X10 VET

Veterinary Monitor

Version 1.0

Data Sheet

X10 VET Specification		
Physical Specifications		
Dimension	261±2 mm (W) × 246±2 mm (H) × 146±2 mm (D)	
Max Weight	< 2.8 kg Standard configurations, no battery or accessories	
Power Supply		
Line Voltage	100 V to 240 V~	
Current	1.4 A to 0.7 A	
Frequency	50 Hz/60 Hz	
Battery		
Capacity	2550 mAh , 5100 mAh	
Operating Time	2550 mAh	≥ 4 h
	5100 mAh	≥ 8 h
Charge Time	2550 mAh	≤ 3.5 h, 90% charge
	5100 mAh	≤ 6.5 h, 90% charge
Display		
Display screen	10.1 inch color TFT screen, touch screen available	
Resolution	800 × 480	
Waves	A maximum of 13 waveforms can be displayed on the same screen	
Recorder		
Record Width	48 mm	
Record Paper Width	50 mm	
Paper Speed	12.5 mm/s, 25 mm/s, 50 mm/s	
Channels	3	
Recording Types	Continuous real-time recording 8-second real-time recording 20-second real-time recording Time recording Alarm recording Trend graph recording Trend table recording NIBP review recording Arrhythmia review recording Alarm review recording 12-lead analysis recording ST view recording QT view recording	
Data Storage		
Internal Temporary Memory	Trend graph/trend table review	3 hrs, at 1 s resolution 120 hrs, at 1 min resolution

	Alarm/Monitoring Event data	Up to 200 sets
	NIBP Measurement Review	1200 sets
	Arrhythmia events	Up to 200 sets
	12-lead Diagnosis Review	Up to 50 sets
Non-volatile Memory (internal or external storage device)	A single piece of patient data maximally contains the following information:	
	Trend graph and trend table	240 hours, at 1 min resolution
	NIBP measurement review	1200 sets
	Alarm review	200 sets
	Arrhythmia event	200 sets
	12-lead diagnosis review	50 sets
	Waveforms	48 hours
Wi-Fi		
IEEE	802.11a/b/g/n	
Frequency Band	2.4 GHz ISM band & 5 GHz ISM band	
Interfaces and others		
VGA output (optional)		1
USB interface		2
Nurse call / analog output/ defibrillator synchronization (optional)		1
Network Interface		1
Data Transmission		
Data Export	Ethernet / USB	
ECG		
Lead Mode	3-Electrode: I, II, III 5-Electrode: I, II, III, aVR, aVL, aVF, V 6-Electrode: I, II, III, aVR, aVL, aVF, and leads responding to Va, Vb 10-Elctrode: I, II, III, aVR, aVL, aVF, V1, V2, V3, V4, V5, V6	
Lead naming style	AHA, IEC	
Display Sensitivity (Gain Selection)	1.25 mm/mV (×0.125), 2.5 mm/mV (×0.25), 5 mm/mV (×0.5),10 mm/mV (×1), 20 mm/mV (×2), 40 mm/mV (×4), AUTO gain	
Sweep speed	6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s	
Bandwidth (-3 dB)	Diagnosis: 0.05 Hz to 150 Hz Diagnosis1: 0.05 Hz to 40 Hz Monitor: 0.5 Hz to 40 Hz Surgery: 1 Hz to 20 Hz Enhanced: 2 Hz ~18 Hz Customized: High-pass Filter and Low-pass Filter	

CMRR	Diagnosis: > 95 dB Monitor: > 105 dB Surgery: > 105 dB Enhanced: > 105 dB Diagnosis 1: > 105 dB (when Notch is turned on) Customized: > 105 dB (Low-pass Filter < 40 Hz) > 95 dB (Low-pass Filter > 40 Hz)		
Hum Filter	In diagnosis, Surgery 1, monitor, surgery, enhanced modes: 50Hz/60 Hz (Hum filter can be turned on or off manually)		
Recovery time after defibrillation	<5 s		
ESU Protection	Cut mode: 300 W Coagulation mode: 100 W Restore time: ≤10 s		
Pace pulse detecting lead	one among I, II, III, AVR, AVL, AVF, V1, V2, V3,V4, V5, V6		
Heart Rate			
Range	15 bpm to 300 bpm		
Accuracy	±1% or ±1 bpm, whichever is greater		
Resolution	1 bpm		
PVC			
Range	0 to 350 PVCs/ min		
Resolution	1 PVCs/min		
ST value			
Range	-2.0 mV to +2.0 mV		
Accuracy	±0.02 mV or 10% (-0.8 mV to +0.8 mV), whichever is greater. Beyond this range: not specified.		
Resolution	0.01 mV		
QT measurement			
Range	200 ms to 800 ms		
Resolution	4 ms		
Accuracy	±30 ms		
QTc measurement			
Range	200 ms to 800 ms		
Resolution	1 ms		
ΔQTc measurement			
Range	-600 ms to 600 ms		
Resolution	1 ms		
Arrhythmia analyses			
Asystole	Sustain VT	V-Fib/V-Tach	ExtremeTachy
ExtremeBrady	V-Tach	Vent Brady	Tachy

Brady	Wide QRS Tachy	Non-Sustain VT	Afib
Vent Rhythm	Acc. Vent Rhythm	Pause	Pauses/min High
PVCs High	R on T	PVC Bigeminy	PVC Trigeminy
Pacer not Pacing	Pacer not Capture	Missed Beat	VEB
PVC	Couplet	Run PVCs	Multiform PVCs
IPVC	Irr Rhythm	PAC Bigeminy	PAC Trigeminy
Low Voltage(Limb)			
12-lead ECG synchronization analysis			
Average parameters of heart beat			
Heart rate (bpm)			
Time limit of P wave (ms)			
PR interval (ms)			
QRS interval (ms)			
QT/QTC (ms)			
P-QRS-T AXIS			
RESP			
Method	Trans-thoracic impedance: R-F(RA-LL), R-L (RA-LA)		
Measurement lead	Options are lead I and II		
Measuring Range	Adult	0 rpm to 120 rpm	
	Ped/Neo	0 rpm to 150 rpm	
Resolution	1 rpm		
Accuracy	6 rpm to 150 rpm: ±2 rpm 0 rpm to 5 rpm: not specified		
Gain Selection	×0.25, ×0.5, ×1, ×2, ×3, ×4, ×5		
Sweep	6.25 mm/s, 12.5 mm/s, 25.0 mm/s, 50.0 mm/s		
Apnea Alarm Time	10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s		
NIBP			
Method	Oscillometry		
Mode	Manual, Auto, Continuous		
Measuring Interval in Auto Mode	1/2/3/4/5/10/15/30/60/90/120/180/240/360/480 min		
Continuous	5 min, interval is 5 s		
Measuring Type	SYS, DIA, MAP, PR		
Measuring Range	Big Cuff Mode	SYS: 25 mmHg to 290 mmHg DIA: 10 mmHg to 250 mmHg MAP: 15 mmHg to 260 mmHg	
	Middle Cuff Mode	SYS: 25 mmHg to 240 mmHg DIA: 10 mmHg to 200 mmHg MAP: 15 mmHg to 215 mmHg	

	Small Cuff Mode	SYS: 25 mmHg to 140 mmHg DIA: 10 mmHg to 115 mmHg MAP: 15 mmHg to 125 mmHg
Cuff Pressure Measuring Range	0 mmHg to 300 mmHg	
Pressure Resolution	1 mmHg	
Maximum Mean Error	±5 mmHg	
Maximum Standard Deviation	8 mmHg	
Maximum Measuring Period	Big/Middle cuff	120 s
	Small cuff	90 s
Typical Measuring Period	20 s to 35 s (depend on HR/motion disturbance)	
Overpressure Protection	Big cuff	297 mmHg±3 mmHg
	Middle cuff	245 mmHg±3 mmHg
	Small cuff	147 mmHg±3 mmHg
SpO_2		
Measuring Range	0% to 100%	
Resolution	1%	
Data update period	1 s	
Accuracy	±3% (70% to 100% SpO_2) Undefined (0% to 69% SpO_2)	
PI (Perfusion Index)		
Measuring Range	0-10	
Resolution	1	
TEMP		
Channel	2	
Position	Skin, Oral cavity, Rectum	
Sensor type	YSI-10K and YSI-2.252K	
Technique	Thermal resistance	
Measure Parameter	T1, T2, TD	
Position	Skin, Oral, Rectum	
Unit	°C , ºF	
Measuring Range	0°C to 50°C (32 ºF to 122 ºF)	
Resolution	0.1°C (0.1 ºF)	
Accuracy	Accuracy (not including sensor): ±0.1°C	
	Sensor accuracy: ≤ ±0.2°C	
Transient Response Time	≤ 30 s	
PR		
PR (SpO_2)	Measuring range	25 bpm to 300 bpm
PR (SpO_2)	Accuracy	±2 bpm

PR (NIBP)	Measuring range		40 bpm to 240 bpm
	Accuracy		±3 bpm or 3.5%, whichever is greater
PR (IBP)	Measuring range		20 bpm to 300 bpm
	Accuracy		30 bpm to 300 bpm: ±2 bpm or 2%, whichever is greater 20 bpm to 29 bpm: undefined
IBP			
Channel	1/2		
Technique	Direct invasive measurement		
Measuring range	Art	0 mmHg to +300 mmHg	
	PA	-6 mmHg to +120mmHg	
	CVP/RAP/LAP/ICP	-10 mmHg to +40 mmHg	
	P1/P2	-50 mmHg to +300 mmHg	
Resolution	1 mmHg		
Accuracy	±2% or ±1 mmHg, whichever is greater (not including sensor)		
Unit	kPa, mmHg, cmH2O		
CO_2			
Measure Parameters	$EtCO_2$, $FiCO_2$, AwRR		
Unit	mmHg, %, kPa		
Measuring Range	$EtCO_2$	0 mmHg to 150 mmHg (0% to 20%)	
	$FiCO_2$	0 mmHg to 50 mmHg	
	AwRR	2 rpm to 150 rpm	
Resolution	$EtCO_2$	1 mmHg	
	$FiCO_2$	1 mmHg	
	AwRR	1 rpm	
Accuracy	$EtCO_2$	±2 mmHg, 0 mmHg to 40 mmHg	Typical conditions: Ambient temperature: (25 ± 3) °C Barometric pressure: (760 ± 10) mmHg Balance gas: N_2 Sample gas flowrate: 100 ml/min
		±5% of reading, 41 mmHg to 70 mmHg	
		±8% of reading, 71 mmHg to 100 mmHg	
		±10% of reading, 101 mmHg to 150 mmHg	
		±12% of reading or ±4 mmHg, whichever is greater	All conditions
	AwRR	±1 rpm	
Sample Gas Flowrate	70 ml/min or 100 ml/min(default), accuracy: ±15 ml/min		
Warm-up time	Display waveform within 20 s, Reach the design accuracy within 2 minutes.		
Response time	<4 s		

Barometric pressure compensation	Automatic	
Zero Calibration	Support	
Calibration	Support	
Apnea alarm delay	10 s, 15 s, 20 s, 25 s, 30 s, 35 s, 40 s	
Safety Specifications		
Compliant with Standards	IEC 60601-1: 2005+A1 :2012; IEC 60601-1-2: 2014; EN 60601-1: 2006+A1 :2013; EN 60601-1-2: 2015; IEC 60601-2-49: 2011	
Anti-electroshock Type	Class I equipment and internal powered equipment	
Anti-electroshock Degree	CF	
Ingress Protection	IPX1	
Environmental Specifications		
Temperature	Working	+0°C to +40°C (32 ºF ~104 ºF)
	Transport and Storage	-20°C to +55°C (-4 ºF ~131 ºF)
Humidity	Working	15%RH to 95%RH (non-condensing)
	Transport and Storage	15%RH to 95%RH (non-condensing)
Altitude	Working	86 kPa to 106 kPa
	Transport and Storage	70 kPa to 106 kPa

** Specifications are subject to change without prior notice*

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