Manuals+ — User Manuals Simplified.

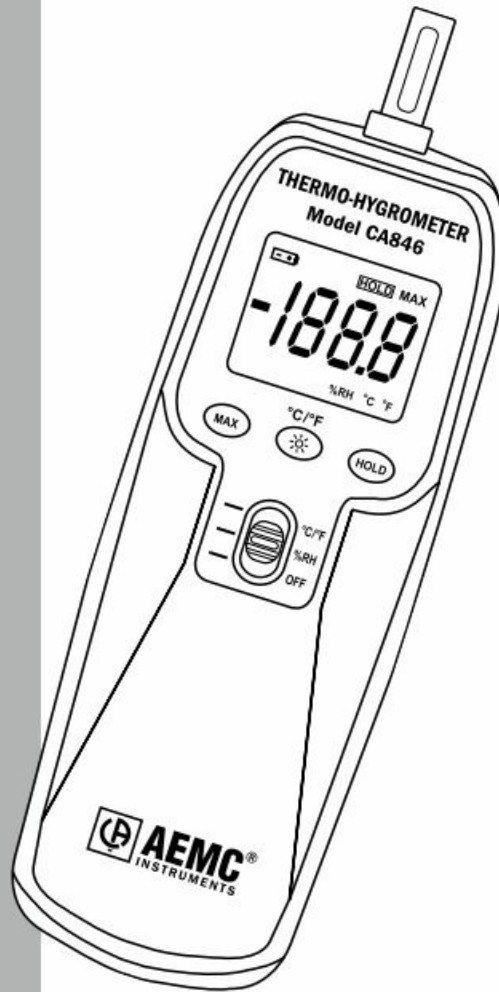# AEMC INSTRUMENTS CA846 Digital Thermo Hygrometer User Manual

AEMC INSTRUMENTS CA846 Digital Thermo
Hygrometer User Manual

■ THERMO-HYGROMETER
■ TERMO-HIGRÓMETRO

CA846

THERMO-HYGROMETER
Model CA846

HOLD MAX

-188.8

%RH °C °F

MAX

°C/°F

HOLD

°C/°F
%RH
OFF

AEMC®
INSTRUMENTS

ENGLISH   User Manual

Statement of Compliance

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments certifies that this instrument has been calibrated using standards and instruments traceable to international standards.

We guarantee that at the time of shipping your instrument has met its published specifications.

An NIST traceable certificate may be requested at the time of purchase, or obtained by returning the instrument to our repair and calibration facility, for a nominal charge.

The recommended calibration interval for this instrument is 12 months and begins on the date of receipt by the customer.

For recalibration, please use our calibration services. Refer to our repair and calibration section at **www.aemc.com**.

Serial #: _____

Catalog #: 2121.24

Model #: CA846

Please fill in the appropriate date as indicated: Date Received: _____

Date Calibration Due: _____

Chauvin Arnoux®, Inc. d.b.a AEMC® Instruments
www.aemc.com

Contents

CHAPTER 1 INTRODUCTION

⚠ Warning ⚠

- Do not connect to, or touch, any electrical circuit with the Thermo-Hygrometer.
- To avoid injury or fire hazard, do not operate this product in an explosive atmosphere or environment.
- Remove (unscrew) the protective metal tube covering the sensor head when using the Thermo-Hygrometer.
- Do not immerse the Thermo-Hygrometer sensor head into liquids – this may cause permanent damage to the sensors.
- Screw on the protective metal tube covering the sensor head when not using the Thermo-Hygrometer.

1.1 International Electrical Symbols

▣	This symbol signifies that the instrument is protected by double or reinforced insulation.
⚠	This symbol on the instrument indicates a WARNING and that the operator must refer to the user manual for instructions before operating the instrument. In this manual, the symbol preceding instructions indicates that if the instructions are not followed, bodily injury, installation/sample and product damage may result.
⚡	Risk of electric shock. The voltage at the parts marked with this symbol may be dangerous.
⚡	This symbol refers to a type A current sensor. This symbol signifies that application around and removal from HAZARDOUS LIVE conductors is permitted.
⌧	In conformity with WEEE 2002/96/EC

1.2 Definition of Measurement Categories

Cat. IV: For measurements performed at the primary electrical supply (<1000V) such as on primary overcurrent protection devices, ripple control units, or meters.
Cat. III: For measurements performed in the building installation at the distribution level such as on hardwired equipment in fixed installation and circuit breakers.
Cat. II: For measurements performed on circuits directly connected to the electrical distribution system. Examples are measurements on household appliances or portable tools.

1.3 Receiving Your Shipment

Upon receiving your shipment, make sure that the contents are consistent with the packing list. Notify your distributor of any missing items. If the equipment appears to be damaged, file a claim immediately with the carrier and notify your distributor at once, giving a detailed description of any damage. Save the damaged packing container to substantiate your claim.

1.4 Ordering Information

Thermo-Hygrometer Model CA846 ……………………………. Cat. #2121.24
Includes meter, shockproof holster, 9V battery and user manual.

CHAPTER 2 PRODUCT FEATURES

2.1 Description

The Thermo-Hygrometer Model CA846 is a portable, compact digital meter designed for simplicity and one-hand operation. The meter uses an NTC as the temperature sensor providing excellent response time to changes in temperature, good repeatability and accurate readings. The Model CA846 also utilizes a thin-film polymer-capacitive type relative humidity sensor as hygrometer sensor, offering excellent recovery from 100% moisture and fast response time and durability.
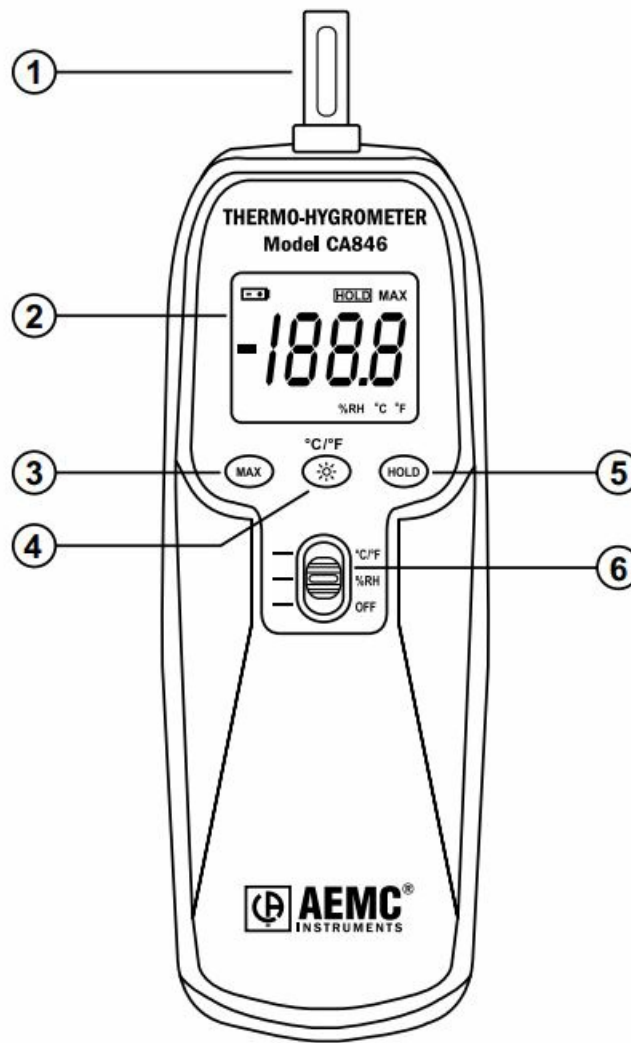
1. Temperature/humidity sensor with protective sensor cover
2. 3½ digit display
3. MAX button
4. °C/°F selector & backlight
5. HOLD button
6. Power/mode selector

2.2 Push Buttons

2.2.1 Center (Yellow) Function Switch

Turns ON the Thermo-Hygrometer and selects the %RH or °C/°F setting. Slide the button to OFF after use.

2.2.2 Back-Light and °C/°F Button

- Press the ? button to turn the Back-Light ON.
- Press the ? button again to turn the Back-Light OFF.
- Press the ? button for 2 seconds to change the temperature scale to °C or °F. The temperature scale °C or °F is displayed in the lower right hand corner of the display.

2.2.3 MAX Button

- Press the MAX button to enter the MAX mode. The "MAX" annunciator appears in the upper right hand corner of the display.
- The selected range (%RH or °C/°F) records and updates the maximum absolute values.
- Press the MAX button again to exit the MAX-recording mode ("MAX" goes out).
- The HOLD button may be used in the MAX mode to "Freeze" (no longer updates) the MAX measurement on the display.

2.2.4 HOLD Button

The Hold button "freezes" the reading on the display. Press the "HOLD" button to toggle (activate/release) HOLD. In the HOLD mode, the "HOLD" annunciator is displayed in the upper part of the LCD display and the last reading is displayed until released.

CHAPTER 3 SPECIFICATIONS

3.1 Environmental Specifications

Temperature Scale: Celsius (°C) or Fahrenheit (°F) user-selectable
Temperature Sensor: NTC
Measurement Range: -4° to 140°F, -20° to 60°C
Resolution: 0.1°F/°C
Accuracy: -4° to 32°F ± 2°F (-20° to 0°C ± 1°C) 32° to 140°F ± 1°F (0° to 60°C ± 0.5°C)
Temperature Coefficient: 0.1 times the applicable accuracy specification per °C from 0° to 18°C and 28° to 50°C (32° to 64°F and 82° to 122°F)
Humidity Sensor: Electronic capacitance polymer film sensor. (The sensor is unaffected by water condensation, and is immune to most reagent vapors)
Measurement Range: 0% to 100% RH
Resolution: 0.1% RH
Accuracy (@ 25°C): 10%-90% RH ± 5.0% 0%-10% RH; 90% to 100% RH ± 10.0%
Sensor Response Time for 90% of Range: 60s typical
Sensor Stability: ±2% RH, 2 years typical
Sensor Hysterisis (10% to 90% to 10% RH): ±1% RH typical
Sensor Temperature Dependence: Negligible from 32° to 140°F (0° to 60°C)
Operating Temperature: 32° to 122°F (0°C to 50°C) at < 80% RH
Storage Temperature: -4° to 140°F (-20° to 60°C), 0 to 80% RH with battery removed
Accuracy: Stated accuracy at 23°C ± 5°C, <90%RH
Altitude: 2000m max

3.2 Mechanical Specifications

Display: 3½ digit liquid crystal display (LCD) with maximum reading of 1999

Over-Range: "OL" is displayed

Low Battery Indication: The ⎓ is displayed when the battery voltage drops below the required level

Sample Rate: 2.5 times per second, nominal

Input Protection: 24VDC or 24Vrms maximum input voltage on any input

Power Supply: Standard 9V battery (NEDA 1604, IEC 6F22 006P, or equivalent)

Battery Life: 200 hours typical with carbon zinc battery

Dimensions: 6.81 x 2.38 x 1.5″ (173 x 60.5 x 38mm)

Weight: Approx. 7 oz (197g) including battery

3.3 Safety Specifications

$$C \hspace{-0.2em} \epsilon$$

EN 61010-1 (1995-A2), Protection Class III Overvoltage Category (CAT III, 24V), Pollution Degree 2 Indoor Use
*All specifications are subject to change without notice

CHAPTER 4 OPERATION

4.1 Recommendations

- For reliable measurements, let the readings stabilize. The hygrometer and temperature sensor must reach equilibrium with the medium measured.
- Avoid temperature measurement errors induced by too short measurement time, sunshine during the measurement, heating, cold outer walls, air draft (e.g. fans), radiating sources including hand and/or body heat, etc.
- Avoid humidity measurement errors induced by steam, water splashes, dripping water or condensation on the sensor, etc.
- Avoid sensor contamination induced by particles in the air or measurements in powder like substances. Contamination may be avoided by measuring through a filter (user supplied). The filter must be cleaned or replaced periodically, depending upon the degree of contamination at the measurement site.

4.2 Operating the Model CA846

1. Unscrew the protective metal tube covering the sensor.
2. Set the power switch to the desired %RH or °C/°F range.
3. Let the reading(s) stabilize (%RH takes at least 60 seconds to reach 90%).
4. Read the display.
5. After use, screw the protective metal tube back onto the sensor.
6. Turn the instrument OFF when finished.

CHAPTER 5 MAINTENANCE

Use only factory specified replacement parts. AEMC® will not be held responsible for any accident, incident, or malfunction following a repair done other than by its service center or by an approved repair center.

5.1 Replacing the Battery

The ⊟ symbol appears on the LCD display when replacement is needed. Replace with a standard 9V battery (NEDA 1604, IEC 6F22). To replace the battery:

- Turn the Thermo-Hygrometer OFF.

- Remove the rubber holster.

- Remove the screw from the back of the meter and lift off the battery cover.

- Replace the battery, then put the rear cover and holster back on.

5.2 Cleaning

- Use a soft cloth lightly dampened with soapy water.

- Rinse with a damp cloth and then dry with a dry cloth.

- Do not use any abrasives or solvents.

- Do not let any liquid enter the case or sensor area.

Repair and Calibration

To ensure that your instrument meets factory specifications, we recommend that it be scheduled back to our factory Service Center at one-year intervals for recalibration, or as required by other standards or internal procedures.

For instrument repair and calibration:
You must contact our Service Center for a Customer Service Authorization Number (CSA#). This will ensure that when your instrument arrives, it will be tracked and processed promptly. Please write the CSA# on the outside of the shipping container. If the instrument is returned for calibration, we need to know if you want a standard calibration, or a calibration traceable to N.I.S.T. (Includes calibration certificate plus recorded calibration data).

Ship To:
Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments 15 Faraday Drive Dover, NH 03820 USA
Tel: (800) 945-2362 (Ext. 360) (603) 749-6434 (Ext. 360)
Fax: (603) 742-2346 or (603) 749-6309
repair@aemc.com

(Or contact your authorized distributor)
Costs for repair, standard calibration, and calibration traceable to N.I.S.T. are available.

NOTE: You must obtain a CSA# before returning any instrument.

Technical and Sales Assistance

If you are experiencing any technical problems, or require any assistance with the proper operation or application of your instrument, please call, fax or e-mail our technical support team:
Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments
Phone: (800) 945-2362 (Ext. 351) (603) 749-6434 (Ext. 351)
Fax: (603) 742-2346 **techsupport@aemc.com**

Limited Warranty

The Model CA846 is warranted to the owner for a period of 2 years from the date of original purchase against defects in manufacture. This limited warranty is given by AEMC® Instruments, not by the distributor from whom it was purchased. This warranty is void if the unit has been tampered with, abused or if the defect is related to service not performed by AEMC® Instruments.
For full and detailed warranty coverage, please read the Warranty Coverage Information, which is attached to the Warranty Registration Card (if enclosed) or is available at www.aemc.com. Please keep the Warranty Coverage

Information with your records.

What AEMC® Instruments will do: If a malfunction occurs within the warranty period, you may return the instrument to us for repair, provided we have your warranty registration information on file or a proof of purchase. AEMC® Instruments will, at its option, repair or replace the faulty material.

REGISTER ONLINE AT: **www.aemc.com**

Warranty Repairs

What you must do to return an Instrument for Warranty Repair:

First, request a Customer Service Authorization Number (CSA#) by phone or by fax from our Service Department (see address below), then return the instrument along with the signed CSA Form. Please write the CSA# on the outside of the shipping container. Return the instrument, postage or shipment pre-paid to:

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments Service Department 15 Faraday Drive · Dover, NH 03820 USA

Tel: (800) 945-2362 (Ext. 360)

(603) 749-6434 (Ext. 360) Fax: (603) 742-2346 or (603) 749-6309 **repair@aemc.com**

Caution: To protect yourself against in-transit loss, we recommend you insure your returned material.

NOTE: You must obtain a CSA# before returning any instrument.

NOTES:

Chauvin Arnoux®, Inc. d.b.a. AEMC® Instruments

15 Faraday Drive • Dover, NH 03820 USA • Phone: (603) 749-6434 • Fax: (603) 742-2346 **www.aemc.com**

Documents / Resources

AEMC INSTRUMENTS CA846 Digital Thermo Hygrometer [pdf] User Manual
CA846 Digital Thermo Hygrometer, CA846, Digital Thermo Hygrometer, Thermo Hygrometer, Hygrometer

References

- Ⓖ **Get Electrical Testers – Power Analyzers | AEMC Instruments**
- Ⓜ **Manual-Hub.com - Free PDF manuals!**
- **User Manual**