



## Anaesthetic Monitoring & Ventilation Equipment Catalogue

### **Anaesthetic Monitors**

Including the Lightning multi-parameter & the new version of The Impact III

### **Small Animal Ventilation**

From the latest SAV04 to the Merlin, a ventilator capable of being used across your entire practice

# Welcome...

## to Vetronic by Burtons

Welcome to the Vetronic by Burtons catalogue, which we have put together to introduce you to the Vetronic anaesthetic monitoring and ventilation product range.

All designed & manufactured by **Vetronic by Burtons**, specifically for the veterinary market. Inside, you will find key features, images, and specifications for our most popular Vetronic products.

If you have any enquiries on the products, or are looking for some guidance and inspiration, our product experts are always happy to assist, either over the phone or for in-practice product demonstrations. Call us on **02 7221 222** or send an email to **vetman@vetman.fi**.

Please visit our **distibutors** website for additional product and company information. Orders can be placed online at **www.vetman.fi** or by calling **02 7221 222**.

Many thanks,  
Keith Simpson, BVSc MRCVS MIET.  
Clinical Director,  
Vetronic, By Burtons



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## Veterinary temperature monitor with comfort zone indicator

A robust hand-held temperature monitor designed specifically for the veterinary market.

### Key Features:

- Clear LCD screen for easy viewing
- Red/green flashing LED indicates comfort zone
- Can be used on all species from mice to elephants
- Compatible with industry-standard YSI 400 series temperature sensors
- Housed in rubber protective boot to withstand drops and knocks.
- Long battery life: 200 hours run time/ 6 months standby
- Can be configured for use with Vetronic range of mini sensors
- Can be used with the Vetronic Oesophageal Temperature Sensors in cats, dogs & horses

Maintaining your patient in the comfort zone (39.3C to 36.6C / 103.2F to 97.9F) gives re-assurance against hyperthermia and hypothermia.

This simple to use monitor is compatible with the industry-standard 400 series of temperature sensors. We also manufacture a range of miniature sensors for the MiniTemp so the unit can be used with all species ranging from mice to elephants.

The MiniTemp is a small, handheld battery operated temperature monitor designed specifically for use with animals. The monitor supports two common ranges of temperature sensor - the industry-standard YSI 400-compatible range and the 8415 miniature range. The miniature sensors measure just 1.2mm in diameter and are suitable for use with small mammals and exotic species.

The standard temperature sensors measure 4mm in diameter and are suitable for all larger species. The introduction of the concept of a comfort zone for temperature monitoring is designed to enable the user to see at a glance if the animal is within the comfortable range of body temperatures.

The comfort zone is designed for use with mammals and has a lower limit of 36.6C(97.9F) and an upper limit of 39.6C (103.2F). This relates to one degree above and two degrees below normal body temperature. When the temperature being monitored is within the comfort zone the LED at the top of the unit flashes green.



# Anaesthetic Monitoring

For temperatures outside the comfort zone, the LED flashes red. The unit is housed in a robust rubber boot resistant to drops and knocks. The boot also has a built-in tilt stand for improved viewing angles.

## Technical Specification

### Mechanical

Dimensions	86mm x 145mm x 34mm
Weight	125g (225g with fitted rubber boot)
Construction	Rugged ABS plastic case housed in a rubber boot

### General

Screen size	25mm x 18mm
Screen type	128 x 64 pixels, transfective LCD
Electrical supply	Alkaline or rechargeable 9v PP3 battery only
Battery life	200 hours run time, six months standby

### Temperature Sensors

Temperature range	5C to 45C
Accuracy	+/-0.1C within specified range. Accuracy outside of this range is unspecified
Standard 400 series: Rectal Type	2m x 4mm, terminated in 6.35mm standard jack plug
Surface type	2m x 8mm disc, terminated in 6.35mm standard jack plug
Miniature Series (8514): Rigid probe	1.2mm tip housed in a 2mm x 80mm rigid metal probe
Flexible probe	1.2mm tip housed in a 2mm x 270mm flexible sheath, terminated with a 3.5mm jack plug



## Three units in one, with optional configuration

An easy to use hand-held monitor for prep-room or theatre

Combining end-tidal CO2 measurement with pulse-oximetry and temperature, the Impact-III delivers performance and reliability in a robust portable unit.

Impact III is an acronym, standing for 'Instant Monitoring of Pulse-Oximetry And Capnography And Temperature'. As such, Impact-III delivers all that it's name suggests: numerical and trace information is shown for all parameters, including capnography, within 15 seconds of turning the unit on.

The interface to Impact-III has been made simple and easy-to-use, so in most cases all that is required is to switch the unit on and start monitoring.

In addition, any changes made to settings will automatically be saved in memory and retained between uses.

There are simple to use alarms featured for all three monitoring units. These all follow the same pattern for set up, making the system intuitive to use.

All alarm conditions are clearly reported on the main screen, with an option to silence (60 seconds) or cancel.

Impact III can be fitted with a temperature module to support either 400 series probe or 8415 probe, but not both

### Key Features:

- Clear, high-visibility screen for easy viewing
- Battery or mains powered for portability
- Optional configuration: capnograph; pulse oximeter; temperature - or all three
- Micro-stream sampling suitable for all animals over 100g
- Self-calibrating capnograph
- Reliable SpO2 and pulse-rate measurement



# Anaesthetic Monitoring

Technical Specification	
Mechanical	
Dimensions	25cm x 12cm x 10cm
Weight	700g
Construction	Rugged polyamide construction in dark grey

General	
Screen size	72mm x 50mm viewing area
Screen type	Colour QVGA 320 x 240 pixels. Backlit high contrast LCD
Electrical supply	Internal rechargeable NimH batteries with mains charger
Electrical classification	Impact III is a class II electrical device
Power	15W maximum
Battery Life	6 hours continuous use with all three modules fitted
Battery recharge time	5 hours from full discharge
Sidestream Capnograph: CO <sub>2</sub> detection range	0-15% (0-1140mmHg)
Accuracy	+/-2%
Respiratory rate range	0-150 breaths/min
Sampling rate	50ml/min fixed rate
Alarms	High ET, Low ET, High FiCO <sub>2</sub> , Apnoea time
Pulse Oximeter: Sensor Type	Dual beam (Red/IR) transmission or reflectance
Range	18 to 450 pulses per minute 0 to 100% saturation
SpO <sub>2</sub> accuracy	70 to 100% +/-2%
Pulse rate accuracy	+/-2%
Alarms	Low saturation, High HR, Low HR
Temperature Capability	1 or 2 sensors
Measurement range	5C to 55C (41F to 131F)
Accuracy	+/-2%
Sensors	Either YSI 400 series - compatible or MiniTemp-compatible
Alarms	High T1/T2, Low T1/T2, Max Delta

## Multi-parameter, colour touchscreen monitor for all animals

A FULLY featured, veterinary specific, multiparameter monitor. With options to include ECG, CO<sub>2</sub>, Agent, Pulse Oximetry, IBP, NIBP and temperature, the Lightning monitor delivers full monitoring performance in a robust, compact unit

### Key Features:

- 6-inch colour touchscreen
- Portable, battery-powered unit
- Lightning weighs just 1.4kg when fully fitted
- Comes with a full PC software suite for monitoring and recording all your data
- Supports the following modules:
  - ECG, Pulse-Oximetry, Capnography, Agent, NIBP, IBP, Temperature, Wireless, USB stick
- Single channel or six-lead ECG module option
- 50ml per minute microsampling sidestream rate
- ECG noise suppression filter
- Fully diagnostic ECG with supporting software
- Single or dual-channel IBP available
- Dual-channel temperature as standard
- PC connection via USB cable or wireless
- Full data recording
- Suitable for general practice and research
- Designed and manufactured in the UK



Automatic anaesthetic record creation



Live stream patient data





# Anaesthetic Monitoring

The Lightning multi-parameter monitor from Vetronic Services is a fully featured, veterinary-specific monitor.

The Lightning is simple to use and can be turned on and connected to the patient in seconds. Using our own embedded software means the time from turn on to display of monitoring data is just four seconds. Lightning has been designed to fit the needs of small animal practitioners, large animal practitioners and research establishments alike.

With a monitoring range catering for exotic species, the Lightning monitor is capable of measuring heart rates up to 600bpm (ECG) and 450bpm (Pulse-Oximetry). A dual-channel invasive blood pressure module allows simultaneous monitoring of arterial and venous lines and the dual-channel temperature module provides two temperature values (as well as the difference or delta value).

Information is displayed on an intuitive, simple to use colour touchscreen, with a user-configurable layout with the functionality to easily add or remove traces. When connected to a PC using either the USB cable (included) or the optional wireless link, all monitoring data is shown on our VitalMonitor software program (below) and can be recorded for future review. A second program, VitalStore, allows a full review of your data and can automatically produce anaesthetic record charts as well as ECG and other monitoring reports. The ECG review feature allows full measurement of the ECG waveform, along with mean heart rate and VVTi calculations.



# Lightning Multi-Parameter Monitor

General	
Weight	1.4kg (all options fitted)
Dimensions	225mm x 205mm x 80mm
Power	Internal lithium polymer battery pack, 7.4v 3.8Ah capacity. 9V 20W DC universal input mains charger
Connectivity	USB: 2.0 compliant, B connector for direct PC connection; 2.0 compliant A connector for use with external USB stick Wireless: Enhanced Bluetooth 2.4GHz link to remote PC
Mounting	Optional pole mount, wall mount or cage hanger

ECG Module	
Type	Fully isolated single-channel or six-lead.
Range	+/- 5mV, 6 to 600bpm
Input Impedance	5MOhms

Pulse-Oximetry module	
Sensor Type	Dual-beam (red/IR) transmission or reflectance
Range	18-450bpm, 0 to 100% saturation
SpO2 accuracy	10-100% +/-2%
Rate accuracy	+/- 3%

Gas monitoring module	
Monitored gases	CO2, Anaesthetic agents, Nitrous oxide and Oxygen (Oxygen by external module only).
Supported anaesthetic agents	Isoflurane, Sevoflurane, Desflurane, Halothane, Enflurane
Detection	Nine-channel, non-dispersive infra-red. Oxygen by paramagnetic sensor
Warm-up time	10 secs first reading; 60 secs full accuracy
Agent detection threshold	0.2%
Accuracy	CO2, Agent and N2O better than +/-0.2%. Oxygen better than one per cent

# Anaesthetic Monitoring

Invasive blood pressure module	
Range	0 to 300mmHg, 10-600bpm
Accuracy	+/- 1mmHg
Modes	Pulsatile (arterial line), Static (CVP, CSF pressure)
Sensor	Industry-standard disposable, 5uV/V/mmHg

Dual temp module	
Range	10° to 45°C (50° to 113°F)
Sensors	2 x industry-standard 400-series or 8415 for exotics
Accuracy	+/- 0.1 degree

NIBP module	
Measurement method	Oscillometric
BP range	2 x industry-standard 400-series
Pulse rate range	+/- 0.1 degree
Start-up initialisation	7 seconds
Supported cuff sizes	Neonate #1 (3-6cm) to Neonate #5 (8-15cm), plus human cuff sizes
Sampling modes	Manual or Automatic
Automatic interval	1-120 minutes in one-minute steps

## Oesophageal ECG & Temperature Probes

Oesophageal probes provide a convenient & simple way of monitoring and anaesthetised patient during surgery.

### Key Features:

- Easy to use
- Available in a range of 3 sizes suitable for cats and dogs
- Available in one size for horses
- Standard connectors for ECG & temperature information
- Made from polyurethane and stainless steel for long life
- Easy to clean
- Provides core body temperature values

Oesophageal probes provide a convenient way to monitor a number of parameters, the most common of which are ECG and body temperature. The probe is lightly lubricated before introducing it into the oesophagus and passing it down to the level of the heart. Once in place, the electrodes spanning the heart pick up the ECG signal and convey it to the connectors at the end of the probe.

The tip of the oesophageal probes house an industry standard thermistor which can be used with most monitoring systems to display the measured temperature. Measuring temperature at this level provides a good core-body reading & provides an excellent reference for a peripheral sensor when core-peripheral gradients are being measured.

The **best solution** for measuring core temperature & ECG simply & conveniently, not having to re-adjust during your surgery



# Anaesthetic Monitoring

The probes are made of stainless steel and polyurethane, both chemically inert materials suitable for repeated use in the veterinary environment and making them easy to clean after use. Using oesophageal probes for monitoring reduces the number of other peripheral attachments required and helps to reduce clutter across the operating table.

Technical Specification	
Mechanical	
Weight	Small: 24g Medium: 30g Large: 34g Equine: 239g
Length	Small: 28.5cm Medium: 47.5cm Large: 66cm Equine: 2m 57cm
Diameter	Small: 5mm Equine: 12mm
Construction	Polyurethane body with stainless steel electrodes

General	
ECG	The ECG signal is taken from the end-connector for use with Vetronic equipment. For other monitors, a standard adaptor is available

Temperature	
Two sensor types are available	
YSI-400 Sensor	For use with standard monitoring equipment
8415 Sensor	For use with Vetronic MiniTemp monitors
Oesophageal Probes are available with either temperature sensor fitted. Please specify when ordering	

## Safe, simple, pressure cycled ventilation for small animals

The SAV04 incorporates a host of new features for improved control of IPPV

### Key Features:

- The SAV04 is an enhanced version of our SAV03
- Now incorporates alerts and alarms for ventilation status - Patient disconnect, Over-pressure, Apnoea, Valve disconnect or failure
- Measurement of inspiratory time & respiratory rate
- Microprocessor controlled
- Select-and-commit entry to prevent false changes
- Easy and intuitive to use
- Compact, rugged unit
- Internal battery for portable/ mobile use
- Clear, bright visual display
- Designed and manufactured in the UK

The SAV04 is an enhanced version of the long-standing SAV03 ventilator and uses the same principles of simple, pressure cycled ventilation.

In the re-development of the ventilator, features have been added to improve patient control and to improve ventilation status feedback. For example, there is now an automatic over-pressure alarm that will sound if the target pressure is exceeded by 8cm. There is also an alarm if the patient becomes disconnected from the ventilator, or if no back-pressure is detected during the inspiratory phase.

These alarms are designed to be informative and are accompanied by explanatory text on the main screen. In addition, an audible beep is produced on every successful breath. Both this beep and the alarm beeps can be individually silenced if required.

There is a new valve design to accompany the new ventilator and this has two major benefits. Firstly, the valve can be automatically zeroed on any other SAV04 machine, allowing valves to be swapped or replaced easily.



# Small Animal Ventilator

Secondly, a larger orifice in the exit port of the valve means the port can now support larger animals. The 12mm diameter exit orifice will now allow unrestricted expiration in animals up to 40kg.

It must be remembered, the principle of operation is still based around a T-piece, so proportionately higher fresh gas flow rates will be required. However, with the advent of oxygen generators, running such a system on 8-10L us feasible for short-term or emergency use.

The new display now provides more information to the user. A central rising bar graph shows the pressure in the patient's airway, enabling quick assessments to be made of system and/or ET tube leaks. Each inspiratory period is now measured and displayed on the screen as the measured respiratory rate.

The SAV04 provides a simple, yet safe, way to ventilate your smaller, most vulnerable patients

Technical Specification	
Mechanical	
Dimensions	170mm x 170mm x 95mm
Weight	1.2kg
Construction	Anodised aluminium case with end protectors

Electrical	
Supply voltage	9volt DC, 2 amp universal input charger
Power Consumption	15 watts
Rear panel fuse rating	2 amps

General	
Intended use	Domestic animals up to 12kg in weight (Up to 40kg with high flow rates)
Anaesthesia apparatus configuration	T-piece with fresh gas & anaesthetic agent in a non-rebreathing circuit.
Mode of operation	IPPV by outlook occlusion. Pressure-cycled/pressure limited device
Preset trigger range	1-60 centimetre water pressure
Resolution	1 centimetre water pressure
Expiratory phase range	0.1 to 60 seconds
Respiratory rate range	1 to 120 breaths/minute (depending on inspiratory fresh gas flow rate)

## One ventilator for all your small animal practice needs

### Key Features:

- Precise, reliable control over all ventilation parameters
- Fits into rebreathing and non-re-breathing circuits
- Pressure cycled, time cycled or volume cycled IPPV
- Patient disconnect & over-pressure alarms
- 80-character screen & high definition LEDs give full parameter information: Tidal volume/ Minute volume/ Inspiratory & expiratory airway pressure/ I:E ratio/ patient compliance/ respiratory rate/ inspiratory & expiratory time/ max allowed airway pressure/ assist effort
- Purpose-designed stainless steel & silicon valves for precise flow control
- Standard 22mm/15mm fittings
- Suitable for anaesthesia or ICU
- Mains powered with fail-safe operation

The Merlin is truly innovative in being the first veterinary ventilator to calculate and display the compliance of the patient being ventilated.

Wouldn't it be nice to have one ventilator that you could use for all your patients, from small rodents to large dogs?

Well, the Merlin veterinary ventilator has been designed with just this in mind. Using the latest technology, Merlin is able to precisely control ventilation parameters to ensure your patient is as safe as can be during mechanical ventilation. Merlin doesn't require a compressed gas supply to operate, so is quiet and smooth. And, because Merlin is controlled by a state-of-the-art microcontroller, you can confidently set the independent ventilation parameters that you want, without compromise.

Merlin is a microprocessor-controlled ventilator, designed by vets for vets. We have done away with the conventional pressurised gas driving mechanism. This new ventilator uses a precisely-controlled piston that can accurately deliver volumes in the range 1ml to 800ml. Merlin can be pressure cycled, volume cycled, or time cycled and the inspiratory and expiratory times are fully and independently variable, without the need to re-adjust after changes in flow rates or volumes.





# Small Animal Ventilator

A pressure control allows you to set the maximum allowable pressure during volume cycling, or the target pressure during pressure cycling. A further added feature is the inspiratory assist control that will tune the ventilator to your patient during recovery and so assist weaning from the ventilator. On the front of the unit is a large, easily readable display that shows all of your selected parameters.

Mechanical	
Overall Dimensions	45 x 20 x 34cm
Weight	17kg
Construction	Enamelled steel box with feet

Electrical	
Power Supply	230 Volts AC 50Hz mains only. European and USA Versions Available
Supply Current	250mA
Power Consumption	60W
Rear Panel Fuse Rating	1A Antisurge
Plug Fuse Rating	5A

General	
Mode Of Operation	Microprocessor-controlled precision piston
Capacity	1ml to 40ml, in 1ml increments. 40ml to 120ml in 5ml increments. 120ml to 800ml in 10ml increments
Flow Rates	0.1 to 3.5L/minute, in 0.1L increments. 3.5 to 25.0 L/minute in 0.5L increments
Inspiratory/expiratory times	0.5 to 9.0 seconds, in 0.1 second increments
Pressure Settings	1 to 57cm H <sub>2</sub> O pressure, in 1cm H <sub>2</sub> O increments
Inspiratory Assist Settings	-1 to -10cm H <sub>2</sub> O pressure, in 1cm H <sub>2</sub> O increments
Valves	Electrically-operated solenoid valves, stainless steel and silicon construction
LCD Module	Backlit 80-character , four-line display
Alarm Mode	Audible: 2kHz buzzer. Visual: Flashing red LED and screen message
Gas connections	Front fixing 22mm O/D, 15mm I/D, stainless steel ports
Power failure mode	All valves open, Manual IPPV can be performed

## Our new Limb Plate Electrodes for stress-free ECG's!

Do you wish there was an easier & pain-free method of attaching your ECG electrodes for a cardiac workup or monitoring session?

We would like to introduce our new Limb Plate Electrodes for small animals. These stainless steel electrodes attach to the patients limb using a soft velcro wrap that is suitable for patients from cats to Great Danes.

Easy to attach, the Limb Plate Electrodes also allow simple connection to the ECG cable by accepting a standard 4mm banana plug, as found on most ECG cables. Alternatively the crocodile clip can be clipped directly to the metal plate. A contact gel, isopropyl alcohol or eletrolyte solution, is used as the contact medium and is applied prior to attaching the limb plates for a lasting durable contact.

### Dimensions:

Plate: 3 x 2cm

Velcro strap: 19 x 2cm



### Our Limb Plate Electrodes are suitable for:

Anaesthetic Monitoring  
Post-op Monitoring  
Diagnostic ECG's on conscious animals

# Purchase your Vetronic equipment & accessories online



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**Vetman** Etäi tuotteita tuotekoodilla tai hakusanalla

Koti > Burton's Veterinary Equipment > MERLIN ventilaattori pieneläimille

### MERLIN ventilaattori pieneläimille

Burtons

**8.100,00€**

Tuotekoodi: MERLIN

Määrä: 1

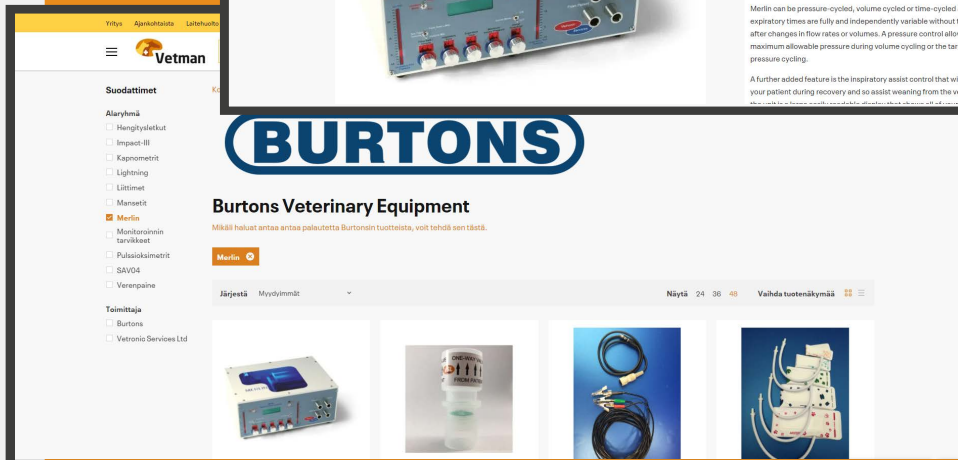
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**Esittely** Merlinin alustaa Tekniset tiedot Videot

MERLIN is a microprocessor-controlled ventilator designed by vets for vets. We have done away with conventional pressurised gas driving mechanisms and use a precisely controlled piston that can accurately deliver volumes in the range 1ml to 800mls.

Merlin can be pressure-cycled, volume cycled or time-cycled and the inspiratory and expiratory times are fully and independently variable without the need to re-adjust after changes in flow rates or volumes. A pressure control allows you to set the maximum allowable pressure during volume cycling or the target pressure during pressure cycling.

A further added feature is the inspiratory assist control that will tune the ventilator to your patient during recovery and so assist weaning from the ventilator. On the front of



Yhteisö Apurakenteita Lehtihuolto

**Vetman**

### Suodattimet

Alaryhmä

- Hengityslaitteet
- Injektorit
- Kapromerit
- Lightit
- Lämpimet
- Manneetit
- Merlin
- Monitoroinnin
- Sähkökoneet
- Pulssilokamerat
- SAVD4
- Verenpaine

Toimittaja

- Burtons
- Vetronic Services Ltd

## BURTONS

### Burtons Veterinary Equipment

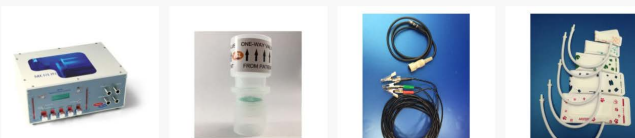
Mikäli haluat antaa palautetta Burtonsin tuotteista, voit tehdä sen tästä.

**Merlin**

Järjestä Myödyntämät

Näytä 24 36 48

Vaihda tuotennäkymää



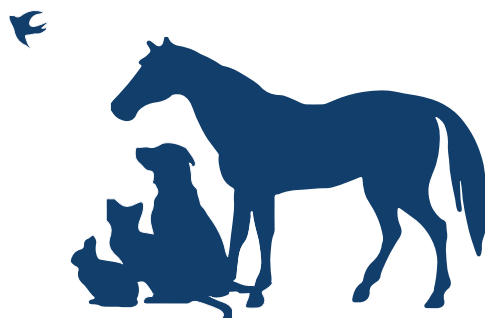
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in the UK  
since 1981

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