

EDAN

M9/M9A Patient Monitor



High performance patient monitor
for ICU / CCU / OR



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M9 (12.1")



M9A (10.4")

Feature

- 12.1" / 10.4" color TFT display with maximum 13 waveforms simultaneously
- Light (4.2kg with battery), portable and easy-to-use
- Conventional diagnostic 12-lead ECG (optional) for cardiac monitoring
- Pacemaker detection and defibrillation protection
- Arrhythmia and S-T segment analysis
- Respironics sidestream and mainstream CO₂ for intubated and non-intubated application
- 4 kinds display modes to meet different critical care needs
- OxyCRG is available to judge the respiration and circulation function for neonates
- Customize alarm limits display around the individual patient's condition
- Long time frozen waveform review (up to 720s)
- Large internal data storage for 96-hour graphic and tabular trends of all parameters, 500 NIBP measurements and 60 alarm events
- USB interface and data safety storage for unexpected power-off
- Built-in rechargeable Li-ion battery
- Nurse Call function and bi-directional communication with
- MFM-CMS central station
- Complete and flexible mounting solution for ICU and operation room
- Data management by *PatientCare viewer* PC software

Standard configuration: 3/5 lead ECG, EDAN NIBP, EDAN SpO₂, RESP, 2-TEMP, PR

Optional: EDAN 12-lead ECG, Nellcor SpO₂, 2-IBP, Omron®M3600 NIBP, CO₂, C.O., Anesthetic Gas/O₂, Thermal recorder, Mounting systems, WLAN kit



ECG Module (EDAN E8, optional)

- Continuous 12-lead ECG waveform display, ST Segment analysis and alarm
- Automatically 208 kinds of analysis results, up to 16 kinds of arrhythmias, 50 sets 12-lead analysis result review, 10s of 12-lead waveform to review and print out
- SEMIP interpretation has tested by CSE and AHA database



Anesthetic Gas/O₂ (Optional)

- Automatic identification of five anesthetic agents
Simultaneous display of inspired and expired of concentrations of anesthetic agent, O₂, CO₂ and N₂O
- Automatic calibration
- Suitable for adult, pediatric and neonatal patients

NIBP(Optional, by Omron M3600)

- Smart Inflation™ for comfortable measurement experience for the patient
- Dynamic Linear Deflation for faster measurements
- Dual Systems for safety



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Clinical Network Solution

- Bi-directional communication with EDAN MFM-CMS central station by wired or wireless connection
Nurse call



Mounting Solution

- Complete and flexible mounting solution for ICU and operation room. With a variety of highly innovative mounting systems, M9's wall mount and rolling stand offer you more versatile interactions with the healthcare environment than ever before.

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Safety Standards

CE Marking in accordance to CE Directive 2007/47/EC concerning Medical Devices
IEC 60601-1+A1+A2; IEC 60601-1-2+A1;

Physical Specification

Device dimension: 322 mm (L) x 150 mm (W) x 285 mm (H)
Weight: Standard Configuration 4.2 kg (with battery)

Display

Color TFT LCD 12.1" (M9) 10.4" (M9A)
Resolution: 800 X 600 dpi
Traces Displayed: up to 8
Waveforms Displayed: up to 13

Various Working Interface Selectable:

Standard Monitoring Display
Large Font Intensive Care Display
Trend Graphy Monitoring Co-Display
Bed to Bed view Display (Optional)
x/yCRG Dynamic View Display
Drug Dose Calculation Interface
Hemodynamics Calculation Interface

Sweep Speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s

Environment requirement

Ambient Temperature: -20°C ~ 55°C (-4 ~ 131° F)
Humidity: 15%-95% non-condensing

Power Supply

External Power Supply
100-240V AC, 50/60HZ
Pmax=80VA
Internal Battery Power Supply
Type: Rechargeable Li-ion
14.8 V DC 2200 mAh
4400 mAh (optional)

Battery working period:
up to 4.5 hours
Recharging time < 150 minutes (2200 mAh)

RESP

Method: Trans-thoracic impedance
Operation mode: Auto/ Manual
RR Measurement range:
Adult: 8~120 rPM
Neonate/Pediatric: 0~150 rPM
Resolution: 1rPM
Apnea alarm threshold:
10s/15s/20s (default); 25s/30s/35s/40s
Alarm: Yes, audible and visual alarm, alarm events recallable
Band width: 0.2-2.5Hz (-3dB)
Sweep speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s

ECG

Lead type: 5-lead and 3-lead selectable, 12-lead optional;
3 leadwire cable: RA, LA, LL or R, L, F; F, C
5 leadwire cable: RA, LA, RL; V or R, L; N; P; F, C
12-lead (including 3/5-lead) optional
Input: 10 leadwire cable: RA, LA, RL; LL; V1-V6 or R, L; N; P; C1-C6
Lead selection: 3-lead: I, II, III; 5-lead: I, II, III; aVR, aVL, aVF; V
12-lead: I, II, III; aVR, aVL, aVF; V1-V6
Gain selection: x0.125;x0.25; x0.5; x1; x2; x4; auto
Sweep speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s
ECG HR Range: Adult: 15-300bpm;
Pediatric / Neonate: 15-350bpm
Resolution & accuracy: ±1bpm or ±1%, whichever is greater
Filter: Diagnostic mode: 0.05-150Hz (optional 12-lead)
Monitoring mode: 0.5-40 Hz
Surgical mode: 1-20Hz

Protection: Withstand 5000VAC/50Hz voltage in isolation against defibrillation and electrosurgical interference
ST-Segment Detection: Measurement range: -2.0 mV~2.0mV
Alarm range: -2.0 mV~2.0mV
ST-Segment Arrhythmia analysis and categorization: Yes
ARR Alarm: Audible and visual alarm, alarm events recallable
12 lead ECG analysis: 208 Reference Diagnostic Results
Pacemaker detection: Yes, and 5 types abnormal status detectable
IEC 60601-2-25; AAMI EC 11/EC 13
IEC 60601-2-27

NIBP

Method: Automatic Oscillometric
Operation modes: Manual/Automatic/Continuous
Auto measurement time interval: Adjustable
1/2/3/4/5/10/15/30/60/90/120/240/480 Minutes
Measurement unit: mmHg/dPa selectable
Measurement types: Systolic, Diastolic, Mean
Pressure range for Adults: Systolic: 40 ~ 270 mmHg
Diastolic: 10 ~ 215 mmHg
Mean: 20 ~ 235 mmHg
Pressure range for Pediatrics: Systolic: 40 ~ 200 mmHg
Diastolic: 10 ~ 150 mmHg
Mean: 20 ~ 165 mmHg
Pressure range for Neonates: Systolic: 40 ~ 135 mmHg
Diastolic: 10 ~ 100 mmHg
Mean: 20 ~ 110 mmHg

Leak test and pressure auto calibration: Yes
Over-pressure protection: Dual Safety protection
Resolution: 1mmHg
Accuracy: Max mean error: ±5 mmHg
Max standard deviation: ±8 mmHg
Systolic, Diastolic, Mean
Alarm: PR from NIBP: Measurement 40~240 bpm
Resolution: 1 bpm
Accuracy: 30bpm or 3% whichever is greater
Leak test and pressure auto calibration: Yes
IEC 60601-2-30
SP10: 2002

NIBP (Optional, by Omron M3600)

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Measurement Ranges
Adult/Pediatric: Pulse Rate: 40 ~ 200bpm
Systolic Pressure: 60 ~ 250mmHg
Diastolic Pressure: 40 ~ 200mmHg
Mean Arterial Pressure: 45 ~ 235mmHg
Neonate: Pulse Rate: 40 ~ 240bpm
Systolic Pressure: 40 ~ 120mmHg
Diastolic Pressure: 20 ~ 90mmHg
Mean Arterial Pressure: 30 ~ 100mmHg
Measurement Accuracy
Pulse Rate: ±2bpm or 2% of reading whichever is greater
Blood Pressure: Complies with ANSI/AAMI SP10:2002
Measurement Modes of Measurement: Manual
Long-term automatic
Short-term automatic
Smart inflation™
Smart measurement
High speed
Pressure Transducers: Two independent solid-state
Deflation Methods: Dynamic Linear Deflation, rate specific to pulse rate

SpO2

Measurement & Alarm Range: 0 ~ 100% (EDAN SPO2)
Resolution: 1%
Accuracy: ±2% (70-100%, Adult/Pediatric); ±3% (70-100%, Neonate)
PR Measurement and Alarm Range: 25 ~ 300bpm
Resolution: 1bpm
Accuracy: 3bpm
Refresh rate: 1s
ISO 9919

SpO2 (Optional, by Nellcor Oximax™)

Measurement & Alarm Range: 0 ~ 100%
Resolution: 1%;
Accuracy: ±2.3% (70-100%, Adult/Pediatric); ±3.5% (70-100%, Neonate)
PR Measurement and Alarm Range: 20 ~ 300 bpm
Resolution: 1bpm;
Accuracy: 3bpm (depends on probe)
Refresh rate: 1s
ISO 9919

IBP (2 Channels, optional)

Measurement Pressure: ART, PA, CVP, RAP, LAP, ICP, P1, P2
Measurement range: -50 ~ 300 mmHg
Resolution: 1 mmHg
Accuracy: ±2% or ±1 mmHg, whichever is greater (without probe)
Sensitivity: 5 µV/V/mmHg; Impedance range: 300-3000
IEC 60601-2-34

Respiricon CO2 (Mainstream and Sidestream, optional)

By Philips Respironics CAPNOSTAT® 5 & LoFlo™ Technology
Range: 0 ~ 150mmHg
Accuracy: ±2% 0 ~ 40mmHg
±5% 41~70mmHg
±8% 71~100mmHg
±10% 101~150 mmHg
AwR Accuracy: ±1 rpm
Convenient design for intubated and non-intubated applications
Possible to work at low sample flow rate: 50ml / minute
Detailed specification refer to the user manual of Respiricon
ISO 21647

C.O. (Optional)

Method Thermomodulation
Measuring range:
CO: 0.1 L/min ~ 20L/min
TB: 23°C ~ 43°C
TI: -1°C ~ 27°C
Alarm range: 23°C ~ 43°C

Anesthetic GAS/O2 (Optional)

Technology: Infra-red absorption characteristic
Gas: CO2, O2, N2O, Des, Iso, Enfl, Hal, Sed
Warm-up time: Iso accuracy mode: 45 s
Full accuracy mode: 10 min
Sample flow rate: Adu/Ped: 120, 150, 200 ml/min
Ned: 70, 90, 120 ml/min
Measuring range: CO2: 0 ~ 30 %
O2: 0 ~ 100 %
Hal/Iso/Enfl/Sed/Des: 0 ~ 30 %
AwR: 2 ~ 100 rpm
MAC Value display
ISO 21647

Temperature (2 Channels, 1 probe by default)

Measurement / Alarm range: 0~50°C (32~122° F)
Probe type: YSI (B Series) and CF-FI
Resolution: 0.1°C
Accuracy: 0.1°C (without probe)
Channel: Dual-channel. Provide T1, T2; T
IEC 12470-4

Thermal Recorder (Optional)

Build-in, direct thermal pixel array recorder
Up to 3 channels printing, 1, 2, 3 channels selectable
Print speed: 25mm/s, 50mm/s Paper width: 50 mm

I/O Interface

USB Port,
RJ-45 Ethernet Port, IEEE 802.3,
Nurse Call output
WLAN Access Point 802.11g 54Mbps (optional)

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