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# Двойной газовый модуль Sidestream для VM3Vet Pro, VM5Vet Pro, VM7Vet Pro. Техническое описание

**Bionet America, Inc.**  
 2691 Dow Ave., Ste. B, Tustin, CA 92780

## Dual Gas

### Accessories

Item Code	Item Image	Product Description
DG-SENSOR		Dual Gas module set - Includes Dual Gas Module 1 ea, Water Trap 1 ea, Sample Line 1 ea, Airway Adaptor (straight) 1 ea, Mounting Kit 1 set, 1 year warranty
DGA-WT		Water Trap
DGA-SL		Sample Line with Luer Lock (8')
DGA-AAS		Airway Adapter (straight)
DGA-AAL		Airway Adapter (L type)



### Technical Specifications

CO2	Range	0 – 100 mmHg; 0 – 13.3 kPa; 0-10% CO2 STPD (standard temperature and pressure dry)
	Accuracy	± (0.2 vol% + 4% relative)
	Rise Time	400 ms (average)
Anesthetic Agents	Gases	Isoflurane, Enflurane, Halothane, Desflurane, Sevoflurane
	Range	Iso., Enf., Hal., Sev.: 0 – 6% Des.: 0 – 18%
	Resolution	0.01%
	Accuracy	± (0.15% vol% + 4% relative)
	Rise Time	450 ms (average)
Calibration		Factory calibrated
Power Up Time		30 sec
Delay Time		< 4 sec
Dimensions	L x W x H	175mm x 85mm x 50mm
Respiration	Range	0-150 breaths/min
	Accuracy	±1 breath/min
Flow Rate	Range	170 ml/min
	Accuracy	±20ml/min
Environment Condition	Operating Temperature	15 – 35°C
	Storage Temperature	-5 to 50°C
	Ambient Humidity	15-95% RH
	Ambient Pressure	70kPa to 106kPa (525mmHg to 795mmHg)
Weight		400g
Water Removal System		Water trap tank
Sampling Line		Anesthetic gas tolerant standard sample line
Application	Veterinary Use Only	Species: Canine, feline, equine

### Dual Gas Module Monitors Both EtCO2 and Anesthetic Gases

- Dual Gas module is a sidestream multi-gas analyzer measuring end-tidal carbon dioxide (EtCO2) and one of five anesthetic agents (isoflurane, sevoflurane, enflurane, desflurane and halothane) with manual selection of specific agent type.
- Dual Gas module is intended for the EtCO2 and anesthetic gas monitoring from the end-tidal breathing of small and large animal patients under general anesthesia.
- Plug-and-play with all BM Pro Series (BM3Vet Pro / BM5Vet Pro / BM7Vet Pro), BM3Vet Touch, and BM7Vet."

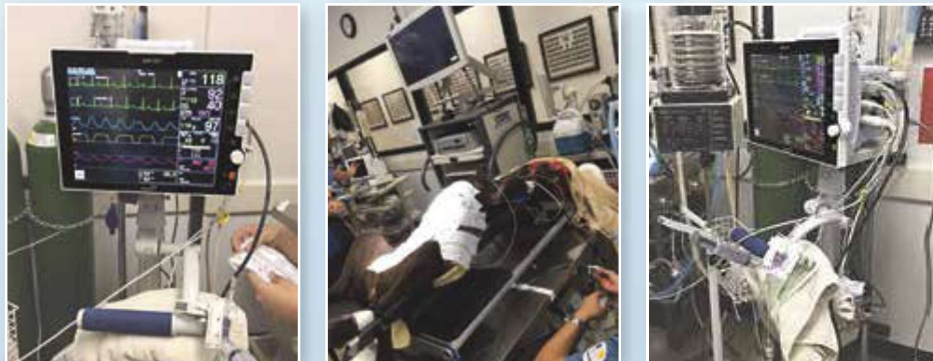
## Superior Advantages and Features

- ✓ Low cost, durable, and proven sidestream technology that accurately measures both EtCO<sub>2</sub> and the concentration of the anesthetic agent (5 different anesthetic agents selectable).
- ✓ 30 seconds warm-up time upon system initiation, and offers fast response time.
- ✓ Infrared (IR) light source with optical bandpass filtering technology allows the Dual Gas system to be free from frequent or routine high calibration (gain calibration) procedures using calibration gas, eliminating routine hustle of conducting system calibration to maintain accurate performance.
- ✓ Zero calibration ensures the system performs accurately regardless of environment.
- ✓ Proprietary advanced pneumatics and filtering system offer the highest protection and safety of the system in the sidestream technology.
- ✓ Large Water Trap filtering system allows the Dual Gas system to continually run without the need to frequently change the water trap, even in highly moisturized situations. Many other systems use moisture-absorbing filters, which require frequent filter changes.
- ✓ Water level detection feature helps prevent excess moisture for safer operation.
- ✓ Provides EtCO<sub>2</sub>, FiCO<sub>2</sub>, Respiration Rate, Anesthetic Agent Concentration, and MAC (Minimum Alveolar Concentration) parameters.

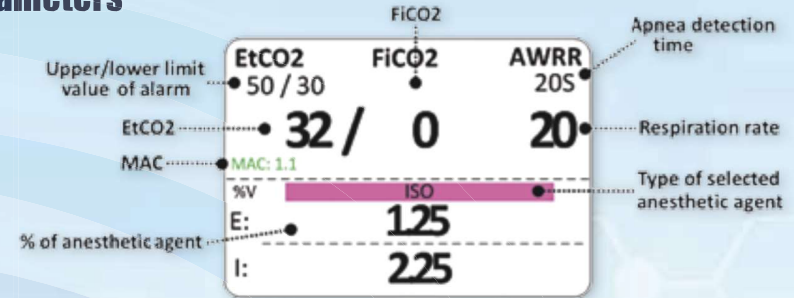
## Why Dual Gas Sensor?

- ✓ An alarm will sound if the values are out of range, while simultaneously monitoring CO<sub>2</sub> and anesthetic gas.
- ✓ Monitor the anesthesia maintenance through MAC parameter.
- ✓ May help prevent overdose of anesthetic gas.
- ✓ Monitor anesthetic gas concentration to help ensure proper functioning of your vaporizer.
- ✓ Records anesthetic gas volume from procedure.

## Display with Dual Gas (100 lb dog)

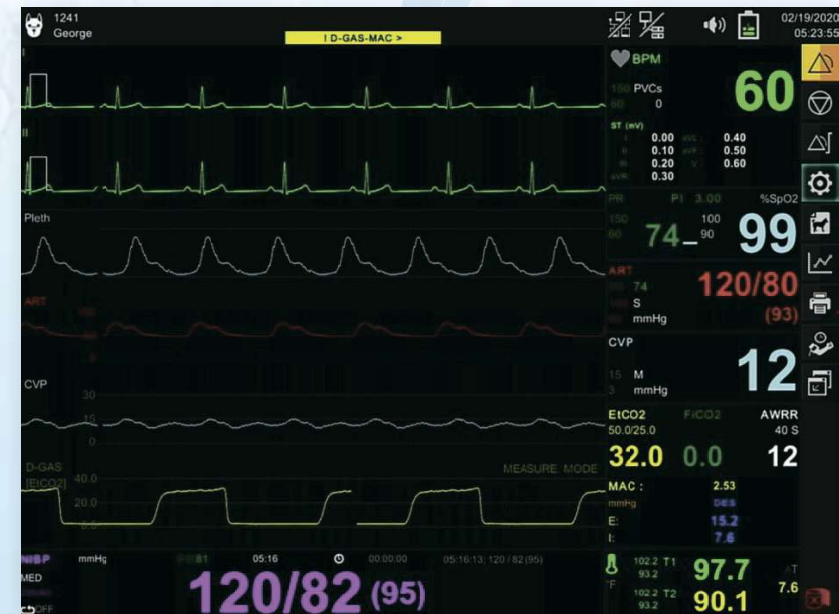


## Parameters



- ✓ **EtCO<sub>2</sub>:** Display of concentration value of carbon dioxide during expiration
- ✓ **FiCO<sub>2</sub>:** Display of concentration value of carbon dioxide during inspiration
- ✓ **Respiration Rate:** Display of the number of respirations per minute
- ✓ **Upper/lower limit value of alarm:** Display of alarm setting range value for the concentration of EtCO<sub>2</sub>
- ✓ **Apnea detection time:** Display of apnea setting time in second unit
- ✓ **% of Anesthetic Agent:** Display of concentration value of anesthetic agent during inspiration and expiration under mechanically ventilated general anesthesia.
- ✓ **MAC:** Minimum Alveolar Concentration of a gas at which 50% of subjects do not respond to surgical incision – MAC is a population average; not a true predictor of an individual's response

## Display with Dual Gas (Demo mode)



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