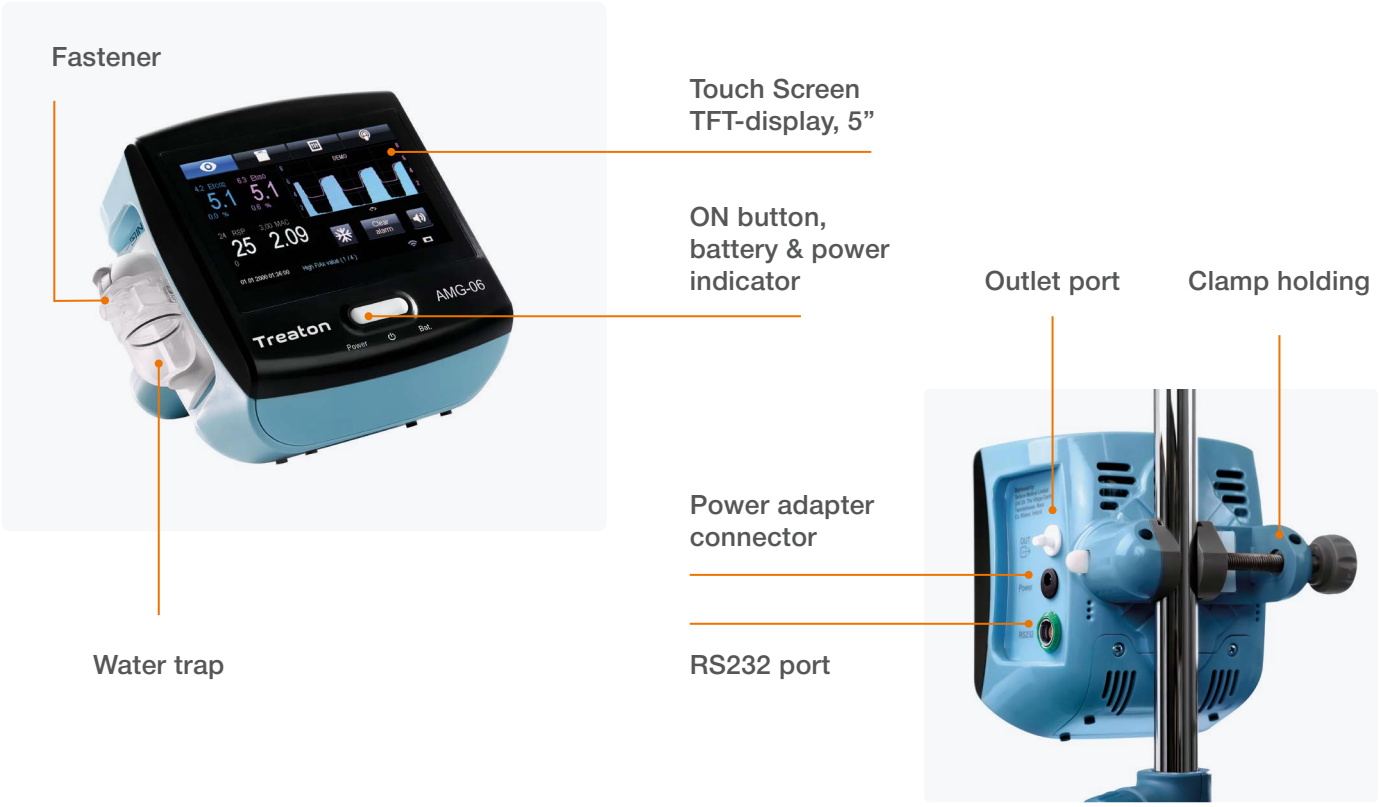
# Multigas Analyzer AMG-06

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 | Adult, children from 3-year-old |
| Measured gases | $CO_2$, Sevoflurane, Isoflurane, Desflurane |
| 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 touchscreen;
- 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**

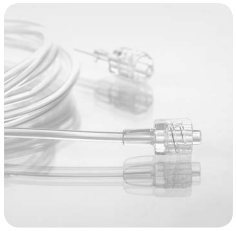
All accessories are standard and easily accessible worldwide.

# Screen Settings


# Delivery Kit

Water trap adult

Sampling tube adult



Water trap pediatric / neonate

Sampling tube neonate

Exhaust gas tube

# Technical Specification

| | |
|---|---|
| Patient groups | Adult, children from 3-year-old |
| Display | Touch Screen TFT-display, 5” |
| Measurement | Non-dispersive infrared (NDIR) |
| Measured gases | $CO_2$, Sevoflurane, Isoflurane, Desflurane |
| Measuring parameters | $FiCO_2$, FiDES, FiISO, FiSEV, $EtCO_2$, EtDES, EtISO, EtSEV, Respiratory rate (RSP) |
| Measurement range | $CO_2$ 0–15.0 Vol% (resolution 0.1)<br>DES 0–17.0 Vol% (resolution 0.1)<br>ISO 0–5.0 Vol% (resolution 0.1)<br>SEV 0–7.0 Vol% (resolution 0.1) |
| Accuracy | $CO_2$ ± (0.43% + 8% of gas level)<br>DES ± (0.2% + 15% of gas level)<br>ISO ± (0.2% + 15% of gas level)<br>SEV ± (0.2% + 15% of gas level) |
| Sampling gas flow rate range | 50–250 ml/min<br>±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,<br>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:<br>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."

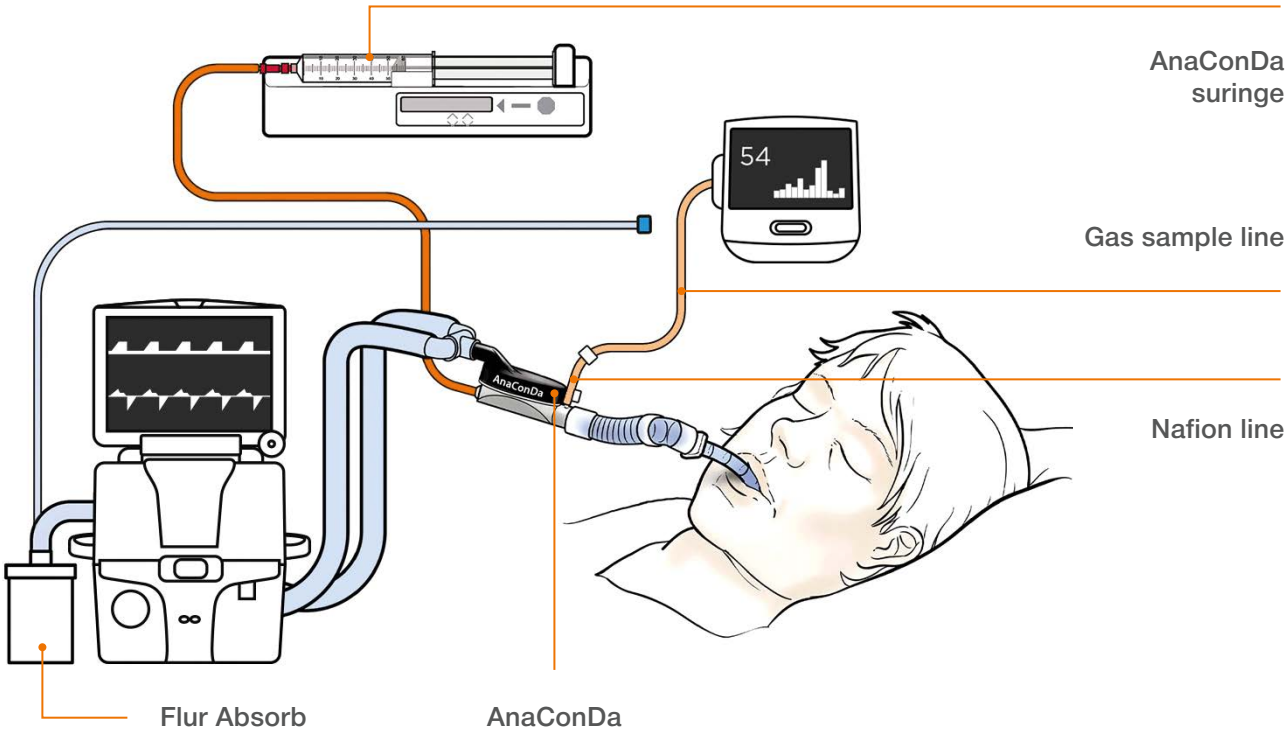
Samantha Sexton:
health.sunnybrook.ca/research/practice-change-icu-sedative-pandemic

**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·kg -1·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 specifc 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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