

LI-COR LI-190

PAR
Sensor

Sensor Interface Manual



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Overview

The LI-COR LI-190 Quantum Sensor measures photosynthetically active radiation (PAR) in the 400 to 700 nm waveband. Micromole per second per square meter ($\mu\text{mol s}^{-1} \text{m}^{-2}$) is the unit of measurement used to quantify PAR.

The LI-190 uses an analog current output to communicate and is cosine corrected for plane surface radiation measurements. Typical PAR measurement applications include plant canopy and greenhouse deployments.



Figure 1: LI-COR LI-190 PAR sensor

Installation

LI-COR 2003S mounting and leveling fixture is recommended to ensure proper mounting for all LI-COR terrestrial light sensors. The NexSens M-ARM mounting arm can be used with the fixture. It consists of a 3' section of aluminum unistrut, a stainless steel bracket designed specifically to accommodate LI-COR 2003S mounting and leveling fixtures, and a u-bolt for quick attachment to any pole less than 2 3/8" in diameter.



Figure 2: NexSens M-ARM mounting arm for LI-COR terrestrial light sensors

Alternatively, the M-ARM-D dual sensor mounting arm is designed to accommodate a Vaisala WXT520 multi-parameter weather sensor along with an LI-190 PAR sensor. However, it functions exactly the same as the M-ARM for terrestrial light sensor mounting.

Connecting to an iSIC Data Logger

To wire the sensor into the iSIC, route the cable and wires through a gland fitting installed in the enclosure, and then unplug the green terminal strip from the data logger before securing individual wires according to the wiring diagram below. Avoid clamping on wire insulation.

CONNECTING TO AN ISIC DATA LOGGER



Figure 3: Unplug the green terminal strip from the data logger before wiring the sensor

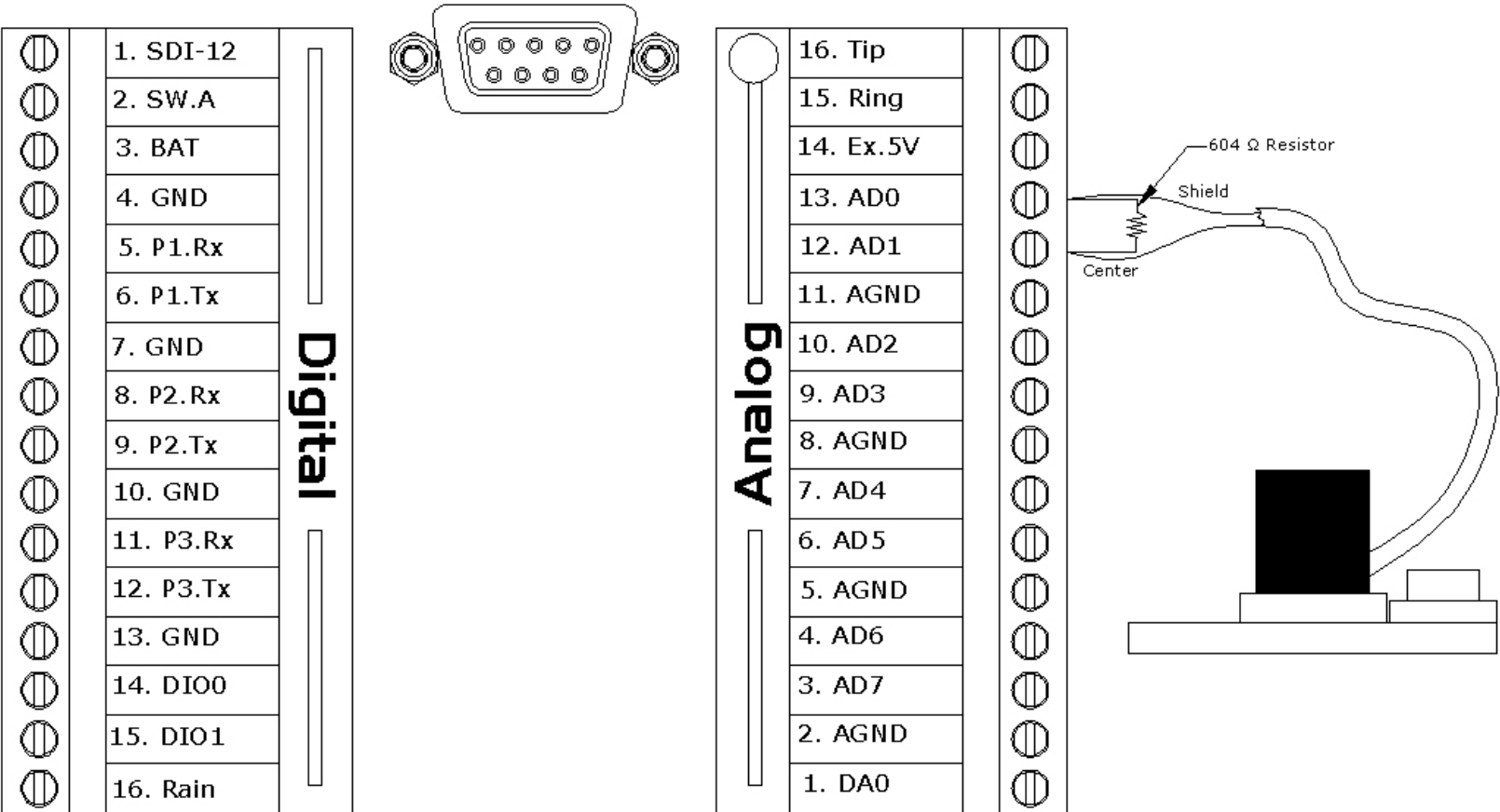


Figure 4: Physical wiring of an LI-190 PAR sensor

Table 1: Table for wiring a LI-190 PAR sensor to an iSIC data logger

Digital		Analog	
1. SDI-12	NC	16. Tip	NC
2. SW.A	NC	15. Ring	NC
3. BAT	NC	14. Ex.5V	NC
4. GND	NC	13. AD0	Shield (Positive) Resistor (604 Ω)
5. P1.Rx	NC	12. AD1	Center (Negative) Resistor (604 Ω)
6. P1.Tx	NC	11. AGND	NC
7. GND	NC	10. AD2	NC
8. P2.Rx	NC	9. AD3	NC
9. P2.Tx	NC	8. AGND	NC
10. GND	NC	7. AD4	NC
11. P3.Rx	NC	6. AD5	NC
12. P3.Tx	NC	5. AGND	NC
13. GND	NC	4. AD6	NC
14. DIO0	NC	3. AD7	NC
15. DIO1	NC	2. AGND	NC
16. Rain	NC	1. DA0	NC

Notes:

- A 604 Ω resistor must be used with the LI-COR LI-190 PAR sensors.

Computer Interface

iChart software is used to set up the iSIC data logger, as well as to acquire and process data. Launch the software and select **File | New Project**. Follow the Setup Device Wizard to create a project file. Additional information is available in the iChart manual.



1415 Research Park Drive
Beavercreek, OH 45432
937-426-2703
www.NexSens.com

