WatchDog®

A-Series
Data Loggers

PRODUCT MANUAL

Model #'s
A110, A125, A130, and A150

Spectrum®
Technologies, Inc.

Contents

Model #	Internal Sensors	External Sensors	Measurement Capacity
A110	Temp	None	8,000 data points
A125	Temp	Temp	8,000 data points (4,000 per sensor)
A130	Temp	Leaf Wetness	8,000 data points (4,000 per channel)
A150	Temp/RH	None	10,666 data points (5,333 per channel)

Temperature Range: -40 to 185°F (-40 to 85°C)
Accuracy: ±1.1°F from -4 to 122°F (±0.6°C from -20 to 50°C),
else ±2.2°F (±1.2°C)
RH Range: 0 to 100%
Accuracy: ±3% from 10 to 90% at 77°F (25°C), else ±5%
Leaf Wetness Range: 0 to 15

For customer support, or to place an order, call Spectrum Technologies at (800)248-8873 or (815)436-4440 between 7:30 am and 5:30 p.m. CST, FAX at (815)436-4460, or E-mail at info@specmeters.com.

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Thank you for purchasing a WatchDog A-Series Data Logger.

This manual describes how to use your WatchDog Logger and keep it working accurately for many years. Read this manual thoroughly in order to get effective performance from your data logger.

IMPORTANT NOTE FOR THE A125 and A130:

The A125 and A130 logger models use the same physical logger. The logger is designed to read temperature as the external sensor. For the A130 logger, the Leaf Wetness sensor value is saved in the logger as a temperature, and is then translated back to a leaf wetness value by SpecWare.

Connecting to the Computer

The A-Series loggers do not use the standard gray PC interface cable that accompanies SpecWare Software. Instead, you need the A-Series PC Connection Cable (Item 3661A). The cable is a serial USB cable and requires that you install the driver prior to its use. The driver is included on the SpecWare Software installation CD for SpecWare 9 Pro or Basic, Version 9.01 Build 206 or greater, as well as on the SpecWare 9 update page at www.specmeters.com.

After installing the drivers, if you plug in the cable before you start SpecWare (or leave it plugged in), SpecWare will automatically find the COM port used by the cable.

The 2.5mm stereo pin connects to the jack labeled "Com" on the data logger. The jack labeled "Ext" is reserved for an external sensor (if applicable).

The **only time** *you must have the WatchDog connected to the computer is during the launching and downloading of the data logger.* After the logger has been launched, and/or downloaded, disconnect the logger and place it in the environment you wish to monitor.

SpecWare Software

SpecWare software version 9.01, Builds 206 and above support the WatchDog A-Series loggers, **except the A130, which requires version 9.02.** Previous builds of SpecWare 9 can be updated via the free downloads available at www.specmeters.com. The software version can be checked by selecting "About SpecWare" from the Help menu.

Complete details on the software are included in the SpecWare Software manual which is available as a pdf document on the installation CD (and accessible via the Help menu). The following sections summarize the most commonly used functions.

Initializing the Serial Number and Logger Type
The first time that an A-Series logger is read by SpecWare, an initialization screen will open. Enter the serial number printed on the back of the logger. **Logger Models A125 and A130 are physically the same. The Model A130 must be electronically marked so SpecWare knows to translate its external sensor signals to a leaf wetness value.** For the A125 and A130, please select the corresponding model number before clicking the Initialize button. The screen remains open so you can initialize several new loggers as a batch.
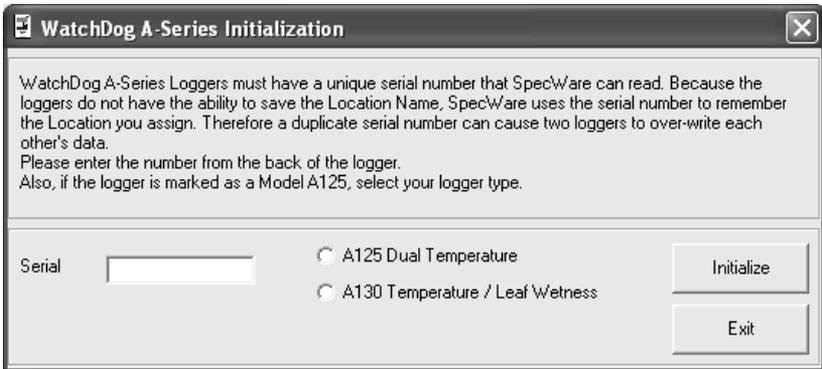
Logger Location Names
SpecWare maintains a list of A-Series logger serial numbers and their corresponding location names. As a result, the first time an A-Series logger is connected on a PC, SpecWare will ask for a location name. If you are planning to launch loggers with one PC and read them with another, you may wish to use the default name of *model-number-serial-number* to make tracking easier.
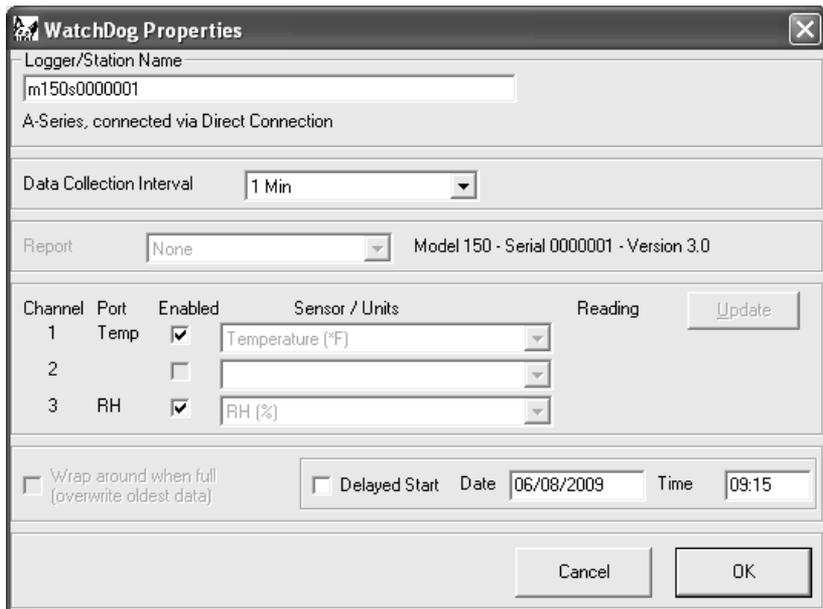
Launching Loggers

The launch screen is used to configure the logger and activate it so it can collect data. The launch screen can be accessed by selecting the "Launch WatchDog A-Series" option from the Logger menu or clicking the icon on the SpecWare toolbar.

Select the logging interval (ranging from 1 to 120 minutes), and ensure all channels are enabled before clicking "Ok" to launch the logger. You may also choose to Delay the start of logging to a later time.

Downloading The Loggers

The download sequence is initiated by selecting the "Get WatchDog A-Series data" option from the Logger menu or by clicking the icon on the SpecWare toolbar. When the download is complete, the data will be saved in the location defined for that logger.

Charts/Reports

Whenever a file is opened, SpecWare will automatically generate a chart. You will be given the choice of which parameters are to be plotted. The Tools menu gives you access to a variety of standard and user-defined (SpecWare Pro only) reports.

Installation and Placement

WatchDog loggers have the versatility to be located in any micro-climate for recording weather data. The sensors and the mini-radiation shield include hardware for attaching them on a 1" to 1¼" outside diameter mast (pipe). Use a 5' - 10' length of conduit or pipe as the mast mount. When purchasing and/or cutting the mast to size, plan on placing 1½' - 2' of the mast into the ground.

For outdoor and greenhouse use, the logger should be placed in a 3663A Radiation Shield to protect it from solar radiation and other sources of reflected heat. The radiation shield also protects the A125 and A130 loggers from rain. To place the WatchDog into the radiation shield, unscrew the two finger-nuts and remove the top of the radiation shield.
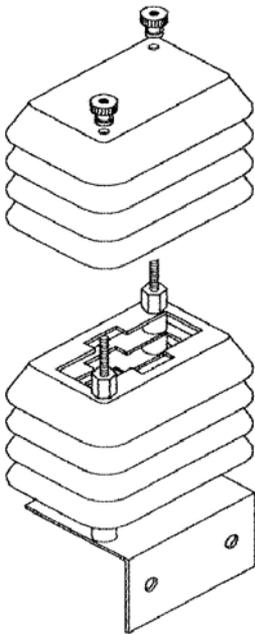
Important: External sensor wires connect to the logger from the side at the point where the top and bottom sections meet. Secure the external sensor wires to the mast just below the radiation shield with a plastic tie to ensure that the sensor wires do not become disconnected while recording.

Radiation Shield

Battery Replacement

Each WatchDog A-Series Data Logger is powered by a 3 volt Lithium CR2 battery. The battery has a life of over 12 months continuous use. It is user replaceable and can be purchased locally, as it is commonly used in photographic equipment.

To replace the battery:
1. Remove the four screws on the back, then the cover.
2. Replace the battery, ensuring it is oriented so that the **+/-** marks on the battery match those on the inside of the battery location.
3. Replace the cover and the screws.

Trouble Shooting

Q. Why won't the logger connect with the computer?

A. The logger may need a new battery or the COM Port settings may need to be changed through SpecWare software. You also may have the cable plugged into the "Ext" (sensor) port instead of the "Com" port.

Q. Why is the A125 or A130 logging invalid or out-of-range values?

A. The A-Series loggers require special models of the external temperature and leaf wetness sensors. If the sensors designed for other WatchDog models are used, or if the external sensor is not plugged in, the logger will not read properly.   Also, the Model A130 logger requires SpecWare 9.02. Using an earlier version will result in invalid data.

Q. Can I use the external port of my WatchDog Model A125 or A130 to monitor rainfall or other sensors?

A. No. The external port is only set up to be connected to a temperature sensor (for the A125) or a leaf wetness sensor (for the A130).

Warranty

This product is warranted to be free from defects in material or workmanship for one year from the date of purchase. During the warranty period Spectrum will, at its option, either repair or replace products that prove to be defective. This warranty does not cover damage due to improper installation or use, lightning, negligence, accident, or unauthorized modifications, or to incidental or consequential damages beyond the Spectrum product. Before returning a failed unit, you must obtain a Returned Materials Authorization (RMA) from Spectrum. Spectrum is not responsible for any package that is returned without a valid RMA number or for the loss of the package by any shipping company.

$C\:E$ This equipment has been manufactured for
Spectrum Technologies, Inc.
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Aurora, IL 60504 USA

The Manufacturer's **DECLARATION OF CONFORMITY** is on file at the above address, and certifies conformity to the following:

Model Number: A110, A125, A130, A150
Description: WatchDog A-Series Data Loggers
Type: Electrical Equipment for Measurement, Control, and Laboratory Use

Directive: 2004/108/EC
Standards: EN 61326-1 (2006)
CISPR11
EN 61000-4-2 (1995/A1:1998/A2:2001)
EN 61000-4-3 (2006)

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