User's Guide

CE

OMEGA
An OMEGA Technologies Company

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HHF-300A
Digital Anemometer

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ΩOMEGA®

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Customer Service: 1-800-622-2378 / 1-800-622-BEST℠
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Unpacking Instructions

Remove the Packing List and verify that you have received all equipment, including the following (quantities in parentheses):

Vane type probe head attached to the instrument by 5 feet of connecting cable (1)

Extension rods (one piece with handle grip) (2)

Flexible rod (1)

"AA" 1.5 Volt alkaline batteries (2)

Carrying case (1)

Operator's Manual (1)

If you have any questions about the shipment, please call the OMEGA Customer Service Department.

When you receive the shipment, inspect the container and equipment for signs of damage. Note any evidence of rough handling in transit. Immediately report any damage to the shipping agent.

NOTE

The carrier will not honor damage claims unless all shipping material is saved for inspection. After examining and removing contents, save packing material and carton in the event reshipment is necessary.

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HHF300A
Digital Anemometer

Introduction 1

The HHF300A Series digital anemometer is an instrument for measuring air velocity. Special features include switchable between Feet Per Minute (FPM) and Meters Per Second (MPS). This instrument is a must for anyone in the heating, ventilation, and air conditioning industry. Specific applications include environmental, paint booths, air balancing, and many others where air velocity measurements are essential.

The anemometer displays the air velocity in FPM initially (until you press the MPS key on the keypad) in 2 second average intervals.

2 Parts of the Air Velocity Meter

2.1 Pushbuttons

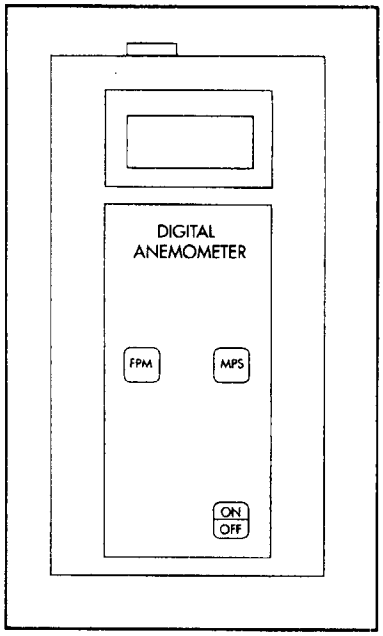

Figure 2-1. Front View of the Meter

ON/OFF — Pressing the "ON/OFF" key switches the unit ON.
Pressing the "ON/OFF" key a second time turns the unit off.

FPM — Pressing the "FPM" key displays air velocity in feet per minute with 1 FPM resolution.

MPS — Pressing the "MPS" key air velocity in meters per second with 0.01 MPS resolution.

2.2 Parts of the Display

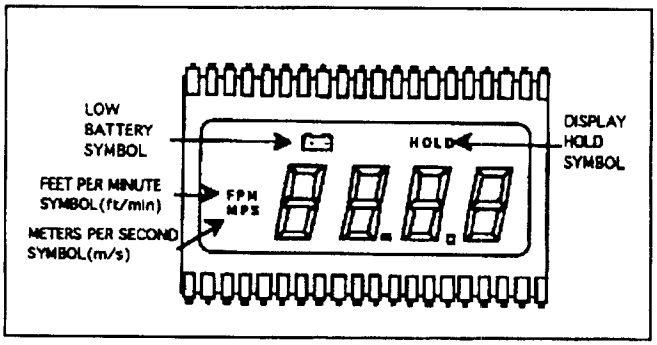

Figure 2-2. LCD Display

3 Installing the Batteries

3.1 Installing the Batteries

1. Remove battery compartment lid by pushing the battery lid tab to the right and lifting. The battery lid should swing out of the way and off.
2. Insert 2 "AA" alkaline batteries into the battery compartment as shown in Figure 3-1.
3. Replace battery compartment lid by placing the battery hinge points into the slots and swing it shut. Make sure the unit is OFF before replacing batteries.

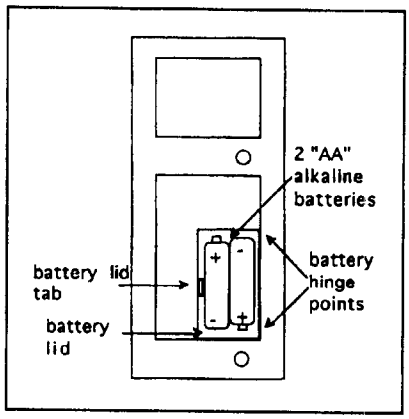

Figure 3-1. Battery Compartment

Operating the Air Velocity Meter 4

1. Make sure you have fresh batteries in the unit.
2. Attach the handle to the probe using the extension and flex rods as needed.
3. Press "ON/OFF" key, and the unit will turn on. The start up sequence displays information about the unit. The unit will display "8 8.8.8"; this is a display check. After display check the unit will display the battery condition ("bA85" means the battery is at 85%). Now the startup sequence is complete and the unit starts displaying air velocity in FPM in 2 sec average intervals. When the low battery symbol appears on display, replace the batteries.
4. Now press the "FPM" or "MPS" key for desired function and place the probe head in the area where air velocity is to be measured. Be sure to line up the arrow on the probe head with the direction of airflow. To calculate CFM, refer to Chapter 6.
5. Press ON/OFF key to turn the unit off when not in use.

5 Volume Airflow Calculations

To calculate cubic feet per minute (ft^3/min) CFM from a measured air velocity (ft/min) FPM, you need the cross sectional area of the flow stream.

volume flow (CFM)=airflow reading (FPM) x A [area (ft^2)]

In rectangular duct work this cross sectional area is the width times the height.

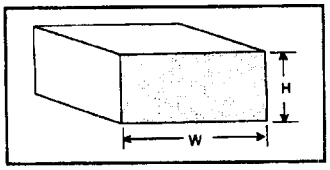

Figure 6-1. Cross Sectional Area

W x H = A (CROSS SECTIONAL AREA)

In circular duct work this cross sectional area is the radius squared times π (Pi = 3.14).

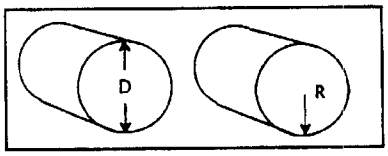

Figure 6-2. Cross Sectional Area

R x R x 3.14 = A (CROSS SECTIONAL AREA)
(D/2) x (D/2) x 3.14 = A (CROSS SECTIONAL AREA)

CONVERSION FACTORS:

To convert from square inches (in^2) to square feet (ft^2) divide by 144.

EXAMPLE

An air duct is rectangular and the width is 24" and the length is 12". The air velocity reading in the duct is 450 FPM.

W x L = A (area)
24" x 12" = 288 square inches
288 square inches ÷ 144 = 2 square feet (ft^2)

volume flow (CFM) = airflow reading (FPM) x A [area (ft^2)]
900 CFM = 450 FPM x 2 square feet (ft^2).

Notes

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MADE IN USA WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA Warranty adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit should malfunction, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of being damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components which wear are not warranted, including but not limited to contact points, fuses, and triacs.

OMEGA is pleased to offer suggestions on the use of its various products. However, OMEGA neither assumes responsibility for any omissions or errors nor assumes liability for any damages that result from the use of its products in accordance with information provided by OMEGA, either verbal or written. OMEGA warrants only that the parts manufactured by it will be as specified and free of defects. OMEGA MAKES NO OTHER WARRANTIES OR REPRESENTATIONS OF ANY KIND WHATSOEVER, EXPRESSED OR IMPLIED, EXCEPT THAT OF TITLE, AND ALL IMPLIED WARRANTIES INCLUDING ANY WARRANTY OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY DISCLAIMED. LIMITATION OF LIABILITY: The remedies of purchaser set forth herein are exclusive and the total liability of OMEGA with respect to this order, whether based on contract, warranty, negligence, indemnification, strict liability or otherwise, shall not exceed the purchase price of the component upon which liability is based. In no event shall OMEGA be liable for consequential, incidental or special damages.

CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. P.O. number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. P.O. number to cover the COST of the repair,
2. Model and serial number of product, and
3. Repair instructions and/or specific problems relative to the product.

OMEGA's policy is to make running changes, not model changes, whenever an improvement is possible. This affords our customers the latest in technology and engineering.

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