

PhysioSuite®

Modular System

Fully integrated touch screen control and display

User's Guide



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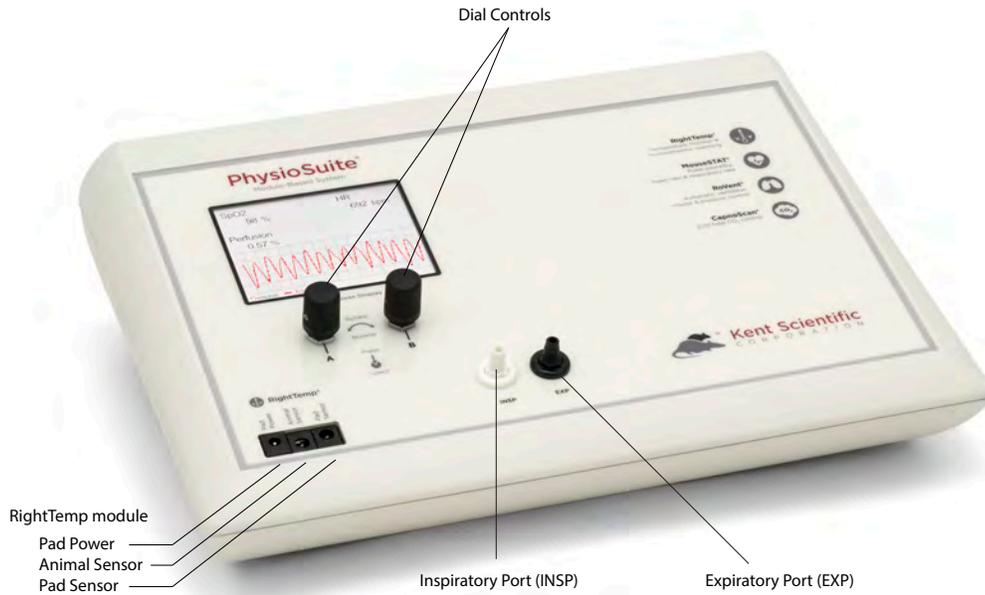
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Introduction

The PhysioSuite is not designed, intended or authorized for use in human applications.

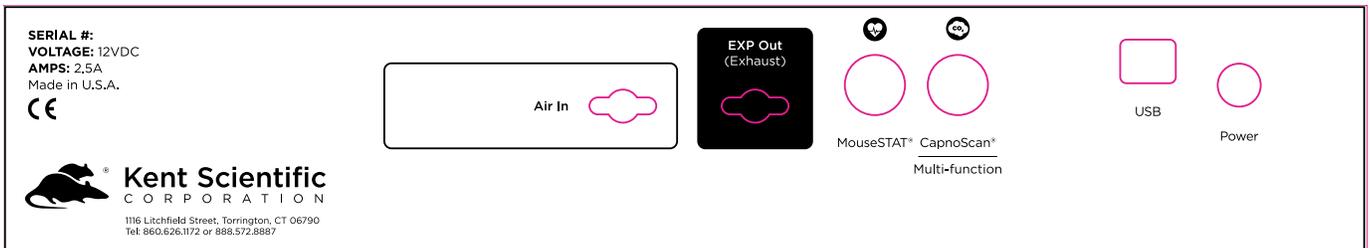
System Components

Front Panel



Inspiratory and expiratory ports are included with the RoVent module.

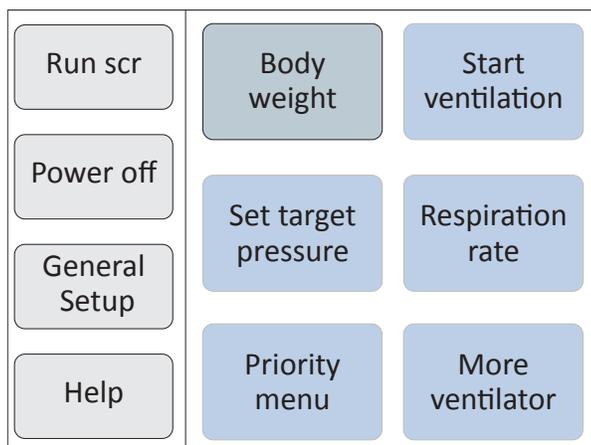
Back Panel



Navigating PhysioSuite®

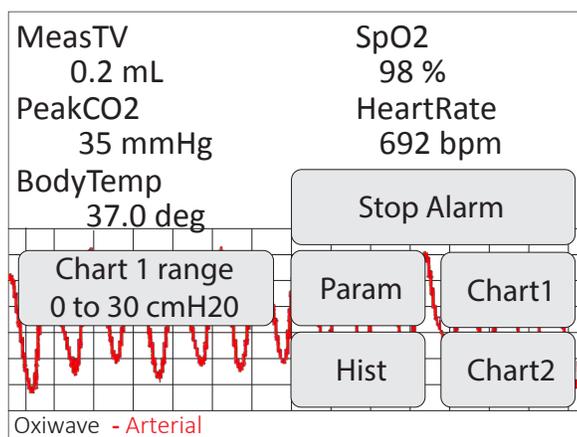
Touch Screen

PhysioSuite Touch Screens offer quick access to most features and settings. Touch the upper half of the Run Screen to reach the first Touch Screen.



First Touch Screen
(Screen buttons may vary based on the modules installed.)

Touch the bottom half of the Run Screen to open the pop-up Display Menu and quickly scroll through charts, view other data or to silence Alarms.



Pop-Up Display Menu
(Screen buttons may vary based on the modules installed.)

Dial Control

There are two Dials, A and B. The function of a Dial varies based on:

- where you use it - from the Touch Buttons Screens, Run Screen, Menu Screens or Main Menu.
- how you use it - turn, press or hold down.

Dials can have specialized uses in a few specific locations. The unit displays on-screen instructions in those locations.

ACTION	DIAL	RESULT
Press	A	Back one level from Main Menu Screens To Run Screen from Main Menu To Run Screen from Touch Button Screens
	B	Select a highlighted Menu item To Main Menu from Home Screen Clear Alarms if they are enabled
Turn	A	Move through Menu choices
	B	Change setting values at Menus
Hold down	A	To Main Menu from Run Screen To Help at any Menu screen
	B	–

**See Main Menu
on page 4.**

Display Options

Customizing the Run Screen Display:

To configure Parameters:

1. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) "General setup".
 - 3) "Config".
 - 4) "Param Locations".

2. Turn Dial A to choose a Parameter and Dial B to assign the Parameter to a Run Screen location.

To configure Charts:

1. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) "General setup".
 - 3) "Config".
 - 4) "Chart 1 setup" or "Chart 2 setup" to choose the type and timing for a chart.

2. Press Dial A to return to the General setup page of the Touch Screen Menu.

3. Touch "Set ranges" to choose the best-fitting axis range for the Parameters on your charts.

Menus

The Main Menu is the non-touch gateway to all features and setting choices for configuring PhysioSuite, useful when a touch screen is not a feasible option, such as for an operator with damp hands. Access the Main Menu through the Touch Screen Menu or from the Run Screen by holding Dial A.

Main Menu	
Body wgt	Set body weight
Air Control	Insp Press: 15cmH20
Anesthesia	30g
Modules	Nominal RR: 133bpm
Data mgmt	Nominal Tidal Vol: 0.200mL
Config	Nominal Minute Vol: 26mL/min
Power off	Turn Dial B to choose the weight
Help	of your animal
	Hold Dial A for Help.

Main Menu

(Screen buttons may vary based on the modules installed.)

System Customization

Profiles

PhysioSuite can save your settings as one or more Profiles. Profiles contain all non-calibration-related settings, including display and functional settings for modules.

To save your current settings as a new Profile:

1. Touch
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) “General setup”.
 - 3) “Profiles”, then “Profiles Menu”.
2. Turn Dial B to select one of the available Profiles.
3. Press
 - 1) Dial B and follow on-screen directions to edit the name of that Profile.
 - 2) Dial B to save the Profile name.
4. Touch “>>”, then press Dial B to save current settings to the highlighted Profile.

To load a previously saved Profile:

- Touch
- 1) the upper half of the Run Screen for the Touch Screen Menu .
 - 2) “General setup”.
 - 3) “Profiles”.
 - 4) “Load” for the Profile you would like to load.

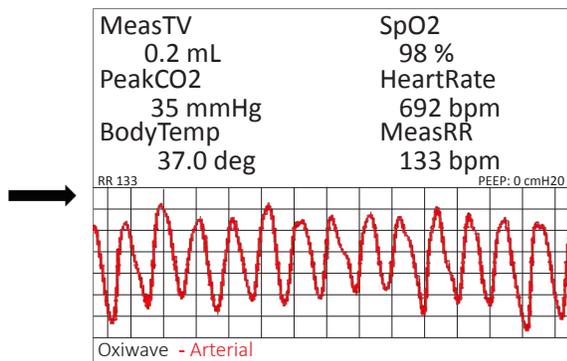
Custom Dial Functions

You can program the Dials to provide quick access to Parameter setting changes. This is convenient in cases where you must frequently change a particular Parameter setting in the middle of a procedure.

To assign a new dial function:

1. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) “General setup”.
 - 3) “Config”
 - 4) “Dial Menu”.

2. Turn Dial B to assign a function.
You can assign one function—changing a Parameter value—to each Dial.



Small text on the run screen displays the assigned Parameter name for each Dial, if set, and its current value.

Run Screen with Dial Function Text

To use a dial command:

1. At the Run Screen, quickly turn the Dial assigned to the Parameter whose value you want to change. PhysioSuite beeps and the associated text becomes blue.
2. Turn the Dial to increase or decrease the value for the assigned Parameter. After 3 seconds, PhysioSuite beeps again and the command text returns to black.

As you turn a Dial, setting changes takes place immediately.

To restore defaults:

1. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) “General setup”.
 - 3) “Profiles”.
 - 4) “Presets”.
2. Turn Dial B to choose the settings you want to restore to their default values:
 - Operation values - all non-calibration, non-Profile and non-History-associated settings for all modules.
 - Saved Profiles - renames all Profiles “Default” and sets associated settings to defaults
 - History - erases history data.
 - Calibration - reset all calibration values.
 - Full Reset - return all settings to factory values.

Alarms

PhysioSuite alarms alert you to certain conditions that might require attention while PhysioSuite is running.

There are two levels of alarms:

Level	Based On	Banner	Sound (If On)	Configurable
Warning	Parameters or other operating conditions	Yellow	1-beep pattern	Yes
Serious	Parameters or other operating conditions	Red	3-beep pattern	Yes except for system alarms

To configure a new Parameter alarm:

1. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) "General setup".
 - 3) "Data Mgmt", then "Alarms".
 - 4) one of the four "Param" Buttons.
2. Using the Dials, make the alarm settings.

You can configure up to 4 Parameter Alarms. Other alarm options may be available depending on the combination of modules installed.

To configure a fixed alarm:

1. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) "General setup".
 - 3) "Data Mgmt", then "Alarms".
 - 4) "Fixed Alarms", then choose the alarm you want to configure.
2. Press Dial B and follow on-screen directions to change the alarm action and timing.

To clear a sounding alarm:

A triggered alarm produces a colored banner at the bottom of the screen describing the cause of the alarm. The banner color corresponds to the severity of the alarm.

To silence the alarm:

Touch:

- 1) the bottom half of the Run Screen.
- 2) "Stop Alarm".

Data Management

For PC Connections

Kent Scientific devices can collect and monitor data using a serial over-USB connection. The data can be uploaded to a variety of programs, including ADI's data acquisition software, LabChart®. If you do not have LabChart, please contact Kent Scientific for recommended alternatives.

Kent Scientific devices are Windows® compatible only.

Driver Installation

The driver installs automatically the first time you connect your device to a PC via mini-USB cable. If the driver does not install automatically, you can install it manually from <http://www.ftdichip.com/Drivers/VCP.htm>.

COM Port Settings

Bits per second: 115200
Data Bits: 8
Parity: None
Stop bits: 1
Flow Control: DTR: green RTS: green

Upload to a PC

The Upload feature sends data at user-selectable time intervals to a PC through the USB port. PhysioSuite can upload data for up to 20 parameters simultaneously.

To upload data in real time to a PC:

1. Connect your Kent device to a PC.

Ensure drivers are installed, COM port settings have been adjusted, and the program you plan to use is running.

-
2. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) “General setup”.
 - 3) “Data Mgmt”
 - 4) “Upload”.
 3. Choose:
 - 1) the Parameters to be uploaded and set the Timing interval for uploads.
 - 2) to add a Header, GroupID, and TimeStamp to records.
 4. Touch “Enable” and choose either “Always enabled” or “Enabled while running”

The “Always enabled” setting saves data as long as the controller is on. The “Enabled while running” setting is available only if your system contains a RoVent ventilator, and saves data only when the ventilator is running.

History - Internal Storage

The History feature stores the most recent 1000 records from your runs. You can send this data to a PC through the USB port at a later time. PhysioSuite can store data for up to 10 Parameters simultaneously at user-selected time intervals. You can view the data on screen or export the data to a computer after your study is complete.

Data record 1001 will overwrite data record 0001, and so on.

To save data to History:

1. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) “General setup”.
 - 3) “Data Mgmt”.
 - 4) “History”.
2. Choose
 - 1) the Parameters to be saved and the Timing interval between saves.
 - 2) to add a Header, GroupID, and TimeStamp to records.

Changing these settings permanently deletes any previously saved data.

3. Touch “Enable” and choose either “Always Enabled” or “Enabled While Running”. “Always Enabled” saves data as long as the controller is on. “Enabled While Running”, available only if your system contains a RoVent ventilator, causes the system to save data only when the ventilator is running.

To view saved History:

1. Touch
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) “General setup”.
 - 3) “Data Mgmt”
 - 4) “History”.
 - 5) “View”.
2. Press Dial B.

To export History to a PC:

1. Connect your Kent device to a PC.

Ensure drivers are installed, COM port settings have been adjusted, and the program you plan to use is running.

2. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) “General setup”.
 - 3) “Data Mgmt”.
 - 4) “History”.
3. Choose data to send. “Send new” exports only data collected since the last upload. “Send all” exports all data saved in History.

Analog

The Analog Output feature sends an analog signal corresponding to a single Parameter to external equipment via a remote cable.

Please contact Kent Scientific for a remote cable if you would like to use this feature.

To configure Analog Output

1. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) "General setup".
 - 3) "Data Mgmt".
 - 4) "Analog output".
2. Choose a Parameter to output.
3. Touch:
 - 1) "Back".
 - 2) "Config."
4. Touch "Set ranges" and choose a range for the Parameter.

The voltage output ranges from 0-3V, with 0V assigned to the low limit of the range, and 3V to the high limit.



Set Up Hardware

Scavenging:

If you are using a Compressed Gas Source or an Anesthetic Vaporizer:

Connect a charcoal canister to the exhaust side of the bypass assembly.

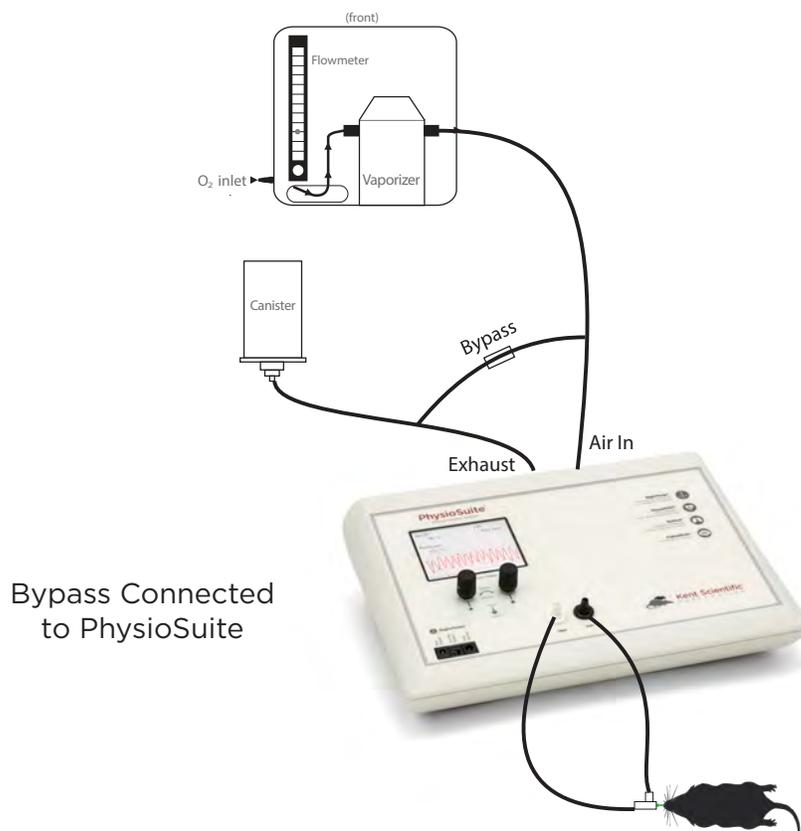
If you are using the Internal Pump:

Connect the charcoal canister to the Exhaust port on the back of the PhysioSuite.

Air Source:

If you are using a Compressed Gas Source or an Anesthetic Vaporizer:

1. Connect the Vaporizer Connection Assembly with Bypass to the back of the PhysioSuite.
2. Connect the compressed gas or vaporizer to the inlet side of the bypass \ assembly.





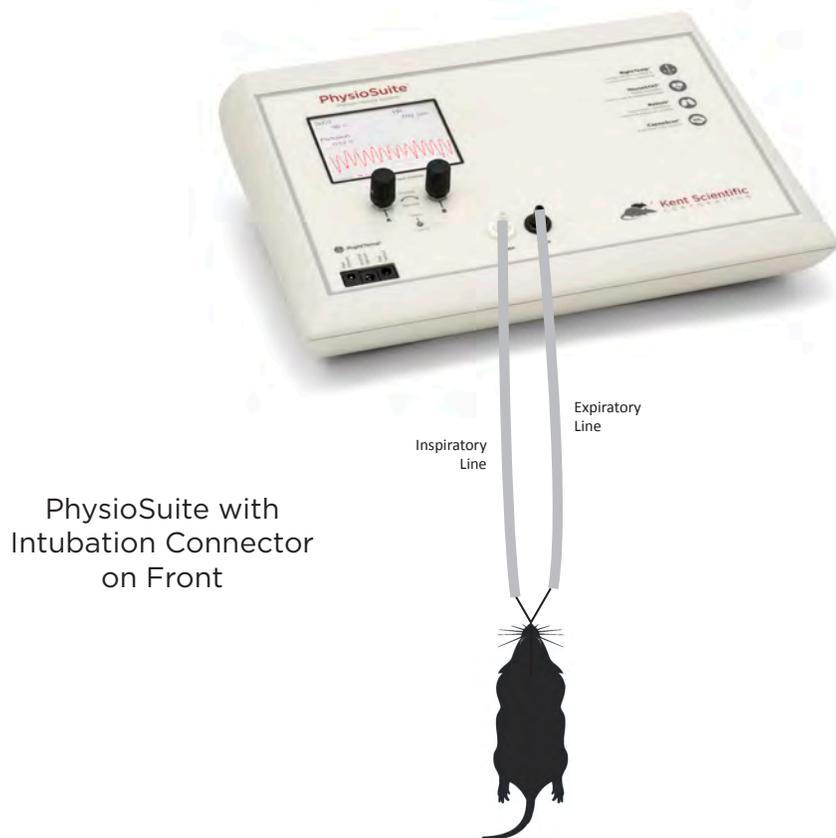
If you are using the Internal Pump:

No additional hardware setup is necessary.

Tubing Configurations:

Connecting Ventilator Tubing to an Endotracheal Tube:

Connect the intubation connector tubing directly to the INSP and EXP ports on the front of the PhysioSuite.





Ventilating an Animal

1. Anesthetize and intubate the animal. Connect the endotracheal tube to the intubation connector.
2. Touch “Start ventilator” to begin ventilation.

PhysioSuite calculates the respiration rate and tidal volume using the animal’s body weight. To change these settings, touch “More ventilator”, then “Respiration rate” or “Set target pressure/volume”. This will override the calculated settings.

3. At the end of the procedure touch “Stop ventilator” to stop ventilation. Allow the animal to recover.



Configure Settings

Ventilator Calibrations

Note: Never perform these functions when an animal is connected to the ventilator.

1. Measure Deadspace

- 1) Set up tubing.
- 2) Touch “Calib & tests”, then “Measure deadspace”.
- 3) Firmly seal the end of the endotracheal tube with your finger or a cap, ensuring that there is no air leakage.
- 4) Press Dial B. When asked to confirm measurement, press Dial B again.

2. Zero Sensors

- 1) Set up tubing.
- 2) Touch “Calib & tests”, then “Zero sensors”.
- 3) Press Dial B. When asked to confirm measurement, press Dial B again.

3. Make Ventilator Settings

Configure all anesthesia settings and air supply settings first (see page 13).

1. Touch:
 - 1) “Select Ventilator” for access to all RoVent touch menus.
 - 2) “Body Weight” to choose the body weight that determines the automatic settings for respiration rate and tidal volume. To change these Parameters manually, Touch “Respiration rate” or “Set target volume”.
2. Choose a ventilator priority by touching “More ventilator”, then “Priority Menu”.

Pressure Priority: RoVent ventilates to a specified inspiratory pressure. The default target pressure is 15cmH₂O independent of body weight setting. To change the target pressure, touch “Set target pressure”.

Volume Priority: RoVent delivers an initial target pressure for the first breath, then delivers a target tidal volume. The default target tidal volume is calculated based on body weight. To change the target tidal volume, touch “Set target volume”.

Note: You can change the initial target pressure for the first breath, as well as the minimum and maximum allowed pressures to customize the ventilator’s operating range as the ventilator delivers the set tidal volume.



3. Make any other desired ventilation settings:

- PEEP: Automatically add a positive end-expiratory pressure. Choose between 0cmH₂O and 9cmH₂O.
- Sigh Breath: Automatically add an intermittent breath with a larger tidal volume. Choose frequency and tidal volume of sigh breaths.
- I/E Ratio: Change the ratio of inspiratory to expiratory parts of a breath cycle.
- Inspiratory Pause: Change the time between the end of active inspiration and the start of expiration.
- Assist Mode: Allow an animal to breathe at a spontaneous respiration rate while retaining control of target inspiratory pressure or target tidal volume.

Assist Mode settings override Respiration Rate settings as long as Assist Mode is enabled.

- Pulse Mode: Apply rapid high pressure to the animal's airways.

Pulse Mode Menu settings override target pressure and target volume settings as long as Pulse Mode is enabled.

Trigger Command Settings

You can assign RoVent-specific functions to either a Dial press or an external signal via remote cable.

To set a new Trigger Command:

1. Touch "Triggers Menu".
2. Turn Dial B to choose an action.

Some actions will require additional settings.



RoVent Troubleshooting

Alarm Messages

Problem	Possible Cause
Tube open to atmosphere The highest measured pressure in a breath cycle is under 25% of the target and the tidal volume is over target.	<ul style="list-style-type: none">• Part of the tubing between the INS and EXP ports is open, disconnected or leaking.• There is a large mismatch between the set or calculated tidal volume and the required tidal volume, or between the set and actual body weights.
Tube blocked The highest measured pressure in a breath cycle is under 25% of the target and tidal volume is under target.	<ul style="list-style-type: none">• The endotracheal tube is not seated correctly.• There is a kink, blockage or foreign matter in the inspiratory or expiratory lines.
Exhaust blocked The breath pressure fails to drop during the expiratory phase of a breath.	<ul style="list-style-type: none">• The cap is on the EXP port.• The expiratory valve has failed.
Out of regulation Over five consecutive breaths, peak pressure was more than 25% or less than 75% of your target.	<ul style="list-style-type: none">• Requested Tidal Volume is too high for Pressure and RR .
Large rise in TV Over the last four breaths, there was an increase of more than 25% in average tidal volume compared to that of the previous 16 breaths.	<ul style="list-style-type: none">• Part of the tubing between the INS and EXP ports is open, disconnected or leaking.
Large drop in TV Over the last four breaths, there was a decrease of more than 25% in average tidal volume compared to that of the previous 16 breaths.	<ul style="list-style-type: none">• There is a kink in the tubing.• There is foreign matter in the tubing or in the exhaust valve.• The exhaust outlet is blocked.• The endotracheal tube is not seated correctly.
Deadspace calib Dead space calibration produced a negative tidal volume.	<ul style="list-style-type: none">• Deadspace calibration is incorrect for current tubing setup.



Diagnostic Procedures

To access these diagnostic procedures, touch “Calib & tests”.

Purge

Resulting Message	Meaning	Possible Action
Success	No leaks found.	None is needed.
Low baffle pressure	There is an internal RoVent problem.	Contact Kent Scientific.

Clears any accumulations from the valves using high pressure air flow.

Leak Test

Checks for internal leaks as well as leaks in tubing circuits.

Resulting Message	Meaning	Possible Action
Test OK	No leaks found.	None is needed.
Tubing leaks	The tubing is open to the atmosphere through a loose connection or a crack or hole in the tubing.	Tighten all connections and ensure that the circuit is air tight. Run Leak test again. If the error recurs, contact Kent Scientific.
Low baffle pressure or Baffle leaks	There is an internal RoVent problem.	Retest making sure that the tubing is not flexed or moved. If the error recurs, contact Kent Scientific.



MouseSTAT Pulse Oximeter and Heart Rate Monitor



Set Up Hardware

Sensor:

1. Connect the interface cable to the MouseSTAT port on the back of the PhysioSuite.
2. Connect the sensor to the interface cable and ensure that the connection is secure.

Configure Settings

MouseSTAT Settings

Touch:

- 1) the upper half of the Run Screen for the Touch Screen Menu.
- 2) “General setup”, then “MouseSTAT setup”.
- 3) “Minimum HR” and turn Dial B to set the minimum heart rate MouseSTAT should detect.

This adjusts the sensitivity of your MouseSTAT.

Monitoring an Animal

Place the sensor over the hind paw of the animal centering the red light over the paw pad.



MouseSTAT sensor on animal

The sensor automatically begins readings. To monitor signal quality, set one of the charts to “Oxiwave”. (See page 21.)



MouseSTAT Troubleshooting

Problem	Possible Cause	Solutions
There is no red light or blinking light in the sensor.	Sensor not fully connected	<ul style="list-style-type: none">• Ensure that all connections are tight, especially at the back of the controller.
	Damaged wire in sensor or interface cable	<ul style="list-style-type: none">• Replace the damaged cable.
Readings are inconsistent. or There are no readings.	Incorrect sensor placement	<ul style="list-style-type: none">• Reposition sensor on the animal's paw.
	Poor animal circulation	<ul style="list-style-type: none">• Investigate types and dosages of anesthetic and other drugs in use; reduce where possible.• Increase animal body temperature to encourage circulation.

MouseSTAT Sensor Maintenance

- Avoid any practice that creates tension or strain on the sensor cable or connections. MouseSTAT sensors are designed to be gentle on small paws.
- When the MouseSTAT sensor is not in use, gently coil it and store it in its package to prevent tangles or bends in the sensor wire.
- Gently wipe the sensor clean between uses.

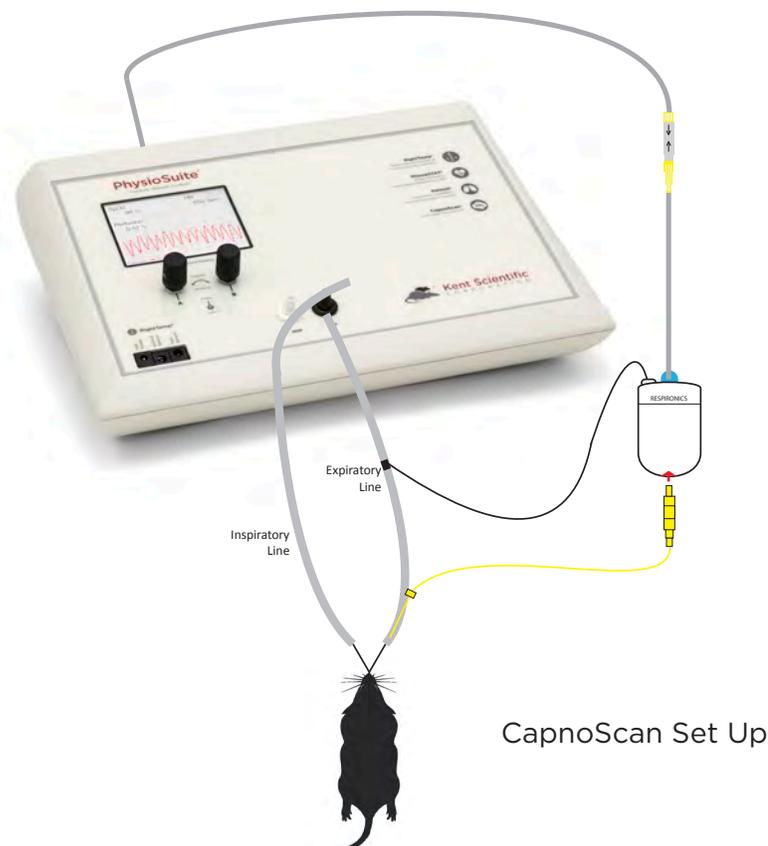


Set Up Hardware

Sensor:

1. Connect:
 - 1) the interface cable to the CapnoScan port on the back of the PhysioSuite.
 - 2) the side-stream sensor to the interface cable, ensuring that the connection is secure.
2. Insert:
 - 1) the sampling assembly into the back slot of the side stream unit.
 - 2) the sampling needle into the expiratory line of the ventilator as close to the animal as possible.
3. Attach the return line to the expiratory line, close to the ventilator.

For CapnoScan to make accurate readings, the animal must be connected to a ventilator.



CapnoScan Set Up

Configure Settings

CapnoScan Calibration

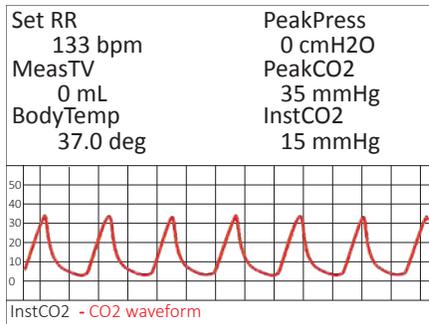
1. Touch:
 - 1) the upper half of the Run Screen for the Touch Screen Menu.
 - 2) “General setup”.
 - 3) “CapnoScan setup”.
 - 4) “More CO₂”.
 - 5) “Calib CO₂ Sensor”.
2. Press Dial B to zero the sensor.

CapnoScan Settings

1. Touch:
 - 1) “General setup”.
 - 2) “CapnoScan setup for:
 - “CO₂ units”: Choose mmHg or %.
 - “Measure RR”: Use CapnoScan to measure the animal’s respiration rate. Choosing “Yes With Priority” will allow the CapnoScan’s MeasRR readings to override MouseSTAT’s MeasRR readings.
 - “RR range”: Choose the expected respiration rate range for your animal.
 - “Gas temp”: Choose the temperature of the expiratory gas. When measuring an animal’s ETCO₂, use the default value of 35°C.
 - “Pressure”: Set the current barometric pressure.
 - 3) “More CO₂” for:
 - “Percent O₂”: Estimate the concentration of O₂ in expired gas.
 - “Gas type”: Indicate the type of balance gas in use.
 - “Percent NO₂”: Set the concentration of NO₂ in the balance gas.

Monitoring an Animal

1. Anesthetize the animal.
2. Connect the animal to the ventilator.
The sensor automatically begins readings.



To monitor the CO2 waveform, set the type for one of the charts to “InstCO2”. (See page 23.)

Run Screen Showing CO2 Waveform

CapnoScan Troubleshooting

Problem	Possible Cause	Solutions
CO2 readings are low or incorrect.	Poor sampling needle placement	<ul style="list-style-type: none"> Place the sampling needle into the expiratory tubing as close to the animal as possible.
	Incorrect compensation settings	<ul style="list-style-type: none"> Enter all gas compensations as accurately as possible. Zero the CapnoScan relative to the airway adapter.
There are no readings.	CapnoScan not running or not connected	<ul style="list-style-type: none"> Ensure that all connections are tight, especially at the back of the PhysioSuite. Ensure that the CapnoScan is running.
	Sampling tube dirty or damaged	<ul style="list-style-type: none"> Ensure that the sampling tube is not wet, soiled or damaged. Remove the sampling assembly from the CapnoScan sensor and clean the window gently.

CapnoScan Sensor Maintenance

- Replace the sampling assembly if wet or soiled. CapnoScan sampling assemblies are designed to be disposable.
- When the CapnoScan sensor is not in use, gently coil the cables and store them in their package to prevent any dust or debris from entering the sampling assembly port.
- Gently wipe the sensor clean between uses.

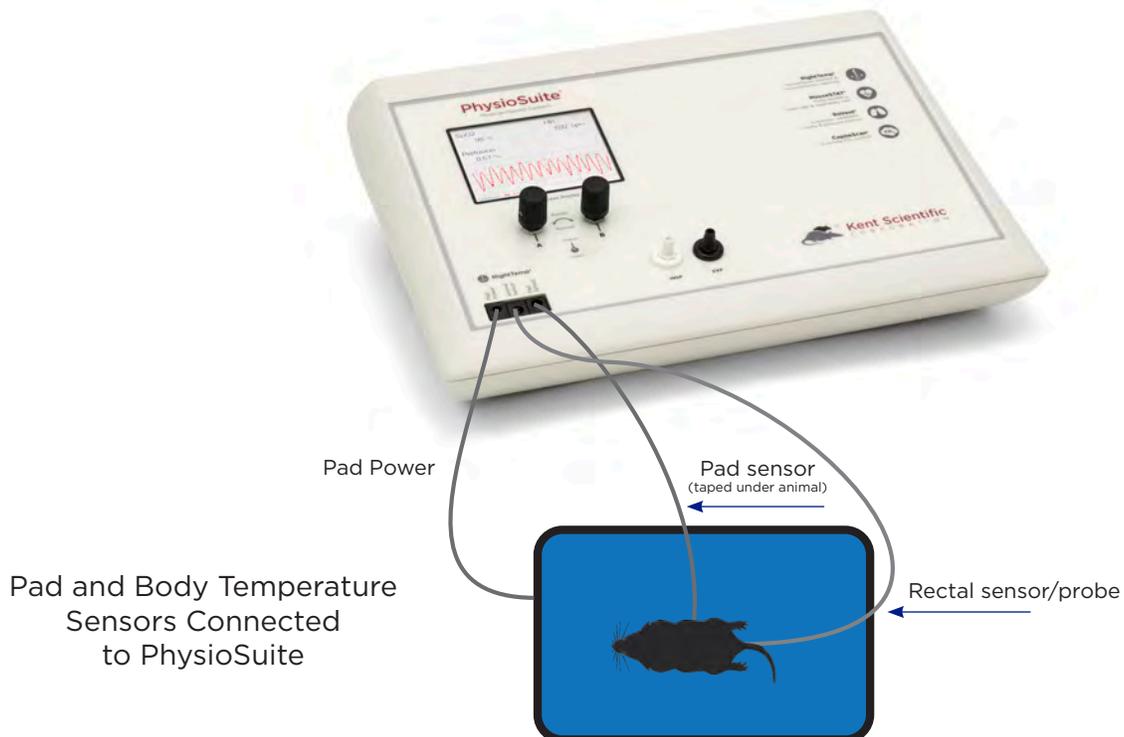


RightTemp Temperature Monitor and Homeothermic Warming



Set Up Hardware

1. Connect the warming pad to the “Pad Power” port on the front of the PhysioSuite.
2. Choose one of the two probes as the body temperature sensor.
 - For mice, select the smaller probe.
 - For rats, select the larger probe.
3. Connect the body temperature sensor to the “Animal Sensor” port.
4. Use the other probe as the pad sensor.
5. Connect the sensor to the “Pad Sensor” port.



We recommend that you secure the pad probe to the warming pad using tape, etc.



Configure Settings

RightTemp Sensor Calibration

1. Place both sensors in a beaker of water and measure the water temperature with an accurate digital thermometer.
2. Wait for the screen display for the sensors to stabilize.
3. Touch:
 - 1) “General setup”.
 - 2) “RightTemp setup”.
 - 3) “Calibrate temp”.
4. Turn Dial B to enter the temperature as measured by the digital thermometer.
5. Press Dial B to save the calibration.

RightTemp Settings

1. Touch:
 - 1) “General setup”.
 - 2) “RightTemp setup”.
 - 3) “Control warming” to choose the type of warming:
 - “Off”: temperature monitoring, no warming
 - “Unregulated”: temperature monitoring, warming with no sensor control
 - “Pad temp regulated”: temperature monitoring with Pad sensor control
 - “Body temp regulated”: temperature monitoring with Animal sensor control
2. Set the target temperature, limit the maximum pad temperature, or set the power level depending on the type of warming you have selected. Appropriate buttons will appear on the screen to allow you to make settings.

Monitoring an Animal

1. Place the anesthetized animal on the warming pad.
2. Insert the animal temperature probe into the rectum of the animal. Secure the probe if necessary.

Always secure the pad temperature probe beneath the animal.

RightTemp Troubleshooting

Problem	Possible Cause	Solutions
Pad is not heating.	Incorrect settings	<ul style="list-style-type: none"> Ensure that all settings are properly enabled for warming and target temperatures are selected.
	Incorrect or loose connections	<ul style="list-style-type: none"> Ensure that the connection at the back of the PhysioSuite is tight.
Pad is overheating.	Incorrect settings	<ul style="list-style-type: none"> Ensure that all settings are properly enabled for warming and target temperatures are correctly selected. Enable a “Maximum Pad Temp” when type of warming is “Body temp regulated” to prevent overheating.
	Incorrect sensor placement	<ul style="list-style-type: none"> Place pad sensors directly beneath the animal. Place animal sensor rectally only.
Sensors are reading incorrect temperatures.	Sensors calibration required	<ul style="list-style-type: none"> Recalibrate the temperature sensors.
	Sensor function reassignment	<ul style="list-style-type: none"> Recalibrate the temperature sensors. Do this any time you reassign sensor function.

RightTemp Pad and Sensor Maintenance

- Use the disposable warming pad covers to prevent soiling the warming pad.
- Wipe the warming pad clean with a damp cloth if needed. Never saturate the warming pad.
- Gently wipe the sensors clean between uses.

General Information

Thank you for purchasing a PhysioSuite. We truly appreciate your business. We strongly advise that you read and study this Owner's Manual to appreciate fully all the features, benefits, and capabilities of the PhysioSuite.

Contact Information

Kent Scientific Corporation
1116 Litchfield Street
Torrington, Connecticut 06790
E-mail: sales@kentscientific.com

Toll-Free: 888-5RATTUS (888-572-8887)
Outside US: 860-626-1172
Fax: 860-626-1179
Internet: www.kentscientific.com

Disclaimer

Kent Scientific Corporation makes no representations or warranties, expressed, statutory or implied, regarding the fitness or merchantability of the components of this system for any particular purpose. Further, Kent Scientific Corporation is not liable for any damages, including but not limited to, lost profits, lost savings, or other incidental or consequential damages arising from ownership or use of these products, or for any delay in the performance of its obligations under the warranty due to causes beyond its control. In no case shall Kent Scientific Corporation's financial obligation extend beyond the cost of or replacement of the Kent product in question. Kent Scientific Corporation also reserves the right to make any improvements or modifications to these products described in this manual at any time, without notice of these changes. All brand and product names used in this manual are the trademarks of their respective owners.

This product is not designed, intended or authorized for use in human applications.

Product Warranty

The PhysioSuite has a one (1) year warranty including all parts and labor charges. This warranty does not cover damage by any cause including, but not limited to, any malfunction, defect or failure caused by or resulting from unauthorized service or parts, improper maintenance, operation contrary to furnished instructions, shipping or transit accidents, modifications or repair by the user, harsh environments, misuse, neglect, abuse, accident, incorrect line voltage, fire, flood, other natural disasters, or normal wear and tear. Changes or modifications not approved by Kent Scientific Corporation could void the warranty. The foregoing is in lieu of all other expressed warranties. Kent Scientific Corporation does not assume or authorize any party to assume for it any other obligation or liability.

Satisfaction Guarantee

Should you experience difficulty with the PhysioSuite, our Technical Support Group will assist you in trouble-shooting and determining if the product needs to be returned to our facility. We will issue you a Return Manufacturer Authorization (RMA) number before the product is shipped back for repair. It is at the discretion of the manufacturer to replace or repair a defective part or product. Please call Customer Service at 888-572-8887 to obtain a Return Manufacturer Authorization number. Shipments without a RMA number will not be accepted. Please note that after our 30-day return policy period ends, we will be happy to assist you with your application, but cannot issue any credit or refund for a returned PhysioSuite.

Prior to shipment, please clean and decontaminate the product of any chemical, biological, or isotopic contamination. Please include a completed Product Return Form with the shipment. This form can be obtained by contacting Kent Scientific Customer Service at 888-572-8887 or 860-626-1172.

Specifications

Controller

Voltage	12 V, 2.5A
Dimensions	29cm (11.41in) x 20cm (7.87in) x 7.6cm (2.97in)
Weight	1.1kg

Power Supply

Input	100 to 240 V, 50 to 60 Hz, 1.0 A
Output	12 V, 2.5 A

RoVent

Control Modes	Volume controlled, pressure controlled
I:E Ratio	1:1 to 1:5
PEEP	Built-in
Respiratory Assist	Automatic or Manual
Sigh Pressure	2cmH ₂ O to 30 cmH ₂ O
Sigh Breath	Automatic or Manual
Respiratory Rate Range	20bpm to 400bpm
Tidal Volume Range	0.01 - 12.0mL
Weight Range	3 to 1,250g

MouseSTAT

Heart Rate	Up to 900bpm
Resolution	1%
SpO ₂ Range	70% to 100%
Alarms	5, programmable
Data Export	Yes
SpO ₂ Sensors	Mouse: Soft Touch paw sensor Rat: Soft Touch paw sensor Pup: Annular paw or body sensor

RightTemp Sensors

Resistance	2,252 Ohm
Operating temperature	-60°C to 150°C (-76°F to 302°F)
Sensor tip diameters	Mouse 0.080" and Rat 0.140"
Time constant in air	15.0sec
Dissipation constant	0.75 m/W (°C)

CapnoScan Sensor

Transducer type	Sidestream CO2 Sensor
Principle of operation	Non-dispersive infrared (NDIR) single beam optics, dual wavelength, no moving parts
Initialization time	Capnogram displayed in less than 15 seconds at an ambient temperature of 25°C, full specifications within 2 minutes
CO2 measurement range	0mmHg to 120mmHg, 0% to 16%, 0kPa to 20kPa (at 760mmHg); Barometric Pressure supplied by host
Rise time	Less than 60ms
CO2 resolution	0.1mmHg at 0mmHg to 69mmHg 0.25mmHg at 70mmHg to 150mmHg
CO2 accuracy	±2mmHg at 0 to 150mmHg
CO2 stability	Short term drift: Drift over four hours shall not exceed 0.8mmHg max Long term drift: Accuracy specification will be maintained over a 120-hour period
Calibration	No routine user calibration required; an airway adapter zero is required when changing to a different style adapter
Airway adapter	< 1cc dead space adapter
Conditions	Operating: 0°C to 45°C, 10% to 90% RH, non-condensing Storage: -40°C to 70°C, <90% RH, non-condensing

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