SONMOL SMPF-2S Electronic Peak Flow Meer Instruction Manual

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Contents

Product Introduction

[Product Name] Peak Flow Meter
[Specification SMPF-2S
Intended use] Measuring forced expiratory volume of 1 second (FEV1), peak expiratory flow (PEF)
[The scope of application Apply to the test of forced vital capacity

Contraindications:

1. Myocardial infarction, stroke, shock in the past 3 months
2. Hemoptysis in the last 4 weeks
3. Uncontrolled hypertension
4. Severe hyperthyroidism
5. Pneumothorax, huge lungs, and not ready for surgery
6. Pregnant women
7. Tympanic membrane perforation (measured after the affected ear canal is first blocked
8. Severe cardiac insufficiency, severe arrhythmia, and unstable angina in the last 4 weeks
9. Seizures require medication
10. Aneurysm
11. Heart rate 120 beats/min

Product Introduction

 **Warning:**

- To ensure proper use of the product, please read the user manual thoroughly and store it safely.
- Dispose of used batteries in accordance with local regulations.
- For accurate testing, do not perform more than 5 consecutive tests as a single user.
- Do not use this product in environments containing enriched oxygen or flammable materials to prevent

explosions.

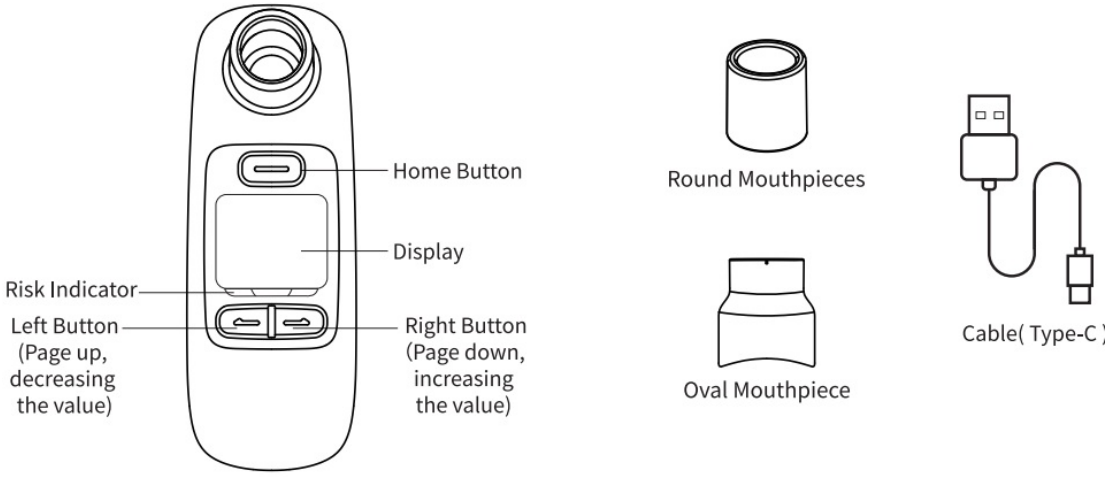
- Avoid usage in areas with strong electromagnetic interference or excessive wind.
- Unauthorized disassembly or modification of the product is strictly prohibited.

Caution:

- Maintain a clean and free-of-vibration operating environment, with no corrosive or flamnable materials, and the temperature and humidity should not be too high or too low.
- When transitioning the product from a cold environment to a warm, humid one, allow it to acclimate before use.
- If the product fails to display data or exhibits other abnormalities during measurements, power it off and restart.

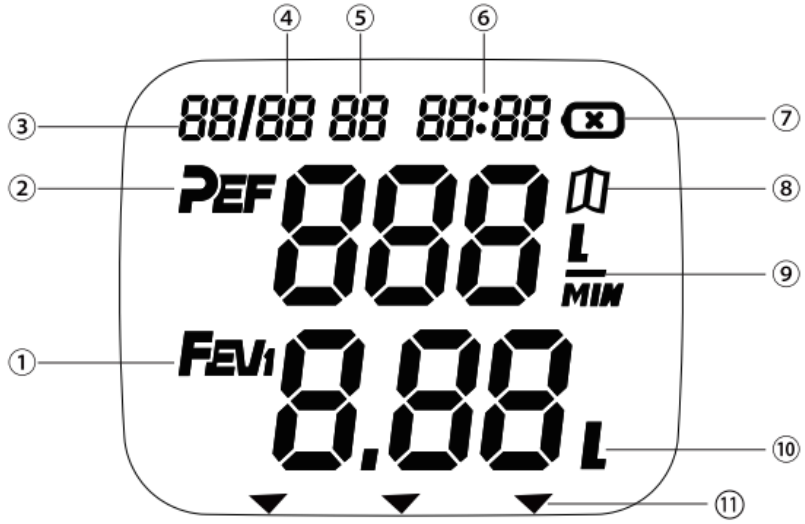
Product Structure and Components

The Peak Flow Meter consists of a Main Unit and a Mouthpiece.



Product Structure and Components

Screen Display



1. FEVT Value
2. PEF Value
3. Current Month
4. Current Date

5. Current Year
6. Current Time
7. Low Battery Indicator
8. Records
9. Unit of PEF
10. Unit of FEV1
11. Risk Indicator

Operating Instructions

Warning: For personal use only

- The Peak Flow Meter (SMPF-25) is a handheld device designed for assessing lung function. It is intended for personal use, and users are only required to follow the instructions provided in the user manual. No specialized training is necessary. When the equipment is taken out of storage under extreme temperature conditions, it should be allowed to acclimate for at least half an hour before use

Measurement

Power on
Press the Home Button screen. the device is properly tumed on with 90-“showing on the

Prepare
Sit straight/stand up, take a deep breath with your mouth, then cover the Mouthpiece with your mouth completely

***Please don’t place your tongue or teeth against the Mouthpiece. Also please do not cover the back of the Mouthpiece with your hand.**

Operating Operating Instructions

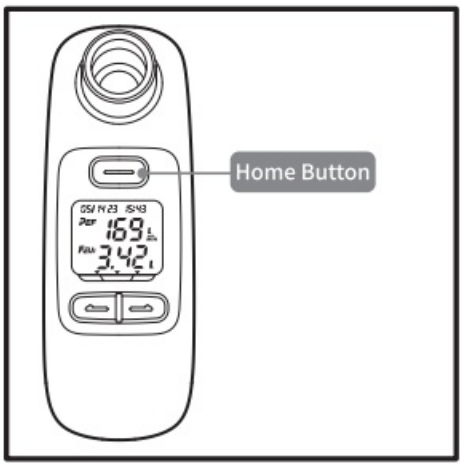
Start

Blow as fast as you can, wait for 2 beeps from the device before you can read the result.

Note: Premeasurement is required in the following cases

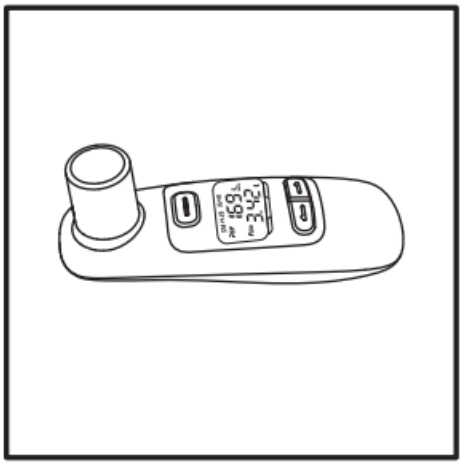
1. Cough
2. Exhalation time is too short
3. Exhale too slow
4. Measured values deviate significantly from normal

Premeasurement



Press the Home Button”-” again, and repeat step 1.2 and step 1.3.
“It is recommended to perform at least three consecutive measurements throughout the measurement, taking the maximum as the final result.

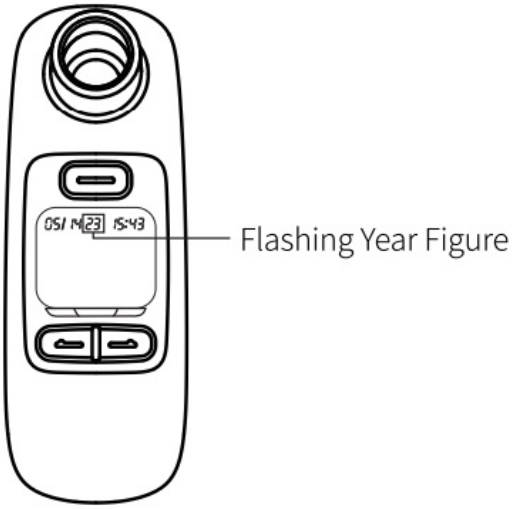
Power off



Press and then hold the Home Button for 2 to 3 seconds until the device is turned off. Also the device will be automatically powered off after approximately 1 minute of inactivity

Operating Instructions

Time setting



Press the Home Button”-“, the screen will be “fully bright fast, then it will display “go.”
Press and hold the Home Button”-” and the Left Button” at the same time for about 5 seconds, and you will see the year figure starts to flash at the top of the screen. Adjust the value through the Left Button” and Right Button
Press the Home Button “-” to confirm, and then set the month, date and time in turn.
Press and hold the Home Button “-” about 3 seconds to save the date and time settings.

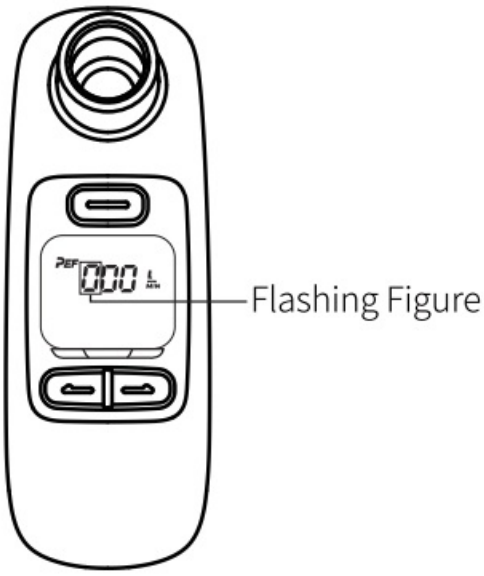
Setup your expected PEF value
The expected value affects the asthma control assessment results and needs to be set in advance before the test. It is recommended to update the expected value once a year due to changes in age, height, otc

Auto configuration

The device will be automatically configured based on your latest expected PEF wallues set in the ePEF app once connected via Bluetooth 4.0.

Manual configuration

Make sure the device is powered off, press and hold the Home Button
ignore the “go” pagel for about 5 seconds. The display will show “”000″ indicating the parameter setting mode is properly activated, and the flashing figure indicates that the value can be edited.
In the parameter setting mode, press the Right Button”” to increase the value of the current digit, press the Left Button to decrease the value, press the Home Button to switch to the next digit.
Press and hold the Home Button about 3 seconds to save the current value as your expected PEF value.



Note:

1. The maximum setting value is “999 L/MIN”, and the minimum is “60 L/MIN”
2. No red, yellow and green Risk Indicators will be displayed on the device without properly setting the expected value.

How can I know my expected value?

1. Calculation formula provided by a specialized research institution, scan to calculate your expected value. “The evaluation and measurement of FEVI values are more complicated than PEF values. It is recommended to consult a doctor or professional journals for detailed interpretation.
2. Your physician recommend value
3. The optimal result you measured in good physical condition (in 2 weeks).

Equipment Maintenance

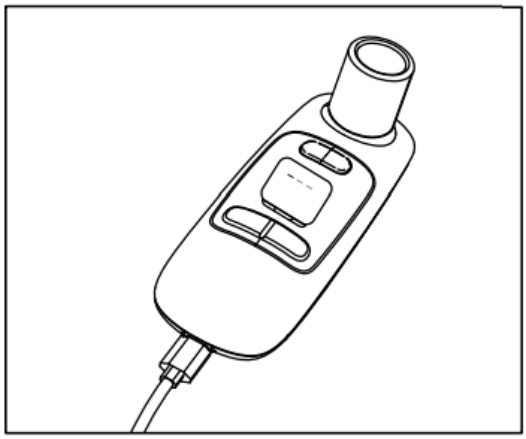
1. **Cleaning**

Main unit: Wipe with a soft dry cloth, do not put it in water. Cleaning once a week is recommended.

Mouthpiece: To clean the Mouthpiece intemal and external, a meidcal alcohol cotton of 75% concentration and larger than 30*60mm is recommended. To ensure the safety and hygiene during use, it must be cleaned after each use.

2. **About battery**

When the icon “00” stay on continuously, it indicates a low battery, a 5V power adapter is required for charging.



“Note: “–” flashes sequentially, indicating that it is charging, and “–” stays on, indicating that it is fully charged.

3. **Period of use**

Peak Fow Meter life is three years.

4. **Maintenance**

Before use, it is essential to perform a comprehensive inspection to ensure the equipment can operate normally. Please follow these steps.

Examine the equipment for any signs of mechanical damage.

Confirm that the display is functioning correctly, ensuring the equipment is in excellent working condition

Note: The equipment undergoes a thorough inspection at the factory before shipping, and during its intended period of use, no further calibrations are necessary.

5. Before use, please refer to the instructions the section (1) for cleaning.

When the low battery indicator lights up, please refer to the instructions the in section (2) for battery charge.

The maintenance of this product is limited to the qualified maintenance personnel designated by the manufacturer. The user canhut disassemble and repair. At the same time the manufacturer can provide the circuit diagram, components list, rectification rules, or necessary information to help qualified technical personnel for maintenance

Warning: Do not modify this equipment without authorization of the manufacturer.

6. **Storage**

Please put the Peak Flow Meter in clean and dry place. Exposure to direct sun light or extreme high and low temperature, or violent impact may result in work failure of the Peak Flow Meter or even damage the device.

7. **Production date**

Please refer to the production date label in detail

Definition

Glossary
PEF: Peak Expiratory Flow (PEF), also called Peak Expiratory Flow Rate (PEFR), is a person's maximum speed of expiration, as measured with a Peak Flow Meter. It measures the airflow through the bronchi of the lungs and shows the degree of obstruction in the airway.

FEVI: Forced Expiratory Volume (FEV1) calculates the amount of air that a person can force out of their lungs in 1 second. It is an indicator of the reversibility of airway obstruction and the primary indicator of impaired lung function,

PEF %: Measured PEF/Expected PEF 100%

FEV1%: Measured FEV1/Expected FEV1 100%

Expected value
The expected value (target value is usually calculated based on statistics. It varies according to race, gender, age, and height According to the variation between the actual tested value and the expected value, your PEF readings are classified into three measurement zones, green, yellow, and red. The device will show these colors with results accordingly.

Green: PEF6806, a peak fiow reading in the green zone indicates that the lung function management is under good control,
Yellow: 50% PEF<80%, your peak flow reading indicates caution. It may mean respiratory airways are narrowing, and additional medication may be required.
Red: PEF-C50%, your peak flow reading indicates a medical emergency. Severe amway narrowing may occur, and immediate action must be taken. This would usually involve contacting a doctor or hospital

 **Note**:
Recommendation from: National Institutes of Health (NIH)
FEV1 is generally used as an indicator to measure airway obstruction. Its measurement, evaluation, and interpretation are complicated. It is recommended to consult a doctor or consult professional publications,

Environmental protection instructions
From an environmental and resource standpoint, environmental disposal for batteries should be in accordance with local regulations. The equipment in lille end should be handled in accordance with local laws and regulations

Key symbols

- After the use of waste, please follow the regulations of local health or environmental protection agencies
- Applied part of type B
- Refer to instruction manual Warning, see the instructions for use
- Pollution control symbol of electronic, information products
- Indicating that this product is environmentally friendly for 10 years and is recyclable and should not be discarded
- Do not use if package is damaged
- Fragile, handle with care
- Keep dry
- Keep away from sunlight

Precautions and warnings

Adverse reactions during use are mostly mild, repeated deep breathing force, hyperventilation may appear dizziness, hand and foot fingertips and facial perioral numbness or acupuncture, slight hand tremor and other symptoms, severe syncope may occur. At this point, the subject should be resting quietly, and care should be taken to protect the subject from fall injuries.

Technical Specifications

Product name	Peak Flow Meter
Model	SMPF-2S
Display	Segment LCD
Test method	Pressure sensor
Measurement range	Volume:0.5L –. 81 Flow rate: 60L/min –. 840 L/min
Accuracy	Volume: ±3% or ±0.05L (whichever is greater)Flow rate: ±10% or ±18L/min (whi chever is greater)
Repeatability	Volume: ±3% or ±0.05L of reading (whichever is greater)Flow rate: ±5% or ±10 L/min of reading (whichever is greater)
Airflow resistance	0.25kPa/L/s (600 L/min)
Flow rate frequency respons e	±12% or ±15L/min (whichever is greater)
Working way	Continuous operation
Operating environment	~10°C — +40°C; C80%RH
Operating atmospheric pres sure	700hPa-1060hPa
Transport, storage environm ent	-10°C — +55°C ; C95%RH
Transport, storage of atmosp heric pressure	500hPa-1060hPa
Software version	V2

Fault Analysis and Resolution

Troubles	Possible Reasons	Solutions
Display EI	Initialization error	Turn off and restart
Display H1	The result is higher than 840L/min	Extremely high measurement
The device cannot be powered on	Battery is low	Use 5V power adapter for charging
No data while blowing	Not enter the test mode	Press the Home Button again or restart
	Wrong inflatable posture	Refer to manual and blow properly
Sudden display disappearance	Shut down naturally while no operation for one minute	Normal phenomenon

EMC Declaration

Warning: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

Guidance and manufacturer's declaration – electromagnetic emission		
The SMPF-2S Peak Flow Meter is intended for use in the electromagnetic environment specified below.The customer or the user of SMPF-2S Peak Flow Meter should ensure that it is used in such an environment.		
Emission test	Compliance	Electromagnetic environment – guidance
RF emissions CISPR 11	Group 1	The SMPF-2S Peak Flow Meter uses RF energy only for its internal function. There for, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The SMPF-2S Peak Flow Meter is suitable for use in all establish-ments other than domestic and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	N/A	
emissions IEC 61000-3-3 e fluctuations flicker	N/A	

EMC Declaration

Guidance and manufacturer's declaration — electromagnetic immunity			
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Immunity test	IEC 60601test level	Compliance level	Electromagnetic environment – guidance
Electrostatic discharge (ESD) IEC 61000-42	± 8 kv contact± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	± 8 kv contact ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrostatic transient / burst IEC 61000-44	± 2 kV for power supply lines± 1 kV for input/output lines	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Surge I EC 61000-45	±1 kV differential mode± 2 kV common mode	N/A	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input [line]sIEC 61000-411	0 % UT; 0,5 cycle g) At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°0 % UT:1 cycle and 70% UT; 25/30 cycles Single phase: at 0° 0 % UT; 250/300 cycle	N/A	Mains power quality should be that of a typical commercial or hospital environment. If the user of the SMPF-2S Peak Flow Meter requires continued operation during power mains interruptions, it is recommended that the SMPF-2S Peak Flow Meter be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic fieldIEC 61000-48	30 A/m	30 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment.
NOTE: UT is the a. c. mains voltage prior to application of the test level.			

EMC Declaration

NOTE 1. At 80 MHz and 800 MHz, the higher frequency range applies
NOTE 2 These guidelines may not apply in all situations. Electromagnetic is affected by absorption and reflection from structures, objects and people.

a The ISM (Industrial, scientific and medicall bands between 150 kHz and 80 MHz are 6,765 MHz to 6,795 MHz. 13,553 MHz to 13,567 MHz, 26,957 MHz to 27,283 MHz; and 40, 66 MHz to 40,70 MHz. The amateur radio bands between 0,15 MHz and 80 MHz are 1,8 MHz to 2,0 MHz, 3,5 MHz to 4,0 MHz, 5,3 MHz to 5, 4 MHz, 7 MHz to 7.3 MHz, 10,1 MHz to 10,15 MHz, 14 MHz to 14.2 MHz, 18,07 MHz to 18,17 MHz, 21,0 MHz to 21,4 MHz, 24,89 MHz to 24,99 MHz, 28,0 MHz to 29,7 MHz and 50,0 MHz to 54,0 MHz.

b Field strengths from fixed trarismitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should beconsidered. If the measured field strength in the location in which th SMPF-25 Peak Flow Meter is used exceeds the applicable RF compliance level above, the SMPF-25 Peak Flow Meter should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as réorlenting or relocating the SMPF-2S Peak Flow Meter.

Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3v/m.

Guidance and manufacturer's declaration — electromagnetic immunity			
The SMPF-2S Peak Flow Meter is intended for use in the electromagnetic environment specified below.The customer or the user of the SMPF-2S Peak Flow Meter should ensure that it is used in such an environment.			
Immunity test	IEC 60601test level	Compliance level	Electromagnetic environment – guidance
Conducted RF IEC 61000-4-6Radiated RFI EC 61000-4-3	[3] Vrms150 kHz to 80 MHz6V in ISM and amateur radio bands between 0,15 MHz and 80 MHz10 V/m80 MHz to 2.7 GFi i385MHz-5785M Hz Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communication equipment (Refer to table 9 of IEC60601-1-2:2014)	N/A10 Vim80 MHz to 2.7 GHz385MHz-5785M Hz Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communication equipment (Refer to table 9 of IEC 60601-1-2:2014)	Portable and mobile RF communications equipment should be used no closer to any part of the SMPF-25 Peak Flow Meter, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter.1.1.1 Recommended separation distance3.5. •—
			d=[— vij //[3] 12 r
			d=[—,,] /P 80 MHz to 800 MHzv2 d_r[=j[3] r“ F 800 MHz to 2.7 GHzE, d=[FA—[7]]
			E,where p is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m).bField strengths from fixed RF transmitters, as determined by an electromagnetic site survey,a should be less than the compliance level in each frequency range. bInterference may occur in the vicinity of equipment marked with the following symbol: i

ManufacturerCompany: CHONGQING MOFFY INNOVATION TECHNOLOGY CO., LTD.
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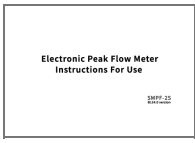
Email: service@sonmolnmed.com
Web: https://www.sonmoimed.com
Made in China

Documents / Resources

	**SONMOL SMPF-2S Electronic Peak Flow Meer** [pdf] Instruction Manual SMPF-2S Electronic Peak Flow Meer, SMPF-2S, Electronic Peak Flow Meer, Peak Flow Meer, Flow Meer

References

- **User Manual**