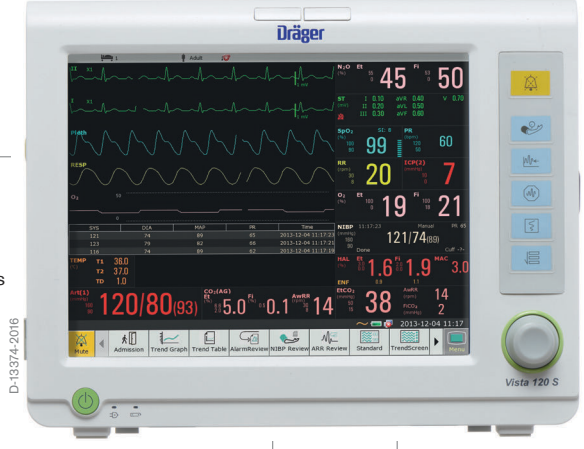
Vista 120 S
Patient Monitoring Solution

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.

305 mm (12") TFT color touchscreen
High resolution display (800 x 600) 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 120 hours of trend data for all parameters in tabular and graphic formats
- Stores up to 1,200 NIBP measurements and 200 alarm events



D-13374-2016

Medibus/Medubus-X connectivity
Offers true integrated workstation functionality across care segments

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

Networking capabilities
Enables central monitoring

Alarms
Alarm indicator and alarm pause/off

Shortcut keys
Fast access to main functions

Benefits

Part of a complete department solution

The Vista 120 S supports adult, pediatric and neonatal patients in a variety of care environments – including Intensive Care Units, Operating Rooms, Emergency Departments and Neonatal Intensive Care Units. Use the Vista 120 S on its own or with a complementary Dräger device, such as a ventilator, or anesthesia machine for a fully integrated workstation.

Essential monitoring capabilities, exceptional value

The Vista 120 S displays up to eleven 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 comes standard. Advanced parameters including three invasive blood pressures, Mainstream etCO_2, Cardiac Output and Sidestream etCO_2 are also available.

Supports workflow efficiently and cost-effectively

The Vista 120 S 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. It's light, portable and ready to go with an integrated bed hook for easy patient transport.

Built-in recorder

The Vista 120 S has an integrated recorder that prints out up to three channels of information – saving time by providing documentation when and where you need it.

Clear view of patient data

The Vista 120 S has a 305 mm (12") TFT color touchscreen that is bright and clear. Displaying comprehensive patient data with ease.

Dräger heritage of quality

At Dräger, 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.

Technical Data

SUPPORTED PARAMETERS

ECG

Lead mode	3-lead wire: I, II, III 5-lead wire: I, II, III, aVR, aVL, aVF, V
Waveform	3-lead wire: 1-channel waveform 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), 10 mm/mV (x1), 20 mm/mV (x2), 40 mm/mV (x4), AUTO gain
Sweep	6.25, 12.5, 25, 50 mm/s
Bandwidth (-3 dB)	Diagnosis: 0.05 to 150 Hz Monitor: 0.5 to 40 Hz Surgery: 1 to 20 Hz
CMRR (Common Mode Rejection Ratio)	Diagnostic: > 95 dB Monitor: > 105 dB Surgery: > 105 dB
Notch	50 Hz/60 Hz (Notch filter can be selected manually)
Differential input impendance	>5 MΩ
Input signal range	±10 mVPP
Electrode offset potential tolerance	±800 mV
Auxiliary current (Leads off detection)	Active electrode: < 100 nA Reference electrode: < 900 nA
Recovery time after defibrillation	< 5 s (measured without electrodes as IEC60601-2-27:2011, Sect. 201.8.5.5.1 requires.)
Leakage current of patient	< 10 µA
Scale signal	1 mV_{PP}, accuracy is ±5
System noise	< 30 μV_{PP}
ESU protection	Cut mode: 300 W Coagulation mode: 100 W Recovery time: ≤ 10 s
ESU noise suppression	Tested according to the test method in ANSI/AAMI EC13-2002: Sect. 5.2.9.14, it accords with the standard
Minimum Input Slew Rate (Lead II)	> 2.5 V/s

Pace pulse

Pulse indicator	Pulse is marked if the requirements of IEC 60601-2-27: 2011, Sect. 201.12.1.101.12 are met: Amplitude: ±2 mV to ±700 mV Width: 0.1 ms to 2.0 ms Ascending time: 10 µs to 100 µs
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 PED/NEO: 15 to 350 bpm
Accuracy	±1% or ±1 bpm, whichever is greater
Resolution	1 bpm
Sensibility	≥ 300 μV_{PP}

PVC

Range	ADU: 0 to 300 PVCs/min PED/NEO: 0 to 350 PVCs/min

Technical Data

Accuracy	1 PVCs/min or 2% of measurement, whichever is greater
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. 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. 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. 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 1 mV 206 bpm	Gain 0.5: 10 s Gain 1.0: 10 s Gain 2.0: 10 s
Ventricular tachycardia 2 mV 195 bpm	Gain 0.5: 10 s Gain 1.0: 10 s Gain 2.0: 10 s
Response time of heart rate meter to change in HR	HR range: 80 to 120 bpm Range: Within 11 s HR range: 80 to 40 bpm 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, Sect. 201.7.9.2.9.101 b) 4). The HR value after 20 s: Ventricular bigeminy: 80 ±1 bpm Slow alternating ventricular bigeminy: 60 ±1 bpm Rapid alternating ventricular bigeminy: 120 ±1 bpm Bidirectional systoles: 91 ±1 bpm

Technical Data

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 Neo/Ped: 0 to 150 rpm
Resolution	1 rpm
Accuracy	Adult: 6 rpm to 120 rpm: ±2 rpm 0 rpm to 5 rpm: not specified Neo/Ped: 6 rpm to 150 rpm: ±2 rpm 0 rpm to 5 rpm: not specified
Gain selection	x0.25, x0.5, x1, x2, x3, x4, x5

NIBP	
Method	Oscillometric
Mode	Manual, Auto, Continuous
Measuring interval in auto mode	1, 2, 3, 4, 5, 10, 15, 30, 60, 90, 120, 240, and 480 min
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 DIA: 10 to 215 mmHg MAP: 20 to 235 mmHg
Pediatric mode	SYS: 40 to 230 mmHg DIA: 10 to 180 mmHg 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 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

PR	
Measuring range	40 to 240 bpm
Accuracy	±3 bpm or 3.5%, whichever is larger

SpO_2	
Measuring range	0 to 100%
Resolution	1%

Technical Data

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)

PI	
Measuring Range	0–10, invalid PI value is 0
Resolution	1

Pulse rate	
Pulse rate measuring range	25 to 300 bpm
Alarm range	30 to 300 bpm
Accuracy	±2 bpm

Nellcor Module	
Measuring Range	1% to 100%
Alarm Range	20% to 100%
Resolution	1%
Data update period	1s
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%

Pulse Rate	
Measuring Range	20 to 300 bpm
Resolution	1 bpm
Accuracy	3 bpm (20 to 250 bpm)
Sensor Wave length	approximately 660 and 900nm
Emitted light energy	<15 mW

NOTE: Information about the wave length 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 10 k
Resolution	±0.1°C (0.1°F)
Accuracy (without sensor)	±0.1°C
Refresh time	Every 1 to 2 s

IBP	
Channels	3
Accuracy	±2% or ±1 mmHg, whichever is greater
Resolution	1 mmHg

Technical Data

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

G2 Module			
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, 0 mmHg to 40 mmHg	Respiratory rate ≤ 60 rpm	Typical conditions: – Ambient temperature: (25±3) ℃ – Barometric pressure: (760±10) mmHg – Balance gas: N_2 – Sample gas flowrate: 100 ml/min
	±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% or ±4 mmHg of reading, whichever is greater	Respiratory rate > 60 rpm	All conditions
AwRR	±1 rpm		
Drift of Measure Accuracy		Meets the requirements of the measure accuracy	
Sample Gas Flowrate		70 mL/min or 100 mL/min (default), accuracy: ±15 mL/min	
Warm-upTime		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 flowrate: 100 mL/min)	
Response Time		< 4 s (water trap with 2 m gas sampling tube, sample gas flowrate: 100 mL/min)	
Work Mode		Standby, measure	
O_2 Compensation		Range: 0% to 100% Resolution: 1% Default: 16%	
N_2O Compensation		Range: 0% to 100% Resolution: 1% Default: 0%	

Technical Data

AG Compensation	Range: 0% to 20% Resolution: 0.1% 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, 60s; default value is 20 s
Data Sample Rate	100 Hz
$EtCO_2$ Change[1]	AwRR >80 rpm, $EtCO_2$ descending 8% 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	
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 Flowrate (sidestream)	(50 ±10) ml/min	

O_2 Compensation

Range	0% to 100%
Resolution	1%

Technical Data

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

Gas or Vapor	Gas Level (%)	Quantitative Effect/Comments
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	*Additional worst case error when compensation for PB, O_2, N2O, anesthetic 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 38 mmHg. Xenon: The presence of Xenon in the exhaled breath will negatively bias Carbon Dioxide values by up to an additional 5 mmHg at 38 mmHg.
Helium	50	
Desflurane	15	

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

Technical Data

*Additional worst case error when compensation for PB, O_2, N2O, 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.

C.O.	
Intended patient	Adult
Measurement method	Thermodilution Technique

Measuring range	
C.O.	0.1 L/min ~ 20L/min
TB	23°C ~ 43°C
TI	-1°C ~ 27°C

Resolution	
C.O.	0.1 L/min
TB, TI	0.1°C

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	120 hrs, 1 min. resolution
Review	1,200 sets NIBP measurement data

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

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

Display specifications	
Display screen	305 mm (12 inch) color touch screen TFT
Resolution	800 x 600
Maximum number of waveforms	11
Indicator LEDs	1 power, 2 alarm, 1 charge

Technical Data

Physical specification	
Size (H x W x D)	266 x 344 x 145 mm
Weight	5 kg

Electrical specification	
Power supply	100 V – 240 V~, 50 Hz/60 Hz
Pmax	110 VA
FUSE	T 3.15 AH, 250 V

Classification	
Anti-electroshock type/protection class	Class I equipment and internal powered equipment
EMC type	Class A
Anti-electroshock degree	CF: ECG (RESP), TEMP, IBP, CO BF: SpO_2, NIBP, CO_2, AG
Liquid ingress protection	IPX1
Disinfection/sterilization method	Refer to Instructions for Use: Care and cleaning
Mode of operation	Continuous running equipment
Power supply	100 V to 240 V~, 50 Hz/60 Hz Pmax = 110 VA FUSE T 3.15 AH, 250 VP

Battery (optional)	
Quantity	1
Capacity	5,000 mAh
Battery Life	>= 350 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 ≤ 351 min, 90% charge (Monitor is off)

ENVIRONMENTAL REQUIREMENTS

The monitor may not meet the performance specifications given here if stored or used outside the specified temperature, humidity and altitude ranges.

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 S monitors comply with the Medical Device Directive (MDD) 93/42/EEC.

Technical Data

VISTA 120 S	Model A MS32996	Model A+ MS32998	Model C MS32997	Model C+ MS32999
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
Built-in Recorder		X	X	X
Gas Bench	X	X	X	X
LAN	X	X	X	X
Wireless		X	X	X

Vista 120 S patient monitors are available in select markets only.

Please contact your local sales office for more information.

Notes

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