



## Testing System for function tests of ECG devices

- ECG impulse output
- periodic signals
- arrhythmia output
- pacemaker outputs
- simulation of respiration
- signal output according to IEC 60601
- user specific language setting

# Technical Data

Line voltage: 83 – 264 V ac, 50 / 60 Hz  
or internal accumulator operation  
Nominal power: max. 25 VA – internal power supply  
Protection class: Internal power supply  
Environmental temperature: + 5 - + 40 °C  
Storage temperature: -10 - + 50 °C

ECG impulse amplitude: 1 – 5 mV ± 1%  
in 1 mV steps  
ECG signal duration: 1 – 200 ms ± 1%  
1 – 200 ms ± 1%

in 1 ms steps  
ECG impulse form: sinus, sinus square, triangle,  
rectangle, trapeze, ISO,  
ventricular fibrillation,  
ventricular tachycardia,  
mains frequency, NSR

ECG impulse frequency: 10 - 300 bpm ± 2 %  
in 1 bpm steps  
Signal frequency variable: 1 - 100 Hz ± 2 %  
in 1 Hz steps  
Signal frequency sine: 0,3 Hz ± 2 %  
Respiration: basic value ± 1 Ohm

Interface: 1 x RS-232 for PC-connection  
Testing device connection: 10 sockets 4 mm for ECG  
Digital display: 4 x 16 char display  
Keyboard: 6 key foil keyboard  
Accessories: 10 x STA8 ECG adapter clip  
1 x charger

Mechanical data: light weight metal case IP20  
Dimensions: 140 x 220 x 30 mm (W x H x D)  
Weight: approx. 0,5 kg  
Selectable languages: german, english, french, polish  
spanish, Italian, portuguese, turkish

The ES-300 serves as a test-signal generator for ECG impulses. These ECG impulses can be used for the functional testing of the signal-representation and signal-evaluation of ECG monitors. Furthermore, the extended ECG functionality can be tested over a respiration-function with apnoea-alarm-control.

The execution of a signal-output can be done with the PC-Software. The results of the signal-representation can be determined, assessed and stored.

PC-Software can be used for a flexible output of the offered waveforms. Consequently, integration into complex test instructions and into automatic test-sequences is possible. For that reason, a high-quality documentation of the signal-representation and signal-evaluation of an ECG appliance is possible.

Because of the, as far as possible, freely configurable and variable ECG signal forms, a large variety of signal sequences can be brought to the output. The simulation of arrhythmic signal forms offers the possibility to test more complex devices in accordance with a standard.

The generation of the calibration impulse CAL and ANE after IEC 60601-2-51:2003 enables practical operating function-controls for manufacturers and examiners.

-	Voltage
Abl. I (L - R)	+ 1,00 mV
Abl. II (F - R)	+ 1,56 mV
Abl. III (F - L)	- 0,56 mV
N – R	+ 0,59 mV
N – L	+ 1,59 mV
N – F	+ 2,15 mV
N – C1	+ 0,59 mV
N – C2	+ 1,18 mV
N – C3	+ 1,75 mV
N – C4	+ 2,03 mV
N – C5	+ 2,83 mV
N – C6	+ 3,35 mV

(Technical modifications and errors reserved. 09/2020)