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E Series Hot Wire Anemometer

LSI LASTEM E Series Hot Wire Anemometer User Guide

Contents

LSI LASTEM E Series Hot Wire Anemometer

Specifications

- **Models:** ESV108, ESV108.1, ESV126, ESV308, ESV309, EXP126
- **Compatibility:** HWFC software
- **Connection:** EXP301 receiver or SVSKA2002 cable

Product Usage Instructions

Installation of the HWFC software

1. Go to **www.lsi-lastem.com** and select Installation and update software from the DOWNLOAD menu.
2. Download the ZIP file containing the LSI Web Installer program.
3. Extract the contents of the ZIP file and run the Setup file.
4. In the installer, select Hot Wire Factorials Config and click Install to complete the installation.

Replacing the head

1. Lower the retractable shell to position 3 to expose the head fully.
2. Unscrew the ring nut of the head to be replaced and disconnect it from the sensor stem.
3. Take the replacement head from the kit container, remove the cork, and carefully remove the contents.
4. Handle the sensor only through the threaded part of the head.
5. For SPMCA1004 or SPMCA1005, follow specific instructions for connector and ring nut placement.

Connecting the anemometer to the PC

To connect the anemometer to the PC, follow these steps based on the sensor model:

1. **ESV108, ESV108.1, ESV126, ESV308, ESV309 models:**
   - Connect the SVSKA2002 cable to a USB port on the PC.
   - Identify and connect the cable to the appropriate serial port on the PC based on model specifications.
2. **EXP126 model:**

- Connect the EXP301 receiver to the serial port of the PC using the DWA601 cable and a 12 V DC power supply.

Frequently Asked Questions

- **Q: How can I download and install the HWFC software?**
  - **A:** You can download the HWFC software from **www.lsi-lastem.com** by following the instructions provided in the user manual. Extract the ZIP file, run the Setup file, and select Hot Wire Factorials Config for installation.
- **Q: How do I replace the head of the hot-wire anemometer?**
  - **A:** To replace the head, lower the retractable shell, unscrew the ring nut of the old head, take out the replacement head from the kit container, and carefully install it following the provided instructions for your specific model (SPMCA1004 or SPMCA1005).
- **Q: What is the method to connect the anemometer to a PC?**
  - **A:** Depending on your sensor model, use either the EXP301 receiver or SVSKA2002 cable to establish a connection between the anemometer and your PC. Follow the detailed steps outlined in the user manual for proper connectivity.

Introduction

- Hot-wire anemometers are highly accurate sensors. They use a tungsten wire inserted into the sensor head. Each head has specific calibration factors: B0, B1, B2 and B3.
- It is essential for proper measurement that the anemometer is configured with the calibration factors of the head in use; this condition is met when the product leaves the factory.
- This guide describes how to independently replace the head of hot-wire anemometer models ESV108, ESV108.1, ESV126, ESV308, ESV309 and EXP126.
- The operation consists of replacing the sensor head and reconfiguring the sensor with the calibration factors of the new head via the HWFC – Hot Wire Factorial Config program.
- To proceed, the SPMCA1004 or SPMCA1005 kit, the HWFC – Hot Wire Factorial Config program and a PC are required. In addition, the EXP301 radio receiver with cable and power supply is required for the EXP126 sensor, while the SVSKA2002 cable is required for the other sensors. The SPMCA1005 kit requires a CCCFA4900 cable.
- On this topic see tutorial **#1-Hot wire anemometer – YouTube**

Installation of the HWFC software

HWFC is installed through the LSI Web Installer program, which can be downloaded from the LSI Lastem website.

- Go to **www.lsi-lastem.com** and choose Installation and Updates software from the DOWNLOAD menu.
- Click on the [LSI Web Installer] button to download the ZIP file with the program to your PC.

- Extract the contents of the ZIP file to a folder on your PC, then run the Setup file.
- When the installation is complete, start LSI Web Installer, place a tick in Hot Wire Factorials Config, and then press [Install] to install the software on your PC.

Replacing the head

- If the head to be replaced is not damaged and you want to reuse it later, you should save its calibration factors (§7) before replacing it.
- This operation can be omitted if you already have the Calibration sheet for the hot wire measurement head or its file.

To replace the head, proceed as follows:

1. Lower the retractable shell to position 3 so that the head is fully exposed.
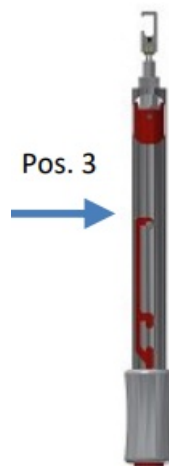
2. Lower the retractable shell to position 3 so that the head is fully exposed.

3. Take the replacement head from the kit container SPMCA1004 (or SPMCA1005 in the cable version CCCFA4900), remove the cork and, carefully, slip off the contents.

4. Remove the upper part of the protective shell and grasp the head by the threaded part. Handle the sensor only through this part.
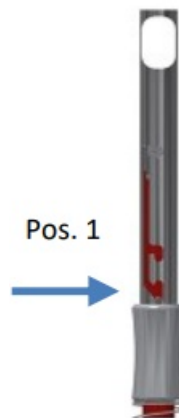
- **For SPMCA1004:**

5. Place the head connector and screw (clockwise) the head ring nut onto the sensor stem connector, taking care not to touch the part with the wire.

6. Reposition the retractable shell to the safety position.

Pos. 1

- **For SPMCA1005:**
- Place the CCCFA4900 cable connector and screw (clockwise) its ring nut onto the sensor stem connector.

- Place the head connector and screw (clockwise) its ring nut onto the cable connector CCCFA4900, taking care not to touch the part with the wire.

Connecting the anemometer to the PC

The connection between the PC and the sensor is made by radio via the EXP301 receiver for the EXP126 model and via the SVSKA2002 cable for the remaining models.

ESV108, ESV108.1, ESV126, ESV308, ESV309 sensor models

1. Connect the SVSKA2002 cable to a USB port on the PC.

2. On the PC, identify the serial port associated with the cable.
   1. Open System from the Control Panel.
   2. Select Hardware setup and expand Ports (COM & LPT).
   3. Identify the port labelled "USB Serial Port". If there is more than one, disconnect and reconnect the SVSKA2002 cable from the PC. The port that disappears and reappears is the one associated with the cable.

3. Connect the other end of the SVSKA2002 cable to the sensor depending on the model.

- **For sensor mod. ESV308 and ESV309:**
    1. Connect the DB9 serial connector.

- **For sensor mod. ESV108, ESV108.1 and ESV126:**
    1. Remove the SERVICE PORT label on the back of the sensor.
    2. Connect the cable connector to the board inside the sensor. With the sensors in a vertical position, insert the con-nector with the cable downwards so that the red part is to the right.


EXP126 sensor model

1. Connect the EXP301 receiver to the serial port of the PC via the DWA601 cable and the 12 V DC power supply.
2. Switch on the receiver through the switch located inside it.

Updating the sensor configuration

In order for the sensor to perform measurements with the expected accuracy, it is necessary to update its configuration with the calibration factors supplied with the head. This is done via a PC on which the HWFC program is installed.

Start HWFC and, referring to the figures below, proceed as follows:

1. In Comm. Port set the serial port where the SVSKA2002 ca-ble or EXP301 receiver is connected.
2. Press the [Open](1) button and check that the program responds with Ready(2).
3. Enter the factors B0, B1, B2 and B3(3) reported on the Calibration sheet for hot wire measurement head(4) supplied with the kit.
    - Be sure to enter the factors for the S/N of the head used. If provided the file, in Serial(9) enter the S/N of the head used, then press [Load] (10) to open the file.
4. Press [Transmit](5) and check that the result is Ok(6).
5. If you want to save the factors to file, in Serial(9) enter the S/N of the head used, then press [Save](11).
6. Press [Close](7) and close the program.
7. Disconnect the SVSKA2002 cable or EXP301 receiver.
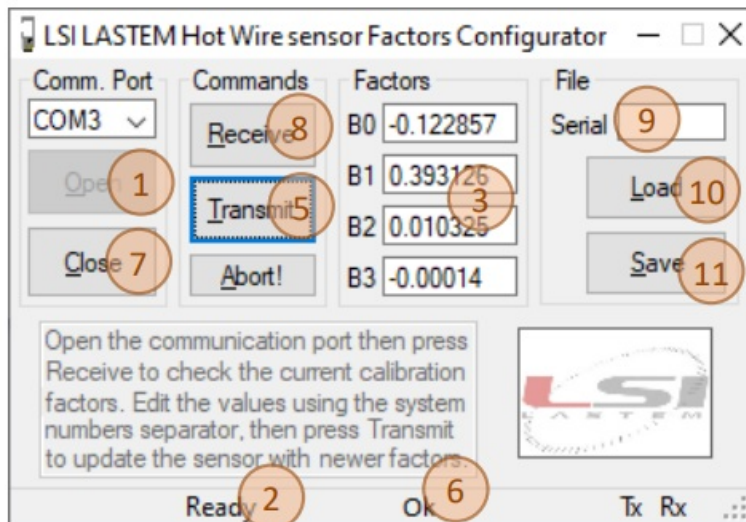
Checking the configuration in the sensor

- To check whether the sensor configuration has been successfully updated, connect the anemometer to the PC as described in Chapter 4 and repeat steps 1 and 2.
- Chapter 5 in sequence, then press [Receive](8) and check that the factors displayed by the program match those given in the Calibration sheet for the hot wire measurement head(4), or if provided, in the file.
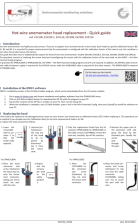
Saving the sensor configuration

- To save the sensor configuration, connect the anemometer to the PC as described in Chapter 4 and repeat the steps in steps 1 and 2 of Chapter 5, then press [Receive](8) and then [Save](11) after entering the S/N corresponding to the head in use.

Final operations

- Once the update and configuration check operations are completed, disconnect the cables from the sensor and PC and close the HWFC program.
- For models ESV108, ESV108.1 and ESV126, apply to the rear of the sensor the SERVICE PORT label supplied with the SPMCA1004 kit, to cover the access slot for the board.
- The replaced head can be repaired. Therefore, it is recommended to store it in an empty container and identify it as faulty.
- For repair, contact LSI LASTEM's after-sales service by sending an e-mail to **riparazioni@lsi-lastem.com**.

Documents / Resources

LSI LASTEM E Series Hot Wire Anemometer [pdf] User Guide
ESV108, ESV108.1, ESV126, ESV308, ESV309, EXP126, E Series Hot Wire Anemometer, E Series, Hot Wire Anemometer, Wire Anemometer, Anemometer

References

- **lastem.com**
- **Sensors for Environmental Monitoring - LSI LASTEM**
- **User Manual**