



MULTI-PARAMETER

PATIENT MONITOR

touching for life



S90 Express

Features:

15" TFT with 10 waveforms

High-end parameters: EtCO₂(Sidestream, Mainstream, Microstream), Multi-gas/O₂, SD memory card

Powerful software features: OxyCRG, large font, short trend, and drug calculation

Pitch tone for audibly recognized SpO₂

Maximum 168-hour trends review

Wire or wireless networking



CE 0123

SINOHERO

Size and Weight

- Size: 366mm×330mm×162mm
- Weight: 5kg

Power supply

- Power Voltage: AC 100-240V 50/60Hz
- Power Input: ≤85VA
- Safety class: Category I

Display

- 15" Color TFT display
- Resolution: 1024x768 pixels

Battery

- Type: Rechargeable Acid Battery
- Operating time under the normal use and full charge: ≥120 minutes
- 2 batteries ≥240 minutes

Thermal Recorder

- Method: Thermal dot array
- Paper width: 50mm (1.97 in)
- Paper Speed: 12.5/25/50 (mm/sec)
- Traces: Maximum 3 tracks

Alarm

- Three Levels: Low, medium and high
- Indication: Auditory and visual
- Setup: Default and custom
- Silence: All alarm can be silenced
- Volume: 45-85 dB measured at 1 meter

Trend

- Trend: 168 hours
- Parameters option: HR, SpO2, NIBP, PR, RESP, EtCO2, Temp1, Temp2, AA, N2O, O2, IBP1, IBP2, ST.
- Cycle intervals of trend storage: 1 min, 2 min, 3 min, 4 min, 5 min, 10 min, 15 min, 20 min, 25 min, 30 min.

Storage & Reviewing

- ECG: 30 minutes one important lead's ECG waveform
- Alarm: 1800 groups alarm events reviewing
- NIBP: 1000 groups NIBP measurement
- Arrhythmia: 128 groups data (8 seconds ECG waveform)
- Power-off storage: 72 hours trend data & 1 ECG waveform (Option)

ECG

- Lead Mode: 3-leads ECG input
- 5-leads ECG input
- Lead selection: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6
- Gain: 2.5mm/mV (×0.25), 5mm/mV (×0.5), 10mm/mV (×1), 20mm/mV (×2), 40mm/mV (×4), 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: ≥5.0Mohm
- ECG signal range: ±10.0mV
- Electrode offset potential: ±500mV
- Patient Leakage Current: <10uA
- Standardizing signal: 1mV±5%
- Baseline recovery: <5s after Defibrillation. (Mon or Surg mode)
- Indication of electrode separation: Every electrode (exclusive of RL)
- Protection: Breakdown Voltage 4000AVC 50/60Hz, defibrillator proof
- Sweep speed: 12.5mm/s, 25mm/s, 50mm/s

HR

- Range: Adult 10 ~ 300bpm
- Pediatric & Neonate 10 ~ 350bpm
- Refreshing time: ≤50 bpm Per 2 pulses
- 50 ~ 120bpm per 4 pulses
- ≥120bpm per 6 pulses
- Resolution: 1bpm
- Accuracy: ±1% or ±1bpm, whichever is greater

ST segment

- Measurement range: -2.0mV ~ 2.0mV
- Resolution: 0.01mV

RESP

- Method: Impedance variation between RA-LL (R-F)
- Gain: ×1, ×2, ×4
- Bandwidth: 0.25Hz to 2.0Hz (-3dB)
- Sweep Speed: 6.25mm/s, 12.5mm/s, 25mm/s
- Measurement Range: 0 ~ 150 rpm
- Accuracy: ±2rpm

NIBP

- Method: Automatic oscillometry
- Range of measurement: Adult: 10 ~ 270mmHg
- Child: 10 ~ 235mmHg
- Neonate: 10 ~ 135mmHg
- Accuracy: Static: ±2% or ±3mmHg, whichever is greater
- Unit: mmHg, kPa
- Intervals for AUTO measurement time: 1, 2, 3, 4, 5, 10, 15, 20, 30, 45, 60, 90 minutes; 2, 4, 8 hours
- Pulse rate range: 40 ~ 240bpm

Standard SpO2 (Digital)

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

PR

- Measurement Range: 25 ~ 250bpm
- Accuracy: ±1% or ±1bpm, whichever is greater

Nellcor-SpO2

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

Masimo-SpO2

- Measurement Range: 0% to 100%
- Resolution: 1%
- Accuracy: 70% to 100%: ±2% (adult/pediatric, on-motion conditions)
- 70% to 100%: ±3% (neonate, on-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: 25bpm to 240bpm
- Accuracy: ±3bpm (non-motion conditions)
- ±5bpm (motion conditions)
- Resolution: 1bpm

TEMP

- Measurement Range: 0°C ~ 50.0°C
- Accuracy: ±0.1°C (exclusive of probe)
- Unit: Celsius (°C), Fahrenheit (°F)
- Connecting cable: Compatible with YSI-400 serial

IBP

- Channel: 2
- Measurement way: Directly invasive pressure measurement
- Sensitivity of transducer: 5uV/mmHg, ±2%
- Impedance of transducer: 300 to 3000Ω
- Measurement Range: -50 ~ +300mmHg
- Resolution: 1mmHg
- Unit: mmHg, kpa, cmH2O
- Accuracy: Static: ±1mmHg or ±2%, whichever is grater (exclusive of transducer)
- ±4mmHg or ±4%, whichever is grater (inclusion of transducer)
- Dynamic: ±4mmHg or 4%, whichever is grater
- Transducer sites: Arterial Pressure (ART)
- Pulmonary Artery Pressure (PA)
- Left Atrium Pressure (LAP)
- Right Atrium Pressure (RAP)
- Central Venous Pressure (CVP)
- Intracranial Pressure (ICP)

EtCO2 (Sidestream)

- Measure method: Infrared spectrum
- Measure Range: 0.0 ~ 13.1% (0 ~ 99.6mmHg)

- Resolution: 1mmHg
- Unit: %, mmHg, kpa
- Accuracy: 0% to 4.9%, ±0.3% (±2.0mmHg)
- 5.0% to 13.1%, < ±10% of the reading
- Measurement range of awRR: 3 ~ 150rpm
- 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.
- Measure Range: 0.0 ~ 10% (0 ~ 76mmHg)
- Resolution: 1mmHg
- Rise time (10 l/min): ≤90ms
- Unit: %, mmHg, kpa
- Accuracy: (±4.0mmHg) or <±10% of reading, which is grater
- awRR measurement range: 0 ~ 150rpm
- awRR measurement Accuracy: ±1rpm

EtCO2 (Microstream)

- 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.
- Measure Range: 0.0-19.7% (0-150mmHg)
- Resolution: 1mmHg
- Unit: %, mmHg, kpa
- CO2 Accuracy: 0-40mmHg, ±2mmHg
- 41-70mmHg, ±5% of reading
- 71-100mmHg, ±8% of reading
- 101-150mmHg, ±10% of reading
- (At 760 mmHg, ambient temperature of 25°C)
- (When RR > 80 rpm, all the rang is ±12% of reading)
- CO2 response time: <3S
- awRR measurement range: 2 ~ 150rpm
- awRR measurement Accuracy: ±1rpm
- Sample Flow Rate: 50ml/min ±10ml/min

Multi Gas

- Measure method: Infrared spectrum
- Fi and ET values: CO2, N2O, O2, AG (HAL, ISO, NEF, SEV, DES)
- Resolution: 1%
- Unit: %
- Calibration: Room air calibration automatically when changing airway Adapter (<5 sec)
- Warm-up time: <10S, full accuracy within 1min
- Measurement and alarm range of AG

Gas	Range	Accuracy
CO2	0-10%	±(0.3% ABS+4%REL)
N2O	0-100%	±(2% ABS+8%REL)
O2	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 ~ 150rpm
- awRR measurement Accuracy: ±1rpm
- Rise time (flowing speed 10l/min) CO2 ≤ 90ms
- O2 ≤ 300ms
- N2O ≤ 300ms
- Hal, Iso, Enf, Sev, Des ≤ 300ms
- Total system response time: <1seconds

Environment

- Operating temperature: 0 ~ +40°C
- Transportation and Storage temperature: -20°C to +50°C
- Relative humidity: Working ≤ 85%
- Transportation and storage ≤ 93%
- Atmospheric pressure: 860hPa to 1060hPa
- Transportation and storage 500-1060 hPa

Standard configuration of S90 Express:

ECG, HR, RESP, SpO2, NIBP, 2-TEMP, Lithium Battery

Optional parameter & configuration of S90 Express:

Nellcor SpO2, Masimo SpO2, 2-TEMP, 2-IBP, EtCO2 (Sidestream, Microstream, Mainstream)

Multigas/O2, VGA output, Thermal recorder.

Specification subject to be changed without prior notice.