

SENTINEL V.R.M.
Veterinary Respiratory Monitor



Instruction Manual

PRECISION
EQUIPMENT



VETERINARY

1099 East 47th Street, Hialeah, Florida 33013
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305-688-8581 FAX – 305-685-7671

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COMPANY PROFILE

Engler Engineering Corporation has been in business since 1964 and occupies an 8000 square foot facility in Hialeah, Florida (USA). We manufacture ultrasonic dental scalers, polishers and combination units including electro surgery equipment and ultrasonic instruments for the veterinary market as well as a microprocessor controlled anesthesia delivery system and a respiratory monitor for veterinary use only.

We also manufacture dental equipment for the human market. Please visit our website www.englerusa.com for more detailed information or call us at the numbers shown below.

Engler Engineering Corp. acquired the exclusive manufacturing and marketing rights of Dynax products, including stretchers, animal restraint devices, comfort cots, and other products. We also acquired the Alpha-Sonic, Ora-Sonic, and Pro-Sonic line of piezo scalers.

Engler Engineering Corporation's brand name products proudly include: Son-Mate II ultrasonic scaler / polisher, Sonus II dental ultrasonic scaler, Poli-x variable speed polisher, Scale-Aire High speed veterinary dental air unit with ultrasonic scaler / Low speed/ high speed/ air/water syringe, Excelsior high speed veterinary dental air unit with vacuum/ Electrosurgery/ ultrasonic scaler / Low speed/ high speed/ air/water syringe, Tri- Mate scaler / polisher / electro surge (for veterinary use only), and A.D.S. 2000 Anesthesia delivery system / Ventilator (for veterinary use only)

We manufacture all of the inserts and tips used in the Engler products as well as many others on the market today in the 18K, 25K, and 30K frequency range.

Our repair department has the technical knowledge to repair and maintain a number of dental devices manufactured by other companies including Shorline.

Engler Engineering Corporation's foreign sales are handled through a large and growing network of dental and veterinary distributors. At the present time we are represented throughout the Middle East, Europe, Central and South America, Canada, Asia, New Zealand, Australia, and most other countries.

If you have any questions or comments, please contact:

**Engler Engineering Corporation
1099 East 47th Street, Hialeah, Florida 33013
800-445-8581 – 305-688-8581 – FAX 305-685-7671**

Web site: www.englerusa.com Help site: www.engler411.com

INTRODUCTION

Thank you for choosing Engler's *Sentinel V.R.M.* (Veterinary Respiratory Monitor)

The *Sentinel V.R.M.* is a microprocessor controlled respiration rate monitor designed specifically for veterinary applications.

WARNING: This unit is not intended for use with human patients.

The *Sentinel V.R.M.* is a portable unit with an internal battery backup. This easy to use unit utilizes a reliable solid-state pressure sensor to detect respiratory activity. The unit measures and displays the number of breaths per minute and sounds an alarm if the time interval between breaths exceeds a preset time interval. The alarm time interval between breaths can be easily programmed from the unit's front panel.

Engler Engineering Corporation makes every effort to verify that all parts for the device along with any optional accessories ordered were shipped from our facility in Hialeah, Florida and are included in this shipment. It is imperative that you inspect the contents and if you find any pieces missing or damaged, you must notify us immediately. All claims submitted after fifteen days of receipt will not be valid.

All devices manufactured and/or sold by Engler Engineering Corporation are built and tested to approved standards. Any modification to the device, cables or hoses, initiated by others nullifies all warranty statements. Engler Engineering Corporation will not be held liable for any injury, death or damage of any type, due to non-authorized service and / or improper installation and / or improper use of the device.

The information contained herein is intended only as a guide. Individuals not properly trained should not use this equipment. It is intended for professional use only

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OPERATING INSTRUCTIONS

1. To turn the unit on, move the toggle switch to position I. (the up position)
2. Attach the **Sentinel V.R.M.** Gas Sampling Elbow to the endotracheal tube.

Note: The sensitivity cannot be adjusted until the sensor is attached to the patient.

3. While the patient is breathing, turn the sensitivity control clockwise until the patients breathing rate is shown in the BREATHS PER MINUTE display and a beep is produced with each breath.
4. Over the next several exhalations make small adjustments if needed to the sensitivity control, making sure that a beep is produced with each breath.

NOTE: Adjustments to the settings may have to be made when the patient is first going under or during the wake up period when the patient exhales.

5. The number of breaths detected during the last 60 seconds are displayed on the LED display labeled BREATHS PER MINUTE. This display is updated with each breath for the first minute and at the end of each minute after the first minute.
6. The monitor alarm time interval is set using the up/down arrow button switches located below the LED display labeled SECONDS-ALARM TIME. To increase the alarm time press the UP arrow, to decrease press the DOWN arrow.

Note: When the unit is turned on, the SECONDS-ALARM TIME display shows the stored alarm setting for 1 second. It then displays elapsed time since the last breath, up to 99 seconds.

7. While either arrow switch is pressed, the display changes to indicate the alarm setting. When the arrow switch is released, the elapsed time is once again displayed.
8. Alarm volume is adjusted using the VOLUME control knob.
9. The monitor alarm will sound if the time between breaths exceeds the ALARM TIME set.

10. Any time the patient takes a breath, the alarm is silenced and the elapsed time is reset to zero.

11. Waving a hand over the photocell on top of the unit will silence the alarm and reset the counter.

Note: If the photocell happens to be covered, the alarm will still sound when the alarm times out. However, this sensor become disabled until it is uncovered and the next breath is detected.

12. Battery voltage is nominally 6 volts, when the unit equires recharging, the decimal points in both SECONDS-ALARM TIME digits will light.

Note: The unit should be used connected to the charger at all times.

TECHNICAL DATA

Power requirement input is: 12 VDC @ 500ma.

Battery is a sealed lead acid (gel) cell 6 volts, 1.2 m/AH.

Length: 5 1/4 in. (13.3 cm.)

Width: 5 1/16 in. (12.8 cm.)

Height: 2 5/16 in. (5.9 cm.)

Weight: 3.5 lbs. (1.4 kg.)

WARRANTY

Engler Engineering warrants each new **SENTINEL V.R.M.** to be free from material and manufacturing defects for a period of one (1) year from the date of purchase.

Please return enclosed warranty card promptly.

MAINTENANCE

1. Gas Sampling Elbow can be disconnected in order to be cleaned / sterilized.

2. Clean the outside of the case with an alcohol pad or cloth lightly saturated with alcohol.

NOTE: DO NOT use any liquid except alcohol in the area of the sensor on top of the unit.

3. As the *Sentinel V.R.M.* is not watertight, do not immerse the unit in any liquid or wash with excessive water or alcohol.

TROUBLE SHOOTING

1. No display.

- Unit not on.
- Battery discharged

2. No beep when patient breaths.

- Sensor not attached correctly.
- Sensitivity not adjusted correctly.
- Volume too low.

3. Photocell does not cancel alarm.

- Not enough light to function
- Photocell covered.
- Hand not close enough to photocell

4. If breaths are indicated with the patient disconnected or a continuous sound is heard.

- Sensitivity is adjusted to high.

RETURN FOR EVALUATION / REPAIR FORM

**LEASE PHOTOCOPY AND INCLUDE A COMPLETED COPY WHENEVER SENDING
UNITS IN TO US FOR EVALUATION AND / OR REPAIR.**

CLINIC PHONE NUMBER: _____ FAX _____

CLINIC NAME: _____

Contact person: _____

Shipping Address: _____

City: _____ State: _____ Zip: _____

ITEM BEING SENT: _____ SERIAL # _____

Please describe what is happening or why you are sending in this unit:

When returning items to us, we would prefer you send the complete unit so that a proper evaluation can be made.

It is suggested that you ship all returns to us by Federal Express or UPS. If using US Mail, it is suggested that you track and insure the package.

Address all returns as follows:

**ENGLER ENGINEERING CORP.
REPAIR DEPARTMENT
1099 EAST 47 STREET
HIALEAH, FL 33013**

If you have any questions or concerns, please call us.
ENGLER ENGINEERING CORP 800-445-8581.



SENTINEL REQUEST FORM

Please review and complete this form and FAX it back to us at **305-681-3831** or **305-688-0018** so we can ship a unit out to you.

CONDITIONS of the Engler Engineering Corporation loaner program:

1. We must receive this completed and signed form before a loaner is shipped out.
2. A Credit Card is required – the information must be shown on the form below.
3. It is understood that if Engler Engineering does not receive your unit for repair within five (5) business days of you receiving the loaner, your credit card will automatically be charged \$50.00 per week for rental of the loaner.
4. You have five (5) business days after we send your estimate of repairs to send us your reply; otherwise a weekly rental charge of \$50.00 will be applied to your credit card.
5. Our loaner must be shipped back to us by Federal Express or UPS (NOT GROUND), to be received within five (5) days of the date you receive your unit. You need to insure it and keep record of the tracking number for reference if needed. If the loaner is not received, Engler Engineering will automatically charge your card for the full value of the loaner.
6. You are responsible for all shipping charges.
7. All parts are double checked at shipping to verify that they are included with the loaner. It is your responsibility to notify Engler Engineering at 800-445-8581 on the day the loaner is received if any items are missing.
8. All loaner items must be returned in good working condition. We include a copy of our check list for you to use to verify all parts are being returned. Missing and/or damaged items will be charged to your credit card.

NOTE: Loaner requests received after 11:00 AM Eastern time will be shipped out the next business day. Unless specified, all loaners will be shipped Federal Express - Express Saver with a 3 to 4 business day delivery time.

Check box if *OVERNIGHT* or *SECOND DAY* is requested at additional cost.

Please fill in the information below authorizing the transaction to accommodate your request.

Contact Name: _____

Clinic Name: _____

Phone _____ FAX _____

Address: _____

City: _____ State: _____ Zip _____

The serial number(s) of the device being sent in is _____

Credit card number (Amex) (Visa) (MC) _____

Expiration: _____ Zip Code of billing address: _____

I understand and agree to the terms and conditions stated above.

Print Name _____ Signature _____

Date: _____