MINI VANEOMETER
MVA-02, MVA-03, MVA-04
User Manual
INTRODUCTION
MVA-40X series measures air speed, temperature and humidity. It is ideal for spot measurements at air outlets on account of its 30mm vane. In addition to air speed and temperature, MVA-404 also measures air moisture and absolute pressure. In this way, air conditions can be reliably checked.

MAIN FEATURES
- 30mm 6 plastics blade.
- Measure from light air 0.4m/s
- Humidity sensor (MVA-03, MVA-04 only)
- Air flow calculate function.
- Max/Min/Avg and data hold.
- Auto power off with disable function.
- Low battery indication.
- Memory capacity: 99 records.
- Memory recall function.
- Backlight function.
- Absolute Pressure Sensor (MVA-404 only).

FUNCTIONS CROSS TABLE
VEL: Air Velocity  TEMP: Temperature
FLOW: Air Volume   RH: Relative Humidity
99 REC: 99 memory  PRESSURE: Absolute Pressure
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FUNCTIONS CROSS TABLE
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<tr>
<th>VEL: Air Velocity</th>
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<tr>
<td>FLOW: Air Volume</td>
<td>RH: Relative Humidity</td>
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<tr>
<td>99 REC: 99 memory</td>
<td>PRESSURE: Absolute Pressure</td>
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</table>

DESCRIPTION

<table>
<thead>
<tr>
<th>VEL</th>
<th>FLOW</th>
<th>99 REC</th>
<th>TEMP</th>
<th>RH</th>
<th>PRESSURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>MVA-02</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>MVA-03</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>MVA-04</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>
1. HOLD and RECALL key
2. ESC and REC key
3. MAX, MIN and AVG key
4. Select up and Auto shutoff key
5. Enter and UNIT change key
6. Select down and Power key
7. Backlight and Set Key
8. Display and backlight
9. Probes input
10. Battery placement
11. Battery cover
12. Probes plug
13. Probes hold
14. Probes sensor (Temperature/Humidity)
15. Blades
16. Internal Pressure Sensor (MVA-404)

FULL DISPLAY

1. Primary display
2. Secondary display
3. Functional symbol display area
4. Lower battery indication.
5. Auto shutoff symbol indication.
6. Units of Primary display
7. Units of Secondary display

POWER ON/OFF
Press key to turn on the meter. Press and hold key to turn off the meter.
- Do not turn off the meter manually while operating Set, Unit change and recall mode.
- The key printing text in yellow stands for long press (press and hold) to set up, recall, record, etc.

AUTO SHUTOFF
The device will auto shutoff in 15 minutes inactivity. To disable auto power off function, in normal mode, press and hold key until the icon is disappeared.
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**BACKLIGHT FUNCTION**
Press \( \text{HOLD} \) key to turn on backlight. Press key again to turn off backlight. The backlight will be unilluminated after 30 seconds.

**AUTO BACKLIGHT ON/OFF**
Users can set on or off the 30-seconds auto-off backlight.
Press and hold \( \text{HOLD} \) key into setting mode.
Press \( \text{HOLD} \) or \( \text{HOLD} \) key to select BLIGHT setting, as shown in figures. Press \( \text{HOLD} \) key into Backlight setting. Press \( \text{HOLD} \) or \( \text{HOLD} \) key to select auto off on or off. Press \( \text{HOLD} \) key to finish the setting mode.

**AIR VELOCITY MEASUREMENT**
1. Please insert probe plug onto the device sensor input socket at the top of the meter.
2. Follow the arrow mark to target to the air sources to measure velocity. As shown below:

Please do not touch the blades by fingers or foreign body to avoid damage to the blades.

**SECONDARY DISPLAY MODE**
In the normal mode, press \( \text{HOLD} \) or \( \text{HOLD} \) key to change to secondary display mode. Selectable units are: RH\%, CFM, hpa

- During the Humidity mode, wait couple minutes to acquire stable and accuracy humidity reading.
**BACKLIGHT FUNCTION**

Press the key to turn on backlight. Press key again to turn off backlight. The backlight will be unilluminated after 30 seconds.

**AUTO BACKLIGHT ON/OFF**

Users can set on or off the 30-seconds auto-off backlight.
Press and hold the key into setting mode.
Press or key to select setting, as shown in figures. Press the key into Backlight setting. Press or key to select auto off on or off. Press the key to finish the setting mode.

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In the normal mode, press or key to change to secondary display mode. Selectable units are: RH%, CFM, hpa

- During the Humidity mode, wait couple minutes to acquire stable and accuracy humidity reading.
CHANGE UNITS
Press and hold  key into the setting units mode.
While in the setting units mode, unit on LCD is
blinking, press  or  key to select desired
unit, then press  key to save the setting.
Primary display units switchable among Beaufort,
kts, fpm, m/s, mph, kph.

AIR FLOW CALCULATION
Make sure the secondary display is in the flow
mode (CMM/CFM), the device will automatically
calculate air flow only when users entered the
area volume in advance.

SETTING AREA
Press and hold  key into the setting mode.
Press  or  key to select setting area
mode, as shown in figures. Press  key into the
setting area mode.
Digit is flashing for selecting the numbers from left
to right, press  or  key to adjust digits to
left or right. Press  or  key to increase or
decrease figures.
Users can press and hold  key to change
units (m² / ft²) of area

FREEZE DISPLAY (HOLD)
Users can press  key to freeze display, and
press  key again to release holding.
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IMPORTANT NOTE
- The units(m²) setting range is 1.5 m²~0.096 m².
- The units (ft²) setting range is 16.15 ft²~1.03 ft².

FREEZE DISPLAY (HOLD)
Users can press key to freeze display, and press key again to release holding.
This function is not available while in the set, unit change and recall mode.

MAX/MIN/AVG RECORD

The meter may record maximum, minimum and average readings. Viewing the figures by pressing key to hold the MAX, MIN, and AVG while measuring. Press key to switch viewing among MAX, AVG and MIN.
- Press and hold key to disable this function.
- This function is not available while in the set, unit change and recall mode.

99 RECORDS

The meter can store air velocity data up to 99 records. Press key to store current reading, the number of the record will show on the LCD about 1 second. See below figure for reference.

CLEAR MEMORY

When the memory (99 records) are full or you want to clear memory data, please follow the setup to clear memory. Press and hold key into the setting mode, as shown in figures. Press or key to select the clear memory mode. Press key into the clear memory mode. Now LCD shows “yes” to reconfirm. Press key to leave or press key to clear memory mode.
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**MEMORY RECALL**

Users can recall the memory data to show on the display.

Press and hold the key into the RECALL mode.

The secondary display shows the memory number and primary display shows the stored velocity data.

Press 0 or 0 key to view last data or next data with memory number.

If you want to escape the recall mode, press and hold the key.

---

**VIEW LCD/SOFTWARE VERSION**

In the shutoff mode, press and hold the key to turn on meter, LCD will show the full display, then the software version appears in one second, the meter returns to normal mode for measurement.

---

**TROUBLE SHOOTING**

- "OL" is shown on the LCD
  - Reasons: a) The input value is over-ranged
  - b) The sensor is damaged
  - c) Humidity probe is not plugged on

  (If it is under %RH mode)

  Action: a) Enter available value or figures.
  - b) Return the meter to the store you purchased for sensor repaired.
  - c) Plug with vane probe to get RH%
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  c) Plug with vane probe to get RH%

Ex.
BATTERY REPLACEMENT

WARNING

If the symbol * appears on the LCD, please replace the battery immediately.

Turn off the meter and disconnect the probe before replacing the battery. Use only the correct type of batteries, properly install in the case to power on the meter.

END OF LIFE

Caution: This symbol indicates that equipment and its accessories shall be subject to a separate collection and correct disposal.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Velocity:</th>
<th>Unit</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>m/s</td>
<td>0.4-25</td>
<td>0.1</td>
<td>±2% +0.2</td>
<td></td>
</tr>
<tr>
<td>Km/hr(kph)</td>
<td>1.5-90</td>
<td>0.1</td>
<td>±2% +0.8</td>
<td></td>
</tr>
<tr>
<td>mph</td>
<td>0.9-55</td>
<td>0.1</td>
<td>±2% +0.4</td>
<td></td>
</tr>
<tr>
<td>Knots(kts)</td>
<td>0.8-48</td>
<td>0.1</td>
<td>±2% +0.4</td>
<td></td>
</tr>
<tr>
<td>ft/min(fpm)</td>
<td>7.5-4921</td>
<td>1</td>
<td>±2% +40</td>
<td></td>
</tr>
<tr>
<td>Beaufort</td>
<td>1-10</td>
<td>1</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air Flow Calculation:</th>
<th>Unit</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CMM</td>
<td>0-9999</td>
<td>1</td>
<td>--</td>
</tr>
<tr>
<td></td>
<td>CFM</td>
<td>0-9999</td>
<td>1</td>
<td>--</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature:</th>
<th>Unit</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>°C</td>
<td>-20-60</td>
<td>0.1</td>
<td>±1°C</td>
<td></td>
</tr>
<tr>
<td>°F</td>
<td>-4-140</td>
<td>0.1</td>
<td>±1.8°F</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Humidity:</th>
<th>Unit</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>%RH</td>
<td>20-80</td>
<td>0.1</td>
<td>±3.5%RH</td>
<td></td>
</tr>
<tr>
<td>%RH</td>
<td>&lt;20, &gt;80</td>
<td>0.1</td>
<td>±5%RH</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Absolute Pressure:</th>
<th>Unit</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>hPa</td>
<td>350-1100</td>
<td>0.1</td>
<td>±12hPa</td>
<td></td>
</tr>
<tr>
<td>mmHg</td>
<td>263-825</td>
<td>0.1</td>
<td>±1.5mmHg</td>
<td></td>
</tr>
<tr>
<td>inHg</td>
<td>10.3-32</td>
<td>0.1</td>
<td>±0.1</td>
<td></td>
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If the symbol " " appears on the LCD, please replace the battery immediately.

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<td>0.4–25</td>
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<td>0.1</td>
<td>±2% +0.4</td>
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<td>ft/min(fpm)</td>
<td>70–4021</td>
<td>1</td>
<td>±2% +40</td>
</tr>
<tr>
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<td>–</td>
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</table>

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<tr>
<td>CMM</td>
<td>0–9999</td>
<td>1</td>
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</tr>
<tr>
<td>CFM</td>
<td>0–9999</td>
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</table>

Temperature:

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Absolute Pressure:

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<td>10.3–32</td>
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<td>±0.1</td>
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</table>
Display: 42mm(W)*33mm(L) Monochrome LCD with backlight
Battery: 9V (NEDA1604, IEC 6F22 or JIS 006P)
Battery Life: Approx continuous used 100 hours.
Shutoff Rate Power: 3uA
Operate Maximum Power: 25mA
Operating temperature and humidity: 5°C to 40 °C, below 80% RH.
Storage temperature and humidity: -10°C to 60 °C, below 70% RH.
Instrument dimensions: 130(L)*56(W)*38(H) mm. Weight: About 160g.
Probe dimensions: 195(L)*47(W)*30(H) mm. Cable length: 95cm. Weight: About 100g.
Replacement probe: (Optional accessories)
A-553 vane for MVA-02
A-554 vane for MVA-03, MVA-04
Accessories: User's manual x1, 9V battery x1, Probe x1, Bag x1