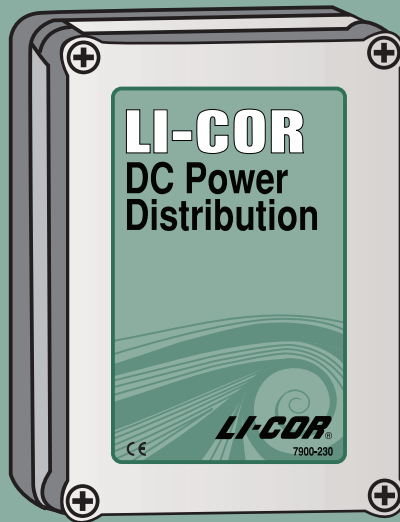


# DC Power Distribution Module

**LI-COR**<sup>®</sup>

**Instruction Manual**





# 7900-230 & 7900-231 Power Distribution Modules

## Instruction Manual

Publication No. 984-13867

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New editions of this manual will include all updates. An update addendum may be used between editions to provide up-to-date information. Revisions are indicated by the revision number. Minor updates, which do not alter the meaning of the content, will be incorporated without affecting the revision number.

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1	July 2014	First edition.



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## Notes on Safety

The power distribution box is designed to be safe when operated in the manner described in this manual. The safety of this product cannot be guaranteed if the product is used in any other way than is specified in this manual. The Power Distribution Box is intended to be used by qualified personnel.

The equipment includes the following markings:

	The product is marked with this symbol if it is necessary for you to refer to the manual or accompanying documents in order to protect against damage to the product.
	The product may be marked with this symbol for an earth ground.

The manual includes the following markings:

<b>WARNING</b>	Warnings must be followed carefully to avoid bodily injury.
<b>CAUTION</b>	Cautions must be observed to avoid damage to your equipment.
<b>NOTE</b>	Notes contain important information and useful tips on the operation of your equipment.

## Safety Warnings

Mind the safety notes in this manual to ensure safe operation of the power distribution box and to avoid damage to equipment.

**Warning:** Wear gloves and safety goggles when installing and servicing the power distribution box.



**Caution:** Read the instructions of the equipment you are connecting to the power distribution box before installing the system. Save any instructions, including these, for future reference.



**Caution:** Use insulated tools to avoid unwanted metal-to-metal contact that may result in a shorted circuit.

**Warning:** Turn off the 10A breaker and disable the power supply before installing or modifying the connections. Be sure that the installation is in compliance with local ordinances and the National Electrical Code. Consult a professional electrician if needed.

**Caution:** Do not reverse the polarity or short circuit the poles *or your equipment may be damaged*. Be sure to connect the positive wires to the red terminals and negative wires to the black terminals.

To prevent damage to equipment, check your work before turning the 10A breaker switch ON.

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# 1 General Information

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LI-COR Power Distribution Boxes (PDB) are power supply junctions for sensors and analyzers in eddy covariance (EC) systems.

The **7900-230** provides 11 connections for powered sensors, with the power output equal to the power supplied, 10 amps maximum.

The **7900-231** provides six unregulated outputs with power out equal to the power supplied (8 amps maximum) and two 12 volt outputs (2 amps maximum). Voltage is regulated by a charge controller/voltage regulator (part #7900-127).

You may wonder: Why use a 12 volt regulator when most components of the system list 28 or 30 volts as the upper limit? It turns out that a 24 volt solar power supply can actually supply >31 volts under sunny very cold conditions. This could damage sensors or cause them to power off. The 12 volt regulator ensures that the voltage will not exceed the limits of the sensors. You may still wonder: Why not use a 12 volt solar power supply? A 12 volt supply is great unless you have a long cable run, in which case the voltage can drop beyond the lower limits of the sensors, causing them to power off. The configurations we provide should supply reliable and safe power to your system without exceeding the upper or lower limits of the system.

## What's What

If you have just taken delivery of the Power Distribution Box, check the packing list to be sure you received everything that you ordered. It is shipped partially assembled and many of the components are installed in the box. Depending upon your specifications, it may include:

- **Enclosure Assembly** - This is the partially assembled enclosure that includes a breaker and terminals for power wires.

*Section 1. General Information*

---

- **Power Supply Wire**<sup>1</sup> - A 65 ft (20 m) 10 AWG cable in conduit (part #7900-232) or a 130 ft (40 m) 12 AWG cable without conduit (part #7900-233) connects the power distribution box to a DC power supply.
- **15 cm Enclosure Mounting Kit** - (part #9979-026) This is to attach the power distribution box to a tripod mast or tower.

<b>Description</b>	<b>Qty.</b>	<b>Part #</b>
Enclosure Assembly	1	7900-230
Enclosure Mounting Plate	1	9879-053
10A DC Circuit Breaker	1	275-13499
6-position Shorting Blocks	2 (7900-230)	331-13512
4-position Shorting Blocks	2 (7900-231)	331-14639
3/4" PVC Strain Relief Fitting	1	6579-055
PVC Locknut	1	259-13743
Coarse Metallic Wool Pack	1	9979-032
15 cm Enclosure Mounting Kit	1	9979-026
Split Washer 5/16"	2	167-05635
Band Clamp, 9/16"	2	300-13293
Single Bolt Flared Leg Mounting Bracket	2	235-13234
5/16-24 x 1/2" Hex Head Bolt	2	(included with
5/16" Flat Washer	2	235-13234)
Charge Controller/Voltage Regulator	1 (7900-231)	7900-127
Power Supply Wire	optional	
20 m (65.6 ft) 10 AWG (5.26 mm <sup>2</sup> ) copper wire in 1/2" flexible aluminum conduit		7900-232
40 m (131 ft) 12 AWG (3.31 mm <sup>2</sup> ) insulated copper wire		7900-233

Inquire with LI-COR® if you need a replacement part that is not on this list. Spare and replacement parts can be ordered directly from LI-COR by contacting [envsales@licor.com](mailto:envsales@licor.com) or by calling 402-467-3576 (International) or 1-800-447-3576 (U.S. & Canada) or your local distributor.

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<sup>1</sup>The 7900-232 power cable with conduit protection should be used for cable lying on the ground.

## Use Cases

Each configuration of the power distribution box is suited for a specific case. This section provides an overview of these scenarios.

System Configuration	Power Supply Recommendation
Are you using a 24V Power Supply? ↓ Yes	- No → If your power supply limits the voltage to 12V, use the 7900-230 unregulated power distribution box. See Figure 1-1 on the next page.
Does your EC System include a Biomet System? ↓ Yes	- No → 7900-231 Voltage Regulated Supply. See Figure 1-2 on the next page. • Power the gas analyzers with unregulated power. • Power the anemometer and stand-alone communications from 7900-231 regulated power.
Does your EC System have a Hughes Satellite Radio? ↓ No	- Yes → 7900-231 Voltage Regulated Supply and Backup Battery System or Voltage Regulator. <sup>1</sup> See Figure 1-3 on page 1-5. • Power the gas analyzers with unregulated power. • Power the anemometer and satellite radio from the 7900-231 regulated power. • Power the Biomet system from the backup battery/regulator.
Does your Biomet system have the CNF4 Heater/Ventilator? ↓ Yes	- No → 7900-231 Voltage Regulated Supply. See Figure 1-4 on page 1-5. • Power the gas analyzers with unregulated power. • Power the anemometer, Biomet system, and cellular radio from 7900-231 regulated power.
Is your EC system equipped with a cellular radio (e.g., AirLink)? ↓ Yes	- No → 7900-231 Voltage Regulated Supply and Backup Battery System or Voltage Regulator. See Figure 1-5 on page 1-6. • Power the gas analyzers with unregulated power. • Power the anemometer from 7900-231 regulated power. • Power the Biomet system from the backup battery/regulator.
7900-231 Voltage Regulated Supply and Backup Battery or Voltage Regulator. See Figure 1-6 on page 1-6. • Power the gas analyzers with unregulated power. • Power the anemometer and cellular radio from the 7900-231 regulated power. • Power the Biomet system from the backup battery/regulator.	

<sup>1</sup>We recommend the Biomet System Backup Battery. It includes the voltage regulator and a backup battery.

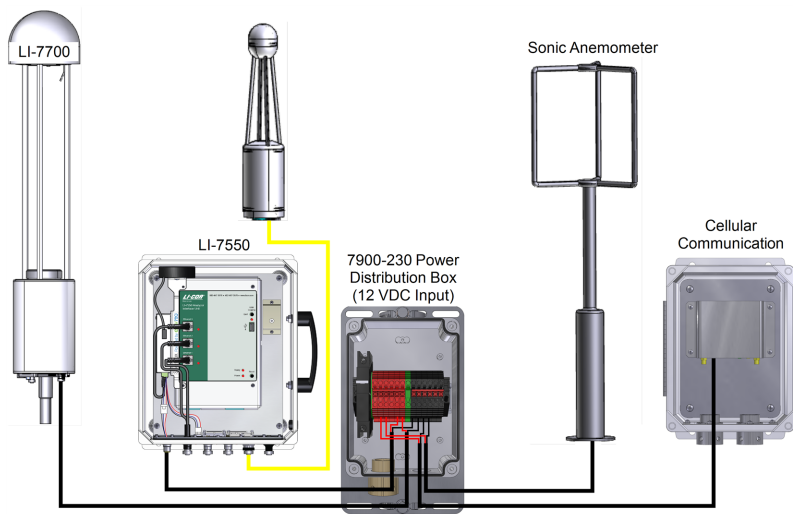


Figure 1-1. Power supply for an EC system with a sonic anemometer, LI-7500A or LI-7200, LI-7700, cellular communication and Biomet with a 12V power supply.

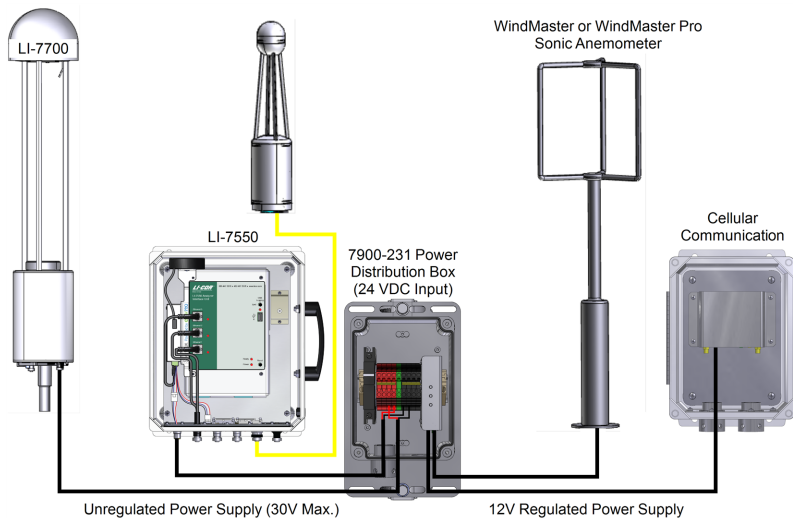


Figure 1-2. Power supply for an EC system with a sonic anemometer, LI-7500A or LI-7200, LI-7700 and cellular communication (24 V power supply).



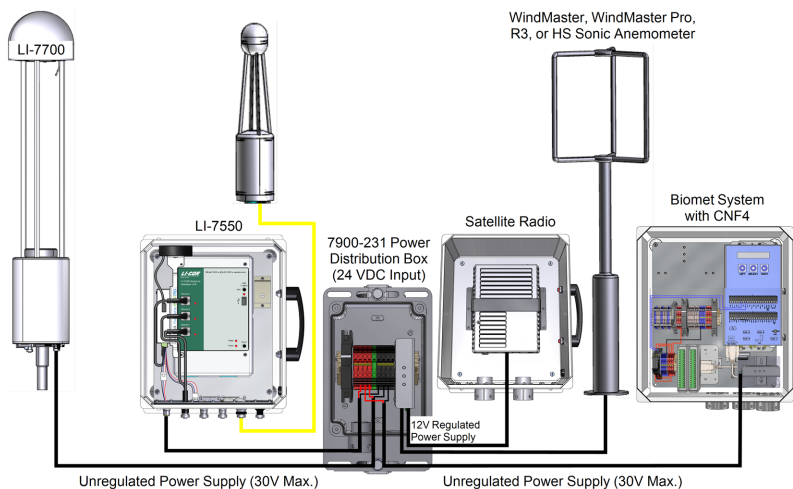


Figure 1-3. Power supply configuration for an EC system with a sonic anemometer, LI-7500A or LI-7200, LI-7700, a Biomet system, and a satellite radio (24 V power supply).

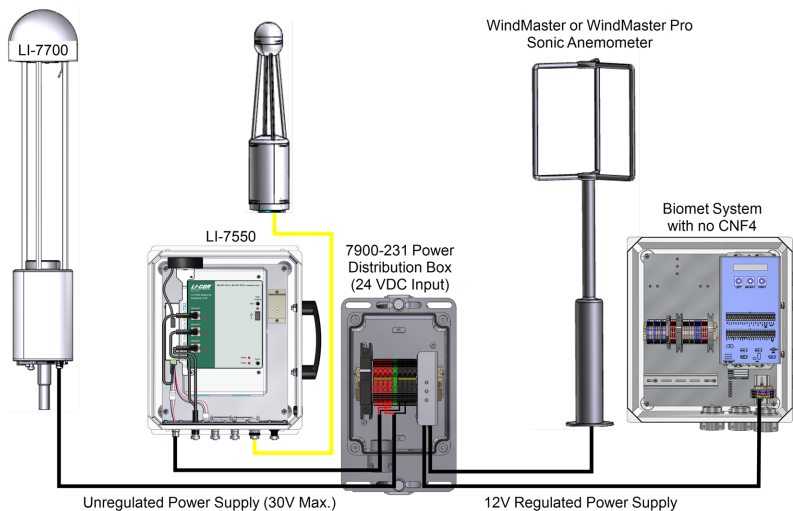
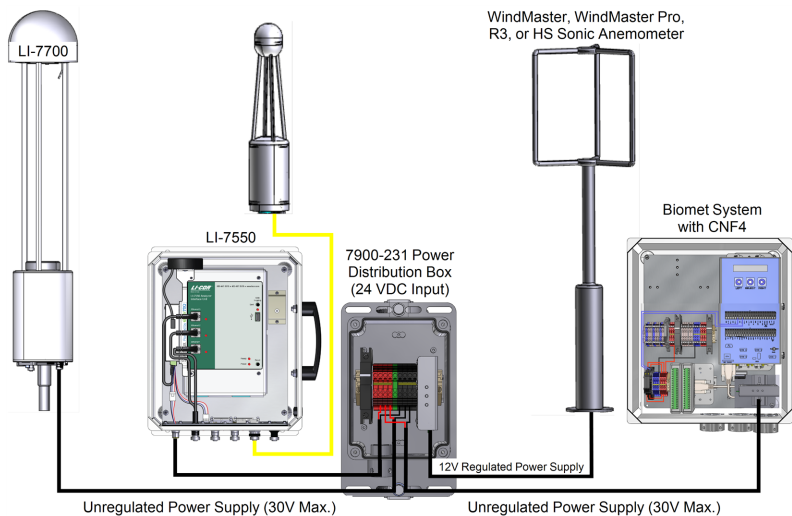
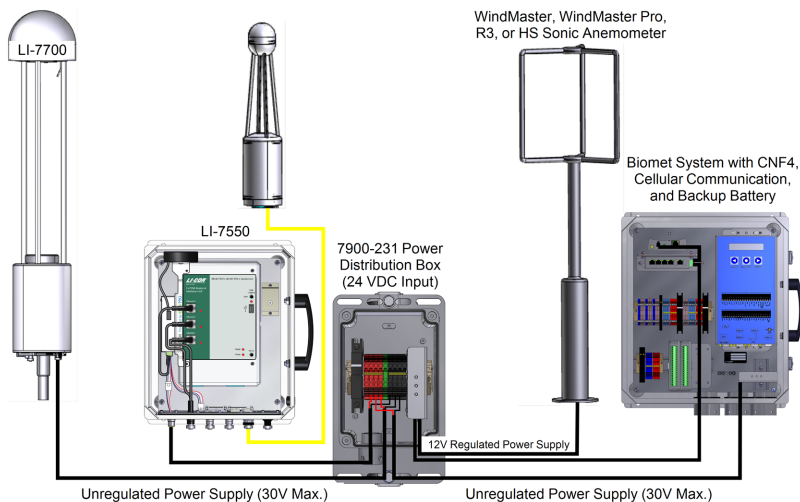


Figure 1-4. Power supply configuration for an EC system with a WindMaster™ sonic anemometer, LI-7500A or LI-7200, LI-7700 and a Biomet system **without** the CNF4 Heater/Ventilation Unit or cellular radio (24 V power supply).



*Figure 1-5. Power supply configuration for an EC system with a sonic anemometer, LI-7500A or LI-7200, LI-7700 and a Biomet system **with** the CNF4 Heater/Ventilation Unit but no cellular radio (24 V power supply).*



*Figure 1-6. Power supply configuration for an EC system with a sonic anemometer, LI-7500A or LI-7200, LI-7700 and a Biomet system **with** the CNF4 Heater/Ventilation Unit, cellular radio, and backup battery system (24 V power supply).*

## Initial Setup

The following section describes how to set up the PDB.

### Tools

The following **tools** are required:

- Phillips screwdriver
- Bolt drivers or wrenches: 13 mm and 8 mm (1/2" and 5/16" SAE equivalents)
- Standard slotted screwdriver (optional, instead of 8 mm driver for mounting band clamps)
- Small standard slotted screwdriver (to install wires in terminal blocks)
- Wire trimmer/stripper (optional)

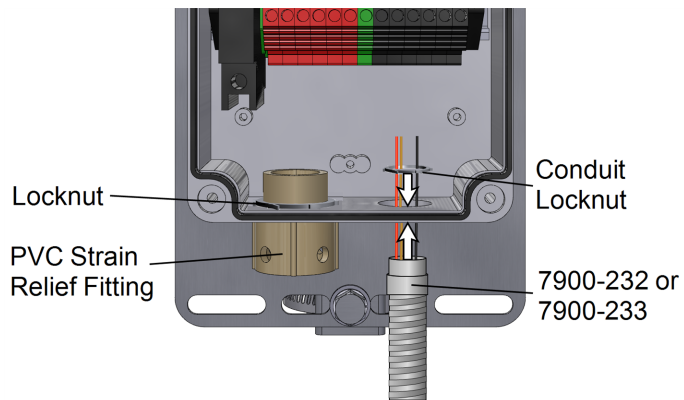
### Time

Allow about 30 minutes to install the hardware.

# 1

## Attach the Power Cable and Strain Relief Fitting

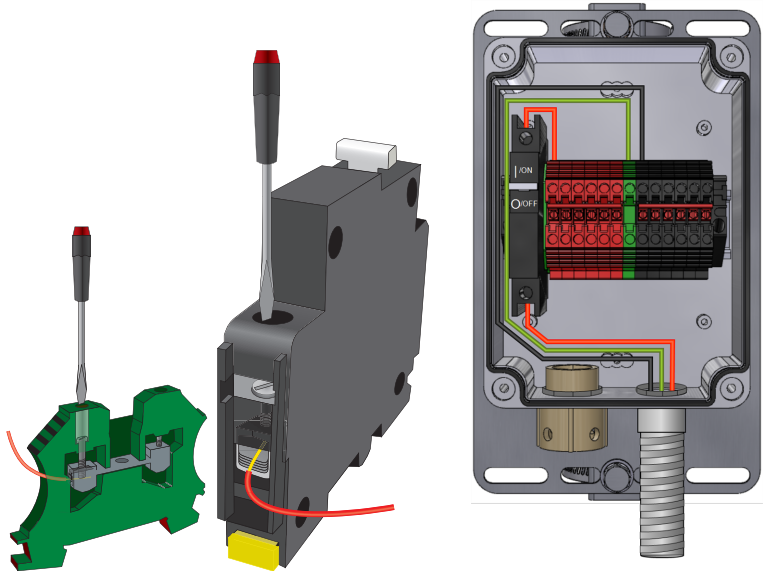
Loosen the two captive screws and open the lid. Install power cable conduit as shown below.



## 2

### Connect the Power Cable Leads

In the power supply box, connect the ground (bare) wire to the green terminal, the red wire to the bottom contact on the breaker, and the black wire to a black negative terminal.

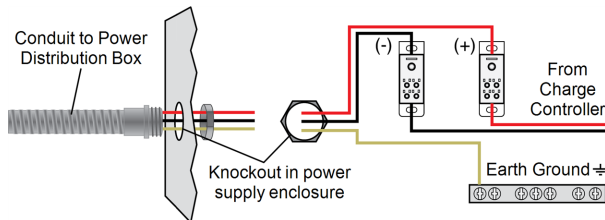


**Important:** Be sure that the clasp closes onto bare wire, rather than the non-conductive insulation.

## 3

### Connect the Power Cable to the Supply

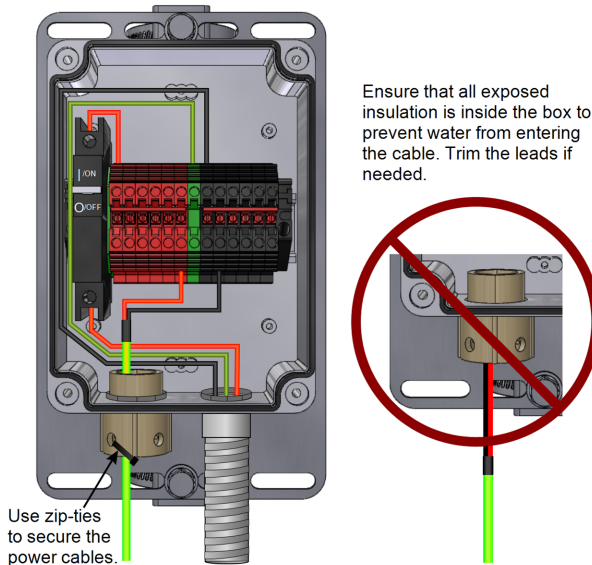
Route the wires through a knock-out at the power supply and attach the conduit to a knock-out. At the power supply, connect the bare wire to an earth ground, the red wire to the positive load terminal, and the black wire to the negative load terminal.



# 4

## Install the Sensor Power Wires

Switch the breaker OFF before installing power wires or servicing the box. Route the sensor power wires through the strain relief fitting. Trim the leads to the desired length. Insert the wire into the terminal and tighten it onto the conducting part of wire, as shown in "Connect the Power Cable Leads" on the previous page.



# 5

## Mount the Power Distribution Box

Mount the power distribution box with the conduit and strain relief fitting on the bottom. See "Mounting the Box" on page 1-12 for more details.

# 6

## Verify the Power Supply

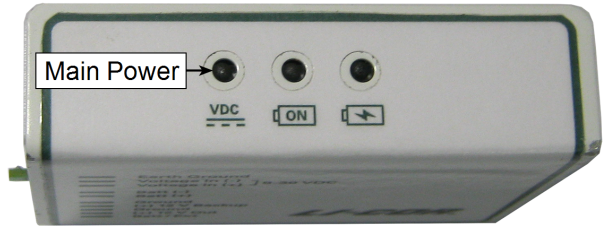
After connecting all the power supply and distribution wires, switch the breaker to ON and verify that each sensor is powered. Secure the lid with the two captive screws. Trim a piece of metallic wool and insert it into the top of the strain relief fitting.

## Using the Voltage Regulator

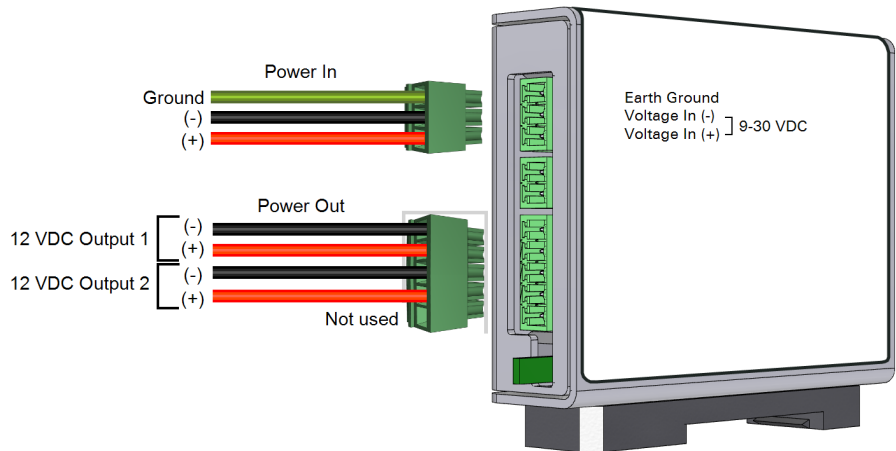
The voltage regulator (part #7900-127) conditions the input voltage and provides two 12VDC output power connections.

### Indicator LEDs and Terminals

The charge controller/voltage regulator has 3 LEDs. The main power LED indicates that the device is powered. The ON and battery LEDs are not used in this application.



The device has three terminal strip connections. The power-in and power-out connections are used in this application.



When installed in the 7900-231, the *unregulated* power output is from the red and black DIN terminals and the *regulated* output is from the charge controller (see Figure 1-7 above).

## Connecting Sensor Power Wires

- Power-in ground connects to the green terminal.
- Power-in positive (+) connects to a red terminal.
- Power-in negative (-) connects to a black terminal.

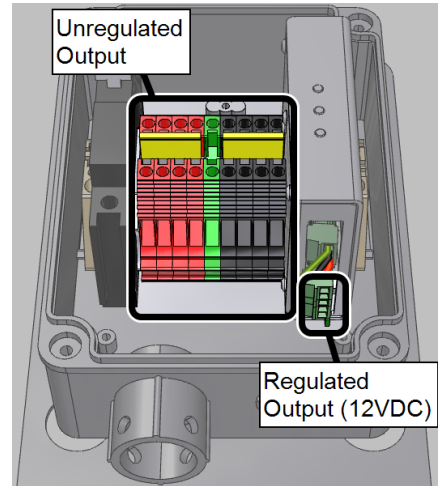
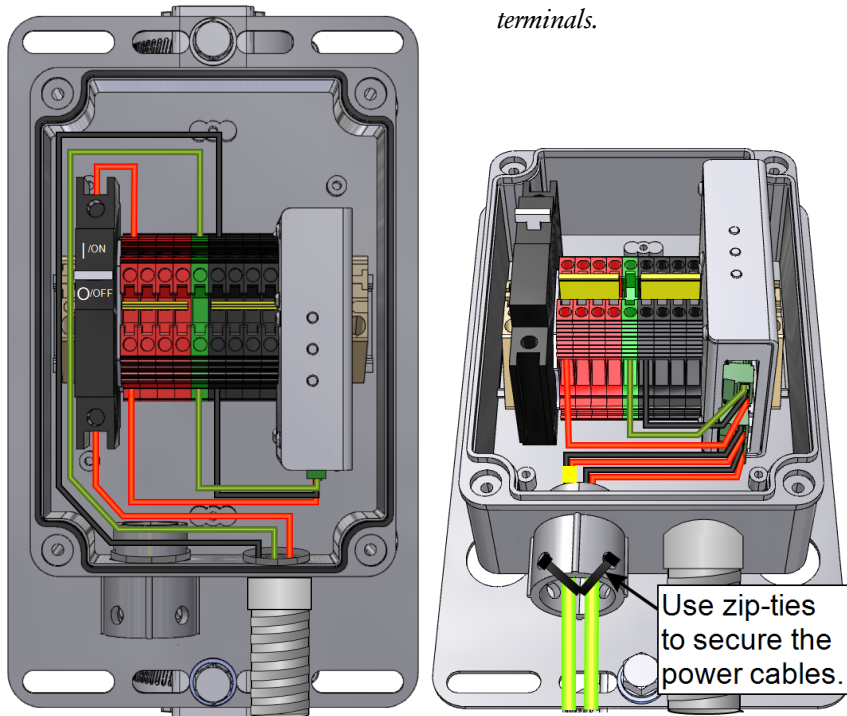


Figure 1-7. Regulated and unregulated terminals.



## Mounting the Box

The mounting bracket consists of a mounting plate and two band clamps. The band clamps can be attached to a tripod mast, leg or tower.

**Important:** The power distribution box should be oriented vertically with the openings facing the ground, as shown. The breaker uses a hydraulic-magnetic mechanism that is designed to operate with a vertical orientation. The vertical orientation also will help prevent water from entering the enclosure through the bottom opening.



Figure 1-8. Mounting hardware assembly and mounting options.

Item	Qty.	Part No.	Description
1	2	167-05635	Split Washer 5/16"
2	2	235-13234	Single Bolt Flared Leg Mounting Bracket
3	2	300-13293	Hose Clamp, 9/16"
4	2		5/16-24 x 1/2" Hex Head Bolt (included w/item #2)
5	2		5/16" Flat Washer (included w/item #2)



## Securing Cables

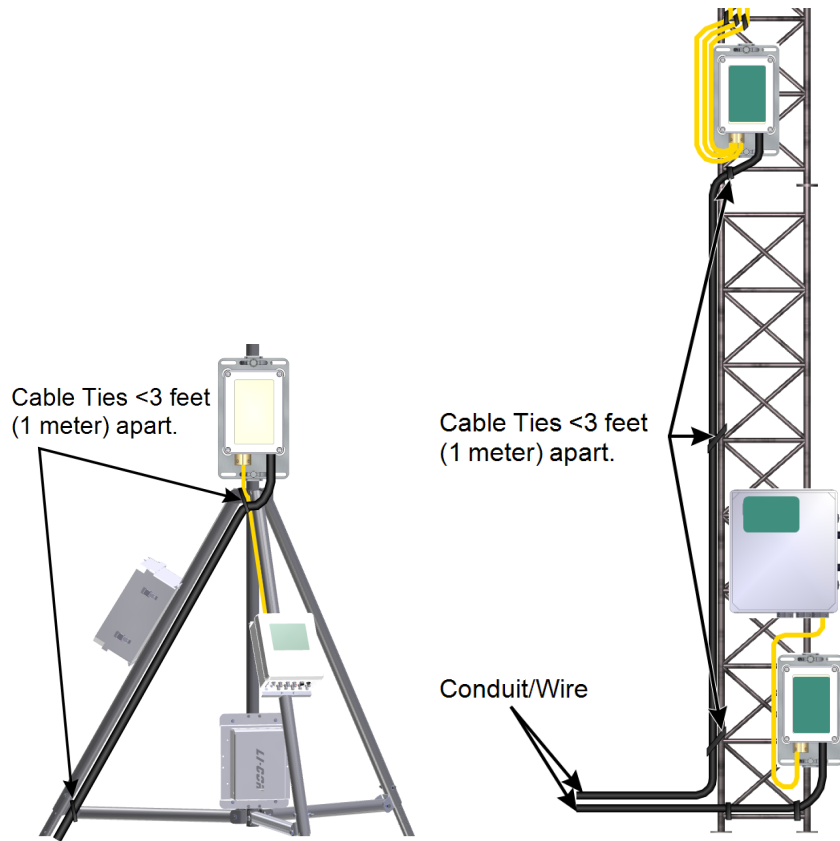
The power supply cable (part #7900-232 or a user-supplied cable) should be attached securely to the tripod mast or tower leg so that the power distribution box does not bear the weight of the cable.

- Secure the conduit with a cable tie every 1 m (3 feet) so the PDB is not supporting the weight of the conduit and wire.
- Use UV-resistant cable ties.
- On the tripod mast or tower, cable ties should be less than three feet (one meter) apart.
- Tighten cable ties snugly around the cable and mast.
- If possible, attach cable ties to a horizontal cross member so that they will not slip with the force of gravity.
- Coil extra cable and attach it to the mast so that it is not resting on the ground.

Instrument power supply cables, which exit the box and connect to the sensors, should be secured to the strain relief fitting as shown in Figure 1-9 below. Also secure the cables to the tripod or tower with UV-stabilized cable ties.



*Figure 1-9. Strain relief fitting for the power distribution box. Use UV-stabilized cable ties to secure the power cables to the fitting.*



*Figure 1-10. Secure the power-in cable conduit to be sure the power distribution box is not bearing the load.*

## Installation

When you install the PDB, it is wise to keep the cables organized and orderly. The effort you put into creating a tidy setup will pay off when you have to troubleshoot a problem or when a new technician or graduate student attempts to understand the setup. Below are some suggestions to help you plan a successful installation.

**Important:** To prevent airflow disturbances that may adversely affect flux results, position the solar power supply downwind (according to the prevailing wind direction) and at a distance of 6x the height of the panels from the anemometer.

### Tripod Installation

Figure 1-11 below shows power wire routing for a tripod installation.

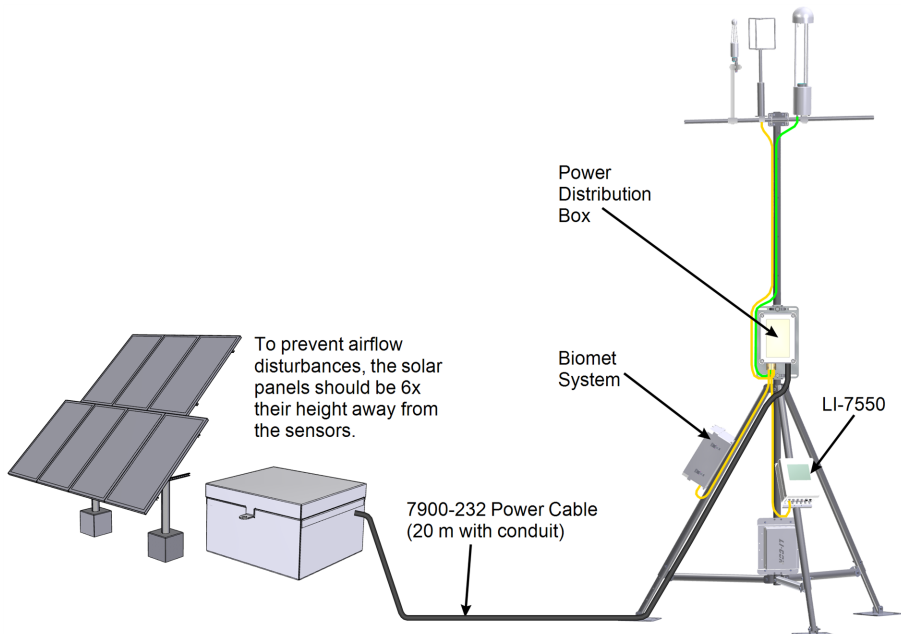


Figure 1-11. Typical power configuration for a tripod installation.

## Tower Installation

Figure 1-12 below shows configurations for tower installations.

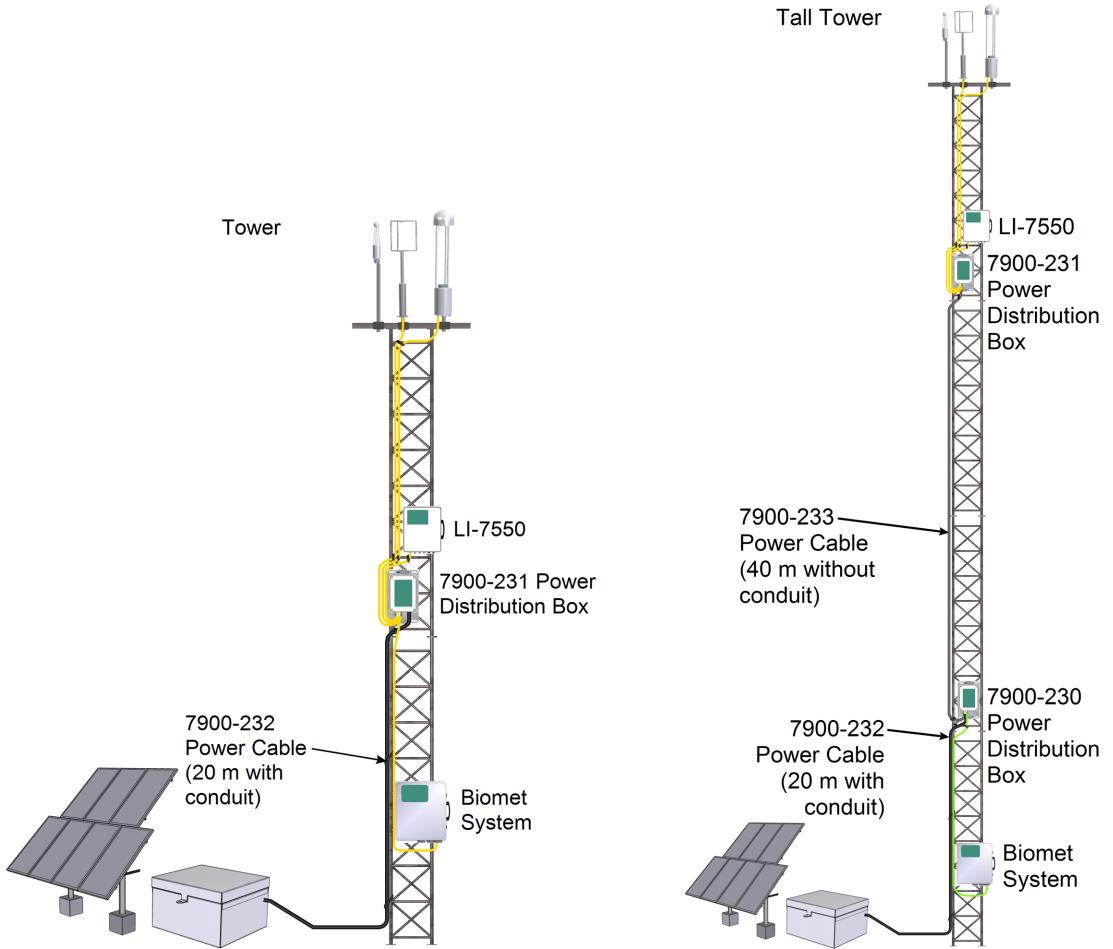


Figure 1-12. Suggested power wire routing for tower installations. You can power the Biomet system directly from the solar power supply or from the power distribution box.<sup>1</sup>

<sup>1</sup>The 7900-232 power cable with conduit protection should be used for cable lying on the ground.

# 2 Maintenance

---

## Power Distribution Box

The Power Distribution Box should require little maintenance during normal operation. When checking instruments powered from the box, check the following:

- Check the band clamps on the tripod or tower and tighten as needed.
- Check the tightness of cable ties to be sure the cables are not straining the box.
- Check the tightness of all conduit fittings at the power supply and Power Distribution Box and secure if needed.
- Check the electrical connections and tighten as needed.
- Check all cables for rodent damage and replace if necessary.

## Voltage Regulator

The charge controller has two internal fuses to protect the circuitry. One spare fuse is included in the unit to replace a blown fuse. If the charge controller fails to function properly, check the fuses and replace the open fuse with the spare.

### Fuse Indicators

An open fuse will be indicated by the following:

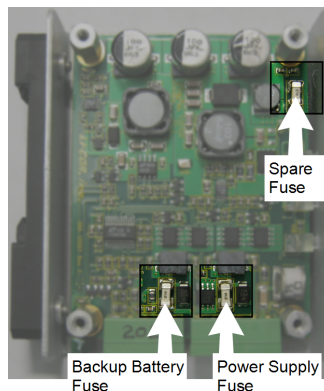
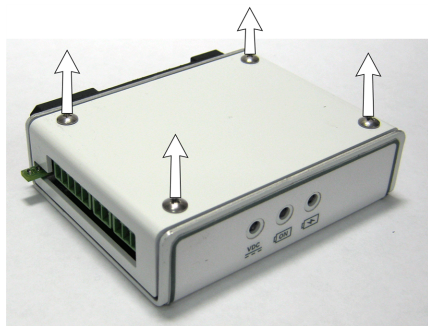
- Power supply fuse: If the Power LED will not light, check the system power supply to be sure it is adequate. If the charger has power but the LED is dark, the power supply fuse may need to be replaced.

### Replacing the Fuses

**Note:** When removing the cover, wear an anti-static wrist strap to prevent accidental static discharge that may damage the circuitry.

**1. Disassemble the charge controller.**

Remove the screws that secure the back plate and remove the plate to gain access to the fuses.

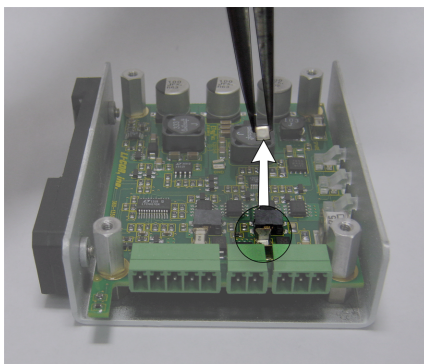


**2. Check the fuse with an ohm meter.**

Resistance of  $<1\Omega$  (ohm) across the fuse indicates that it is OK.

**3. Replace the fuse if necessary.**

To remove a fuse, grip it with a needle-nose pliers or tweezers and pull it out of the mount.



**4. Install the spare fuse in place of the blown fuse.**

The fuse is a 4 amp Nano<sup>2</sup> SMF Fuse (Littelfuse part #0453004.MR).

Contact Littelfuse, Inc. for replacements: <http://www.littelfuse.com/contact-us.aspx>.

## Troubleshooting

### **Circuit breaker trips**

- Check the electrical load and ensure that the sensors do not exceed the 10 Amp maximum.
- Check each wire for damage that may lead to a short. Replace any damaged cables.

### **System will not power on**

- Check the breaker and be sure it is in the ON position.
- Check the tightness of electrical connections along the power supply cable. Tighten any loose connections.
- Use a volt meter to measure voltage at the power supply and at the power distribution box. Be sure that the power distribution box has sufficient power provided to it. Long cable runs can result in a voltage drop, which can be solved by using a heavy gauge wire.
- Check wires/DIN terminal clasps to be sure that they are installed properly. Be sure the clasp is not closed on insulation and that the conductive wires are installed in the proper opening on the DIN terminals and breaker.
- Be sure the power supply is adequate to operate the entire system, including the startup load.

### **One sensor does not have power, but other sensors do**

- Check the electrical connections to the unpowered sensor. It is possible that the power cable was inserted too far and the electrical terminal closed on the insulation rather than the conductor.
- Measure the voltage at the sensor power cable to ensure that power is delivered. Replace the cable if needed.
- Be sure the power supply is sufficient to provide start-up power required for each sensor in the system.
- Test the sensor using an alternative power source to ensure that the sensor operates properly.

### **Sensor powers off intermittently**

- This may result from voltage drop over the power supply wires. If possible, shorten the cable length to minimize voltage drop.

- Short or bad connection in power supply wires. Be sure the connections are tight and that there is no damage to cables.
- Underpowered solar supply. If a solar power supply is drawn down excessively, it will not supply enough power to keep the system running and instruments will power off.



# A Specifications

---

## **7900-230 Unregulated Power Distribution Module**

**Voltage In/Out:** 10 to 30 VDC

**Maximum Current Load:** 10 Amps

**Operating Temperature Range:** -40 to 50 °C

**Weight:** 3.0 lbs (1.36 kg)

**Dimensions:** 9 15/16 in x 5 15/16 in x 4 1/2 in (25.3 cm x 15.1 cm x 11.4 cm)

**Frontal Area:** 59.0 in<sup>2</sup> (380.6 cm<sup>2</sup>)

**Input Wire:**

**7900-232:** 20 m (65.6 ft) 10 AWG (5.26 mm<sup>2</sup>) copper wire in 1/2" flexible aluminum conduit

**7900-233:** 40 m (131 ft) 12 AWG (3.31 mm<sup>2</sup>) insulated copper wire

**Compatible Output Wire Gauge:** 10 to 26 AWG (0.13 to 5.26 mm<sup>2</sup>)

## **7900-231 Regulated Power Distribution Module**

**Voltage In:** 10 to 30 VDC

**Unregulated Voltage Output:** Equal to input

**Regulated Output Voltage:** 12VDC; 2A max.

**Maximum Current Load:** 10 Amps (including charge controller load)

**Operating Temperature Range:** -20 to 50 °C

**Weight:** 3.5 lbs (1.6 kg)

**Dimensions:** 9 15/16 in x 5 15/16 in x 4 1/2 in (25.3 cm x 15.1 cm x 11.4 cm)

**Frontal Area:** 59.0 in<sup>2</sup> (380.6 cm<sup>2</sup>)

**Input Wire:**

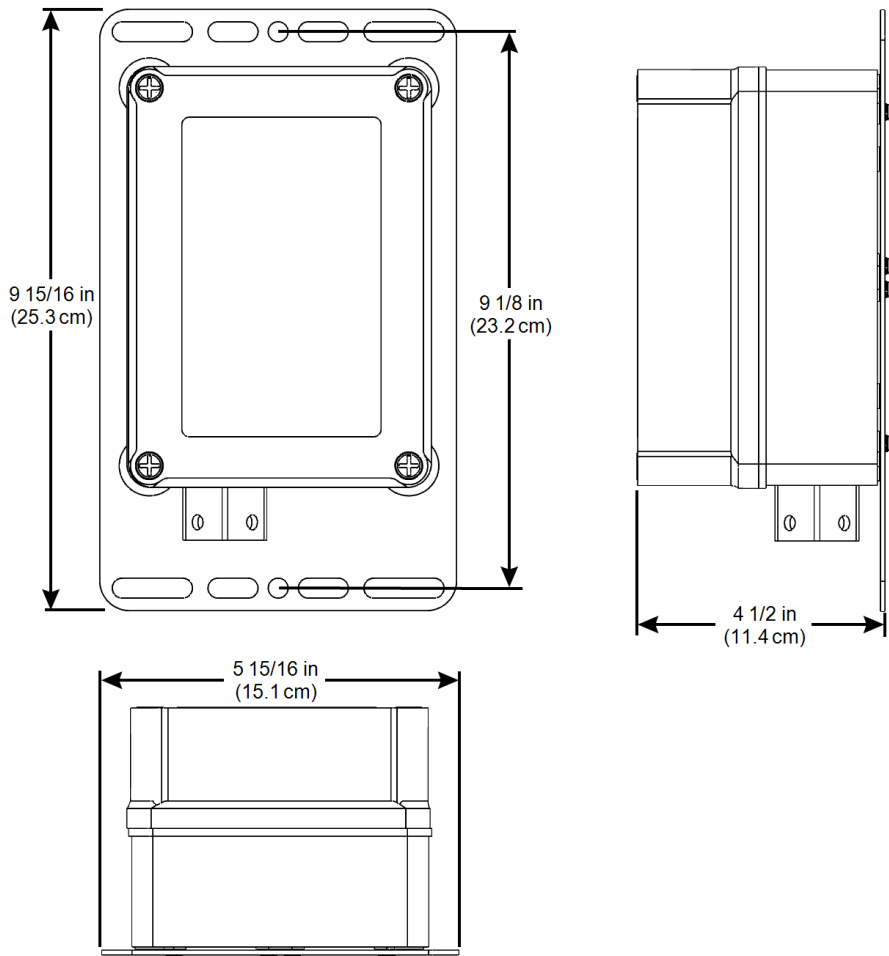
**7900-232:** 20 m (65.6 ft) 10 AWG (5.26 mm<sup>2</sup>) copper wire in 1/2" flexible aluminum conduit

**7900-233:** 40 m (131 ft) 12 AWG (3.31 mm<sup>2</sup>) insulated copper wire

**Compatible Output Wire Gauge:**

**Unregulated Outputs:** 10 to 26 AWG (0.13 to 5.26 mm<sup>2</sup>)

**Regulated Outputs:** 16 to 28 AWG (0.081 to 1.31 mm<sup>2</sup>)



## Analyzer Power Requirements

**Table A-1.** Voltage limits for instruments in LI-COR eddy covariance systems.

<b>Sensor</b>	<b>Input Voltage</b>
LI-7500A Open Path CO <sub>2</sub> /H <sub>2</sub> O Analyzer	10.5 to 30 VDC
LI-7200 Enclosed CO <sub>2</sub> /H <sub>2</sub> O Analyzer	10.5 to 30 VDC
7200-101 Flow Module	10.5 to 30 VDC
LI-7700 Open Path CH <sub>4</sub> Analyzer	10.5 to 30 VDC
7900 Biomet System	10 to 16 VDC
Cellular Communications and Telemetry Devices (cellular modem and Ethernet switch)	10 to 28 VDC
Hughes Satellite Radio	12/24 VDC
LI-840A or LI-820 Gas Analyzers	12 to 30 VDC
Sonic Anemometers	
Gill WindMaster™	9 to 30 VDC
Gill WindMaster™ Pro	9 to 30 VDC
Gill R3-50™ or R3-100™	9 to 30 VDC
Gill HS-50™ or HS-100™	9 to 30 VDC
Gill PCI Unit	8 to 15 VDC
Campbell Scientific® CSAT3	10 to 16 VDC

## Interior Labels

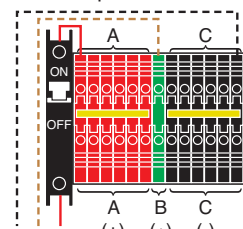
The power distribution box labels are reproduced below. Be mindful of the warnings and suggestions on the label.

### 7900-230

**7900-230 DC Power Distribution Box**

**⚠ Warning**

Devices must be compatible with the supplied voltage.  
**EXCESSIVE VOLTAGE WILL DAMAGE EQUIPMENT!**

Power	Notes
Voltage In/Out: 30 VDC <span style="border-bottom: 1px dashed black; width: 20px; display: inline-block;"></span> Maximum Current In/Out: 10 Amp Maximum	Switch breaker "OFF" before installing power wires and when servicing the box.
 <p style="text-align: center;"> <span style="margin-right: 20px;">- +</span> <span style="margin-right: 20px;">A (+)</span> <span style="margin-right: 20px;">B (+)</span> <span>C (-)</span> </p> <p style="text-align: center;"> <span style="margin-right: 40px;">Power In</span> <span>Power Out</span> </p>	Compatible with 10 - 26 AWG (0.13 - 5.26 mm <sup>2</sup> ) wires.  "Power In" ground must be connected to an earth ground.
<p>A: Interconnected positive terminals (+, red)                      B: Ground terminal (⊥, green/bare)                      C: Interconnected negative terminals (-, black)</p>	

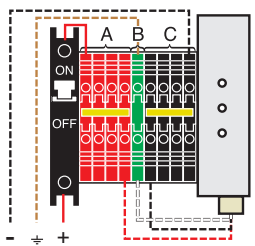
**LI-COR**® 1-800-447-3576 (U.S. & Canada)  
 402-467-3576 (International)  
 LI-COR Biosciences envsales@licor.com  
 4647 Superior St. envsupport@licor.com  
 Lincoln, NE 68504 www.licor.com

## 7900-231

### 7900-231 DC Power Distribution Box

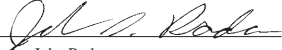
⚠ Warning

Devices must be compatible with the supplied voltage.  
**EXCESSIVE VOLTAGE WILL DAMAGE EQUIPMENT!**

Power	Notes			
	<p>Switch breaker "OFF" before installing power wires and when servicing the box.</p> <p>Unregulated output: 10 - 26 AWG (0.13 - 5.26 mm<sup>2</sup>) wires. Regulated output: 18 - 24 AWG (0.20 - 0.82 mm<sup>2</sup>) wires.</p>			
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%; border-right: 1px solid black; padding: 2px;">           Power In: 30 VDC  Max.         </td> <td style="width: 33%; border-right: 1px solid black; padding: 2px;">           Unregulated Output: VDC Equal to Input: 10A Max.         </td> <td style="width: 33%; padding: 2px;">           Regulated Output: 12 VDC  2A Max.         </td> </tr> </table>	Power In: 30 VDC  Max.	Unregulated Output: VDC Equal to Input: 10A Max.	Regulated Output: 12 VDC  2A Max.	<p>"Power In" ground must be connected to an earth ground.</p>
Power In: 30 VDC  Max.	Unregulated Output: VDC Equal to Input: 10A Max.	Regulated Output: 12 VDC  2A Max.		
<p>A: Interconnected positive terminals (+, red)            B: Ground terminal (<math>\perp</math>, green/bare)            C: Interconnected negative terminals (-, black)</p>				
<div style="display: flex; justify-content: space-between;"> <div style="text-align: left;"> <p><b>LI-COR</b><sup>®</sup></p> <p>LI-COR Biosciences 4647 Superior St. Lincoln, NE 68504</p> </div> <div style="text-align: right;"> <p>1-800-447-3576 (U.S. &amp; Canada) 402-467-3576 (International) envsales@licor.com envsupport@licor.com www.licor.com</p> </div> </div>				

# Declarations of Conformity

## 7900-230

<b>LI-COR</b> <sup>®</sup>	■ LI-COR, inc. Environmental 4647 Superior Street P.O. Box 4425 Lincoln, Nebraska 68504 USA  ■ Phone: 402-467-3576 FAX: 402-467-2819 Toll-free: 1-800-447-3576 (U.S. & Canada) E-mail: envsales@licor.com
<hr/> <b>Declaration of Conformity</b>	
<b>Manufacturer's Name:</b> LI-COR Inc.	
<b>Manufacturer's Address:</b> 4647 Superior Street Lincoln, Nebraska USA 68504	
<b>This declaration of conformity is issued under the sole responsibility of the manufacturer.</b>	
<b>Product Description:</b> DC Power Distribution Box	
<b>Product Name:</b> DC Power Distribution Box	
<b>Model Number(s):</b> 7900-230	
<b>Product Options:</b> None	
<b>Exemptions Claimed:</b> III 6(a), III 8(b)	
<b>This product complies with the requirements of the RoHS Directive 2011/65/EU, and carries the CE marking accordingly.</b>	
Document #53-13968-B February 27, 2014	 John Rada Director of Engineering
Page 1 of 1	

# 7900-231



■ LI-COR, inc.  
Environmental  
4647 Superior Street  
P.O. Box 4425  
Lincoln, Nebraska 68504 USA

■ Phone: 402-467-3576  
FAX: 402-467-2819  
Toll-free: 1-800-447-3576 (U.S. & Canada)  
E-mail: envsales@licor.com

## Declaration of Conformity

**Manufacturer's Name:** LI-COR Inc.

**Manufacturer's Address:** 4647 Superior Street  
Lincoln, Nebraska USA 68504

**This declaration of conformity is issued under the sole responsibility of the manufacturer.**

**Product Description:** DC Power Distribution Box  
**Product Name:** DC Power Distribution Box  
**Model Number(s):** 7900-231  
**Product Options:** None

### Harmonized Standard Product Specifications:

#### EMC:

FCC Title 47 CFR, Part 15.109; Radiated Emissions, Class A  
EN 55011 : 2009/A1:2010 Radiated Emissions, Class A  
EN 61326-1: 2006 Electrical equipment for measurement, control and laboratory use  
IEC 61000-4-2 : 2008 ESD, 4kV/8kV Contact/Air  
IEC 61000-4-3 : 2006/A1:2007/A2:2010 Radiated RF Immunity,  
10V/m, 80MHz-1GHz  
3V/m, 1.4GHz-2.0GHz  
1V/m, 2GHz-2.7GHz  
IEC 61000-4-4 : 2012 EFT/Burst, ±1kV  
IEC 61000-4-6 : 2008 Conducted RF Immunity, 3V

#### Supplementary Information:

The product herewith complies with the requirements of the EMC Directive 2004/108/EC.

John Rada  
Director of Engineering

Document #53-14581-A  
May 8, 2014

Page 1 of 1





# B Warranty

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Each LI-COR, inc. instrument is warranted by LI-COR, inc. to be free from defects in material and workmanship; however, LI-COR, inc.'s sole obligation under this warranty shall be to repair or replace any part of the instrument which LI-COR, inc.'s examination discloses to have been defective in material or workmanship without charge and only under the following conditions, which are:

1. The defects are called to the attention of LI-COR, inc. in Lincoln, Nebraska, in writing within one year after the shipping date of the instrument.
2. The instrument has not been maintained, repaired or altered by anyone who was not approved by LI-COR, inc.
3. The instrument was used in the normal, proper and ordinary manner and has not been abused, altered, misused, neglected, involved in an accident or damaged by act of God or other casualty.
4. The purchaser, whether it is a DISTRIBUTOR or direct customer of LI-COR or a DISTRIBUTOR'S customer, packs and ships or delivers the instrument to LI-COR, inc. at LI-COR inc.'s factory in Lincoln, Nebraska, U.S.A. within 30 days after LI-COR, inc. has received written notice of the defect. Unless other arrangements have been made in writing, transportation to LI-COR, inc. (by air unless otherwise authorized by LI-COR, inc.) is at customer expense.
5. No-charge repair parts may be sent at LI-COR, inc.'s sole discretion to the purchaser for installation by purchaser.
6. LI-COR, inc.'s liability is limited to repair or replace any part of the instrument without charge if LI-COR, inc.'s examination disclosed that part to have been defective in material or workmanship.

**There are no warranties, express or implied, including but not limited to any implied warranty of merchantability of fitness for a particular purpose on underwater cables or on expendables such as batteries, lamps, thermocouples, and calibrations.**

**Other than the obligation of LI-COR, inc. expressly set forth herein, LI-COR, inc. disclaims all warranties of merchantability or fitness for a**

**particular purpose. The foregoing constitutes LI-COR, inc.'s sole obligation and liability with respect to damages resulting from the use or performance of the instrument and in no event shall LI-COR, inc. or its representatives be liable for damages beyond the price paid for the instrument, or for direct, incidental or consequential damages.**

The laws of some locations may not allow the exclusion or limitation on implied warranties or on incidental or consequential damaged, so the limitations herein may not apply directly. This warranty gives you specific legal rights, and you may already have other rights which vary from state to state. All warranties that apply, whether included by this contract or by law, are limited to the time period of this warranty which is a twelve-month period commencing from the date the instrument is shipped to a user who is a customer or eighteen months from the date of shipment to LI-COR, inc.'s authorized distributor, whichever is earlier.

This warranty supersedes all warranties for products purchased prior to June 1, 1984, unless this warranty is later superseded. To the extent not superseded by the terms of any extended warranty, the terms and conditions of LI-COR's Warranty still apply.

DISTRIBUTOR or the DISTRIBUTOR's customers may ship the instruments directly to LI-COR if they are unable to repair the instrument themselves even though the DISTRIBUTOR has been approved for making such repairs and has agreed with the customer to make such repairs as covered by this limited warranty.

Further information concerning this warranty may be obtained by writing or telephoning Warranty manager at LI-COR, inc.

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Measuring Change in a Changing World®

**LI-COR Biosciences**

***Global Headquarters***

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