Oxygen Pen

800047

SPER
SCIENTIFIC

Environmental Measurement Instruments

Oxygen Pen - 800047

TABLE OF CONTENTS

1. INTRODUCTION 4
2. FEATURES 5
3. MATERIALS SUPPLIED 5
4. FRONT PANEL DESCRIPTION 6
5. CALIBRATION 7
6. MEASUREMENT PROCEDURE 8
7. BATTERY REPLACEMENT 10
8. SPECIFICATIONS 11
9. WARRANTY 12

INTRODUCTION

The Sper Scientific Oxygen Pen (Model 800047) is designed to read oxygen in the air.

At standard temperature and pressure, oxygen is a colorless, odorless, tasteless diatomic gas with the molecular formula O_2.

Applications for the meter include O_2 monitors and detectors, environmental studies, IAQ, food storage and refrigeration, bio-technology (oxygen incubators and anaerobic cultivators), security systems, air conditioning, oxygen shortage alarm systems, fire alarms, and fuel cell systems.

FEATURES

- Dual display with O_2 and air temperature measurement
- Highly reliable, galvanic cell type O_2 sensor with temperature compensation, withstands acidic gases (i.e., CO_2)
- O_2 Alarm: If the measurment value <18.0% O_2, the alarm will sound for warning.
- Microprocessor circuit ensures high accuracy
- Durable and compact ABS-plastic housing
- Data hold
- Auto-power-off
- Low battery indicator

MATERIALS SUPPLIED

- Meter
- Batteries
- Instruction Manual
- Soft Carrying Case

FRONT PANEL DESCRIPTION

Oxygen / Temperature Sensor

Power

Hold

Rec

LCD Display

Battery Compartment / Cover

CALIBRATION

For best results, perform the calibration procedure in a large and ventilated environment:

Note…
The oxygen value of air (20.9%) is used for calibration.

1. Press **POWER** to turn the meter on.
2. Wait at least 3 minutes until the displayed reading becomes stable and shows no fluctuation.
3. Press **HOLD** and **REC** simultaneously until “CAL” appears on the primary display of the LCD. (The secondary display will show 20.9.)
4. Release **HOLD** and **REC.** “CAL will flash on the LCD for several seconds, then the meter will return to Normal Mode, display a value that is ±0.1% of 20.9% and complete the calibration procedure.

MEASUREMENT PROCEDURE

O_2 and Air Temperature Measurement

1. Press **POWER** to turn the meter on.

Note…
Press **POWER** again to turn the unit off.

2. Point the oxygen/temperature sensor toward the intended measurement area.
3. The O_2 value appears on the primary display as $\%O_2$. The temperature value appears on the secondary display as °C or °F.

Note…

O_2 Buzzer warning: If the measurement value <18.0 $\%O_2$, the buzzer will sound for warning.

O_2 Buzzer warning disable: Power off the meter, press the **REC** button continuously then power on the meter, press the **POWER** button once, the O_2 buzzer warning function will be disable.

Hold Function

1. During measurement, press **HOLD** to freeze the current readings on the display. “Hold” will appear on the LCD.
2. Press **HOLD** again to release the hold function.

Record Data

The data record functions holds one maximum and one minimum reading in memory. To record:

1. Press **REC** to start recording. “REC” will appear on the LCD.
2. With “REC” on the display, press **REC**. “REC MAX” and the maximum value will appear on the LCD.

Note…

To delete the maximum value, press **HOLD**. The display will show “REC” only and the meter will resume executing the memory function.

3. Press **REC** again. “REC MIN” and the minimum value will appear on the LCD.

Note…

To delete the minimum value, press **HOLD**. The display will show “REC” only and the meter will resume executing the memory function.

4. To exit the data record function, press **REC** for at least 2 seconds. The display will return to the current reading.

Note…

The maximum and minimum values will NOT be saved when you exit the memory function or when the meter is turned off.

Setting the Temperature Unit

1. Press **POWER** to turn the meter off.
2. Press and hold down the **HOLD** button. While **HOLD** is still being pressed, press **POWER** until the temperature unit (°C or °F) appears on the display. Release the **HOLD** button. The temperature unit will change from °C or °F (or °F or °C).

Note…
The meter will default to the last temperature unit selected when turned off and then on again.

Auto Power Off

To save battery life, the meter will automatically turn off after 10 minutes of inactivity. Press **REC** to disable this function.

BATTERY REPLACEMENT

1. Replace all 4 AAA batteries when the low battery icon is flashing, or when troubleshooting fails.
2. Unscrew the cover and install the batteries with the flat positive (+) side facing the springs.
3. Do not remove the black O-ring.
4. Remove the batteries when the unit is not in use for an extended period.

SPECIFICATIONS

	O_2	Air Temp
Range	0 to 30%	32 to 122°F 0 to 50°C
Resolution	0.1%	0.1°
Accuracy	±(1%RDG +0.2%O_2) (Following calibration)	±1.5°F ±0.8°C
Response Time	≤15 seconds	
Environment Pressure Range	0.9 to 1.1 atmosphere	
Expected Lifetime (O_2 Sensor)	≥2 years	
Sensor	Galvanic cell type	Thermistor
Circuit	Custom one-chip of microprocessor LSI circuit	
Sampling Time	Approximately 1 second	
Operating Temp	0 to 50°C; (For best results: 23 ±5°C)	
Operating RH	<80% RH	
Battery	4 DC 1.5 V (UM4/AAA) batteries	
Power	Approximately DC 4.0 mA	
Weight	5.3 oz (150 g)	
Dimensions	7" × 1½" × 1½" (178 × 38 × 38 mm)	

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of **1 year** from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover probes, batteries, or damage resulting from accident, misuse, or abuse. To obtain warranty service, ship the unit postage prepaid to:

SPER SCIENTIFIC
8281 E. Evans Rd. Suite #103,

Scottsdale, AZ 85260

The defective unit must be accompanied by a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days.

RoHS Compliant 2002/95/EC

CE

rev. 7/11/2019