

## **Congratulations !**

Thank you for purchasing a TPS instrument. We trust that your new **MC-86** Anemometer will give you many years of reliable service.

The **MC-86** is easy to operate. This manual has been designed to help you get started, and also contains some handy tips. If at any stage you require assistance, please contact either your local TPS representative or the TPS factory in Brisbane.

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The manual is divided into the following sections:

### **1. Table of Contents**

Each major section of the handbook is clearly listed. Sub-sections have also been included to enable you to find the information you need at a glance.

### **2. Introduction**

The introduction has a diagram and explanation of the display and controls of the **MC-86**. It also contains a full listing of all of the items that you should have received with your **MC-86**. Please take the time to read this section, as it explains some of items that are mentioned in subsequent sections.

### **3. Main Section**

The main section of the handbook provides complete details of the **MC-86**, including operating modes, troubleshooting, specifications, and warranty terms.

## **Model MC-86 Anemometer**

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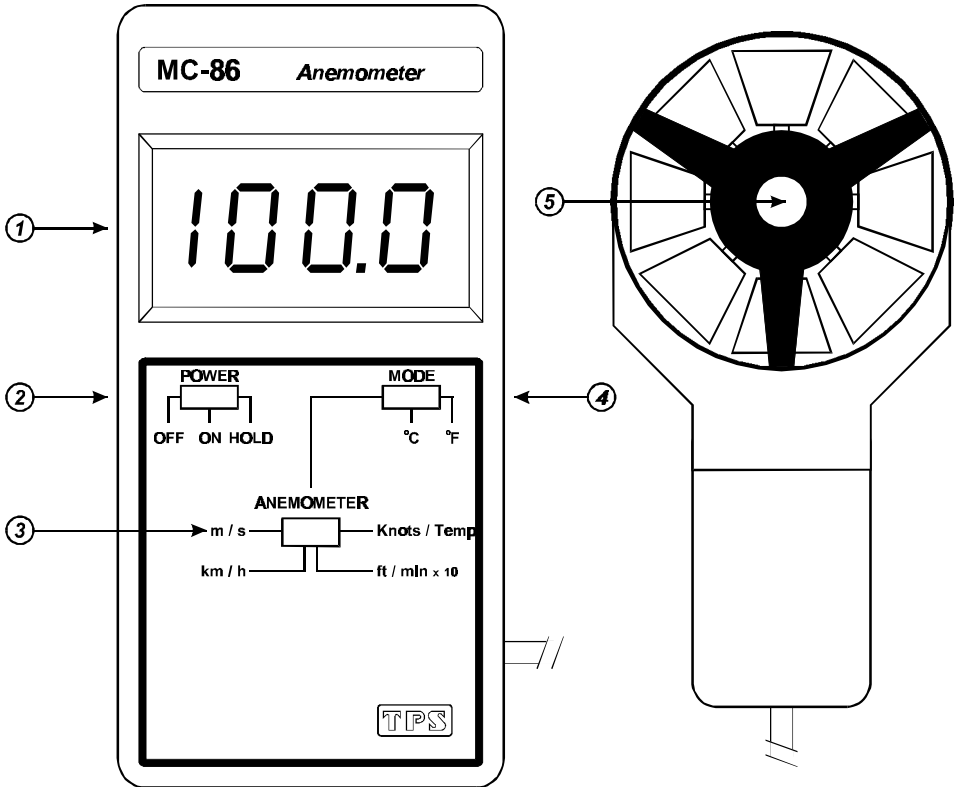
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# 1. Introduction

## 1.1 MC-86 Display and Controls



① **Display**

3½ digit Liquid Crystal Display with 18 mm digits, max display 1999

② **Power**

Used to switch the **MC-86** on and off. Also used to freeze a reading on the display. This feature is useful in rapidly changing environments (section 4).

③ **Range**

Selects units for readout of air velocity. Choice of km/h, m/s, Knots and ft/min.

Switch to Knots/Temp when in temperature readout mode.

④ **Mode**

Selects either Anemometer, °Celcius or °Fahrenheit readout modes.

⑤ **Anemometer Vane and Temperature Sensor**

The sensitive, balanced vane wheel has a low friction ball bearing design for accurate results in high and low air velocity applications. The bead type thermocouple temperature sensor is designed for fast response in air.

## 1.2 Unpacking Information

Before using your new **MC-86**, please check that the following accessories have been included:

	Part No
1. <b>MC-86</b> Anemometer .....	125103
2. 9V Battery .....	130026
3. <b>MC-86</b> Handbook.....	130050

Options that may have been ordered with your **MC-86**:

1. NiCad Rechargeable battery and charger .....	130007
2. Hard Plastic Carry Case.....	130057

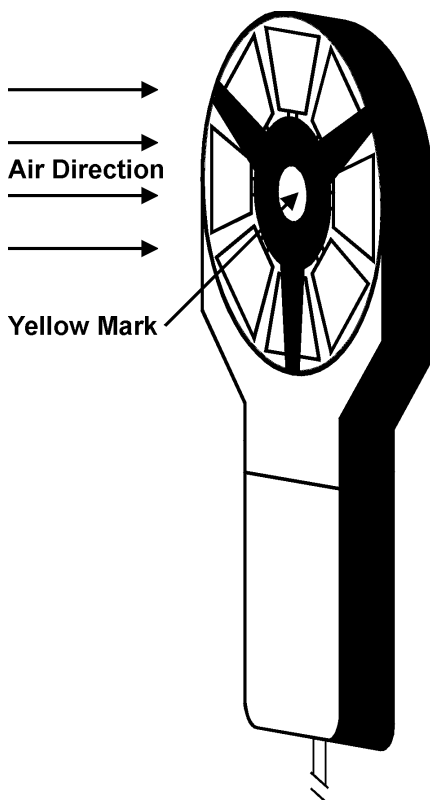
## 1.3 Specifications

Mode	Range	Resolution	Accuracy
km/h	1.4 to 108.0 km/h	0.1 km/h	±2% + 1 digit
m/s	0.4 to 30.0 m/s	0.1 m/s	±2% + 1 digit
ft/min	80 to 5910 ft/min	10 ft/min	±2% + 1 digit
Knots	0.8 to 58.3 knots	0.1 knots	±2% + 1 digit
°C	0.0 to 60.0 °C	0.1 °C	±0.8 °C
°F	32.0 to 140 °F	0.1 °F	±1.5 °F

Display	: 18mm, 3½ Digit Liquid Crystal Display, max display 1999
Sensor Type	: Air Velocity : Conventional twisted vane arms with low friction ball bearing design. Temperature : Naked bead thermocouple sensor, type K (NiCr-NiAl)
Power	: 9V Alkaline Battery for 75 hours operation. Optional NiCad battery/charger pack available.
Dimensions	: Instrument : 157 x 78 x 35 mm Probe : 157 x 26mm dia
Mass	: Instrument only : Approx 200g Full Kit : Approx 0.5kg
Environment (instrument)	Temperature : 0 to 50 °C Humidity : Less than 80% R.H.

## 2. Air Velocity Measurement

1. Switch the **Power** selector to the **ON** position.
2. Switch the **Mode** selector to **Anemometer**.
3. Switch the **Range** selector to km/h, m/s, ft/min or Knots, as required.
4. Hold the Vane Sensor with the yellow mark pointing towards the air flow source, as per Figure 1.
5. The display will show the Air Velocity reading from the sensor.



**Figure 1: Air flow direction for correct air velocity measurement.**

### **3. Temperature Measurement**

1. Switch the **Power** selector to the **ON** position.
2. Switch the **Range** selector to **Knots/Temp**.
3. Switch the **Mode** selector to **°C** for temperature measurements in degrees Celsius.  
Switch the **Mode** selector to **°F** for temperature measurements in degrees Fahrenheit.
4. The display will show the Temperature reading from the sensor.

### **4. Freezing the Reading on the Display**

When taking measurements in a rapidly changing environment, or in a difficult to reach areas, the operator is able to freeze the display. This allows readings to be correctly noted.

1. To freeze the display, switch the **Power** selector to **HOLD**.
2. To resume normal measurement, switch the **Power** selector back to **ON**.
3. To switch the instrument off, switch the **Power** selector to **OFF**.

### **5. Battery Replacement**

1. When the battery volts drops below 6.5-7.5V the display shows “**BAT**” in the lower left hand corner. When this occurs the battery must be replaced as soon as possible, otherwise readings will become inaccurate.
2. Loosen the battery cover screw on the rear of the **MC-86** and slide the battery cover away.
3. Remove the battery and replace it with a new 9V battery. Alkaline batteries are preferred.
4. Replace the battery cover and re-tighten the screw.

## 6. Troubleshooting

Symptom	Possible Causes	Remedy
Unstable readings	<ol style="list-style-type: none"> <li>1. Battery is low</li> <li>2. Sensor is faulty.</li> </ol>	<p>Replace battery.</p> <p>Return to factory for sensor repair or replacement.</p>
Display shows just “1 .” or “-1 .”	<ol style="list-style-type: none"> <li>1. Meter has over-ranged.</li> <li>2. Instrument or sensor is faulty.</li> </ol>	<p>Check that the Air Velocity or Temperature are within the specified ranges (section 1.3)</p> <p>Return to factory for repair.</p>
Meter will not turn on.	Battery is exhausted.	Replace the battery.
Reading does not change. Fixed at one value.	<b>Power</b> selector switched to <b>HOLD</b> position.	Switch back to <b>ON</b> for normal operation.

## **7. Warranty**

TPS Pty. Ltd. guarantees all instruments and electrodes to be free from defects in material and workmanship when subjected to normal use and service. This guarantee is expressly limited to the servicing and/or adjustment of an instrument returned to the Factory, or Authorised Service Station, freight prepaid, within twelve (12) months from the date of delivery, and to the repairing, replacing, or adjusting of parts which upon inspection are found to be defective. Warranty period on electrodes is three (3) months.

There are no express or implied warranties which extend beyond the face hereof, and TPS Pty. Ltd. is not liable for any incidental or consequential damages arising from the use or misuse of this equipment, or from interpretation of information derived from the equipment.

Shipping damage is not covered by this warranty.

### **PLEASE NOTE:**

A guarantee card is packed with the instrument or electrode. This card must be completed at the time of purchase and the registration section returned to TPS Pty. Ltd. within 7 days. No claims will be recognised without the original guarantee card or other proof of purchase. This warranty becomes invalid if modifications or repairs are attempted by unauthorised persons, or the serial number is missing.

### **PROCEDURE FOR SERVICE**

If you feel that this equipment is in need of repair, please re-read the manual. Sometimes, instruments are received for "repair" in perfect working order. This can occur where batteries simply require replacement or re-charging, or where the electrode simply requires cleaning or replacement.

TPS Pty. Ltd. has a fine reputation for prompt and efficient service. In just a few days, our factory service engineers and technicians will examine and repair your equipment to your full satisfaction.

To obtain this service, please follow this procedure:

Return the instrument AND ALL SENSORS to TPS freight pre-paid and insured in its original packing or suitable equivalent. INSIST on a proof of delivery receipt from the carrier for your protection in the case of shipping claims for transit loss or damage. It is your responsibility as the sender to ensure that TPS receives the unit.

Please check that the following is enclosed with your equipment:

- **Your Name and daytime phone number.**
- **Your company name, ORDER number, and return street address.**
- **A description of the fault. (Please be SPECIFIC.)**  
(Note: "Please Repair" does NOT describe a fault.)
- **either \$13.50 for return freight for units under warranty,  
or \$24 to cover inspection costs and return freight.**

(These amounts are not applicable to full-account customers.)

Your equipment will be repaired and returned to you by air express where possible.

For out-of-warranty units, a repair cost will be calculated from parts and labor costs. If payment is not received for the additional charges within 30 days, or if you decline to have the equipment repaired, the complete unit will be returned to you freight paid, not repaired. For full-account customers, the repair charges will be debited to your account.

- **Always describe the fault in writing.**
- **Always return the sensors with the meter.**