AMPROBE®

# TMA40-A

## Airflow Anemometer

**Users Manual**

AMPROBE®

English

# TMA40-A

## Airflow Anemometer

Users Manual

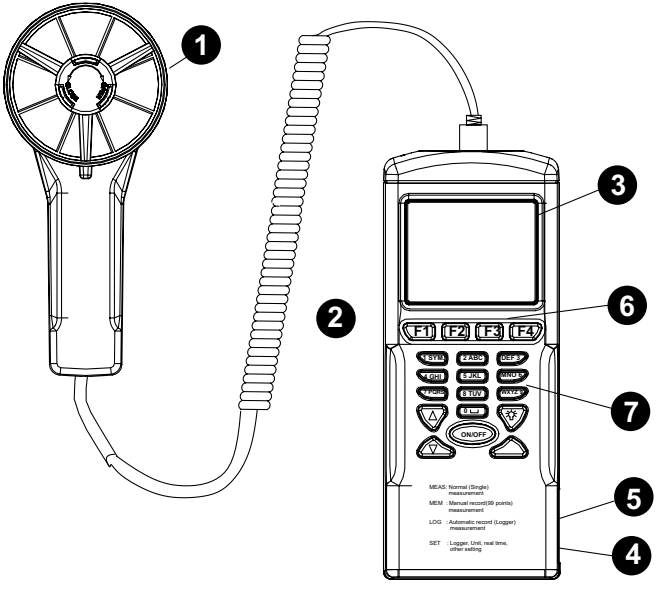
TMA40-A_Rev002

**Limited Warranty and Limitation of Liability**
Your Amprobe product will be free from defects in material and workmanship for 1 year from the date of purchase. This warranty does not cover fuses, disposable batteries or damage from accident, neglect, misuse, alteration, contamination, or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on Amprobe's behalf. To obtain service during the warranty period, return the product with proof of purchase to an authorized Amprobe Test Tools Service Center or to an Amprobe dealer or distributor. See Repair Section for details. THIS WARRANTY IS YOUR ONLY REMEDY. ALL OTHER WARRANTIES - WHETHER EXPRESS, IMPLIED OR STAUTORY - INCLUDING IMPLIED WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, ARE HEREBY DISCLAIMED. MANUFACTURER SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, ARISING FROM ANY CAUSE OR THEORY. Since some states or countries do not allow the exclusion or limitation of an implied warranty or of incidental or consequential damages, this limitation of liability may not apply to you.

**Repair**
All test tools returned for warranty or non-warranty repair or for calibration should be accompanied by the following: your name, company's name, address, telephone number, and proof of purchase. Additionally, please include a brief description of the problem or the service requested and include the test leads with the meter. Non-warranty repair or replacement charges should be remitted in the form of a check, a money order, credit card with expiration date, or a purchase order made payable to Amprobe® Test Tools.

**In-Warranty Repairs and Replacement – All Countries**
Please read the warranty statement and check your battery before requesting repair. During the warranty period any defective test tool can be returned to your Amprobe® Test Tools distributor for an exchange for the same or like product.

**Non-Warranty Repairs and Replacement – US and Canada**
Non-warranty repairs in the United States and Canada should be sent to a Amprobe® Test Tools Service Center. Call Amprobe® Test Tools or inquire at your point of purchase for current repair and replacement rates.




1. Fan probe with built-in temperature and humidity sensors
2. Tripod mounting screw
3. LCD display
4. DC adaptor jack
5. USB port
6. Function Keys
   **F1:** Press for measurement mode
   **F2:** Press to access the memory
   **F3:** Press to access the log files
   **F4:** Press to enable/disable auto power off, set data and time, and set parameters to record.
7. Keypad
   **1SYM** stands for "1,*,.,:,$,+,-,="
   **2ABC** stands for "2,a,b,c,A,B,C"
   **3DEF** stands for"3,d,e,f,D,E,F"
   **4GHI** stands for"4,g,h,i,G,H,I"
   **5JKL** stands for"5,j,k,l,J,K,L"
   **6MNO** stands for"6,m,n,o,M,N,O"
   **7PQRS** stands for"7,p,q,r,s,P,Q,R,S"
   **8TUV** stands for"8,t,u,v,T,U,V"
   **9WXYZ** stands for"9,w,x,y,z,W,X,Y,Z"
   **0** |__| stands for"0 and space"
   ☼: Press to turn on and off the backlight
   △: Press to shift the cursor to previous
   ▽: Press to shift the cursor to next
   **ON/OFF**: Press to turn the unit on and off

**CONTENTS**

**INTRODUCTION**

This meter is designed with three measurement modes:

1. Single point measurement
2. Multiple points measurement (Manual record)
3. Automatic Logging
   - Measuring/programming anywhere at any time
   - User friendly interface
   - USB cable and software enable to link with PC for downloading and uploading
   - Backlight function
   - Tripod mountable for long time use
   - Power off time selectable
   - Big Dot matrix LCD
   - Powered by 4-pcs AAA batteries or 9V adaptor (not included) (Plug: outer:5.5mm; Inner:2.1mm; Center positive) 0.05mA minimum

**UNPACKING AND INSPECTION**

Your shipping carton should include:

1 x TMA40-A Airflow Anemometer

4 x AAA Battery

1 x USB Cable

1 x CD Download Suite

1 x Carrying case

**OPERATION**

**Meter setting: SET (See Fig.2)**

- Press F4 to enter the meter setting
- Press ▽ or △ key to shift the cursor
- Press EDIT to enter modification mode
- Press NEXT/BACK to enter the next or previous page.
- Press EXIT to return to main menu.

**Meter Screen Description (See Figs 2&3)**

1. LCD Cont.(1-5): LCD brightness. From darkest 1 to brightest 5.
2. Auto Off: Selectable 1 to 20 minutes.
3. Set clock: Choose date and time. Press EDIT to enter the month. Press NEXT to accept or ABORT to cancel. Repeat for day, year, hour, minute and second.
4. Set ID: Press EDIT to enable or disable ID.

5. ID: Press EDIT to enter the user id. Use the keypad to enter the information.

**Note:** To calculate air volume, first enter the value of the air source area. Three choices are available: length X width (rectangle); Diameter(Circle); and Area.

Range from 0~300cm (Rectangle and Circle and 0~90000sq.cm for area.

**Single Measurement: MEAS (See Fig. 3)**

- Press F1 to enter the single measurement mode.
- Press F2 to select the type of input
- Press ESC to return to previous menu

**Multiple Measurement: MEM (See Fig. 4)**

In this mode, you can manually record what you measure in real time and attach a file name with the recording. There is a total of 99 memory locations in this mode.

- Press F2 to enter the multiple measurement mode.
- Press F2(MEAS) to start a measurement.
- Press ABORT(F1) to cancel the measurement .
- Press SAVE(F4) to save the recording.
- Press F3(EDIT) to edit the file name of the recorded value. Use the keys to enter the name. Press and hold to move from one character to another. Release the key to select the desired character.
- Press CLR(F2) to delete a selected character.
- Press and hold CLR(F2) for over 2 seconds to delete the whole memory.

**Automatic Logging: LOG (See Fig. 5)**

In this mode, you can automatically record what you have set up before a real time measurement.

- Press F3(LOG) to enter the LOG mode.
- Press SET(F3) to set up the parameters for the recording.
- Press ▽ △ keys to select a parameter.
- Press EDIT to modify begin date, start time, End date, suspend time, and the rate ( 1 to 200 seconds).
- Expect is 2400 points(total memory) and remain (remaining memory) will be calculated according to your setting.
- Press NEXT
- Press START to begin the logging session
- Press VIEW to see the recording data
- Press MEAS to see the real time data measurement.
- Press ESC to return to previous screen.
- Press STOP to suspend the logging session.

- Press NEXT
- Press P-PG(previous page) or N-PG (next page) to see the previous or the next 100 points.
- Press BACK
- Press EXIT to return to the main screen

**COMPARISON TABLE**

| **Measurement** | **Description** | **Memory Point** |
|---|---|---|
| Single point | Single point measurement | No Memory |
| Multi-Point | File name editable<br>Multi-point measurement | 99 points |
| Automatic Logging | Programmable<br>Data logging function | 2400 points |

| | **Multi-point measurement** | **Data Logging** |
|---|---|---|
| Record | 99 points | 2400 points |
| File Name | Editable or Default with date and time (Note 1) | Default (Note 2) |
| Measuring/Sampling | Press MEAS Key to measure and store | Automatically measure and store according to preset parameters (Note 3) |

**Note 1:** The recording file name will show current date and time as file name if the user doesn't edit any.
Example: "05-06 09:21:51" means the recording was made on May 6th at 09:21:51 or June 5th at 09:21:51 depending on your date mode setting.

**Note 2:** Each recording file will take the current date and time as file name.

**Note 3:** The meter will start and stop recording at the preset dates and times. If the preset time is less than 24-hour and the end date is in the future, the meter will stop at the ending time and restart again the next day until the ending date or until the memory is full.
a) Set the date and start time
b) Set the date and stop time
c) Set the sample rate
d) In order to record 24-hour a day, you must set START for 00:00:00 and SUSPEND for 23:59:59

**TECHNICAL SPECIFICATIONS**

| | |
|---|---|
| Temperature resolution | 0.1°C (0.1°F) |
| Temperature response | 30 seconds |
| Relative Humidity range | 0 to 100% |
| RH accuracy | ± 3% at 10% to 99%; ± 5% at all others |
| RH resolution | 0.1% |
| RH response time | 15 seconds |
| Wet Bulb range | -22 to 70°C (-7.6°F to 158°F) |
| Wet Bulb resolution | 0.1 |
| Air Velocity range | 0.4 to 32 m/s ( 1.3 to 105 ft/s) |
| Air Velocity accuracy | ± 3% |
| Air Velocity Resolution | 0.1 m/s (0.1 ft/s) |
| Air Velocity response time | 1 second |
| Air Volume range | 0 to 99999 (CFM or CMM) |
| Air Volume accuracy | ± 3% |
| Air Volume resolution | 0.1 |
| Measurement with memory | 99 points |
| Datalogging measurement | 2400 points |
| Dimensions | 165 X 70 X 53 mm ( 6.5 X 2.57 X 2.1 in) |

**SOFTWARE OPERATION**

-Insert the software CD into CD-ROM driver

-Install the USB driver first

-Install the software follow the on-screen instructions

-Open the program

-Click the “Port” from main screen and input the right comm. port.

-Click as follow to download the memory

1. Click to download manually recorded data.
2. Click to download automatically recorded data
3. Click to download both manually & automatically recorded data

**TROUBLESHOOTING**

**Power on but no display**

- Make sure the time of pressing “ON/OFF” key is more than 0.2 seconds.
- Check the batteries are in place and make sure they are at good contact and correct polarity.
- Replace the batteries and try again .

**Display disappear**

- Check whether the low battery indicator is displayed on or before display disappears. If yes, replace the batteries .

**Error code:**

- E2. Problem : Meter value is underflow .
- E3. Problem : Meter value is overflow.
- E4. Problem: Calculated source value occurs error.

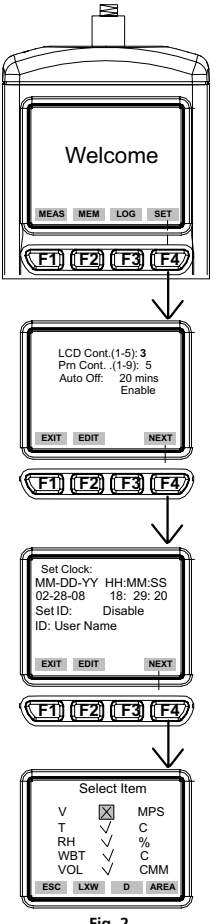

Welcome
MEAS MEM LOG SET
F1 F2 F3 F4
LCD Cont.(1-5): 3
Prn Cont. .(1-9): 5
Auto Off: 20 mins
Enable
EXIT EDIT NEXT
F1 F2 F3 F4
Set Clock:
MM-DD-YY HH:MM:SS
02-28-08 18: 29: 20
Set ID: Disable
ID: User Name
EXIT EDIT NEXT
F1 F2 F3 F4
Select Item
V ☒ MPS
T √ C
RH √ %
WBT √ C
VOL √ CMM
ESC LXW D AREA

**Fig. 2**

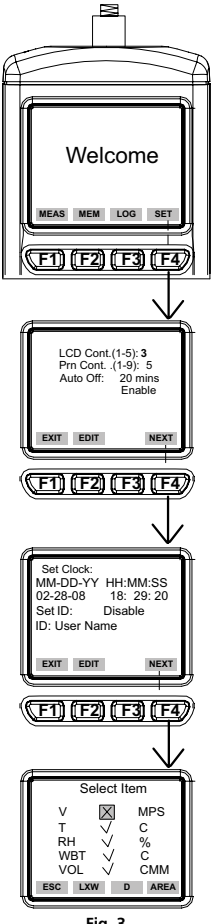

Welcome
MEAS MEM LOG SET
F1 F2 F3 F4
LCD Cont.(1-5): 3
Prn Cont. .(1-9): 5
Auto Off: 20 mins
Enable
EXIT EDIT NEXT
F1 F2 F3 F4
Set Clock:
MM-DD-YY HH:MM:SS
02-28-08 18: 29: 20
Set ID: Disable
ID: User Name
EXIT EDIT NEXT
F1 F2 F3 F4
Select Item
V ☒ MPS
T √ C
RH √ %
WBT √ C
VOL √ CMM
ESC LXW D AREA

**Fig. 3**

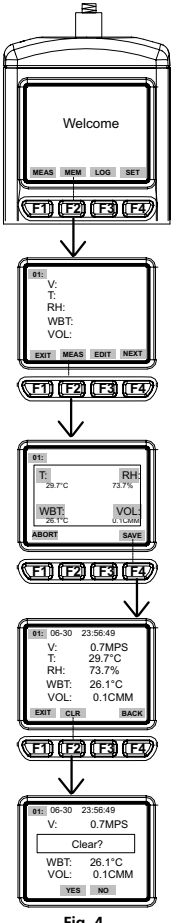

Welcome
MEAS MEM LOG SET
F1 F2 F3 F4
01:
V:
T:
RH:
WBT:
VOL:
EXIT MEAS EDIT NEXT
T: RH:
29.7°C 73.7%
WBT: VOL:
26.1°C 0.1CMM
ABORT SAVE
01: 06-30 23:56:49
V: 0.7MPS
T: 29.7°C
RH: 73.7%
WBT: 26.1°C
VOL: 0.1CMM
EXIT CLR BACK
Clear?
YES NO

Fig. 4

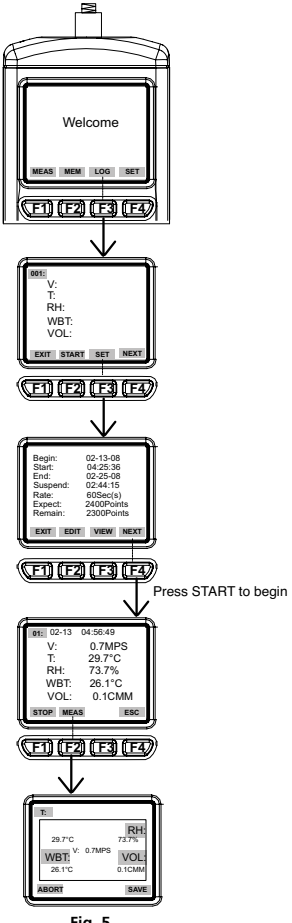

Welcome
MEAS MEM LOG SET
F1 F2 F3 F4
001:
V:
T:
RH:
WBT:
VOL:
EXIT START SET NEXT
Begin: 02-13-08
Start: 04:25:36
End: 02-25-08
Suspend: 02:44:15
Rate: 60Sec(s)
Expect: 2400Points
Remain: 2300Points
EXIT EDIT VIEW NEXT
Press START to begin
01: 02-13 04:56:49
V: 0.7MPS
T: 29.7°C
RH: 73.7%
WBT: 26.1°C
VOL: 0.1CMM
STOP MEAS ESC
T: RH:
29.7°C 73.7%
V: 0.7MPS
WBT: VOL:
26.1°C 0.1CMM
ABORT SAVE

Fig. 5