

# HUKSEFLUX SR30-D1 PYRANOMETER

## TECHNICAL PRODUCT SHEET



### Tools Required

- 3mm Slotted Screwdriver
- 4mm Hex Key

### Overview

The SR30-D1 from Hukseflux provides class A (secondary standard) performance per ISO 9060:2018 along with a rich set of features that are unmatched by other sensors. The all-digital sensor provides high-accuracy irradiance measurements with high data availability due to its integrated heating and ventilation functionality. Unlike traditional, externally heated and ventilated pyranometers, the SR30-D1's internal heating and ventilation system consumes relatively little power and still delivers high data availability.

### Specifications

Measurement Range	-400 to 4000 W/m <sup>2</sup>
Signal Type	Two Wire Half Duplex MODBUS RS-485
Sensor Accuracy	Class A (secondary standard) ISO 9060:2018 & IEC 61724-1:2017 compliant
Voltage Supply	8 to 30 VDC (standard power mode)
Supply Current	0.25 to 0.375 A (with heater active)
Operating Temperature Range	-40 to 80 C
Sensor Cables	5m, 10m, 20m, and 50m options
Mounting	Met Mast and array mount options available

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



**NRG**Systems®

## 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. Attach the sensor cable and place the Sun Screen back on the sensor body.
5. **For Symphonie PRO:** Route the cable to the Power Supply and connect the sensor wires to a power source and RS485 COM Port.

**For LOGR | Solar:** Connect the sensor wires to the appropriate COM Port.

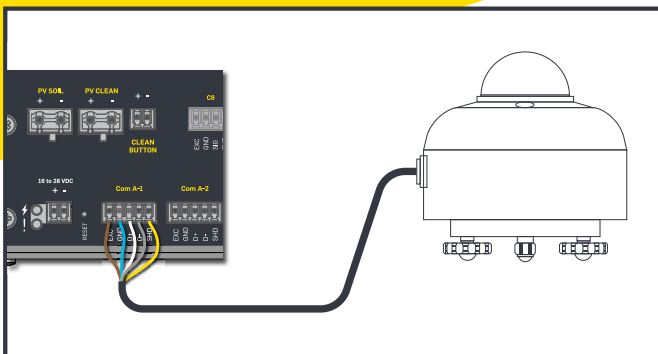
*When installing the sensor facing down to collect reflected global irradiance (RPOA), remove the white sun shield and if available use a glare screen.*

## 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. **For Symphonie PRO:** Route the cable to the Power Supply and connect the sensor wires to a power source and RS485 COM Port.

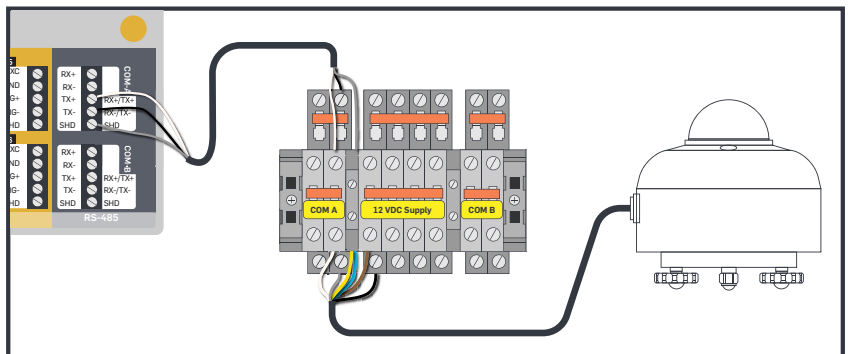
**For LOGR | Solar:** Connect the sensor wires to the appropriate COM Port.

### LOGR | Solar



\*See LOGR | Solar wiring details on Page 3

### SymphoniePRO



\*See SymphoniePRO wiring details on Page 4

# LOGR | Solar Data Logger Programming

The Hukseflux SR30-D1 is a digital sensor that utilizes the LOGR| Solar data logger's COM A1 to COM B1 ports.

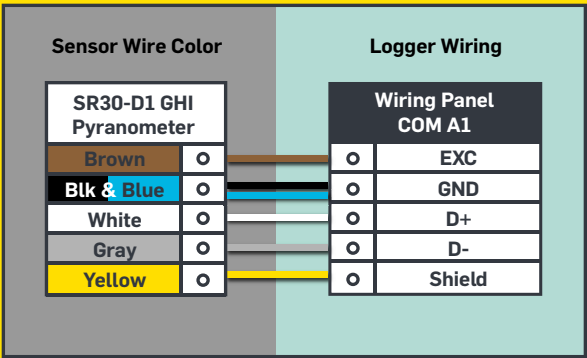
Once wired into the appropriate COM port (in this example COM A), program the data logger as follows:

- 1. Select the desired previously configured sensor from the Sensor drop-down menu. This will automatically check the Enabled checkbox in the first column for the channel.
- 2. Select the desired Measurand from the drop-down menu.
- 3. Edit the Slope, Offset and Units fields if the default values need to be changed.
- 4. Channels configured with a wind direction sensor will enable a **Gust Source Ch** dropdown menu. Select the configured channel of a wind speed sensor to pair the data.

***Note: Wind gust is the highest 3-sec average wind run per averaging interval and is used for structural loading calculations. Pairing a direction channel to a wind speed channel allows the user to determine the direction from which a gust originates.***

- 5. Repeat for as many channels as necessary and click the yellow Save button at the bottom of the screen to complete the channel configurations.

After saving the channel configurations, the Web Interface will automatically route to the Sensor Outputs home page where Active channels report live data. The drop-down menu at the top right corner of the table allows alternative views of All, Active, Inactive, and Unconfigured channels.



Serial Channels							
Enabled	Channel	Sensor	Measurand	Slope	Offset	Units	Gust Source Ch
<input checked="" type="checkbox"/>	101	Luft WS600	Air Temperature (Act.)	0.10000	0.00000	deg_C	
<input checked="" type="checkbox"/>	102	Luft WS600	Relative Humidity (Act.)	0.10000	0.00000	%	
<input checked="" type="checkbox"/>	103	Luft WS600	Relative Air Pressure (Act.)	0.10000	0.00000	hPa	
<input checked="" type="checkbox"/>	104	Luft WS600	Wind Speed Fast	0.10000	0.00000	m/s	
<input checked="" type="checkbox"/>	105	Luft WS600	Wind Direction Fast	0.10000	0.00000	deg	104

Sensor Outputs				Active
Channel Number	Type	Description	Data	
1	Analog	NRG BP20	0.00 hPa	
101	Serial	Hukseflux SR30-Irradiance	0.97 W/m²	
102	Serial	Hukseflux SR30-Irradiance (UC)	0.96 W/m²	
103	Serial	Hukseflux SR30-Body Temp	34.25 deg_C	
104	Serial	Hukseflux SR30-Humidity	11.04 %	
105	Serial	Hukseflux SR30-Tilt	0.17 deg	
106	Serial	Hukseflux SR30-Heater Current	335.00 mA	
107	Serial	Hukseflux SR30-Fan Speed	9077.00 rpm	

# SymphoniePRO Logger Programming

The Hukseflux SR30-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:

## (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. SR30-M2-D1 sensors are typically programmed with Slave ID 1 but if more then two sensors are placed on the same COM port, they must each have unique IDs.
- 4. Choose "SR30 Pyranometer" as the Device being used
- 5. Choose the Measurand that will be measured on this channel. Typically the first measurand for the SR30 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. Press "Save All" to save the settings to the logger.

