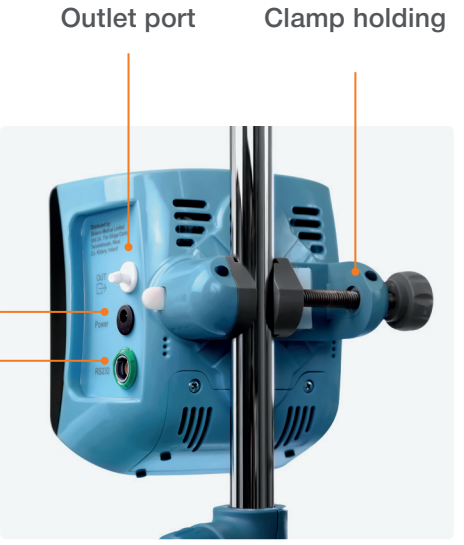
Multigas Analyzer AMG-06

Complete solution for anesthesiologists:
Anesthesia Gas Monitoring

Multigas Analyzer AMG-06 is intended for continuous non-invasive sidestream monitoring of CO_2 & anesthetics concentration in inspired and expired gases. The device also determines RSP, MAC index and measures atmospheric pressure in operating rooms and wards when providing anesthetic support.



Application	Anesthesiology, intensive care during postoperative period, prolonged sedation, resuscitation
Patient groups	All patient groups
Measured gases	Isoflurane, Sevoflurane, Desflurane, CO_2
Operation principle	Non-invasive, sidestream
High measurement accuracy	Technology based on the infrared method of measuring, enables to measure anesthetics and CO_2 concentration precise and fast due to an in-house high-precision sensor. Measurement accuracy corresponds to the standard ISO 80601-2-55
Patient’s safety	Manual selection of the anesthetic type, automatic detection of the incorrect choice. Accurate anesthetic concentration measurement ensures to make safe anesthesia, especially using low-flow method
Built-in battery	Turn-on automatically in the absence of power supply, allows the device to work autonomously up to 2 hours

Advantages

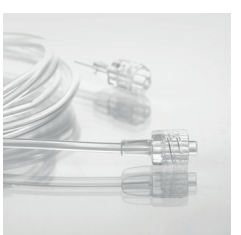
Design	Simple design, light weight, compact; portable device, can be used during intrahospital patient transportation; fits into any working environment. The device can be fixed on any surface due to its universal mounting system.
Operation	Intuitive interface, sensitive touch screen; minimum set of the most necessary functions; can be used with high-frequency electrosurgical devices; works with an external information system (MIS), possess Wi-Fi function; maintenance-free.
Safety for a patient	Suitable for low-flow anesthesia; automatic detection of installed water trap (adult or neonate version); displaying of the real time gas concentration; extended user friendly alarm system (visual and audible signals, text messages, vibration); alarm log and 72 hours trends with intuitive navigation system and alarm filtering, freezing of CO_2 and anesthetic graph in the main screen; integrated MAC calculator; safe use of consumables: the device has a special valve which prevents the reverse flow of gas through the sampling tube.
Accessories	All accessories are standard and easily accessible worldwide.

Screen Settings

Delivery Kit

Water trap adult

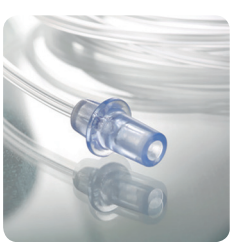
Sampling tube adult



Water trap pediatric / neonate

Sampling tube neonate

Exhaust gas tube



Technical Specification

Patient groups	All patient groups
Display	Touch screen TFT-display, 5”
Measurement	Non-dispersive infrared (NDIR)
Measured gases	Isoflurane, Sevoflurane, Desflurane, CO_2
Measuring parameters	FiISO, FiSEV, FiDES, FiCO_2, EtISO, EtSEV, EtDES, EtCO_2, respiratory rate (RSP)
Measurement range	ISO 0–5.0 vol.% (resolution 0.1) SEV 0–7.0 vol.% (resolution 0.1) DES 0–17.0 vol.% (resolution 0.1) CO_2 0–15.0 vol.% (resolution 0.1)
Accuracy	ISO ±(0.2% + 15% of gas level) SEV ±(0.2% + 15% of gas level) DES ±(0.2% + 15% of gas level) CO_2 ±(0.43% + 8% of gas level)
Sampling gas flow rate range	50–250 ml/min ±10 ml/min (or ±10% whichever is greater)
Display of registered parameters	Concentration of CO_2, anesthetics in digital and graphical form
Response time	2.5 s
Respiration rate range	0–160 breath per minute (BPM)
Alarms	Visual and audible. 3 levels of priority, physiological and technical alarms and events
Warm up time	ISO accuracy within 45 s (warming-up time). Full accuracy within 10 min (in normal mode)

Mains supply	100–240 V, 50/60 Hz
Built-in battery	2000 mA·h, Ni-Mh, up to 2 h of operation
Trends	72 h
Dimensions	170x155x135 mm
Weight	1.5 kg
Working surface	The device is portable and it can be placed on working surface or suspended and fixed at any surface near patient
Recording patient information	Age, gender, weight, height, admission date, admission diagnosis, clinical diagnosis, notes
Languages	Multi-language
Standards	Meet the requirements: ISO 80601-2-55, IEC 60601-1, IEC 60601-1-2
Calibration	Automatic and manual zero calibration. No routine calibration required

Application

To equip any type of anesthesia machines by multigas option

Approved for usage in combination with a ventilator and AnaConDa by Sedana Medical

It was explored the potential therapeutic role of volatile anesthetics during mechanical ventilation in the late stages of the disease

COVID-19 is thought to hit the human body via five major mechanisms: direct viral damage, immune overactivation, capillary thrombosis, loss of alveolar capillary membrane integrity, and decreased tissue oxygenation.

The literature suggests that these effects could be directly countered by using volatile anesthetics for sedation. These agents possess multiple properties that affect viral replication, immunity, and coagulation.

Sci. Pharm. 2021, 89, 6:
doi.org/10.3390/scipharm89010006

Scientists have identified the benefits of using volatile anesthetics for patients on prolonged mechanical ventilation

"In the early days of the COVID-19 pandemic, intravenous sedatives — sleep-inducing medications patients require to tolerate the uncomfortable procedure of being put on a breathing machine. [...] There is some evidence to suggest that these drugs may also have therapeutic properties that reduce lung inflammation, which may speed up recovery and reduce the time patients spend on a ventilator."

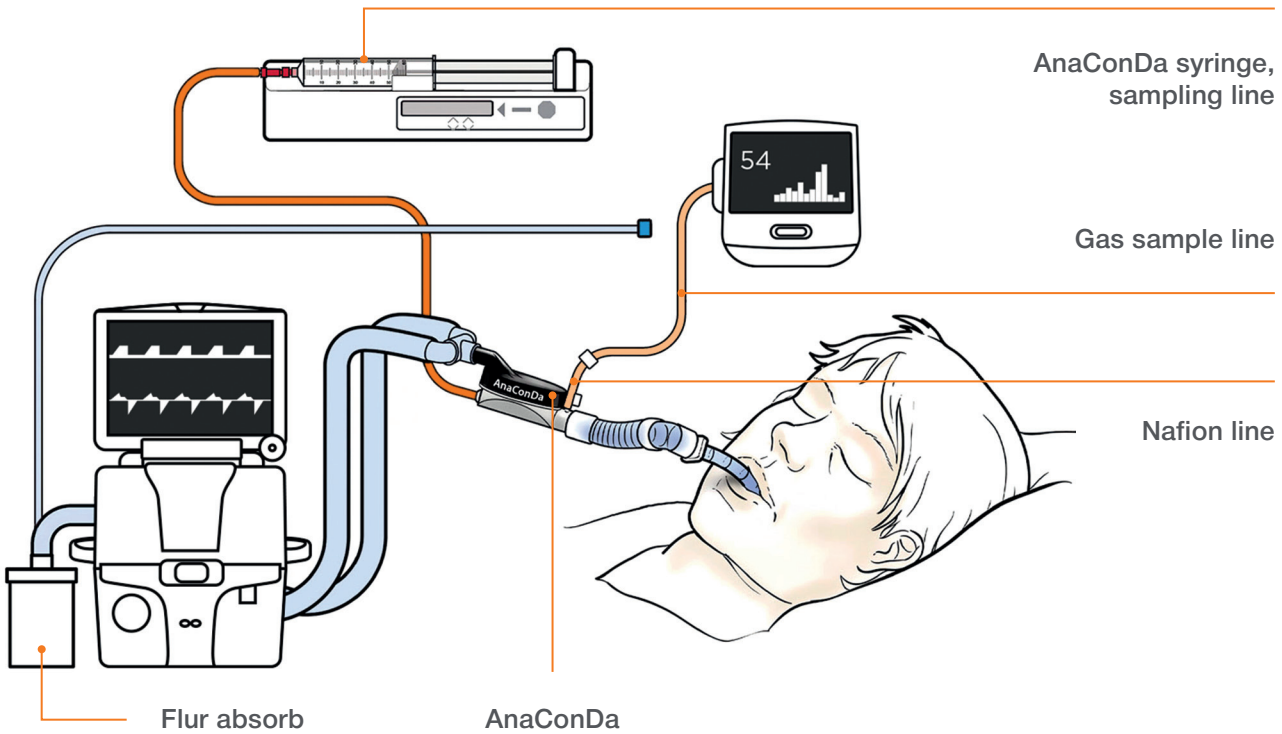
Samantha Sexton:
health.sunnybrook.ca/research/practice-change-icu-sedative-pandemic

Different studies show that when the patient is under prolonged sedation, especially in the context of the COVID pandemic, the use of volatile anesthetics is much more effective than intravenous anesthetics.

"In COVID-19 patients, the maximum recommended propofol dose of 4 $mg \cdot kg^{-1} \cdot h^{-1}$ ABW may not always be sufficient. In contrast, isoflurane provides sufficiently deep sedation with less polypharmacy, less NMBA use and lower opioid doses."

Journal of Anesthesia volume 35, pages 625–632 (2021):
doi.org/10.1007/s00540-021-02960-6

In the absence of an anesthesia machine, volatile anesthetics can be delivered using a ventilator. To control the concentration of the supplied anesthetics, it is necessary to use AMG-06 monitor



Inhalational sedation is practical, of low cost, and easily controlled. It also meets ASA safety guidelines for COVID-19 patients' sedation

Inhalational agents may mitigate the progression of the disease through many mechanisms: near-balanced immunosuppression, antiviral properties, antithrombotic effects, preservation of membranous and cellular integrity, improvement of tissue oxygenation and bronchodilation.

Sci. Pharm. 2021, 89, 6:
doi.org/10.3390/scipharm89010006

The severity of lung injury in COVID-19 patients correlates with levels of cytokines and viral load. Convincing preclinical data from others and us have shown that inhalational anesthetic drugs attenuate lung inflammation and dilate airways.

Sedating ventilated COVID-19 patients with inhalational anesthetic drugs Beverley A. Orsera, b, c, *, Dian-Shi Wangb, Wei-Yang Lud:
doi.org/10.1016/j.ebiom.2020.102770

Bedside end-tidal gas monitoring is very important, especially in the treatment of patients with COVID-19.

Bedside end-tidal gas monitoring (correlate of cerebral concentration) can be used to ensure gas delivery, assess concentration of drug needed to achieve a specific clinical sedation endpoint, re-breathing of carbon dioxide and device obstruction. Monitoring can be performed using a portable monitor or gas module compatible with the ICU monitoring system.

Angela Jerath, Niall D. Ferguson and Brian Cuthbertson
Intensive Care Med (2020) 46:1563–1566:
doi.org/10.1007/s00134-020-06154-8

We continuously improve the technological principles and implement new profitable solutions based on market demands

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