Kingpo Technology Development Limited

ECG electrode electrical performance tester

This equipment is a specialized equipment for electrode integrated performance testing, designed under the Test Method of disposable ECG electrode ANSI/AAMI EC12:2000(R2005) Disposable ECG electrodes

Test items	Incentive conditions	scope	Accuracy	Testing time
Impedance	Sinusoidal alternating curret 100μAp_p - 5% 10Hz±10%	0-20KΩ	Less than or equal to 1KΩ 2%±10Ω>1 KΩ 3%	>60s
Disorder	DC input impedance Greater than or e qual to 10μΩ	±1200mV	Less than or equal to 100mV 1%±1m V >100mV 2%	60-90s
Noise	RC Bandpass 0.15-100Hz	0-2000μV (PP)	Less than or equal to 150μV ±7. 5μV >150μV 5%	60-360s
Flow resist ance	DC Current 200nA±5%	±1200mV	Less than or equal to 100mV 1%±1m V>100mV 2%	More than 8 ho urs
Defibrillatio n	Capacitor 10μF±5% Power 200V±2%	±1200mV	Less than or equal to 100mV 1% ±1mV >100mV 2%	5, 15, 25, 35s

Overall dimensions: 27.5cmx22cmx10cm.

Total machine weight: 2.5Kg.

Fuse: F2A 250V.

Environmental conditions

a) Power supply voltage: AC 220V±10%, 50Hz±1Hz, with good grounding.

b) Ambient temperature: 23℃±5℃.

c) Relative humidity: 40%±10%.

d) Atmospheric pressure: 70.0～106.0Kpa.

Standard configuration: 1 main unit, 1 external power supply, 1 instruction manual, 1 grounding wire, 1 pair of 200nA connections, 15 electrode pair series wires, 1 portable case

Standard:

YY/T 0196-2005 Disposable ECG Electrodes

ANSI/AAMI EC12:2000(R2005)

Application Scope:

Used for testing the electrical properties of ECG electrodes , suitable for disposable body surface ECG electrodes , including disposable ECG electrodes with pre-installed conductive glue or self-adhesive ECG electrodes with pressure-sensitive conductive glue and disposable ECG electrodes with conductive glue placed according to the requirements before use .

ANSI/AAMI EC12:2000(R2005) ， YY/T O196-2005 "Disposable ECG Electrodes " stipulates the requirements for batch inspection and periodic inspection, that is, the grouping of electrode pairs and the test sequence of each item. The requirements for the above test items are as follows:

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Test items	Impedance	Disorder	Noise	Flow resistance	Defibrillation
Industry Standard Requirements	< 3KΩ	< 100mV	< 150μV	< 100mV	< 100mV

AC Impedance ("Impedance" for short)

A comprehensive measurement indicator that represents the impedance and capacitive reactance of an electrode pair.

During the test, the instrument applies a 10Hz sinusoidal AC current with a peak-to-peak value not exceeding 100μA to the electrode pair through two electrode test cables. In this case, the AC impedance of the electrode pair should not exceed 3KΩ.

DC offset voltage (offset for short)

The voltage developed between two disposable ECG electrodes due to the difference in their half-cell potentials.

After forming the electrode pair, after a 1 minute stabilization period, the DC offset voltage of the electrode pair measured through the electrode test cable should be no more than 100mV.

Internal Noise (“Noise” for short)

The voltage signal within a certain frequency band is presented by the change of the offset voltage of the electrode pair.

After forming the electrode pair, after a 1 minute stabilization period, within the following 5 minutes, the peak-to-peak value of the internal noise generated by the electrode pair in the frequency band of 0.15-100 Hz (first-order frequency response) measured by the electrode test cable should be no more than 150μV.

Bias current tolerance (abbreviated as "current tolerance")

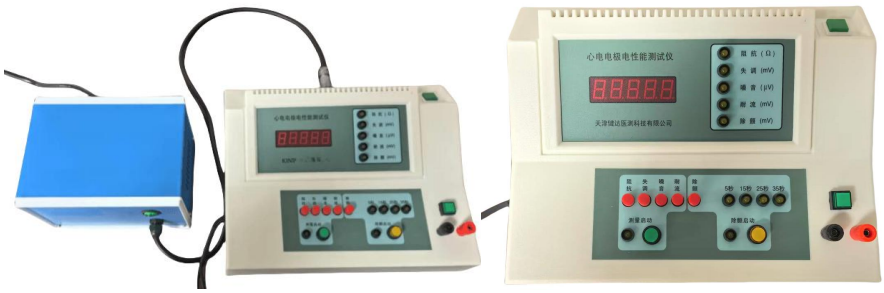
The ability of an electrode pair to maintain a stable DC offset voltage under the long-term action of a given small DC current.

The electrode pair is connected to the 200nA terminal of the instrument, and then a 200nA DC current is continuously applied to the electrode pair for more than 8 hours. During the entire period, the voltage change across the electrode pair measured by the electrode test cable should not be greater than 100mV.

Simulated Defibrillation Recovery Performance (abbreviated as "Defib")

The ability of the electrode pair to restore ECG detection after being stimulated by defibrillation current.

During the test, the 10μF capacitor in the instrument is charged to DC200V, and the electrode pair and the 100Ω resistor in the instrument are discharged in series through the electrode test cable. The voltage value on the electrode pair should be no more than 100mV in the 5th second after the capacitor begins to discharge; within the next 30 seconds, the average rate of change of the voltage every 10 seconds should be no more than ±1mV/s. It is also required that after four times of the above experiment, the 10Hz AC impedance of the electrode pair should be no more than 3KΩ.



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