



Q5/Q3

Modular Patient Monitor



NEW

Q5/Q3 Main Unit

Size and Weight

- Size : 318mmX264mmX152mm
- Weight : ≤ 4.5kg
- Standard module slot: 2

Power supply

- Power Voltage: AC 100-240V 50/60Hz
- Input Current: 1.1~0.5A
- Safety class: Category I

Display

- Q5 : 12.1"/Q3:10.4" Color TFT-LCD
- Resolution : 800X600 pixels

Battery

- Type: Rechargeable Lithium battery, 11.1V/4.0AH
- Operating time under the normal use and full charge : ≥210minutes

Recorder (Option)

- Method : Thermal dot array
- Paper width : 50 mm (1.97 in)
- Paper length: 15m
- Paper Speed : 12.5 / 25 / 50 (mm/sec)
- Traces : Maximum 3 tracks
- Recording way : Real-time recording, Periodic recording, Alarm recording

Alarm

- Level : Low, medium and high
- Indication : Auditory and visual
- Patient Physiological Alarm Light color: Yellow & Red:
- Equipment Technical Alarm Light color: Blue
- Supports Pitch Tone and multi-level volume;
- Supports custom arrhythmia tone

Input device

- Touch screen:standard config
- Knob:standard config
- Mouse input:Support
- Keyboard input:Support

System Output & Extensible Interfaces

- Ethernet Network: 1 Standard RJ45 socket
- Defibrillation Output:1 BNC connector
- Nurse Call: 1 RJ11 connector
- Video Output : 1 VGA port
- USB1.1 port : 2
- SD memory card : 2G (Option)
- Analog Output (ECG or IBP) : Option

Trend & Reviewing :

- Trend : Long trend:168h,minimum resolution is 1min (store when power goes off)
High resolution trend:2h, minimum resolution is 5s
- NIBP measurement reviewing : 1000 groups
- ARR event: 128 groups of ARR event and the associated waveform.
- Alarm events:128 groups of parameter alarm events and associated parameter waveform at the alarm moment
- Full Disclosure waveform: 24 hours for 3 waveforms(with 2G SD cord)

Environment

- Operating temperature:0°C ~ +40°C
- Storage temperature:-20°C ~ +50°C
- Operating humidity:15% to 85% non condensing
- Storage humidity:10% to 93% non condensing
- Operating atmospheric pressure: 860hPa to 1060hPa
- Storage atmospheric pressure:500hPa to 1060hPa

Safety:

- IEC60601-1 Approved, CE marking according to MDD93/42/EEC

Performance:

ECG

- Lead Mode : 3-leads ECG input
5-leads ECG input
12-leads ECG input
- Lead selection : I, II, III
I, II, III, aVR, aVL, aVF, V-
I, II, III, aVR, aVL, aVF, V1-V6 (option)
- Gain : 2.5 mm/mV(x0.25), 5 mm/mV(x0.5), 10 mm/mV(x1),
20 mm/mV (X2),40mm/mv(x4),Auto
- CMRR : Monitor mode≥105dB
Surgery mode ≥105dB
Diagnostic mode≥90dB
- Frequency response (-3dB):
Monitor mode 0.5~40Hz
Surgery mode 1~25Hz
Diagnostic mode 0.05~150Hz
- Input impedance : ≥5.0 Mohm
- ECG signal range: ± 10.0mV
- Electrode offset potential: ± 500mV
- Patient Leakage Current: <10 uA
- Standardizing signal :1 mV ± 5%
- Baseline recovery : <5s after Defibrillation. (Mon or Surg mode)
- Indication of electrode separation : Every electrode (exclusive of RL)
- Protection: Breakdown Voltage 4000VAC 50/60Hz; defibrillator proof
- Sweep speed : 12.5mm/s, 25mm/s, 50mm/s

HR

- Range : Adult 10~300 bpm
Pediatric & Neonate: 10 ~350bpm

Refreshing time : ≤50 bpm Per 2 pulses
50~120bpm Per 4 pulses
≥120bpm Per 6 pulses

- Resolution : 1 bpm
- Accuracy : ± 1% or ± 1bpm, whichever is greater

ST segment

- Measurement range : -2.0mV~2.0mV
- Accuracy: -0.8mV~0.8mV ; ± 0.02mV or ± 10%, whichever is greater
- Resolution : 0.01mV

RESP

- Method : Thoracic impedance
- Lead Selected from: I (RA-LA) or II (RA-LL); Default: I
- Gain : x0.25, x1 x2 x4
- Bandwidth: 0.25 Hz to 2.0Hz (-3dB)
- Sweep speed : 6.25mm/s, 12.5mm/s, 25mm/s
- Measurement Range : 0~150 rpm
- Resolution : 1 rpm
- Accuracy : ± 2rpm or ± 2%, whichever is greater
- Delay of Apnea Alarm : 10s,15s,25s,30s,35s,40s,45s,50s,55s, 60s

NIBP

- Way of measurement : Automatic oscillometry
- Range of measurement :
Adult : SYS 30~270 mmHg
DIA 10~220 mmHg
MAP 20~235 mmHg
Child: SYS 30~235 mmHg
DIA 10~220 mmHg
MAP 20~225 mmHg
Neonate: SYS 30~135 mmHg
DIA 10~100 mmHg
MAP 20~125 mmHg
- Cuff pressure range : 0~300mmHg
- Resolution : 1 mmHg
- Pressure Accuracy : Static : ± 2% or ± 3mmHg, whichever is greater
Clinical : ±5 mmHg average error
standard deviation : ≤8 mmHg
- Unit: mmHg, kPa
- Measurement mode:Manual , Auto, STAT
- Intervals for AUTO measurement time : 1,2,3,4,5,10,15,30,60,90 minutes;
2,4,8,12hours
- STAT mode cycle time : Keep 5 minutes, at 5 seconds interval.
- Overpressure Protection : Hardware and software double protections
- Pulse rate range : 40 ~ 240 bpm

BLT-SpO2 (Digital Technic)

- Measurement Range : 0~100%
- Resolution: 1%
- Accuracy: At 70~100%, ±2%
At 0~69%, unspecified

PR

- Measurement Range : 25~255 bpm
- Resolution : 1 bpm
- Accuracy : ± 1% or ± 1 bpm, whichever is greater

Nellcor-SpO2 (option)

- Measurement Range : 0~100%
- Resolution : 1%
- Accuracy : At 70~100%, ±2% (Adult)
At 70~100%, ±3% (Neonate)
At 70~100%, ±2% (Low Perfusion)
At 0~69%, unspecified

PR

- Measurement Range : 20~300 bpm
- Resolution : 1 bpm
- Accuracy : 20bpm to 250bpm : ± 3 bpm
251bpm to 300bpm: unspecified

Masimo SpO2 (option)

- Measurement range:0% to 100%
- Resolution: 1%
- Accuracy: 70% to 100% ± 2% Adult/pediatric, non-motion conditions
70% to 100% ±3% Neonate, non-motion conditions
70% to 100% ±3% Motion conditions
0% to 69% unspecified
- Average time: 2~4s, 4~6s, 8s, 10s, 12s, 14s, 16s

PR

- Measurement range:25 bpm to 240 bpm
- Accuracy : ± 3bpm Non-motion conditions
± 5bpm motion conditions
- Resolution:1 bpm

TEMP

- Max Channel : 8
- Measurement way: Thermal resistance way
- Measurement Range : 0.0°C ~ 50.0°C (32°F~122°F)
- Accuracy : ±0.1°C or ±1°F (exclusive of probe)
- Resolution : 0.1°C or 1°F
- Unit : Celsius (°C), Fahrenheit (°F)

IBP

- Max Channel : 8
- Measurement way: Directly invasive pressure measurement
- Sensitivity of transducer: 5uV/V/mmHg, ± 2%
- Impedance of transducer: 300 to 3000Ω

- Measurement Range : -50 ~ +350 mmHg
- Resolution : 1mmHg
- Unit : mmHg, kPa,cmH2O

- Accuracy : Static : ±1mmHg or 2%, whichever is greater (exclusive of transducer)
±4mmHg or 4%, whichever is greater (inclusive of transducer)

Dynamic : ±4mmHg or 4%, whichever is greater

- Transducer sites : Arterial Pressure (ART)
Pulmonary Artery Pressure (PA)
Left Atrium Pressure (LAP)
Right Atrium Pressure (RAP)
Central Venous Pressure (CVP)
Intracranial Pressure (ICP)
P1/P2

- Selection of measurement range :

- ART : 0 ~ +350mmHg
PA : -10 ~ +120 mmHg
CVP/RAP/LAP/ICP: -10 ~ +40 mmHg
P1/P2 : -50 ~ +350 mmHg

EtCO₂ (Sidestream)

- Measure method : Infrared spectrum
- Measurement Range : 0.0~13.1% (0~99.6 mmHg)
- Resolution : 1 mmHg
- Unit : %, mmHg, kPa
- Accuracy : 0% to 4.9% ± 0.3% (± 2mmHg)
5.0% to 13.1%, < ± 10% of reading
- Measurement range of awRR : 3~150 rpm
- Calibration: Offset calibration: auto, manual, Gain calibration

EtCO₂ (Mainstream)

- Measure method : Infrared spectrum
- Warm up time : Capnogram displayed in less than 15 seconds, At an ambient temperature of 25 °C, full specifications within 2 minutes.
- Measurement Range : 0~19.7% (0~150 mmHg)
- Resolution : 1 mmHg
- Rise time (10 l/min) : ≤ 60 ms
- Unit : %, mmHg, kPa
- CO₂ Accuracy 0 ~ 40 mmHg, ± 2mmHg
41 ~ 70 mmHg, ± 5% or reading
71 ~ 100 mmHg, ± 8% or reading
101 ~ 150 mmHg, ± 10% of reading
(at 760 mmHg, ambient temperature of 25 °C)
- awRR measurement range: 0~150 rpm
- awRR measurement Accuracy: ± 1 rpm

EtCO₂ (Microstream)

- Measure method : Infrared spectrum
- Warm up time : Capnogram displayed in less than 20 seconds, At an ambient temperature of 25 °C, full specifications within 2 minutes.
- Measurement Range : 0 ~ 19.7% (0~150mmHg)
- Resolution : 1mmHg
- Unit : %, mmHg, kPa
- CO₂ Accuracy 0 ~ 40 mmHg, ± 2mmHg
41 ~ 70 mmHg, ± 5% of reading
71 ~ 100 mmHg, ± 8% of reading
101 ~ 150 mmHg, ± 10% of reading
(at 760 mmHg, ambient temperature of 25 °C)
(when Rr >80 rpm, all the range is ± 12% or reading)
CO₂ response time: < 3s
- awRR measurement range 2~150 bpm
- awRR measurement Accuracy : ± 1rpm
- Sample Flow Rate 50 ml/min ± 10ml/min

Anesthetic Gas

- Measure method : Infrared spectrum
 - Measure mode : Mainstream or Sidestream
 - Fi and Et values : CO₂ N₂O O₂ AG (HAL, ISO, ENF, SEV, DES)
 - Resolution : 1%
 - Unit : %
 - Calibration : Room air calibration performed automatically when changing airway adapter (<5 sec)
 - Warm-up time : <10 s, full accuracy within 1 min
 - Measurement and alarm range of AG:
- | Gas | Range | Accuracy |
|------------------|----------|------------------------|
| CO ₂ | 0-10 % | ± (0.3%ABS+4% REL) |
| N ₂ O | 0-100 % | ± (2% ABS+8% REL) |
| O ₂ | 10-100 % | ± (2% ABS+2% REL) |
| HAL, ISO, ENF | 0-5% | ± (0.15% ABS+10% REL) |
| SEV | 0-8% | ± (0.15% ABS+10% REL) |
| DES | 0-18% | ± (0.15% ABS+10% REL) |
- awRR measurement range : 0~150 rpm
 - awRR measurement Accuracy : ± 1 rpm
 - Rise time (flowing speed 10 l/min) CO₂ ≤ 90 ms
O₂ ≤ 300 ms
N₂O ≤ 300 ms
Hal, Iso, Enf, Sev, Des ≤ 300 ms
 - Total system response time : < 1 seconds

C.O.

- Measurement Mode: Thermal dilution method
- Measurement Wave: Thermal dilution curve
- Measurement parameters: C.O., TB, TI, C.I.
- Measurement Range:C.O.: 0.1 L/min ~ 20 L/min
TB: 23.0 ~ 43.0°C
TI: -1.0 ~ 27.0°C
- Resolution :C.O.: 0.1 L/min
TB: 0.1°C
TI: 0.1°C
- Accuracy:C.O.: 2% SD TB, TI: ±0.1°C
- TB Alarm range:23.0~43.0°C, high/low limit can be adjusted continuously

Standard configuration:

Mainunit: Q5 : 12.1"/Q3:10.4" TFT-LCD display, 2 Standard module slot, Touch Screen, 1 RJ45 ethernet socket, 1 Defibrillation Output, 1 Nurse Call socket, 1 VGA port, 2 USB1.1 port, 1 Lithium rechargeable battery.

Option:

- Option Module: Sidestream CO₂ Module, Microstream CO₂ module, Mainstream CO₂ module, AG module, C.O. module, IBP module, Temp module, Masimo SpO₂ module, Nellcor SpO₂ module.
- Navigating: USB compatible mouse and keyboard.
- Printing: 3 channel thermal recorder
- Mounting: Rolling stand, wall mount
- Battery: 11.1V/4.0AH Rechargeable Lithium Battery.
- Other options: External Display, Wireless Lan, Extensive Memory card, Analog Output (ECG or IBP)

