VENTOXYN

ALL YOU NEED FROM VENTILATION

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Easy Touch Menu Selections

It is the ability of the ventilator to adapt to its users and their patients. Minimal layer menus and multiple methods of navigation (Touch and Track) provide quick interaction allowing maximum focus on the patient. :

Highly Accurate Performance

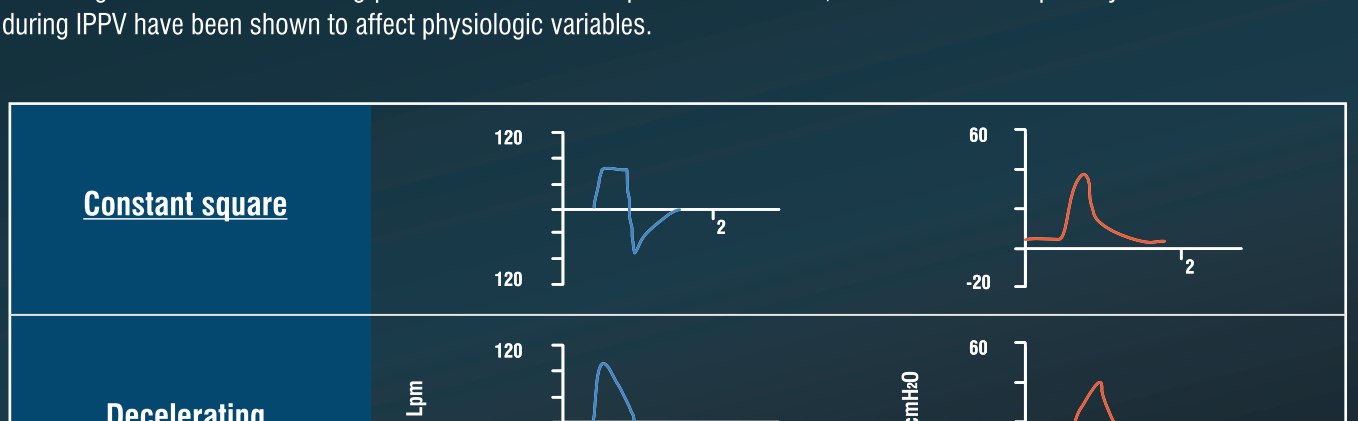
Performance is also in the capability and precision by which the ventilator matches the clinical settings with delivery to the patient. Active proportional flow valves provide precise ventilation delivery regardless of mode.

Compensation by All Means

Accurate control is maintained in all modes using not only dynamic compliance and fresh gas compensation but also through active control of the inspiratory and expiratory flow valves.Both valves working together to precisely control delivery and maintanence of the target pressure

Adaptive Chest Flow

This new feature in our ventilator allows us for varying inspiratory flow waveform and time during mechanical ventilation. Dynamic Lung characteristics is unique for every patient and the ventilator should stimulate the patient's best inspiratory flow waveform according to the natural breathing pattern of human. In experimental models, the variation in inspiratory flow waveform and time during IPPV have been shown to affect physiologic variables.



The three types of inspiratory flow waveform studied (left panels). The right panels show airway pressure tracing of each corresponding waveform. The ventilator was connected to a lung model with PEEP set at 5 cmH2O. It is of note that with the decelerating waveform, the peak flow setting head to be increased to diminish Ti, in order to maintain a similar I/E as those achieved with the other waveforms.

Technical Specification :

Functional

Tidal Volume range :	10 - 1600 ml (Increments of 10 ml)
Rate :	4 - 100 bpm
I : E Ratio :	1 : 0.2 to 1 : 8
Pressure Limit :	10 to 60 cmH_2O
Inspiratory Pause :	5 - 60 % (Increments of 5 %)
Pressure (Pinsp) Range :	4 - 70 cmH_2O (Increments of 1 cmH_2O)
Electronic Peep :	4 - 20 cmH_2O

Support Modes : PSV, SIMV, MMV

Trigger :	0.7 - 4 L/min (PEEP Referenced)
Inspiratory Time :	0.3 - 5 Seconds
Minute Volume :	0.5 - 20 Litres
Support Pressure :	4 to 70 cmH_2O
Trigger Window :	60 % of Cycle Time

Features

- Demonstrated battery time under typical operating conditions is 120 + minutes when fully charged. Internal rechargeable sealed lead acid
- $EtCO_2$and Multi Gas Analyzer Monitoring, with user adjustable active alarms
- 10.1 inch high resolution color TFT with Capacitive touch screen and navigation knob
- Compact breathing system especially designed for low flow to help provide fast gas kinetics for rapid wash in/out
- Pressure, Flow, Volume vs. Time waveforms plus two spirometry loops
- Measuring flow at patient's airway with dual accurate one directional flow sensors
- Short and easy calibration procedure to ensure the ventilation accuracy
- Comprehensive data output for networking and interfacing to PEC 19 inch patient care monitoring system
- Taking screen-shots using USB flash memory
- A four second power down delay helps protect against accidental shutdown during a case
- Quick key to take the ventilator out of standby and start the ventilation with your preset ventilation parameters

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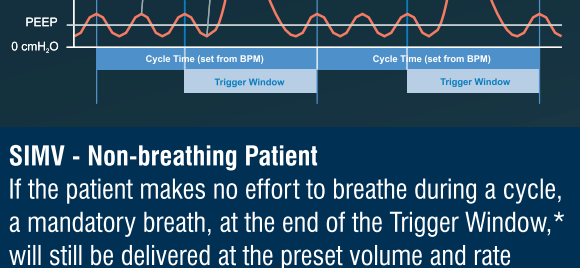
Advanced Spontaneous Breathing Modes

The VENTOXYN ventilator provides three support modes that can be utilised as the patient attempts to breathe spontaneously. Patient recovery is accelerated by increased tidal volume and SpO_2, and reduced $EtCO_2$.

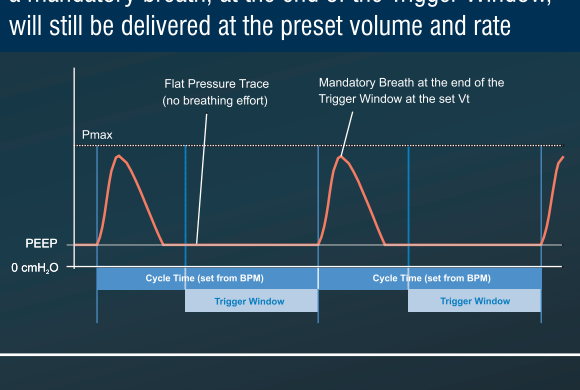
SIMV Synchronised Intermittent Mandatory Ventilation

Guarantees a minimum level of volume. SIMV allows spontaneous breaths and set mandatory breaths

SIMV - Spontaneously Breathing Patient
Negative pressure† in the Trigger Window* (generated by the patient's spontaneous breath) results in a synchronised mandatory breath at a preset volume and rate



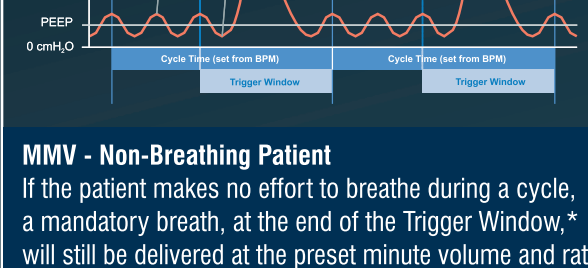
SIMV - Non-breathing Patient
If the patient makes no effort to breathe during a cycle, a mandatory breath, at the end of the Trigger Window,* will still be delivered at the preset volume and rate



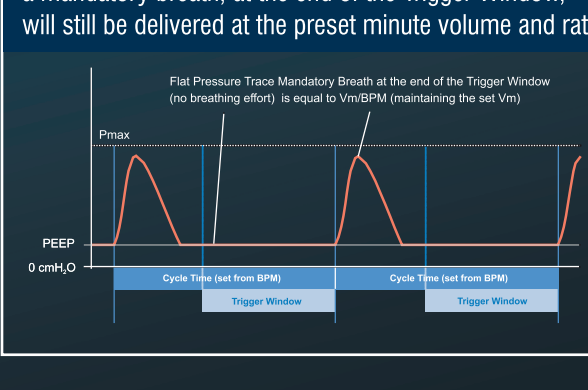
MMV Synchronised Mandatory Minute Ventilation

Guarantees a set level of minute volume ventilation. SMMV allows spontaneous breaths, combined with a synchronised mandatory breath, to achieve the set minute volume

MMV - Spontaneously Breathing Patient
Negative pressure† in the Trigger Window* (generated by the patient's spontaneous breath) results in a synchronised mandatory breath, ensuring that the set minute volume is achieved



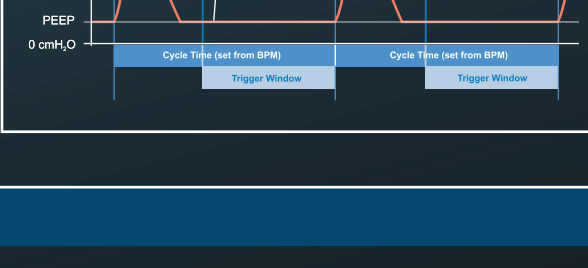
MMV - Non-Breathing Patient
If the patient makes no effort to breathe during a cycle, a mandatory breath, at the end of the Trigger Window,* will still be delivered at the preset minute volume and rate



PSV Pressure Supported Ventilation

PSV assists each spontaneous breath with a preset pressure, thus reducing the effort required to breathe. Negative pressure (generated by the patient's spontaneous breath) results in synchronised pressure support

PSV is used to support spontaneously breathing patients ONLY
If the patient makes no attempt to breathe, the ventilator will not provide support and the apnoea alarm will be activated



*Trigger Window = 60% of Cycle Time †Negative relative to PEEP

Plug your etCO2/Gas-Analyzer Sensor

Capnography is synonymous with patient safety during anesthesia and sedation.Therefore we put a special attention to satisfy all user requirements by considering a gas-analyzer plug-in into the ventilator panel. All you have to do is connecting the right sensor and the ventilator automatically set the alarm limits, displays the waveform and alert the user to zero calibrate the sensor. Gas-Analyzing makes no difference at all, it would take minimum user effort to set up his settings.

Ventilator Self-Test

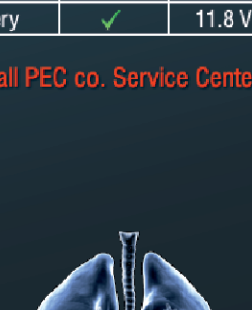
Giving the right maintenance service at the right time is extremley vital for the anesthesia machine. Self-Test at the ventilator startup checks all the major parts in the machine which are essentials to guarantee the best system performance.
A brief report about each part readings can help the PEC after services to locate the problem easily, besides any of those parts run out of order the user will instantly informed by the machine. For those cautious faults you can Bypass and call our service center at a better time while some others need an instant action.

INSTANCE	STATUS	COMMENT
Nand Flash	✓	-
e2prom	✗	-
Insp Sensor	✓	67 VDC
Exp Sensor	✓	60 VDC
O_2 Sensor	⚠	25 mA
Battery	✓	11.8 VDC

Call PEC co. Service Center !!!

Dynamic Lung

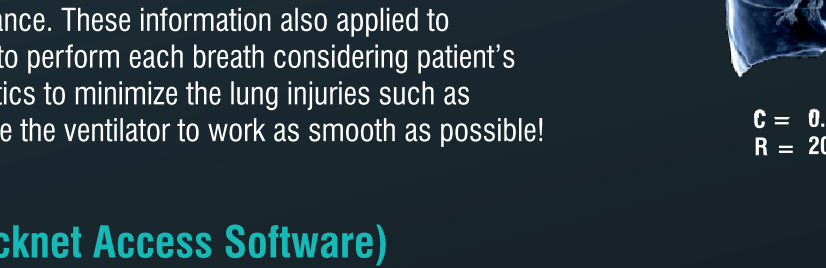
The Dynamic Lung panel is part of the Ventilation Monitoring. It displays tidal volume, lung compliance, patient triggering and resistance in real time. The Dynamic Lung expands and contracts in synchrony with actual breaths. The shape of the lungs also changes with compliance. These information also applied to VENTOXYN software to perform each breath considering patient's individual characteristics to minimize the lung injuries such as volutrauma, this cause the ventilator to work as smooth as possible!



C = 0.05 L/cmH_2O
R = 200 cmH_2O/L/s

IT System (Quicknet Access Software)

Each anesthesia machine have the ability to connect to PEC's central IT system via Quicknet Access Software. The IP will set on the anesthesia machine and the information is broadcast by WiFi. User have the ability to watch all the waveforms in real time, better say the whole ventilator panel in his desktop screen. In addition there are profiles which can be introduced to manage the patient and their case study information. Watching trends of vital parameters for 48hr is other facilities of the software.



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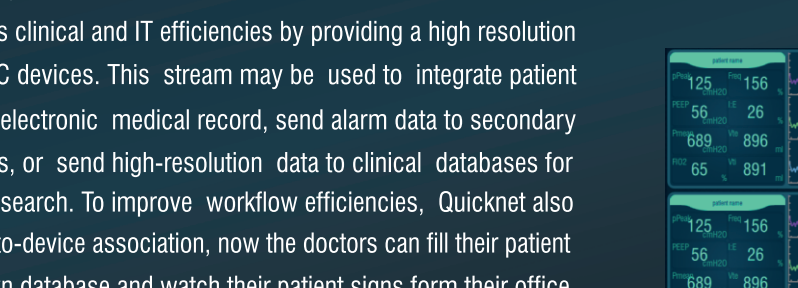
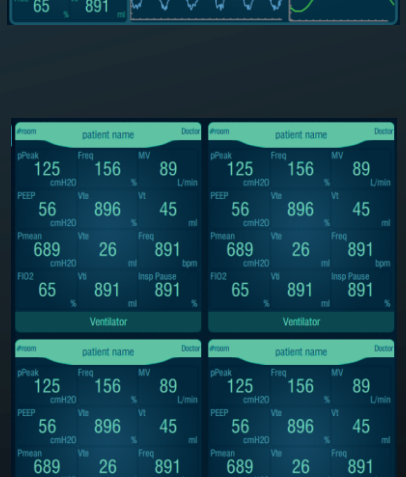
Universal IT Network Solution

Universal Quicknet Access brings the view and review of vital signs data to the clinician wherever they need to see it. It can be deployed directly to the hospital computers, laptops and mobile workstations and to handheld Tablets by installing the PEC Quicknet Access Software. QuicknetAccess can be launched from a installed portal which convert the information between anesthesia machines to any device that is connected to the PEC server by means of thin software. Our goal is to make a Universal Network which connect to all PEC manufactured healthcare devices such as patient monitoring systems and syringe pumps to monitor the patient's vital signs and track one in hospital sections. This enables us to use the hospital network for connections between services and to the central database. This is the only practical method for capturing data from wireless portable monitors using the hospital's wireless provision. The need for separate or duplicate networks is thus removed. It supports real time views across ED, surgery and critical care.

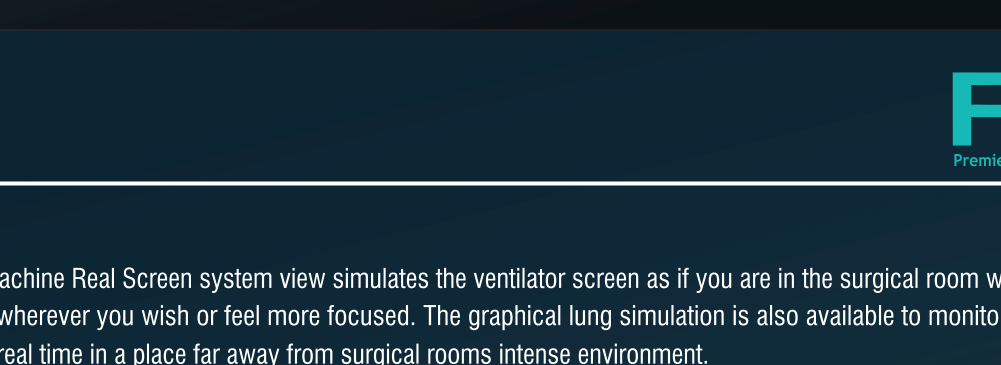


Today's clinicians expect data to be available at their fingertips. PEC's connectivity system carries vital information to clinicians across services and at sites in real time. It can also bring it to your desktop and gadget devices. Working seamlessly with Electronic Medical Records systems it can supply both numeric and waveform data which is beneficial for educational institutions to research among data analysis Quicknet Access maximizes clinical and IT efficiencies by providing a high resolution data stream of all your PEC devices. This stream may be used to integrate patient monitoring data with your electronic medical record, send alarm data to secondary alarm notification systems, or send high-resolution data to clinical databases for streaming analytics and research. To improve workflow efficiencies, Quicknet also enables automated patient-to-device association, now the doctors can fill their patient vital information in their own database and watch their patient signs form their office during the surgery or critical care. Centricity Patient Classification reports offer many benefits for various roles ithe organization.



- Patient demographic information including patient name and patient ID.
- Vital parameters compact view to get more information at a glance.
- Controlling intern workflow at educational organizations.
- Effective alarm traction at each anesthesia system for supervisors.
- Over 18 systems monitoring at a time with fascinating graphics.
- Variety of interfaces including grid view and Real Screen system view.
- Interfaces are available for a variety of devices, including ventilators, transcutaneous gas monitors, syringe pumps & monitors.

The Anesthesia machine Real Screen system view simulates the ventilator screen as if you are in the surgical room working with the real device, from wherever you wish or feel more focused. The graphical lung simulation is also available to monitor patient's lung characteristics in real time in a place far away from surgical rooms intense environment.



- Numeric Parameter Data are updated at a rate of once every 2 seconds. Additional data averaging varies on a parameter-by-parameter basis depending on algorithm used in the acquisition device.
- Parameter alarm limits including current upper and lower limit settings for each monitored parameter.
- Alarm status is available for each monitored parameter. Examples include (High Airway Pressure, Low Tidal Volume and etc.)
- Over 200 hour of alarms and vital parameters trend which is saved in a user filter adjustable database.
- Easy date and time switch through hours and even seconds of ventilation.
- Search through any Volume, Flow and Pressure waveforms at the data management page.

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