

Logging Eddy Covariance Data Sets to the LI-7550

This quick start guide will show you how to configure the LI-7500A or LI-7200 with an optional LI-7700 (GHG-1 or GHG-2) to log high-speed eddy covariance data sets to the LI-7550 USB drive. Some benefits of this configuration include:

- Logged data seamlessly imports into EddyPro™ eddy covariance flux calculation software,
- Logged data includes all the required site and meta information to compute fluxes, and
- Automated data transfer from the LI-7550 to a computer.

1 Configure the Sonic Anemometer



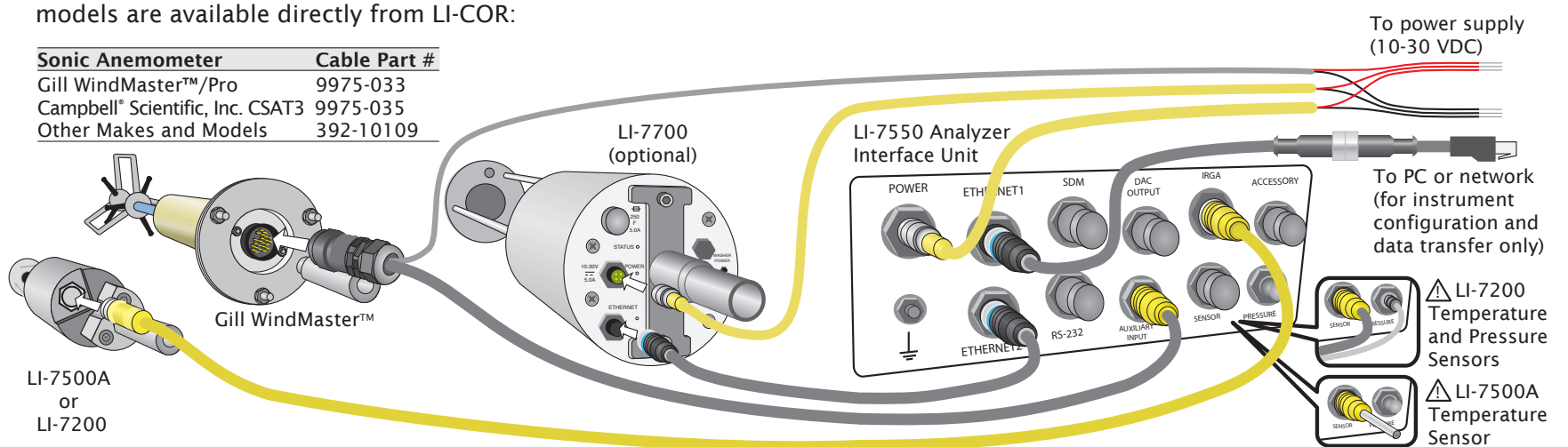
Choose settings that are suitable for your anemometer, research site, and objectives. The settings below are suitable for Gill WindMaster™ and WindMaster™ Pro anemometers. Configure other anemometer brands similarly.

- Analog outputs: On
- Analog output voltage range: ± 5 V
- Output rate: The recommended setting is twice the “Update Rate” set in Step 7 (also called “Acquisition Frequency”)
- Flow distortion correction: On (if available)
- DAC channel 1: U, -30 to 30 m/s
- DAC channel 2: V, -30 to 30 m/s
- DAC channel 3: W, -5 to 5 m/s
- DAC channel 4: T_s : -40 to 70 °C

2 Connect the Cables and Arrange the Instruments

Data cables for common anemometer models are available directly from LI-COR:

Sonic Anemometer	Cable Part #
Gill WindMaster™/Pro	9975-033
Campbell® Scientific, Inc. CSAT3	9975-035
Other Makes and Models	392-10109



3 Collect Metadata

You will enter this metadata into the LI-7550 software in Step 7. This will make it possible to compute fluxes in a few simple steps using EddyPro eddy covariance software (www.licor.com/eddypro). See the EddyPro help system for more information.

Site Information:

- Altitude (m)
- Canopy height (m)
- Displacement height (m, optional)
- Roughness length (m, optional)
- Geographic location (latitude and longitude in WGS84 DMS or decimal degrees)

Anemometer Information:

- Manufacturer
- Model
- North alignment (spar or transducer, if applicable)
- Wind data format (U, V, W; polar, W; or axis velocities)
- North Offset (°)
- Height (m)

Gas Analyzer Information:

- Analyzer model(s)
- Height (m)
- Northward separation (cm)
- Eastward separation (cm)
- Vertical separation (cm)
- Tube length (cm, LI-7200 only)
- Tube diameter (mm, LI-7200 only)

4 Configure LI-7700 Time Settings (only if using an LI-7700)

Install the LI-7700 Software on your computer (Windows® XP, Vista, or 7).

Launch the application.

Select the LI-7700 from the menu.

Connect with the LI-7700.

Configure the LI-7700 settings.
 PTP: Automatic
 Instrument Date: *Ignore this field*
 Instrument Time: *Ignore this field*
 Time Zone: *Ignore this field*
 Output Rate: 10 Hz or as desired

Click “OK.”

5 Configure LI-7550 Analog Inputs

Insert the LI-7200/LI-7500A Software CD into your computer's optical drive and install the following applications:

- LI-7200/LI-7500A 5.0 or higher
- GHG File Transfer
- LI-7x00 File Viewer

Launch the LI-7200/LI-7500A application.

Connect with the LI-7200/LI-7500A.

Click "Inputs."

Configure the Analog Inputs (Aux1 - Aux4).

- Type: U, V, W, and T_s (or SOS), respectively
- Units: m/s or C
- m: slope
- b: offset

Click "OK."

Hint: To simplify data analysis, convert analog voltages to anemometric units before logging data. With the CSAT3, log U, V, W, and SOS.

6 Configure LI-7550 Settings

Under the Time tab, configure the LI-7550 settings.

Clock Sync (PTP): Preferred
 Date: Current date
 Time: Current time
 Time Zone: Set as required

Click "Settings."

Click "Connect."

Click "OK."

If you are using an LI-7700, select it under the LI-7700 tab.

7 Configure LI-7550 Data Logging

Click "Logging."

Set the "File Duration" to 30 minutes or your desired file length.

Set the "Update Rate" to 10 Hz or your desired rate.

Select the CO₂/H₂O variables you want to log.

Select the CH₄ variables you want to log (optional).

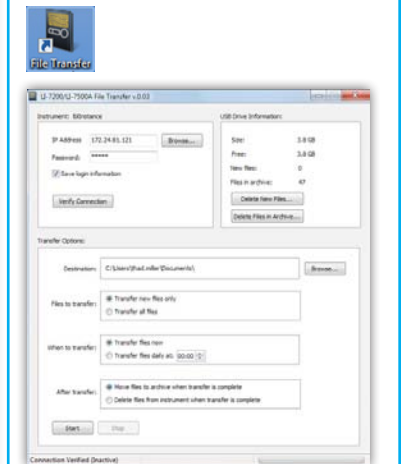
Check the "Compress files" box. The LI-7550 will now log compressed files with the .ghg extension.

Check the "Log site information" box. The LI-7550 will now include site metadata in the compressed .ghg files.

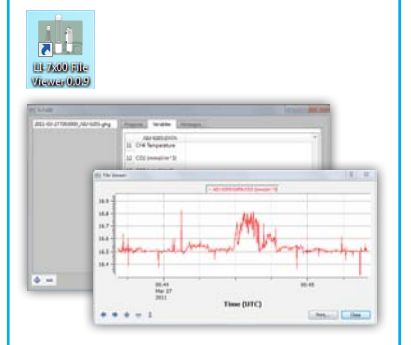
Click "Update Site Info" and enter Metadata from Step 3.

Update Site Info...

Hint: Use the LI-COR file transfer utility to transfer data from the LI-7550 to your computer at any time or at scheduled intervals.



Hint: Use the LI-7x00 File Viewer (for LI-7200, LI-7500A, and LI-7700) to quickly evaluate your GHG data for spikes and trends and to convert GHG files to text or TOB1 files, if desired.



Data logging will begin automatically:

- When a suitable USB drive is inserted into the LI-7550 USB port (the instruments must be running), *or*
- Following start up (a USB drive must be in the port).

Click "OK" in each of the open windows, and save the configuration file.