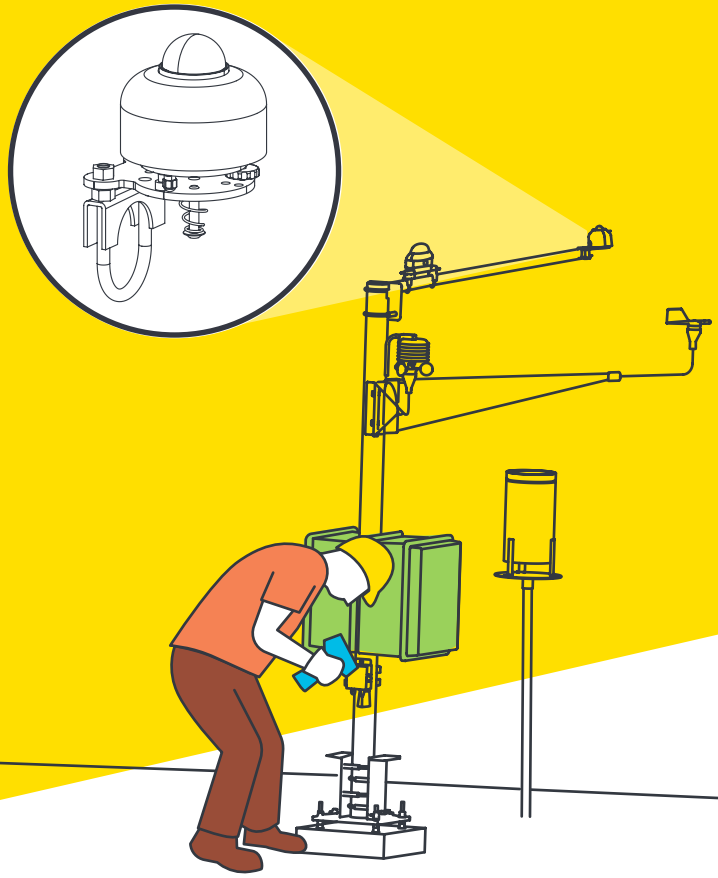
Array Mounted Installation:

1. Install the mounting bracket on the array (this example shows mounting bracket #16073) following the applicable instructions.
2. Remove the sun screen (white cover) from the pyranometer. Remove the sensor leveling feet and place the sensor on the mounting plate, making sure the cable exits towards the nearest pole (north in the northern hemisphere, south in the southern hemisphere).
3. Thread the two mounting screws into the base of the sensor and tighten until snug (do not over tighten).
4. Connect SR300 grounding cable to the SR300 sensor body using provided hardware. Connect grounding cable to ground rod.
5. Attach the sensor cable and place the sun screen back on the sensor body.
6. Route the cable to the power supply and connect the sensor wires to a power source and RS485 COM port. When installing the sensor facing down to collect reflected global irradiance (RPOA), remove the white sun screen and if available use a glare screen.

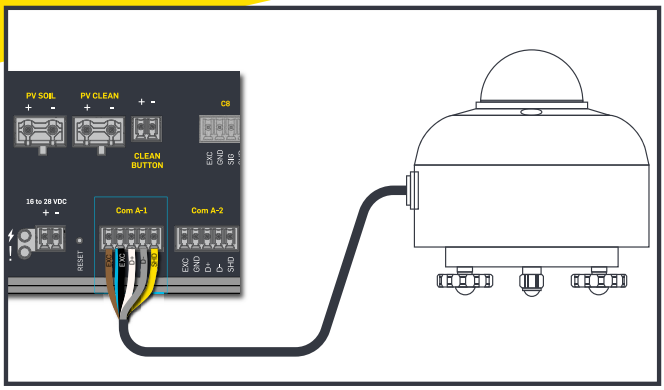
Boom Mounted Installation:

1. Install the mounting boom being utilized by following the associated instruction sheet.
2. Assemble and install the pyranometer mounting plate on one end of the mounting boom. Use a level to verify that the mounting plate is level.
3. Remove the sun screen (white cover) from the pyranometer. Place the sensor on the mounting plate, making sure the cable exits towards the nearest pole (north in the northern hemisphere, south in the southern hemisphere).
4. Thread the two mounting screws loosely into the base of the sensor. Use the adjustable feet and leveling bubble on the sensor body to level it.
5. Attach the sensor cable and place the sun screen back on the sensor body.
6. Route the cable to the power supply and connect the sensor wires to a power source and RS485 COM Port.



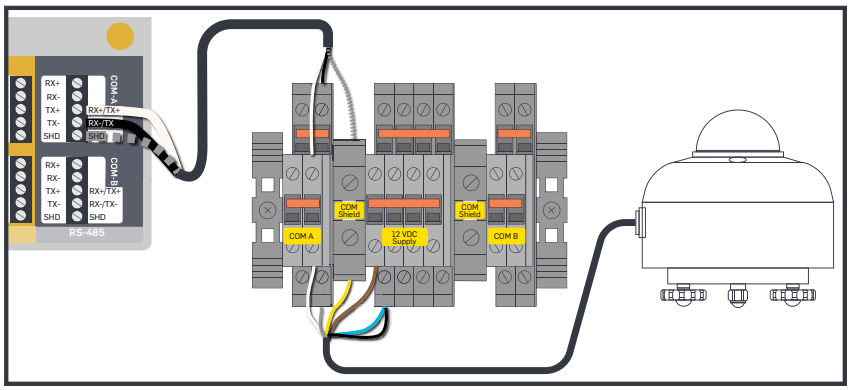


LOGR | Solar



*See wiring details on page 3

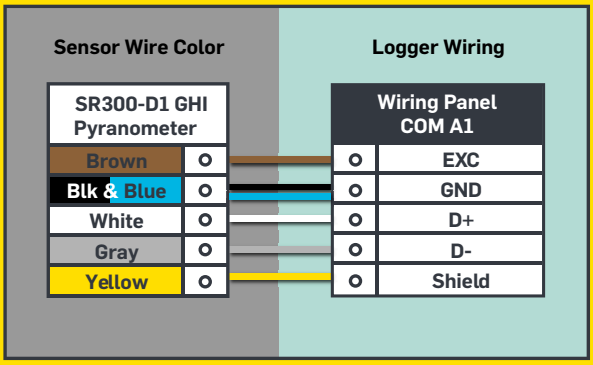
SymphoniePRO

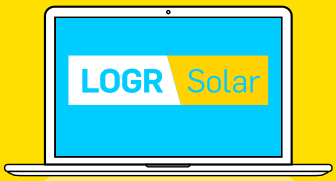


*See wiring details on page 4

LOGR | Solar Logger Programming

The Hukseflux SR300-D1 is a digital sensor that utilizes the LOGR | Solar data logger's RS485 COM A and COM B ports. Once wired into the appropriate COM port (in this example COM A), program the data logger as follows (please use firmware versions 1.10.06 or newer):





1. Under the "Sensor's Tab" navigate to Serial Sensor Setup. Under Sensor Type, select "Hukseflux SR300".

2. Select the COM port that the sensor is wired into (either A or B).

3. Enter the sensors Slave ID of the sensor. SR300 sensors are typically programmed with Slave ID 1 but if more than two sensors are placed on the same COM port, they must each have unique IDs.

4. Enter the Serial number and control scheme if applicable.

5. Scroll to the bottom of the page and hit "Save".

6. For SR300s which intend to use heater control, navigate to "Sensor Control Setup"

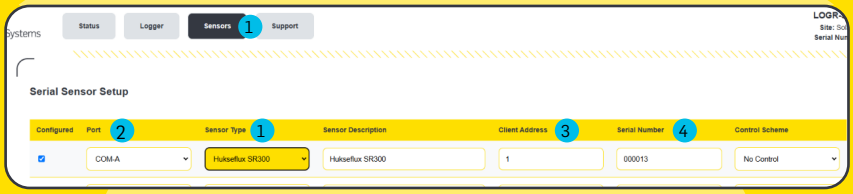
7. Click "Configure" and either input the reference temperature sensor used to determine at which temperature the heater will turn on, or input the time frame the heater will turn on.

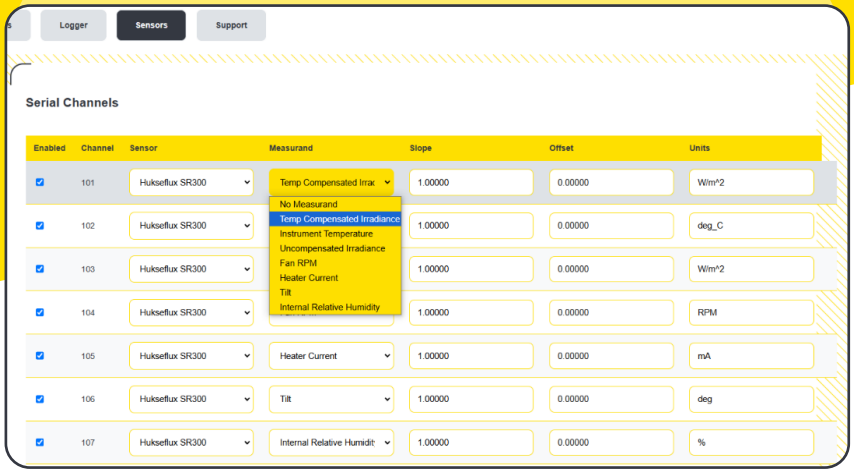
8. Save the Control Scheme. Go back to "Serial Sensor Setup" and make sure the correct control scheme is selected for the SR300.

9. Again, using the "Sensors" tab, navigate to "Serial Channels".

10. For the desired channel, choose "SR300 Pyranometer" as the Sensor being used.

11. Choose the measurand that will be measured on this channel. Typically, the first measurand for the SR300 is "Temp Compensated Irradiance".





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SymphoniePRO Logger Programming

The Hukseflux SR300-D1 is a digital sensor that utilizes the SymphoniePRO data logger's RS485 COM A and COM B ports. Once wired into the appropriate COM port (in this example COM A), program the data logger as follows (please use firmware versions 3.4.12 or newer, and SymphoniePRO Desktop Application software versions 3.17.0.15 or newer):

(Example on channel 27)

1. Press the + next to the first Serial channel the sensor is being programmed into (27-50)

2. Select the COM port that the sensor is wired into (either A or B)

3. Enter the sensors Slave ID of the sensor. SR300-D1 sensors are typically programmed with Slave ID 1 but if more than two sensors are placed on the same COM port, they must each have unique IDs.

4. Choose "SR300 Pyranometer" as the device being used.

5. Choose the measurand that will be measured on this channel. Typically, the first measurand for the SR300 is "Irradiance".

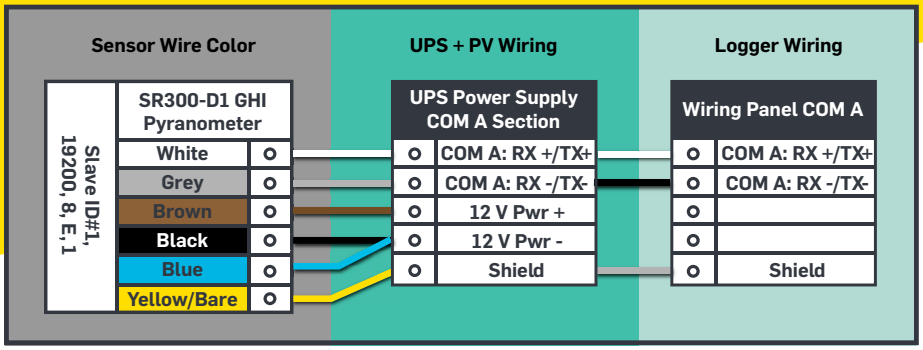
6. To program additional measurands, expand the next available channel by pressing the + and follow steps 2 through 5 and choose the next desired measurand.

7. Repeat these steps until all desired measurands are activated.

8. For SR300s which intend to use heater control, press the + next to the channel of the "SR300-Heater" measurand window.

9. Under "Heater Control Settings, input the reference temperature sensor used and input the temperature at which the heater will turn on. Save this setting to the logger.

10. Press "Save All" to save the settings to the logger



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ISO 9001: 2015 Certified

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