

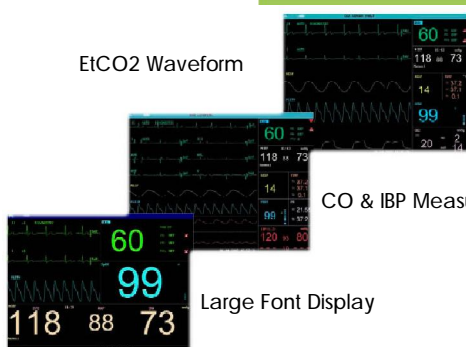
# M9 Series Vital Patient Monitors

## Features

- 12" / 10" colour TFT display—maximum of 11 waveforms
- ECG, SpO2, Resp, NIBP, 2 x Temp, PR, 2 x IBP, CO, EtCO2, Multi-Gas/O2 (Artema) monitoring possible from the same instrument
- 96 hours graphic and tabular trends of all parameters
- 120 seconds full disclosure waveforms review
- Nellcor Oximax SpO2 sensor available
- OxyCRG for neonatal monitoring
- 7 leads ECG analysis
- Built in rechargeable Li-ion battery
- LAN connection
- Large font display
- Pacemaker detection
- Alarm trigger printing
- Alarm and NIBP review
- Nurse call function



EtCO2 Waveform



CO & IBP Measurement

Large Font Display



Maximum 11 Waveforms



Trend Screen Mode



OxyCRG for Neonatal Monitoring



Optional rolling stand

**Standard Configuration:** ECG, NIBP, RESP, SpO2, 2 x Temp, Li-ion Battery

**Optional Configuration:** Nellcor SpO2, 2 x IBP, CO, EtCO2, Multi-Gas/O2, Thermal Recorder



### Safety

IEC60601 1 approved, CE marking according to MDD93/42/EEC

### Dimensions & Weight

Dimensions: 318 (w) x 152 (l) x 264 mm (h)  
Weight: 5 kg

### Operating Environment

Temperature: 5—40°C  
Humidity: 25—95 % (non condensing)  
Power: 100—240 V, 50 / 60 Hz

### Performance Specifications

Display: M9—12" colour TFT  
M9A—10" colour TFT  
Waveforms: 11 waveforms maximum  
Indicators: Alarm. Power. Charging. QRS beep and alarm sound  
Interface: Network port  
Battery: Rechargeable Lithium-ion battery  
Maximum 4.5 hours continuous usage with full battery  
Recall: 1—96 hours trend recall  
Alarm: 3 level audible and visual alarm  
Recorder: Built-in, thermal array  
2 traces  
Paper width—48mm  
Record Speed—25 mm/sec, 50 mm/sec

### ECG

Lead Mode: 3 leads (R, L, F or RA, LA, LL)  
5 leads (R, L, F, N, C, or RA, LA, LL, RL, V)  
4 Selectable Plus: x0.25, x0.5, x1, x2 cm/mV

### Pace Detection

7 selectable detection leads: I, II, III, avR, avL, avF, V  
Input Voltage Range: +/- 8mV, polarized voltage, +/- 500mV

### CMRR

Diagnosis: > 100 dB (no 50 / 60 Hz software trap)  
Monitor: > 110 dB (has 50 / 60 Hz software trap)  
Surgery: > 100 dB (50 / 60 Hz software wave trap)

### Respiration

Method: Impedance between R-F (RA-LL)  
Measuring & Alarm Range: Adult: 0—120 rpm  
Neonate / Paediatric: 0—150 rpm  
Resolution: 1 rpm  
Accuracy: +/- rpm  
Gain Selection: x0.5, x1, x2, x4, Auto

### HR Measuring and Alarm Range

Adult / Paediatric: 15—300 bpm  
Neonate: 15—350 bpm  
Accuracy: +/- 1% or +/- 1 bpm, (whatever is greater)  
Resolution: 1 bpm  
Sensitivity: >200µV P-P  
Differential Input Impedance: >5 M  
Electrode Offset Potential: +/- 300mVdc, +/- 600mVdc  
Leakage Current: <10 uA  
ECG Signal Range: +/- 6mV (Vp-p)

### ST Segment Monitoring

Measurement & Alarm Range: -2.0—+2.0 mV

### NIBP

Method: Oscillometric  
Mode: Manual, Auto, Continuous  
Measurement Interval in AUTO: 1/2/3/4/5/10/15/30/60/90/120/240/480 minutes  
Cuff Pressure Range: 0—280 mmHg  
Pressure Resolution: 1mmHg

### Pressure Accuracy

Mean Error: +/- 5 mmHg  
Maximum Standard Deviation: <8mmHg  
Adult: 297 +/- 3 mmHg  
Paediatric: 240 +/- 3 mmHg  
Neonatal: 150 +/- 3 mmHg  
Dual Over Voltage Protection

### SpO2

Measuring Range: 0—100%  
Alarm range: 0—100%  
Resolution: 1%

### Accuracy

Adult & Paediatric: +/-2 digits (70—100% SpO2)  
Undefined (0—10% SpO2)  
Neonate: +/- 3 digits (70—100% SpO2)  
Undefined (0—70% SpO2)

### Pulse Rate

Measuring and Alarm Range: 15—254 bpm  
Resolution: 1 bpm  
Accuracy: +/- 3 bpm  
In Moving Conditions: +/- 5 bpm

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## Technical Specifications

### Nellcor Module (Optional)

Measuring Range: 1—100 %  
 Alarm Range: 1—100 %  
 Resolution: 1 %

#### Accuracy

Adult & Low Perfusion:  $\pm 2$  digits (70—100% SpO<sub>2</sub>)  
 Undefined (0—70% SpO<sub>2</sub>)  
 Neonate:  $\pm 3$  digits (70—100% SpO<sub>2</sub>)  
 Undefined (0—70% SpO<sub>2</sub>)

#### Pulse Rate

Measuring & Alarm Range: 20—235 bpm  
 Resolution: 1 bpm  
 Accuracy:  $\pm 3$  bpm  
 Low Perfusion: 0.03—20 %

### Temperature

Channels: 2  
 Measuring Range: 0—50°C  
 Sensor Type: YSI (B series) and CF-FI  
 Resolution: 0.1°C  
 Accuracy:  $\pm 0.1$ °C (20—45°C)  
 $\pm 0.2$ °C (0—25°C / 45—50°C)

### IBP

Channels: 2  
 Label: ART, PA, CVP, RAP, LAP, ICP, P1, P2  
 Static Pressure Measuring Range: -50—+300 mmHg (up to 350 mmHg)  
 Static Pressure Accuracy:  $\pm 1$  % or 1 mmHg (whatever is greater) excl. probe  
 $\pm 4$  % or 4 mmHg (whatever is greater) incl. probe  
 Dynamic Pressure Measuring Range: -50—300 mmHg  
 Dynamic Pressure Accuracy:  $\pm 4$  % or 4 mmHg (whatever is greater) incl. probe

#### Measuring & Alarm Range

ART:	0—300 mmHg	PA:	-10—120 mmHg
	CVP/RAP/LAP/ICP		-10—40 mmHg
P1/P2	-10—300 mmHg	Resolution:	1mmHg

### CO<sub>2</sub>

Method: Infrared absorption technique  
 Measuring Mode: Sidestream

#### Measuring Range

CO <sub>2</sub> :	0—99 mmHg
INSCO <sub>2</sub> :	0—99 mmHg
AwRR:	0—150 rpm

#### Resolution

CO <sub>2</sub> :	1 mmHg
INSCO <sub>2</sub> :	1 mmHg
AwRR:	1 rpm

#### Accuracy

CO <sub>2</sub> :	$\pm 2$ mmHg, 0—40 mmHg Reading $\pm 8$ %, 41—76 mmHg Reading $\pm 10$ %, 77—99 mmHg $\pm 2$ rpm
AwRR:	

#### Alarm Range

CO <sub>2</sub>	Adult:	15—50 mmHg
	Paediatric:	20—50 mmHg
	Neonate:	30—45 mmHg

InsCO <sub>2</sub> :	ALM HI 1mmHg
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AwRR:	Adult:	8—30 rpm
	Paediatric:	8—30 rpm
	Neonate:	30—100 rpm

#### Suffocation Alarm Delay

AwRR:	10—40 seconds
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### CO

Method: Thermodilution technique

CO Range:	0.1—20 l/min
TB Range:	23—43°C
TI Range:	0—27 °C

CO Resolution:	0.1 l/min
TB & TI Resolution:	0.1°C

CO Accuracy:	$\pm 5$ % or $\pm 0.1$ l/min
TB & TI Accuracy:	$\pm 0.1$ °C

Alarm Range:	23—43°C
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## Technical Specifications

### Multi Gas

Technology: Infrared absorption  
Gas Sorts: CO<sub>2</sub>, N<sub>2</sub>O, Des, Iso, ENF, Sev, Hal, O<sub>2</sub>  
(Galvanic oxygen sensor)

### *Measuring Range*

CO <sub>2</sub> :	0—10%
O <sub>2</sub> :	0—100%
N <sub>2</sub> O:	0—100%
AwRR:	2—100 rpm
Halothane:	0—5%
Isoflurane:	0—5%
Enflurane:	0—5%
Sevoflurane:	0—8%
Desflurane:	0—18%
Respiration Rate:	4—60 +/- rpm
Other:	Up to 3 waveforms displayed Agent mixture detection MAC value displayed

Specification subject to change without prior notice

