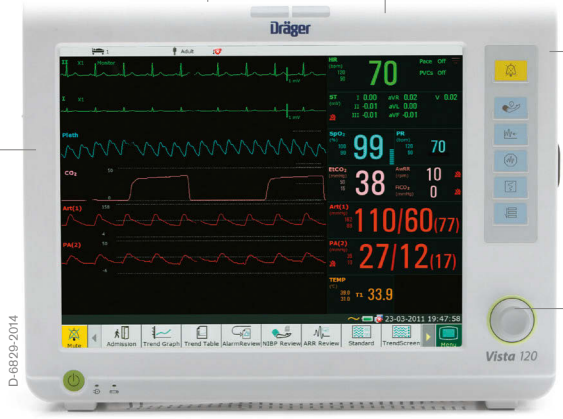
# Vista 120
## Patient Monitoring Solution

Hospitals around the world share a common challenge – to provide the best possible care in locations with growing populations, stricter financial regulations and caregivers that are increasingly overloaded. The Vista 120 was engineered to meet your clinical needs and stay within your budget, allowing you to deliver efficient and high-quality patient care.

**380 mm (15") TFT touch screen**
High resolution display (1,024 x 768) is bright and easy to read, even from a distance

**Configurable layout**
Lets you see the information you want, the way you want to see it

**Enhanced trending**
- Stores up to 150 hours of trend data for all parameters in tabular and graphic formats
- Stores up to 1,200 NIBP measurements and 200 alarm events
- 96 hours of full disclosure




**Device Connectivity**
Enables true integrated workstation functionality

**Core set of essential parameters**
3/5 lead ECG, $SpO_2$, non-invasive blood pressure, respiration and dual temperature

**Anesthesia support**
Displays data from Scio Four gas measurement modules

**Alarms**
Alarm indicator and alarm pause/off

**Shortcut keys**
Fast access to main functions

# Benefits

### Fully-integrated workstation solution

The Vista 120 supports adult, pediatric and neonatal patients in a variety of care environments – including Intensive Care, Operating Rooms, Emergency Departments and Neonatal Intensive Care. Medibus/Medibus-X connectivity enables the Vista 120 to be used with a complementary Dräger device, such as a ventilator or anesthesia machine allowing true integrated workstation functionality.

### Essential monitoring capabilities, exceptional value

The Vista 120 displays up to 13 waveforms in an easy-to-configure layout and offers a core set of essential parameters including 3/5 lead ECG, non-invasive blood pressure, respiration and dual temperature. Advanced parameters including three invasive blood pressures, flexible mainstream and sidestream et$CO_2$ and cardiac output are also available.

Users can add external parameter modules including SCIO, $CO_2$ and BIS on model C and model C+ after initial device purchase.

### Supports workflow efficiency

The Vista 120 is easy to learn and easy to use. You can configure the display to see the information you want to see, the way you want to see it. Fast access keys and simplified menus put the data you need right at your fingertips.

### Monitor level of consciousness with flexible Bispectral Index (BIS) measurement

The Vista 120 offers BISx measurement to support clinicians with enhanced information as they monitor the depth of anesthesia. It allows the ability to better assess patient status and quickly respond to a changing condition.

### Standard built-in gas interface

The Vista 120 provides seamless connectivity to Dräger Scio anesthetic gas measurement modules delivering precise inspiratory and expiratory values.

### Health level-7 (HL7) international interface

The Vista 120 offers direct connection to the hospital information system (HIS) and/or an electronic medical record in HL7 protocol or a secure connection via the Vista 120 Gateway. The ability for easy access to both of these important information files help improve workflow efficiency and reduce human error.

# Benefits

### Dräger heritage of quality

Every life is unique. Protecting, supporting and saving lives is the foundation of our company philosophy. Our goal is to provide product and solutions that support acute care, help improve patient outcomes, reduce costs and achieve greater overall patient satisfaction.

# Related Products

D-68804-2012

### Vista 120 Central Monitoring System

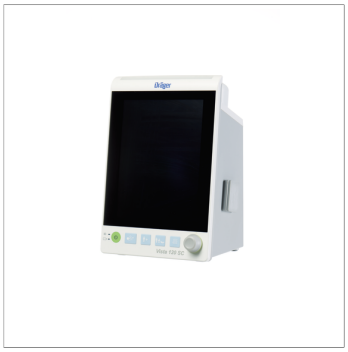
The easy-to-use Vista 120 Central Monitoring System (CMS) lets you centrally monitor the vital signs of up to 64 patients connected to Vista 120/Vista 120 S bedside monitors. This central surveillance streamlines workflow for clinicians, while significantly increasing patient safety.

D-13374-2016

### Vista 120 S

Dräger understands the growing need for a patient monitor with built-in connectivity that provides essential monitoring at a good value. The Vista 120 S supports adult, pediatric and neonatal patients and can be used on its own or with a Dräger therapy device as a fully integrated workstation.

# Related Products



D-11590-2019

## Vista 120 SC

Reduce clinicians' workload with an easy-to-use and intuitive user interface. The Vista 120 SC is designed for spot check and continuous vital signs monitoring to complete Dräger's hospital-wide solution offerings.

# Technical Data

| **Classification** | |
|---|---|
| Protection class | Class I equipment and internal powered equipment |
| Degree of protection against electric shock | CF: ECG (RESP), TEMP, IBP, C.O.<br>BF: $SPO_2$, AG, BIS |
| Defibrillation protection | Yes |
| Liquid ingress protection | IPX 1 |
| Disinfection/sterilization method | Refer to chapter "Care and Cleaning" for details. |
| Mode of operation | Continuous |
| Compliant with standards | IEC 60601-1: 2005+A1:2012; IEC 60601-1-2: 2014;<br>EN 60601-1: 2006+A1:2013; EN60601-1-2: 2015;<br>IEC 60601-2-49: 2011 |

| **Supported Parameters** | |
|---|---|
| **ECG** | |
| Lead mode | 3-lead wire: I, II, III<br>5-lead wire: I, II, III, aVR, aVL, aVF, V |
| Waveform | 3-lead wire: 1-channel waveform<br>5-lead wire: 2-channel waveform, max. seven waveforms |
| Lead naming style | AHA, IEC |
| Display sensitivity | 1.25 mm/mV (x0.125), 2.5 mm/mV (x0.25), 5 mm/mV (x0.5),<br>10 mm/mV (x1), 20 mm/mV (x2), 40 mm/mV (x4), AUTO gain |
| Sweep | 6.25, 12.5, 25, 50 mm/s |
| Bandwidth (-3dB) | Diagnosis: 0.05 to 150 Hz<br>Monitor: 0.5 to 40 Hz<br>Surgery: 1 to 20 Hz |
| CMRR<br>(Common mode rejection ratio) | Diagnostic: > 95 dB<br>Monitor: > 105 dB<br>Surgery: > 105 dB |
| Notch | In diagnosis, monitor and surgery modes: 50 Hz/60 Hz<br>(Notch filter can be turned on or off manually) |
| Differential input impendance | > 5 MΩ |
| Input signal range | ±10 mVPP |
| Electrode offset potential tolerance | ±800 mV |
| Auxiliary current<br>(Leads off detection) | Active electrode: < 100 nA<br>Reference electrode: < 900 nA |
| Recovery time after defibrillation | < 5 s (measured without electrodes as IEC60601-2-27:2011,<br>Sect. 201.8.5.5.1 requires) |
| Leakage current of patient | < 10 μA |
| Scale signal | 1 $mV_{PP}$, accuracy is ±5 |
| System noise | < 30 $\mu V_{PP}$ |
| ESU protection | Cut mode: 300 W<br>Coagulation mode: 100 W<br>Recovery time: ≤ 10 s |
| Electrosurgical interference suppression | Tested according to ANSI/AAMI EC13-2002: Sect. 5.2.9.14,<br>Complied with ANSI/AAMI EC13:2002, Sect.4.2.9.14 |
| Minimum input slew rate (lead II) | > 2.5 V/s |
| Baseline reset time | < 3 s |

| **Pace Pulse** | |
|---|---|
| Pulse indicator | Pulse is marked if the requirements of IEC 60601-2-27: 2011,<br>Sect. 201.12.1.101.12 are met: Amplitude: ±2 mV to ±700 mV<br>Width: 0.1 ms to 2.0 ms Ascending time: 10 μs to 100 μs |

# Technical Data

| | |
|---|---|
| Pulse rejection | Pulse is rejected if the requirements of IEC 60601-2-27: 2011, Sect. 201.12.1.101.13 are met: Amplitude: ±2 mV to ±700 mV Width: 0.1 ms to 2.0 ms Ascending time: 10 µs to 100 µs |

**Heart Rate**

| | |
|---|---|
| Range | ADU: 15 to 300 bpm<br>PED/NEO: 15 to 350 bpm |
| Accuracy | ±1% or ±1 bpm, whichever is greater |
| Resolution | 1 bpm |
| Sensibility | ≥ 300 $\mu V_{PP}$ |

**PVC**

| | |
|---|---|
| Range | ADU: 0 to 300 PVCs/min<br>PED/NEO: 0 to 350 PVCs/min |
| Resolution | 1 PVCs/min |

**ST Value**

| | |
|---|---|
| Range | -2.0 to +2.0 mV |
| Accuracy | -0.8 mV to +0.8 mV: ±0.02 mV or 10%, whichever is greater |
| Resolution | 0.01 mV |

**HR Averaging Method**

| | |
|---|---|
| Method 1 | Heart rate is computed by excluding the minimum and maximum values from the 12 most recent RR intervals and averaging the residual 10 RR intervals |
| Method 2 | If each of three consecutive RR intervals is greater than 1,200 ms, then the four most recent RR intervals are averaged to compute the HR |

**Range of Sinus and SV Rhythm**

| | |
|---|---|
| Tachycardia | Adult: RR interval for 5 consecutive QRS complex ≤ 0.5 s.<br>Pediatric/neonatal: RR interval for 5 consecutive QRS complex ≤ 0.375 s |
| Normal | Adult: 0.5 s < RR interval for 5 consecutive QRS complex < 1.5 s.<br>Pediatric/neonatal: 0.375 s < RR interval for 5 consecutive QRS complex < 1 s |
| Bradycardia | Adult: RR interval for 5 consecutive QRS complex ≥ 1.5 s.<br>Pediatric/neonatal: RR interval for 5 consecutive QRS complex ≥ 1 s |

**Range of Ventricular Rhythm**

| | |
|---|---|
| Ventricular tachycardia | The interval of 5 consecutive ventricular complexes is less than 600 ms |
| Ventricular rhythm | The interval of 5 consecutive ventricular complexes ranges from 600 ms to 1,000 ms |
| Ventricular bradycardia | The interval of 5 consecutive ventricular complexes is higher than 1,000 ms |

**Startup Time for Tachycardia**

| | |
|---|---|
| Ventricular tachycardia<br>1 mV 206 bpm | Gain 0.5: 10 s<br>Gain 1.0: 10 s<br>Gain 2.0: 10 s |
| Ventricular tachycardia<br>2 mV 195 bpm | Gain 0.5: 10 s<br>Gain 1.0: 10 s<br>Gain 2.0: 10 s |

# Technical Data

| | | | |
|---|---|---|---|
| Response time of heart rate meter to change in HR | HR range: 80 to 120 bpm<br>Range: within 11 s<br>HR range: 80 to 40 bpm<br>Range: within 11 s | | |
| Tall T-wave rejection | Complied with IEC 60601-2-27: 2011, Sect. 201.12.1.101.17 minimum recommended 1.2 mV T-wave amplitude | | |
| Accuracy of heart rate meter and response to irregular rhythm | Complied with IEC 60601-2-27: 2011,<br>Sect. 201.7.9.2.9.101 b) 4).<br>The HR value after 20 s:<br>Ventricular bigeminy: 80 ±1 bpm<br>Slow alternating ventricular bigeminy: 60 ±1 bpm<br>Rapid alternating ventricular bigeminy: 120 ±1 bpm<br>Bidirectional systoles: 91 ±1 bpm | | |
| Time to alarm for heart rate alarm conditions | Asystole alarm: ≤ 10 s<br>HR low alarm: ≤ 10 s<br>HR high alarm: ≤ 10 s | | |
| Arrhythmia analyses | Asystole | V-fib/V-tach | Couplet |
| | Run PVCs | PVC bigeminy | PVC trigeminy |
| | Vent rhythm | R on T | PVCs high |
| | Tachy | Brady | Missed beat |
| | Irr rhythm | Vent brady | Pacer not capture |
| | Pacer not pacing | | |

**Respiration**

| | |
|---|---|
| Method | Impedance between RA-LL, RA-LA |
| Baseline impedance range | 200 Ω to 2,500 Ω (with ECG cables of 1 KΩ resistance) |
| Measuring sensitivity | Within the baseline impedance range: 0.3 Ω |
| Waveform bandwidth | 0.2 to 2.5 Hz (-3 dB) |
| RR measuring and alarm range: | Adult: 0 to 120 rpm<br>Neo/Ped: 0 to 150 rpm |
| Resolution | 1 rpm |
| Accuracy | Adult: 6 rpm to 120 rpm: ±2 rpm<br>0 rpm to 5 rpm: not specified<br>Neo/Ped: 6 rpm to 150 rpm: ±2 rpm<br>0 rpm to 5 rpm: not specified |
| Gain selection | x0.25, x0.5, x1, x2, x3, x4, x5 |
| Sweep | 6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s |
| Apnea alarm time setup | 10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s; default value is 20 s |

**NIBP**

| | |
|---|---|
| Method | Oscillometric |
| Mode | Manual, auto, continuous |
| Measuring interval in auto mode (unit: minutes) | 1/2/2.5/3/4/5/10/15/30/60/90/120/180/240/360/480 |
| Continuous | 5 min, interval is 5 s |
| Measuring type | Systolic pressure, diastolic pressure, mean pressure |
| Alarm type | SYS, DIA, MAP |

**Measuring and Alarm Range**

| | |
|---|---|
| Adult mode | SYS: 40 to 270 mmHg<br>DIA: 10 to 215 mmHg<br>MAP: 20 to 235 mmHg |
| Pediatric mode | SYS: 40 to 230 mmHg<br>DIA: 10 to 180 mmHg |

# Technical Data

| | |
|---|---|
| | MAP: 20 to 195 mmHg |
| Neonatal mode | SYS: 40 to 135 mmHg |
| | DIA: 10 to 100 mmHg |
| | MAP: 20 to 110 mmHg |
| Cuff pressure measuring range | 0 to 300 mmHg |
| Pressure resolution | 1 mmHg |
| Maximum mean error | ±5 mmHg |
| Maximum standard deviation | 8 mmHg |
| **Maximum Measuring Period** | |
| Adult/pediatric | 120 s |
| Neonate | 90 s |
| Typical measuring period | 20 to 35 s (depend on HR/motion disturbance) |
| **Overpressure Protection** | |
| Adult | 297 ±3 mmHg |
| Pediatric | 245 ±3 mmHg |
| Neonatal | 147 ±3 mmHg |
| **Pulse Rate** | |
| Measuring range | 40 to 240 bpm |
| Accuracy | ±3 bpm or 3.5%, whichever is larger |
| **$SpO_2$** | |
| Measuring range | 0 to 100% |
| Resolution | 1% |
| **Accuracy** | |
| Adult (including pediatric) | ±2% (70 to 100% $SpO_2$) |
| | Undefined (0 to 69% $SpO_2$) |
| Neonate | ±3% (70 to 100% $SpO_2$) |
| | Undefined (0 to 69% $SpO_2$) |
| **Perfusion Index** | |
| Measuring range | 0 – 10, invalid PI value is 0 |
| Resolution | 1 |
| **Pulse Rate** | |
| Measuring range | 25 to 300 bpm |
| Resolution | 1 bpm |
| Adjustable range of alarm limits | 30 to 300 bpm |
| Accuracy | ±2 bpm |
| **Nellcor Module** | |
| Measuring range | 1% to 100% |
| Alarm range | 20% to 100% |
| Resolution | 1% |
| Data update period | 1 s |
| Accuracy (70% to 100% $SpO_2$): | |
| DS-100A, OXI-A/N (adult) | ±3% |
| OXI-A/N (neonate) | ±4% |
| D-YS (infant to adult) | ±3% |
| D-YS (neonate) | ±4% |
| D-YS with D-YSE ear clip | ±3.5% |
| MAX-FAST | ±2% |

# Technical Data

| **Pulse Rate** | |
|---|---|
| Measuring range | 20 to 300 bpm |
| Resolution | 1 bpm |
| Accuracy | ±3 bpm (20 to 250 bpm) |
| Sensor wavelength | Approximately 660 and 900nm |
| Emitted light energy | <15 mW |

**NOTE**

Information about the wavelength range can be especially useful to clinicians (for instance, when photodynamic therapy is performed).

| **Temperature** | |
|---|---|
| Channels | 2 |
| Measuring and alarm range | 0 to 50°C (32 to 122°F) |
| Sensor type | YSI 2.252K/YSI 10K |
| Resolution | 0.1°C (0.1°F) |
| Accuracy (without sensor) | ±0.1°C |
| Refresh time | Every 1 to 2 s |

| **IBP** | |
|---|---|
| Accuracy (not including sensor) | ±2% or ±1 mmHg, whichever is greater |
| Resolution | 1 mmHg |

| **Pressure Sensor** | |
|---|---|
| Sensitivity | 5 (μV/V/mmHg) |
| Impedance range | 300 Ω to 3,000 Ω |
| Filter | DC~ 12.5 Hz; DC~ 40 Hz |
| Zero | Range: ±200 mmHg |

| **Measuring and Alarm Range** | |
|---|---|
| Art | 0 to 300 mmHg |
| PA | -6 to 120 mmHg |
| CVP/RAP/LAP/ICP | -10 to 40 mmHg |
| P1/P2 | -50 to 300 mmHg |

**$CO_2$**

| Complies with ISO 80601-2-55: 2011. | | | | |
|---|---|---|---|---|
| Intended patient | Adult, pediatric, neonatal | | | |
| Measure parameters | $etCO_2$, $FiCO_2$, AwRR | | | |
| Unit | mmHg, %, kPa | | | |
| Measuring range | $CO_2$ | 0 mmHg to 150 mmHg (0% to 20%) | | |
| | AwRR | 2 rpm to 150 rpm | | |
| Resolution | $etCO_2$ | 1 mmHg | | |
| | $FiCO_2$ | 1 mmHg | | |
| | AwRR | 1 rpm | | |
| Accuracy | $etCO_2$ | ±2 mmHg,<br>0 mmHg to 40 mmHg | Respiratory rate<br>≤ 60 rpm | Typical conditions:<br>Ambient temperature:<br>(25±3)°C<br>Barometric pressure:<br>(760±10) mmHg<br>Balance gas: $N_2$<br>Sample gas flow rate:<br>100 ml/min |
| | | ±5% of reading,<br>41 mmHg to 70 mmHg | | |
| | | ±8% of reading,<br>71 mmHg to 100 mmHg | | |
| | | ±10% of reading,<br>101 mmHg to 150 mmHg | | |
| | | ±12% of reading or | Respiratory rate | All conditions |

# Technical Data

| | | | | |
|---|---|---|---|---|
| | | ±4 mmHg, whichever is greater | > 60 rpm | |
| | AwRR | ±1 rpm | | |
| Drift of measure accuracy | Meets the requirements of the measure accuracy | | | |
| Sample gas flow rate | 70 ml/min or 100 ml/min(default), accuracy: ±15 ml/min | | | |
| Warm-up time | Display reading within 20 s; reach to the designed accuracy within 2 minutes. | | | |
| Rise time | < 400 ms (water trap with 2 m gas sampling tube, sample gas flow rate: 100 ml/min) | | | |
| Response time | < 4 s (water trap with 2 m gas sampling tube, sample gas flow rate: 100 ml/min) | | | |
| Work mode | Standby, measure | | | |
| $O_2$ compensation | Range: 0% to 100%<br>Resolution: 1%<br>Default: 16% | | | |
| $N_2O$ compensation | Range: 0% to 100%<br>Resolution: 1%<br>Default: 0% | | | |
| AG compensation | Range: 0% to 20%<br>Resolution: 0.1%<br>Default: 0% | | | |
| Humidity compensation method | ATPD(default), BTPS | | | |
| Barometric pressure compensation | Automatic (The change of barometric pressure will not add additional errors to the measurement values.) | | | |
| Zero calibration | Support | | | |
| Calibration | Support | | | |
| Alarm | $etCO_2$, $FiCO_2$, AwRR | | | |
| Apnea alarm delay | 10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s, 60 s; default value is 20 s. | | | |
| Data sample rate | 100 Hz | | | |
| $etCO_2$ change[1] | AwRR >80 rpm, $etCO_2$ descending 8%<br>AwRR >120 rpm, $etCO_2$ descending 10% | | | |

**NOTE**

Use a test device equivalent to EN ISO 80601-2-55 fig 201.101 to measure at 1:2 I/E ratio. Respiration rate accuracy is determined by frequency of device, and ET READING change refers to the nominal value.

**Interfering Gas Effects:**

| Gas | Gas Level (%) | Quantitative Effect/Comments |
|---|---|---|
| Nitrous oxide | 60 | The interfering gas will have no effect on the measurement value if compensation of $O_2$, $N_2O$, anesthetic agents has been correctly set. |
| Halothane | 4 | |
| Enflurane | 5 | |
| Isoflurane | 5 | |
| Sevoflurane | 5 | |
| Desflurane | 15 | |

**Respironics Module**

| | |
|---|---|
| Applicable patient type | Adult, pediatric and neonatal patients |
| Technique | Infra-red absorption technique |
| Measure parameters | $etCO_2$, $FiCO_2$, AwRR |
| Unit | mmHg, %, Kpa |

**Measuring Range**

| | |
|---|---|
| $etCO_2$ | 0 mmHg to 150 mmHg |
| $FiCO_2$ | 3 mmHg to 50 mmHg |

# Technical Data

| | | |
|---|---|---|
| AwRR | 0 rpm to 150 rpm (mainstream) | |
| | 2 rpm to 150 rpm (sidestream) | |
| Resolution | $etCO_2$ | 1 mmHg |
| | $FiCO_2$ | 1 mmHg |
| | AwRR | 1 rpm |
| $etCO_2$ accuracy | ± 2 mmHg, 0 mmHg to 40 mmHg | |
| | ± 5% of reading, 41 mmHg to 70 mmHg | |
| | ± 8% of reading, 71 mmHg to 100 mmHg | |
| | ± 10% of reading, 101 mmHg to 150 mmHg | |
| | ± 12% of reading, RR is over 80 rpm (sidestream) | |
| | There will be no degradation in performance due to respiration rate (mainstream) | |
| AwRR accuracy | ± 1 rpm | |
| Operation mode | Measure, standby | |
| Sample gas flow rate (sidestream) | (50 ±10) ml/min | |

**$O_2$ Compensation**

| | |
|---|---|
| Range | 0% to 100% |
| Resolution | 1% |
| Default | 16% |
| Barometric pressure compensation | User setup |

**Anesthetic Gas Compensation**

| | |
|---|---|
| Range | 0% to 20% |
| Resolution | 0.1% |
| Default | 0.0% |
| Balance gas compensation | Room air, $N_2O$, helium |

**Stability**

| | |
|---|---|
| Short-term drift | Drift over 4 hours < 0.8 mmHg |
| Long-term drift | 120 hours |
| Zero calibration | Support |
| Alarm type | $etCO_2$, $FiCO_2$, AwRR |
| Apnea alarm delay | 10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s; default value is 20 s |
| Data sample rate | 100 Hz |
| $CO_2$ rise time/response time (mainstream) | Less than 60 ms |
| Sensor response time (sidestream) | < 3 seconds, including transport time and rise time |

**Interfering Gas and Vapor Effects on $etCO_2$ Measurement Values:**

| | | |
|---|---|---|
| Nitrous oxide | 60 | Dry and saturated gas |
| Halothane | 4 | (0 ~ 40) mmHg: ±1 mmHg additional error |
| Enflurane | 5 | (41 ~ 70) mmHg: ±2.5% additional error |
| Isoflurane | 5 | (71 ~ 100) mmHg: ±4% additional error |
| Sevoflurane | 5 | (101 ~ 150) mmHg: ±5% additional error |
| Xenon | 80 | Note: Additional worst case error when |
| Helium | 50 | compensation for PB, $O_2$, $N_2O$, anesthetic |
| Desflurane | 15 | agents, or helium is correctly selected for the actual fractional gas constituents present. |
| | | Desflurane: |
| | | The presence of desflurane in the exhaled breath at concentrations greater than 5% will positively bias carbon dioxide values by up to an additional 3 mmHg at |

# Technical Data

| | | |
|---|---|---|
| | | 38 mmHg.<br>Xenon:<br>The presence of xenon in the exhaled breath will negatively bias carbon dioxide values by up to an additional 5 mmHg at 38 mmHg. |
| | | |
| | | |

**Barometric Pressure on $etCO_2$ Measurement Values:**

**Quantitative Effect**

Ambient barometric, operational
(0 ~ 40) mmHg: ± 1 mmHg additional error
(41 ~ 70) mmHg: ± 2.5% additional error
(71 ~ 100) mmHg: ± 4% additional error
(101 ~ 150) mmHg: ± 5% additional error
Note: Additional worst case error when compensation for PB, $O_2$, $N_2O$, anesthetic agents, or helium is correctly selected for the actual fractional gas constituents present.

**NOTE**

Respiration rate accuracy was verified by using a solenoid test setup to deliver a square wave of known $CO_2$ concentration to the device. 5% and 10% $CO_2$ concentrations were used. Respiration rate was varied over the range of the device. Pass/fail criteria was comparison of the respiratory rate output from the sensor to the frequency of the square wave.

**Dräger MCable Mainstream $CO_2$ Module**

| | |
|---|---|
| Measure parameters | $etCO_2$, $FiCO_2$, AwRR |
| Unit | mmHg, %, Kpa |

**Measuring Range**

| | | |
|---|---|---|
| $etCO_2$ | 0 mmHg to 100 mmHg | |
| $FiCO_2$ | 0 mmHg to 100 mmHg | |
| AwRR | 3 rpm to 150 rpm (PGM algorithm) | |
| Resolution | $etCO_2$ | 1 mmHg |
| | $FiCO_2$ | 1 mmHg |
| | AwRR | 1 rpm |
| $etCO_2$ accuracy | < 0.5 mmHg rms, 0 mmHg to 40 mmHg | |
| | < 1 mmHg rms, 40.1 mmHg to 100 mmHg | |
| Operation mode | Measure, standby | |
| Local barometric pressure | 57 kPa to 110 kPa | |

**$O_2$ Compensation**

| | |
|---|---|
| Range | 0% to 100% |
| Resolution | 1% |
| Default | 16% |

**$N_2O$ Compensation**

| | |
|---|---|
| Range | 0% to 100% |
| Resolution | 1% |
| Default | 0% |

**He Compensation**

| | |
|---|---|
| Range | 0% to 100% |
| Resolution | 1% |

# Technical Data

| | |
|---|---|
| Default | 0% |

**Xe Compensation**

| | |
|---|---|
| Range | 0% to 100% |
| Resolution | 1% |
| Default | 0% |
| Zero calibration | Support |
| Alarm type | et$CO_2$, Fi$CO_2$, AwRR |
| Apnea alarm delay | 10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s; default value is 20 s |
| Data reporting rate | Every 10 msec or 20 msec |
| Response time | Rise time: t10–90 = 24 msec<br>Delay time: 150 msec |
| Warm up | The sensor meets the specified operating performance within 2 minutes typical from power on or reset at ambient temperatures from 20°C to 40°C (68°F to 104°F). At 10°C (50°F) ambient temperature, time from power on to reach the specified operating performance is 10 min approximately. |

**Interfering Gases and Vapours**

| | |
|---|---|
| $N_2O$ 100 vol.% | 0.00 vol.% |
| Halothane 5 vol.% | 0.02 vol.% |
| Enflurane 5 vol.% | 0.03 vol.% |
| Isoflurane 5 vol.% | 0.02 vol.% |
| Sevoflurane 5 vol.% | 0.02 vol.% |
| Desflurane 20 vol.% | 0.00 vol.% |
| Ethanol 4‰ * | 0.00 vol.% |
| Acetone 1‰ * | 0.00 vol.% |
| Isopropanol 1% | 0.00 vol.% |
| Methane 3 vol.% | <0.02 vol.% |
| NO 100 ppm | 0.01 vol.% |
| $NO_2$ 50 ppm | 0.00 vol.% |
| CO 4 vol.% | 0.00 vol.% |
| Freon R21 100 vol.% | 0.07 vol.% |
| Freon R134a 100 vol.% | 0.19 vol.% |
| Heptafluorpropane 0.7 vol.% | 0.00 vol.% |
| Water vapour 37°C saturated | 0.01 vol.% |
| *blood concentration equivalent | |

**NOTE**

The numbers given at the end of each line are typical $CO_2$ readings of the sensor for the pure interfering gas or vapour, balance $N_2$ (if applicable), without $CO_2$ content. $CO_2$ reading of common mixtures like $CO_2$, $O_2$, $N_2O$, anaesthetic agent (in physiological concentration) or $CO_2$, $O_2$, $N_2$, water vapour is within specified bias, provided that the major foreign gases (see above: $O_2$, $N_2O$, He, Xe) are entered to the sensor.

**Effects of Humidity or Condensate**

The airway adapter windows are indirectly heated via the sensor to prevent moisture condensation. While by sensor design the effect of water droplets spilled onto the airway adapter windows and of contamination, as long as still some measurement light passes the airway adapter windows, is largely compensated for, water droplets and other window contamination may slightly influence measurement bias, up to 0.3 Vol.% approximately at 5 Vol.% $CO_2$ (normally much less). Precision, of course, worsens if less light passes (i.e., noise of reading gets higher). After some time, water droplets are heated away.

If measurement light is blocked such that noise of reading gets unacceptably high, an error message is sent from the $CO_2$ sensor indicating that the airway adapter has to be checked (cleaned or replaced).

# Technical Data

## BIS

| | | | |
|---|---|---|---|
| **Technique** | **Bispectral Index, Power Spectrum Analysis** | | |
| Measure parameters | Primary parameter | BIS | 0 to 100 |
| | Secondary parameters | SQI | 0% to 100% |
| | | SR | 0% to 100% |
| | | EMG | 30 dB to 80 dB |
| | | SEF | 0.5 Hz to 30.0 Hz |
| | | TP | 40 dB to 100 dB |
| | | BC (only applicable to BIS™ extend sensor) | 0 to 30 |
| Sweep speed | 6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s | | |
| Wave scale | 50 µv, 100 µv, 200 µv, 500 µv | | |
| BIS trend | Length of BIS trend: 6 min, 12 min, 30 min, 60 min | | |
| Smoothing rate | 10 s, 15 s, 30 s | | |
| Noise (EEG waveform) | < 0.3 µV (0.25 Hz ~ 50 Hz) | | |
| EEG bandwidth | 0.25 Hz ~ 50 Hz | | |
| BIS alarm range | 0 ~ 100 | | |

## C.O.

| | |
|---|---|
| Measure parameters | C.O., TB, TI |
| Measurement method | Thermodilution technique |

### Measuring Range

| | |
|---|---|
| C.O. | 0.1 l/min ~ 20 l/min |
| TB | 23°C ~ 43°C |
| TI | -1°C ~ 27°C |

### Resolution

| | |
|---|---|
| C.O. | 0.1 l/min |
| TB, TI | 0.1°C (+0.1°F) |

### Accuracy

| | |
|---|---|
| C.O. | ±5% or 0.2 l/min, whichever is greater |
| TB | ±0.1°C (without sensor) |
| TI | ±0.1°C (without sensor) |

### Trend review

| | |
|---|---|
| Short | 1 hr, 1 s. resolution |
| Long | 150 hrs, 1 min. resolution |
| NIBP measurement data review | 1200 sets |
| Alarm review | 200 sets |
| Arrhythmia review | 200 sets |

**NOTE**

Regarding the AG specifications, refer to the Supplement Scio Four modules.

### Wireless

| | |
|---|---|
| IEEE | 802.11 b/g/n |
| Frequency band | 2.4 GHz ISM band |
| Modulation | OFDM with BPSK, QPSK, 16-QAM, and 64-QAM 802.11 b with CCK and DSSS |
| Typical transmit power (±2 dBm) | 17 dBm for 802.11 b DSSS, 17 dBm for 802.11 b CCK, 15 dBm for 802.11 g/n OFDM |

# Technical Data

| **Device Connectivity** | |
|---|---|
| Protocol | Medibus/Medibus.X |
| Supported device | Atlan, Fabius Plus/XL, Fabius GS Premium, Fabius Tiro, Fabius MRI, Primus/IE, A500, Zeus IE, Evita V500, Evita VN500, V300, Savina/300/Classic/Select, Babylog 8000 Plus, Babylog VN500, Oxylog 3000 Plus |

| **Recorder** | |
|---|---|
| Record width | 48 mm (1.9 inch) |
| Paper width | 50 mm |
| Paper speed | 12.5, 25, 50 mm/s |
| Trace | Up to 3 waveforms |
| Recording types | – Continuous real-time recording<br>– 8/20 seconds real-time recording<br>– Oxygenation calculation result recording<br>– Ventilation calculation result recording<br>– Renal function calculation result recording<br>– Trend graph recording<br>– Trend table recording<br>– NIBP review recording<br>– Arrhythmia review recording<br>– Alarm review recording<br>– C.O. measurement recording<br>– Frozen waveform recording<br>– Drug calculation titration recording<br>– Hemodynamic calculation result recording |

| **Display Specifications** | |
|---|---|
| Display screen | 380 mm (15 inch) color TFT |
| Resolution | 1024 x 768 |
| Maximum number of waveforms | 13 |
| Indicator LEDs | 1 power, 2 alarm, 1 charge |

| **Physical Specification** | |
|---|---|
| Size (H x W x D) | (408±2) mm x (316±2) mm x (157±2) mm (12.4 x 16.1 x 6.2 inch) |
| Weight | <7.0 kg (15.4 lbs) |

| **Electrical Specification** | |
|---|---|
| Power supply | 100 V – 240 V~, 50 Hz/60 Hz |
| Current | 1.4 A-0.7 A |
| FUSE | T 3.15 AH, 250 VP |

| **Classification** | |
|---|---|
| Protection class | Class I equipment and internal powered equipment |
| EMC type | Class A |
| Degree of protection against electric shock | CF: ECG (RESP), TEMP, IBP, C.O.<br>BF: $SpO_2$, NIBP, $CO_2$, AG, BIS |
| Liquid ingress protection | IPX1 |
| Mode of operation | Continuous |

| **Lithium-ion Battery (optional)** | |
|---|---|
| Quantity | 1 |
| Capacity | 5,000 mAh |

# Technical Data

| | |
|---|---|
| Battery life | ≥ 300 min (At 25±2°C, with (a) new fully charged battery/ batteries, continuous $SpO_2$ measurement and NIBP automatic measurement mode at interval of 15 minutes, Dräger ECG/TEMP module connected, recording at interval of 10 minutes, brightness set to “1”) |
| Battery charge time | ≤ 390 min, 100% charge (monitor is on or in standby mode)<br>≤ 351 min, 90% charge (monitor is on or in standby mode) |

**Enviromental Requirements**

The monitor may not meet the performance specifications given here if stored or used outside the specified temperature and humidity ranges. When the monitor and related products have differing environmental specifications, the effective range for the combined products is that range which is common to the specifications for all products.

**Temperature Range**

| | |
|---|---|
| Operating | 0 to 40°C (32 to 104°F) |
| Transport and storage | -20 to 55°C (-4 to 131°F) |

**Relative Humidity**

| | |
|---|---|
| Operating | 15% RH ~ 95% RH (non-condensing) |
| Transport and storage | 15% RH ~ 95% RH (non-condensing) |

**Atmospheric Pressure**

| | |
|---|---|
| Operating | 86 kPa ~ 106 kPa |
| Transport and storage | 70 kPa ~ 106 kPa |

**Standards**

IEC 60601-1: 2005+A1 :2012; IEC 60601-1-2: 2007; EN 60601-1: 2006+A1 :2013; EN 60601-1-2: 2007; IEC 60601-2-49: 2011
The Vista 120 monitors comply with the Medical Device Directive (MDD) 93/42/EEC.

| Vista 120 | MS34008 | MS34010 | MS34009 | MS34011 |
|---|---|---|---|---|
| 3/5 lead ECG | X | X | X | X |
| Proprietary $SpO_2$ | X | | X | |
| Nellcor $SpO_2$ | | X | | X |
| NBP | X | X | X | X |
| Dual temps | X | X | X | X |
| 3IBP | | | X | X |
| CO | | | X | X |
| $etCO_2$ | | | X | X |
| BISx | | | X | X |
| Built-in recorder | | X | X | X |
| Gas bench | X | X | X | X |
| LAN | X | X | X | X |
| Wireless | X | X | X | X |

Vista 120 monitors are available in select markets only.
For availability in your area, please contact the appropriate Dräger office from those listed below.

# Notes

# Notes



9105 981 | 20.06-3 | HQ | PP | Subject to modifications | © 2020 Drägerwerk AG & Co. KGaA

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