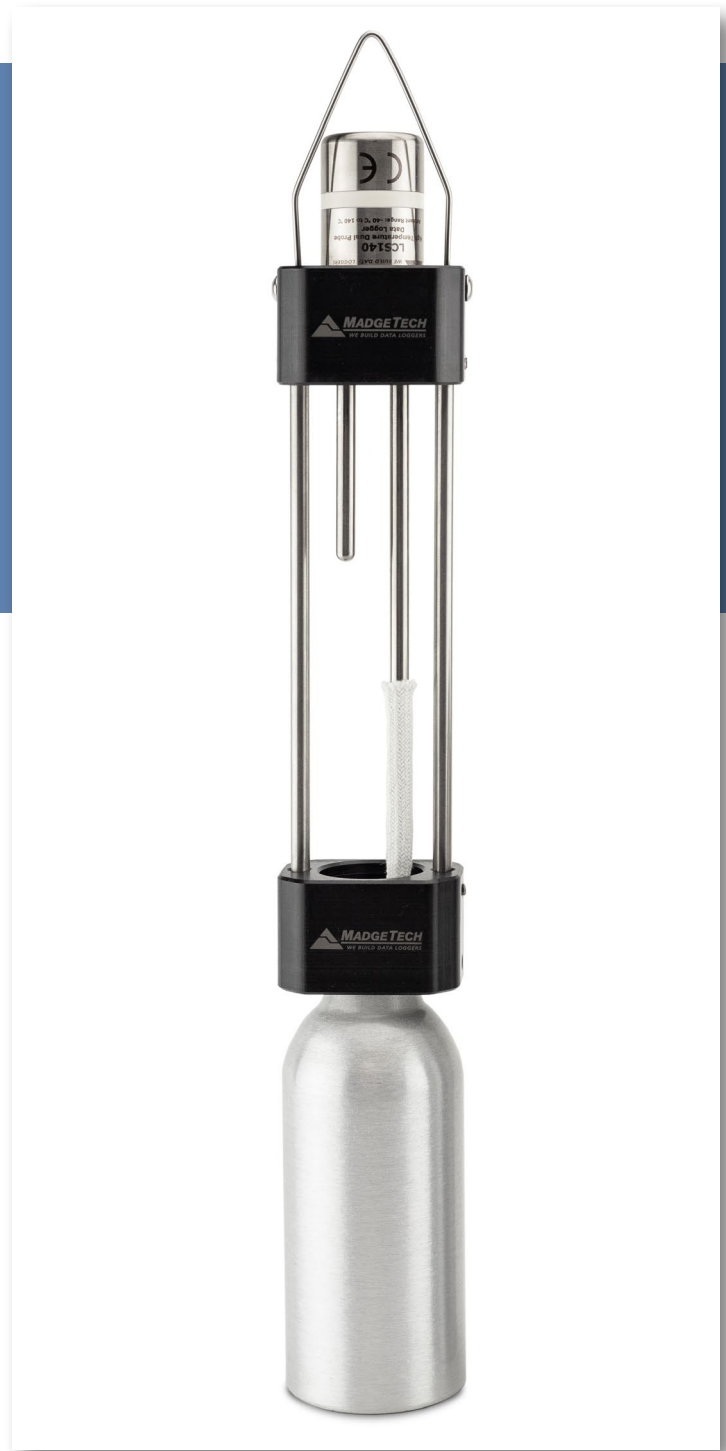


LCS140

Lethality Compliance System

PRODUCT USER GUIDE

To view the full MadgeTech product line, visit our website at madgetech.com.



PRODUCT USER GUIDE

Product Overview

The LCS140 is a wet-bulb dry-bulb unit designed to calculate humidity in high temperature locations such as smokehouses, ovens and drying kilns.

The LCS140 kit includes a dual-probe temperature data logger with two rigid probes. The dry-bulb probe is 2 inches for measuring ambient temperature and the web-bulb probe is 5 inches, allowing it to be covered with an included sock. The LCS140 can monitor up to 140 °C (284 °F) and is compatible with MadgeTech Data Logger Software version 4.2.18.0 and above.

Components

1. LCS140 Data Logger
2. Hanging Fixture
3. Reservoir Bottle
4. 6 Wet Bulb Socks (for use with the wet-bulb only)

Installation Guide

Installing the Software and Drivers

The Software can be downloaded from the MadgeTech website at madgetech.com. Follow the instructions provided in the Installation Wizard to install the software and drivers for the docking station.

Connecting the Docking Station

IFC400 or IFC406 (sold separately) — Connect the device into a USB port with the interface cable.

Ordering Information

- 902168-00 — LCS140
- 900319-00 — IFC400
- 900325-00 — IFC406
- 902229-00 — LCS140 Data Logger
- 902230-00 — LCS140 Hanging Fixture
- 902231-00 — LCS140 Aluminum Bottle 4 oz
- 902308-00 — LCS140 Aluminum Bottle 8 oz
- 902232-00 — LCS140 Extra Socks
- 900097-00 — ER14250MR-145

Device Operation

Connecting and Starting the Data Logger

1. Once the software is installed and running, plug the interface cable into the docking station.
2. Connect the USB end of the interface cable into an open USB port on the computer.
3. Place the data logger into the docking station.
4. The data logger will automatically appear under **Connected Devices** within the software.
5. For most applications, select **Custom Start** from the menu bar and choose the desired start method, reading rate and other parameters appropriate for the data logging application and click **Start**. (**Quick Start** applies the most recent custom start options, **Batch Start** is used for managing multiple loggers at once, **Real Time Start** stores the dataset as it records while connected to the logger.)
6. The status of the device will change to **Running**, **Waiting to Start** or **Waiting to Manual Start**, depending upon your start method.
7. Remove the data logger from the docking station, set up the components of the logger (see page 3) and place it in the environment to measure.

Note: The device will stop recording data when the end of memory is reached or the device is stopped. At this point the device cannot be restarted until it has been re-armed by the computer.

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Device Operation (cont'd)

Setting Up the Logger



1. Remove all components from the packaging.



2. Fill the reservoir bottle with distilled water, approximately 2 oz (60 ml).



3. Screw the reservoir bottle into the bottom of the hanging fixture.



4. Drop the sock into the water about 2 inches.



5. Insert the LCS140 data logger into the hanging fixture so it is suspended upside down.



6. Slide the sock onto the 5-inch probe.



7. Ensure the LCS140 data logger is firmly secured in the fixture.



8. Adjust the sock on the probe so that it touches the bottom of the water reservoir.

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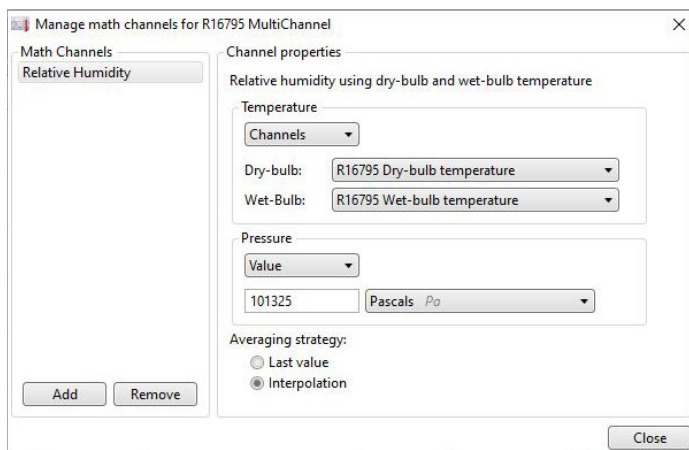
Device Operation (cont'd)

Downloading Data from the Data Logger

1. Once the cycle is complete, remove the LCS140 data logger from the hanging fixture.
2. Place the LCS140 into the IFC connected to the PC.
3. Highlight the data logger in the Connected Devices list. Click **Stop** on the menu bar.
4. Once the data logger is stopped, with the logger highlighted, click **Download**.
5. Downloading will offload and save data to the PC.

Calculating Humidity

1. With the report open, click to **Math Channels** in the menu.
2. Click **Add** on the left side of the pop up and select **Relative Humidity**.
3. On the right-hand side, select the **Dry-Bulb** as probe 1 and the **Wet-Bulb** as probe 2.
4. Pressure is default at atmosphere. Please enter measured value for better calculation accuracy.
5. Close the pop up and the relative humidity will now be added to the report.



Trigger Settings

The device can be programmed to only record based off user configured trigger settings. Triggers can be configured for temperature only not on the math channel.

1. In the **Connected devices** panel, select the intended device to change the settings.
2. On the **Device** tab, in the **Information** group, click **Properties**. Users can also right-click on the device and select **Properties** in the context menu.
3. Click **Trigger** and configure the Trigger settings. Trigger formats are available in Window and Two Point (bi-level) mode. Window mode allows for one range of temperature monitoring and two point mode allows for two ranges.

Set Password

To password protect the device so that others cannot start, stop or reset the device:

1. In the **Connected Devices** panel, click the device desired.
2. On the **Device** Tab, in the **Information** Group, click **Properties**. Or, right-click the device and select **Properties** in the context menu.
3. On the **General** Tab, click **Set Password**.
4. Enter and confirm the password in the box that appears, then select **OK**.

Note: This product is rated for use up to 140 °C (284 °F). Please heed the battery warning. The product will explode if exposed to temperatures above 140 °C (284 °F).

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Device Maintenance

Sock Maintenance

Replace the sock when it becomes noticeably dirty. Using distilled water will extend the life of the sock due to minerals in normal tap water. Additional socks can be purchased from madgetech.com.

O-Rings

O-ring maintenance is a key factor when properly caring for the LCS140 data logger. The O-rings ensure a tight seal and prevent liquid from entering the inside of the device. Please refer to the application note **O-Rings 101: Protecting Your Data**, found at madgetech.com, for information on how to prevent O-ring failure.

Battery Replacement

Materials: ER14250MR-145 Battery

1. Unscrew the bottom of the logger and remove the battery.
2. Place the new battery into the logger. Note the polarity of the battery. It is important to insert the battery with positive polarity pointing upward towards the probe. Failure to do so could result in product inoperability or potential explosion if exposed to high temperatures.
3. Screw the cover back onto the logger.



Recalibration

MadgeTech recommends annual recalibration. To send devices back for calibration, visit madgetech.com.



Product Support & Troubleshooting

- Visit our Resources online at madgetech.com/resources.
- Contact our friendly Customer Support Team at (603) 456-2011 or support@madgetech.com.



MadgeTech 4 Software Support

- Refer to the built-in help section of the MadgeTech 4 Software.
- Download the MadgeTech 4 Software Manual at madgetech.com.
- Contact our friendly Customer Support Team at (603) 456-2011 or support@madgetech.com.

