

SV300

Ventilator



Flow	± (2 L/min + 10 % of the actual reading) (BTPS)
Log	
Type	Alarm, Operation
Max number	5000
O₂ Sensor	
Type	Galvanic fuel cell
Response time	< 15 s
Communication interface	
Communication interface	Rs232, Ethernet, VGA, USB port, Nurse call
Gas supply	
Gas type	O ₂
Pipe Connector	NIST or DISS
Gas supply pressure	280 - 600 kPa
Peak flow in case of single supply gas(air)	≥ 210 L/min (BTPS)*1
Operation Data	
Environmental specifications	
Temperature	5 - 40 °C (operating); -20 to 60 °C (storage and transport, O ₂ sensor: -20 to 50°C)
Relative Humidity	10 - 95 % (operating); 10 - 95 % (storage and transport)
Barometric Pressure	62 - 106 kPa (operating); 50 - 106 kPa (storage and transport)
Power and Battery Backup	
External AC power supply	
Input voltage	100 - 240 V
Input frequency	50/60 Hz
Input current	2.7 - 1.1 A
Fuse	T3.15 AH/250 V
External DC power supply	
Input voltage	12 V
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)*2 360 min (Powered by two new fully - charged battery in standard working condition)
Trolley	
Dimensions	1039 mm*528 mm*544 mm
Weight	Approximately 20 kg
Special Functions and procedures	
Sigh	
100% O ₂	
Suction	
Manual breath	
Expiratory hold	
Inspiratory hold	
P0.1	
NIF	
PV - Tool	
PEEPi	
Nebulizer	
O ₂ Therapy	

*1 BTPS = Body Temperature and Pressure Saturated

*2 The standard work condition is: Ventilation mode: P-A/C; ΔP_{insp}: 10 cmH₂O; f: 10 bpm; T_{insp}: 2 s; T_{slope}: 0.2 s; O₂: 21 Vol.%; PEEP: 5 cmH₂O; R: 20 cmH₂O/L/s; C: 20 ml/cmH₂O; Gas supply nominal work pressure: 400 ± 100 kPa.

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Technical Specifications		
Physical Specification		
Dimensions	354 mm*315 mm*249 mm (Excluding the trolley)	
Weight	Approximately 10 kg (Excluding the trolley)	
Screen		
Display Size	12.1 Color active matrix TFT touch	
Display Resolution (H) x (V)	1280*800 pixels	
Brightness	Adjustable	
Ventilation Specifications		
Patient Type	Adults, children, infants (body weight of at least 3 kg)	
Ventilation Mode	V-A/C (Volume assist/control) P-A/C (Pressure assist/control) V-SIMV (Volume - Synchronized Intermittent Mandatory Ventilation) P-SIMV (Pressure - Synchronized Intermittent Mandatory Ventilation) DuoLevel (Duo Level Ventilation) CPAP (Continuous Positive Airway Pressure) PSV (Pressure Support Ventilation) APRV (Airway Pressure Release Ventilation) PRVC (Pressure Regulated Volume Control) PRVC-SIMV (Pressure Regulated Volume Control-Synchronized Intermittent Mandatory Ventilation) AMV (Adaptive Minute Ventilation) NIV (Non-invasive Ventilation) Apnea Ventilation	
Controlled Parameters		
O ₂ %	21 - 100% (increments of 1 %)	
TV(Tidal Volume)	Adult: 100 - 2000 mL (increments of 10 mL) Pediatric: 20 - 300 mL (increments of 1 mL)	
MV%	25% to 350%	
f (Ventilation frequency)	1 - 100 bpm (increments of 1 bpm)	
fSIMV (Ventilation frequency in SIMV mode)	1 - 60 bpm (increments of 1 bpm)	
I:E range	4:1 - 1:10 (increments of 0.5)	
T _{insp} (Inspiratory time)	0.20 - 10 s (increments of 0.05 s)	
T _{slope} (Time of Pressure Rising)	0 - 2.00 s (increments of 0.05 s)	
T _{high}	0.2 - 30 s (increments of 0.1 s)	
T _{low}	0.2 - 30 s (increments of 0.1 s)	
T _{pause}	5 % - 60 % (increments of 5 %), Off	
ΔP _{insp}	5 - 80 cmH ₂ O (increments of 1 cmH ₂ O)	
ΔP _{supp}	0 - 80 cmH ₂ O (increments of 1 cmH ₂ O)	
Phigh	0 - 80 cmH ₂ O (increments of 1 cmH ₂ O)	
Plow	0 - 45 cmH ₂ O (increments of 1 cmH ₂ O)	
PEEP	1 - 45 cmH ₂ O (increments of 1 cmH ₂ O), Off	
Flow trigger	0.5 - 15 L/min (increments of 0.1 L/min), Off	
Pressure trigger	-10 to - 0.5 cmH ₂ O (increments of 0.5 cmH ₂ O), Off	
Exp % (Expiration termination level)	10 - 85% (increments of 5%), Auto	
Apnea Ventilation		
T _{vapnea}	Adult: 100 - 2000 mL (increments of 10 mL)	Pediatric: 20 - 300 mL (increments of 1 mL)
ΔP _{apnea}	5 - 80 cmH ₂ O (increments of 1 cmH ₂ O)	
f _{apnea}	1 - 80 bpm (increments of 1 bpm)	
Apnea T _{insp}	0.20 - 10 s (increments of 0.05 s)	

Sigh	
Sigh Switch	ON, Off
Interval	20 s - 180 min (increments of 1 s from 20 to 59 s, increments of 1 min from 1 to 180 min)
Cycles Sigh	1 - 20 (increments of 1)
Δint.PEEP	1 - 45 cmH ₂ O (increments of 1 cmH ₂ O), Off
Automatic Tube Resistance Compensation	
Tube Type	ET Tube, Trach Tube, Disable ATRC
Tube I.D.	Adult: 5.0 - 12.0 mm (increments of 0.5 mm) Pediatric: 2.5 - 8.0 mm (increments of 0.5 mm)
Compensate	0 -100 % (increments of 1 %)
Expiration Compensation Switch	ON, Off
Monitored parameters	
Airway pressure range	Ppeak, Pplat, Pmean, PEEP (Range 0 - 120 cmH ₂ O)
Tidal volume range	TVi, TVe, TVe spn (Range 0 - 4000 mL)
Frequency range	ftotal, fmand, fspn (Range 0 - 200 bpm)
Minute volume range	MV, MVspn, MVleak (Range 0 - 100 L/min)
Resistance	Rinsp, Rexp (0 - 600 cmH ₂ O/L/s)
Compliance	Cstat, Cdyn (0 - 300 mL/cmH ₂ O)
Inspired Oxygen(FiO ₂)	15 - 100 %
RSBI	0 - 999 1/(L·min)
WOB	0 - 100 J/min
P0.1	-20 - 0 cmH ₂ O
NIF	-45 - 0 cmH ₂ O
PEEPi	0 - 80 cmH ₂ O
RCexp	0 - 10 s
TVe/IBW	0 - 50 ml/kg
I:E	100:1 -1:150
Tinsp	0.00 - 60.00s
Waveforms	Airway pressure - time, Flow - time, Volume - time
Loops	Paw - Volume, Flow - Volume, Paw - Flow
Ventilator Accuracy	
Control Accuracy	
O ₂ %	± (3 vol.% +1 % of setting)
TV	± (10 mL + 10 % of setting) (BTPS)
Tinsp	± 0.1 s or ± 10 % of setting, whichever is greater
I: E	2: 1 to 1: 4: ± 10 % of setting, other range: ± 15% of setting
f	± 1 bpm
fSIMV	± 1 bpm
Tslope	± (0.2 s + 20 % of setting)
PEEP	± (2.0 cmH ₂ O + 5 % of setting)
ΔPinsp	± (2.0 cmH ₂ O + 5 % of setting)
ΔPsupp	± (2.0 cmH ₂ O + 5 % of setting)
Phigh	± (2.0 cmH ₂ O + 5 % of setting)
Plow	± (2.0 cmH ₂ O + 5 % of setting)
Thigh	± 0.2 s or ± 10 % of setting, whichever is greater
Tlow	± 0.2 s or ± 10 % of setting, whichever is greater
Pressure Trigger	± (1.0 cmH ₂ O + 10 % of setting)
Flow Trigger	± (1.0 L/min + 10 % of setting)
Δint.PEEP	± (2.0 cmH ₂ O + 5% of setting)
Exp %	± 10 %
fapnea	± 1 bpm
ΔPapnea	± (2.0 cmH ₂ O + 5 % of setting)
TVapnea	± (10 mL + 10 % of setting) (BTPS)
Apnea Tinsp	± 0.1 s or ± 10% of setting, whichever is greater

Monitoring Accuracy	
Airway pressure (Ppeak, Pplat, Pmean, PEEP)	± (2 cmH ₂ O + 4 % of the actual reading)
Tidal Volume (TVi, TVe, TVe/IBW, TVe spn)	0 ml - 100 ml: ± (10 ml + 3 % of the actual reading) (BTPS); 100 ml - 4000 ml: ± (3 ml + 10 % of the actual reading) (BTPS)
Minute Volume (MV, MVspn, MVleak)	± (0.2 L/min + 10 % of the actual reading) (BTPS)
Frequency (ftotal, fmand, fspn)	± 5% of reading or ± 1bpm, whichever is greater
Inspired Oxygen (FiO ₂)	± (2.5 vol.% + 2.5 % of the actual reading)
Resistance	0 to 20: ± 10 cmH ₂ O/L/s Other range: 50 % of actual reading
Compliance	± (2 ml/cmH ₂ O + 20 % of the actual reading)
RSBI	± (3 1/(L·min))+15 % of the actual reading)
WOB	± (1 J/min+15 % of the actual reading)
NIF	± (2 cmH ₂ O + 4 % of the actual reading)
P0.1	± (2 cmH ₂ O + 4 % of the actual reading)
PEEPi	No declaration
RCexp	± (0.2 s + 20 % of the actual reading)
Alarm settings	
Tidal Volume	High Adult: 110 - 4000 mL, Off Pediatric: 25 - 600 mL, Off Low Adult: 50 - 4000 ml, Off Pediatric: 10 - 600 mL, Off
Minute Volume	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
Air pressure	High 10 - 85 cmH ₂ O
Frequency	High 1 - 150 bpm, Off
Inspired oxygen (FiO ₂)	High Auto, FiO ₂ exceeds the alarm limit for at least 30 s, internal alarm limit: min (set value+max (7 % or set value*10 %), 100 %) Low Auto, FiO ₂ lower than the alarm limit for at least 30 s, internal alarm limit: max (set value-max (7 % or set value*10 %), 18 %), Absolute FiO ₂ low limit: 18 %
Apnea alarm time	5 - 60 s
SideStream CO₂ Module (optional)	
Displayed numerics	EtCO ₂
Measurement Range	0 - 99 mmHg
Measurement accuracy	0 to 40 mmHg ± 2 mmHg 41 to 76 mmHg ± 5% of reading 77 to 99 mmHg ± 10% of reading
Waveforms	EtCO ₂ - time
Resolution	1 mmHg
Sampling rate	Adult: 70 ml/min, 100 ml/min, 120 ml/min, 150 ml/min Pediatric: 70 ml/min, 100 ml/min
Sampling rate Accuracy	± 15% of the set value or ± 15 mL/min, whichever is greater
System response time	Using Adult water trap, Adult sampling line: < 7.5 s @ 150 ml/min < 8.0 s @ 120 ml/min < 8.5 s @ 100 ml/min < 9.5 s @ 70 ml/min Using Pediatric water trap, Pediatric sampling line: < 7.5 s @ 100 ml/min < 8.0 s @ 70 ml/min
Rise time	Adult water trap: < 400 ms @70 ml/min < 330 ms @100 ml/min < 300 ms @120 ml/min < 240 ms @150 ml/min Pediatric water trap: < 400 ms @70 ml/min < 330 ms @100 ml/min
Water trap cleaning time	Adult water trap: ≥24 h @150 ml/min ≥48 h @70 ml/min Pediatric water trap: ≥24 h @100 ml/min ≥48 h @70 ml/min

Sidestream CO₂ alarm limits	
EtCO ₂	High 2 - 99 mmHg Low 0 - 97 mmHg
MainStream CO₂ Module(optional)	
Displayed numerics	EtCO ₂
EtCO ₂ Measurement range	0 -150 mmHg
EtCO ₂ Measurement Accuracy	0 to 40 mmHg ± 2 mmHg of reading 41 to 70 mmHg ± 5% of reading 71 to 100 mmHg ± 8% of reading 101 to 150 mmHg ± 10% of reading
Resolution	1 mmHg
Waveforms	EtCO ₂ - time, Volume - EtCO ₂
Other Parameters	
SlopeCO ₂ (slope of the alveolar plateau)	Range: 0 - 9.99 %/L Resolution: 0.01 %/L
Vtalv (Alveolar tidal ventilation)	Range: 0 - 9999 ml Resolution: 1 ml
V'alv (Alveolar minute ventilation)	Range: 0 - 20 L/min Resolution: 0.01 L/min for < 1 L/min, 0.1 L/min for ≥ 1 L/min
V'CO ₂ (CO ₂ elimination)	Range: 0 - 9999 mL/min Resolution: 1 ml/min
VDaw (Airway death space)	Range: 0 - 999 mL Resolution: 1 ml
VDaw/TVe (Physiological dead space fraction at the airway opening)	Range: 0 - 100 % Resolution: 1 %
VeCO ₂ (exhaled CO ₂ volume)	Range: 0 - 999 mL Resolution: 1 ml
ViCO ₂ (inspired CO ₂ volume)	Range: 0 - 999 mL Resolution: 1 ml
System response time	< 2.0 s
CO₂ alarm limits	
EtCO ₂	High 2 - 150 mmHg Low 0 - 148 mmHg
SpO₂ module(optional)	
Measurement Range and Resolution	
SpO ₂	Range: 0 - 100 % Resolution: 1 %
PR	Range: 20 - 254 1/min Resolution: 1 1/min
PI	Range: 0.05 - 20 %
Measurement Accuracy	
SpO ₂	70 to 100 %: ±2 % 0 % to 69 %: Not specified.
PR	± 3 1/min
SpO₂ alarm limits	
SpO ₂	High 2 -100 % Low 0 - 98 %
Desat	0 - 98 %
PR	High 17 - 300 1/min Low 15 - 298 1/min
Trend	
Type	Tabular, Graphic
Length	72 hours
Content	Monitor Parameters, Setting Parameters (Setting Ventilation mode and Parameters)
O₂ Therapy	
Controlled Parameters	
O ₂ %	21 - 100 % (increments of 1 %)
Flow	2 - 60 L/min
Controlled Accuracy	
O ₂ %	± (3 vol.% +1 % of setting)
Flow	± (2 L/min +10 % of setting) (BTPS)
Monitor Accuracy	
FiO ₂	± (2.5 vol. % + 2.5 % of the actual reading)