## **Specification: A7-V**



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## Anesthesia Machine

A7-V



Tech	inical Specification	
Physical Characterist	tics	
Size	780 mm*676 mm*1390 mm	
Weight	90kg ( without vaporizer and cylinder)	
Screen Size:	8.4" TFT touch screen	
Resolution	800 *480	
Handrail Length	412mm	
Caster wheel	4 wheels, Foot brakes optional; size 5"	
brightness	adjustable	
<b>Operation Environm</b>	ent	
Working Temp	10~40°C	
Humidity	≤93%	
Power Supply	100-240V~, 50/60Hz±1Hz	
Battery Type	Rechargeable Lithium-ion battery	
Battery Capacity	standard 2200mAh;	
	optional 4400mAh;	
Battery Recharging		
Time	6 hours for charging;	
Battery backup	Standard configuration:	
	60 min for continuous working	
	optional configuration:	
	6 hours for continuous working	
Waveforms	Pressure-time; Flow	
Spirometry	rate-time; Volume-time;	
	EtCO2; EEG	
	Optional: Pressure-volume Loops;	
	Flow-volume Loops; Pressure- flow	
	Loops	
Top Plate		
Maximum supporting		
capacity	20kg	
Operational		
dimensions	535mm×235mm	

Dimensions with	
Additional Accessory	508mm×313mm×380mm
Workbench	
Maximum	
supporting capacity	20kg
Operational	
dimensions	850mm*480mm*230mm
Interface:	
	1 USB interfaces
	1 RJ45 network interface
	3 auxiliary power output
	1 AC power interface
	1 Equal-potential grounding terminal
	1 DB9 interface
Drawers	
Single drawer	Optional
Three drawer	Standard
Тор:	Size:392mm*333mm*150mm
	Bearing Weight: 1Kg
Features	
Patients	Small Animal, Large Animal
Working Mode	Manual, Mechanical, Standby
Compliance	Compliance Correction
Alarms	2000 events
Standard	8.4"TFT touch screen, Lithium-ion
Configuration	battery of 60 min, 2 tube
	flowmeter(Single oxygen pipeline),
	single drawer, single vaporizer slot,
	flush Oxygen; foot brake,3 auxiliary
	power output, breath circuit system;
Standard ventilation	VCV, PCV
Optional	MASIMO EtCO2 (mainstream);
Configuration	MASIMO AG (sidestream); Respironics
	EtCO2 (mainstream); Respironics

	EtCO2 (Sidestream); MASIMO AG+O2
	(sidestream); Artema AG; Artema
	AG+O2; Optimal flow indication;
	Anesthetic usage monitoring; CPB
Vent	ilator Specification
Ventilation Modes	
VCV/VC	Volume-Controlled Ventilation
PCV/VPC	Pressure Control Ventilation
SIMV-VC, SIMV-PC	Synchronized Intermittent
	Mandatory Ventilation
PRVC	Pressure Regulated Volume Control
PSV/ CPAP	Pressure Support Ventilation
PSV Pro	Pressure support ventilation for
	apnea backup
SIMV-PRVC	Synchronized Intermittent
	Mandatory Pressure Regulated
	Volume Control Ventilation
Others	Manual and automatic ventilation
Ventilation principle	Chronometric, volumetric and
	barometric
Ventilation	Electronically controlled&
	pneumatically driven
Driven gas	O2(air: optional)
Breathing circuit	
volume	1000 ml + bag
Ventilator Setting ra	inges
Tidal volume range	15 ~1500 mL
MV (Per-minute	
ventilation amount)	0~100 L/min
Plimit (pressure)	10~100 cmH2O
RR	
	3~60 cmH2O
f (Respiratory Rate)	4~100 bpm
I.E. (Inspiratory	
Expiratory ratio)	4:1~1:10
Apnea I.E.	4:1~1:8
Apnea time	10~30s
Apnea pressure	3~60 cmH2O
Freq. Min. (Min.	
frequency for apnea-	2-60 bpm
ventilation)	
Tpause (Inspiratory	
pause)	OFF, 5~60% of inspiratory time

Tinsp (Inspiratory	0.2~5s
time)	
Pinsp (Inspiratory	
pressure)	5~70 cmH2O
PEEP	OFF, 3~30 cmH2O
Trigger pressure	-20~-1 cmH2O
Trigger window	5~90%
Trigger flow rate	0.2~15 L/ min
Flush oxygen (Rapid	
Oxygenation)	25~75 L/ min
Inspiratory stop level	5~80%
Tslope (Pressure	
slope)	0~2.0s
Ventilator Monitorin	g Ranges
Monitoring parameter	er
Tidal volume, Inspirat	tory/expiratory, Tidal Volume,
minute volume, Oxyg	en Concentration, frequency,
pressure (Paw, Pmea	n, Pplat, Ppeak,PEEP), I: E, Oxygen,
CO2, N2O and haloge	enated expiratory
concentration,Pressu	re, oxygen,CO2, N2O and Halogen
numerical values, cor	npliance and patient resistance
TV (Inspiratory tidal	
volume)	0~3000 mL
TV (expiratory tidal	
volume)	0~3000 mL
MV (Per-minute	
ventilation amount)	0~100 L/min
FiO2 (Oxygen	
concentration)	18~100%
Paw (Airway	
pressure)	-20~120 cmH2O
PEEP	0~70 cmH2O
Ppeak	
(Airway pressure)	-20~120 cmH2O
Pmean	
(Mean pressure)	-20~120 cmH2O
Pplat	
(Platform pressure)	0~100 cmH2O
I.E. (Inspiratory-	
expiratory ratio)	4:1~1:12
RR	0~120 bpm
Compliance	0~300 mL/cmH2O
Resistance	0~600 cmH2O/(s/L)
EtCO2	

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MASIMO EtCO2	0~190mmHg, 0~25% (at 760mmHg)
(sidestream);	Accuracy: ± (0.3%+4% of reading).
MASIMO EtCO2	0~190mmHg, 0~25% (at 760mmHg)
(mainstream)	Accuracy: ± (0.3%+4% of reading).
Respironics EtCO2	0~150mmHg, 0~19.7%
(sidestream);	(at 760mmHg)
	Accuracy: 0~5.3%: ±0.3%;
	5.4~9.2%: ±5% of reading;
	9.3~13.2%: ±8% of reading;
	13.3~19.7%: ±10% of reading;
Respironics EtCO2	0~150mmHg, 0~19.7% (at 760mmHg)
(mainstream)	Accuracy: 0~5.3%: ±0.3%;
	5.4~9.2%: ±5% of reading;
	9.3~13.2%: ±8% of reading;
	13.3~19.7%: ±10% of reading;
AG	
MASIMO AG	SEV: 0~25%
	DES: 0~25%
	HAL/ ISO/ ENF: 0~25%
	N2O: 0~100%
	02: 0~100%
	CO2: 0~25% (0~190mmHg)
	Accuracy:
	SEV: $\pm$ 0.15%; 5% (Reading);
	DES: $\pm$ 0.15%; 5% (Reading);
	ISO, ENF, HAL: ± 0.15%; 5%
	(Reading);
	N2O: $\pm$ 2% + 2% (reading)
	O2: $\pm 1\%$ ; $\pm 2\%$ (reading)
	CO2: 0.2% + 2% (reading)
MASIMO AG	MASIMO AG SEV: 0~25%
	DES: 0~25%
	HAL/ ISO/ ENF: 0~25%
	N2O: 0~100%
	O2: 0~100%
	CO2: 0~25% (0~190mmHg)
Anesthesia depth	
BIS	0.0~100.0%
SQI	0.0~100.0%
EMG	0.0~100.0%
ESR	0.0~100.0%
Ventilator Performa	nce
Inlet Pressure range	280~600 kPa
Peak MV	100 L/min
Minuto Volumo	1~100 L/min
winnute volume	

Inspiratory flow	Standard: Maximum inspiratory flow
	shall not be smaller than 80L/min
	when gas supply pressure is 280KPa.
	Optional: Maximum inspiratory flow
	shall not be smaller than 120L/min
	when gas supply pressure is 280KPa
Pressure limitation	Controlled by the electronic relief
Controlling means for	valve fitted inside the ventilator;
ventilator	Controlled by the mechanical relief
ventilator	valve fitted inside the ventilator.
Ve	ntilator accuracy
Control accuracy	
TV	15~100 ml: +5ml:
	$100^{2}$
	$200^{-1500} \text{ ml} \pm 25 \text{ ml}$
PCV	
PCV	Inspiratory pressure: ±1cmH2O;
	Limiting pressure: ±1cmH2O
	PEEP: OFF; ±1cmH2O;.
	Supporting pressure: ±1cmH2O;
	Apnea pressure: ±1cmH2O;
	Trigger pressure: ±1%
RR	±1 bpm:±0.5%
I.E.	4: 1~1: 10: ±0.5%
Apnea I.E.	4: 1~1: 8: ±0.5%
Tpause	1%
Inspiratory time	±0.1s
Trigger window	±1%
Trigger flow rate	±1 L/ min
Inspiratory stop level	±1%
Pressure slope	±0.1s
Inspiratory trigger	Trigger pressure:-5 CMH2O;
	Trigger flow: 0.1 L/Min
SIMV Rate	1 bpm
Monitoring accuracy	
TV	0~60ml(without 60ml): ±15 ml;
(expiratory)	60ml ~ 3000ml: ± 20ml or ± 10% of
	setting value, whichever is greater;
TV	± 20ml or ± 10% of setting value,
(Inspiratory)	whichever is greater;
Paw	±3 cmH2O or ± 8% of set value,
	whichever is greater; Others:
	undefined.
	·

PEEP	±2.0 cmH2O or ± 10% of set value,
	whichever is greater; Others:
	undefined.
RR	±1 bpm or ±5% of set value,
	whichever is greater.
I.E.	2: 1~1: 4: ±10% of reading value;
	4: 1~2: 1 and 1: 4~1: 12: ±25% of
	setting value; Others: undefined.
MV	0 L/min~30 L/min: ±1 L/min or ±15%
	of set value, whichever is greater; >30
	L/min: undefined.
Compliance	0 ml/cmH2O~250 ml/cmH2O
Resistance	0 cmH2O/(L/s) ~500 cmH2O/(L/s)
Alarm Settings	
Tidal volume	High: 5~1600 ml
	Low: 0 ~1595 ml
MV	High: 2~100L/min
	Low: 0 ~98L/min
FiO2	High: 20~105%
	Low: 18 ~ 103%
Air pressure	High: 2 ~100cmH2O
	Low: 0 ~98cmH2O
Apnea alarm	Two (2) triggering conditions are
	satisfied simultaneously:
	1. Airway pressure is continuously
	lower than (PEEP +3) cmH2O for more
	than 30 seconds.
	2. Expiratory tidal volume is
	continuously lower than 10ml for
	more than 30 seconds.
	Increase the set values of tidal volume
	and respiratory frequency, or set it to
	Manual/spontaneous mode.
Alarm	Audible and visual alarm; 120s
Alarm access	Easy access by shortcut
Flow meters	
Туре	Mechanical flow meter
N2O range	0~15 L/min,The flow can be adjusted
	to 50ml/min
Air range	0~15 L/min,The flow can be adjusted
	to 50ml/min
O2 range	0.2 ~15 L/min,The flow can be
	adjusted to 50ml/min
Total flow control	Air balance gas: 21~100%
	N2O balance gas: 25~100%

Total flow range	0 ~15 L/min
Backup flow control	0 ~15 L/min
O2-N20 Link system	Equipped with a safety system to
	ensure an O2 concentration of at least
	25%
Gas Supply	
Pipeline gasses	O2, N2O, Air
Backup	
gas-cylinder gasses	O2, N2O, Air
Pipeline gas	
connection	NIST/DISS
Backup cylinder	
connection	YOKE-CGA
Inlet pressure range	280~600 kPa
Filter	60-100μm, Stainless steel mesh
Features	Switch easily to the other gas without
	interrupting the ventilation
Auxiliary gas supply	Float flowmeter
	Standard: O2 supply
	Optional: Air, auxiliary gas supply
Breathin	g System Specification
System Pressure Gau	ige
Range	-20~100 cmH2O
Accuracy	± (4% of full scales reading + 4% of
	actual reading)
Adjustable Pressure	Limiting (APL)valve
Range	1~75 cmH2O
Touch indication	>30 cmH2O
Accuracy:	±10 cmH2O,±15%, which is greater
Minimum opening	
pressure	0.3 cmH2O (dry), 0.5 cmH2O (humid)
<b>Breathing Circuit Par</b>	ameters
Compliance	0 ml/cmH2O $\sim$ 300 ml/cmH2O
Volume of CO2	2000ml
canister	
Feature	Heated at 134 degree, removable,
	easy to dismantle and sterilize, 2000
	times
Gas Monitoring	
Carbon Dioxide (CO2	) Modules
Туре	Mainstream ETCO2, Sidestream
	ETCO2
Method	Infrared absorption

Display	Numeric and curve displayed in
	screen
<b>BIS Modules</b>	
Smoothing rate	10s, 15s, 30s
Waveform Sweep	6.25 mm/s,12.5
	mm/s,25mm/s,50mm/s
Wave gear	50 $\mu$ v $_{\times}$ 100 $\mu$ V $_{\times}$ 200 $\mu$ V $_{\times}$ 400 $\mu$
	$V_{\infty}$ 625 $\mu$ $V_{\infty}$ 1000 $\mu$ V/2000 $\mu$ V
Anesthetic Agent (AG) Module	
Maximum sound	
pressure for low	
alarm	79dB
Measurement type	Side stream
Accuracy	±10ml/min or ±10%, whichever is
	greater
Monitored	CO2, N2O, AG+O2, MAC, AG,
parameters	Paramagnetic O2 and BIS
Active AGSS	
Feature	High flow, low vacuum
Size	535 mm×120 mm×155 mm
Weight	2.2 kg
Applies	ISO 80601-2-13 and YY 0635-2
Pressure relief device	Atmospheric pressure compensation
	port
Connector	ISO9170-2 or BS6834 standard
	connector
Flow of suction	50-80L/min
Filter	Stainless steel mesh, with pore size of
	60~100μm
ACGO	
Connector	Taper coaxial fitting of 22mm
	(outside) and 15 (inside)

Back pressure	
generated at the	
rear end of	
anesthesia	
vaporizer and the	
front-end of ACGO	
during rapid	≥ZKPa
oxygen variation	
Flush O2	25-75L/MIN
	100% fast oxygen
Vaporizer	
Brand	Comen/Drager/Penlon available
Single vaporizer	Standard
Double vaporizer	Optional
Locking	Two vaporizers with interlocking
	system
Automatic	Anesthesia machine able to automatic
recognition	recognize halogenated gases
	Power
External AC power se	upply
Input voltage	100~240 V~
Input current	7.0-3.5A
Input frequency	50/60 Hz
Leakage current	< 500µA
Length of wire	5M
Auxiliary output supply	
Output voltage	100~240 V~
Output frequency	50/60 Hz
Output current	1.0 A

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