

ELEKTRO VENTILATOR



Technical Specifications

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| <p>Physical Specification</p> <p>Dimensions (L*W*H)</p> <p>Weight</p> | <p>327 mm * 310 mm * 493 mm</p> <p>664 mm * 600 mm * 1520 mm (with trolley)</p> <p>Approximately 12.0kg, Approximately 33.0kg (with trolley)</p> |
| <p>Screen</p> <p>Display Size</p> <p>Display Resolution (H) x (V)</p> <p>Brightness</p> | <p>18.3 Color active matrix TFT touch</p> <p>1080*1980 pixels</p> <p>Adjustable</p> |
| <p>Ventilation Specifications</p> <p>Patient Type</p> <p>Invasive Ventilation Mode</p> <p>Non-invasive Ventilation Mode</p> | <p>Adult, Pediatric</p> <p>VCV (Volume Control Ventilation)</p> <p>PCV (Pressure Control Ventilation)</p> <p>VSIMV (Volume Synchronized Intermittent Mandatory Ventilation)</p> <p>PSIMV (Pressure Synchronized Intermittent Mandatory Ventilation)</p> <p>CPAP/PSV (Continuous Positive Airway Pressure/Pressure Support Ventilation)</p> <p>PRVC (Pressure Regulated Volume Control)</p> <p>V+SIMV (PRVC+SIMV)</p> <p>BPAP (Bilevel Positive Airway Pressure)</p> <p>APRV (Airway Pressure Release Ventilation)</p> <p>Apnea Ventilation</p> <p>CPAP (Continuous Positive Airway Pressure)</p> <p>PCV (Pressure Control Ventilator)</p> <p>PPS (Proportional Pressure Support)</p> <p>S/T (Spontaneous and Timed)</p> <p>VS (Volume Support, similar like AVAPS)</p> |
| <p>Controlled Parameters</p> <p>O2%</p> <p>VT(Tidal Volume)</p> <p>f(Ventilation frequency)</p> <p>fSIMV(Ventilation frequency in SIMV mode)</p> <p>I:E range</p> <p>T_{insp}(Inspiratory time)</p> <p>T_{slope}(Time of Pressure Rising)</p> <p>Thigh</p> | <p>21-100% (increments of 1%)</p> <p>Adult: 100-2000mL(increments of 10mL)</p> <p>Pediatric: 20-300mL(increments of 1mL)</p> <p>1-80 bpm (increments of 1 bpm)</p> <p>1-80 bpm (increments of 1 bpm)</p> <p>4:1-1:10 (increments of 0.5)</p> <p>0.20-10s (increments of 0.05s)</p> <p>0-2.00s (increments of 0.05s)</p> <p>0.2-30s (increments of 0.1s)</p> |

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| <p>Tlow</p> <p>Tpause</p> <p>ΔP_{insp}</p> <p>ΔP_{supp}</p> <p>P_{high}</p> <p>P_{low}</p> <p>PEEP</p> <p>Flow trigger</p> <p>Pressure trigger</p> <p>Exp% (Expiration termination level)</p> <p>CPAP</p> <p>EPAP</p> <p>IPAP</p> <p>Rise time</p> <p>Ramp time</p> <p>Min P (VS minimum IPAP)</p> <p>Max P (VS maximum IPAP)</p> <p>Max P (PPV maximum pressure limit)</p> <p>Max V (PPV maximum volume limit)</p> <p>Max E</p> <p>Max R</p> <p>PPV%</p> | <p>0.2-30s (increments of 0.1s)</p> <p>5 %-60% (increments of 1%), Off</p> <p>0-60cmH₂O (increments of 1cmH₂O)</p> <p>0-60cmH₂O (increments of 1cmH₂O)</p> <p>0-60cmH₂O (increments of 1cmH₂O)</p> <p>0-45cmH₂O (increments of 1cmH₂O)</p> <p>1-45cmH₂O (increments of 1cmH₂O), Off</p> <p>0.5-15 L/min (increments of 0.1 L/min)</p> <p>-10 to -0.5 cmH₂O (increments of 0.5 cmH₂O)</p> <p>10-85% (increments of 5%), Auto</p> <p>4-25 cmH₂O (increments of 1cmH₂O)</p> <p>4-25 cmH₂O (increments of 1cmH₂O)</p> <p>4-20 cmH₂O (increments of 1cmH₂O)</p> <p>1-5 (increments of 1)</p> <p>5-45min (increments of 5min), Off</p> <p>5-30cmH₂O (increments of 1cmH₂O)</p> <p>6-40cmH₂O (increments of 1cmH₂O)</p> <p>5-40cmH₂O (increments of 1cmH₂O)</p> <p>200-3500mL (increments of 5ml)</p> <p>0-100 cmH₂O/L (increments of 1cmH₂O/L)</p> <p>0-50 cmH₂O/L (increments of 1 cmH₂O/L)</p> <p>0%-100% (increments of 1%)</p> |
| <p>Apnea Ventilation</p> <p>V_tapnea</p> <p>ΔP_{apnea}</p> <p>f_{apnea}</p> <p>Apnea T_{insp}</p> | <p>Adult: 100-2000mL (increments of 10mL)</p> <p>Pediatric: 20-300mL (increments of 1mL)</p> <p>5-60cmH₂O (increments of 1 cmH₂O)</p> <p>1-80bpm (increments of 1 bpm)</p> <p>0.20-10 s (increments of 0.05 s)</p> |
| <p>Sigh</p> <p>Sigh Switch</p> <p>Interval</p> <p>Cycles Sigh</p> <p>$\Delta int.PEEP$</p> | <p>On, Off</p> <p>20s-180 min (increments of 1 s from 20 to 59s, increments of 1 min from 1 to 180min)</p> <p>1-20 (increments of 1)</p> <p>1- 45 cmH₂O (increments of 1 cmH₂O), Off</p> |
| <p>Synchronized Tube Resistance Compliance</p> <p>Tube Type</p> <p>Tube I.D.</p> <p>Compensate</p> <p>Expiration Compliance Switch</p> | <p>ET Tube, Trach Tube, Disable STRC</p> <p>Adult: 5.0-12.0mm (increments of 0.5 mm)</p> <p>Pediatric: 2.5-8.0mm(increments of 0.5mm)</p> <p>0-100% (increments of 1%)</p> <p>On, Off</p> |

Monitored Parameters

Numeric:

Paw

Ppeak

Pplat

Pmean

PEEP

Insp Flow

Exp Flow

MV

MV leak

MV spn

Vte

VTi

Real time Graphics:

Pressure-time waveforms

Flow-time waveforms

Volume-time waveforms

Oxygen concentration

VTe spn

VTe/IBW

f

ftotal

fmand

fspn

Re

Ri

Cdyn

Cstat

Rcexp

WOB

RSBI

NIF

P0.1

PEEPi

PIP

EPAP

Pt.Trig

Pt.leak

Tot.leak

Continuous Flow (O Therapy)

Paw-Volume Loop

Flow-time Loop

Paw-Flow Loop

Control Accuracy

O %

TV

Tinsp

I: E

f

fSIMV

Tslope

PEEP

Δ Pinsp

Δ Psupp

Phigh

Plow

Thigh

Tlow

Pressure Trigger

Flow Trigger

Δ int.PEEP

Exp%

CPAP

EPAP

IPAP

Rise time

Ramp time

\pm (3 vol.% +1% of setting)

\pm (10mL +10% of setting) (BTPS)

\pm 0.1s or \pm 10% of setting, whichever is greater

2:1 to 1: 4: \pm 10% of setting, other range: \pm 15% of setting

\pm 1bpm

\pm 1bpm

\pm (0.2s+20% of setting)

\pm (2.0cmH₂O + 5% of setting)

\pm (2.0cmH₂O + 5% of setting)

\pm (2.0cmH₂O + 5% of setting)

\pm (2.0cmH₂O + 5% of setting)

\pm (2.0cmH₂O + 5% of setting)

\pm 0.2s or \pm 10% of setting, whichever is greater

\pm 0.2s or \pm 10% of setting, whichever is greater

\pm (1.0 cmH₂O + 10 % of setting)

\pm (1.0 L/min + 10 % of setting)

\pm (2.0 cmH₂O + 5% of setting)

\pm 10 %

\pm (2.0 cmH₂O + 5% of setting)

\pm (2.0 cmH₂O + 5% of setting)

\pm (2.0 cmH₂O + 5% of setting)

/

\pm 1s

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|--|--|---------------------------|-------------------------|--------------------------|-----|------------------------|--------------------------|------|------------------------|---------------------------|-----|-----------------------|---------------------------|------|--------------------------|--|------|----------------|--|------|---|--|-----|--|--|
| Min P (VS minimum IPAP) Max P (VS maximum IPAP) Max P (PPV maximum pressure limit) Max V (PPV maximum volume limit) Max E Max R fapnea ΔPapnea Tvapnea Apnea Tinsp | ± (2.0 cmH ₂ O + 5% of setting) ± (2.0 cmH ₂ O + 5% of setting) ± (2.0 cmH ₂ O + 5% of setting) ± 15% of setting / / ± 1bpm ± (2.0cmH ₂ O + 5% of setting) ± (10mL +10% of setting) (BTPS) ± 0.1s or ±10% of setting, whichever is greater | | | | | | | | | | | | | | | | | | | | | | | | |
| Monitoring Accuracy Airway pressure (Ppeak, Pplat, Pmean, PEEP, PAP, EPAP) Tidal Volume (Tvi, Tve, Tve/IBW, Tve spn) Minute Volume (MV, MVspn, Mvleak) Frequency (ftotal, fmand, fspn) Inspired Oxygen (FiO ₂) Resistance Compliance RSBI WOB NIF P0.1 PEEPi Rcexp | ± (2 cmH ₂ O + 4 % of the actual reading) 0ml -100ml: ± (10ml+3% of the actual reading) (BTPS) 100ml - 4000ml: ± (3ml+10% of the actual reading) (BTPS) ± 0.3L/min or ± 8% of the actual reading, whichever is greater (BTPS) ± 5% of reading or ± 1bpm, whichever is greater ± (2.5 vol. % + 2.5% of the actual reading) 0 to 50: ±10 cmH ₂ O/L/s Other range: 50% of the actual reading 25% of the actual reading or ± 10 ml/cmH ₂ O, whichever is greater 0 to 1000 1/(Lmin) : 15% of the actual reading or ± 20 1/(Lmin) / ± (2 cmH ₂ O + 4 % of the actual reading) ± (2 cmH ₂ O + 4 % of the actual reading) / / | | | | | | | | | | | | | | | | | | | | | | | | |
| Alarm Settings Tidal Volume Minute Volume Airway pressure Frequency Inspired oxygen (FiO ₂) Apnea alarm time | <table border="0"> <tr> <td>High</td> <td>Adult: 110-4000 mL, Off</td> <td>Pediatric: 25-600 mL,Off</td> </tr> <tr> <td>Low</td> <td>Adult: 50-4000 ml, Off</td> <td>Pediatric: 10-600 mL,Off</td> </tr> <tr> <td>High</td> <td>Adult: 0.2-100.0 L/min</td> <td>Pediatric: 0.2-60.0 L/min</td> </tr> <tr> <td>Low</td> <td>Adult: 0.1-50.0 L/min</td> <td>Pediatric: 0.1-30.0 L/min</td> </tr> <tr> <td>High</td> <td colspan="2">10-85 cmH₂O</td> </tr> <tr> <td>High</td> <td colspan="2">1-150 bpm, Off</td> </tr> <tr> <td>High</td> <td colspan="2">Actual reading + 8% (High-pressure oxygen) 2%-100% (Low-pressure oxygen)</td> </tr> <tr> <td>Low</td> <td colspan="2">Actual reading - 8% (High-pressure oxygen) 18%-98% (Low-pressure oxygen) 5-60s</td> </tr> </table> | High | Adult: 110-4000 mL, Off | Pediatric: 25-600 mL,Off | Low | Adult: 50-4000 ml, Off | Pediatric: 10-600 mL,Off | High | Adult: 0.2-100.0 L/min | Pediatric: 0.2-60.0 L/min | Low | Adult: 0.1-50.0 L/min | Pediatric: 0.1-30.0 L/min | High | 10-85 cmH ₂ O | | High | 1-150 bpm, Off | | High | Actual reading + 8% (High-pressure oxygen) 2%-100% (Low-pressure oxygen) | | Low | Actual reading - 8% (High-pressure oxygen) 18%-98% (Low-pressure oxygen) 5-60s | |
| High | Adult: 110-4000 mL, Off | Pediatric: 25-600 mL,Off | | | | | | | | | | | | | | | | | | | | | | | |
| Low | Adult: 50-4000 ml, Off | Pediatric: 10-600 mL,Off | | | | | | | | | | | | | | | | | | | | | | | |
| High | Adult: 0.2-100.0 L/min | Pediatric: 0.2-60.0 L/min | | | | | | | | | | | | | | | | | | | | | | | |
| Low | Adult: 0.1-50.0 L/min | Pediatric: 0.1-30.0 L/min | | | | | | | | | | | | | | | | | | | | | | | |
| High | 10-85 cmH ₂ O | | | | | | | | | | | | | | | | | | | | | | | | |
| High | 1-150 bpm, Off | | | | | | | | | | | | | | | | | | | | | | | | |
| High | Actual reading + 8% (High-pressure oxygen) 2%-100% (Low-pressure oxygen) | | | | | | | | | | | | | | | | | | | | | | | | |
| Low | Actual reading - 8% (High-pressure oxygen) 18%-98% (Low-pressure oxygen) 5-60s | | | | | | | | | | | | | | | | | | | | | | | | |

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| <p>Trend</p> <p>Type</p> <p>Length</p> <p>Content</p> | <p>Tabular, Graphic</p> <p>72 hours</p> <p>Monitor Parameters, Setting Parameters (Setting Ventilation mode and Parameters)</p> |
| <p>O₂ Therapy</p> <p>Controlled Parameters</p> <p>O₂ %</p> <p>Flow</p> <p>Controlled Accuracy</p> <p>O₂ %</p> <p>Flow</p> | <p>21-100% (increments of 1%)</p> <p>4-60 L/min</p> <p>± (3vol.% +1% of setting)</p> <p>± (2L/min+10% of setting) (BTPS)</p> |
| <p>Environmental Specifications</p> <p>Temperature</p> <p>Relative Humidity</p> <p>Barometric Pressure</p> | <p>5-40°C (operating); -20 to 60°C (storage and transport, O sensor: -20 to 50°C)</p> <p>10-95% (operating); 10-95% (storage and transport)</p> <p>62-106 kPa (operating); 50-106 kPa (storage and transport)</p> |
| <p>Power Battery Backup</p> <p>External AC power supply</p> <p>Input voltage</p> <p>Input frequency</p> <p>Input current</p> <p>Fuse</p> <p>Internal battery</p> <p>Number of batteries</p> <p>Battery type</p> <p>Battery run time</p> | <p>100-240V</p> <p>50/60 Hz</p> <p>2.5A Max</p> <p>T2.5 AH/250V</p> <p>One or Two(Optional)</p> <p>Build-in Lithium-ion battery, 11.25 VDC, 6400 mAh</p> <p>3 hours (Powered by one new fully-charged battery in standard working condition)</p> <p>6 hours (Powered by two new fully-charged battery in standard working condition)</p> |
| <p>Others</p> <p>Communication interface</p> <p>Gas supply</p> <p>Pipe Connector</p> <p>Gas supply pressure</p> <p>Trolley</p> <p>Dimensions</p> <p>Weight</p> | <p>Rs232, Ethernet, USB port, Nurse call, CO₂ calibration connector</p> <p>O₂</p> <p>NIST or DISS</p> <p>280-600kPa</p> <p></p> <p>1000 mm * 676mm * 505mm</p> <p>Approximately 21kg</p> |