

# SV300

## Ventilator

### Physical Specification

#### Dimensions and weight

|                    |   |
|--------------------|---|
| Dimensions (HxWxD) | 354 mmX315 mmX255 mm<br>(Excluding the trolley) |
| Weight             | Approximately 10kg<br>(Excluding the trolley)   |

### Display

|                  |  |
|------------------|--|
| Screen           | 12.1" Color active matrix TFT touch screen |
| Resolution (HxV) | 1280X800 pixels                            |
| Brightness       | Adjustable                                 |

### Trolley

|                    |                       |
|--------------------|-----------------------|
| Dimensions (HxWxD) | 1039 mmX528 mmX544 mm |
| Weight             | Approximately 20 kg   |

### Communication interface

|                         |   |
|-------------------------|---|
| Communication interface | RS-232, Nurse call connector, VGA connector, USB Port, Ethernet |
|-------------------------|---|

### Ventilation Specifications

|                  |   |
|------------------|---|
| Patient Type     | Adult, Pediatric, Neonate   |
| Ventilation Mode | V-A/C (Volume assist/control)<br>P-A/C (Pressure assist/control)<br>V-SIMV (Volume-Synchronized Intermittent Mandatory Ventilation)<br>P-SIMV (Pressure-Synchronized Intermittent Mandatory Ventilation)<br>DuoLevel (Duo Level Ventilation)<br>CPAP (Continuous Positive Airway Pressure)<br>PSV (Pressure Support Ventilation)<br>VS (Volume Support)<br>APRV (Airway Pressure Release Ventilation)<br>PRVC (Pressure Regulated Volume Control)<br>PRVC-SIMV (PRVC-Synchronized Intermittent Mandatory Ventilation)<br>AMV (Adaptive Minute Ventilation)<br>CPRV (Cardio-Pulmonary Resuscitation Ventilation)<br>nCPAP (Nasal Continuous Positive Airway Pressure ventilation)<br>NIV (Non-invasive ventilation)<br>Apnea Ventilation |

### Controlled Parameters

|  |  |
|--|--|
| O <sub>2</sub> %                           | 21 to 100 vol.%  |
| TV (Tidal Volume)                          | Adult: 100 to 2000 mL<br>Pediatric: 20 to 300 mL<br>Neonate: 2 to 100 mL |
| MV%  | 25% to 350%  |
| f  | Adult / Pediatric: 1 to 100 /min<br>Neonate: 1 to 150 /min               |
| fsimv (Ventilation frequency in SIMV mode) | 1 to 60 /min   |
| I:E  | 1:10 to 4:1  |



|                                     |  |
|-------------------------------------|--|
| Tinsp                               | 0.10 to 10.00 s  |
| Tslope (Time of pressure rising)    | 0.00 to 2.00 s   |
| Thigh                               | 0.10 to 30.00 s  |
| Tlow                                | 0.20 to 30.00 s  |
| Tpause                              | OFF, 5% to 60%   |
| Flow Pattern                        | Square, 100% Decelerating, 50% Decelerating                              |
| ΔPinsp                              | 1 to 80 cmH <sub>2</sub> O   |
| ΔPsupp                              | 0 to 80 cmH <sub>2</sub> O   |
| Phigh                               | 0 to 80 cmH <sub>2</sub> O   |
| Plow                                | 0 to 50 cmH <sub>2</sub> O   |
| PEEP                                | 0 to 50 cmH <sub>2</sub> O   |
| Flow trigger                        | OFF,<br>Adult/Pediatric: 0.5 to 20.0 L/min;<br>Neonate: 0.1 to 5.0 L/min |
| Pressure trigger                    | OFF, -20.0 to -0.5 cmH <sub>2</sub> O                                    |
| Exp% (Expiration termination level) | Auto, 1% to 85%  |
| Neg.Plimit (CPRV)                   | -30 to 0 cmH <sub>2</sub> O  |

### Apnea Ventilation

|                   |   |
|-------------------|---|
| TVapnea           | Adult: 100 to 2000 mL<br>Pediatric: 20 to 300 mL<br>Neonate: 2 to 100 mL              |
| ΔPapnea<br>fapnea | 1 to 80 cmH <sub>2</sub> O<br>Adult / Pediatric: 1 to 80 bpm<br>Neonate: 1 to 150 bpm |
| Apnea Tinsp       | 0.10 to 10.00 s   |

### Sigh

|             |                                 |
|-------------|---------------------------------|
| Sigh Switch | ON, OFF                         |
| Interval    | 20 s to 180 min                 |
| Cycles Sigh | 1 to 20                         |
| Δint. PEEP  | OFF, 1 to 50 cmH <sub>2</sub> O |

### Automatic Tube Resistance Compensation

|                                |   |
|--------------------------------|---|
| Tube Type                      | ET Tube, Trach Tube, Disable ATRC   |
| Tube I.D.                      | Adult: 5.0 to 12.0 mm<br>Pediatric: 2.5 to 8.0 mm<br>Neonate: 2.5 to 5.0 mm |
| Compensate                     | 0 to 100 %  |
| Expiration Compensation Switch | ON, Off   |

### O<sub>2</sub> Therapy

|                  |   |
|------------------|---|
| O <sub>2</sub> % | 21 to 100 vol.%   |
| Flow             | Adult/Pediatric: 2 to 80 L/min<br>Neonate : 2 to 20 L/min |

### Automatic Leakage Compensation

|                                   |                |
|-----------------------------------|----------------|
| Maximum leakage compensation flow | Adult: 65L/min |
|-----------------------------------|----------------|

|                                     |  |
|-------------------------------------|--|
|                                     | Pediatric: 45L/min<br>Neonate: 15L/min   |
| <b>IntelliCycle</b>                 |  |
| Applicable patient type             | Adult / Pediatric  |
| Automatically adjust parameters     | Trigger, Tslope, Exp%  |
| IntelliCycle Switch                 | ON, Off  |
| <b>Monitored parameters</b>         |  |
| Airway pressure range               | Ppeak, Pplat, Pmean<br>(Range -20 to 120 cmH <sub>2</sub> O)<br>PEEP (Range 0 to 120 cmH <sub>2</sub> O)   |
| Tidal volume range                  | TVi, TVe, TVe spn (Range 0 to 4000 mL)   |
| Frequency range                     | ftotal, fmand, fspn (Range 0 to 200 /min)  |
| Minute volume range                 | MVi, MVe, MVspn, MVleak<br>(Range Adult/Pediatric: 0 to 100 L/min<br>Neonate: 0 to 30 L/min)   |
| Leak%                               | 0 to 100%  |
| Resistance                          | Rinsp, Rexp (Range 0 to 600 cmH <sub>2</sub> O/L/s)  |
| Compliance                          | Cstat, Cdyn (Range 0 to 300 mL/cmH <sub>2</sub> O)   |
| Inspired Oxygen (FiO <sub>2</sub> ) | 15 to 100 vol.%  |
| RSBI                                | 0 to 9999 1/(min*L)  |
| WOB                                 | 0 to 100 J/min   |
| P0.1                                | -20 to 0 cmH <sub>2</sub> O  |
| NIF                                 | -45 to 0 cmH <sub>2</sub> O  |
| PEEPi                               | 0 to 80 cmH <sub>2</sub> O   |
| RCexp                               | 0 to 10 s  |
| TVe/IBW                             | 0 to 50 mL/kg  |
| I:E                                 | 100:1 to 1:150   |
| Tinsp                               | 0.00 to 60.00s   |
| Waveforms                           | Airway pressure-time, Flow-time, Volume-time, CO <sub>2</sub> -time, Pleth-time  |
| Loops                               | Paw-Volume, Flow-Volume, Paw-Flow, Volume-CO <sub>2</sub>  |
| <b>Alarm settings</b>               |  |
| Tidal Volume                        | High Neo: Off, 3 to 200 mL<br>Ped: Off, 25 to 600 mL<br>Adu: Off, 110 to 4000 mL<br>Low Neo: Off, 1 to 200 mL<br>Ped: Off, 10 to 600 mL<br>Adu: Off, 50 to 4000 mL   |
| Minute Volume                       | High Neo: 0.02 to 30.0 L/min<br>(can be set to Off in nCPAP)<br>Ped: 0.2 to 60.0 L/min<br>Adu: 0.2 to 100.0 L/min<br>Low Neo: 0.01 to 15 L/min<br>Ped: 0.1 to 30.0 L/min<br>Adu: 0.1 to 50.0 L/min<br>(can be set to Off in NIV)   |
| Airway pressure                     | High 10 to 85 cmH <sub>2</sub> O   |
| Frequency                           | High OFF, 1 to 160 /min  |
| Inspired Oxygen (FiO <sub>2</sub> ) | High Auto, FiO <sub>2</sub> exceeds the alarm limit for at least 30 s, internal alarm limit: set value+max (7 vol.% or set value X10%) or 100 vol.%, whichever is lower.<br>Low Auto, FiO <sub>2</sub> lower than the alarm limit for at least 30 s, internal alarm limit: setvalue-max (7 vol.% or set valueX10%) or 18%, whichever is greater. |
| Apnea alarm time                    | Low 5 to 60 s (can be set to Off in nCPAP)   |

|              |   |
|--------------|---|
| <b>Trend</b> |   |
| Type         | Tabular, Graphic  |
| Length       | 72 hours  |
| Content      | Monitor Parameters, Setting Parameters<br>(Setting Ventilation mode and Parameters) |

|            |                  |
|------------|------------------|
| <b>Log</b> |                  |
| Type       | Alarm, Operation |
| Max number | 5000             |

|                              |                                |
|------------------------------|--------------------------------|
| <b>Ventilator components</b> |                                |
| O <sub>2</sub> sensor        |                                |
| Type                         | Calvanic fuel cell             |
| Response time                | < 15 s                         |
| <b>Neonatal flow sensor</b>  |                                |
| Flow Range                   | 0.2 to 30 L/min                |
| Dead space                   | <0.75 mL                       |
| Resistance                   | 0.9 cmH <sub>2</sub> O@10L/min |

|   |                       |
|---|-----------------------|
| <b>Sidestream CO<sub>2</sub> Module</b> |                       |
| Displayed numeric                       | EtCO <sub>2</sub>     |
| Measurement range                       | 0 to 99 mmHg          |
| Resolution                              | 1 mmHg                |
| Waveforms                               | CO <sub>2</sub> -time |
| EtCO <sub>2</sub> High alarm limit      | 2 to 99 mmHg          |
| EtCO <sub>2</sub> Low alarm limit       | 0 to 97 mmHg          |

|   |  |
|---|--|
| <b>Mainstream CO<sub>2</sub> Module</b> |  |
| Displayed numerics                      | EtCO <sub>2</sub> , VeCO <sub>2</sub> , ViCO <sub>2</sub> , Vtalv, VDaw, VDaw/TVe, SlopeCO <sub>2</sub> , VCO <sub>2</sub> |
| Measurement range                       | 0 to 150 mmHg  |
| Resolution                              | 1 mmHg   |
| Waveforms / Loop                        | CO <sub>2</sub> - time, Volume - CO <sub>2</sub>   |
| System response time                    | < 2.0 s  |
| EtCO <sub>2</sub> High alarm limit      | 2 to 150 mmHg  |
| EtCO <sub>2</sub> Low alarm limit       | 0 to 148 mmHg  |

|                                    |                           |
|------------------------------------|---------------------------|
| <b>SpO<sub>2</sub> module</b>      |                           |
| Displayed numeric                  | SpO <sub>2</sub> , PR, PI |
| SpO <sub>2</sub> Measurement range | 0 to 100 %                |
| PR measurement range               | 20 to 254 1/min           |
| PI measurement range               | 0.05 to 20 %              |
| Waveform                           | Pleth                     |
| SpO <sub>2</sub> High alarm limit  | 2 to 100 %                |
| SpO <sub>2</sub> Low alarm limit   | 0 to 98 %                 |
| SpO <sub>2</sub> Desat alarm limit | 0 to 98 %                 |
| PR High alarm limit                | 17 to 300 1/min           |
| PR Low alarm limit                 | 15 to 298 1/min           |

|                                     |  |
|-------------------------------------|--|
| <b>Operation Data</b>               |  |
| <b>Environmental specifications</b> |  |
| Temperature                         | 5 to 40°C(operating); -20 to 60°C(storage)         |
| Relative Humidity                   | 10 to 95 % (operating); 10 to 95 % (storage)       |
| Barometric Pressure                 | 62 to 106 kPa (operating); 50 to 106 kPa (storage) |

|  |                     |
|--|---------------------|
| <b>Gas supply</b>                      |                     |
| Gas type                               | O <sub>2</sub>      |
| Pipe Connector                         | NIST, DISS          |
| Gas supply pressure                    | 0.28 to 0.6MPa      |
| Peak flow in case of single supply gas | ≥ 210 L/min (BTPS)* |

#### Air supply (Blower)

Maximum output flow  $\geq$  210 L/min (BTPS)\*  
Maximum output pressure  
 $\geq$  80 cmH<sub>2</sub>O  
Maintenance interval 20,000 hours

#### Power and Battery Backup

##### External AC power supply

Power input voltage 100 to 240 V  
Power input frequency 50/60 Hz  
Power input current 2.7 to 1.1 A  
Fuse T3.15 AH/250 V

##### External DC power supply

Power input voltage 12 V  
Power input current 15 A

##### Internal battery

Number of batteries One or Two  
Battery type Build-in Lithium-ion battery, 14.8 VDC,  
5800 mAh  
Battery run time 180 min (Powered by one new fully-  
charged battery in standard working  
condition)\*  
360 min (Powered by two new fully-  
charged battery in standard working  
condition)

#### Special Functions and procedures

Sigh  
100% O<sub>2</sub>  
Suction  
Nebulization  
Manual breath  
Inspiratory hold  
Expiratory hold  
PEEPi  
P0.1  
NIF  
PV-Tool  
PulmoSight  
Lung Recruitment Tool (SI)

\*BTPS =Body Temperature and Pressure Saturated

\*The standard work condition is: Ventilation mode:V-A/C; TV:500 mL; f:10/min; T<sub>insp</sub>:2 s ; O<sub>2</sub> %:40 Vol.%; PEEP:3 cmH<sub>2</sub>O ; R:5 cmH<sub>2</sub>O/L/s ; C:50 mL/cmH<sub>2</sub>O ; Gas supply: O<sub>2</sub> and Air Pipeline gas supply, nominal work pressure: 400±100 kPa.

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Some of functions marked with an asterisk may not be available.  
Please contact your local Mindray sales representative for the most  
current information.

**[www.mindray.com](http://www.mindray.com)**

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