# ISA™ OR+™ Multigas Monitoring

## Supporting Anesthetic Agent and Ventilation Management


The ISA OR+ sidestream multigas analyzer with the Masimo Root® patient monitoring and connectivity platform provides the following features and benefits:

- During general anesthesia, the ISA OR+ monitors the inhaled and exhaled concentration of five anesthetic gas agents (Sevoflurane, Isoflurane, Halothane, Desflurane, Enflurane), carbon dioxide ($CO_2$), nitrous oxide ($N_2O$), and oxygen ($O_2$), in addition to respiration rate
- Requires only 50 ml sampling flow to support monitoring
- Time-saving in critical situations with virtually no warm-up time and full accuracy performance in less than 20 seconds
- Automatic anesthetic agent identification
- Supports monitoring patients with high respiration rates, up to 150 bpm
- Low-power consumption and automatic temperature and pressure compensation
- Provides minimal alveolar concentration (MAC) calculated from the measured anesthetic agents and $N_2O$*
- Appropriate for monitoring adult, pediatric, or infant patients in a range of clinical environments including the operating room and intensive care unit
- Compatible with Masimo's Nomoline™ Adapter and the Nomoline Airway Adapter Set to interface with endotracheal tubing

Masimo

# COMPONENTS

The portable ISA OR+ module easily mounts onto the back of Root and plugs into a MOC-9™ Port

MOC-9 Ports on Root

Single-patient-use Nomoline Airway Adapter Set

ISA OR+ MOC-9 Module

Nomoline Adapter

*When technology modules are connected with Root, multiple additional parameters are available including Masimo SET® pulse oximetry, noninvasive and continuous hemoglobin (SpHb®), PVI,® SedLine® brain function monitoring, and O3™ Regional Oximetry (not available for sale in the U.S.)*

# PERFORMANCE AND SPECIFICATIONS

### GENERAL

| | |
|---|---|
| Weight | < 420 g |
| Size | 49 x 90 x 100 mm (1.9 x 3.5 x 3.9 inches) |
| Power Supply | 4.5 to 5.5 VDC<br>< 2.0 W (normal op.) |

### ENVIRONMENTAL

| | |
|---|---|
| Operating temperature | 5 to 50 °C (41 to 122 °F) |
| Storage | -40 to 70 °C (-40 to 158 °F) |
| Operating humidity | < 4 kPa $H_2O$ (non-condensing) (95 %RH at 30 °C) |
| Operating atmospheric pressure | 525 – 1200 hPa (< 5211 m) |

### PATIENT CONNECTIONS

| | |
|---|---|
| Nomoline | See separate Nomoline information for full details of available options |

### GAS ANALYZER

| | |
|---|---|
| Automatic compensation | Pressure, temperature, and broadening effects on $CO_2$ |
| Warm-up time | < 20 sec |
| ISA sampling flow rate | 50 ± 10 ml/min |

Fulfills the requirements of EN ISO 80601-2-55:2011.
Accuracy during standard conditions:

| | RANGE | ACCURACY |
|---|---|---|
| $CO_2$ | 0 – 15 vol% | ± (0.2 vol% + 2% of reading) |
| $N_2O$ | 0 – 100 vol% | ± (2 vol% + 2% of reading) |
| HAL, ISO, ENF | 0 – 8 vol% | ± (0.15 vol% + 5% of reading) |
| SEV | 0 – 10 vol% | ± (0.15 vol% + 5% of reading) |
| DES | 0 – 22 vol% | ± (0.15 vol% + 5% of reading) |
| $O_2$ | 0 – 100 vol% | ± (1 vol% + 2% of reading) |

| | |
|---|---|
| Rise time | $CO_2$ ≤ 250 ms, $N_2O$, Agents ≤ 350 ms, $O_2$ ≤ 450 ms |
| Total system response time | < 3 sec |
| Breath detect | Adaptive threshold, minimum 1 vol% $CO_2$ change |
| Respiratory rate | 0 – 150 bpm ± 1 bpm |

### CERTIFICATIONS

CE Marked according to the 93/42/EEC Medical Device Directive

Data subject to change without notice

* Altitude, patient age and other individual factors are not considered in the MAC calculation.

**Caution: Federal law restricts this device to sale by or on the order of a physician.**

**For professional use. See instructions for use for full prescribing information, including indications, contraindications, warnings, precautions, and adverse events.**

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