

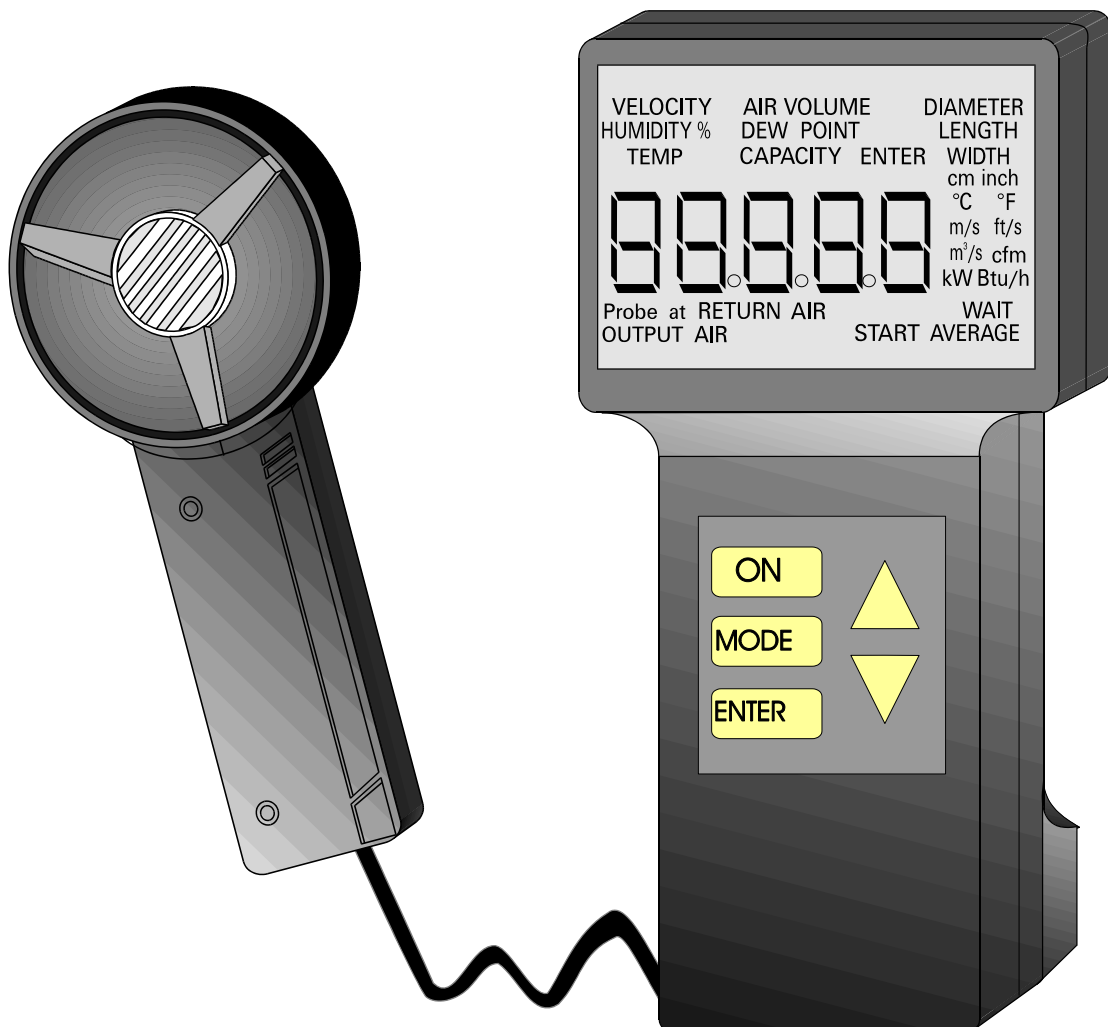
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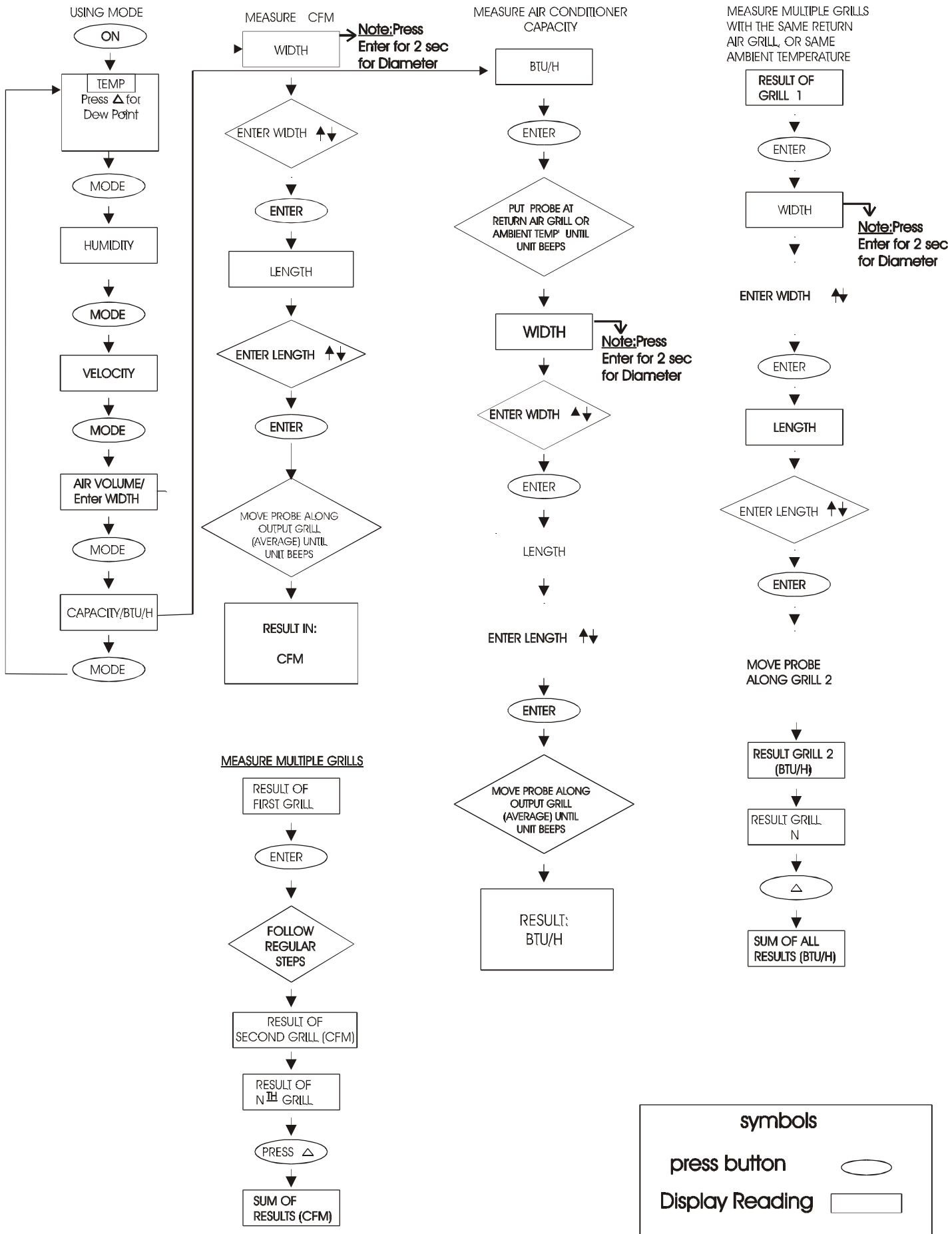
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M 4000E, M4000ED

DIGITAL HVAC ANALYZER

User's Manual





M-4000E, M4000ED

General Description:

An advanced measurement product, developed and produced by “MEITAV” - gives for the first time the applications to features the following measurements capabilities

- **Temperature**
 - **Humidity**
 - **Air Velocity**
 - **Air Volume**
 - **Capacity**
 - **Dew Point (M4000ED)**

<i>PARAMETER</i>	<i>ENGLISH</i>
Temperature	°F
Humidity	%RH
Air Velocity	Ft/sec
Width / Length	Inch
Air volume	CFM
Power	BTU/H
Dew Point	°F

ON button:

1. Press ON button (the unit will beep and LCD highlight).
2. Press ON button to switch off. (the unit will beep before to switch off)

1. Measuring Temperature



Fig.1

- 1.1 Press the ON button (on the first time) or MODE button - TEMP will be displayed on LCD. (fig. 1)
- 2 Place the probe in front of unit outlet (or any other outlet) so that the sensor's cover is facing the outlet.
- 3 The LCD screen will display temperature level in °F. Press Δ to display Dew Point in °F. (fig.2)

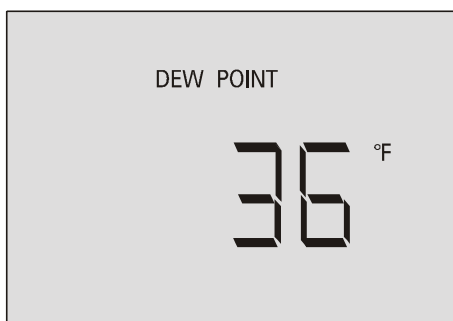
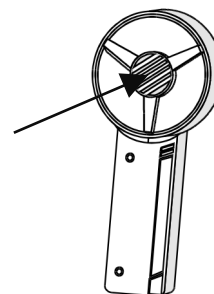


Fig.2

Sensor's cover

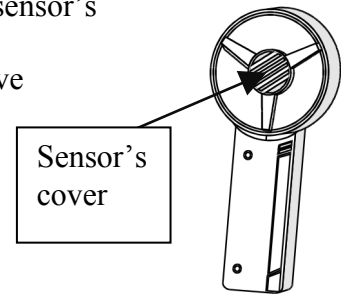


2. Measuring Humidity Level



Fig.3

- 1 Press the MODE button - HUMIDITY% will be displayed on LCD. (fig.3)
- 2 Place the probe in front of units outlet (or any other outlet) so that the sensor's cover is facing the outlet.
- 3 The LCD screen will display relative humidity level in % RH.



3. Measuring Air velocity



Fig.4

- 1 Press the MODE button - VELOCITY will be displayed on LCD. (fig.4).
- 2 Place the probe in front of units **outlet** (or any other outlet) so that the sensor's cover is facing the outlet.
- 3 The LCD screen will display Air velocity in feet/second.

4. Measuring Air Volume

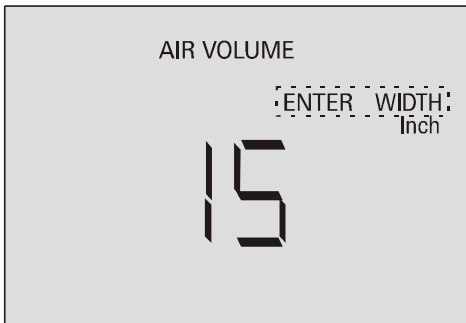


Fig.5

- 1 Press the MODE button - AIR VOLUME and ENTER WIDTH (flashing) will be displayed on LCD.* (fig 5)
The M4000 will request the A\C's outlet **width**.
- 2 Using ∇Δ buttons enter the appropriate measurements in inch.



Fig.6

- 4.3 Press ENTER to write width to memory.
AIR VOLUME and ENTER LENGTH (flashing) will be displayed on LCD.* (fig 6)
The M4000 will request the A\C's outlet **length**.
- 4.4 Using ∇Δ buttons enter the appropriate measurements in inch.

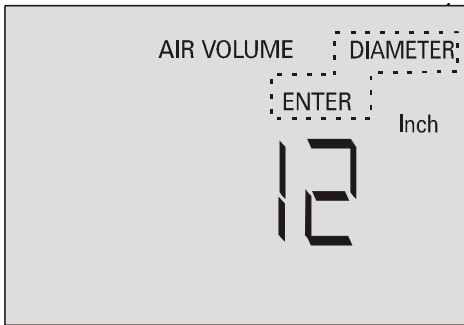


Fig.7

5 Place the probe in front of the units outlet so that the sensor's cover is facing the outlet. Press ENTER, The M4000 will start flashing "WAIT". "WAIT" will flash for about 20 seconds put the probe on the grill and when "start average" start to flash then move the probe along the unit's outlet so as to cover the whole area, aim to get an average reading from all available openings*.

Try to cover all area in less than 10 seconds (fig.8) and repeat again and again for 1 minute ("START AVERAGE" flashing fig.9).

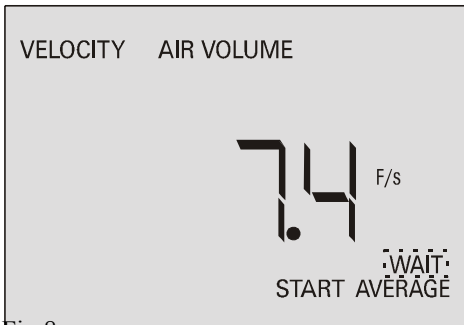


Fig.8

4.6 If you wish to measure round grills - after step 4.1 press ENTER button more than 2 sec (long press) until DIAMETER will be displayed on LCD. (fig.7)

7 At the end of one minute the M4000 will beep signaling that measurement time ended. The LCD will display the measured Air Volume in CFM.(fig.10)

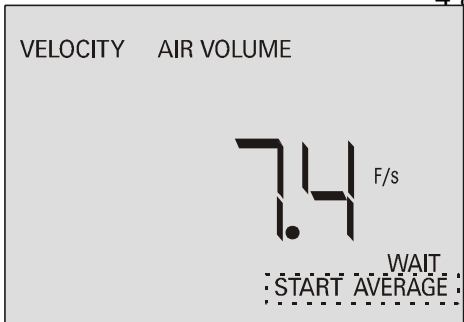


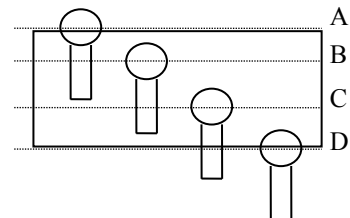
Fig.9

4.8 If you wish to redo this action. Or if you wish to measure few openings press ENTER and return steps 4.2-4.7. Measure each opening as described up to now and after the last measuring press Δ and LCD will display the sum of all openings.



Fig.10

*** When moving probe along the grill's borders (A,D) keep the probe half out of the grill.**

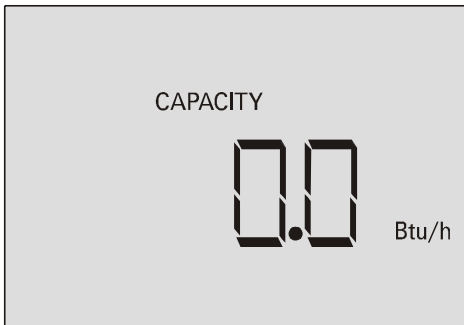


5. Measuring Capacity

IMPORTANT:

Before you begin to measure switch with MODE to HUM mode. Put the probe in front of the inlet air (or ambient room humidity) and wait until the measure will stable (which promise that the Temp' measure stabilized too). Do not put it at output grill - it will take long time to return to normal room temperature and humidity conditions!

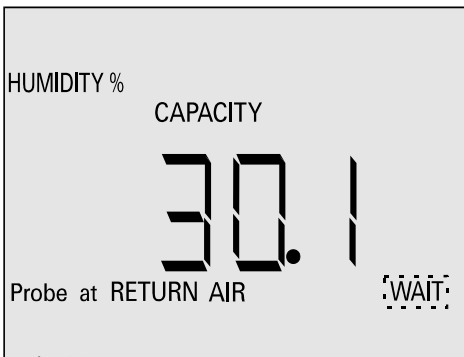
5.1



Press MODE button - CAPACITY will be displayed on LCD (fig.11). (It is recommended to test at HIGH FAN SPEED)

Fig.11

5.2 Align the probe in front of units inlet (or ambient room temperature) and press ENTER.



The LCD will display the HUMIDITY %, CAPACITY, Probe at RETURN AIR and "WAIT" flashing (fig.12)
The M4000 will start measuring the unit's inlet air parameters while displaying a flashing "WAIT". After one minute of measuring, the M4000 will beep and the "WAIT" will stop flashing a signal that this measurement has ended.

Fig.12

5.3 ENTER WIDTH flashing will be displayed on LCD.(fig.13)

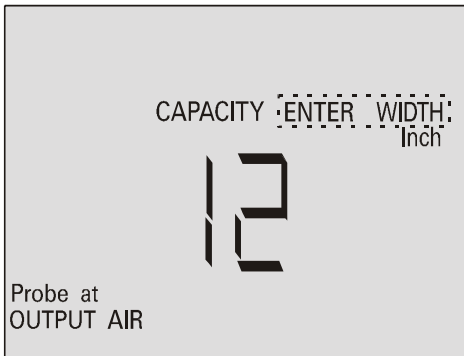
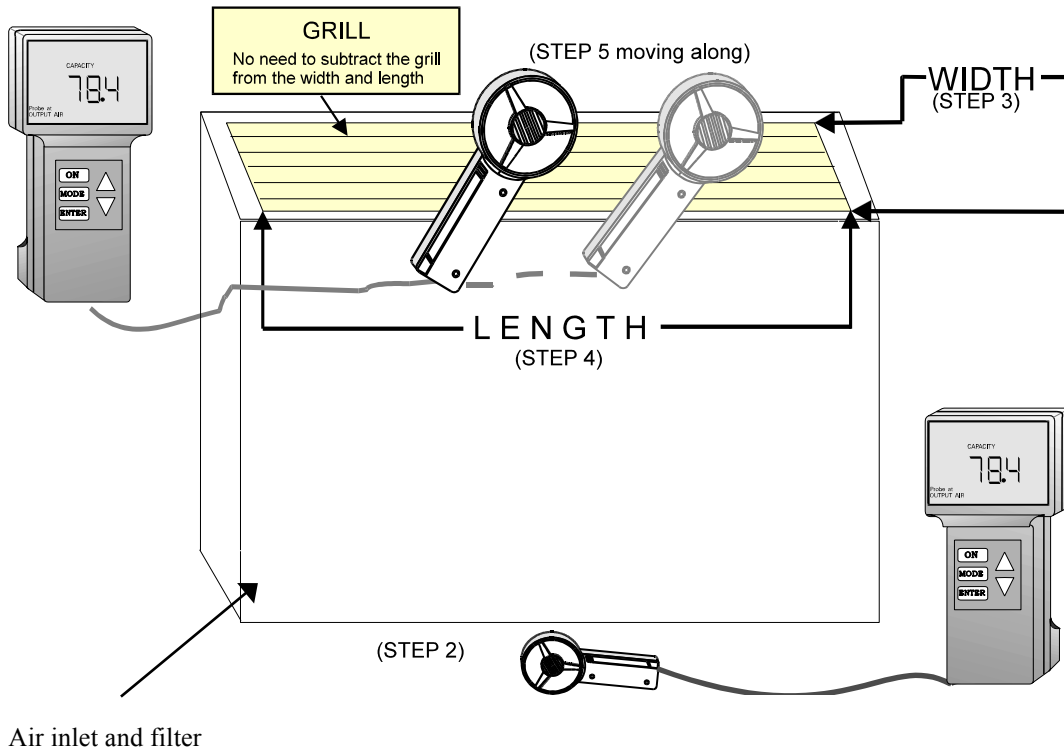


Fig.13



When measuring return air the sensor box should be in the center (no need to move it during measuring)

Fig.14

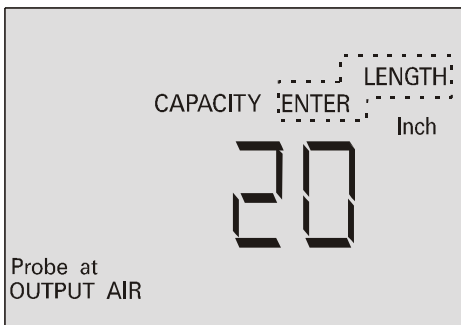


Fig.15

Using the ∇/Δ buttons enter the outlet's **width** (inch) and press ENTER (fig. 14 step 3). ENTER LENGTH flashing will be displayed on LCD.

The M4000 will request the A/C's outlet **length**. Using the ∇/Δ buttons enter the outlet's length (in inch) (fig. 14 step 4, fig.15)

If you wish to measure round grills - after step 5.2 press ENTER button more than 2 sec (long press) until DIAMETER will be displayed on LCD. (fig.16)

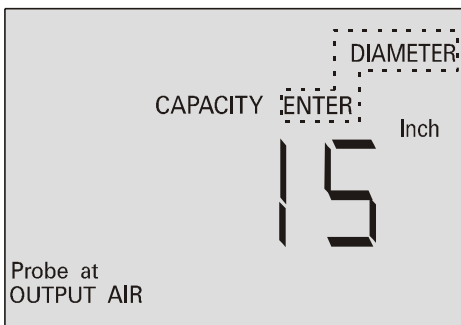


Fig.16

5.7 Press ENTER "WAIT" will flash (fig.17) Place the probe in

front of the units outlet. Pay attention that the sensor's cover is facing the Grill no need to move it. The M4000 is waiting until sensors will be stable with the new temp. and hum. (about 90 seconds) when "START AVERAGE" will flash (fig. 17) go to 5.8

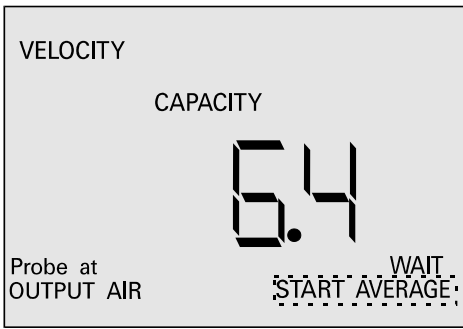


Fig.17
Btu/h (fig.18)

IMPORTANT:

Read 4.6 (and *) before starting 5.8

8. Measure for one minute (fig.14 step 5). Make sure you move the probe along the units outlet so as to cover the whole area, aim to get an average reading from all available openings. At the end of this minute the M4000 will beep and the LCD screen will display the result in

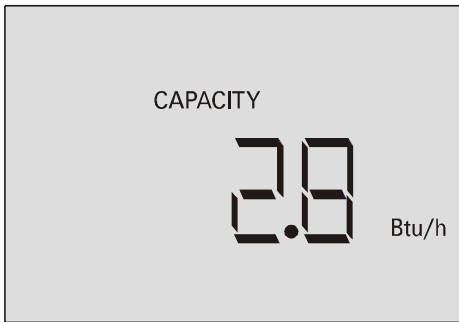


Fig.18

Redo measuring outlet air:

- 5.9 In case you wish to redo this action (return air and the grill size are already in memory) press ENTER and repeat sections 5.4-5.8 above.

Measuring few outlet's opening:

- 5.10 When there are several outputs openings but the same return air, press ENTER and repeat sections 5.4 - 5.8 for each one. In this case in section # 5.7 "WAIT" will flash for 20 seconds. Each time a measurement ends the LCD will display the Btu/h for that specific outlet, if you wish to know the total Btu/h of all the outlets measured up to now press Δ .

- If you wish to go over the all process again include return air you should wait for about 10 minutes and allow the humidity sensor to return to the humidity room or help it by home ventilator. Then start from section # 5.1.